Sri Lanka: Agribusiness Development Project

Asian Development Bank
CURRENCY EQUIVALENTS

(as at 1 October 2007)

United States Dollar – 114.04 SLR (selling rate)

ABBREVIATIONS

ADA   Agribusiness Development Alliance
ADP   Agribusiness Development Project
AWDR  Average Weighted Deposit Rate
AWPR  Average Weighted Prime Rate
BoC   Bank of Ceylon
BOI   Board of Investment of Sri Lanka
CAC   Codex Alimentarius Commission
CBSL  Central Bank of Sri Lanka
CEAT  Controlled Environment Agricultural Technology
CIF   Cost, Insurance and Freight
CWE   Cooperative Wholesale Establishment
DAPH  Department of Animal Production and Health
DDEC  Dambulla Dedicated Economic Centre
DEA   Department of Export Agriculture
DFR   Draft Final Report
DMF   Design and monitoring framework
DNBG  Department of the National Botanical Gardens
DOA   Department of Agriculture
EDB   Export Development Board
EU    European Union
FAO   Food and Agriculture Organisation
FAQ   Fair Average Quality
FLO   Fair Trade Labeling Organization
FOB   Free On Board
FPEA  Floriculture Produce Exporter Association
GAP   Good Agriculture Practices
GDP   Gross Domestic Product
GGS   Govi Gnana Seva (Farmer Intelligence Service)
GMP   Good Manufacturing Practice
Government  Government of Sri Lanka
GTZ   German Technical Cooperation
GUMP  Grown Up Milk Powder
HACCP Hazard Analysis Critical Control Points
HARTI Hector Kobbakaduwa Agrarian Research and Training Institute
HNB   Hatton National Bank
HS    Horticulture Specialist
HVC   High Value Crops
ICT   Information and Communications Technology
IDB   Industrial Development Board
IDPL  International Dairy Products Limited
IFOAM International Foundation of Organic Agriculture
ILO   International Labour Organisation
IPHT  Institute of Post Harvest Technology
IPM   Integrated Pest Management
ISO   International Standards Organisation
ITI   Industrial Technology Institute
LS    Livestock Specialist
MADAS  Ministry of Agricultural Development and Agrarian Services
MIDAS  Marketing Innovation, Development and Ancillary Support
MIS    Marketing Information System
MLD    Ministry of Livestock Development
MOFP   Ministry of Finance and Planning
NAC    National Agribusiness Council
NDB    National Development Bank
NGO    Non Governmental Organization
PAP    Project Appraisal Committee
PCDP   Perennial Crop Development Project
PERC   Public Enterprise Reform Commission
PFI    Participating Financial Institution
PMU    Project Management Unit
Pola   Periodic market
PPP    public/private sector partnerships
PPTA   Project Preparation Technical Assistance
PSC    Project Steering Committee
PWC    Project Working Committee
QSC    Quality, standards and certification
SAPPTA Spice and Allied Product Producers and Traders Association
SCM    Supply Chain Management Specialist
SLFVPPEA Sri Lanka Fruit and Vegetable Producers and Processors
Exporters Association
SLR    Sri Lanka rupees
SLRM   Sri Lanka Resident Mission
SME    Small and Medium Enterprises
SMEDP   Small and Medium Sized Development Project
SPCDP   Second Perennial Crop Development Project
SPREAP Southern Province Rural Economic Enhancement Project
SPS    Sanitary and Phytosanitary Standards
SS     Spices Specialist
TBA    To be advised
TCP    The Competitiveness Program (USAID)
USAID United States Agency for International Development
WTO    World Trade Organization
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# DRAFT LOAN AND PROJECT SUMMARY

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<th>Democratic Socialist Republic of Sri Lanka</th>
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<td>Project Description</td>
<td>The Agribusiness Development Project (ADP) involves accelerating the growth of the agribusiness sector through increased private sector (including PPP) investment throughout the whole island of Sri Lanka</td>
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## Rationale

2. Over the past 20 years the agribusiness sector has not achieved its growth potential.
3. Agribusiness led development is perceived as an engine for rural development and poverty reduction.

## Impact and Outcome

1. Enhanced stakeholder coordination, vertical integration and stronger backward and forward linkages in the value chain.
2. An organized and competitive agribusiness sector.

## ADP Financing Plan

TBA

## Loan Amount and Terms

$60 million ($30 million at market rate and 430 million grant funds)

## Loan Allocation and Relending Terms

Through qualified PFI’s and direct by the PMU through an imprest account

## Period of Utilization

6 years (2008/9 to 2014/15)

## Estimated Project Completion Date

2014/2015

## Executing Agency (EA)

TBA (probably MADAS)

## Implementation Arrangements

Through a “not for profit” PMU company, acting as facilitator, with multiple implementation service providers

## Procurement

TBA

## Project Benefits and Beneficiaries

Smallholder farmers / commercial farms / traders / agribusiness service providers / agro processors / retailers / exporters

## Risks and Assumptions

1. Appropriate “private sector enabling environment
2. Macroeconomic stability
3. Conflict resolution

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1 A provisional loan and project summary has been prepared in order to assist a new PPTA team should the ADP be reinstated.
I. INTRODUCTION

A. Background to the PPTA

1. The Draft Final Report (DFR) is the third milestone document submitted by the TA to the ADB and the Ministry of Agricultural Development and Agrarian Services (MADAS), and covers activities in Phase 2 of the TA, which refined the work and proposals presented in the Inception Report (June 2007) and the Interim Report (August 2007).

2. Since the late 1980’s the ADB has funded two support projects to the Sri Lanka commercial agriculture sector, viz, the Perennial Crops Development Project (PCDP), 1988/1997; and, the Second Perennial Crops Development Projects (SPCDP), 1998/2005. Following a request from the Government of Sri Lanka to the ADB, in December 2005, for further support to the commercial agriculture sector, a PPTA for a proposed Agribusiness Development Project, (ADP) building on the lessons learned from the PCDP and the SPCDP, was subsequently agreed in 2006. The PPTA (Project Preparation Technical Assistance) contract was awarded to ANZDEC Limited, New Zealand, and started on 1st May 2007.

B. Cancellation of the Agribusiness Development Project

3. On 31 August 2007, ADB agreed to remove the loan of $60 million for the ensuing Agribusiness Development Project from the ADB country program 2008-2011. The request was made by the Secretary to the Treasury during his meeting in Manila with the ADB Director of Agriculture, Natural Resources and Social Services Division. This request confirmed earlier meetings the ADB Country Director and his team had with Ministry of Finance (MOF) officials, including the Secretary to the Treasury, and was further confirmed on 18 September 2007 in a follow up meeting with the ADB Country Director and the Deputy Secretary of Finance.

4. Since MOF/External Resources Department (ERD) is firm in the decision to drop the agribusiness sector loan from ADB’s forward pipeline, certain TA activities (e.g. stakeholders’ workshops to validate project design, full conflict assessment of the project area) have not be undertaken in Phase 2 of the TA as they would provide only incomplete or time-bound information. Therefore, ADB, MADAS, and the TA Team have agreed accelerate the completion of the DFR in order to submit one final concise project proposal.

5. MADAS and ADB have agreed that, in the event the loan for the Agribusiness project is requested again by the Government, TA savings will be used to remobilize some of the TA consultants to (i) finalize the Report, (ii) carry out stakeholder consultations, (iii) incorporate the Government’s comments, and (iv) complete the following:

   - Implementation Schedule
   - Procurement Plan
   - Gender Action Plan
   - Conflict Assessment
   - Update detailed cost estimates
   - Other requirements of the ADB.

C. Layout of the Draft Final Report (DFR)

6. In view of the Government’s decision to cancel the proposed ADP this report is presented as a proposal that may be of interest to other bilateral and/or multilateral donors, either as a whole or in its component parts.

7. The DFR has the following features:
1. References to the Interim Report

The DFR contains extensive references to the Interim Report, which contains comprehensive assessment and analysis of the agribusiness sector together with options for donor support interventions for the development of the sector. The DFR summarizes key findings contained in that document. For ready reference, the Interim Report included the following working papers:

- Supply Chain Management
- Horticulture
- Floriculture
- Spices and allied products
- Livestock
- Marketing
- Research and Extension
- Quality Standards and Certification
- Business Development
- Finance and Credit
- Social Development
- Environment

9. The Interim Report and the working papers are available to interested parties on request to the ADB and MADAS.

2. DFR focus

10. The DFR has the following focus:

(i) The sector analysis is summarized in a form enabling use by sector stakeholders.
(ii) The proposed interventions for each product sub-sector are packaged in a form enabling possible funding by donors other than ADB.
(iii) The proposed project activities, including TA inputs, have been rationalized and further prioritized.
(iv) A section is included on non ADB external assistance to the sector to assist in future identification of potential donors for the proposed project, in its entirety, or, under its component parts.
(v) A section is included on potential Private Public Partnership (PPP) models, including their legal requirements, to assist the Government in exploring the possibility of PPP in agriculture.
(vi) The report summarizes and selects those sector policies that are the most constraining to the development of agribusiness.
(vii) The following additional working papers were produced in phase 2 and are available on request:
- Supplementary working paper on supply chain management
- Supplementary working paper on horticulture, beverages and virgin coconut oil
- Working paper on the status of medicinal plants in Sri Lanka
- Miscellaneous working paper on (i) the research and development activities of HORDI; the DOA, Angunakolapallessa and Horana on – grain legumes; oilseeds; and fruit crops; the DEA on cocoa and coffee; the CRI, Lunuwila on virgin coconut oil (ii) the status of the cocoa and coffee industry in Sri Lanka; (iii) costs and returns to selected intercropping under coconuts (source – CRI/CCB).

11. It should be noted that due to the cancellation of the project by the Government’s MOFP effective on the 31st August 2007, it was neither appropriate nor feasible to conduct the stakeholders meetings, focus group sessions and a final workshop, as envisaged originally in phase 2 of the PPTA.

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2 ADB TA 4800 SRI: PPTA for the Agribusiness Development Project; Interim Report, August 2007 in two volumes
Furthermore, at the time of the submission of the PPTA, comments on the Interim Report had not been received from the Government EA.

12. MADAS requested a meeting with the PPTA and Deputy Team Leader on 10th October in order to discuss the status of the proposed project; in this context it should be noted that that current active and proposed external support to the agriculture/agribusiness sector is small, particularly following the removal by the Government of the ADP from ADB’s pipeline of projects for 2008-2011.

3. Layout

13. This DFR is organized into seven sections, including an introduction (Section I) and * individual appendixes.

14. Section II briefly describes the Proposal; Section III covers the rationale behind the project proposal including the macroeconomic context, an overview of the agribusiness sector, largely in terms of a summary of the findings contained in the Interim Report, external support to the sector and an analysis of key problems and constraints; where possible, the detail required under this section is included in the main body of the DFR rather than in appendixes.

15. Section IV gives details of the proposed project; Section V outlines proposed Technical Assistance; Section VI describes the proposed projects benefits, impact and risks; and, Section VI covers assurances.

16. The appendixes include the following:

(i) Design and Monitoring Framework

(ii) Agriculture/Agribusiness Institutional Framework

(iii) Sub-project and program details

D. Summary of individual illustrative sub projects and programs

17. Examples of programs and PPP sub projects, detailed in Section IV B 3 (Project components), and appendix 3 and 4. are itemized below.

Horticulture

Programs

- HORDI support program to for targeted research, information development and extension ($1,228,000)
- DOA support program on horticulture ICT (information communication and technology) - ($121,500)
- PPP support program on targeted adaptive R&D ($1,000,000)

PPP Projects

- Coconut land improved productivity project (virgin coconut oil, intercropping and livestock grazing)
- High value crops nucleus farm – out grower project (strawberries and berry fruits) project
- Sea freight perishable products (Mauritius variety pineapples) trials project
- Conversion of Government owned seed farms to private sector management

Floriculture

Programs

- NBG support program for targeted research, information development and extension
- NBG strengthening and capacity building program
PPP Projects
- Sea freight perishable products (potted plants and cut foliage) trials project

Spices and Allied Products

Programs
- DEA support program on targeted R&D and outreach
- Spice exporter quality management program
- Estate (plantation sector) spice development program
- Cinnamon and pepper primary processing program

PPP Projects
- Cocoa development and rehabilitation project
- Coffee nucleus estate project

Livestock

Programs
- PPP demonstration farms and farmer training program
- Cattle marketing system program
- DAPH extension personnel capacity building program

PPP Projects
- Conversion of Government owned dairy farms to private sector management

Agribusiness Development Support – General/Cross Cutting

Institutional development
- Feasibility study on the rationalization of public sector institutions (International TA)
- NAC strengthening and capacity building program

Marketing
- Quality standards and certification (QSC) program
- GSS Market Information Systems Program
- Marketing Innovation, Development and Ancillary Support Program (MIDAS)

II. THE PROPOSAL

18. This report and recommendations contain proposals for a loan to the Democratic Socialist Republic of Sri Lanka for an Agribusiness Development Project consisting of ordinary and concessional financing to public and private sector stakeholders. The proposal envisages either single or multiple donors and covers support to the agribusiness sector over the whole island of Sri Lanka. The proposed design and monitoring framework is attached under appendix 1.

III. RATIONALE: SECTOR PERFORMANCE, PROBLEMS, AND OPPORTUNITIES

A. Sector performance indicators and analysis

1. The macroeconomic context

19. The current macroeconomic situation is as follows:

   a. Real sector

20. In the first quarter of 2007, the economy grew by 6.1 %. This was lower than the 7.9 % growth experienced in the first quarter of 2006, which was supported by the healthy performance of the

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3 Source: Economic Update, January – June 2007; ADB SLRM, 15/08/07
agricultural and fisheries sector in the post-tsunami recovery stage. In 2007, growth came from industry and services, which grew by 7 and 7.1% respectively.

21. The agriculture sector (excluding Fisheries) declined due to the poor performance in the tea and paddy sectors. Tea production was affected by worker strikes and bad weather and the paddy sector was affected by flash floods towards the end of 2006. In the industrial sector, construction and food and beverages provided the impetus to growth, contributing to around half of the growth of the industrial sector, and 16% of total growth.

22. Maintenance expenditure on roads and bridges increased by 64.7% during the first quarter of 2007. The number of completed new condominiums (luxury and semi luxury) was 19 during the period under reference. Building materials, eg, sand, metal, and lime in mining and quarrying sector used as inputs in the construction industry increased by 47.2% in value terms.

23. Services accounted for 68% of total GDP growth for the first quarter, and 59% of value addition, with transport, domestic trade, and banking and insurance sub sectors being the main contributors in the services sector. Growth in the transport sector came mainly from cargo handling, and ports and civil aviation. Industry contributed 32% to growth and 28% to value addition.

24. Agriculture contributed zero% and 13% to growth and value addition, respectively. The processed rubber, tea, and coconut sectors declined reflecting the poor performance in agriculture generally.

b. Monetary sector

25. Year on year inflation peaked at 20.5% in January 2007 and has declined steadily from April 2007, reaching 13% in June. Food prices continued to rise due to shortage of vegetables in the Colombo markets, with fuel and lighting costs also rising, following kerosene price increases. Petroleum prices were increased five times during the first half of the year, reflecting global price increases. A cabinet sub-committee on energy has decided to allow monthly price adjustments for petroleum, and the June price increase was made accordingly. The government modified the pricing formula for retail fuel, bringing down the profit margin of retailers from five to 1.5%. A liter of petrol cost SLR 117, with diesel at SLR 75 per liter, and Kerosene at SLR 68 per liter by the end of July 2007.

26. The Central Bank continues to pursue a tight monetary policy framework, using open market operations to control excess liquidity. Within the monetary sector, the maintenance of monetary reserves, which is the operational target of monetary policy, was kept within the targeted level during the first quarter of the year. Net credit to the government, by the banking sector, declined by 1.4% over the first five months of the year. However, credit to the private sector continued to grow, expanding by 9.4% over the same period. Real interest rates on treasury bills became positive in May for the first time in 2007.

c. Fiscal sector

27. Current expenditure increased driven by salaries and interest payments. Expenditure on salaries increased by 30%, over the same period last year, during the first five months of 2007. The increase was due to the cost of living allowances and new recruitment that took place during this period. Recruitment costs included the strengthening of security forces to protect the newly secured areas in the East. The total pensions budget increased by 19%, with higher scales and the cost of living allowance taking effect. The full impact of the 18,000 new retirees at the higher scale in 2006 also contributed to the increased budget.

28. Interest payments registered a 15% growth due to rising domestic interest rates and the depreciation of the SLR, driving up both domestic and foreign debt servicing costs.

29. Capital expenditure increased by 17% to May 2007, compared with the same period last year. Programs such as “Gama Neguma” and “Maga Neguma” contributed to this increase. Investments in the road sector amounted to about SLR 12 billion to May 2007.
30. Revenue increased by 27% during the first five months of 2007, compared to the same period last year. Income tax recorded a 66% increase, resulting from efforts at broadening the tax base and rate revisions over the last three years. VAT revenue increased by 21% for the same period. The government raised SLR 67.2 billion through market instruments during the first half of the year, which was SLR 2 billion higher than the amount raised over the first half of 2006. However, over 90% of all treasury income in this context was absorbed by the Employees Trust Fund. During the first four months of the year, there were net repayments totaling SLRs 27 billion to the banking sector.

31. Total foreign aid commitments up to May amounted to $874 million, consisting of $803 million in loans and $71 million in grants.

d. External sector

32. Exports grew by 12.9% during the first half of the year with industrial exports growing by 13.5%, and garments and textiles growing by 14.6%.

33. In the garments sector, competition in the USA market continues to be a concern. According to USA data, the value of apparel imports from Sri Lanka for the first five months was $670.6 million compared with $675.7 million for the same period last year, a decline of 0.76% USA apparel imports from Bangladesh (17.7%), China (52.7%) Cambodia (22.1%), Indonesia (22.6%), Pakistan (16.8) and Vietnam (22.4%) all recorded substantial gains while India (-1.4%) and Sri Lanka (-0.8%) experienced a decline. In the first five months of this year exports to the EU amounted to $522.8 million as against $411.1 million in the corresponding previous period recording an increase of 27.2%.

34. In spite of the poor performance in the tea sector, the value tea exports grew by 8.9%, as whilst the quantity of tea exported declined in the first quarter, the value increased due to higher prices.

35. Growth in imports was only 3.9% from January to June 2007. Import of intermediate goods, which is the largest category of imports, declined over this period, with petroleum imports reducing by 7.8%. Petroleum imports declined due to two reasons, viz, (i) in early 2007 stocks were available due to higher imports towards the end of 2006, with imports in December 2006 being 21.4% higher than the same month the previous year; (ii) In January 2007, crude imports declined by 45.5% due to maintenance work at the Sapugaskanda oil refinery. Crude oil imports are expected to increase during the second half of the year.

36. The import of investment goods increased marginally, resulting from higher imports of transport equipment and building materials. During the first half of 2007 non-oil imports increased by 7.1 per cent.

37. The overall trade deficit in the first half of 2007 narrowed to $1,581 million from $1,793 in the first quarter of 2006. Private remittances grew by 18.4 per cent to $1,314 million during the first half of 2007, containing the current account deficit. The overall balance of payments registered a surplus of US dollars 192 million and gross official reserves stood at $2,719 million (by end June 2007, sufficient to cover 2.9 months of merchandise imports (and 2.5 months of goods and services). Over the first half of the year the SLR depreciated by 3% against the US dollar and by 6% against other currencies. Most other countries in Asia experienced sharp capital inflows, caused by pull factors (better fundamentals), and by push factors (high global liquidity, higher yields, and the perception that some currencies were undervalued).

e. Contribution of agriculture to the economy

38. The contribution of agriculture to the economy has been declining steadily since the early 1970's. Sri Lanka, in common with many other developing countries, has seen a trend towards increased economic activity in the industrial and services sectors and a decline in the contribution of agriculture to Gross Domestic Product (GDP). The contribution of the agriculture sector to GDP between 1995 and 2005 averaged around 18.6 per cent a decline of 15 per cent from the figure registered between 1985 and 1995. The current contribution stands at 17.2 per cent. The average growth of the agriculture sector at around 1.2% over the past 4 years is also slow compared to the industrial and services sectors, which recorded 55 and 70% respectively. However, agriculture is of
major significance in the country’s economic development accounting for 30.7% of employment in 2005 and providing the main source of livelihoods in rural areas where some 70% of the population reside. Furthermore agriculture provides the country with significant returns in terms of export earnings and contributes in a major way to food security\(^4\).

2. **Overview of the agribusiness sector**

39. This sub section summarizes and refines the information and analysis given in the Interim Report, sections IV, V, VI and VII (pages 14 to 113), together with the appropriate attached specialist working papers.

a. **Definition of commercial agriculture and agribusiness**

40. The concept implied by the term “commercial agriculture / agribusiness” was defined in the Interim Report\(^5\) in order to ensure that project design focuses on declared objectives, and is summarized hereunder for ready reference:

41. Agribusiness may be broadly defined as involving a wide range of complex and interlinked activities including inputs, related to the commercial production of agricultural commodities (including crops and livestock); their transformation of into products; and, their marketing and distribution. This definition encompasses four major activities:

   (i) Agricultural farm inputs, e.g., planting material, fertilizers, pesticides and herbicides, farm service and supply
   (ii) Commercial farm production – planting, husbandry, harvesting and post harvest on farm activity
   (iii) Primary and secondary production – storage, transport, logistics, processing, marketing, wholesaling and retailing and exporting
   (iv) Services – R&D, extension, technology transfer and outreach; education; banking and finance; investment; and technical assistance

42. Agribusiness activity differs from basic farming systems in that it is commercially oriented and implies organized linkages among different stakeholders in the value chain. Therefore, subsistence level agriculture would not fall within this definition of agribusiness. Furthermore, agribusiness, as defined, implies close coordination between both the public and private sector; and, between different public sector institutions, such as ministries involved with agriculture and rural development, commerce and trade, and industry. Finally, it is widely acknowledged worldwide that agribusiness must be led by the private sector in order to succeed.

43. For the purposes of this report agribusiness includes the products of horticulture (fruit and vegetables); floriculture (cut flowers, live plants and foliage); spices (primarily cinnamon and pepper) and allied crops (primarily cocoa, coffee, and medicinal plants); and, livestock (primarily dairy animals), and those associated crops suitable for intercropping with coconuts, and, possibly rubber. However, any future project based on the findings of the PPTA, the Interim Report, this report and specialist working papers should not be product restrictive and flexibility is advised in order to cope with changing circumstances over the lifetime of a project. For example, edible nuts, grains and legumes, poultry, swine, goats, and fish farming could all be considered for project support if conditions are considered appropriate. The paddy sector and crops relating to the plantation sector, viz, tea, rubber, and coconuts (per se), have been excluded.

b. **The enabling environment**

44. The agribusiness enabling environment is essentially those aspects of Government policy, and the Institutional framework affecting the sector’s ability to grow and achieve its potential. Policy, legislation, regulatory issues and public and private sector institutions were assessed and analyzed at

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\(^4\) CBSL Annual Report 2006

\(^5\) Interim Report, Section I D, paragraphs 6 to 13
length in the Interim Report\(^6\), and are summarized hereunder. Those areas of Government policy posing major constraints to the development of the agribusiness sector are selected and discussed in Section III C (Analysis of key problems and opportunities) hereunder.

i. Government policy

45. Current Government policy towards the sector is enshrined in a document released in 2005, viz “The Economic Policy Framework of the Government of Sri Lanka”. Under the current policy framework, the key economic objective of the Government is to assist the agricultural sector to attain self-sufficiency in food production and food security. The policy focuses on smallholder development and emphasizes tea, coconut, rice, aromatic plants, and a number of spices as national crops that would provide an ownership structure for equitable growth because they are largely comprised of smallholder activities. Current policy also focuses on supporting:

(i) Development assistance by way of new technology; subsidized inputs (fertilizer, seed paddy, and planting material); storage; and credit facilities to promote agricultural production, value addition, and exports.

(ii) Establishment of cultivation zones for strategic food crops (potato, onion, vegetables, etc.) and horticulture development, particularly using organic fertilizer.

(iii) Promotion of domestic private sector in commercial agriculture, particularly in plantation crops and export agriculture for value addition.

(iv) Rehabilitation of existing irrigation facilities to minimize the adverse impact of periodic droughts.

46. The Government also proposed actions to promote sugarcane cultivation to reach self-sufficiency targets in sugar production and highlights several Government programs on farmer support and subsidies including (i) increased subsidies for coconut and rubber replanting, tea replanting and new tea plantations, and fertilizers; (ii) a guaranteed floor price for milk to promote self-sufficiency; (iii) abolition of taxes on two-wheel tractors and other agricultural equipment; (iv) reestablishment of the mechanism to purchase paddy to facilitate Government intervention in the rice market; (v) the launch of a special program for national food security to enhance paddy production in the wet zone and encourage cultivation in abandoned fields; and (vi) measures against importation of several food crops (such as potatoes, onions, and chilies) during the local harvesting seasons.

47. This policy, in the context of the commercial agriculture sector and agribusiness development, is strongly focused towards subsidy, Government price intervention and interference in marketing channels, and overall public sector management and control. Although the policy statement mentions the promotion of the private sector in the context of plantation, commercial agriculture and value addition, its current policy statements do not seem particularly private sector friendly (See comments under Section III C hereunder).

ii. Legislative framework

48. The current legislative framework, under which Government policy affecting the agriculture sector in general is implemented covers law affecting key areas of (i) plant protection and animal health; (ii) pesticide use and control; (iii) seed and planting material; (iv) land; (v) food, including genetically modified crops; (vi) consumers; and standards. The legislation relevant and in force is as follows:

(i) Plant protection, quarantine and animal health and feed issues are covered by:

- The Plant Protection Act (1999) which provides the necessary framework to prevent the entry of pests that may cause plant health problems through the use of risk analysis, inspection and quarantine procedures. A Seed Certification and Plant

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\(^6\) Interim Report, Sections IV and V, pages 14 to 37
Protection Center maintains and updates a list of notifiable pests and issues phytosanitary certificates for exported plant material and germplasm. For imported material the Government has the right to keep the germplasm in quarantine areas under the auspices of the National Quarantine Service.

- **The Animal Diseases Act (1992)** which is primarily concerned with the control and prevention of contagious animal diseases and the control of imported and exported animals, animal and veterinary products providing the powers of enforcement to the Animal Production and Health Department. Methods of disease containment include animal destruction, isolation, testing and inoculation and the disinfection of buildings and livestock and poultry housing. Concerning import and export, there is prohibition of import without a permit, prior notice is required for live animal imports and a health certificate is required for imported poultry and animals which is an integral part of the risk assessment process used by the Ministry’s risk managers.

- **The Animal Feed Act (1986)** regulates, supervises and controls the manufacture, sale and distribution of animal feed. Feed wholesalers and retailers have to be registered and the labeling complies with the standard (composition, net weight, storage and expiry date).

- **The Animals Act (1958)** regulates the slaughter of animals and shipment of animals between districts to prevent the spread of disease. The Act refers to animal branding, trespass, castration and breeding. The Act provides scope for the restriction, control and regulation of the removal of animals from one district to another.

(ii) **Pesticide usage and control issues** are covered by **the Control of Pesticides Act (1980)** under which the Registrar of Pesticides has a mandate, for the approval and registration of pesticides taking into account efficacy, formulation, packaging, labeling, storage and transportation of the products.

(iii) **Seed and planting material issues** are covered by **the Seed Act (2003)** which provides a mandate for the Seed Certification and Plant Protection Center, through the National Seed Council, to undertake the following activities; (i) elaborating guidelines to ensure good seed quality is produced (ii) monitoring quality (iii) establishing minimum standards for seed (viability, purity etc) (iv) labeling and packaging requirements and (v) undertake seed certification activities

**Land issues** are covered by:

- **The Agrarian Services Act 1979, as amended in 1990, 1991, and 1993** regulates land tenancy in Sri Lanka. It prescribed a ceiling of 2.20 ha (5 acres) on land that could be cultivated by a tenant, the rental payment and terms of succession. The 1991 amendment eliminated the restriction of cropping paddy lands only with paddy and provided for the establishment of Agrarian Services Committees to ensure efficient management of all agricultural lands and Farmer Organizations to promote development activities.

- **The Land Reform (Special Provisions) Act 1981** permitted leasing of lands to individuals or companies over and above the ceiling of 20.2 ha (50 acres) for purposes of agricultural development, and encouraged the return of foreign and domestic companies to agriculture.

- **The Agrarian Services Development Act, No. 46 2000**, a key aspect of which concerns the use of paddy land, and states (page 25): that "(1) Paddy lands which have been identified by the Commissioner-General as paddy lands from which the maximum production can be obtained by the cultivation of paddy shall be cultivated with paddy during every season in which paddy can be cultivated thereon; (2) Where paddy cannot be cultivated during any season in an extent of paddy land, which has been identified above, due to a natural or other cause, an agricultural crop which is not a perennial crop may be cultivated on such paddy lands after obtaining the written permission of the Commissioner-General; and, (3) In the case of paddy lands from which satisfactory production can be obtained by the cultivation of any crop other than paddy, such paddy land may be cultivated with half yearly crops other than paddy after obtaining the written permission of the Commissioner-General. For the purpose of cultivating long-term crops in such paddy lands, the written permission of the
The Commissioner-General shall be obtained prior to the commencement of such cultivation."

- The **Land Registration Ordinance 1863** originally introduced a system of title registration and registration of deeds. Problems associated with surveys and investigations made title registration ineffective. The registration of deed was implemented, currently under the Registration of Documents Ordinance 1927.

- The **Registration of Title Act No 21 of 1998** provides for unencumbered and clear title to every parcel of land in the country, establishes a system of registration of land parcels and ownership rights, and creates a new system of land-transaction registration, including records containing information on parcel boundaries, name of owners and rights that third parties have over the land such as mortgages, leases and easements.

(iv) **Food, consumer and standards issues** are covered by:

- **The Food Act No 26 (1980)** defines the organization of food control at the level of central administration and local services, with the main responsibility for food safety with the Ministry of Health, while specific agencies carry out export control.

- **The Consumer Affairs Authority Act (2003)**: provides for the establishment of a Consumer Affairs Authority, the protection of consumers, the regulation of international trade and gives a mandate for enforcing relevant regulations.

- **The Sri Lanka Standards Institution Act (1984)** provides for the establishment of SLSI (Sri Lanka Standards Institute) and the repeal of the "Bureau of Ceylon Standards Act" (1964) and makes provision for SLSI to (i) prepare national and international standards (ii) amend or null existing standards (iii) promote standardization and harmonization, establish laboratories (iv) provides facilities for standards testing (v) undertake research in standards and (vi), operate a certification mark schemes.

- **The Sri Lanka Accreditation Board for Conformity Assessment Act of 2005** provides for the establishment of the Sri Lanka Accreditation Board (SLAB) that (i) can grant accreditation in accordance with national standards based on the relevant international standards, of laboratories, certification and inspection bodies, training institutions and persons to carry out conformity assessments (ii) ensure competence in internationally accepted accreditation practices and to facilitate international cooperation in accreditation and (iii) to conclude mutual recognition agreements relating to accreditation.

### iii. Institutional framework

49. The institutional framework affecting the agribusiness sector was described at length in the Interim Report⁷, and the salient features are summarized hereunder.

**The public sector**

50. **Ministry of Agricultural Development and Agrarian Services (MADAS):** Whilst there are a multitude of public sector institutions concerned with the operation of the Sri Lankan agriculture / agribusiness sector, at Government level MADAS has overall responsibility for agricultural matters. The mandate of MADAS covers agricultural policy, planning and implementation, through its departments and statutory bodies. Details regarding the mandate, role and structure of MADAS are given in appendix 2 (Agriculture / Agribusiness Institutional Framework).

51. **Ministry of Livestock Development (MLD):** The MLD has prime responsibility for the livestock sector policy and implementation (dairy animals, swine, poultry, and goats) through its departments and statutory bodies. Details regarding the mandate, role and structure of MLD are given in appendix 2 (Agriculture / Agribusiness Institutional Framework).

52. **Other Ministries concerned with the sector:** A number of other ministries have mandates that affect agricultural matters also have important roles in the agriculture / agribusiness sector and the

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⁷ Interim Report, Section V, pages 29 to 37
implementation of projects; (i) Ministry of Sports and Public Recreation (Department of Botanical Gardens - floriculture); (ii) Ministry of Enterprise Development and Investment Promotion (BOI); (iii) Ministry of Export Development and International Trade (The Export Development Board); (iv) Ministry of Plantation Industries; (v) Ministry of Indigenous Medicine; (vi) Ministry of Finance and Planning (National Planning Department, and External Resources Department).

The private sector

53. With regard to the private sector, the key institutions involved with the non plantation agribusiness sector are, (i) The National Agribusiness Council; (ii) the Ceylon Chamber of Commerce; the National Chamber of Commerce, and the Federation of Chambers of Commerce and Industry. Details regarding the mandate, role and structure of private sector institutions are given in appendix 2 (Agriculture / Agribusiness Institutional Framework).8

54. Local and international NGO's also involve themselves in the sector, particularly at regional and district level.

55. As a general comment the current institutional framework is confusing and seems an inefficient use of human resources.

c. Research and extension

56. At present the Sri Lankan agricultural extension system is essentially a public sector activity. To support the extension system, research, education and media all play a vital role. The present public sector agricultural extension service, is relatively ineffective, does not provide quality services on a timely basis, and is unable to access new technologies. The stagnation of yields for most crops cultivated by farmers can be partly attributed to this lack of a complete effort in agricultural extension.

57. Centralized and standardized national extension systems do not provide satisfactory results. The wide range of social environments, economic contexts, agro-ecological conditions and cropping patterns has produced a varied mix of farms and as such no single approach or organization fits all. Extension systems must be flexible to respond to new situations and to be effective must address change.

58. The extension system should facilitate the provision of new technologies, coordinate input supplies and assist in securing markets for the produce at reasonable prices. In today’s context, agricultural extension is increasingly being viewed more as a means of facilitation rather than merely a technological transfer process. It is also been viewed as a means of reducing poverty and the social inequalities as well as encouraging the judicious use and sustainability of natural resources. To perform these tasks, the extension system need not be operated exclusively by the public sector. The private and NGO sectors can and do participate in this endeavor and some quite effectively provide these services. As such, the development of an effective agricultural extension service is a medium to long-term investment in the same way as education and research and should involve a number of institutions including different stakeholders.

d. Business promotion

59. The TA assessed the business climate with a view to identifying measure to support more private sector investment to the agribusiness sector, and detailed findings are included in both the PPTA Inception and Interim Reports. In view of the decision of the Government to cancel the ADP, further official and focus group meetings with private sector stakeholders in the context of business promotion were abandoned in phase 2 of the TA.

60. There is a general consensus amongst the private sector on the poor and inappropriate enabling environment for greater private sector investment in the agribusiness sector and is relate primarily to government policy issues. The prevailing environment in the agribusiness sector is not conducive to entice commercial-scale investments. Proliferation of institutions in the sector has made

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8 Extract from the Interim Report for ready reference
the situation further complicated by making it extremely difficult for any prospective investor to fulfill basic investment requirements. Therefore, it is imperative to create an enabling environment to attract investments to the agribusiness sector.

61. The Government’s equivocal policy towards involving the private sector in agribusiness is a key constraint to agribusiness as it is acknowledged widely that private sector led growth offers the most efficient and successful model for development. For example, in the late 1990’s the Government privatized two commercial seed farms which are now running successfully under private sector ownership. The Government still owns a number of commercial farms, but current policy under the “Mahinda Chintra” states that it will not privatize national assets and, in consequence, has announced the closure of the Public Enterprise Reform Commission (PERC). PERC, which was set up under an Act of Parliament in 1996 was instrumental in identifying and restructuring State owned commercial enterprises including the two farms mentioned above.

62. From the information gathered and observations made during the TA assessment of the sector it is evident that at the present time neither Government nor the business community have a meeting of minds on how to create the most appropriate enabling environment in Sri Lanka for the development and promotion of the private sector, to the benefit of the economy as a whole and for the agribusiness sector in particular.

63. Nevertheless, there are still sufficient grounds to believe that enough goodwill exists between Government and the private sector for meaningful collaboration to move to the next level, even if not about the means required to achieve the objective of increased agribusiness investment. These issues should be pursued vigorously if the ADP is reinstated.

64. The Minister of Enterprise Development and Investment Promotion at a meeting of BOI investors in July 2007, advised the planned creation of a BOI agro Industrial zone targeted, inter alia at floriculture and horticulture. Whilst this is an interesting development further progress has not been reported by the Government during the lifetime of the TA, and future action in this context is unknown

65. The main features of the PPTA product sub sector assessment and analysis are summarized hereunder. Constraints, problems and opportunities, where not specifically applicable to the individual sub sectors, are included in section III C hereunder. Similarly proposed horticultural interventions are included under Section IV B (Proposed Project – components and outputs), together with the referenced appendixes.

i. Horticulture

Production

66. Sri Lanka produces a very wide range of fruit and vegetables in different agro-ecological areas which may be categorized, generally, according to altitude.

67. Overall country wide production of the major fruit crops, viz, banana, mango, pineapple, papaya, rambutan, guava, and watermelon increased by 8.06% to 571,513 t during the five year period from 2002 to 2005. Banana, mango and pineapple are the principal cultivated fruits.

68. Country wide production of vegetables increased by 21.63 % to 660,012 t; Overall up country vegetable production, viz, primarily beans, tomatoes, cabbage, leeks, beetroot, radish and carrots increased by 27.98 % to 291,412 t during period from 2002 to 2005; with overall low country vegetable production, viz, ash plantain, ash pumpkin, okra, bitter gourd, brinjal, capsicum, cucumber, gherkin, red pumpkin and snake gourd, increasing by 17.03 % to 368,600 t

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9 Reference Interim Report, Section VI D, pages 64 to 72, and attached floriculture working paper
69. It should be noted that more recently capsicums, cucumbers, tomatoes, lettuce, and other high value vegetables, together with strawberries, raspberries and iceberg lettuce are being grown in plastic protected cultivation tunnels, and greenhouses in the high country.

70. Potato and sweet potato along with manioc are not recorded in Sri Lanka as vegetables, but are recorded as roots and tubers, while onion and red onion along with chilli are considered as condiments and not vegetables. Only crops classified as vegetables in Sri Lanka have been considered by the PPTA.

71. Detailed statistics indicate that the overall fruit production performance is modest to disappointing, particularly in view of the support given to the sub sector during the SPCDP. The up country vegetable production performance is encouraging with overall increases in area, production and yields; however, it is disappointing that three of the main low country crops, viz, ash plantain, brinjal, and okra, whilst registering production and yield increases, all decreased in area planted during the five year period reviewed.

72. As a consequence of the horticulture assessment and analysis, the following priority high quality fruits and vegetables capable of competitive commercial production for targeted markets, and promoted for agribusiness development, including export and processing, have been identified:

- **Existing priority fruits**: pineapple, papaya, rambutan, mangosteen, avocado, passion fruit, banana, melons, strawberry.
- **Potential new fruits**: for commercial development include: durian, longan, star fruit / carambola, sapodilla, lychee, macadamia, avocado (high quality), sweet tamarind, mandarin, orange and guava.
- **Vegetables**: Salad lettuce (all types), zucchini, capsicum, broccoli, cauliflower, cabbage, beans, tomato, leek, cucumber, gherkins, celery, high-value Asian vegetables, temperate herbs, tropical herbs

**Key features of the horticulture sub sector**

73. An assessment and analysis of the horticulture value chain during the PPTA revealed the following key features:

(i) The supply chain structure for fresh horticultural produce is extremely complex with very limited vertical integration, and with approximately 95% marketed through three primary routes, viz; (i) assembly markets/brokers collectors (60%); (ii) producer/retail pola markets (20%); and (iii) commission agents/itinerant traders (15%). The absence of any weather protection in the main markets results in the produce being subjected to either strong sunlight or heavy rain, which, together with journey cycle times being constrained by the poor infrastructure and road networks, tends to result in the rapidly deteriorating quality of perishable products. The consequent post-harvest losses of fruit and vegetables are around 25 -45%, and, the extent to which this current level of physical loss impacts on the economy is significant.

(ii) The emergence of supermarkets and multiple retail outlets provides a significantly better opportunity for demand driven vertically integrated horticulture structures, improved supply channels, reduced transaction costs and better quality produce.

(iii) Cool Chain Distribution facilities are very limited.

(iv) The most common modes of traditional farm to market transportation are bulk supply (e.g. potatoes, pineapples, bananas, etc.), gunny bags and woven polyethylene bags (brinjal, gourds etc.) and wooden boxes (e.g. tomatoes). In the traditional marketing channels there is limited attention paid to grading or grading standards, other than on the broad based definition of good and poor, or Fair Average Quality (FAQ). Intermediaries and traders involved in export activities purchase produce in bulk and undertake grading to meet market requirements, normally at premises in Colombo, immediately prior to export. Of the grading facilities witnessed virtually none had any mechanized grading equipment and the standards applied were rudimentary.

(v) With the exception of the vertically integrated supply chains, operated by major retailers, the majority of producers are remunerated on the basis of Fair Average
Quality (FAQ), which is subjectively applied by the intermediaries in the chain, and offers no incentive to produce premium quality.

(vi) Agro processing of fruits and vegetables into juices, pulps, frozen, dried, canned and bottled products is limited, and dominated by the few large retailers and agribusiness corporate entities.

(vii) Imports of fruits and vegetables (including potatoes, chillies and onions) is substantial, eg, around 30,000 t of fresh fruit is imported annually at a cost of around SLR 1.2 billion. Exports are minimal in relation to total production and are discussed further in sub section iii hereunder.

**Horticulture export markets**

74. **Current and potential export markets:** The PPTA marketing assessment and analysis covered not only export destinations and appropriate products but also how to export and how to support the exporter. Trade does not arise because producers are able to grow items in demand, but because buyers have been induced to acquire such output sometimes in preference to that from elsewhere in the world. They have been alerted to the existence of such supplies and then stimulated to place orders. Therefore, attention should be given to this crucial aspect (especially in the case of niche markets) as well as to the market intelligence aspect.

75. Sri Lanka’s geography enables the production of temperate as well as tropical fruits and vegetables. Also, Sri Lanka is strategically located within the Indian Ocean; it possesses a market of some significance (the Maldives) very nearby, and two much larger markets, viz, India and the Arabian Gulf, which are not far distant. Therefore, although a relatively small globally (in terms of output and geography), Sri Lanka has the potential to become a respected market player.

76. Sri Lankan exporters have achieved some notable successes in recent years, in part building from experience in serving the nearby Maldives market. For some items the range of destination markets is both diverse and far flung. But, the Gulf States are pre-eminent, followed by W. Europe.

77. In the case of fruit, fresh pineapple sales, in particular, to Germany have been exceptional. Mangosteen and papaya exports also are exhibiting more modest but still good growth. New HVC products are achieving significant market penetration, notably avocados and strawberries.

78. With regard to vegetables, successes are fewer, of smaller dimensions, and still reliant on the Maldives. The prospects seem encouraging for salad items and herbs, especially if organically grown. However, volume trade is elusive, except for traditional items, e.g. manioc, tamarind and dried lemons, and in the special case of processed gherkins.

79. Purchasing power is the key attribute to be considered by would be Sri Lankan exporters. The ethnic food segment represents a relatively easy market to penetrate but the produce demanded generally is not of high value. In contrast, there can be strong competition for the custom of consumers with high purchasing power but the price that the demanded produce can command permits a satisfactory level of sales revenue.

80. As demand becomes more sophisticated it also becomes more focused and more demanding. For horticultural produce this is evidenced by preference for particular varieties, origins, and other attributes (absence of blemishes, standard size/shape/color, etc). An over arching factor may be a desire for organically-grown produce. Modifications to supply chains may be necessary, with also a different marketing strategy to supply the right produce to the right consumer.

81. The relatively small physical size of Sri Lanka, limitations on land availability and its topographical and climatic diversity causes large scale cropping of any one crop to be severely limited. Therefore, for individual items Sri Lanka cannot be a big player in global markets. However, it can be a significant market participant, particularly if offerings are of high unit value and export is focused upon the most receptive markets. The Maldives is the obvious example, but exploiting the French

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10 Reference; Interim Report - attached working paper on marketing
preference for green colored mangoes and the Saudi Arabian desire to consume strawberries all year round are other examples.

82. The foregoing comments have been confined to generalities. In practice, individual circumstances dictate market priorities. A typical example involves avocados that have achieved recent success in the USA market. Similarly, the Gulf States exhibit significantly different opportunities; for example, for dried lemons sizeable variations in unit value are recorded between the UAE, Saudi Arabia and Kuwait. Similarly, strawberries sold to Saudi Arabia command a large premium, reflecting purchasing power pressure, but only in the off season.

83. The many apparent anomalies and uncertainties reflect the special circumstances associated with particular trade flows and can only be isolated by detailed investigation. Cases in point include the different sizes and values of papayas exported and the specifics (varieties and markets) surrounding the apparent market penetration success of melons in the Gulf.

84. It also is interesting to note that the trade itself is by no means familiar with the totality of Sri Lankan export performance. To a degree this is not surprising since most exporters focus upon particular items and/or particular markets. Also, the nature of Sri Lanka Fruit & Vegetable Producers Processors and Exporters Association (SLFVPPEA), and the statutory body, the Export Development Board (EDB) is not conducive to across the board market monitoring.

85. The general conclusions reached as regards horticultural market priorities are:

• Near markets: Maldives and other Indian Ocean island groups favored by foreign tourists. Volumes demanded are not large but can command high unit prices. Sri Lanka’s proximity and the relative weakness of the competition, with the exception of India for certain items, creates a captive market in the case of the Maldives. The Seychelles is however served from Dubai which is able to offer the entire range of horticultural produce demanded.

• Traditional markets: Principally India but also Pakistan. In India, in particular, scope is emerging to satisfy the demand for higher priced non-traditional items emanating from newly-affluent members of society. Sri Lanka should be able to build upon established contacts but only selectively, involving those items for which it has a comparative advantage and hence able to exploit gaps and or compete successfully with local produce.

• Gulf-core: The population comprises two segments, viz, one seeking high value produce and the other seeking ethnic-type items. For the latter Sri Lanka has a definite competitive edge in some cases but for the former its exporters will face many strong and established competitors.

• Gulf-periphery: Countries served by supply chains originating in the Gulf-core countries. These are located elsewhere in the Middle East and beyond, particularly oil-rich former Soviet territories, e.g. Turkmenistan and Kazakhstan, and even Russia itself. In all cases high-value items are demanded. For the latter Sri Lanka has a definite competitive edge but for the former its exporters will face many strong and established competitors.

• Distant: Countries physically distant, but also not likely to be prominent in the short/medium term since new Sri Lankan producers will need time to respond effectively and in volume to the often stringent conditions for importation. Europe is the most prominent destination but Japan and Malaysia/Singapore also may come into consideration. In all cases the competition will be strong.

86. An ability to demonstrate proven sales is particularly crucial. Buyers need to be confident that the promised supply exists and that their orders can be effectively fulfilled. New Sri Lankan suppliers can demonstrate this through gearing initial output to nearby markets; the Maldives for example and even that segment of the domestic market receptive to high value produce, eg, up market hotels in Colombo and premium country wide tourist destinations.

87. Commercial realities suggest that the Maldives market continue to be of top priority with any market gaps in India also addressed; the latter might embrace melons, cauliflower, grapes and apples. Further a field, Dubai stands out, both as a market in its own right and as a conduit for gaining entry to
other Gulf markets. Dubai would appear to be seeking mango, banana, papaya, calamansi, and pineapple, however, all horticultural produce is likely to be acceptable.

88. Overall, Sri Lanka should be able, over time, to exploit its emerging competitive advantage but in most cases market penetration will not be easy since many established suppliers exist, including local sources particularly in the case of India and Malaysia.

89. The strength of local destination horticultural sectors or existing trading relationships means that market penetration by Sri Lanka must be highly selective, reflecting comparative advantage, eg targeting the Indian market for durians. Presently, no specific priorities can be flagged but the following general observations can be made regarding most favored produce:

- **Salad vegetables and herbs**: organically-grown items with attendant high standard of packaging, price reasonable, etc.
- **Fresh fruit**: attractive appearance and taste, offered out of season (vis a vis competing sources), competitively priced, etc.
- **Fresh vegetables**: good appearance, favored size, organic in origin, offered out of season, etc
- **Processed produce**: well presented, attractive taste, always available, etc.

90. A lack of evidence (or conflicting evidence, including that of the statistical record) means that only tentative conclusions can be reached regarding product priorities. All existing priority fruits (pineapple, papaya, rambutan, mangosteen, avocado, passion fruit, banana, melons, and strawberry) are seen as having continuing trade potential. With regard to the potential new fruits flagged by the PPTA Horticultural Specialist (HS), none have been ruled out for export, although reservations have been expressed regarding orange, durian and dragon fruit. In the case of vegetables, all proposed by the HS could offer export potential.

91. The following two main export constraints have emerged, however, which are applicable to all products:

(i) Variety selection can be crucial, which has, of course, underpinned the success of strawberries and was cited as a clear drawback where existing supplies of durian are concerned.

(ii) A clear commitment to export is essential. Buyers’ interest only will be gained once output has been delivered, and successfully sold. To overcome this chicken and egg situation, initial output will have to be entered into on the basis of some assurance from domestic buyers that, given satisfactory quality, they will place it onto selected facets of the market in Sri Lanka, e.g. leading hotels.

92. **Market intelligence/research and future action:** In view of the foregoing it seems essential the quality of market intelligence be enhanced, initially by the undertaking of multi-country screening surveys. The aim would be to elaborate upon the present exercise so as to develop, for top-ranking markets, a clear indication of product preferences and provide guidelines for satisfying these preferences.

93. The next step would involve country-specific wholesale/retail market research for products earmarked for cultivation in conjunction with domestic buyers. Such research will seek to quantify future prospects and specify how to attain proposed targets.

94. For market penetration to be most effective, all of the foregoing research should be paralleled by individual and collective sector initiatives to explore options for market penetration. Such business-to-business activity will benefit from the foregoing especially as regards that involving the EDB, which may be, given Sri Lanka’s current agribusiness institutional framework, the most effective entity when it comes to addressing issues pertaining to WTO regulations, free trade agreements, sanitary and phytosanitary (SPS) measures, technical barriers to trade (TBT) and non technical barriers to trade (NTB), and other official involvement with exportation.
95. It is assumed that, once guided as regards specific markets and a selection of Sri Lankan produce sought to be exported, an appropriate support program can be devised. Such a program should be the outcome of co-coordinated effort on the part of EDB, SLFVPPEA, and the donors in the latter stages of project implementation, i.e. when the future course of events has clarified. It should involve a systematic effort to enter upon and progressively intensify the promotion globally of Sri Lanka as source of quality horticultural produce.

96. Previous to any such initiative, and indeed as a matter of some urgency, an informed examination should be undertaken of the EDB Data Base, to create from it statistical series that are product specific but are confined to an agreed list of products and produce that are of most interest to SLFVPPEA members and others directly concerned with export (and import). This should not be an onerous task since much of the sought information is on file. What will be more onerous is to represent the information in a readily assimilated form. For example, key countries of destination should be presented only and, ideally, should be assembled in parallel to focus upon key regions, e.g. the Gulf and even specific countries, e.g. Germany. It might also be possible, given good government-to-government collaboration, perhaps facilitated through recourse to the International Trade Center, Geneva (ITC), to generate comparable statistics showing imports into specific countries.

97. Having secured what would, in effect, be a sector data base, resources might usefully be made available to EDB and SLFVPPEA to compile and publish an ongoing analysis of the trends and new developments so revealed together with appropriate comment from the trade. This could form a regular feature in EDB’s “Expo News publication”.

**Constraints to the development of the horticulture sector**

98. Many of the constraints to the development of the horticulture sector are common to agribusiness growth as a whole and are discussed in section III C hereunder. Specific problems relative to horticulture are also shared by floriculture stakeholders and relate to the perishable nature of most of the products produced by these sectors. Identified specific problems of particular significance include:

- Poor and inadequate cool chain facilities
- Poor road infrastructure and transport facilities affecting the quality of perishable goods
- Lack of improved varieties of fruit trees and root stock in particular
- High cost and availability of appropriate controlled environment agricultural technology (CEAT)
- Inability to export perishable goods by sea, and reliance on costly air freight
- Inadequate number of commercial nurseries supplying planting material
- Low level of value addition through agroprocessing, packing, and branding

ii. Floriculture

**Main features**

99. The main features of the floriculture sector are as follows:

100. Over the past 20 years, a small group of large scale producers have developed Sri Lanka’s commercial floriculture sector enabling it to provide a regular supply of quality products to world markets at competitive prices. Although there is a domestic market (few official statistic exist), the floriculture sector has been assessed and analyzed primarily in terms of the export market. Sri Lanka has suitable macro and micro climatic conditions which are ideal for the commercial production of many different floriculture crops requiring tropical, sub-tropical, temperate, or dry zone cultivation conditions.

101. Sri Lankan Floriculture products may be classified into 4 broad categories, viz; (i) cut flowers; (ii) cut foliage; (iii) plants; and (iv) planting materials. The Floriculture industry in Sri Lanka is

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11 Reference Interim Report, Section VI C, pages 50 to 63, and attached horticulture working paper
comprised mainly of two types of producer groups; (i) large-scale export oriented enterprises and (ii) medium or small scale producers or entrepreneurs whose products are mainly for the domestic market. There is a wide gap in the professional level of floriculture expertise and management between large producers and the medium or small scale producers.

102. Floriculture has been traditionally the mandate of MADAS, with responsibility delegated to the Department of Agriculture (DOA). The main technical institution involved in floriculture promotion is the National Botanic Gardens, now under the Ministry of Sports and Public Recreation. The primary organization in the export sector is Floriculture Produce Exporters Association (FPEA) with 17 members and 38 exporters. The FPEA is represented by the National Agribusiness Council (NAC) and is the only official non-governmental organization to represent flower producers in Sri Lanka. The Protected Agricultural Entrepreneurs Association (PAEA) have also assisted growers to enter the floriculture sector.

103. The floriculture supply chain is mainly categorized by the size of operation. Smaller producers either supply the domestic market through small scale traders or direct, or sell to the larger export oriented producers under out grower schemes. The structure of the supply chain is geared to the export market which absorbs over 80% of production. Exporters tend to supply the overseas market direct rather than through local intermediaries.

104. The industry is dominated by cut foliage and live potted plant production which accounted for 90% of exports in 2006. Whilst production and exports are being maintained, with the exception of cut flower output which declined in 2006, growth over the past three years remains relatively static as illustrated in the export statistics shown in the table 1 below:

<table>
<thead>
<tr>
<th>Product</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
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<tbody>
<tr>
<td>Cut Foliage</td>
<td>3.08</td>
<td>3.16</td>
<td>3.38</td>
<td>3.54</td>
<td>3.98</td>
<td>4.60</td>
<td>5.54</td>
</tr>
<tr>
<td>Live Plants -potted plants</td>
<td>3.29</td>
<td>3.28</td>
<td>3.16</td>
<td>3.30</td>
<td>3.84</td>
<td>4.10</td>
<td>4.90</td>
</tr>
<tr>
<td>Cut Flowers -fresh and dried</td>
<td>1.88</td>
<td>1.64</td>
<td>1.57</td>
<td>2.74</td>
<td>1.22</td>
<td>1.60</td>
<td>.66</td>
</tr>
<tr>
<td>Flower seeds; bulbs, corms, tubers, etc.</td>
<td>.77</td>
<td>.99</td>
<td>.93</td>
<td>1.12</td>
<td>1.43</td>
<td>.70</td>
<td>.37</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>9.02</strong></td>
<td><strong>9.07</strong></td>
<td><strong>9.04</strong></td>
<td><strong>10.07</strong></td>
<td><strong>10.47</strong></td>
<td><strong>11.00</strong></td>
<td><strong>11.47</strong></td>
</tr>
</tbody>
</table>

Source: Sri Lanka Customs Statistics

105. Sri Lankan floriculture products from have been exported traditionally to two major markets; Asia and Europe, with the Middle East emerging as a third potentially important growth market. Export value totaled around $11.47 million in 2006. Europe, the largest market, with 44% of total export value, is dominated by Holland (41%), the UK (19%) and Germany (17%), and buys mainly cut foliage and foliage potted plants. Asia, the second largest market, with 40% of export value, is dominated by Japan (86%) which buys most of Sri Lanka’s cut flowers in addition to foliage products. The emerging Middle East market, in the Maldives Islands, accounted for 13% ($1.48 million) of the total value of floriculture exports in 2006. The Middle East market shows a more equal distribution pattern with Saudi Arabia, the UAE, and the Maldives, each accounting for between 20% and 25% of total Sri Lankan exports. To a much lesser extent, the North American region, with 3% of export value, is a regular market for floriculture planting material, i.e. tissue cultured ex-plants.

**Constraints to the development of the floriculture sector**

106. Many of the constraints to the development of the floriculture sector are common to agribusiness growth as a whole and are discussed in section III C hereunder. Identified specific problems of particular significance include:

- Restriction for importation of plant materials
- Limited access to newest varieties in demand by importers due to IPR issues
- Insufficient market information on demand for additional crop varieties
• Need for attracting new customers/buyers
• Price competitiveness vs other countries
• Lack of updated technical production know-how, i.e. bio-pest control, fertilization, etc.
• Need for modern production technology to improve production quality and efficiency
• Insufficient information on crop specific post harvest technology and handling
• Limited cold chain facilities and deficiency in cool chain handling at airport
• High cost of packaging materials for export
• Need for more training programs to increase export quality output from smaller producers
• Need for more training and information on Fairtrade certification, etc.
• High airfreight costs for shipping product for export and limited airfreight space availability and priority
• Limitation in production capacity to expand utilization of sea freight options for exporting for all types of floriculture product.

iii. Spices and allied products

Main features

107. The sector includes, in addition to spice crops, other non plantation categorized crops such as cocoa, coffee, edible nuts and medicinal plants.

108. The sector is important within Sri Lanka. It contributes 1% to GDP, 2% to total foreign exchange earnings, and around 9% to total agricultural foreign exchange earnings. After tea, the sector generates the largest agricultural foreign exchange earnings. The scale of cultivation of the spice crops is important. Over 90,000 ha of wet zone are under spices, equivalent to around 9% of all land under perennial crops. Over 300,000 small scale growers are involved in spice crop cultivation, of which 90,000 depend on spices for their main family income. An additional 60,000 people are involved in various activities connected to production, processing, trading and shipping. Many of the rural poor are connected with the spice crop sector.

109. The key institutions with responsibilities and activities in the sector are: DEA; The Spice Council; and the Spices and Allied Products Producers' and Traders Association (SAPPTA). In addition to these key institutions, the Universities of Ruhuna and Peradeniya are active in research and training; the Export Development Board of the Ministry of Export Development and International Trade provides support and services in improving export performance and marketing services to support identification and development of new market opportunities, including a useful (but poorly supported by the local industry) e-marketplace; ITI provides support and services in the development of products and processes and analytical services and capability; the Sri Lankan Standards Institute (SLSI) develops and maintains product and process standards.

110. Export volumes and values are dominated by cinnamon, accounting for over 50% of export values. Pepper and cloves are the second tier products followed by nutmeg. Cardamom and vanilla are not significant export crops and there is no prospect of developing significant export production levels in the short to medium term. Although the export revenues of pepper and clove are of a similar order, pepper has a far larger production base (31,000 ha vs 8,000 ha) and very substantially greater production potential if practices and technologies were improved, and significant scope for expansion of export markets and value addition. Cinnamon and pepper are therefore the two priority crops for the sector. The following salient features of the export market should be noted:

• Total export volumes can vary substantially on a year-to-year basis, but the overall trend in volumes over the last 6 years is increasing; total export volumes are now around 30,000 tonnes;
• Total export values have shown strong and consistent growth over the period, more than doubling to SLR 12,362 (around $110 million)
• Overall export volumes are dominated by cinnamon and pepper. Cinnamon accounts for around 40% of total export volumes, with pepper in the range 20 to 25%;
• Export values are dominated by cinnamon, accounting for around 55% of exports; pepper only accounts for 10 to 15% of total value
• Clove and Nutmeg/Mace comprise a second group by volume, but clove volumes are highly variable, and clove values are substantially higher than nutmeg and of a similar order to those of pepper
• Cinnamon volumes and values are not volatile, and are increasing consistently; both volumes and values of all other spice crops are highly volatile and unstable by comparison
• Cardamom export volumes are increasing, but from a very low level, and do not contribute significantly to export values; vanilla is not an export crop
• Areca nut and Betel nut have export volumes in a similar range to nutmeg and clove, and volumes are increasing, but values are substantially lower

111. There is broad agreement across the industry that the objectives for the development of the sector are to:

• Increase the level of value addition in the base raw material and processed products
• Increase export volumes and values,
• Increase levels of crop production and productivity, and
• Increase levels of investment and economic development in the regional areas of Sri Lanka.

112. The target business model for the delivery of these core objectives is based on:

• The supply of high quality raw materials into higher and premium priced markets,
• An expanded processing sector developing and supplying new products and markets with higher levels of value addition,
• Vertically integrated businesses with the skills, technology and practices to service market requirements and maximize competitive advantage over suppliers from competing origins,
• Increased levels of crop production and productivity.

113. Current exports of processed products, viz, essential oils, oleoresins, ground spices and mixes etc – are small but there is considerable potential to expand production and export in these product areas, particularly on the oleoresin extraction side but the industry cannot simply develop a production base in direct competition with the Indian industry. Without the economies of scale of the Indian industry the Sri Lankan industry has to define a different basis for supply and competitive advantage in the market.

114. The organic production and export sector is well established in Sri Lanka, and is supported by new developments of Fairtrade spice production. The sector delivers strong value addition. The international markets are growing strongly, but actual volumes are still relatively small, and it is therefore easy for the market to be swamped, therefore, is essential that the industry grows through direct linkages with the markets.

Main constraints to the development of the sector

115. The following key constraints specific to the development of the sector were identified during the PPTA:

(i) Insufficient production areas and low productivity

(ii) Low raw material quality due to:
• Poor grower attitudes and knowledge
• Poor cultivation practices
• Poor post harvest practices and facilities (processing, drying, storage, grading)
• Poor/weak linkage - quality to price

(iii) Inefficient post-harvest chain (collection and marketing) due to:
• Length of chain – too long
• Poor facilities (infrastructure and equipment)
• Lack of specialist professional companies
• Lack of vertically integrated operations (field to processing/export)

(iv) Structure of production sector due to:
• Imbalance of size smallholder/estate sectors
• Lack of structure/grouping in smallholder sector

(v) Blockages of entry to estate (plantation) sector into spice production
• Mentality and approach of estate companies
• Finance: shortage of, and access to finance and priorities for usage
• Weak technical crop knowledge
• Lack of downstream processing expertise

(vi) Poor Export quality management capability due to:
• Poor, or lack of drying facilities and equipment
• Lack of grading/sorting equipment
• Lack of purpose built storage facilities
• Lack of dedicated fumigation facilities
• Lack of sterilization facilities
• Low level of company in-house laboratory facilities; low usage of analytical facilities

(vii) Low level of business and process certifications due to low level of spice company appreciation of importance/value and cost

(viii) Inadequate export marketing capability due to poor access/knowledge to market information (including regulatory information); market identification; market development; market communication; staff skills; Sri Lanka (Ceylon) branding

(ix) Poor product development capability due to inadequate knowledge of product identification; product development costs and technical requirements; and investment costs of processing facilities and equipment

(x) Inadequate packaging due to lack of access and availability; and information on developments and market requirements

(xi) Inadequate capability and focus of research services due to:
• Imbalance of focus across production, post-harvest and marketing
• Poor capability in processing and product development
• Poor integration of industry in setting objectives and priorities
• Lack of expertise and resources

(xii) Inadequate capability and focus of extension services due to:
• Imbalance of focus across production, post-harvest and marketing
• Poor/weak linkage of activities and resources to results (changes effected)
• Lack of skills for capacity building in smallholder groupings

(xiii) Livestock

116. Sri Lanka is largely self-sufficient in most animal products apart from dairy but is reliant on significant imports of animal feedstuffs for the poultry and swine industries. There are an estimated almost 400,000 livestock farmers with 75,000 poultry farmers, 15,000 goat farmers, 5,000 pig farmers and about 300,000 cattle and buffalo farmers. Up to 150,000 farmers supply milk to the formal collection system but the number of active suppliers is unknown. The Government has an ambitious target for growth within the livestock sector with a major emphasis on dairy production aiming at 50% self-sufficiency by 2015. However, as Sri Lanka is only currently about 15 – 20% self-sufficient the industry needs to grow at about 15% annually for the next eight years even without growth in total consumption. Recent growth has been between 1 – 2% p.a. The PPTA focused on the dairy sector in its assessment and analysis of the livestock sector
Main features of the dairy sector

117. The main features of the dairy sector are as follows:

(i) Local milk collection and processing is dominated by two companies, the State owned Milco and multinational Nestle. There are a further ten or so significant milk collectors and processors as well as numerous small-scale processors operating at a local or regional level. Most of the small companies produce, liquid milk, yoghurt, cheese and/or curd. Milk Producer Society Co-operatives were historically strong in many areas and remain so in some areas.

(ii) The overarching feature of the dairy sector is the enormous number of small farms with an estimated 150,000 supplying the formal collection system. There are four main dairy production systems, the Up-country Tea Estate Dairy/Market Vegetable System, the Mid-Country: Kandyan Forest Garden System, the Coconut Triangle and Wet Lowlands, and the Dry Lowlands.

(iii) Productivity is low in all farm systems and profitability is reported to be even lower on many or most small-scale dairy farms. Very few farmers deliberately grow feed for their stock but instead rely on what they or their cows can find. Almost by definition this will be low quality feed apart from tree legumes. The concept of deliberately growing quality forage for cows, including fertilizing it, is largely ignored; therefore, the current herd is capable of much higher output than is achieved at present.

(iv) The formal milk collection system picks up just over 120 million liters per year or about 330,000 l/day. Milk density is very low so the costs of collection are high in even the most organized system. There is stiff competition between processors for milk supply with considerable duplication between collection systems with a resultant inefficiency in collection and transportation of milk.

(v) The Sri Lankan milk market in 2006 was worth $311 million and has grown by an average of almost 5% p.a since 2000. Full-cream milk powders dominate the market with 60% while liquid milks, both white and flavored, only account for 3% and curd and yoghurt account for another 6%.

(vi) Many people have become accustomed to powder milk rather than the traditional boiled fresh milk. Powders are a much more convenient product for the majority of the population who do not have refrigerators in their homes. Dairy imports in 2006 were valued at SLR 17.61 billion with over 95% for the 68,000 t of milk powders. International dairy commodity prices in $ terms have been rising rapidly over the past year\(^\text{12}\) with milk powders more than doubling.

Main Constraints to the development of the dairy sector

118. The key constraints to the development of the dairy sector have been identified as follows:

(i) A major disincentive to increased productivity in the dairy sector is the presence of Government in the sector. Government effectively controls the farm-gate price of milk through the State-owned company Milco and controls retail milk powder prices, distorting the market at both ends. The National Livestock Development Board (NLDB) is a State owned agency with a mandate to maintain nucleus herds and flocks of livestock and to provide breeding materials for the sector. NLDB controls 31 farms across the country with a combined area of 14,983 ha. While the scale of these operations is impressive the performance is dismal.

(ii) The key constraint to development of the dairy industry is low profitability stemming from relatively low farm-gate price for milk, low productivity and high cost of

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\(^{12}\) Rabobank Group - Food and Agribusiness Review, 2007
production. Low productivity is largely a function of poor feeding of stock, primarily resulting from low levels of farmer knowledge and understanding of basic animal husbandry / nutrition issues. The low farm-gate price is a function of relatively inefficient collection and processing systems, partly caused by low volumes and duplication, and a market that is distorted by Government influence. The very high number of small-scale farmers with no economies of scale is in itself a major constraint as this increases the complexity and difficulty of service provision, the cost of input supplies and the cost of milk collection.

(iii) Stakeholders in both the public and private sector agree that the greatest constraint in the short-term to expansion of the dairy sector by commercial medium- and large-scale farmers is the availability of good quality dairy stock. In this context, there is no effective market for dairy stock. There is no organized system for interested buyers to contact agents or for agents to contact each other to broker deals. Enterprises setting up commercial farms find it time consuming and inefficient to find and purchase stock.

(iv) Access to land for production of livestock forage and fodder is a critical issue if productivity gains in the sector are to be achieved however access to land alone will have little impact on dairy productivity and profitability unless there is a change in attitude to deliberately growing pasture or fodder for stock.

(v) The extension service provided by the Government to farmers is largely ineffective as the number and training of the frontline agents is insufficient. In addition to the government extension service, commercial milk processors provide services to their clients (farmers) but these services are focused on milk collection not extension. There is a need to train extension providers in extension methodology as well as on various aspects of animal husbandry.

(vi) One of the key drivers of low productivity in the dairy sector is the massive number of small farmers involved. There are estimated to be somewhere between 50,000 and 150,000 farmers supplying the 120 million liters of milk collected annually in the formal sector.

f. The classification agricultural products

119. The PPTA TOR originally included the following: “In consultation with the Central Bank of Sri Lanka and the MADAS, propose a redefinition of the “other crops” category in the national income statistics to specify subcategories, such as fruits, vegetables, spices, floriculture, and animal husbandry, to enable more effective monitoring of agribusiness activities.” It had been the intention to undertake this task in phase 2, following the assessment and analysis of the agribusiness sector in phase 1. In view of the cancellation of the ADP by the Government, and the acceleration of the close of the TA, it proved impossible to undertake this task. In the event of the ADP being reinstated by the Government and the ADB the redefinition of the “other crops’ category should be undertaken.

B. External support to the sector

1. Overview

120. A comprehensive list of ongoing donor projects to the agriculture sector, and provided by the ERD, is given hereunder:

   (i) Smallholder out grower estate development project (IFAD) - $15 million
   (ii) Dry zone livelihood support and partnership project(IFAD) – $30 million
   (iii) Post Tsunami coastal rehabilitation project (IFAD) - $16.2 million
   (iv) Aquatic resource development and quality improvement project (ADB) - $20.7 million
   (v) Plantation development project (ADB) - $139 million
   (vi) Dam safety project (WB) – 4.72 million
2. External support

121. **ADB:** ADB’s historical support, to 2005, to the agriculture/agribusiness and natural resources sectors was detailed in the Interim Report, Section III, and is not repeated in this DFR. The proposed ADP has been assumed, in all probability, to be the final ADB support to the sector. Ongoing and imminent ADB projects are as follows:

(i) Southern Province Rural Economic Advancement Project (SPREAP); approved in 2001\(^{13}\)
(ii) The Plantation Development Project
(iii) The Regional Small and Medium Enterprise Development Project (RSMEDP); loan under negotiation\(^{14}\)

122. The lessons learned from ADB’s past sector support may be summarized as follows\(^{15}\):

- A good and contextual understanding of political and legislative processes including policy and regulatory environments are key requisites in project preparation and implementation
- The rapid divestiture of government interests in state-owned enterprises within the short span of a program loan tends to sacrifice transparency and sound practices of due diligence, and to impair durability
- Investing in awareness campaigns should be given greater consideration to improve beneficiary participation
- Obtaining continued support from stakeholders for policy reforms is essential for sustaining the reform process
- Monitoring changes in the macro contexts influencing the agriculture sector would have alerted ADB and the Government to emergent needs to make midcourse corrections in a number of the policy reforms
- Assessing the institutional and management capacities of executing agencies and stakeholders is critically important
- Developing a project management and information system should be prioritized for effective project implementation and monitoring
- The complexity and diversity of the agriculture and natural resources sector should be matched with flexible and robust project designs that can meet evolving and emergent development needs
- Strong private sector involvement in agriculture is essential to project success
- Economic growth has been primarily confined in the Western Province and the Greater Colombo areas, which has led to widening inequality across regions. Stagnation in agriculture partly explained the uneven economic progress in the country, rural areas, and interface with the broader national economy are critical points to analyze
- Efforts should be made to ensure a balance between economic development in agriculture and natural resources and ecological safeguards, taking into account the critical role of ecosystems as life support to both marine and terrestrial environments
- There has been limited expansion in agricultural employment, and poverty reduction in rural areas requires non-farm economic growth to absorb the growing labor force. Commercialization of agriculture will need strong policy coherence and improvement in the business climate. Supporting commercialization of agriculture, for example, may be feasible in areas where there is a potential for getting strong private sector participation
- Interventions for poverty reduction should not be limited and targeted only at the poor. The exclusion of non-poor participants may isolate the poor from the more dynamic actors in the society and from the mainstream of economic growth, and forego the opportunity of employment generation that is often led by the non-poor

\(^{13}\) Reference, Interim Report, page 9
\(^{14}\) Reference, Interim Report, page 10
\(^{15}\) Reference Interim Report, page 10
The main economic agenda of the Government has identified agriculture and natural resources as a development catalyst with significant roles to play, particularly in the context of the rural economy and poverty reduction. The strong link of agriculture and natural resources with other sectors in the Sri Lankan economy underscores its importance to national development.

The multiplicity of government ministries and agencies involved in the sector will continue to pose serious challenges to coordination and synergy.

123. **USAID**16. Over the past fifteen years USAID/Sri Lanka has assisted in the development of the country’s agribusiness and services sectors through two main initiatives: (i) AgEnt (1992-2000); and (ii) The Competitiveness Program (2001-2006). Each of these programs resulted in several successes, laying the groundwork for increased competitiveness of Sri Lanka’s private sector.

124. **AgEnt** was a collaborative effort between USAID and Oregon State University with the purpose of generating employment and income growth through the development and expansion of private agro-based enterprises. The program resulted in:

- Increased capacity and production of over 400 agriculture-based enterprises through a series of capacity building training programs focused on new production technology, innovation, market development and business management.
- Stronger, more unified private agribusiness sector through the formation of the National Agribusiness Council, an organization comprised of 20 associations covering every sphere of agribusiness in the country.
- Introduction of over 300 new technologies, some of which include: protected (greenhouse) agro processing, vanilla production, and hybrid maize production.
- Increased export sales by $373 million per year through establishing 190 new export markets for Sri Lankan commodities.
- Policy reform in trade and tariff fiscal policy, seed production and certification, importing new.
- Genetics for the livestock sector, and several other side policy issues.

125. Building on these accomplishments, the Competitiveness Program focused its efforts on eight main clusters: coir, rubber, gems and jewelry, ceramics, tourism, tea, spices and ICT. The project worked through Apex bodies made up of representatives from all sectors of the industry value chain. The progress made in each cluster is outlined on the project’s website [http://www.competitiveness.lk](http://www.competitiveness.lk).

126. USAID will continue to support Sri Lanka’s agribusiness development through its current CORE program, which has the following five Components:

(i) **Support livelihood development for vulnerable populations at the household level, especially women and children in conflict-affected and -strategic areas.** This component is envisioned as a first step in the process of restoring economic activity to war-torn populations, and will assist those most directly impacted by the escalating conflict in the north and east to participate in livelihood activities, such as creating their own small businesses, building towards their eventual participation in CORE value-chain development activities and access to new markets.

(ii) **Promote the competitiveness of agriculturally based value chains that offer or have the potential to offer sources of income for traditionally neglected groups located in conflict-affected and, strategic areas.** The CORE proponents may also suggest other non-agricultural value chains.

(iii) **Ensure that groups located in conflict-affected and -strategic areas benefit from participation in selected value chains.** This will involve the promotion of win-win relationships between value chain actors. This will address power imbalances as well as equitable access to the resources needed to participate viably in selected value chains, i.e. finance, business services, infrastructure, and ICT (to improve access to

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16 Source: USAID Colombo Office
markets, market information, business skills and other information on the “outside world.”).

(iv) **Implement a workforce development strategy** that benefits groups located in rural, conflict-affected and -strategic areas and that is driven by the needs of selected value chains.

(v) **Promote a business enabling policy environment** that will allow businesses in conflict-affected and strategic areas to grow and become sustainable.

127. USAID may be interested in taking up some aspects of the ADP.

128. **The World Bank/IFAD/JIBC:** have been, and continue to be major supporters of the agribusiness sector and may be interested in aspects of the ADP.

129. **The EU:** has recently shown more interest in the Agriculture and Natural Resources sector and are supporting this sector in other parts of the world. The EU should be contacted by the Government in this context.

130. **Other bi-lateral support:** Bi lateral support to the sector tends to be more focused regionally and on a smaller scale than that of the multilateral agencies

131. There are few donor funded projects with significant dairy development components. Small projects are in the pipeline such as Italian funding to set up two small-scale cheese production facilities in Anuradhapura and the International Labour Organisation (ILO) project in the Puttalam and Anuradhapura districts that will have an emphasis on value chains in the dairy sector. There are unconfirmed reports of a “Land of Lakes” dairy project in Jaffna but no details are available.

132. The German (GTZ) Economic Strategy Support Program (ESSP) has supported primary spice processing, and floriculture in targeted areas of the Central Province.

C. **Analysis of key problems and opportunities**

1. **Key problems**

133. The main constraints to agribusiness development were prioritized in phase 1 of the TA, and have been used to justify the components proposed in the project design and components recommended in section IV hereunder.

134. In the context of ascertaining priority constraints to development an independent value chain survey was commissioned in phase 1, however, the survey's findings became available only in phase 2 of the TA and are summarized in appendix 4. The survey results do not contradict significantly, the conclusions already reached in phase 1.

135. The key problem inhibiting the growth of the sector is that "the agribusiness sector has not realized its potential." The underlying basic causes for the problem are (i) the lack of an effective enabling environment; and (ii) low sector profitability and returns.

136. With regard to a lack of an effective enabling environment the priorities that need to be addressed through project intervention are, restrictive policies affecting (i) the security of tenure and availability of land, crop diversification, and the market in land, manifested through the implementation of land legislation; (ii) the absence of adequate seed legislation and restrictive quarantine regulations; (iii) price intervention and food subsidies; (iv) policies that act as disincentives the private sector such as the lack of investment incentives and the current “no privatization” of state farms policy; and (iv) poor rural infrastructure.

137. The poor profitability of the sector is also partially a result of the lack of an effective and encouraging enabling environment discouraging investment. However, low profitability stems from a number of causes including, (i) high cost of production compared to competitors, which is a factor of poor yields, low prices, high credit labor costs, lack of economies of scale and non optimum land use,
and (ii) lack of access to new technology and appropriate planting material, lack of skills and knowledge, and poor extension services.

138. The above constraints are not exhaustive and there are a multitude of problems which stakeholders have proffered as priority issues to be addressed, most of which appear in the proceedings of the focus working groups, and the working papers attached to the Interim Report. In this context, it should be noted that during stakeholder consultations at the inception workshop and the focus working group project planning meetings, it proved difficult to obtain a consensus on priority constraints due, in the main, to the mixture of public and private sector participants with different agendas. For example, invariably, the private sector would place the lack of accessible and affordable credit as a top priority, whereas, this issue did not feature for the public sector representatives who believed that a top constraint involved the capacity building of public sector institutions. In view of the private sector focus of the proposed new project the private sector

139. The key problems and constraints to the growth of the sector may be summarized in terms of requiring the following essential development priorities:

- Credit availability and affordability for production and value addition
- Policy reform with regard to land legislation, plant quarantine and seed legislation
- Marketing efficiency support, e.g. dissemination of market information, contract strengthening
- Value chain integration support measures, e.g. farmers group formation, out grower systems and infrastructure
- Institutional rationalization
- Rural infrastructure, e.g. rural feeder roads, water and power supply

2. **Stakeholder Survey**

140. The survey was initially scheduled for completion on 31st July 2007, revised to 12th August 2007, but was subsequently further delayed. The provisional report and data tables became available on 23 September 2007. A total of 120 individual surveys were initially planned but the livestock sector, due to differing needs, was conducted independently under the supervision of the Livestock Specialist. Accordingly, ultimately a total of 79 surveys were conducted for the three remaining sectors, namely: fruit and vegetable (36), floriculture (16) and spices and allied products (27). The overall composition of the group of respondents was dominated by sole owners (87%), private/liability companies (10%), partnerships (2%) and noting that growers associations and/or cooperatives are not represented in the sample. The classifications and composition are presented in Table 2 below:

<table>
<thead>
<tr>
<th>Ownership Type by Sector</th>
<th>Fruit &amp; Vegetable Sector</th>
<th>Floriculture Sector</th>
<th>Spices &amp; Allied Products Sector</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sole ownership</td>
<td>32</td>
<td>13</td>
<td>24</td>
<td>69</td>
</tr>
<tr>
<td>Partnership</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Grower association/cooperative</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Private/liability company</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>36</strong></td>
<td><strong>16</strong></td>
<td><strong>27</strong></td>
<td><strong>79</strong></td>
</tr>
</tbody>
</table>

141. The survey identified 11 key types of overall business activity with four categories operating in a singular activity (e.g. producer, wholesaler, retailer and exporter), whereas four categories were engaged in dual role activities and three effectively operating complete supply chain operations. The respondents in the singular activity dominate in the survey (70%), followed by the dual role activities (19%) and lastly the complete supply chain activities (11%). The activity classifications and composition, by sector, are presented in table 3 below:
Table 3

<table>
<thead>
<tr>
<th>Business Activity by Sector</th>
<th>Fruit &amp; Vegetable Sector</th>
<th>Floriculture Sector</th>
<th>Spices &amp; Allied Products Sector</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producer</td>
<td>15</td>
<td>6</td>
<td>15</td>
<td>36</td>
</tr>
<tr>
<td>Wholesaler</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Retailer</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Exporter</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Producer/wholesaler</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Producer/retailer</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Producer/exporter</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Producer/wholesaler/retailer</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Producer/wholesaler/exporter</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Producer/retailer/exporter</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Wholesaler/retailer</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Totals</td>
<td>36</td>
<td>16</td>
<td>27</td>
<td>79</td>
</tr>
</tbody>
</table>

Source: Provisional data: Stakeholder Survey – RDC 2007

142. The survey largely endorsed the supply chain findings presented in the sector analysis undertaken. The supply chain structure for fruit and vegetables was confirmed as being dominated by the wholesale market (54%), sales through traders (22%), direct marketing (14%), and sales through the pola markets (10%). The increase in direct marketing sales being notable, where industry sources earlier cited this as only some 5%. This increase in mainly attributable to a decline in the popularity of the pola markets as a market channel. This trend in direct marketing was also demonstrated in the floriculture sector, where some 71% reported this as the main marketing channel, followed by traders (16%) and the wholesale market (13%). The spices and allied product sectors was shown to place heavy reliance on marketing through wholesale markets (54%), followed by traders (35%) and, lastly, direct marketing (10%).

143. In terms of fruit and vegetable storage infrastructure 59% of respondents were cited as not using storage facilities and that the storage capacity in existence represented about 51% of the peak storage capacity demand. Although based on a relatively small sample the findings for the floriculture sector suggest that existing storage capacity can only meet 45% of peak demand. Whereas the indicative finding for the spices and allied products sector suggest that existing storage capacity exceeds peak demand by some 22%.

144. The transportation of fruit and vegetables is mainly reliant on trucks (67%), van (26%) and motorcycle/three-wheelers (7%). Whereas in terms of responsibility for transportation the role of the trader or intermediary (57%) dominates, followed by the primary producer (32%) and the contract buyer (11%). This latter figure broadly correlates with the volume traded directly, implying that under direct marketing arrangements the buyer takes sole responsibility for transportation in the fruit and vegetable sector. The transportation in the floriculture sector is also reliant on trucks (57%), vans 15% and, surprisingly, transportation by train (28%). The spices and allied products sector is also mainly reliant on trucks (51%), vans (34%) and motorcycle/three-wheeler (15%). The responsibility for transportation falls mainly on the producer (48%), trader/intermediary (41%) and the contact buyer (11%).

145. The findings of the survey also identified 30 cross-cutting issues of key importance to the sector. These are consolidated and the top ten perceived factors constraining development are presented in the table 4 below:

Table 4

<table>
<thead>
<tr>
<th>Issues of Key Importance</th>
<th>Points</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor costs</td>
<td>197</td>
<td>1</td>
</tr>
<tr>
<td>Availability of agricultural input supplies</td>
<td>182</td>
<td>2</td>
</tr>
<tr>
<td>Fluctuating raw material prices</td>
<td>125</td>
<td>3</td>
</tr>
</tbody>
</table>
3. Opportunities

146. The key objective of the proposed ADP is to raise rural incomes and increase rural employment. Box 1 hereunder suggests seven themes, related to agribusiness led rural development, which should form the underlying philosophy behind the proposed interventions.

<table>
<thead>
<tr>
<th>Level of risk</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of risk</td>
<td>118</td>
<td>4</td>
</tr>
<tr>
<td>Credit availability and/or cost</td>
<td>118</td>
<td>4</td>
</tr>
<tr>
<td>Poor quality raw material</td>
<td>115</td>
<td>6</td>
</tr>
<tr>
<td>Civil war</td>
<td>88</td>
<td>7</td>
</tr>
<tr>
<td>Consumer purchasing power</td>
<td>82</td>
<td>8</td>
</tr>
<tr>
<td>Raw material availability</td>
<td>80</td>
<td>9</td>
</tr>
<tr>
<td>Poor domestic market information</td>
<td>73</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Provisional data: Stakeholder Survey – RDC 2007

Box 1: Agribusiness - led, rural development strategy – 7 themes

1) Change the thinking: This requires the will, belief and effort of Government to increase investment in the rural economy, to create free and open markets, and move towards greater dependence on private initiative and investment. Fresh and innovative thinking at both the national and provincial levels of government is essential.

2) Reform the role of Government: The Government has a crucial role to play; however, its role needs to change. Whilst the Government must work to create appropriate and efficient physical and institutional infrastructure it must also reduce both its direct service provision to rural areas, and involvement in commercial agriculture. Provincial governments, in cooperation and partnership with the private sector, should be more responsive to rural development aspirations, food security and poverty reduction.

3) Develop Public – Private Sector Partnerships (PPP): PPP requires innovative thinking by Government to enter into legal contracting relationships with the private and “not for profit” enterprises to deliver services. There are areas where the state has been seen as the main provider such as in agricultural research, development and extension where PPP arrangements can be successful. In some developing countries early efforts to use these creative arrangements have been successful overall but in reaching poorer communities the record is mixed. In Sri Lanka significant private sector, involvement will be essential in achieving sustainable rural development.

4) Invest in rural Infrastructure. There is ample evidence that Government must grapple with projects to reverse the decline in rural infrastructure. Rural roads and power always figure largely in any participatory discussions with farmers. Experimental maintenance arrangements will however be necessary to avoid the trap of long- term decline in any new road system. A major improvement in Sri Lanka’s rural infrastructure should be an essential objective of future agribusiness development projects.

5) Technology and knowledge generation. The connection between effective adaptive research and extension, and productivity has long been demonstrated. A related factor in the twenty first century is the availability of knowledge. For example, this can mean decontrolling telecommunications, reducing costs, and pushing the boundaries of education, especially of females. Training and the capacity building of rural people, particularly in order to access and use transfer technology, and of those charged with driving development should be a major focus of the approach to project preparation.

6) Empowering farmers. In the Sri Lanka the democratic experiment must continue to reach down to farm level with the development producer controlled groups such as co-operatives, and, agribusiness SME clusters. Producer associations will allow farmers to purchase inputs, sell produce, obtain credit, and lobby for policy change. Government must create the appropriate enabling environment to encourage these developments. Also, “agents of change” must be actively sought by projects, for example, “lead farmers”, local traders and entrepreneurial SME’s, with the motivation and potential to change the structure of entrenched commodity market value chains.
7) Develop more efficient marketing arrangements. Agribusiness markets in Sri Lanka continue to be fragmented, and uncertain. There is scope for improving market information, improving quality standards, and marketing efficiency overall. It is also necessary to be bold in exploring new export markets, particularly in niche consumer areas such as the fair trade and organic sectors, which are very appropriate for economies such as the Sri Lanka, which does not enjoy comparative advantage in some of its crops in the global market place.

a. Public Private Sector Partnerships (PPP)

147. The involvement of the private sector in partnerships with Government as a catalyst for rural development is recognized in current declared economic policy and should be pursued vigorously.

i. The general model and the challenge

148. The model of public sector/private sector co-operation, particularly in the financing and operation of services, and, production through out grower schemes is now accepted in developed economies. PPP is best described as a legal arrangement between contracting agencies to deliver a service. To be successful in the operation of a PPP the private sector needs to demonstrate value for money and compete against both their competitors and the public sector agencies. In addition a PPP contractor would be expected to:

- have the capability to provide the service and be in position to combine modern infrastructure, equipment and the staff
- demonstrate an ability to raise the funds to pay for the development
- put in place a program of change management, to take things from where they are to where the public sector client wants them to be
- have the flexibility to accommodate the changes which will be inevitable if a long term relationship is to be build with the public sector client
- In the developing world early experiments were in the provision and operation of utilities infrastructure. One problem has been to harness this type of scheme to impact on poorer communities. The lessons, which have emerged include the following:
  - The contractual framework is crucial: operational detail will control how well the poor benefit.
  - An information base on the priorities of the users is essential before starting the work.
  - Communication is vital: misunderstandings are frequent.
  - PPP’s offer great scope for technological innovation, and differentiated levels of service.
  - There is initial suspicion-the private sector has little experience with poor communities and community groups have little experience of private business.

149. The challenge is to move this model on to other sectors and in the rural economy and agribusiness sector. There are a number of areas where innovative thinking could be explored. These can be sub-divided into:

(i) Services, which result directly in increased profit for the farm household (training in the production of commercial crops; vaccination of livestock; business planning to obtain credit)

(ii) Services, which generate benefits in terms of profit and also are in the public interest (vaccination of livestock against notifiable diseases, market integration in remote areas)

(iii) Services, which are largely in the public interest (e.g. promotion of safe pesticide use; conservation of biodiversity; production of staple crops for food security)

150. The largest challenge is to find solutions to unlock the potential of private sector funding in public sector dominated areas such as agricultural extension and research. Studies have suggested that a single template for PPP in extension services is illusive and the diversity of contexts, services and institutional forms demands flexibility and a pluralistic approach. For example, one feasible way forward is via a ‘basket’ grant fund. This implies a flexible funding window through which grants (from
different donors if necessary), can be channeled. Organizations engaged in work which is relevant such as producer associations, extension providers, research institutions, can access the fund by bidding, supported by well structured business plans.

151. PPP often involves a monetary relationship between the partners, and, the establishment of a separate legal company entity to implement the project or program. However, other modalities are possible, implying no direct monetary relationship between public and private sector partners, but ensuring mutually beneficial cooperation through legal agreements setting out the rights and obligations of the respective partners. The specific proposed model investments, described in Section IV hereunder adopt this latter approach.

ii. Opportunities

152. The proposed project recommends a focus on support to the following main areas of existing opportunity which the TA believes are essential for agribusiness growth. The underlying feature is private sector involvement, either through PPP arrangements, or, direct private sector involvement.

(i) The promotion of focused primary processing and marketing farmers groups
(ii) The development of nucleus farms linked to out grower schemes and contract farming
(iii) The promotion of value addition through agro processing, packaging and branding
(iv) The Improvement of marketing efficiency through value chain integration, and contract security
(v) The expansion of export markets through the development of niche markets such as the fair trade and organic sectors, and, the improvement of quality standards and certification capacity and knowledge
(vi) The promotion of private sector direct investment in the agribusiness sector through incentive schemes and awareness campaigns
IV. THE PROPOSED PROJECT

A. Objectives

153. The objective of the project is to increase the income and employment opportunities of rural household’s throughout the whole island of Sri Lanka, and, to improve the equality of opportunity between the more prosperous districts of the Western Province and the lesser developed areas, particularly in the North and East. A further overall objective is to realize the agribusiness potential through the development of an organized, integrated and competitive agribusiness sector.

B. Impact, outputs and components

1. Impact and outcome

154. The overall impact of the sector is illustrated in figure 1 below.

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**Figure 1**

**NATIONAL / REGIONAL – DISTRICT IMPACTS**

- National: Increased exports, foreign exchange revenues, import substitution
- Regional - District: Increased rural employment, household incomes, and economic development in less developed areas

**SUB SECTOR IMPACTS**

- Farm profitability and revenues increased
- Product volumes increased
- Market efficiency and opportunities increased
- Improved policy dialogue and consensus

**CORE IMPACT**

- Enhanced stakeholder coordination, vertical integration and stronger backward and forward linkages in the value chain

**MAIN IMPACTS**

- Increased productivity, continuity of supply and improved standards
- Improved raw material supply for value addition / agro processing increased
- Demand driven production development
- Enhanced institutional capacity and private sector involvement and representation

**IMPROVED SUB SECTOR OUTPUTS**

- Production
  - Enhanced good agricultural practices (GAP), knowledge, skills, and capacity

- Agro processing
  - Improved raw material supplier / processor linkages
  - Improved quality and standards

- Marketing
  - Improved market information dissemination
  - Improved commodity trade facilitation

- Institutions
  - Improved PPP, and enhanced efficiency and service delivery capacity

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155. The overall outcome of the project will be an organized and competitive agribusiness sector.

2. Outputs

156. The project outputs include, (i) increased employment opportunities and higher incomes in rural areas; (ii) increased private sector investment in agribusiness; (iii) rationalized public sector institutional framework; (iv) improved marketing efficiency in terms of the timely availability of market information, improved quality standards and certification capability, and, access to premium niche markets; (v) increased value addition through agro processing, packaging and branding; an (vi) greater participation of the poor, disadvantaged and rural youth in the sector.

157. The TA has taken note of the following output performance targets/indicators, based on a start date of 2008, included in the Design and Monitoring Framework under the ADB TA for preparing the Agribusiness Development Project.

- Income of households involved in agribusiness increased by 10% by 2015
- Employment in agro industries increased by 10% by 2015
- Agribusiness sector
- Post-harvest losses for fruits and vegetables reduced below 30% by 2012
- Increase in the area for high-value crops from 17.6% to 25% by 2012
- Increase in the share of agribusiness products in total agricultural output from 47% to 60% by 2012
- Increase in the share of agricultural products in total manufacturing exports from 2% to 10% by 2012

158. The feasibility of the above targets should be further assessed if the project is reinstated.

3. Components

159. The proposed project components, with proposed percentage financing allocations (shown in brackets), are as follows:

| Component 1 | Primary Production and Agro - Processing (45%) |
| Component 2 | Applied Research, Outreach and Extension (10%) |
| Component 3 | Agribusiness Infrastructure Development (25%) |
| Component 4 | Marketing (10%) |
| Component 5 | Institutional Strengthening and Capacity Building (8%) |

Nb: Project Management (2%)

160. The above six components will each comprise sub components and be applicable to all the product sub sectors, viz, horticulture; floriculture; spices and allied products; and livestock. With regard to the allocation of funding between the various products sub-sectors, as the project will be demand driven precise parameters are not proposed. However, based on disbursements during the previous project, the SPCDP, and the objective of supporting exports, and high value crops, particularly in the horticulture and floriculture sectors, the following product related “take up” of funds may be envisaged:

<table>
<thead>
<tr>
<th>Funding type</th>
<th>Horticulture</th>
<th>Floriculture</th>
<th>Spices</th>
<th>Livestock/Dairy</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit (loans) - %</td>
<td>60</td>
<td>15</td>
<td>15</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Non-Credit (grants) - %</td>
<td>60</td>
<td>15</td>
<td>15</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

17 Project 39381 SRI-TAR, June 2006
18 Percentage allocations amongst activities relate to the cost estimates and project components by financier shown under Section IV E and F below
161. **Financing**: under each component and sub component and covering all product sectors will be through either loans or grants, or a combination of both disbursement methodologies. Grants will include both outright grants and matching grants. Where support is requested in the least developed areas of the country, and depending on the nature of the proposed investment and its location, grant financing will be considered.

162. **Support approval criteria**: The basic criteria for support approval will be, (i) the proposed investment must be market/demand driven, with proven forward and/or backward market linkages; (ii) the production of a business plan relative to the proposed investment; (iii) where appropriate, an impact assessment report on previous support provided under the SPCDP; (iv) in appropriate sub project cases the proposed investments should be replicable in different appropriate locations.

163. **PPP sub-projects**: The PPP arrangements, under illustrative sub projects proposed hereunder, do not envisage, at least initially, the establishment of a separate legal company entity, although, dependent on the progress of the project, and the wishes of the concerned parties, such an entity may develop in due course. The projects will be governed by tripartite legal agreements entered between the (i) authorized Government entity empowered to commit the public sector partner; (ii) the identified private sector company; and (iii) the ADP project management unit (the Agribusiness Development Alliance (ADA) – see Section IV G hereunder) setting out the respective rights, duties and obligations of the parties to the agreement.

164. **Costs**: Overall preliminary cost estimates related to investment component and financier are given in Section IV E and F. Where available, indicative overall cost estimates for the illustrative proposed identified programs and PPP sub projects, described, below are given.

   a. **Component 1 — Primary Production and Agro-Processing**

165. Component 1 will support the following sub components:

   (i) **Primary production development**: Applications will be considered for:

   - Land preparation / provision of planting material / nurseries for horticulture, floriculture, spice crops and medicinal/indigenous plants
   - CEAT (controlled environment agricultural technology – greenhouse, net houses, polytunnels, drip irrigation etc) crop production in horticulture and floriculture
   - Improvement of “on – farm” post harvest practices and post quarantine facilities
   - Cattle breeding programs and stock purchase
   - Loans to medium & large scale commercial farms to increase stock & efficiency & productivity

   (ii) **Post harvest production/profitability improvement and support**: This sub component is aimed at integrated production, primary processing and marketing initiatives, particularly involving PPP. The following Illustrative replicable PPP sub project has been identified.

**Cocoa Development and Rehabilitation Project**

166. The envisaged investment is a PPP between the DEA and a private sector company (already identified) to rehabilitate replant and encourage new plantings of smallholders’ cocoa in the Matale / Kandy / Kurenagala area, linked to a private sector dry bean central processing unit, and marketing and service provision to smallholders. The project is geared to export to the EU market and envisages fair trade certification, and, possibly organic certification in the future, if proved economically viable.

167. The DEA would conduct awareness campaigns, organize cocoa farmers, where possible into groups, for wet cocoa bean collection, provide extension, and, facilitate the provision of planting material, and also facilitate fair trade certification.

168. The private sector company would handle the collection of farmers’ wet cocoa beans with prompt cash payment; provide transport, centralized processing facilities; quality advice, and marketing to overseas destinations.
169. It is hoped that this project will prove a catalyst for the (re) establishment of a viable, export oriented cocoa industry in Sri Lanka, geared to export and the improvement of rural incomes and employment. Success in this context could lead to Sri Lanka membership of the International Cocoa Organization (ICCO), which, itself, has funding available for supporting cocoa development worldwide.

170. The initiation of the project will be linked to a feasibility study on “the Development of the Sri Lanka Cocoa Industry and the role PPP” (see Section V – Technical Assistance)

171. Further project details are given in appendix 3 (Details of selected proposed programs and sub-projects – “Cocoa Development and Rehabilitation Project: Theobroma Lanka”)

Estimated cost – to be advised

(iii) **Agro processing**: Applications will be considered for the support of expansion and start up enterprises in:

- Fruit and vegetable dehydration, bottling, canning and freezing
- Fruit juice and pulp production
- Spice processing (essential oils and oleo resins)
- Milk processing and other dairy products (cheese, yoghurt, curd etc)

172. The following programs have been identified (estimated cost in brackets)

**Cinnamon and pepper primary processing program ($1,875,000)** (see SS working paper and appendix 3 for details)

The following Illustrative replicable PPP sub project has been identified:

*Improved Productivity and Profitability of Coconut Land Project*

173. The envisaged investment is a PPP between the CRI/ITI and a private sector commercial farming company and farmers/farmers groups (to be identified) to improve coconut land productivity/profitability maximization, primarily, through “on-farm” virgin coconut oil production, linked to intercropping, possibly with spices and/or foliage, and livestock grazing. Integrated poultry and freshwater prawn production may also be considered in this context. It is also envisaged that the PPP would need the involvement of private sector product manufacturers / retailers / exports to ensure that the project is demand driven and economically viable.

174. The CRI and ITI would provide intercropping, and other land diversification advice, technical and quality assurance services, and the private sector companies would provide land, processing facilities, transport and markets.

175. The initiation of the PPP project will require an in depth comprehensive feasibility study on “Productivity and Profitability Improvement of Coconut Land in Sri Lanka and the role PPP” (see Section V – Technical Assistance).

176. Further project details are attached under appendix 3 (Details of selected proposed programs and sub-projects – “Improved Productivity and Profitability of Coconut Land Project”)

Estimated cost - $1,026,000

**b. Component 2 — Applied research, outreach and extension**

177. Component 2 will support the following sub components:

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19 Note provided by the proposed private sector partner. Nb: “theobroma cacao” – the Latin name for cocoa, meaning “food of the Gods”

20 Extract from the Horticulture Specialist’s supplementary report on horticulture, beverages and virgin coconut oil, available on request
Adaptive research: Applications will be considered for public sector adaptive research and development on a restricted scale; and private sector research and development related to commercial agricultural development provided that the results are made universally available to the sector. As in other project activities strict criteria should apply, as follows:

- Provision of an Impact assessment report of support received under SPCDP
- Adaptive R and D only to be considered (no basic or academic research allowed)
- Support to be given only for market driven activities to support commercial agriculture
- Demonstrable backward linkages to farm level (outreach), and the improved operation of the value chain

178. The following specific targeted research and outreach (R&O) programs (estimated cost in brackets) have been identified:

**Horticulture**

- HORDI support program for targeted research, information development and extension ($1,228,000)
- DOA support program on horticulture ICT (information communication and technology) - ($121,500)
- PPP support program on targeted adaptive R&D ($1,000,000)

**Floriculture**

- NBG support program for targeted research, information development and extension (Cost – to be verified)

(Activities to include: upgrading nursery facilities and propagation trials; flower seed initiatives; a royalty monitoring program; new plant variety testing in at least 7 districts)

**Spices and Allied Crops**

- DEA support program for targeted R&D and outreach – ($645,000)

(see HS supplementary report and appendix 3 for details)

(ii) **Extension / farmer training:** It is not recommended that public sector extension/farmer training is supported per se, but rather that extension is conducted either under PPP arrangements, or privatized in targeted areas, e.g. support to farmer organic farming, establishment of new HVC operations and CEAT applications will be considered in the above context.

The following PPP program has been identified:

- Demonstration dairy farms and farmer training program

**c. Component 3 — Agribusiness infrastructure development**

179. Component 3 is considered a core element of the project and seeks to promote investments that facilitate the integration of the value chain, and, the pivotal role of the private sector in leading agribusiness development.

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21 Details are contained in the Horticulture Specialist’s (HS) supplementary report available on request
22 It is strongly recommended that the NBG assumes the role and mandate for all public sector floriculture activities and is transferred to MADAS with the status of a Department
23 See floriculture working paper attached to the interim report
180. Component 3 will support the following sub components:

(i) **Commercial model / nucleus farms:** Applications will be considered from the private sector (with or without PPP) for:

- The establishment of fruit, vegetable, floriculture, spice and dairy farms, on the model farm/nucleus - out grower system (to include CEAT production)

The following program has been identified:

- Estate (plantation sector) spice development program ($4 million)

(See SS working paper and appendix 3 for details)

The following PPP sub projects have been identified:

**Conversion of Government owned farms to private sector management**

181. The envisioned investment is a PPP between the MADAS (DOA) and the MLD, and private sector agribusiness companies and dairy/retail companies (to be identified). The overall objective is the eventual privatization of all Government owned and managed commercial farms (primarily seed and dairy enterprises), using the successful plantation sector model, but also with an additional aim of encouraging the integration of the out grower model. Given the current policy regarding the privatization of Government owned commercial enterprises, it is proposed that the goal of public sector disinvestment, considered by the PPTA team as essential to facilitate private sector led agribusiness growth, is initiated through PPP. The prior prerequisite for the start of this project is a TA feasibility study (see Section V - Technical Assistance), which would be followed by support to start up costs, farm rehabilitation, and the implementation of out grower strategies.

Estimated cost – to be advised

**Establishment of a Coffee Nucleus Estate**

182. The envisioned investment is a PPP between the DEA/ITI and a private sector commercial coffee producer/roaster/grinder/packer (already identified) to promote small holder production of high value arabica coffee and its sale to both domestic and export markets. The project would be geared to export to the Australia/New Zealand markets, where Sri Lanka enjoys high brand recognition through the successful promotion of Ceylon tea; and envisages fair trade certification, and, possibly organic certification in the future, if proved economically viable

183. The DEA would conduct awareness campaigns, organize coffee farmers, where possible into groups, for coffee cherry and/or parchment collection, provide extension, and, facilitate the provision of planting material, and also facilitate fair trade/organic certification.

184. The private sector company would handle the collection of farmers’ coffee/cherry with prompt cash payment; provide transport, centralized pulping and milling facilities; quality advice, and marketing to domestic and overseas destinations.

185. It is hoped that this project will prove a catalyst for the (re) establishment of a viable, export oriented coffee industry in Sri Lanka, geared to export and the improvement of rural incomes and employment.

186. The initiation of the project will be linked to a feasibility study on “the Development of the Sri Lanka Coffee Industry and the role PPP” (see Section V – Technical Assistance)

24 This Government follows a no-privatization policy.” Quote from the Presidential Secretariat reported in the Daily News, 28th June 2007

25 Hansa Coffee Company
187. Further project details are attached under appendix 3 (Details of selected proposed programs and sub-projects – “Establishment of a Coffee Nucleus Estate”\(^{26}\))

Estimated cost - $950,000

**Development of a HVC Nucleus Farm Project**

188. The envisioned investment is a PPP between the DOA / ITI and an existing commercial producer and exporter (already identified)\(^{27}\) of HVC (strawberries, and, potentially other berry crops such as raspberries and blueberries), in the Nuwara Eliya area. The project would promote small holder production of HVC, rather than the current low value vegetables being produced, and their sale to both domestic and export markets. The project would be geared to export to the EU and the regional markets of the Maldives, and Gulf, and envisages fair trade certification, and organic certification.

189. The DOA, together with the private sector partner, would conduct awareness campaigns, organize farmers, where possible into groups and provide land, on lease, from its adjacent moribund seed potato farm. The DOA would also facilitate fair trade/organic certification. The private sector would arrange collection of perishable HVC, with cash payment; provide extension, planting material, logistics and markets. ITI would provide technical and quality assurance services.

Estimated cost – to be advised

(ii) **Value chain infrastructure**: Applications to be considered for investments to include, cool chain facilities; pack houses; farm feeder roads; and transport facilities.

(iii) **Farmer group establishment, support and capacity building**: The following program has been identified:

- Spice farmer group organization program (see SS working paper and appendix 3)

**d. Component 4 — Marketing**

190. Component 4 will support the following sub components:

(i) **Market research**: International marketing TA is recommended under this sub component (see appendix 4 - TOR)

(ii) **Market information and dissemination**: The following programs were identified in phase 1.

191. **GSS Market Information Systems Program**: The pilot operations of the GSS (Relief to Farmers) Govi Sahanaya Scheme market price information system, at Dambulla Dedicated Economic Centre, has provided an innovative step forward to apply information and communications technology to resolve the absence of real-time spot-prices for agricultural products. The development of a comprehensive proposal was envisaged during phase 2, utilizing the services of the original architect\(^{28}\) of the GGS. Not least due to the detailed specialist knowledge required but also because of the intellectual property rights pertaining to the activities undertaken thus far. The implementation of this proposed activity was curtailed due to the effective cancellation of the Agribusiness Development Project, at least for the foreseeable future.

192. **Marketing Innovation, Development and Ancillary Support Program (MIDAS)**: The rationale for the MIDAS approach is to address the limited presence of integrated and vertical supply chains, reduce the number of intermediaries in the marketing chain, limit the level of post-harvest losses, and

\(^{26}\) Extract from the Horticulture Specialist’s supplementary report on horticulture, beverages and virgin coconut oil, available on request

\(^{27}\) Jagpro

\(^{28}\) Dr. Harsha de Silva, LIRNEasia
support the development of demand-driven production with the objective of a more equitable
distribution of returns to supply chain participants. The concept is to identify market opportunities in
terms of destination, supply window, volumes, target price and quality criteria and to match this data
with potential areas of production.

193. The development of the above proposed programs was curtailed due to the effective
cancellation of the ADP, at least for the foreseeable future. Full details of the above concept are

Cattle marketing system program

(see LS working paper for details)

(iii) **Quality standards and certification**: Improved knowledge and capacity in this field is
considered essential in order to develop Sri Lanka’s agribusiness exports and, to
ensure food safety domestically and for the tourist industry. Therefore the following
budgeted programs are proposed.

- Quality Standards and Certification (QSC) Program

194. The program will cover the following (estimated budget shown in brackets):

- Skills development and capacity building (Total $502,000 – project contribution 78%)
- Surveys, equipment and infrastructure (Total $2,038,000 – project contribution 81.8%)
- Certification and accreditation (Total $75,000 – project contribution 80%)
- Business development support (Total $4,075,000 – project contribution 50%)
- International consultancies (Total 484,000) see Section V – Technical Assistance

195. The total cost of the program is estimated at $7,174,000, with a project contribution of
$4,639,900 (64.7%).

196. Further details of the program are given in appendix 3, and the QSC Specialist’s working
paper attached to the Interim Report and available on request.

- Spice exporter quality management program (see SS working paper and appendix 3)

(iv) **Commodity trading facilitation**: The following PPP sub project has been identified:

197. Sea Freight Perishable Products Shipment Trials (Mauritius variety pineapples and floriculture
products) Project

198. The envisioned investment is a PPP between the ITI, a private sector shipping company
(already identified)\(^{29}\), and commercial farmers organized either through the NAC or a private sector
service provider. The objective is to conduct trials of perishable products by sea freight and reduce
substantially the high cost of air freight, currently being used by exporters. The success of the project
is dependent on commercial farmers being willing and able to group themselves for freight purposes,
and in this context, professional and effective logistical support will be absolutely necessary.

Estimated cost - $400,000

\(^{29}\) MAERSK Line
• Feasibility study on the rationalization of public sector institutions (International TA)
• DAPH extension personnel capacity building program (see LS working paper)
• NBG strengthening and capacity building program

(ii) **Private sector institutional strengthening:** The following program has been identified:

• NAC strengthening and capacity building

C. **Geographical scope and the conflict**

200. The project will target the whole island of Sri Lanka including the conflict zones of the North and East, which will qualify for support when the security situation improves and providing potential stakeholders can meet the criteria established by the project. The proposed project should be guided by the need for flexibility, bearing in mind that the implementation is envisaged for a period of a minimum of 6 years.

201. The project should endeavor to ensure that a reasonable share of project resources is taken up by districts in Sri Lanka that are identified as being economically backward. This is in keeping with current Government policy. The previous sector support project, SPCDP, had the experience of a large share of investments being made in Gampaha and Kurunegala districts which are considered to be among the more prosperous areas in the country. At the other extreme, Moneragala district received one of the lowest shares of SPCDP funds despite the potential to grow a variety of crops. The following districts, which for a variety of reasons, have not received adequate support under previous sector projects, have been provisionally identified as particularly worthy of concessional treatment:

• Moneragala
• Hambantota
• Ampara
• Anuradhapura
• Polonnaruwa
• Badulla
• Puttalam
• The current conflict areas of the North and East, when the situation improves

202. Although a basis for geographical allocation has not been developed under the PPTA, if the ADP is reinstated, or wholly/partially taken up by other donors, the new TA team should develop this concept further and utilize such mechanisms as the matching grants to ensure that the poorer districts also receive their due share, especially in view of the national poverty alleviation goals.

D. **Special features**

203. The proposed project has the following special features which differentiate its focus from previous support to the sector.

204. **Private sector and market/demand driven focus:** The project interventions focus, largely, on private sector and market driven investment, which will be determined by demand.

205. **Value chain integration and linkages:** The project has a two dimensional thrust, supporting forward and backward linkages between stakeholders. Firstly, farmers’ capacity will be supported to increase production, profitability and interrelate with market participants in order to improve their efficiency and negotiating skills; and, secondly, private sector processors, retailers, traders, exporters and agribusiness service providers are supported in order to foster their backward linkages to the smallholder farmer sector. The development of value chain integration an linkages, with improved transparency, is the key aspect of the project.

206. **Support to least developed rural areas:** Concessional funding is proposed to the least developed districts, and conflict areas (when the situation improves).
Public Private Sector Partnerships (PPP): The project has a strong emphasis on PPP, as a mechanism to promote private sector investment and private sector led sector growth.

Focus on high value crops, value addition, and export: The project focuses on HVC for export, such as floriculture products, emphasizing cut flowers as the premium end of the market, CEAT fruit and vegetables. Value addition through agro processing, packaging and branding is also a feature of the project.

Social inclusion and participation: The project seeks to include measures to ensure the participation of the rural poor and disadvantaged, and also to encourage greater participation of rural youth in agribusiness enterprises.

Innovative project management and implementation: An innovative project management unit is proposed that will allow the full participation of the private sector, and involve the creation of a “not for profit” project, private sector orientated facilitating company, and multiple implementation of components and sub components through both private and public sector service providers.

E. Cost estimates

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<th>Table 5: Cost Estimates ($ Million)</th>
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<tr>
<td>A: INVESTMENT COMPONENT (CREDIT &amp; GRANT)</td>
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<td>A1: Primary Production and Agro Processing</td>
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<tr>
<td>Primary production development Credit</td>
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<td>Post harvest production improvement and support Credit</td>
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<td>Agro-processing Credit</td>
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<tr>
<td>Primary Production Grant</td>
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<tr>
<td>Post harvest production improvement and support Grant</td>
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<tr>
<td>A2: Agribusiness Infrastructure and Development</td>
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<tr>
<td>Infrastructure Credit</td>
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<tr>
<td>Infrastructure Matching Grant</td>
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<td>A3: Marketing</td>
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<tr>
<td>Marketing/Quality Credit</td>
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<td>Marketing/Quality Grant</td>
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<tr>
<td>B: INFRASTRUCTURE, RESEARCH, MARKETING AND INSTITUTIONAL DEVELOPMENT</td>
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<tr>
<td>Adaptive research</td>
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<tr>
<td>Outreach</td>
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<td>Extension / farmer training</td>
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<td>Market research</td>
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<td>Quality standards and certification</td>
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<td>Commodity trading facilitation</td>
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<td>Public sector institutional strengthening</td>
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<td>Private sector institutional strengthening</td>
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<tr>
<td>C: PROJECT MANAGEMENT &amp; EVALUATION</td>
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<tr>
<td>Project Management and Evaluation</td>
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<tr>
<td>TOTAL BASE COSTS</td>
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</table>
F. Financing plan

211. Although agriculture accounts for 17% of the country’s economy in terms of GDP, the credit extended to the sector has been a low 4% of all loans and advances by the banking sector. Furthermore, of the total labor force of 7.1 million in 2006, 2.1 million (30%) are employed in agriculture.

212. The banking sector has advanced almost 60% of all credit for trading, housing and consumption. Agriculture is considered to be of a higher risk due to fluctuation in prices, post harvest losses and weather conditions.

213. Another reason for the low rate of lending for the sector has been that the typical loans are short term (less than one year) or medium term (1-3 years). More than half of all loans advanced by the banking sector are on a short term basis. Given the long gestation periods for cultivation and the attractiveness of an extended payback period for almost any industry, there is a clear need for long term finance, to promote investments in cultivation and other value added activities such as processing, cold storage, transportation and marketing.

214. Lending is heavily collateral based. This is a barrier for cultivation as the value of rural agricultural land is very much less than land in urban areas, although the investment cost is more or less the same.

215. Given the above issues resulting in the shortage of financing for the sector, the Government, together with international lending agencies has been funding the sector through several credit schemes. With the end of the Second Perennial Crops Development Project (SPCDP), the intention was that the sector would continue to be funded with the Revolving Fund of SPCDP. A sum of SLR 1 billion has already been committed under the SPCDP Revolving Fund, at a subsidized interest rate of 9% per annum, and it is considered unlikely that additional funds will be available, i.e. that the SPCDP Revolving Fund will continue, as was the original intention. There are other credit schemes in operation such as Sushanana, Small Business Revival Project, Jeevana Shakti Program, the Small Farmer and Landless Credit Project and the Poverty Alleviation Microfinance Project, but all are microfinance programs with the maximum loan typically below SLR 100,000. Details of relevant credit schemes in operation have been presented in the Interim Report – working paper on credit.

216. The only access to funds for the sector (other than through bank’s own funds) is under the Revolving Fund of SMILE II, a Small and Medium Enterprises (SME) credit scheme. There too there is competition for funds with all types of industries. Again, loans from this Revolving Fund are limited to a maximum of Rs. 5 million and must be repaid over 4 years.

217. Given this scenario, there is a severe lack of long term funding for the agricultural sector, with only one scheme (that too shared with all industries) available on fairly restrictive terms.

218. An analysis of loans given under the Perennial Crops Project (1987-1998) and SPCDP (1999-2006) has been provided in the Interim Report – Working Paper on Credit. In summary, loans have been mostly for cultivation (91% and 61% of all loans respectively for the two projects named above), and the average loan size was SLR 113,000 under PCDP and SLR 332,000 under SPCDP. The intention is that loans of a much larger size will need to be disbursed under the ADP in order to have an impact on the sector. To this extent, the ceiling on a loan of SLR 50 million is considered to be reasonable. Any loan above this threshold would need to be approved by the ADB.

219. There is clearly a need for a credit scheme to promote investments in the sector. The credit will be disbursed through the formal banking sector which has a good outreach with some 1,300
branches throughout the country. Criteria for the selection of the participating banks, subprojects and sub-borrowers have been put forward in the Interim Report.

220. Interest rates have been designed on the principle of full cost recovery - the elements of costs being the interest cost payable to the original financier (multilateral lending agency), the premium to cover exchange rate depreciation and interest spread of the banks, termed as Participating Financing Institutions (PFI). The interest rate would be based on a market benchmark such as the Average Weighted Lending Rate (AWPR) or the Average Weighted Deposit Rate (AWDR). The AWPR which averaged 19.01% in 2001 declined to a low of 10.24% in 2003 and thereafter increased to 17.67% by early 2007. The AWDR which averaged 11% in 2001 declined to a low of 5.07% in 2004 and thereafter climbed to 7.93% by early 2007. As at the end of September 2007 the AWPR stood at 18.95% and the AWDR at 9.65%. A full description of AWPR and AWDR is presented in the Interim Report – Working Paper on Credit.

221. Given the volatility of AWPR, many recent projects have selected AWDR as the interest rate benchmark. The on-lending rate (i.e. to the borrower) would then be AWDR plus a spread to cover credit risk, cost of own funds, and profits of the PFI. Based on historical data, a spread of 5% appears to be reasonable. The re-lending rate (to the PFI’s) could be determined once the lending rates from the multilateral lending agency are known.

222. The SLR/$ exchange rate, based on average yearly buying and selling rates, averaged Rs. 51.39 in 1995 and averaged SLR 109.88 for the first six months of 2007, reflecting an average annual depreciation of the SLR against the US dollar of 6.5%. It was 113.40 at the end of September 2007. For the six year period 1995-2001 the average annual depreciation was 9.8% and for the six year period 2001-2007 it was 3.3%, mainly due to the appreciation of the currency following large remittances after the Tsunami in 2004. Given the trend, the exchange risk premium which has to be inbuilt into the interest rate is at least 5-6%.

223. Under the PCDP and SPCDP, the Central Bank of Sri Lanka (CBSL) performed the function of an administrative unit, where it was responsible for co-ordination and monitoring of the proposed project including the administrative functions in relation to refinance applications and loan disbursements. Consequent to the re-organization of CBSL, Government is of the view that these tasks should be assigned to one of the two development banks, NDB or DFCC and that CBSL should devote its efforts at regulation of the financial sector. As a result, several recent ADB projects have been designed in such a manner. The development banks also have a track record of functioning as AU under the SMI projects and the World Bank Funded Energy Services Delivery Project and its follow on project. The AU will charge a management fee for this task which is usually 1% of the funds disbursed, but both institutions should be allowed to bid for the role of AU on a competitive basis.

224. It is proposed that loans will have a maximum grace period of five years and repayment within ten years thereafter.

225. It is also proposed that a system of grants be available to borrowers of project funds, in order to reduce cost of funds and enable the project to be more financially attractive. These grants will be disbursed by the project management unit, which will establish criteria for their release, based on the sector and location of the sub project.

30 ADB Plantation Development Project, ADB Aquaculture Development Project, ADB Southern REAP
### Table 6: Project components by financier ($ million)

<table>
<thead>
<tr>
<th>MARKET BASED LOAN</th>
<th>CONCESSIONARY LOAN</th>
<th>THE GOVERNMENT</th>
<th>LOCAL COST</th>
<th>TOTAL COST</th>
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<td>Foreign Exch.</td>
<td>Local Curr.</td>
<td>Total Cost</td>
<td>Foreign Exch.</td>
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<td>A.1: Primary Production and Agro Processing</td>
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<td>Outreach</td>
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<td>Extension / farmer training</td>
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<tr>
<td>Market research</td>
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<td>--------------------------------</td>
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**C: PROJECT MANAGEMENT & EVALUATION**

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<th>0.5</th>
<th>0.0</th>
<th>0.0</th>
<th>0.0</th>
<th>1.1</th>
</tr>
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**TOTAL BASE COSTS**

| Physical Contingencies | 0.4 | 0.8 | 1.2 | 0.4 | 0.8 | 1.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 2.9 |
| Price Contingencies | 0.4 | 0.8 | 1.3 | 0.4 | 0.8 | 1.3 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 3.0 |
| Interest During Construction | 0.8 | 1.4 | 2.2 | 0.8 | 1.5 | 2.2 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 5.2 |

**GRAND TOTAL COST**

| 10.0 | 19.3 | 29.3 | 10.1 | 19.5 | 29.6 | 0.0 | 0.5 | 0.5 | 4.8 | 4.8 | 9.5 | 68.9 |
G. Implementation arrangements

226. The recommended project implementation arrangements are as follows:

(i) A “not for profit” company (proposed name: Agricultural Development Alliance (ADA)) Project Management Unit (PMU) acting as project facilitator, and incorporated under the Companies Act 2007 in accordance with the provisions contained in Part III (Companies limited by guarantee)

(ii) A Project Steering Committee (PSC) composed equally of public and private sector representatives.

(iii) An independent Project Appraisal Panel (PAP), chaired by a representative of the EA and comprising public and private sector representatives and nominated experts.

227. Further details of the implementation arrangements are given below.

1. Agricultural Development Alliance (ADA)

228. ADA, a “Not for Profit” Company: would have the following recommended key features;

- It would exist only for the lifetime of the project, and be wound up on project termination
- It would be incorporated under the appropriate legislation allowing it to enter into legal contracts, eg, service providers
- It would act as facilitator, not an implementing agency
- Implementation of project components would be subcontracted to service providers appointed on a tender basis, some possible examples are given below,

229. The NAC and / or its product-specific member associations could implement aspects of component 2 (Primary Production and Agro Processing) such as the establishment of SME fruit processing plants;

230. A private-sector company, eg, an exporter or retailer could implement aspects component 3 (Agribusiness Infrastructure Development) such as farmer producer group formation and capacity building / out-rower schemes;

231. A private sector company, eg, a shipping company, could implement aspects of component 4 (Marketing), such as the proposed floriculture sea freight pilot project, and a producer / exporter could implement an organic certification program

232. A public sector institution, such as the DOA, could implement aspects of component 2 (Research, Extension and Outreach) such as those related to horticulture, and floriculture; and the ITI could implement a pesticide residue survey

233. A professional management consultancy company could implement aspects of component 5 (Institutional Strengthening and Capacity Building)

234. The FNCCI and selected NGO’s could assume overall management of project activities in the poorer, less developed areas.

235. The company will have the following basic roles and responsibilities, which will be finalized in Phase 2:

- Project coordination, monitoring and evaluation (including the social and environmental impact of project activities)
- Sourcing, screening and final approval of project implementation service providers
- Processing of project funding applications evaluated by the Project Appraisal Committee
- Facilitation of all loan applications, over a minimum size, for implementation by the PFI’s
- Facilitate and act as secretaries to the Project Steering Committee
- Operate an imprest account covering the funding of grants, matching grants and concessional loans

236. The company will have a nominated Board of Directors comprising 6 persons, with 3 each from the private and public sector

237. Professional commercially oriented staff would be engaged through competition; have private sector nomenclature. The final composition of staffing arrangements under the PPP agreement will be recommended in phase 2. The preliminary recommendation is as follows: Chief Executive Officer (CEO) / Finance Manager and Company Secretary / Technical Manager plus supporting clerical staff etc. Job descriptions for the ADA’s executive positions should be formulated if the project is reinstated.

238. It is recommended that the company is located in Colombo, with probably 4 small branch offices. Costs will be kept to the minimum, but a quality, efficient operation may need more than the 2% allocation currently proposed for project management.

2. Project Steering Committee (PSC)

239. The PSC would be responsible for supervising project implementation and providing guidance on policy matters. The recommended composition of the PSC is:

- Chairman – Secretary to MADAS
- Government nominees – nominated by the EA
- Representatives of the private sector – nominated through NAC to represent horticulture, floriculture, spices and livestock

240. It should be noted that the Project Steering Committee that had been established under the PCDP (1988 – 1997) retained responsibility for the supervision of SPCDP implementation. The PSC was essentially a public sector entity but with provision for private sector representation.

3. Independent Project Appraisal Panel (PAP)

241. A PAP will be established in order to appraise and evaluate project proposals over a specific size; the criteria will be established in Phase 2. The recommended composition of the PAP is a total of 7 persons as follows:

- Chairman – Representative from MADAS
- 2 Public Sector Nominees (Representatives from DOA/DEA, DAPH, and MOFP)
- The Chairman of the NAC
- The CEO of the ADA
- A core of Technical Specialists contracted to attend when specialization is presented in projects for appraisal

242. The PAP’s appraisals would be processed for implementation by the ADA
V. INTERNATIONAL TECHNICAL ASSISTANCE

243. International TA has been proposed under the projects various components and subcomponents. It is recommended that TA is required in the following areas:

- PPP and the role of Government
- Institutional rationalization
- Coffee, virgin coconut oil and cocoa development
- Horticulture R&D
- Market research
- Quality standards and certification capacity building

244. Under the various proposed interventions a substantial amount of international TA has been recommended. With regard to individual specialists, it is proposed that the list be rationalized and consolidated, and costs verified, if the project is reinstated and following consultation with stakeholders. Meantime, the full list has been included, as detailed below, with indicative estimated costs in brackets. TOR for those positions underlined and marked with a star is given in appendix 4.

(i) Tropical Fruit R&D Specialist ($132,000)*
(ii) Vegetable R&D Specialist ($88,000)*
(iii) Vegetable IPM Specialist (132,000)*
(iv) Tropical Fruit and Vegetable Processing Specialist ($132,000)*
(v) Virgin Coconut Oil/Products Specialist ($132,000)*
(vi) Coffee Processing Specialist ($132,000)*
(vii) Coffee Breeder/Agronomy Specialist ($66,000)*
(viii) Coffee R&D Specialist ($88,000)*
(ix) Standards, Branding and GAP Specialist ($176,000)*
(x) Quarantine and Risk Specialist ($132,000)*
(xi) Organic Certification Specialist ($176,000)*
(xii) International Marketing Specialists ($576,000)
(xiii) Institutions Specialist (TOR to be prepared)
(xiv) PPP Specialist (TOR to be prepared)
(xv) Floriculture Specialist (TOR to be prepared)
VI. PROJECT BENEFITS, IMPACT AND RISKS

A. Economic Benefits

245. The project interventions are designed to assist in the adoption of commercial agriculture and agribusiness by rural farmers and other stakeholders. The target groups of the project comprise small farmers, commercial farms, traders, processors, those involved in logistics and exporters.

246. Credit finance provided under the project, with grant funding where appropriate, will encourage small farmers to adopt new high value crops. The project gives priority to the development of backward regions. Grant funds will be available to meet part of the costs for investments in underdeveloped regions where most farmers are engaged in subsistence agriculture. Initiatives such as the introduction of primary processing for spices at farm level will bring higher incomes to farmers. The large number of training programs planned under the project will improve the awareness of farmers.

247. The project will generate a large number of employment opportunities especially in undeveloped rural areas. Project interventions will contribute to reversing the current trend of rural youth turning away from agriculture, due to low returns as well as a negative social image that is associated with agricultural labor. The new high value crops and agricultural activities such as protected agriculture that are proposed will yield higher returns and will attract youth partly due to the innovative nature of the ventures proposed.

248. A series of interventions are proposed for the improvement of infrastructure relating to commercial crops and agribusiness. These include the establishment of nucleus farms for a diverse range of crops. These will be an inducement for small farmers to participate in the cultivation of new commercial crops, and also introduce economies of scale that will provide immediate economic benefits. The project will support institutions engaged in the development of technology and the establishment of standards, certification and quality by providing equipment and training. These interventions will lead to enhanced exports and higher prices. The project has made provision for financing of investment in transport and logistics, with the use of grant funds to induce investments in this sector. Economic benefits will arise from this intervention by improving returns to farmers and providing better quality, quantities and prices to consumers. Investments in market research, product and packaging development, establishment of certification facilities and training will enhance exports of agribusiness related products.

249. The project will have a wide ranging impact on the alleviation of poverty in the rural sector. Around half of the poorest households in the rural sector are engaged in agriculture. The type of interventions proposed under the project, such as small loans and grants, adoption of high value crops, farm level primary processing and value addition will contribute greatly to the reduction of poverty in the rural sector.

B. Summary of economic and financial analysis

250. The proposed interventions for the project number around 200, due to the number of sectors that comprise the agribusiness sector and the issues that have to be addressed. The interventions are not designed for a particular farming model. Due to this diversity, a mix of interventions that reflects the project cannot be identified and an integrated cost-benefit analysis for the project is not realistic. Therefore representative sub-projects have been identified for the purpose of financial and economic analysis. The representative sub-project models are based on projected cash flows over a period of 25 years for the agricultural investments, providing an adequate period due to most of the crops belonging to the perennial category.

251. The analysis is conducted in constant 2007 prices. The sub projects selected for analysis include fruit crops, spices, beverage crops, small-scale dairying and virgin coconut oil. The key indicator used is the financial rate of return (FIRR) for financial analysis and economic internal rate of return (EIRR) for economic analysis. The foreign exchange “numeraire” is used for the analysis where economic prices are expressed at border value terms.
Table 7: Selected Interventions – FIRR/EIRR

<table>
<thead>
<tr>
<th>Financial and Economic Rates of Return</th>
<th>FIRR</th>
<th>EIRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td>25%</td>
<td>27%</td>
</tr>
<tr>
<td>Pineapple</td>
<td>52%</td>
<td>51%</td>
</tr>
<tr>
<td>Papaya</td>
<td>26%</td>
<td>23%</td>
</tr>
<tr>
<td>Arabica Coffee</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>Cocoa</td>
<td>15%</td>
<td>16%</td>
</tr>
<tr>
<td>Cardamom</td>
<td>39%</td>
<td>42%</td>
</tr>
<tr>
<td>Cinnamon</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>Small Scale Dairy Production</td>
<td>4%</td>
<td>14%</td>
</tr>
<tr>
<td>Virgin Coconut Oil</td>
<td>23%</td>
<td>24%</td>
</tr>
</tbody>
</table>

252. An economic internal rate of return of 12 percent is used as a benchmark for the opportunity cost of capital in economic terms. All the selected interventions are seen to be economically viable, with the EIRR for Arabica coffee seen to be marginally lower than the benchmark rate. The economic rate of return of exportable products is much higher than the products with a purely domestic market. Sensitivity tests were conducted on the forecasts by changing key parameters by 20 percent to observe changes in the economic internal rate of return. Most of the commercial agriculture interventions are seen to be robust to increases in investment and operating costs. In conclusion, the commercial agriculture investments are economically viable and justify the investments made in economic terms.

C. Social measures and impact on poverty

253. The proposed project will seek to promote cross cutting values of equity, partnership, participation, gender, and transparency in agribusiness development amongst all stakeholders along the value, with particular emphasis on, poverty reduction and the elimination of regional rural income and employment opportunity disparities, and "pro-poor" social strategies. The overall objective and expected impact of the project is to is to increase rural household incomes and employment opportunities, and project implementation should be guided by this overriding principle, and seek to change behavior and attitudes of stakeholders in the context of social inclusion. Project implementation should stress the social inclusion aspects of investments in order to support, directly, and/or indirectly, the rural poor and smallholder farmers through information, skill and knowledge creation, technology transfer, the organization of farmers groups, the provision of accessible and available rural credit, and new agribusiness opportunities. The project's positive impact on social and gender development, and youth employment is expected to occur through (i) enhancing opportunity for the poor to engage in commercial agriculture, agribusiness generally, and develop forward linkages with other participants in the value chain; the reduction of vulnerability of disadvantaged groups arising from the move from subsistence to commercial agriculture and agribusiness enterprise; and (iii) enhancing the capacity of the rural poor to engage and benefit directly and/or indirectly in agribusiness.

254. The poverty reduction impact of the project is expected to arise from (i) employment generation; (ii) the organization of smallholder farmers into groups to facilitate improved access to rural credit, value addition through agro processing, branding and packaging, and, markets; (iii) improved rural household incomes and employment opportunities arising from a more dynamic and growing rural economy; and, (iv) the improved capacity of smallholder farmers directly, or through their groups, to negotiate more effectively with other stakeholders in the value chain.

31 Due to the cancellation of the project at end August 2007, the services a Social Development Specialist was not available during phase 2. Therefore, a summary of “poverty reduction and social strategy” has not been included in the appendixes to the DFR.
D. Environmental assessment

255. The environmental management system (EMS) during project implementation should embody policies, procedures, and capacity. The objectives of an environmental policy are to (i) protect the environment; (ii) encourage the efficient use of natural resources; and (iii) promote the improvement of the environment, wherever possible. Sri Lankan national policies are the basis for EMS policy, and all participating implementation agencies will comply with national environmental policies, rules, and regulations. The Government’s National Environment Act 1981 is supported by conservation laws including the: (i) Coast Conservation Act of 1981, requiring environmental assessment for projects undertaken in coastal areas; (ii) Soil Conservation Act, which aims at erosion protection in areas highly susceptible to erosion, (iii) State Lands Ordinance provisions on control of use of water of public sources, (iv) National Water Supply Board Act provisions on protecting water supply sources, and (v) Fauna and Flora Protection Ordinance, which aims at conservation of forest and wildlife—provide the basic legal framework for environmental assessment in Sri Lanka, (vi). Land Acquisition Act and National Involuntary Resettlement Policy. Other relevant regulations include by-laws related to pollution control, health and sanitation, and disposal of solid waste; Geological Survey and Mining Bureau Act; Motor Traffic Act; Ministry of Defense and Police Policies; Agrarian Services Act; and Antiquities Ordinance. The term “Environment” covers the environment, health and safety, and social safeguards.

256. Project implementation will ensure that sub-projects’ comply with national environmental policies and regulations as well as with applicable ADB’s environment and social safeguard assessment requirements. The national policies and ADB’s environment assessment requirements reinforce each other.

257. The project will only invest in sub-projects:

- if its activities are outside of the exclusion list
- that take account of the environmental impact of their operations and take steps to avoid, minimize, and mitigate any risks;
- that are designed, implemented and operated in compliance with all Government environmental regulations and requirements, as well as with ADB’s requirements, as applicable.
- that takes account of relevant international environmental agreements.

258. The operational principles of the environmental policy of the project should include:

- Ensuring that environmental safeguards as defined by the Environmental Protection Act, and rules and regulations issued by the Central Environmental Authority of Sri Lanka are integrated into project design prior to its financing and complied with during construction and operation.
- Adopting a risk classification system in accordance with government procedure or international best practice.
- Ensuring that no activities on the ‘exclusion list’ of activities are financed or fostered by the project.
- Where potential adverse social and environmental impacts are expected, the measures to prevent these from occurring in the first place are preferred to measures seeking minimization, mitigation, or compensation.
- Disclosing relevant information and consulting with project-affected people for sub-projects with potential adverse environmental and social impacts.
- Where the effect on resettlement and/or indigenous peoples is significant, ensuring that social safeguards, based on the principle of restoration and possible improvement in the economic status of project affected people, are integrated into the project design prior to its financing and followed through in its implementation.

32 Due to the cancellation of the project at end August 2007, the services an Environment Specialist was not available during phase 2. Therefore, a summary initial environmental examination, environmental assessment and review procedures has not been included in the appendixes to the DFR
Here required to mitigate significant adverse environmental risk, ensuring that relevant international best practices are integrated into project design, implementation, construction and operation.

- Encouraging project promoters and other project partners to adopt environmentally sound practices.
- Where subprojects have potential significant adverse impacts, ensuring independent compliance review by the PMU.
- Ensuring transparency in and commitment to continual improvement of its EMS.

259. The source for the above is the RSMEDP RRP (July 2007).

E. Sustainability

260. The sustainability of the project assumes that project investments will be financially and economically viable during the lifetime of the project and beyond, without the availability of project funding and technical support. The key factors in ensuring sustainability are, (i) the willingness of the Government to ensure an appropriate “private sector friendly” agribusiness enabling environment, and, to acknowledge that private sector led economic growth is the key to rural development; (ii) macroeconomic stability and affordable interest rates; (iii) the improvement of the conflict situation, thus opening up large areas of the country in the North an East known to be eminently suitable for agribusiness development.

F. Risks

261. The main risks to the success of the project are the converse to the sustainability issues stated in sub section F above, viz:

- Unchanged, or more negative, Government policy regarding the agribusiness enabling environment
- Macroeconomic instability
- Increased conflict

VII. ASSURANCES

262. Given the current status of the project, i.e., that Government have cancelled the project, it is suggested that the elaboration of specific assurances; conditions for loan effectiveness; and conditions for disbursement, are identified by a new TA team, should the project be reinstated.
### APPENDIX 1
**DESIGN AND MONITORING FRAMEWORK (DRAFT)**

<table>
<thead>
<tr>
<th>Design Summary</th>
<th>Performance Targets/Indicators</th>
<th>Data Sources/Reporting Mechanism</th>
<th>Assumptions and Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Impact</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Increased income and employment of rural households throughout the project area</td>
<td>• Incomes of households involved in agribusiness increased by 10% by 2016</td>
<td>• Project results - based monitoring and impact assessment surveys</td>
<td>• Macroeconomic stability</td>
</tr>
<tr>
<td>2. Increased participation of the private sector in rural development</td>
<td>• Employment in agribusiness enterprises increased by 10% by 2016</td>
<td>• Government economic and social statistics</td>
<td>• International demand for Sri Lankan agribusiness products maintained</td>
</tr>
<tr>
<td>3. Increased economic development in least developed province and districts</td>
<td></td>
<td>• Central Bank of Sri Lanka (CBSL) statistics</td>
<td>• Rural household surveys undertaken</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• PFI reports on sector related loan portfolios</td>
<td>• Development initiatives will always be demand/market driven</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Annual reports of the Ministry of Agricultural Development and Agrarian Services (MADAS); and Ministry of Livestock Development (MLD)</td>
<td>• Natural disasters</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td></td>
<td></td>
<td>• Deteriorating security situation in rural areas</td>
</tr>
<tr>
<td>1. An organized and competitive agribusiness sector led by the private sector</td>
<td>• Fruit and vegetable Post harvest losses reduced below 20% by 2016</td>
<td>• Government economic and social statistics</td>
<td>• Market price fluctuations, leading to lack of profitability</td>
</tr>
<tr>
<td>2. Improved production, processing, and marketing of high value agricultural crops (HVC’s), e.g., horticulture, floriculture and spice products</td>
<td>• Increase in area under high value horticultural and floricultural crops to 25% by 2016</td>
<td>• CBSL statistics</td>
<td></td>
</tr>
<tr>
<td>3. Improved milk production and availability in rural areas</td>
<td>• Increase in the share of agribusiness products in total agricultural output to 60% by 2016</td>
<td>• Project monitoring and impact assessment surveys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Increase in the share of agribusiness products in total manufacturing exports to 10% by 2012</td>
<td>• Annual reports of MADAS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Exports of HVC’s increased by 20% by 2016</td>
<td>• Monitoring reports of the Departments of Agriculture (DOA), Export Agriculture (DEA) and Animal Production and Health (DAPH)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Exports of HVC’s increased by 20% by 2016</td>
<td>• National Agribusiness Council (NAC) reports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Exports of HVC’s increased by 20% by 2016</td>
<td>• Private sector agribusiness company annual reports</td>
<td></td>
</tr>
</tbody>
</table>

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33 Assuming the start of the project in 2009
34 From 17.6% in 2005 (reference ADB TA Report 3381 of June 2006)
<table>
<thead>
<tr>
<th>Outputs</th>
<th>Assumptions</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Increased public / private sector (PPP) investment in agribusiness production, infrastructure and marketing</td>
<td>• PPP (with DEA) replicable cocoa development project established by end 2010</td>
<td>• Government will wish to maintain a controlling interest in the project rendering it inoperable</td>
</tr>
<tr>
<td>• PPP (with DEA) replicable coffee nucleus estate project established by end 2010 and commercially operable by 2014</td>
<td>• Establishment of an agreed PPP legal, and monitoring framework satisfying both public and private sector aspirations</td>
<td>• The current negative enabling environment, if not improved, will be a disincentive to private sector involvement</td>
</tr>
<tr>
<td>• PPP (with CRI) replicable coconut land productivity project established by end 2010</td>
<td>• ADA (PMU) monitoring reports</td>
<td>• ADA (PMU) monitoring reports</td>
</tr>
<tr>
<td>• PPP (with DOA) replicable HVC (strawberries) established by 2010</td>
<td>• DOA, DEA, DAPH monitoring reports</td>
<td>• ADA (PMU) - Agribusiness Development Alliance (Project Management Unit)</td>
</tr>
<tr>
<td>• 10 Government, DOA managed farms, and 10 DAPH managed dairy farms converted to private sector management by 2013, and privatized by 2018</td>
<td>• ADA (PMU) monitoring reports</td>
<td>• ADA (PMU) monitoring reports</td>
</tr>
<tr>
<td>• PPP (with ITI) perishable products shipment project established by 2010</td>
<td>• ADA (PMU) monitoring reports</td>
<td>• ADA (PMU) monitoring reports</td>
</tr>
<tr>
<td>2 Increased private sector investment in agribusiness infrastructure</td>
<td>• Establishment of (i) 2 fruit, 2 vegetable model farms, of around 50 acres each; and 3 floriculture model farms (at least 1 producing cut flowers), based on out grower/contract farming systems, by 2012</td>
<td>• Ongoing effective awareness campaigns will be conducted by ADA (PMU), targeted at private sector entrepreneurs</td>
</tr>
<tr>
<td>• <strong>horticulture cool chains established by 2012</strong></td>
<td>• ADA (PMU) monitoring reports</td>
<td>• Availability of easily accessible, affordable finance through matching grants</td>
</tr>
<tr>
<td>• <strong>fruit agroprocessing plants established, or expanded by 2012</strong></td>
<td>• ADA (PMU) monitoring reports</td>
<td>• ADA (PMU) monitoring reports</td>
</tr>
</tbody>
</table>

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36 From 2% in 2005 (reference ADB TA Report 3381 of June 2006)
37 ADA (PMU) - Agribusiness Development Alliance (Project Management Unit)
<table>
<thead>
<tr>
<th>Activities and Milestones</th>
<th>Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Increased HVC &amp; milk production</td>
<td>• Production of HVC’s increased by *% and *% in terms of volume, and value respectively by 2016</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4 Increased agribusiness marketing efficiency</td>
<td>TBA</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>5 Improved adaptive research and extension services</td>
<td>TBA</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6 Institutional strengthening</td>
<td>TBA</td>
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<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Activities and Milestones</th>
<th>Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Mid Term Review in 2013</td>
<td>• $30 million OCR</td>
</tr>
<tr>
<td>• Annual Reviews by ADA (PMU)</td>
<td>• $30 million ADF</td>
</tr>
<tr>
<td>• Quarterly PSC reports</td>
<td>• PFI own contributions</td>
</tr>
<tr>
<td>• Quarterly service provider reports</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 2
AGRICULTURE/AGRIBUSINESS INSTITUTIONAL FRAMEWORK

I. INSTITUTIONS

A. Introduction

1. There are a multitude of institutions, particularly in the public sector, concerned with the operation of the Sri Lankan agricultural sector. Whilst, at Government level, the Ministry of Agricultural Development and Agrarian Services (MADAS) has overall responsibility for agricultural matters a number of other ministries have mandates that affect agricultural matters. In the context of the Agribusiness Development Project PPTA, in addition to dealing with MADAS, the TA Executing Authority (EA), livestock issues are the responsibility of the Ministry of Livestock, and floriculture matters are now the responsibility of the Ministry of Sports and Public Recreation. Other key ministries which have some concern with agriculture, and particularly agribusiness, and which have been consulted during Phase 1 of the TA either directly or through their constituent Departments, include:

- Ministry of Finance
- Ministry of Enterprise Development and Investment Promotion
- Ministry of Export Development and International Trade
- Ministry of Plantation Industries
- Ministry of Indigenous Medicine

2. Overall there are at least five ministries involved in some manner with the agricultural sector. This situation is perhaps not surprising as under the current Government Sri Lanka has 53 Cabinet Ministries, 34 Non Cabinet Ministries and 19 Deputy Ministries, supported by a plethora of secretaries, additional secretaries and civil servants together with various statutory bodies and constituent policy implementation departments. The current institutional framework is both confusing and seems an inefficient use of human resources.

3. With regard to the private sector, the key institutions involved with the non plantation agribusiness sector are, (i) The National Agribusiness Council; (ii) the Ceylon Chamber of Commerce; the National Chamber of Commerce, and the Federation of Chambers of Commerce and Industry. Local and international NGO’s also involve themselves in the sector, particularly at regional and district level.

4. The role and impact on the agribusiness sector of the various public and private sector institutions are described in this section and preliminary recommendations for institutional strengthening and capacity building are proposed.

B. Public sector

1. The Ministry of Agricultural Development and Agrarian Services (MADAS)

5. MADAS is the successor to the former Ministry of Agricultural Development (Non Cabinet) / Ministry of Agriculture, Irrigation & Mahaweli (Cabinet), and was renamed as such in 2006. It is an indication of the confusion surrounding the Government’s institutional framework with responsibility for agriculture that the Ministry has changed its name no less than five times since 2002, as shown below:

- (i) 2002 – 2004: Ministry of Agriculture & Livestock
- (ii) 2004 – 2005: Ministry of Agriculture, Livestock, Lands and Irrigation
- (iii) 2005: Ministry of Agriculture – (3 months)
- (iv) 2005 – 2006: Ministry of Agricultural Development (Non Cabinet) / Ministry of Agriculture, Lands, Livestock, Irrigation & Mahaweli (Cabinet)
- (v) 2006: Ministry of Agricultural Development & Agrarian Services
- (vi) 2006 – to-date: Ministry of Agricultural Development & Agrarian Services (Cabinet) / Ministry of Agricultural Development (Non Cabinet)
6. MADAS is the key Government institution charged with the implementation of policy and issues connected with agricultural development. The ministry is headed by a Minister and a Secretary together with the following support staff:

(i) Additional Secretary (Administration)
   (a) Director (Administration)
   (b) Director (Human Resources Development)

(ii) Additional Secretary (Agricultural Development)
   (a) Director (Agricultural Development)
   (b) Director (National Fertilizer Secretariat)
   (c) Director (Natural Resources Management)
   (d) Director (Research & Development)

(iii) Additional Secretary (Planning & Projects)
   (a) Director (Planning)
   (b) Director (Projects)

(iv) Additional Secretary (Mahaweli & Export Agriculture)
   (a) Director (Development)

(v) Additional Secretary (Irrigation)
   (a) Director (Development)

(vi) Additional Secretary (Agrarian Services)
   (a) Director (Agrarian Services)

7. The mandate of MADAS covers policy, planning and implementation, through its departments and statutory bodies in the following overall areas of agricultural development and the provision of agrarian services:

- Implementation of policies, plans and programs in respect of Agricultural Development and Mahaweli
- Agricultural Diversification
- Agriculture Production Improvement
- Agricultural Education
- Administration and Operation of the Soil Conservation Act
- Agriculture Research and Extension
- Development of Export Agricultural Crops
- Development of High - Tech Agriculture
- Plant Quarantine
- Work connected with the Food and Agricultural Organization of the United Nations Food Council and International Fund for Agricultural Development
- Import and Export of Planting material (Only regulatory functions)
- Administration and Operation of the Control of Pesticides Act
- Administration and Operation of Plant Protection Ordinance
- Administration and Operation of the Felling of Trees (Control) Act
- Agricultural Enterprise Development
- Measures for increased production of food
- Post Harvest Technology and Research
- Floor Price Schemes for Agriculture Products
- Implementation of Policies, Plans and Programs in respect of Agriculture Marketing Development
- Administration and operation of the Agrarian Services Act
- Agrarian Services Development
- Farmers’ Social Security Benefit Scheme
- Agricultural Insurance
- Administration of the National Freedom from Hunger Campaign Board Act
- Paddy Land Tenure
• Re-development and maintenance of Mahaweli Areas Administration and operation of Mahaweli Authority Act

a. Departments

8. MADAS is responsible for the three following operational departments:

i. Department of Agriculture (DOA)

9. The DOA, which is headquartered in Kandy, with regional departments located in Western, Southern, Central, Uva, Sabragamuwa, North Central, North East and North West Provinces. The DOA has the following main functions, (i) Research and extension; (ii) seed and planting material production; and regulatory services, viz, plant quarantine, soil conservation and registration of pesticides.

10. The DOA's organization chart is shown below:

11. The DOA comprises the following institutes and centers devoted to specific agricultural crops, seeds and planting materials, seed certification and plant protection

Horticulture:

(i) Horticultural Crop Research and Development Institute (HORDI)
(ii) Fruit Crops Research and Development Centre (FCRDC)
(iii) Natural Resource Management Centre (NRMC)
(iv) Regional Agricultural Research and Development Centre (RARDCs) Agriculture Research Station- Sita-Eliya (ARS)
(v) Virus Indexing Centre (VIC)
(vi) Food Research Unit (FRU)

Rice:

(i) Rice Research and Development Institute (RRDI)
(ii) Regional Agriculture Research and Development Centre (RARDC)
(iii) Rice Research Stations (RRS)
(iv) Agriculture Research Stations (ARS)

Field crops:

(i) Field Crops Research and Development Institute (FCRDI)
(ii) Grain Legumes & Oil crops Research & Development Centre, Angunakolapallessa
(iii) Regional Agriculture Research and Development Centre (RARDCs)
(iv) Farm Machinery Research Centre (FMRC)
(v) Agriculture Research Station (ARS)

38 Source: DOA website, updated May / August 2007, and discussions with DOA Staff
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(vi) Agriculture Research Unit (ARU)
(vii) Seed Certification and Plant Protection

Seed certification and plant protection:

(i) Seed Certification and Plant Protection Centre (SCPPC)
(ii) Seed Certification Centre (SCS)
(iii) Plant Protection Centre (PPS)
(iv) Plant Genetic Resources Centre (PGRC)
(v) Office of the Registrar of Pesticides (ORP)
(vi) National Plant Quarantine Service (NPQS)

Seed and planting material:

(i) Seed and Planting Material Development Centre (SPMDC)
(ii) FARMS

12. Additionally, the DOA has centers covering research and extension which include, (i) in service training units; (ii) district training centers; (iii) schools of agriculture; (iv) a fertilizer unit; a farm mechanization center; Farm women agricultural extension; (vi) mobile agriculture technical support services

13. The Agribusiness Enterprise Development and Information Service (AgEDIS): The DOA has established the Agro Enterprise Development and Information Service (AgEDIS) as a "one stop shop" under the Extension and Training Centre. The role of AgEDIS is stated as to provide technical assistance in planning and implementation of agro enterprises in the Country and to promote Public and Private Partnership for agro enterprises development for agricultural prosperity in Sri Lanka.

ii. Department of Export Agriculture (DEA)

14. The DEA, headquartered in Kandy, has a mandate to develop export agricultural crops (EAC). EAC are officially defined, under an Act of Parliament No. 46 of January 10, 1992, as being those crops that are perennial in nature other than tea, Rubber, Coconut & Cashew, and where over 50% of their annual production is exported are considered under EAC. Under this classification the DEA’s main emphasis is on crops such as pepper, cinnamon, cardamom, clove, nutmeg, coffee, cocoa, citronella, lemon grass, vanilla, betel, arecanut and kitul. The main activities of the DEA include improving production, productivity, and quality and product diversity of EAC with the specific objective of enhancing foreign exchange earnings from the sector.

15. DEA, headed by the Director, consists of four major divisions, as indicated in the departmental organigram below, with following members of staff:

16. DD-Deputy Director, CA-Chief Accountant, AC-Accountant SAD(R)-Senior Asst. Director(Research), SADT-Senior Asst. Director(Technical), ROO-Research Officer, AD-Asst. Director, ZAD-Zonal Asst. Director, ADO-Administrative Officer, STN-Statistician, RAA-Research Assistant, RDA-Research Development Asst., FSA-Farm Service Asst, CRS-Central Research Station, MC-Mass Communication, PHASU-Post Harvest Advisory Services Unit, PLASU-Plantation Advisory Services Unit, PMU-Progress Monitoring, PP-Plant protection, RSS-Research Sub Station, Trn.-Training *-Proposed for closure ERU-Economic Research Unit.
iii. Department of Agrarian Development (DAD)

17. Department of Agrarian Development (DAD) is located in Colombo and headed by the Commissioner General of Agrarian Development. Key functions of the DAD are, formulation and implementation of general agrarian development policies and objectives, recruitment and administration of related human resources, implementation of the Agrarian Development Act No.46 of 2000 and the exercise of departmental powers pertaining thereto, construction and supervision of Agrarian Services Centers, establishment and supervision of Agrarian Development Committees, establishment, registration and ensuring the sustainability of farmer organizations under the provisions of the Agrarian Development Act and the training of farmer organization members, ensuring the efficient functioning of the Boards of Review and Inquiry Officers appointed by the Judicial Services Commission to inquire into tenant cultivator disputes, implementation of the Farmers’ Credit Scheme and the recovery of loans and introduction and implementation of Water Management Systems.

b. Statutory institutions

18. MADAS is also responsible for the following statutory bodies, some of which, as indicated, are moribund or in active at present.

(i) National Agricultural Diversification and Settlement Authority (Hadabima)
(ii) National Fertilizer Secretariat
(iii) Sri Lanka Council for Agricultural Research Policy (CARP)
(iv) Hector KobbeKaduwa Agrarian Research and Training Institute
(v) Institute of Post Harvest Technology
(vi) Janatha Fertilizer Enterprise Ltd.
(vii) Ceylon Fertilizer Co. Ltd
(viii) Colombo Commercial Fertilizer Company Ltd
(ix) Thamankuda Agro Fertilizer Company
(x) Agricultural and Agrarian Insurance Board
(xi) Spices and Allied Products Marketing Board
(xii) Mahaweli Authority of Sri Lanka and Agencies created under the Mahaweli Authority Act.

19. The following extant statutory bodies are moribund and non-active, (i) the Vegetable Development Board; (ii) the Fruit Development Board; (iii) Sri Lanka National Freedom from Hunger Campaign Board; and (iv) the Agricultural Product Marketing Authority. A former statutory body, viz, the Pulses and Grain Research and Production Authority, has been closed.

2. Ministry of Livestock Development (MLD)

20. The MLD has primary responsibility for the livestock sector with its headquarters covering policy and planning located in Colombo and a Department of Animal Production and Health (DAPH) located at Peradeniya, Kandy. There are regional DAPH’s located in each Province with responsibility for the implementation of programs and the provision of field services, particularly veterinary, artificial insemination and extension.

Organogram of the Department Animal Production and Health

21. In addition to the Ministries and Departments mentioned above, the following also have important roles in the agriculture/agribusiness sector and the implementation of projects; (i) Ministry of Sports and Public Recreation (Department of Botanical Gardens); (ii) Ministry of Enterprise Development and Investment Promotion (BOI); (iii) Ministry of Export Development and International Trade (The Export Development Board); (iv) Ministry of Plantation Industries; (v) Ministry of Indigenous Medicine; (vi) Ministry of Finance and Planning (National Planning Department, and External Resources Department).
C. Private sector

1. The National Agribusiness Council (NAC)

a. Background and membership

22. The NAC, established in June 2000, is the successor to the USAID funded Agro Enterprises Project (AgEnt). Following the closure of AgEnt, the NAC was established to continue the work carried out by AgEnt. The remaining funds of the AgEnt were transferred to NAC and became its seed capital of NAC has the aim of being the prime driving force in the development of the national agribusiness sector by acting as the apex representative body for the sector. The NAC’s membership consists of the following associations representing the full spectrum of Sri Lanka’s agribusiness sector:

(i) All Island Poultry Association
(ii) Ceylon Coir Fibre Export Association
(iii) Coconut Growers Association of Sri Lanka
(iv) Crop Life Sri Lanka
(v) Dairy Development Milk Procurement & Processor Association (DDMPPA)
(vi) Floriculture Producers and Exporters Association
(vii) National Horticultural Association of Sri Lanka (apparently non operative)
(viii) Planters Association of Ceylon
(ix) Protected Agricultural Entrepreneur's Association
(x) Seed Producers Association of Sri Lanka
(xi) Seedmen’s Association of Sri Lanka
(xii) Spice Council
(xiii) Spices & Allied Products Producers’ and Traders’ Association (SAPPTA)
(xiv) Sri Lanka Association of Animal Production (SLAAP)
(xv) Sri Lanka Coir & Allied Products Manufacturers Association (SLACMA)
(xvi) Sri Lanka Food Processors Association
(xvii) Sri Lanka Fruits & Vegetable Producers, Processors and Exporters Association
(xviii) Vanilla Growers Association

b. Objectives

23. The NAC’s main overall aim is to create an enabling environment for a viable and profitable agribusiness sector in Sri Lanka, with the following specific objectives

(i) To fulfill the need for a private sector apex body to coordinate and strengthen agribusiness associations.
(ii) To engage the government in policy, regulatory and institutional reform through a regular dialogue
(iii) To offer technical assistance and essential services to NAC Agribusiness Associations and their members to improve international competitiveness.
(iv) To encourage cluster development initiatives and strategies and achieve economies of scale, eliminate duplication of services and facilities and broaden the role of all participants in the agribusiness sector.
(v) To provide agro-enterprise consulting services, business information and planning, market linkages etc. to any agribusiness enterprise in the country.
(vi) To establish an organization capable of attracting outside sources for funding for development efforts to improve agribusiness growth in Sri Lanka.
(vii) To build public-private sector partnerships through seminars and workshops, exchange of information, and collaborative research.
(viii) To provide the business information center with the most modern sources of agribusiness information in the country for the benefit of all involved to develop the agribusiness sector in Sri Lanka.
(ix) To act as a collaborator to funding and donor agencies, in facilitating agribusiness development.
Appendix 2

ADB TA 4800 SRI: PPTA for the Agribusiness Development Project
Draft Final Report

24. The NAC had limited involvement as a collaborative institution under the SPCDP. Further details are given in Section VII B b.

ii. Current initiatives

(i) The Federation of Farmer’s Council of Sri Lanka (FFCSL): This initiative, which is still in its embryonic stage aims to create an alternative structure to enable the private sector to connect meaningfully with rural farming communities. The FFCSL was officially launched at the National Agri-business Forum in Colombo in July 2007. The initiative aims to involve 20 district councils, and farmers’ societies representing some 2 million farmers, and link them with the national corporate sector and the repositioned informal sector. The potential of this interesting initiative will be further investigated in Phase 2.

(ii) Agri-Foods Supply Chain Development Project (ASDEP)

(iii) Rural Agro-Enterprise Development Project (RADEP)

(iv) Market Access through Competitive Branding (MAC)

25. The status of initiatives 2, 3 and 4 above were unknown at the time of preparing the report. Further information will be collected in Phase 2.

d. The Ceylon Chamber of Commerce (CCC)

26. The CCC founded 1839, is an independent, non-profit and non-political voluntary body and is comprised of Confederation of Regional and Sectoral Chambers of Commerce and Industry, Trade Associations, Employer Organizations and Bilateral Business Councils.

27. It is the focal point for business contacts both locally and abroad and has specialized committees, affiliated associations and bilateral business councils.

28. The Chamber membership ranging from the sole proprietors to the multinational companies, encompasses virtually every sphere of economic activity in Sri Lanka including agribusiness, industry, import, export, banking, hire-purchase, leasing, tourism, shipping, engineering, mining, consultancy services, wholesale, retail, financial services legal and other services.

29. The Chamber functions as a spokesman of the business sector and its members serve on various institutions and committees set up by the Government as well as the private sector, either as Chamber nominees or in their personal capacities.

30. The Chamber is mainly funded by the membership subscriptions and by what it charges for the various technical services it provides; The Chamber receives no financial assistance from the Government.

2. The National Chamber of Commerce of Sri Lanka

31. The National Chamber of Commerce of Sri Lanka (NCCSL) was founded in 1948 soon after Sri Lanka gained independence from British colonial rule, primarily to establish a forum for the Sri Lankan business community. The foremost objective of the Chamber at that time was the Ceylonisation of trade, as the policy climate was not quite conducive to national interests. The Founder Members comprised of all leading ethnic groups, Sinhalese, Tamils, Muslims, and Burgher. In 1951, the Chamber was formally incorporated as a Company Limited.

32. Having achieved its foremost objective in the mid fifties, the Chamber turned to address the problems faced by members.

33. During the last five decades the Chamber had emerged as the leading trade and industrial promotion body in the island. The Chamber is the focal point for member companies representing
virtually the entire spectrum of industry, trade and commerce in Sri Lanka. Among them the Chamber counts some of the most vibrant and progressive business houses in the country.

3. The Federation of Chambers of Commerce & Industry of Sri Lanka (FCCISL)

34. The FCCISL is an umbrella organization of the Sri Lankan private sector. FCCISL plays a key role in promoting business and industry in the country. It provides information, advisory, consultative, promotional and representative services to business and government and organizes various business promotional events and activities on a regular basis.

35. Established in 1973 with 7 member bodies, FCCISL today has a membership of over 40 trade and industrial chambers and commodity/sectoral associations spread throughout the country. These bodies collectively represent over 11,000 business entities of all legal forms. With the private sector being identified as the ‘engine of economic growth’, the role of FCCISL and its constituent member bodies has been widespread, reaching almost every major economic activity. FCCISL plays a major role in articulating the macro policies necessary for overall private sector development and progress while the affiliated trade chambers and associations take up regional and sectoral issues.
APPENDIX 3
DETAIL OF PROPOSED INTERVENTION PROGRAMS AND SUB PROJECTS

A. Horticulture Programs

1. HORDI Support Program For Targeted Research, Information Development and Extension ($1,228,000)

   1. Undertake, as a first priority, a complete review of then R&D&E&I needs of the priority horticultural crops defined for agribusiness development. Costs to cover a series of meetings and travel of participants over a 3 month period are estimated at USD 8,000.

   The review discussions must include consultation with farmers and the involvement of researchers, other institutes such as ITI and Universities, extension, information technology personnel, and agribusiness including producers, processors and exporters. The review must produce a complete report and framework for each crop and the outcome must define research topics as well as actions involving technology development as well as preparation of GAP, GMP and Technology Manuals, CDROMS, promotional awareness literature, film clips etc.

   The essential approach for such a review must be farm systems based, especially where systems are to be diversified or new crops introduced. This is because of both socio-economic as well long and short term sustainability and environmental implications. Currently, none of the existing R&D&E programs in agriculture in Sri Lanka are taking into account the whole farm systems approach.

   Major areas of research at HORDI are crop improvement, development of improved agronomic practices, soil and water management practices, pests and disease management and pre and post-harvest technologies, processing etc. These areas will cover most constraints and opportunities except for processing and new product development R&D, which is covered by the Food Research Institute of HORDI and ITI.

   The review will be set up with the aid of an International Tropical Fruits Specialist and an International Vegetable Specialist. The outcome framework for such a R&D review is given for a Pakistan example for a mango R&D program example, which includes monitoring, is in Appendix 1. This framework summarizes the review findings and R&D&E&I needs. In addition a checklist framework for Technical Interventions Needed for Fruits and Cross Cutting Technologies are also included in Appendix 2, and for Vegetables in Appendix 3, to assist the review process.

2. Production of technical manuals on GAP and GMP for all priority fruit and vegetable crops and key cross cutting technologies such as protected cultivation, micro-irrigation, etc. -Est. Cost USD 120,000.

   As noted earlier HORDI will need to play a much larger role in technology development and transfer with a linking of key researchers, extension officers, information technology specialists with farmers, processors and agribusiness. Cooperative production of good GAP and GMP manuals is essential along with linking in with extension officer and farmer training which also involves agribusiness services. Currently, many farm production guides and manuals including those on supporting technologies as well as crop manuals are 10 to 25 years out of date.

3. Updating of library publications, and CDROMS etc.for all key Horticultural Centres and Information officers—Est. cost USD 25,000.

4. Collection and introduction of key varieties and rootstocks of priority fruit crops—Est. cost USD 25,000.

5. A new guideline for fruit tree cultivar and rootstock release should be enacted that provides for immediate release of new cultivars, with recipients signing a disclaimer which says the plant material is given in good faith by DOA but there are no guarantees as to its disease or pest status and

39 Appendixes available on request
authenticity as a named variety. If such a policy is not adopted then it is a waste of time procuring the materials in the first place as they will not be released for 10 years or more after trials, if they survive in HORDI mother tree collections. Commercial horticulture cannot wait for such delays!

Furthermore, private sector post quarantine enclosed greenhouses should be approved for new plant introduction use under a prescribed rigid inspection program.

6. Operational funds for expendable items (polybags, fertilizers, hand tools, potting media etc.,) for multiplication of fruit tree cultivars for immediate release after introduction to private nurseries and key centers for further multiplication for commercial use—Est. cost USD 60,000.

7. Support to the establishment and maintenance of fruit tree mother orchards of all new fruit tree varieties in the appropriate centers based on crop climatic needs. Such orchards should be securely fenced and have micro-irrigation available—Est. cost USD 60,000.

Test new fruit tree cultivars in appropriate regions in adaption trials over a 6 year period—Est. cost USD 150,000.

Introduce new appropriate IPM technologies and cheap protected screenhouse production of upcountry priority high value temperate vegetables to give better pest and disease control with reduced pesticide use and reduced revenues. Equipment and operational costs over 6 years—Est. cost USD 80,000.

N.B. The IPM program will be supported by International IPM Specialist TA-see below.

Develop pest and disease control strategies and actions for field grown priority vegetables in the up-country and dry zone areas. Equipment and operational costs over 6 years—Est. cost USD 70,000.

Undertake testing of new vegetable varieties in up-country and dry zone to evaluate performance, quality and pest and disease tolerance—Est. cost USD 50,000.

Provide operational funding support to the Food Research Institute of HORDI for development of new fruit and vegetable processed products—Est. cost USD 60,000.

N.B. Other funding will be available to public and private sector researchers and institutes via the Horticulture RD& Technology Development Grants Fund, for production, post harvest and processing research as defined in the R&D review of priority fruits and vegetables and technologies coordinated by HORDI (see Activity 1 above).

Capacity Building TA. It is recommended that funds be allocated for limited visits to other counties by key scientists from the public sector accompanied by 2 to 3 persons from key private sector enterprises to view modern production, post-harvest handling and processing technologies used in priority fruit and vegetable crops. Some funds should also be expended to allow visits to appropriate international technical/scientific meetings on fruit and vegetable crops—Est. cost USD 80,000.

International TA—Est. cost USD 440,000.

The International Horticulture Specialists below will support both HORDI and the full R&D&I&E&T approach for commercial agribusiness development of priority fruits and vegetables.

<table>
<thead>
<tr>
<th>Position</th>
<th>Duration</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Tropical Fruit R&amp;D Specialist/Adviser</td>
<td>6 months over 6 years</td>
<td>USD 132,000</td>
</tr>
<tr>
<td>International Vegetable R&amp;D Specialist/Adviser</td>
<td>4 months over 6 years</td>
<td>USD 88,000</td>
</tr>
<tr>
<td>International Vegetable IPM Specialist/Adviser</td>
<td>4 months over 6 years</td>
<td>USD 88,000</td>
</tr>
<tr>
<td>International Fruit and Vegetable Processing Specialist</td>
<td>6 months over 6 years</td>
<td>USD 132,000</td>
</tr>
</tbody>
</table>
2. **DOA Support Program On Horticulture ICT (Information Communication and Technology) - ($121,500)**

**Strategy, concept and overall rationale**

Major changes in trade policies, withdrawing of extension workers from extension work and the devolution of extension to provincial councils has had a major negative impact on extension in Sri Lanka. To meet the urgent need to communicate information to and from researchers to farmers and other end users there is an urgent need for Information Communication Technology (ICT) strategies to meet the information needs of farmers, entrepreneurs, processors and the public in general.

The Audio-Visual (AV) Unit of Department of Agriculture has already developed a Cyber Extension Project and will expand this ICT facility to a stage where it will service 100 Agrarian Service Centers throughout the country. To date it services 45 Centers, with Cyber Extension Units (CEU). The CEU’s have CDMA telecommunication to the internet. The AV centre provides for:

- One to one communication with farmers and agriculturalists by email.
- Exchange of digital visuals between farms and agriculturalists.
- Free video conferencing with toll free telephone advice.
- Establishing a farmer database on products and prices and markets.
- Access to international agricultural information by internet links to info sources.

In addition the AV Unit provides services to institutes such as HORDI on desk-top publishing, of manuals on crops, practices etc., ready for printing and makes videos and produces CDROMS etc., as well as publicizing agriculture through TV programs, 2 /week, and fairs, exhibitions etc.

**Impact, outcome, benefits and justification**

To fully develop and extend the technology messages generated by the horticultural researchers, working with key extension personnel it is essential that strong links be developed between the AV Unit an via them the CEUs and HORDI, on crops and crosscutting technologies to urgently get information messages out to farmers, entrepreneurs, processors and the public in general.

The impact of Cyber extension will be far quicker and will be a much cheaper way to transfer up-to-date information to end users, which should result in a far quicker flow on of benefits, especially when combined with targeted extension training.

Thus, funding for ICT development and technology transfer training via CEUs for public and private sector, is fully justified by the project to make full use of these extension and training facility links for targeted crops and crosscutting technology information transfer.

**Activities and estimated costs—USD 121,500**

**Preparation of:**

(i) Video clips on key horticultural crops and crosscutting technologies such as poly-tunnel production, micro-irrigation etc.
(ii) Preparation of key interactive CDROMS for extension officers and posting on the Cyber Extension Unit network.
(iii) Desk-topping to print ready stage of GAP and GMP Manuals for 30 horticultural crops in both hard copy and CDROM versions.
(iv) Desk-topping of cross-cutting technologies such as poly-tunnel production, micro-irrigation etc. for hard copy manuals and CDROMS.
(v) Posting of key technical information on targeted horticultural crops and technologies on the Cyber Extension Unit network.

**Costs to be supported are:**

- Operational support costs and consumables—USD 60,000.
1 X Complete Video Camera Unit and Editing Facility—USD 35,000.
5 x Multimedia Computers—USD 10,000.
5 x Backup external disk drives—USD 1,500.
5 X Laser color printers—USD 8,000.
1 x Color scanner for color transparencies—USD 4,000.
2 x Flatbed color scanners—USD 3,000

3. PPP Support Program On Targeted Adaptive R&D ($1,000,000)

Strategy, concept and overall rationale

As discussed at the Horticulture Agribusiness Development Project Planning Meeting for key stakeholders the concept proposed is that an R&D& Technology fund be set up at the outset of the new project. This fund will support both private and public sector R&D and Technology development in the priority fruit and vegetable crops and technologies needed for commercial agribusiness development.

The rationale is that the Horticulture Program Fund will support adaptive/applied research (not basic research) directly aimed at solving real problems preventing the crop from realizing its full commercial potential. The fund will also support proposals that aim at developing new productive opportunities for assisting such commercialization, such as new commercial product development, key marketing studies etc. All results must meet the criteria of having a defined practical outcome, applicable in the farmer’s fields or processors operations etc. Pursuit of academic themes will not qualify for funding.

The funding concept is in line with the strategies proposed earlier for the overall proposed R&D&E&T support to the horticultural sector.

Proposals must meet the strict guidelines to be provided and must be a part of the overall reviewed R&D programs for the priority crops.

Proposals may be submitted from private and public sector agencies, institutes, universities that have credible, qualified, successful researchers.

R&D progress will be strictly monitored and if milestones are not met on performance and monitoring, funding will be immediately suspended or discontinued.

Activities and estimated costs—USD 1 million

The way in which the fund is to be set up as a non-profit organization is still under discussion, but both private and public sector people will be involved in the consideration of proposals and the administration of the fund including monitoring and evaluation, including impact assessment.

B. Spices and Allied Crops Programs

1. DEA Support Program Department on Targeted R&D and Outreach – ($645,000)

1. Arrange for permission to import of at least six (6) high quality Arabica coffee varieties, preferably excluding all Catimors unless sourced from exceptional cupping Catimors. Make arrangements for importation of the targeted varieties from Thailand, Lao, India and Indonesia and Australia if possible, including collection costs and travel. N.B. Allow for introduction of up to 6 varieties of cacao as well. Cost—USD 10,000.

2. Establish 4 regional adaption trials at 1200 m. a.s.l. or more, for up to 8 varieties of Arabica coffee including existing S9 and HDT and fund all trial maintenance operations, harvesting etc., for 6 years, (All trials must be established with permanent shade and will serve as demonstration plots for farmer familiarization and training. Cost—USD 30,000.

3. Fully equip a 6m x 10 coffee quality laboratory with sample and mini-commercial roasting facilities and sample huller, and separate 6 x 8 m cupping lab. Cost—USD 55,000.
4. Fully equip a wet processing facility using 2 x Vietnamese VINACAFE 500 kg/hr cherry pulper demucliagers plus standard 500 kg/hr motorized and hand cherry pulpers; build a 30 x 10 m concrete drying patio with drying trays and a 10 x 10 m hulling/storage area with a small commercial parchment huller. Cost—USD 25,000.

5. Undertake hands on training of DEA research and extension officers, pilot estate staff and key private sector persons in wet processing, drying, storage methods, hulling, roasting, quality testing and grading, cup tasting, packaging and test marketing. Training to be provided by International Coffee Specialist TA. Cost—USD 18,000 over 6 years for local cost in training, excludes International Specialist’s TA which is separately listed below.

6. Early in the project undertake an assessment of coffee quality and coffee cupping quality, using a taste panel to assess Arabica varieties across a range of high altitude areas where coffee is currently produced in Sri Lanka. Distribute superior samples to key coffee buyers around the world for independent cupping assessment. All coffee sourced to be wet and dry processed, dried and roasted in a standard way. Repeat over 2 years. Cost—USD 5,000.

7. Undertake a complete review of coffee R&D to develop a support program for commercial coffee development in Sri Lanka. (Use Appendix I framework for developing the program), Undertake essential R&D training of DEA staff to support the program. The review to be done with International TA assistance, costed separately below. Local costs USD 3,000.

8. Provide funding for key equipment purchases and operational funds needed for work on key aspects of coffee cultivation including, selection, pest and disease control, nutrition ground covers etc. Cost—USD 58,000

9. Prepare a complete GAP and GMP coffee manual, including all production, wet and dry processing and quality testing and cupping methodologies along with post harvest handling, and a complete guide to costs and returns to establish and run a coffee plantation. The preparation and writing of the manual will be done with International TA assistance, costed separately below. Costs include data collection, photos, editing, desk-topping and printing of the manual and production of CDROMS. Cost—$ 20,000.

10. Undertake a series of training events with the extension staff of DEA and the provincial extension staff over the 6 year period; 24 events for 20 people. Cost—USD 10,000.


12. Undertake a series of farmer awareness and training exercises and field days; 24 events for up to 30 people over the 6 year period. Cost—USD 15,000.

**International Coffee Specialists TA—Est. cost USD 198,000**

The International coffee specialists below will support both DEA and the establishment and running of the Pilot Nucleus Estate.

- International coffee processing specialist/adviser: 6 months over 6 years—USD132,000.
- International coffee breeder/agronomist: 3 months over 6 years—USD 66,000.
- International coffee R&D specialist: 4 months over 6 years—USD 88,000.

**R&D technology development grants for Arabica coffee—Est. cost USD 100,000**

R&D technology development grants for targeted priority coffee issues including market development, outside of DEA will be made available by the project for public and private sector proposals on the same basis as Horticulture Grants.
2. **Spice Farmer Organization Program**

A program already being run by the DEA to group smallholders into Producer Groups – Community Based Organizations – and this program needs to be continued and expanded. Without developing this structure to channel services into, and production out of the smallholder sector it is considered that the smallholder sector will continue to under-perform. The Groups provide a minimum size of production unit that can support the efficient delivery of extension and training and other services, that can attract and support the supply of inputs by the trade, and has a scale of output that enables production to be marketed directly to a final buyer so providing a base for vertical integration in the marketing chain. Groups will be predominately formed by growers who are motivated to improve their production and earnings, and will be receptive to advice and new technology. This should result in rapid and significant development of new plantings and the rehabilitation of existing plantings to improve productivity. The priority crops for the formation of Producer Groups are cinnamon and pepper, but the Groups are not product specific. There need be no fixed minimum or maximum size to a group (crop area or number of members), but an area of the core crop in the range 20 to 50 ha would ensure a viable unit.

   **a. Requirements**

The key requirements are the delivery of extension and training services for organization and capacity building support for the development and functioning of these Producer Groups. In their basic minimum form these Groups are not commercial operations – they are simply a community grouping that allows individual producers to pool their requirements and outputs in a cooperative way. Some will certainly develop into independent commercial organizations and will require business and other related training. Groups will also certainly become the focus for other commercial operations. DEA is currently responsible for the development of these Producer Groups, and it requires support and training to develop the increased capacity and skills to develop this program. Private sector organizations could also be contracted to provide training and capacity building services to these Groups – the service to be provided can be closely defined, the input is required over a defined time, and the results can be assessed against pre-defined criteria, making it well suited to provision by independent contractors.

Over the period of the project the objective must be to involve a substantial part of the smallholder production sector in Producer Groups. On the basis of the average crop area of the core crop per group being 35 ha, a total crop area of around 70,000 ha, and an objective to have at least 40% of the sector structured into Producer Groups, a program to develop and support around 800 groups over the project period is envisaged (with a possible average of 70 producers per group giving a total of around 56,000 producers involved under this program).

The basic training package proposed would be a total of 5 days training/group (spread over a minimum of 5 separate training sessions). At an average cost of US$50/session/group, the total training budget required is US$200,000.

The target for each group would be to expand and/or replant 30% of the core crop area over the period of the project, resulting in a total of around 8,400 ha of new/improved plantings (divided primarily between pepper and cinnamon). The credit requirement to support these new plantings, at an average of US$1,000/ha, is around US$8.4 million.

   **b. Results and benefits**

The result will be a clear structure in the smallholder sector that will allow private sector and institutional service providers, and buyers to access commercial sized production units and deliver services effectively and efficiently. The key benefits will be:

- Extension and training services to promote new plantings, to increase productivity, to improve quality and develop marketing can be efficiently delivered to selected receptive, motivated producers;
- The groupings should deliver increased rate of new crop plantings, and increases in productivity in existing plantings, both combining to give significant increase in crop production volumes
The scale of production under the group provides a viable unit to support changes in post harvest practices to improve product quality, and to market the product to a buyer who wants and will pay for the higher quality. These Groups will deliver the improved spice quality required.

The scale of production and output makes the Group of interest to processors/exporters that are trying to develop vertically integrated businesses, and will expand the base for this key industry development.

3. Estate Spice Development Program

The industry sees strategic benefits from a greater involvement of the estate sector in spice production. The estate sector could deliver rapid expansion in the cultivated area, it will focus on the production of a high quality product, and it can both act as a demonstration and develop service provision to the surrounding smallholder producers in order to develop the volume and quality of supply available for purchase.

a. Requirements

The key requirements to stimulate this development are based around: the further development and improvement of the technical crop production extension services offered by the DEA’s PLASU unit; training programs for estate staff to address both technical needs and their attitude to spice crop; the development of DEA’s intercropping research program on coconuts and rubber coupled with development of a contract research program; access to credit to finance new plantings; and the positive consideration of requests for the allocation of new land areas for spice crop cultivation.

The estate sector maintains that one of the barriers to its participation in the spice sector is its lack of knowledge of the requirements for crop cultivation. DEA’s PLASU unit was set up to address this issue. The further development of the capability of this unit, coupled with the development of training programs for estate managers and field staff on the production, processing and marketing of spices to change attitudes to spices – to help position them as valuable and profitable estate crops – will directly address 2 of the key constraints articulated by the estate sector. The project will address the needs of the PLASU unit under the capacity building component for DEA. Provision for 2 training programs a year for estate managers and field staff is made, at US$1,000/training, a total of US$12,000 over the project period.

The development of new spice plantings as intercrops to existing estate plantings of coconuts and rubber offers immediate potential for the substantial development of new crop areas. Research into these intercropping systems – initiated under the Second Perennial Crops Development Program – needs to be continued, and should become an established part of DEA’s crop research program. The estate sector needs to see that a research program is being developed to support its investments, and this should be supported by a contract research program during the period of the project to allow the estate sector direct input into the research program. The development of DEA’s intercropping research program is dealt under the capacity building component for DEA. A grant allocation of US$50,000 is proposed to support a contract research program to address immediate issues raised by estates.

Current Government policies allow the release of new land areas, but in practice this is restricted. Whilst there are some available lands in the estate sector, and areas of degraded land, the priority must be to establish spice plantings in productive lands that are best suited to spice production, and the provision of new land areas for estate cultivation particularly in the core cinnamon production areas should be made.

Whilst the estate sector has established access to credit in the banking system, they give priority to their core estate crops – tea, rubber, coconut – for the funds available. If an envelope of credit tied to the spice crops was made available, this would stimulate development with some companies. An initial target to establish a further 4,000 ha in the estate sector, at an average establishment cost of US$1,000 ha would require a credit envelope of US$4 million.
b. Results and benefits

The results of this program should be a substantial increase in the involvement of the estate sector in spice crop production. The key benefits of this would be:

- The rapid establishment of significant areas of new high quality high productive plantings of cinnamon and pepper. It would be quite feasible to target 2,000 to 3,000 ha of new plantings of both cinnamon and pepper if intercropping was successfully taken up and new land areas made available;
- New large volume sources of high quality spice crops, that can be marketed directly to final buyers (processors/exporters);
- Production bases for the development of vertically integrated operations;
- Development of extension and training services to smallholders in catchment areas of estates to boost their production and quality, and provision of markets for their products, increasing production, productivity and quality of smallholder output.

4. Cinnamon and Pepper Primary Processing Centers

Many of the problems of poor product quality in the basic dried spice result from poor primary processing facilities and practices. Product is poorly dried in the open on the ground, resulting in high levels of moisture, mould, microbial contamination, infestation, extraneous matter etc. This is compounded by lack of facilities for grading and sorting, poor storage and lack of facilities for fumigation to control pest infestations. The industry has already identified the problem as a priority issue, and is promoting the development and uptake of primary processing centers by producers and producer groups – a multipurpose center with the core focus on pepper, and a specific unit for cinnamon. The cinnamon processing center, with appropriate practices and standards can meet the requirements for GMP and HACCP certification. A training center is planned to build up the size and capability of the cinnamon processing workforce and provide trained staff for the new primary processing centers. These programs directly address a critical constraint to the production of high quality products and should be continued and expanded substantially. In addition to the highly specified primary processing center that the cinnamon industry is promoting, a simpler peeling center, providing the core facilities of a peeling room with peeling stations, tables for quill manufacture, and slow drying facilities, should also be promoted as it will be of direct benefit to small producers and producer groups, whereas the high specification units are targeted at plantation owners and exporters.

a. Requirements

There are 5 key requirements: the specification of modular packages of core equipment and facilities for the general spice (pepper) unit, and the 2 levels of cinnamon unit and a grant and credit package for the investment required, with the grant element equivalent to 25% of the cost of approved purpose built facilities and new equipment purchased; a training package for the operation of the units; a grant program for the costs of preparation for GMP and HACCP certification for the cinnamon unit; a marketing assistance program to ensure that those who invest in these units secure commercial benefits; establishment of further cinnamon training centers in all main cinnamon production areas.

The current primary processing centers have not yet been reduced to modular designs. Once this is done they can be promoted as a simple fixed price standard capacity unit. For the general spice (pepper) unit, the key elements are the drier, and the ability to clear and grade material. It is likely that a deep bed drier will give greater capacity and lower operating unit costs than current cabinet driers used. DEA, working with other relevant institutions should finalize the specification of a modular package for the pepper unit and prepare operational costings. The Spice Council should prepare modular packages for both proposed cinnamon units.

Uptake of these primary processing centers should be promoted with a standard credit and grant package, a training package for the operation of the units, and a marketing assistance program to ensure that investors and the wider industry benefit from the investment. DEA can provide technical content for the training programs, but these can be implemented by private sector providers. In addition, a grant program should be made available for the costs of certifications for the cinnamon processing center.
It is proposed that the establishment of:

- 20 cinnamon primary processing units be supported, with each unit costed at a total of US$50,000, and a grant element of 25%, total grant requirement will be US$250,000 and total credit requirement up to US$750,000;
- 50 cinnamon peeling centers be supported, with each unit costed at a total of US$20,000 and a grant element of 25%, total grant requirement will be US$250,000 and total credit requirement up to US$750,000;
- 50 pepper/general primary processing centers be supported with each unit costed at a total of US$10,000, and a grant element of 25%, total grant requirement will be US$125,000 and total credit requirement up to US$375,000.

A further 4 cinnamon training centers should be established (in addition to the one currently planned) to give 2 centers in each of Galle and Matara, and one in Ratnapura District. Establishment of the training centers should continue to be done through the Spice Council who will be responsible for their on-going management. The project should provide a grant for the construction cost, with the industry donating the land. The project will make a grant available to provide for training costs of 120 people per training center per year (50% capacity) for each center for 3 years. Estate owners will be expected to send their staff for training at their own expense. The Spice Council will be responsible for providing the training programs from the fees received by people attending.

The cost of each training center is budgeted at US$50,000. US$200,000 is required for the 4 centers. The cost of training one person over a 3 month training course is budgeted at US$300. The project requirement to train a total of 360 persons requires a provision of US$108,000.

b. Results and benefits

The program will provide the capability for the production sector to deliver a high quality product and will have a major impact on the farm gate quality of dried spices and provide exporters with the quality of material to enter higher standard higher priced markets. It will result in significant investment in commercial primary processing facilities in the producing areas generating significant added value, increase the skills of producers opening opportunities for direct linkage of production operations with processors/exporters. The key benefits will be:

- Establishment of significant capacity of high quality primary processing facilities
- Development of significant volume supply from production areas of high quality dried pepper and other spices;
- Development of significant volume supply from production areas of high quality, GMP & HACCP certified cinnamon quills;
- Development of significant volume supply from production areas of improved quality cinnamon quills;
- Increase in number of trained peelers for cinnamon industry, and skilled workers for primary processing centers.

5. Exporter Quality Management Program

The spice export sector is poorly equipped for the management of product quality. The typical export operation is based on reception and sale of product without significant further processing. Few companies have any significant mechanized capacity to allow them to re-dry, clean, sort, and grade material to rectify quality problems and meet international product standards. Facilities for fumigation and product storage are basic. Few companies have in-house laboratories capable of providing a routine QC/QA function for the purchase and preparation of material for export. Companies can use the services of commercial laboratories but in practice they only use outside services when absolutely necessary and not for routine in-house requirements. Product is purchased on visual inspection rather than analytical results. Product is sold on the basis of representative sample (buyers assessment) rather than the exporters guarantee of minimum analytical criteria. The sector can only improve the

---

40 Mechanisation is not relevant to cinnamon where product is in quills, but it is required for pepper and cloves where the scale of throughput of the main export companies is beyond the capacity of manual systems.
quality of its export product and develop exports to higher priced markets demanding higher standards if the export sector has the capability to manage product quality. In addition to quality of product, companies have to address the quality of their management and administrative processes to meet the needs of the new markets.

a. Requirements

The 3 key requirements for the development of Exporter Quality Management program are: access to credit for investments in primary processing equipment and infrastructure; a program of matching grants to stimulate and support the establishment of companies in-house QC/QA laboratories; and a program of matching grants for consultancy services to prepare companies for securing international business and process certifications.

Exporters require the installation of significant clean/grade/sort capacity, and re-drying capacity. Clean/grade/sort equipment is multi-purpose (multi-crop). Purpose built storage facilities allow material to be kept in good conditions and for safe fumigation. SAPPTA has around 66 exporter members. It is proposed the project target 15 to make investments in this area, 5 in large integrated cleaning/grading units with driers at US$50,000 per unit; 10 investing in smaller units at US$20,000 per unit, and a an overall investment in buildings of US$200,000, giving a total credit requirement of up to US$650,000.

A lump sum provision of US$50,000 is made for grants towards the costs of preparing for certifications (20 enterprises at US$2,500 per enterprise).

b. Results and benefits

The results of the program will be the development of a professional spice exporter sector, with companies equipped and able to manage, control and assure product quality in a large volume export trade, and having the business practices and process standards and certifications to meet the requirements of the higher value western markets and multinational buyers, securing their competitive position in the international markets. The key benefits will be:

- Exporters having the processing capability to prepare product to meet the requirements of international product standards in the higher quality higher priced markets;
- Exporters able to meet the business and process standards of multinational buyers
- Exporters focused on product quality and able to realize benefits from vertical integration and linkages with high quality producers.

6. Training in the Post Harvest Marketing Chain

Except where producers are directly linked to the end buyers (processors/exporters) in vertically integrated operations, the basic dried spice is passed down and consolidated into larger lot sizes through an often extended marketing chain. Product quality is frequently lost in this process, both through poor conditions and practices, and through mixing different batches of product without regard to differences in quality. The linkage between quality and price is weak and often absent, reducing or removing the incentive for the producer and intermediaries in the chain to focus on quality. DEA has institutional responsibility for internal marketing, and does run training programs for intermediaries on quality and quality assurance programs, in collaboration with SAPPTA and the Spice Council. These programs need to be expanded to ensure that the proposed developments focused on quality in the producer sector are supported and secured through the marketing chain.

a. Requirements

Expanded training program focused on intermediaries in the marketing chain dealing with criteria of product quality, and good handling practices and facilities to maintain quality. DEA in collaboration
with SAPPTA and the Spice Council would have technical responsibility for the program content. Implementation of the training programs could be undertaken by independent private contractors.

Training programs will be run at District and District Secretariat level. Overall, 300 training programs are projected – giving a very significant level of repetition and reinforcement – at a cost of US$200/training, requiring a total allocation of US$60,000.

b. Results and benefits

The result will be a significant improvement in intermediaries in the marketing chain in the awareness of criteria that determine spice product quality and good handling practices and facilities to maintain quality. The key benefits will be:

- An improvement in the handling of spices and a reduction in the level of loss of quality in the marketing chain
- A basis for supporting the linkage of quality and price in purchase of product from producers
C. Marketing Programs

1. Quality Standards and Certification Program – Components and Costs

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Rate ($)</th>
<th>Number over 6 Years</th>
<th>Total</th>
<th>Project Contribution</th>
<th>Government Contribution</th>
<th>Private Sector Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Consultancies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standards, Branding, GAP</td>
<td>month</td>
<td>22,000</td>
<td>8</td>
<td>176,000</td>
<td>176,000</td>
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<tr>
<td>Quarantine and Risk Assessment</td>
<td>month</td>
<td>22,000</td>
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<td>132,000</td>
<td>132,000</td>
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<tr>
<td>Organic Consultant</td>
<td>month</td>
<td>22,000</td>
<td>8</td>
<td>176,000</td>
<td>176,000</td>
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<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>484,000</td>
<td>484,000</td>
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</tr>
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<td><strong>B. Skills Development and Capacity Building</strong></td>
<td></td>
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</tr>
<tr>
<td>Quarantine pest identification</td>
<td>course</td>
<td>4,000</td>
<td>6</td>
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<td>19,200</td>
<td>4,800</td>
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<td>Quarantine risk management</td>
<td>course</td>
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<td>6</td>
<td>24,000</td>
<td>19,200</td>
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<td>6,000</td>
<td>10</td>
<td>60,000</td>
<td>48,000</td>
<td>12,000</td>
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<td>Organic farmer training</td>
<td>course</td>
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<td>40</td>
<td>44,000</td>
<td>35,200</td>
<td>6,800</td>
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<td>200,000</td>
<td>150,000</td>
<td>40,000</td>
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<td>Laboratory techniques training</td>
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<td>25</td>
<td>150,000</td>
<td>120,000</td>
<td>15,000</td>
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<td><strong>TOTAL</strong></td>
<td></td>
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<td></td>
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<td>502,000</td>
<td>391,600</td>
<td>83,200</td>
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<td><strong>C. Surveys, Equipment, Infrastructure</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>1</td>
<td>250,000</td>
<td>200,000</td>
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<td>Inter-laboratory proficiency testing</td>
<td>program</td>
<td>5,000</td>
<td>6</td>
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<td>1</td>
<td>1,000,000</td>
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<td>equipment</td>
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<td>1</td>
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<td>Vehicles for RoP and organic project</td>
<td>vehicle</td>
<td>30,000</td>
<td>2</td>
<td>60,000</td>
<td>60,000</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>2,038,000</td>
<td>1,666,800</td>
<td>316,700</td>
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<td><strong>D. Certification and Accreditation</strong></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>SLAB international accreditation</td>
<td>unit</td>
<td>30,000</td>
<td>1</td>
<td>30,000</td>
<td>15,000</td>
<td>15,000</td>
<td></td>
</tr>
<tr>
<td>ITI certification by SLAB</td>
<td>unit</td>
<td>2,500</td>
<td>6</td>
<td>15,000</td>
<td>15,000</td>
<td></td>
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<tr>
<td>HORDI &amp; ROP certification by SLAB</td>
<td>unit</td>
<td>2,500</td>
<td>12</td>
<td>30,000</td>
<td>30,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>75,000</td>
<td>60,000</td>
<td>15,000</td>
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<tr>
<td><strong>E. Business Development Support</strong></td>
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<tr>
<td>Private sector enterprise certification</td>
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<td>1,500,000</td>
<td>750,000</td>
<td>750,000</td>
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<td>Farmer organic certification</td>
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<td>50</td>
<td>15,000</td>
<td>750,000</td>
<td>375,000</td>
<td>375,000</td>
<td></td>
</tr>
<tr>
<td>Laboratory certification by SLAB</td>
<td>unit</td>
<td>2,500</td>
<td>10</td>
<td>25,000</td>
<td>12,500</td>
<td>12,500</td>
<td></td>
</tr>
<tr>
<td>Compliance advisors</td>
<td>unit</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000,000</td>
<td>500,000</td>
<td>500,000</td>
<td></td>
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<tr>
<td>Laboratory testing fees</td>
<td>loan</td>
<td>80</td>
<td>10,000</td>
<td>800,000</td>
<td>400,000</td>
<td>400,000</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,075,000</td>
<td>2,037,500</td>
<td>337,500</td>
</tr>
</tbody>
</table>

| Contribution % | 81.8 | 15.5 | 2.5 |

Intervention Totals 7,174,000 4,639,900 752,400 1,778,700

| Contribution % | 64.7 | 10.5 | 24.8 |
D. Sub Projects

1. Cocoa Development and Rehabilitation Project

Theobroma Lanka
PROJECT REPORT, SEPTEMBER 2007

Overview

This project aims to establish a commercial operation to collect harvested cocoa pods, paying farmers realistic farm-gate prices.

A fermentation facility and drier will be constructed at the central collection point to process the pods through to fermented and dried cocoa beans. A quality grading and sorting system will be used to generate parcels of Good Fermented Grade One (GFG1) cocoa beans, suitable for export in small consignments of not more than 40 metric tons per lot.

The area of cocoa purchasing has been identified and an estimate of cocoa pod potential calculated. The target purchase volume for Year 1 is 1,000 metric tons only. The breakdown into monthly purchasing rates is tabulated elsewhere in this report. Future regional purchase potential is shown elsewhere in the report.

Whilst purchasing cocoa pods from farms, technical assistance and tree husbandry education will also be provided. This will help boost immediate production as well as instill a culture for future pod production.

It is essential that this pod purchasing scheme is linked to revenue generated by exports of finished cocoa beans and to subsequent farm-gate prices. Only if the farmer is aware and convinced that he is getting a fair and sustainable price for his cocoa pod will the future production be realized. We intend to work closely with the Department of Export Agriculture (DEA) in this regard and have already had several meetings to discuss ways forward.

In addition we will process discarded cocoa pod husks into organic fertilizer for re-sale back to the local agricultural community. This project will be carried out in association with DEA as it is already a project/work-in-progress at their facility in Matale.

Contacts have already been established with overseas companies to confirm their interest in purchasing our GFG1 cocoa.

Cocoa in Sri Lanka

Cocoa was first established in Sri Lanka in 1837 in the region North West from Matale. It was established in pockets across the zone running from in the North West across to Digana in the South East. It was then established in the Monoragala District.

However, there were never large areas placed under cocoa cultivation. The practice of inter-planting with other tree crops was unknown and the income derived from a monoculture type of plantation industry meant more emphasis was placed on rubber, coconut and more especially tea.

During the period of land reform in the 1970’s and 80’s it would appear that cocoa was sidelined by increased emphasis and farmer interest in tea, rubber and oil palm.

To a great degree, large scale plantation cocoa has disappeared leaving a few isolated estates. Some cocoa production comes from smallholder farmers engaged in cultivating other tree crops like cinnamon, cloves, nutmeg who have a small number of trees planted near their homes. Many of these trees are now quite old (40 years +) and their yield is beginning to falter.

Given the lack of export orientated purchasing over the last 30 years and thus a lack of income to the farmer for cocoa pods, much expertise and interest has been lost. The remaining small holder cocoa exists merely due to the reluctance of farmers to cut down an otherwise healthy tree but this changing and now more than 50% of the remaining cocoa is being removed.
Under the purview of Public Sector – Private Sector partnership and cooperation, the scenario is perfect for development by both Theobroma Lanka and the Department of Export Agriculture to encourage the rehabilitation of existing cocoa trees and also the new planting of cocoa in Sri Lanka. New techniques for rapid regeneration of old stands of cocoa are well understood by the D.E.A. and direct assistance can be given to existing farmers. There is also the potential to introduce new cocoa interplanted with coconut and rubber. Both these initiatives can be assisted by Theobroma Lanka in the field and are of obvious self-interest as they will be the basis of new production and thus new increased cocoa bean purchasing potential.

Location of Current Cocoa in Sri Lanka

1. Total Plantings by District, in hectares.

<table>
<thead>
<tr>
<th></th>
<th>District</th>
<th>2004</th>
<th>2005</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Matale</td>
<td>3,279</td>
<td>1,143</td>
<td>-65%</td>
</tr>
<tr>
<td>2</td>
<td>Kandy</td>
<td>1,411</td>
<td>266</td>
<td>-81%</td>
</tr>
<tr>
<td>3</td>
<td>Monoragala</td>
<td>918</td>
<td>310</td>
<td>-66%</td>
</tr>
<tr>
<td>4</td>
<td>Kurunegala</td>
<td>686</td>
<td>684</td>
<td>-0.3%</td>
</tr>
<tr>
<td>5</td>
<td>Kegalla</td>
<td>282</td>
<td>226</td>
<td>-20%</td>
</tr>
<tr>
<td>6</td>
<td>Badulla</td>
<td>38</td>
<td>31</td>
<td>-18%</td>
</tr>
<tr>
<td>7</td>
<td>Gampaha</td>
<td>7</td>
<td>7</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>Nuwara Eliya</td>
<td>2</td>
<td>13</td>
<td>N/A</td>
</tr>
<tr>
<td>9</td>
<td>Colombo (+ Others)</td>
<td>2</td>
<td>861</td>
<td>N/A</td>
</tr>
<tr>
<td>Total</td>
<td>6,579</td>
<td>2,954</td>
<td>-55%</td>
<td></td>
</tr>
</tbody>
</table>

Source: DEA Administration Reports, 2004/2007

The dramatic decline in the number of hectares remaining is proof that the industry is neglected; current farmers are not receiving good income and within another few years the last remaining cocoa in Sri Lanka may well have disappeared.

2. Of these total plantings the following hectares are co-located and represent 71% of all the remaining cocoa in Sri Lanka.

<table>
<thead>
<tr>
<th></th>
<th>District</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Matale</td>
<td>3,279</td>
<td>1,143</td>
</tr>
<tr>
<td>2</td>
<td>Kandy</td>
<td>1,411</td>
<td>266</td>
</tr>
<tr>
<td>4</td>
<td>Kurunegala</td>
<td>686</td>
<td>684</td>
</tr>
<tr>
<td>Total</td>
<td>5,376</td>
<td>2,093</td>
<td></td>
</tr>
</tbody>
</table>

Source: DEA Administration Reports, 2004/2007

Production potential, current scenario

Two main Upper Amazon Hybrids were given out as planting material. These are known as SCA6 x ICS6 and NA32 x ICS1.

These trees have been established in some areas as a mono-culture but mostly intercropped with Rubber and Coconut. For the purpose of this report we are taking a planting density of 800 trees per hectare.

Given the lack of husbandry, these trees are producing on average 50 pods per tree per year.

Given the pod size of the hybrid material planted, 25 pods will yield 1 kilo of fermented and dried cocoa beans.
The potential tonnage being produced each year is as follows:

<table>
<thead>
<tr>
<th>#</th>
<th>District</th>
<th>Hectares</th>
<th>Trees (No.)</th>
<th>Pods (No.)</th>
<th>Beans (Kgs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Matale</td>
<td>1,143</td>
<td>914,400</td>
<td>45,720,000</td>
<td>1,828,800</td>
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<tr>
<td>2.</td>
<td>Kandy</td>
<td>266</td>
<td>212,800</td>
<td>10,640,000</td>
<td>425,600</td>
</tr>
<tr>
<td>4.</td>
<td>Kurunegala</td>
<td>684</td>
<td>547,200</td>
<td>27,360,000</td>
<td>1,094,400</td>
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<tr>
<td></td>
<td>Total</td>
<td>2,093</td>
<td>1,674,400</td>
<td>83,720,000</td>
<td>3,348,800</td>
</tr>
</tbody>
</table>

Our target of 1,000 tons purchased per year is thus viable and realistic, representing almost 30% of the cocoa being produced in these Districts.

**Harvesting Potential and Crop Purchasing pattern**

Cocoa flourishes best in an area that has a pronounced “Dry Season” and “Wet Season” pattern of at least 1,800 mms of rain per year. If this is interspersed with a “Little Dry Season” sub pattern then production is enhanced.

With the “Wet Season” in Sri Lanka starting in April/May the trees undergo a root flush, leaf flush and then flowering cycle. Providing the rains during this period do not have a break of more than five continuous days this cycle will mean cherelles (young cocoa pods) will appear in June and July. Given the “Wet Season” continuing into August, the pod growth will continue until near ripe pods appear in early September. If a “Little Dry Season” occurs in September and October this helps reduce the incidence of Black Pod (Phytophthora Palmivora) amongst vulnerable ripe pods and allows for easier harvesting, fermenting and drying in the production zone. Second rains occurring in late October and November enhance second flowering and pod setting giving rise to the Mid –Crop, which will occur in April of the following year. However, as the growth and ripening phases of this setting will happen during the “Dry Season” of December to March the pod size and thus the subsequent fermented and dried bean size will be smaller.

Given the poor husbandry over the past years and the lack of regular harvesting we will assume that all the production potential will occur in a single “Main Crop” scenario running from September to January. In this scenario the harvesting and production of fermented and dried cocoa beans will be as follows

**Harvesting and Pod/Bean Production**

Our target for the first year of operation is to purchase 1,000 metric tons of cocoa beans. Using the same yield figures and an average of 24 working days per month, our purchasing programme would look as follows:

<table>
<thead>
<tr>
<th>Month</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>Total/Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Purchased</td>
<td>10</td>
<td>25</td>
<td>30</td>
<td>25</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Number of Pods</td>
<td>2,500,000</td>
<td>6,250,000</td>
<td>15,000,000</td>
<td>12,500,000</td>
<td>2,500,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Tons of Beans</td>
<td>100</td>
<td>250</td>
<td>300</td>
<td>250</td>
<td>100</td>
<td>1,000</td>
</tr>
<tr>
<td>Average Daily Purchase</td>
<td>4</td>
<td>10</td>
<td>13</td>
<td>10</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

Some plantations may be in a position to deliver whole harvested cocoa pods to our collection centre. These would be bought on the basis of the pods being opened, the wet bean including mucilage being weighed and the payment made in cash or by cheque. Empty pod husks will be transferred to the cocoa pod husk composting project (See details in “Other Projects” section)

However, the project will also require two 5-ton capacity vehicles to patrol the Districts every day making road side purchases. The purchasing process would be the same as for delivered cocoa with the farmers being paid cash for wet bean weight. The trucks would collect wet beans in 50 kg containers for ease of transfer to the fermentary on return and also collect all empty cocoa pod husks. Each truck will carry a portable weighing scale capable of weighing up to 50kgs at a time.
Fermentation boxes will be filled each with 1 ton of wet bean. Given the 2 days per box x three box cascade process of fermentation, a total of 40 boxes per layer x 3 layers or 120 boxes will need to be built. The drying process will take 5 days and thus the drying table must be able to contain at least 70 tons of beans at any one time.

**Post harvest processing**

Cocoa pods contain cocoa beans attached to a central “string”, coated in sugary mucilage. The pods are broken open using a blunt truncheon (a knife is not used so as to avoid cutting the beans inside the pod), the beans are scooped out by hand, the “string” discarded and the combined beans and mucilage placed into the fermentation boxes. Fermentation boxes are made of wood with a sliding front face and measure 1 metre cube. Three fermentation boxes are constructed to form a “cascade” to one side of the drying table area.

After passing through a cycle of six days fermentation and turning, the fully fermented beans are turned out onto the drying table. In many countries the drying process is by natural sun drying means. However, given the rainfall pattern in Matale District, artificial drying with hot air blowers will be required.

During the drying process the beans are turned over twice a day with wooden rakes and hand sorted to remove any remaining foreign matter. Once dried the moisture content has been reduced to below 9% and ideally should reach no more than 7.5%. Over-drying should be avoided as this makes the cocoa bean too brittle. If the shell of the cocoa bean is broken the “nib” or cotyledon can deteriorate. This is particularly important when preserving the value of the cocoa butter content of the nib as a broken shell allows air to penetrate and gives rise to a higher free-fatty-acid level in the subsequent cocoa butter product.

After the drying process has finished the cocoa beans are taken to a grading table. This is a vibrating screen sorter that eliminates small beans below 1 gram in weight and any last remaining bean and shell fragments.

The fermented and dried cocoa beans are packed in jute bags to weigh 62.5Kgs. The jute bags should carry stenciled markings to identify producer, year of harvest, lot number and country of origin. The should be machine stitched closed and may have a security seals added to the thread ends to prevent tampering.

**ICCO International Cocoa Standard**

**Good Fermented, Grade One**

**Bean Size:** Not more than 990 beans per 1 kilo weight.

**Bean Defects**

1. Mouldy beans. Not more than 4%
2. Slaty beans. Not more than 3%
3. Defective beans. Not more than 3%
4. Foreign matter. Not more than 0.5%

(A combined defect % of all 4 categories must not exceed 5 %.)

**Moisture content:** Not more than 7.5%

We are in a position to establish our own grading, testing and in-house quality certification process based on continuous sampling and analysis for every bag produced.

Other quality considerations, whilst largely subjective and not covered by a formal testing and analysis process, are concerned with taste and smell.

In particular, it is essential that if artificial drying is used there is no possibility of smoke contamination of the drying cocoa beans. The newly fermented beans with a relatively moist and absorbent shell are
highly susceptible to absorbing smoke. This smoke can pass across to the nib on the drying table and also during the roasting and winnowing process in the purchaser’s cocoa processing factory. As well as ruining the delicate chocolate flavors in the cocoa mass it can also remain within the cocoa butter and ruin the value of this product. Once contaminated with smoke this is impossible to remove and can result in entire parcels of cocoa being rejected by the end purchaser.

Taste is also important as the cocoa is going to end up in food products. Great care must be taken to avoid contact with any strong smelling or tasting material during the drying, storage and shipment phases. However, when referring to the actual chocolate taste of the bean itself, this is determined largely by the genetic material of the tree and not subject to change by the fermentation or drying process.

**Exportation of the finished product**

In countries where production runs into hundreds of thousands of tons per year exportation of cocoa bean is done in chartered bulk vessels, carrying only cocoa, in jute bags, with cargo sizes being upwards of 9,000 tons per shipment.

Given the small tonnage we will be exporting it is accepted international practice that ventilated containers can be used. These must be lined with kraft paper to assist in controlling humidity. The floor must have some dunnage laid down to avoid contact between the jute bags and the metal floor of the container. The main risk is that given the extreme temperature difference between port of shipment (Colombo, dry season) and port of arrival (Northern Europe, winter) condensation can form inside the container during the voyage leading to accelerated mould growth within the parcel.

We would use 40 foot ventilated containers for export purposes and make use of the normal export process for all container traffic leaving from Colombo.

Cocoa is highly susceptible to insect infestation when stored in jute bags in production areas. Despite maintaining best practices with warehousing and phyto-sanitary precautions, infestation is so prevalent that the international trade expects automatic pre-shipment fumigation on all cocoa from anywhere in the world. Methyl-bromide is the gassing agent most often used. This is highly toxic and must be administered by a licensed company. The normal method is to cover the entire parcel with gas tight tarpaulins with the edges weighed down with "sand snakes". The carefully metered dosage is administered through a vent at the top of the pile. Warning signs are hung around the edge of the tarpaulin. The gassing process must last at least 48 hours. Gas masks and other protective equipment must be worn at all times when working on the parcel. After gassing the tarpaulin is removed and the parcel is ventilated to remove gas residue. Great care must be taken during the ventilation period and certainly if the parcel pile is being broken down soon after ventilation for loading into containers or onto lorries that pockets of gas residue do not remain within the pile.

Fumigation should be carried out prior to stuffing the container but as close to the time of export as possible to avoid re-infestation.

**Other Projects**

*(As these projects are not part of the core business their financial impact in terms of boosting core revenue has not been included in the initial financial proposal.)*

1. **Cocoa Pod Husk Composting**

In many counties the cocoa pod husk is discarded as a waste product. Old fashioned wisdom said they were a potential source of Black Pod infection if left lying around the plantation and thus they should be buried or at least covered with leaf litter. Current knowledge shows that they are in fact a rich source of compost both for the cocoa growers and others involved in horticulture. Good composted cocoa pod husk has up to 6% Potassium content as well as considerable quantities of pectin. All pod husks will be collected, shredded, have other organic matter added and be composted to provide a high quality compost ready for re-sale. There is almost no capital investment required for this process. There is little hard data available at present on the commercial value of this product as this will be a pioneer venture.
2. Encouraging rehabilitation of existing cocoa.

Theobroma Lanka will be on hand to advise and assist with the rehabilitation of existing cocoa. This will be done in close cooperation with a representative from the Department of Export Agriculture. Assistance will include hosting seminars on farming techniques, providing data feedback on current and future production levels and possible material assistance to farmers to improve harvesting techniques (for example, providing free secateurs to farms to improve harvesting methods and minimizing damage to pod cushions whilst, at the same time, promoting the routine pruning of chupon and general improvement of the canopy).

3. Promoting inter-planting of new cocoa.

In partnership with the DEA and outside agencies, Theobroma Lanka will become actively engaged in promoting the concept of inter-planting cocoa in existing coconut, rubber and other tree crop plantations. With a vested interest in increasing national production, Theobroma Lanka is well placed to provide this assistance under expert guidance.

Conclusions

Whilst in a much neglected state, the cocoa production potential of Sri Lanka still remains a viable commercial proposition. If the correct steps are taken now, farmers can be encouraged to re-habilitate these last remaining old stands of existing cocoa.

Within one year, old cocoa that receives better husbandry can show dramatic increases in yield. Correct application of fertilizer, controlled spraying against insect, correct control of pod disease like Black Pod as well as basic techniques of weeding and pruning can all combine to raise production in the short term.

For the medium term bud grafting onto old root stock or selected cultivation of chupon growth from old tree stumps can accelerate bringing old unproductive cocoa back into new higher yield production.

In the longer term, building on from renewed interest generated by establishing a proper commercial coca pod purchasing project and with assistance and control from the DEA, new plantings can be established in large areas of the country. In particular, emphasis should be placed on the inter-planting of cocoa under existing stands of coconut and rubber.

With the farmer receiving a fair price for his produce, secure in the knowledge that a reliable pod purchaser will buy all his production, year after year, there is no reason why cocoa cannot return to Sri Lanka in substantial quantities. Given the strong agricultural base in the areas suitable for cocoa cultivation there is certainly no lack of manpower, expertise and land to achieve these aims. Cocoa could become a major foreign exchange earner for the county whilst adding another crop to the already well diversified collection of commercially produced commodities.

For Theobroma Lanka the scenario also looks optimistic as the revenue passing from purchaser to farmer will in turn guarantee larger future crops and thus more potential cocoa bean for export.

2. Improved Productivity and Profitability of Coconut Land Project

(Coconut R&D and outreach, based on virgin coconut oil and value-added products-private/public sector- Estimated cost USD1,026,000)

Strategies, concept and rationale

As part of the proposal from GOSL to ADB, the Coconut Farm Systems were included in the proposal as many of the coconut plantations in Sri Lanka offer good potential for intercropping with fruits, vegetables, spices and allied crops to support expansion of agribusiness in Sri Lanka. Current GOSL cumbersome, bureaucratic, land lease procedures make it difficult to release larger tracts of land with water access for expansion of commercial production so that existing private coconut plantations are targeted to lift productivity via economies of scale.
The previous Second Perennial Crops Project supported some 125 trials on intercropping of coconut. Sufficient knowledge now exists on intercropping including production of fodder for livestock development. No further work is justified on more intercropping trials.

Development of intercropping in coconut lands is already occurring quickly with larger agribusiness enterprises linked to smallholders to produce products for domestic and export markets including processing of high-value organic products for sale as functional health foods.

However, the Coconut Growers Association of Sri Lanka (CGA), as reported in Sunday Observer of June 17 2007, are very concerned that many coconut trees are being cut down as yields are low, because of high fertilizer costs discourage fertilizer application. So far CGA seem to be concentrating on increasing yields and increasing new plantings to improve tree densities per acre rather than adding value to existing private holdings.

Long neglected coconut plantations that are not fertilized because of the high fertilizer and labor costs and low returns for nuts and copra, are now the target of entrepreneurs wishing to classify such plantings as organic. Entrepreneurs are now beginning to make value-added organic coconut cream, and are just beginning an interest in high-value organic Virgin Coconut Oil (VCO), and possible downstream products. In addition, intercropping with fruits and spices and some vegetables, allows such products to claim organic status, provided strict organic management practices meet organic certification standards.

Because excellent opportunities exist for adding value to the coconut tree itself via Virgin Coconut Oil and its products, the concept of this proposal is to support the essential R&D&E&T needed to develop these opportunities. At present these opportunities are only partly developed in Sri Lanka. Higher priced value added products like VCO and its derived products can be readily made from the some of the nearly 20 % of nuts exported and not consumed domestically at present, and exported as low value coconuts, copra, copra meal and copra oil.

Virgin Coconut Oil is the newest, high value, coconut product which is very much sought after for its human neutraceutical benefits and as a functional food (Bawalan and Chapman, 2006). As they point out, world demand for VCO is rapidly increasing and VCO production is beginning to rise rapidly and has excellent potential for improving farm incomes.

Thus the strategy is to capitalize on this opportunity to promote production of value-added VCO or organic VCO production in Sri Lanka for both the domestic and export markets and to add further value by developing higher- value again downstream products out of VCO and the dry kernel left after VCO extraction. Such a strategy is well justified as the current lower value exported nuts, copra etc., can be much further value-added to the benefit of Sri Lanka’s economy.

The rationale is to provide project funding support to Coconut Research Institute (CRI) to develop a range of value-added products from VCO namely, foods, cooking oils, flour, cookies, fibre-rich products from dry fresh coconut kernel, including pastes, cookies etc, enriched VCO functional neutraceutical foods, creams, shampoos, lotions, massage oils, soaps, etc., and promote and introduce these technologies and products to the smallholder coconut producers..

**Impact, outcome, benefits and justification**

Bawalan and Chapman, 2006, report that world demand for VCO is rapidly increasing and VCO production is beginning to rise rapidly and has excellent potential for improving farm incomes by five to eight-fold over traditional copra production or sale of fresh nuts or whole nuts.

In the Philippines, returns on investment after 30% tax, for VCO alone of 118% /year, and a payback period of 1 year have been realized in a small units processing 350 nuts/day for 300 days/year using the natural fermentation method, and an overall expenditure of USD 20,000 for the plant, building and production costs. The net profit of USD 6,196 represented a profit per nut of almost US 60 cents or 6 times the prices realized for coconuts.
If more value-adding is done on the VCO at the processing unit, including retail packing and making of value-added soaps, shampoos, lotions, massage oils etc., the returns per nut increase dramatically to 10-20 fold or more. The key element is identifying the markets, both local and international.

Currently up to 20% of production, which represents the lower priced, whole nut, copra and copra oil exports could be value-added by making VCO and VCO products to benefit very significantly coconut farmers and processors in Sri Lanka.

**Option 1: VCO Production with Loan or Donor Support**

Based on the impact and outcome and benefits, investment in R&D on VCO and VCO products and promoting VCO and VCO downstream products is fully justified.

Activities and estimated costs—USD1,026,000—provided by donor/loan support

- Set up and equip and run a complete R&D pilot plant at CRI with basic food processing facilities and equipped to develop and test oils, lotions, soaps, shampoos etc. and value-added products from VCO and VCO residues—USD 520,000.
- Fund the services of international consultants for 6 months over 6 years to train the scientists in the advanced VCO technologies and product development and with CRI help, setup 5 smallholder pilot plants for VCO and small-scale commercial product manufacture and sale—USD 132,000.
- Fund 5 smallholder VCO demonstration/pilot plants for VCO and small-scale commercial product manufacture and sale including seed money for establishment and marketing—USD 150,000.
- Fund consultant support to the new Agribusiness Unit in CRI for training and enterprise development methodologies (4 months over 6 years)—USD 88,000.
- Fund production of GMP Manuals and CDROMS for VCO training and distribution to smallholders and the larger agribusiness enterprises—USD 25,000.
- Fund enterprise awareness and key farmer training programs for enterprise expansion—USD 36,000.
- Assist with international marketing of VCO and VCO value added products—USD 75,000.

**Option 2: VCO Production with NGO Support**

Promote a linkage between an NGO, smallholders and CRI to undertake smallholder production of VCO and VCO products. The NGO would provide the base funding for set-up and seed money along with identifying markets for products and assisting the marketing process. Organic VCO products are a clear possibility from areas that can be readily certified as organic.
<table>
<thead>
<tr>
<th>Intervention/Activity</th>
<th>Unit</th>
<th>Rate</th>
<th>Number (Total)</th>
<th>Total</th>
<th>Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>($)</td>
<td>($)</td>
<td>($)</td>
<td>Project ($)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>($)</td>
<td>($)</td>
<td>GoSL ($)</td>
<td>Beneficiaries</td>
</tr>
<tr>
<td>1. Pilot Scheme-Coconut R&amp;D &amp; Outreach-Virgin Coconut Oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>A. Consultancies</td>
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<td></td>
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<tr>
<td>International Virgin Coconut Oil/Products Specialist</td>
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</tr>
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<td>220,000</td>
<td>220,000</td>
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<td>-</td>
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<td>B. Other Activities</td>
<td></td>
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<td></td>
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<td>Set up &amp; run a R&amp;D Pilot Plant at CRI for VCO/Products</td>
<td>lump</td>
<td>1</td>
<td></td>
<td>520,000</td>
<td>520,000</td>
</tr>
<tr>
<td>Fund set up of 5 smallholder VCO community pilot plants</td>
<td>lump</td>
<td>1</td>
<td></td>
<td>150,000</td>
<td>150,000</td>
</tr>
<tr>
<td>Fund production of GMP Manuals/CDROMS on VCO for Training</td>
<td>lump</td>
<td>1</td>
<td></td>
<td>25,000</td>
<td>25,000</td>
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<tr>
<td>Fund awareness and smallholder training programs on VCO/prod.</td>
<td>lump</td>
<td>1</td>
<td></td>
<td>36,000</td>
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<tr>
<td>Assistance to Local/International marketing of VCO/Products</td>
<td>lump</td>
<td>1</td>
<td></td>
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</tr>
<tr>
<td>Sub-total</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>806,000</td>
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<td></td>
<td>-</td>
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<tr>
<td>Grand Total Activity #1</td>
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<td></td>
<td></td>
<td>1,026,000</td>
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</table>
3. Establishment of a Coffee Nucleus Estate

(A Nucleus estate pilot scheme for Arabica coffee development with supporting R&D and outreach—private/public sector-estimated cost –USD 950,000)

**Strategies, concept and rationale**

Formerly, prior to tea development, Sri Lanka had a large Arabica coffee industry, begun by the Dutch around the early 1700s and which flourished under the Dutch until they took greater interest in Java coffee production.

The British when they took over in Sri Lanka in 1795, very rapidly expanded Arabica coffee production in the highlands and out quickly climbed to high levels. In 1857 production was over 30,000 tons. Coffee quality was recognized as superior to Java coffee produced by the Dutch with similar varieties. By 1867 there were 162,700 acres of Arabica coffee. However, from 1869 onwards the Arabica coffee was devastated by coffee rust disease. Coffee bushes were not grown under shade and decline from the rust was very rapid. Tea development then replaced coffee in the plantations. Nowadays we know a great deal more about how to manage coffee rust by variety, altitude and shade and there are also lines and varieties of coffee with very good tolerance to number of stains of rust.

For the past 30 years, various areas of the world have been developing signature Geographic/Estate Arabica coffees for the Specialty coffee market, which continues to expand rapidly at rates approaching 15 % per year. (Brazil Specialty Coffee Association, 2007).This trend, combined with an explosion of coffee consumption in the past 5 to 10 years, especially in Asia, and overall growth in consumption in the world market of 1.5% p.a., is continuing to drive demand and keep Arabica coffee prices high in the world markets.

Sri Lanka, like key areas of Indonesia, India, East Timor, Lao, Myanmar, has an excellent opportunity to produce high quality Geographic/Estate Arabic coffee for this world Specialty market. Various signature coffees such as Achenese Gayo Highland Mandheling Coffee and Toraja and Java coffees from Indonesia may bring up to 3 to 4 times the average New York “C” prices for Arabica in the world market.

Small amounts of Arabica and Robusta coffee are currently produced in Sri Lanka (3,500 MT in 2006) and some is exported (105 MT in 2006) from Sri Lanka with (90.7 MT) going to Germany, while most is consumed at home. Currently we have no break-up to distinguish between Arabica and Robusta production and exports in EDB data below. However, it is fair to say that the Arabica coffee industry in Sri Lanka is in its infancy, probably about 10% or less of current production, but with very bright future prospects, if it is developed sensibly with respect to quality and coffee rust management.

One group, Hansa Ceylon Coffee is collecting coffee from smallholders and producing small amounts of excellent high quality roasted specialty Arabica coffee and selling in a small way into the Specialty coffee world market. The opportunity to expand production of very high quality Specialty Arabica coffee is very good. Coffee Returns are attractive and it is an ideal smallholder based industry linked to larger nucleus estate enterprises for dry processing and export marketing.

Relatively recent data from DEA on Arabica coffee costs and returns show an IRR of 19% with a break-even point at 5 to 6 years, and net returns of approx USD 600 to 1000 /ha based on a sale price of USD 1/kg for green bean (GB). Current Fair Trade Arabica is at USD 2,860 /MT in New York so net returns per ha would be around USD1600 to USD 2000/ha with an improved IRR. Thus Arabica coffee has reasonable profitability in Sri Lanka even without Specialty status which my double or triple prices received. Farm gate prices paid to producers of Hibrido De Timor Arabica, produced at around 1000 to 1200 m.a.s.l., are currently paid USD 3.50/kg for No.1 GB with annual costs of production of USD 1.60/kg GB.

Because labor costs, for harvesting especially, in the tea estates are now very high, some tea planters are keen to try Arabica coffee where labor costs will be much lower. Only two to three harvests per season will be needed for well-managed coffee grown in the highland areas of Sri Lanka (around 1200 m.a.s.l. upwards). Labor costs for coffee are about equal to the material costs of inputs per year in maintaining coffee production. Arabica yield at present of around 1 MT GB/ha and is quite acceptable,
but with better management, yields may well average 1.25 MT GB/ha or better. Some farmers are already averaging near to 1.5 MT/ha.

Current constraints to Arabica coffee industry development in Sri Lanka

- Limited number of high quality Arabica coffee varieties in country—only S9 and HDT (Hibrido De Timor) at present and some older unidentified Arabica lines.
- Phytosanitary limitations on coffee seed imports must be lifted to allow in clean planting material under quarantine supervision.
- New varieties will need to be introduced and adaptation trials conducted; time-span 6 to 8 years for evaluation.
- R&D capabilities of DEA are very limited for coffee, and ideally, a highland centre for coffee needs to be established, resourced and staffed, or at least a better, much improved capability within DEA for providing better up-to-date coffee research, development, information, extension and training support to the coffee sector.
- New processing, cup tasting and post-harvest management, quality improvement and processing technologies are not present in Sri Lanka and will have to be introduced and personnel trained and the technologies rapidly extended to the industry via improved extension and training.
- A GAP and GMP will need to be established for entering into key world markets and Fair Trade Specialty Coffee.
- Suitable tracts of land with a minimum area of 40 ha (100 acres) with good soils and appropriate climate will have to be identified and made available at locations around 1200 m.a.s.l. to provide a nucleus as a base for the industry to grow and brand market high quality Sri Lankan Arabica coffee. Sri Lanka has adequate lands to meet these requirements if they can be released by GOSL or diverted away from tea.
- Currently there appear to be no GOSL incentives for investment in Arabica coffee development by private sector with or without out-growers. GOSL needs to develop clear policy and incentives for encouraging Arabica coffee development and exports for Sri Lanka.

To address these constraints and develop the excellent opportunities for production and marketing of high quality Specialty Arabica coffee in Sri Lanka the strategy proposed is for the ADB Agribusiness Development Project to provide firm, catalytic underlying funding and TA support.

The rationale is that the regeneration of the high quality Arabica coffee industry in Sri Lanka will provide excellent opportunities for profitable agribusiness enterprises to develop and for linked participation by thousands of smallholders.

Such interventions will be market driven by the excellent demand for branded geographic origin specialty Arabica coffee and will have backward linkages to smallholder farmer groups.

Finally the intervention strategy will be to take a holistic farm system approach to coffee with vegetable intercropping promotion in the early establishment phase and/or the use of dairy cattle, with extra protein feed provided from later established inter-row ground covers, such as Pinto peanut, or from Gliricidia or Leucaena shade trees etc.

Option 1: Nucleus Estate with Project Loan and DEA Support

The concept proposed is to use a well tested and proven nucleus estate model linked closely with smallholder farmers. Both farmers and the nucleus estate will grow coffee. Farmers and the estate will undertake primary processing of cherry to parchment or green bean stage on-farm, with final cleaning, sorting and grading done at the nucleus estate base, where final quality control is exercised for packaging, and where marketing and exports are organized. For local market and exports as well a roasting facility will be established as well.

The basis of the intervention proposed is to establish a 100 acre pilot nucleus plantation unit for producing high quality Arabica coffee at altitudes of 1200 m.a.s.l., or above linked back to smallholders. In addition support to R&D&E&T system via the Department of Export Agriculture closely linked to private sector extension and research. A separate budget of $500,000 is provided to
support DEA R&D&I&E and training assistance to the nucleus estate and outgrows. (Item 3 of the Revised Component 2. above)

Impact, outcome, benefits and justification

Regeneration of the Arabica coffee industry of Sri Lanka will have excellent economic benefits that will link back to the smallholder sector. In addition establishment of shade grown coffee with soil conservation measures used from the outset at planting will produce a more sustainable farm system with conservation of the resource base. The outcome of re-establishing a coffee industry will be a much more environmentally and profitably sustainable farm system than just a monocrop of tea, where soil degeneration over time has been acute.

The benefit of high quality Arabica coffee will be to diversify cropping, spread risk, more profitably use labour to produce a high value branded specialty coffee product that will bring to Sri Lanka excellent incomes from a value-added exported commodity. In doing so coffee production will generate more opportunities for smallholders to improve incomes and livelihoods.

Project interventions are justified to overcome the constraints and develop the opportunities for high quality geographic origin Specialty Arabica coffee in a high growth, high demand world market.

Pilot Nucleus Estate development with support to out-growers

Activities and estimated costs—USD 950,000

1. Identify Suitable tracts of land with a minimum area of 40 ha (100 acres) with good friable well drained soils and appropriate climate at locations around 1200 m.a.s.l. and above to provide a pilot nucleus estate as a base for the industry to grow, process, roast and brand market high quality Sri Lankan Specialty Arabica coffee and link with smallholder out-growers suppliers. Sri Lanka has adequate lands to meet these requirements if they can be released by or diversified away from tea.

The pilot nucleus estate as well as serving as a full commercial production unit will also have a dual role as a DEA research farm for holding Arabica coffee mother trees, undertaking propagation of high quality coffee seedlings for smallholders, and as one site for coffee variety evaluation for yield, bean and cupping quality and peat and disease tolerance. The pilot nucleus estate will act as a centre for information for farmers and a place to conduct training events on site with DEA and International Specialist TA support.

2. Plan, the layout and design for the field plantings of Arabica coffee and all essential buildings for the pilot nucleus estate, including an office, staff accommodation, machinery sheds etc., and a repair workshop. For field plantings it must be a prerequisite that good soil conservation practices are in place and field planting of shade trees for coffee will be mandatory for producing environmentally friendly coffee and reducing the chances of coffee rust in high quality Arabica varieties.

Provision will be made for:

- All infrastructure needs, including water and power.
- All field equipment needs including farm machinery and implements, tools, workshop tools etc.
- A fully equipped wet processing and drying area. Capacity 1 MT cherry/hr minimum provided by 2 x inexpensive, high quality, Vietnamese VINACAFE pulper / demucilager machines with a processing capacity of 500 kg/hr of cherry. Also provide for least 2 motorized cherry pulpers.
- A dry processing facility-all hulling, cleaning sorting, grading equipment for a minimum 1 MT/hr line and storage for up to 500 MT of dry coffee.
- A commercial roasting unit 20 kg/hr minimum capacity with bagging and storage facility.
- Operation of the whole pilot nucleus estate unit for 5 years.
- A coffee quality and cup tasting laboratory fully equipped for sample roasting.
Appendix 3

The whole process of establishing and running the pilot nucleus estate unit will be supported strongly by International Coffee Specialist TA as note below and with DEA TA support and advice.

Establish and maintain a mother tree collection of imported Arabica coffee varieties at high altitude, on the pilot nucleus estate at 1200 m.a.s.l., (DEA researchers to oversee the collection and make initial assessments on quality, performance, and good and bad attributes of the various cultivars).

Design and build at the high altitude pilot nucleus estate a protected poly-covered propagation houses/nursery, total area approximately 5,000 m², and release immediately new Arabica nursery plants of high quality varieties to the nucleus estate and selected farmers, along with shade trees.

Provide a link to smallholder from the nucleus estate to assist with provision of advice, planting materials and assistance with procuring credit etc.

Currently there appears to be no GOSL policy or incentives for investment in Arabica coffee development by private sector with or without out-growers. GOSL needs to develop clear policy and incentives for encouraging Arabica coffee development and exports for Sri Lanka. There is a clear policy for crop diversification, supported by GOSL and ADB, but as far as can be determined no guidelines for Arabica coffee.

Option 2: Specialty Arabica Coffee Rehabilitation and Development based on a Nucleus Collection Centre Model-Without Project Loan Support

This model envisages a situation where a linkage would be established between a private sector enterprise to promote expanded planting of high quality Specialty Arabica coffee by smallholders in areas above 1200 m.a.s.l. with the assistance of the DEA, who would also supply the technical assistance and training and key nursery seedlings for production of coffee.

The private sector entity would arrange to assist and procure high quality Specialty Arabica coffee as parchment or cherry from smallholders and market green bean and some roasted coffee in the overseas Specialty Arabica/Origin/Fair Trade Markets as defined.

The private sector entity would provide funding for setting up the processing facility for coffee including dry processing, cleaning and grading for export and the marketing expertise.

4. Sea Freight Perishable Products Shipment Trials Project

(Proposal for ITI private sector partnership – to promote sea shipment of pineapples – possibly include floriculture products)

Background

Sri Lankan Mauritius variety pineapples have a unique, exotic flavor and therefore the potential to capture a larger export market. However, despite the advantage of low freight costs, sea shipment has not been adopted by exporters due to discoloration of the flesh when placed under low temperature conditions to extend storage life.

Over the years scientists at Industrial technology Institute (ITI), have carried out investigations to resolve this problem. Necessary technology and post harvest protocol is now available to make sea shipment a viable proposition. This project concept paper discusses basic information required for commercial sea shipment operation for export of fresh Mauritius variety pineapples where journey and distribution time of product exceeds 12 days.

This proposal is intended to promote exports of pineapple via a pilot project including a private sector cum public sector collaboration.

The partnership entails the commitment of the private sector to shoulder the responsibility for:

(i) Producing and collecting and transporting crop to pack house
(ii) Setting up the pack house facility according to ITI recommendations
(iii) Packing, marketing and distribution of the product

The ITI will be responsible for providing necessary technology and recommendations, and monitoring pre and post harvest operations at the following levels as necessary for successful sea shipment:

(i) Pre-harvest treatments
(ii) Harvest operations
(iii) Post harvest treatments
(iv) Preliminary cooling
(v) Low temperature storage / transport - in country and overseas
(vi) Establishment of necessary protocol for traceability- ISO 8000 requirements
(vii) Designing lay-out of pack house for sea shipment
(viii) Recommendations for necessary machinery and equipment

Project Requirements

1. The Product

- The product is identified as the Sri Lankan Mauritius variety pineapple of unit fruit size 1 – 1.2 kg for most overseas markets.
- Acreage required for production of the crop will depend on shipment schedule – i.e., the number of shipments scheduled for each week or month.
- Shipments are dispatched in refrigerated reefer containers held at 12°C and are available in two sizes.
- Product volume required to stuff a 20 ft reefer will amount to approximately 12,000 fruits (fruit size 1 -1.2kg/fruit)
- Product volume required to stuff larger 40 ft reefer will amount to approximately 24,000 fruits (fruit size as above)
- Pineapples could be planted at a plant density of 8,000-13,000 plants per hectare when inter-cropped with coconut. If planted as a mono-crop, plant density could be increased to between 15,000-32,000 plants per hectare (DOA –recommendations).
- Acreage necessary may thus be calculated depending on frequency of dispatches and type of land available, i.e., for mono-cropping or for inter cropping with coconut. Overall acreage can gradually be increased with planned harvests to accommodate multiple monthly shipments.
- As pineapple is a ratoon crop it will be possible to harvest approximately double the volume of fruits in the second production cycle with additional fertilizer inputs. However, new planting materials is recommended for the 3rd production cycle.
- Plant material must be sourced from a reliable supplier and must be healthy and free of contamination from viruses.

2. Pre and post harvest crop management

- Careful pre and post harvest crop management contributes significantly to quality of the pineapple and its marketability. The production protocol recommended by the Department of Agriculture must be strictly adhered to. Careful management of pest and disease control, fertilizer application etc. are very important cultural practices, as fruit quality will be badly affected if such factors are neglected.
- The ITI has developed a nutrient regime which will be introduced as part of the production schedule. This supplementary nutrient programme is intended to prevent internal browning of Mauritius variety pineapple harvested at the 10-20% yellow stage of maturity.
- ITI has also developed post harvest protocol for controlling black rot and enhancing flavour and quality via post harvest treatments applied prior to packing and pre-cooling the commodity for shipment.
3. Pack house facilities

It is important that necessary pack house facilities are available and in place in time for the first shipment. It is anticipated that an area of approximately 2500 sq.ft., will be required to accommodate equipment necessary for post harvest treatments as well as areas for sorting, cleaning, packing and storage of product and packaging materials. It is preferable that pre-cooling and cold room facilities are also in place. The packing line will need to be accommodated within the pack house so as to enhance efficiency. Equipment will include a dry dump tank, tables for cleaning and sorting product, disease treatment system, wax applicator and tunnel drier, packing tables and stacking area prior to loading of trucks. Cold room facilities are optional and will depend how soon the packed product can be moved into cooling facility from pack house – preferably within three hours.

4. Transport

Transport of packed produce to cooling facility must be efficient. Delays will result in rapid deterioration in quality. Packed produce may be transported in a refrigerated truck provided the product is shifted directly into low temperature management.

Good road surfaces will help minimize build up of heat within cartons. If trucks are not refrigerated, heat build up must be avoided by providing ventilation and air flow within the truck.

5. Low temperature storage

It is recommended that the packed product be moved into recommended low temperature (12°C) storage within 2-3 hrs, when it will be ready for either stuffing in refrigerated containers maintained at 12°C – or held in a cold room at this temperature until loading is possible. Fruits are expected to remain in good condition for 17-21 days provided product is handled carefully and pre and post harvest recommendations are strictly adhered to.

6. ITI Consultancy for Technology Support

The Industrial Technology Institute is able to enter into a memorandum of understanding whereby technical support will be provided to the client with respect to:

- (a) Recommendations for crop production and management.
- (b) Post harvest handling
- (c) Specifications for design and lay out of pack house facility.

Regular site visits will be scheduled to monitor project activities. ITI will assist with negotiating concessionary trial shipment terms with shipping lines for export of initial consignment of the commodity.

Cost Components

1. Pre and post harvest management cost per acre with a proposed planting of 8000 plants per acre and 16,000 plants per hectare.

1 Ac – 8000 plants
2 Ac – 16000 plants ~ 1 Hac

<table>
<thead>
<tr>
<th>Cost Component</th>
<th>Cost (Rs.)</th>
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<tbody>
<tr>
<td>Land preparation</td>
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<tr>
<td>Soil conservation practice</td>
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<tr>
<td>Planting materials</td>
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<tr>
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<tr>
<td>Transport</td>
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<tr>
<td>Fertilizer</td>
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<td>Weed Control</td>
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### Pesticides

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### Hormone application

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### Harvesting (Labour)

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<tr>
<td>@ Rs. 2/- per fruit</td>
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### Field spray treatment cost

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<td>Rs. 3,000/-</td>
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**Approximate Cost - Component 1 Rs. 110,000/-**

### Pack house Construction Cost*

- Proposed area of 2500 sq.ft @ Rs.3000 per sq.ft (Land cost not included)

**Approximate Cost Component -2 Rs. 7,500,000/-**

### Pack house machinery and Installation Cost

#### Machinery

1. Hot water system for stems Rs. 975,000/-
2. Waxer Rs. 950,000/-
3. Tunnel Dryer Rs. 675,000/-
   - **Sub Total** Rs. 2,600,000/-

#### Installation

- **Machine Installation**
  1. Hot water system for stems Rs. 50,000/-
  2. Waxer Rs. 50,000/-
  3. Tunnel Dryer Rs. 35,000/-
   - **Sub Total** Rs. 135,000/-

- **Electrical Installation**
  1. Hot water system for stems Rs. 30,000/-
  2. Waxer Rs. 30,000/-
  3. Tunnel Dryer Rs. 30,000/-
   - **Sub Total** Rs. 90,000/-

   **Total Cost Component – 3 Rs. 2,825,000/-**

### ITI Consultancy cost

- Period 12-18 months – as required by the client and progress of the project*

- Technology transfer and provision of technical expertise to assist client with production and post harvest protocol and design specifications for pack house.

- Cost to including staff time, transport to project site, ITI overheads and 15% VAT

**Total Cost Component 4 Rs. 525,000/-**

### TOTAL COST OF PROJECT *- Rs. 10,960,000/-

* (Excluding land costs)
APPENDIX 4
INTERNATIONAL CONSULTANCY TA - TOR

A. International Tropical Fruit R&D Specialist (Cost – 132,000)

1. Background

The Government of Sri Lanka (GoSL) formally requested the ADB to provide assistance in the formulation of an Agribusiness Development Project, to follow through on the activities implemented under the Second Perennial Crop Development Project (SPCDP). The objective of this earlier project was to i) support further perennial crop development, and ii) institute measures that would ensure sustainability of credit facilities and extension services for perennial crops. The ADP is considered a logical progression of these activities and support is being provided to the GoSL to consider underlying problems in the sector. This is being implemented through a Project Preparation Technical Assistance (PPTA) designed to i) assess in detail the constraints and impediments to the development of the agribusiness sector in Sri Lanka, ii) propose strategies for overcoming the constraints that have been prioritized by the sector stakeholders, and iii) recommend design and the implementation arrangements for the project.

Under the design and implementation of the project, one of the proposed interventions under Component 2. Applied Research Extension and Outreach is 1. Support to HORDI Research, Information Development and Extension.

The reason for this support is that currently, overall yields and quality of fruits and vegetables are poor in comparison to other countries and compared to key agribusiness initiatives such as the CIC DSI and IFC large farm nucleus enterprises. HORDI has a key role to play in collection and introduction of key fruit and vegetable varieties, establishment of mother tree orchards of new high quality, high yielding varieties, support to IPM and varietal adaption trials, development of technical GAP/GMP manuals and farmer and private sector training to support horticulture agribusiness development.

2. Objective

To review and upgrade HORDI Research, Development Information, Extension and Training (R&D&I&E&T) in key areas via project support to develop close PPP sector collaboration in fostering agribusiness development in priority fruits and potential new fruits for both fresh and processed products for both domestic and export markets.

3. Scope of Work

Under the guidance of the Team Leader/Deputy Leader, in conjunction with the PPTA Economist, and Marketing Specialist the Tropical Fruit R&D Specialist Consultant will focus on the following.

- Undertake a complete review of the HORDI Research, Development Information, Extension and Training (R&D&I&E&T) needs of priority and potential new fruits for commercial agribusiness development in Sri Lanka.
- The review discussions must include consultation with farmers and the involvement of researchers, other institutes such as ITI and Universities, extension, information technology personnel, and agribusiness including producers, processors and exporters. The review must produce a complete report and framework for each crop and the outcome must define research topics as well as actions involving technology development as well as preparation of GAP, GMP and Technology Manuals, CDROMS, promotional awareness literature, film clips etc. The essential approach for such a review must be farm systems based.
- Review the major areas of research at HORDI which are crop improvement, development of improved agronomic practices, soil and water management practices, pests and disease management and pre and post- harvest technologies, processing etc
- Produce a complete prioritized Fruit R&D&I&E&T Program Log Frame for Operational Program Planning and Monitoring for each crop and major area of research.
• Assist with development of new GAP/GMP technical manuals and CDROMS to be published in collaboration with the DOA AV Unit.
• Recommend key new publications etc., for acquisition on tropical fruits.
• Recommend key potential commercial fruit tree varieties for introduction, multiplication release and testing in Sri Lanka and assist in procurement.
• Develop an new agreed rapid release policy for new fruit tree varieties to assist the agribusiness private sector.
• Provide advice on fruit tree multiplication/propagation and design and conduct of adaption trials.
• Identify key activities for extension of technical know-how to the agribusiness private sector and linked smallholders.
• Assist with any other relevant and reasonable requests made by the Team Leader/Deputy Team Leader.

4. Working and Reporting Schedule

Duration of Input: 6 months over 6 years-5 missions

Duty Station: Kandy with regional field visits

Reporting

At the completion of each mission provide a comprehensive, concise draft report with a summary of main findings and conclusions with recommendations for follow-up. Include an itinerary and list of persons met. Draft reports are to be completed before departure.

5. Qualifications

At least 10 years experience in tropical fruit research and development in Asia/Pacific region, with leading institutions and/or commercial enterprises of international recognition.

Extensive experience in development and extension systems in developing countries in the Asian/Pacific region, preferably with prior experience of working in Sri Lanka.

A good working knowledge of all aspects of production of tropical fruits including production processing and post harvest management issues.

A University higher degree in Agriculture or Horticulture or a closely related discipline from a world recognized university.

A proven track record as evidenced by international assignments, activities, reports, publications etc.

Fluent in written and spoken English.

B. International Vegetable R&D Specialist (Cost - $88,000)

1. Background

The Government of Sri Lanka (GoSL) formally requested the ADB to provide assistance in the formulation of an Agribusiness Development Project, to follow through on the activities implemented under the Second Perennial Crop Development Project (SPCDP). The objective of this earlier project was to i) support further perennial crop development, and ii) institute measures that would ensure sustainability of credit facilities and extension services for perennial crops. The ADP is considered a logical progression of these activities and support is being provided to the GoSL to consider underlying problems in the sector. This is being implemented through a Project Preparation Technical Assistance (PPTA) designed to i) assess in detail the constraints and impediments to the development of the agribusiness sector in Sri Lanka, ii) propose strategies for overcoming the constraints that have been prioritized by the sector stakeholders, and iii) recommend design and the implementation arrangements for the project.
Under the design and implementation of the project, one of the proposed interventions, under Component 2. Applied Research Extension and Outreach is 1. Support to HORDI Research, Information Development and Extension.

The reason for this support is that currently, overall yields and quality of fruits and vegetables are poor in comparison to other counties and compared to key agribusiness initiatives such as the CIC DSI and IFC large farm nucleus enterprises. HORDI has a key role to play in collection and introduction of key fruit and vegetable varieties, establishment of mother tree orchards of new high quality, high yielding varieties, support to IPM and varietal adaption trials, development of technical GAP/GMP manuals and farmer and private sector training to support horticulture agribusiness development.

2. Objective

To review and upgrade HORDI Research, Development Information, Extension and Training (R&D&E&T) in key areas via project support to develop close PPP sector collaboration in fostering agribusiness development in priority vegetables and potential new vegetables for both fresh and processed products for both domestic and export markets.

3. Scope of Work

Under the guidance of the Team Leader/Deputy Leader, in conjunction with the PPTA Economist, and Marketing Specialist the Tropical Vegetable R&D Specialist Consultant will focus on the following.

- Undertake a complete review of the HORDI Research, Development Information, Extension and Training (R&D&E&T) needs of priority and potential new vegetables for commercial agribusiness development in Sri Lanka.
- The review discussions must include consultation with farmers and the involvement of researchers, other institutes such as ITI and Universities, extension, information technology personnel, and agribusiness including producers, processors and exporters. The review must produce a complete report and framework for each crop and the outcome must define research topics as well as actions involving technology development as well as preparation of GAP, GMP and Technology Manuals, CDROMS, promotional awareness literature, film clips etc. The essential approach for such a review must be farm systems based.
- Review the major areas of vegetable crop research at HORDI which are crop improvement, development of improved agronomic practices, soil and water management practices, pests and disease management and pre and post harvest technologies, IPM, protected cultivation, processing etc
- Produce a complete prioritized Vegetable R&D&E&T Program Log Frame for Operational Program Planning and Monitoring for each crop and major area of research.
- Assist with development of new vegetable GAP/GMP technical manuals and CDROMS to be published in collaboration with the DOA AV Unit.
- Recommend key new publications etc., for acquisition on tropical and temperate vegetables
- Recommend key potential commercial vegetable varieties for introduction, and review current breeding, selection and testing programs for highland and dry zone vegetables.
- Provide advice on conduct of adaption trials and protected cultivation and drip irrigation technologies.
- Identify key activities for extension of technical know-how to the agribusiness private sector and linked smallholders.
- Assist with any other relevant and reasonable requests made by the Team Leader/Deputy Team Leader.

4. Working and Reporting Schedule

Duration of Input: 4 months over 6 years-3 missions
Duty Station: Kandy with regional field visits

Reporting:

At the completion of each mission provide a comprehensive, concise draft report with a summary of main findings and conclusions with recommendations for follow-up. Include an itinerary and list of persons met. Draft reports are to be completed before departure.

5. Qualifications

At least 10 years experience in vegetable research and development in Asia/Pacific region, with leading institutions and/or commercial enterprises of international recognition.

Extensive experience in development and extension systems in developing countries in the Asian/Pacific region, preferably with prior experience of working in Sri Lanka.

A good working knowledge of all aspects of production of tropical and temperate vegetables, including production, protected cultivation, processing and post harvest management issues.

A University higher degree in Agriculture or Horticulture or a closely related discipline from a world recognized university.

A proven track record as evidenced by international assignments, activities, reports, publications etc.

Fluent in written and spoken English.

C. International Vegetable IPM Specialist (Cost - 132,000)

1. Background

The Government of Sri Lanka (GoSL) formally requested the ADB to provide assistance in the formulation of an Agribusiness Development Project, to follow through on the activities implemented under the Second Perennial Crop Development Project (SPCDP). The objective of this earlier project was to i) support further perennial crop development, and ii) institute measures that would ensure sustainability of credit facilities and extension services for perennial crops. The ADP is considered a logical progression of these activities and support is being provided to the GoSL to consider underlying problems in the sector. This is being implemented through a Project Preparation Technical Assistance (PPTA) designed to i) assess in detail the constraints and impediments to the development of the agribusiness sector in Sri Lanka, ii) propose strategies for overcoming the constraints that have been prioritized by the sector stakeholders, and iii) recommend design and the implementation arrangements for the project.

Under the design and implementation of the project, one of the proposed interventions, under Component 2. Applied Research Extension and Outreach is 1. Support to HORDI Research, Information Development and Extension.

The reason for this support is that currently, overall yields and quality of fruits and vegetables are poor in comparison to other counties and compared to key agribusiness initiatives such as the CIC DSI and IFC large farm nucleus enterprises. HORDI has a key role to play in collection and introduction of key fruit and vegetable varieties, establishment of mother tree orchards of new high quality, high yielding varieties, support to IPM and varietal adaption trials, development of technical GAP/GMP manuals and farmer and private sector training to support horticulture agribusiness development.

2. Objective

To review and upgrade HORDI Research, Development Information, Extension and Training (R&D&I&E&T) in key areas of Integrated Pest Management (IPM) in vegetables using project support to develop close PPP sector collaboration in fostering agribusiness development in priority vegetables and potential new vegetables for both fresh and processed products for both domestic and export markets. Overuse of pesticides is of major concern in vegetable production in Sri Lanka and alternate
IPM interventions are urgently needed to reduce pesticide usage, protect human health and reduce environmental contamination.

3. **Scope of Work**

Under the guidance of the Team Leader/Deputy Leader, in conjunction with the PPTA Economist, and Marketing Specialist the Vegetable IPM Specialist Consultant will focus on the following:

- Undertake a complete review of the HORDI Research, Development Information, Extension and Training (R&D&E&T) needs of IPM for priority and potential new vegetables for commercial agribusiness development in Sri Lanka.
- The review discussions must include consultation with farmers and the involvement of researchers, other institutes such as ITI and Universities, extension, information technology personnel, and agribusiness including producers, processors and exporters. The review must produce a complete report and framework for each crop and the outcome must define research topics as well as actions involving technology development as well as preparation of GAP, GMP IPM Manuals, CDROMS, promotional awareness literature, film clips etc. The essential approach for such a review must be farm systems based.
- Review the major areas of vegetable crop IPM research at HORDI., IPM, protected cultivation, processing etc
- Produce a complete prioritized Vegetable IPM R&D&E&T Program Log Frame for Operational Program Planning and Monitoring for each priority vegetable crop.
- Assist with development of new vegetable GAP/GMP IPM technical manuals and CDROMS to be published in collaboration with the DOA AV Unit.
- Recommend key new IPM publications etc., for acquisition on tropical and temperate vegetables.
- Recommend key protected cultivation interventions for assisting IPM in highland vegetables and key IPM interventions to be pursued for dry-zone vegetables.
- Identify key activities for extension of technical know-how to the agribusiness private sector and linked smallholders.
- Assist with any other relevant and reasonable requests made by the Team Leader/Deputy Team Leader.

4. **Working and Reporting Schedule**

**Duration of Input:** 6 months over 6 years-5 missions

**Duty Station:** Kandy with regional field visits

**Reporting:**

At the completion of each mission provide a comprehensive, concise draft report with a summary of main findings and conclusions with recommendations for follow-up. Include an itinerary and list of persons met. Draft reports are to be completed before departure.

5. **Qualifications**

At least 10 years experience in vegetable IPM research and development in Asia/Pacific region, with leading institutions and/or commercial enterprises of international recognition.

Extensive experience in development and extension systems in developing countries in the Asian/Pacific region, preferably with prior experience of working in Sri Lanka.

A good working knowledge of all aspects of production of tropical and temperate vegetables, including production, protected cultivation and IPM.
A University higher degree in Entomology, Agriculture or Horticulture or a closely related discipline from a world recognized university.

A proven track record as evidenced by international assignments, activities, reports, publications etc on IPM.

Fluent in written and spoken English.

D. International Tropical Fruit and Vegetable Processing Specialist (Cost - 132,000)

1. Background

The Government of Sri Lanka (GoSL) formally requested the ADB to provide assistance in the formulation of an Agribusiness Development Project, to follow through on the activities implemented under the Second Perennial Crop Development Project (SPCDP). The objective of this earlier project was to i) support further perennial crop development, and ii) institute measures that would ensure sustainability of credit facilities and extension services for perennial crops. The ADP is considered a logical progression of these activities and support is being provided to the GoSL to consider underlying problems in the sector. This is being implemented through a Project Preparation Technical Assistance (PPTA) designed to i) assess in detail the constraints and impediments to the development of the agribusiness sector in Sri Lanka, ii) propose strategies for overcoming the constraints that have been prioritized by the sector stakeholders, and iii) recommend design and the implementation arrangements for the project.

Under the design and implementation of the project, one of the proposed interventions, under Component 2. Applied Research Extension and Outreach is 1. Support to HORDI Research, Information Development and Extension.

The reason for this support is that currently, overall yields and quality of fruits and vegetables and value-adding via processing are poor in comparison to other counties and compared to key agribusiness initiatives such as the CIC DSI and IFC large farm nucleus enterprises. HORDI has a key role to play in collection and introduction of key fruit and vegetable varieties, establishment of mother tree orchards of new high quality, high yielding varieties, support to IPM and varietal adaption trials, development of technical GAP/GMP manuals and in assisting fruit and vegetable processing technologies and farmer and private sector training to support horticulture agribusiness development.

2. Objective

To review and upgrade HORDI Research, Development Information, Extension and Training (R&D&I&E&T) in key areas of fruit and vegetable processing and product development, using project support to develop close PPP sector collaboration in fostering agribusiness development in priority fruits and vegetables and potential fruit and vegetable processed products for both domestic and export markets. In particular the Food Research Unit of HORDI is the key focus of support.

3. Scope of Work

Under the guidance of the Team Leader/Deputy Leader, in conjunction with the PPTA Economist, and Marketing Specialist the International Tropical Fruit and Vegetable Processing Specialist Consultant will focus on the following.

- Undertake a complete review of the HORDI Research, Development Information, Extension and Training (R&D&I&E&T) needs of processing and product development for tropical fruits and vegetables for commercial agribusiness development in Sri Lanka.
- The review discussions must include consultation with farmers and the involvement of researchers, other institutes such as ITI and Universities, extension, information technology personnel, and agribusiness including producers, processors and exporters. The review must produce a complete report and framework for each crop and the outcome must define research topics as well as actions involving technology
development as well as preparation of GAP, GMP Processing Manuals, CDROMS, promotional awareness literature, film clips etc.

- Review the major areas of tropical fruit and vegetable processing undertaken in the private sector, and the R&D at the Food Research Unit at HORDI, ITI, and Universities and in the private sector.
- Produce a complete prioritized Processing R&D&E&T Program Log Frame for Operational Program Planning and Monitoring for each priority fruit and vegetable crop.
- Assist with development of new processing GAP/GMP technical manuals and CDROMS to be published in collaboration with the DOA AV Unit.
- Recommend key new fruit and vegetable processing key publications etc., for acquisition.
- Provide ad hoc guidance and assistance/advice to targeted private sector processors requiring urgent assistance. Assist key institutes with advice on R&D in product development activities.
- Identify key activities for extension of technical know-how to the agribusiness private sector and linked smallholders.
- Assist with any other relevant and reasonable requests made by the Team Leader/Deputy Team Leader.

4. Working and Reporting Schedule

**Duration of Input:** 6 months over 6 years-5 missions

**Duty Station:** Kandy with regional field visits

**Reporting:**

At the completion of each mission provide a comprehensive, concise draft report with a summary of main findings and conclusions with recommendations for follow-up. Include an itinerary and list of persons met. Draft reports are to be completed before departure.

5. Qualifications

At least 10 years experience in fruit and vegetable processing research and development, preferably in the Asia/Pacific region, with leading institutions and/or commercial enterprises of international recognition.

Extensive experience in development in developing countries in the Asian/Pacific region, preferably with prior experience of working in Sri Lanka.

A good working practical knowledge of all processing and value-adding to tropical and temperate vegetables.

A University higher degree in Food Science, Food Engineering, Agriculture or Horticulture with major emphasis on processing and product development with fruits and vegetables from a world recognized university.

A proven track record as evidenced by international assignments, activities, reports, publications etc on fruit and vegetable processing.

Fluent in written and spoken English.
E. International Virgin Coconut Oil/Products Specialist (Cost - $132,000)

1. Background

The Government of Sri Lanka (GoSL) formally requested the ADB to provide assistance in the formulation of an Agribusiness Development Project, to follow through on the activities implemented under the Second Perennial Crop Development Project (SPCDP). The objective of this earlier project was to i) support further perennial crop development, and ii) institute measures that would ensure sustainability of credit facilities and extension services for perennial crops. The ADP is considered a logical progression of these activities and support is being provided to the GoSL to consider underlying problems in the sector. This is being implemented through a Project Preparation Technical Assistance (PPTA) designed to i) assess in detail the constraints and impediments to the development of the agribusiness sector in Sri Lanka, ii) propose strategies for overcoming the constraints that have been prioritized by the sector stakeholders, and iii) recommend design and the implementation arrangements for the project.

Under the design and implementation of the project, one of the proposed interventions under Component 1. Primary Production and Agro-processing 1. Pilot Scheme-Coconut R&D and Outreach on Virgin Coconut Oil and Value-added Products. This intervention is a PPP initiative linking the Coconut Research Institute (CRI) with smallholder private sector groups via a proposed NGO or larger agribusiness enterprise linkage.

The reason for this support is that currently, long neglected smallholder coconut plantations that are not fertilised because of the high fertiliser and labour costs and low returns for nuts and copra, are now the target of entrepreneurs wishing to classify such plantings as organic. Entrepreneurs are now beginning to make value-added organic coconut cream, and are just beginning an interest in high-value organic Virgin Coconut Oil (VCO), and possible downstream products. In addition, intercropping with fruits and spices and some vegetables, allows such products to claim organic status, provided strict organic management practices meet organic certification standards.

Because excellent opportunities exist for adding value to the coconut tree itself via Virgin Coconut Oil and its products, the concept of this proposal is to support the essential R&D&I&E&T needed to develop these opportunities. At present these opportunities are only partly developed in Sri Lanka. Higher priced value added products like VCO and its derived products can be readily made from the some of the nearly 20% of nuts exported and not consumed domestically at present, and exported as low value coconuts, copra, copra meal and copra oil.

Virgin Coconut Oil is the newest, high value, coconut product which is very much sought after for its human neutraceutical benefits and as a functional food. World demand for VCO is rapidly increasing and VCO production is beginning to rise rapidly and has excellent potential for improving smallholder farm incomes.

2. Objective

To assist CRI and Sri Lanka to upgrade and develop new technologies for production of Virgin Coconut Oil (VCO) and VCO products and their testing and to set-up a CRI outreach program to assist in commercialization and marketing of VCO and VCO products with smallholder groups via NGO or commercial larger agribusiness enterprises.

3. Scope of Work

Under the guidance of the Team Leader/Deputy Leader, in conjunction with the PPTA Economist, and Marketing Specialist the International Virgin Coconut Oil/Products Specialist Consultant will focus on the following.

- Work with Coconut Research Institute VCO specialists to set up a pilot plant for VCO and VCO product research and development. Assist with definition of equipment specifications and procurement sources.
- Assist CRI with the development of high quality VCO and VCO products and their testing and quality control.
- Assist CRI specialists with techniques for value-added utilization of by-products from the VCO manufacturing process and appropriately environmentally friendly disposal of wastes.
- Develop training materials on small-scale VCO and VCO product manufacture, including GMP manuals and CDROMS for awareness and training activities.
- Work with CRI and NGO's on formation of five (5) smallholder VCO production units. Provide technical advice and training of smallholder groups in VCO production quality control and product manufacture.
- Provide advice on local promotion and marketing of VCO and VCO products.
- Recommend key new publications etc., for acquisition on VCO and VCO products.
- Assist with any other relevant and reasonable requests made by the Team Leader/Deputy Team Leader.

4. Working and Reporting Schedule

**Duration of Input:** 6 months over 6 years-5 missions

**Duty Station:** Coconut Research Institute with regional field visits

**Reporting:**

At the completion of each mission provide a comprehensive, concise draft report with a summary of main findings and conclusions with recommendations for follow-up. Include an itinerary and list of persons met. Draft reports are to be completed before departure.

5. Qualifications

At least 10 years experience in research and development on production technologies for Virgin Coconut Oil and downstream products from VCO and coconut by-products.

Extensive experience in developing countries in the Asian/Pacific region.

A good working knowledge of all practical aspects of manufacture of VCO and VCO products at smallholder level and larger commercial levels.

A University higher degree in Food Engineering/Food Science or a closely related discipline from a world recognized university.

A proven track record as evidenced by international assignments, activities, reports, publications etc.

Fluent in written and spoken English.

F. International Coffee Processing Specialist (Cost - $132,000)

1. Background

The Government of Sri Lanka (GoSL) formally requested the ADB to provide assistance in the formulation of an Agribusiness Development Project, to follow through on the activities implemented under the Second Perennial Crop Development Project (SPCDP). The objective of this earlier project was to i) support further perennial crop development, and ii) institute measures that would ensure sustainability of credit facilities and extension services for perennial crops. The ADP is considered a logical progression of these activities and support is being provided to the GoSL to consider underlying problems in the sector. This is being implemented through a Project Preparation Technical Assistance (PPTA) designed to i) assess in detail the constraints and impediments to the development of the agribusiness sector in Sri Lanka, ii) propose strategies for overcoming the constraints that have been prioritized by the sector stakeholders, and iii) recommend design and the implementation arrangements for the project.

Under the design and implementation of the project, one of the proposed interventions under Component 3. Agribusiness Infrastructure and Development, is 1. Nucleus Estate Pilot Scheme for...
Arabica Coffee Development with Supporting R&D and Outreach. This intervention is a PPP initiative linking the Department of Export Agriculture (DEA) to private sector agribusiness and smallholder groups via a proposed Nucleus Estate Pilot Scheme.

The reason for this support is, that in the past Sri Lanka was a very large producer of high quality Arabica coffee with some 16, 700 acres in 1867. However, from 1869 onwards the Arabica coffee was devastated by coffee rust disease. Coffee bushes were not grown under shade and often at too low an elevation and decline from the rust was very rapid. Tea development then replaced coffee in the plantations. Nowadays we know a great deal more about how to manage coffee rust by variety, altitude and shade and there are also lines and varieties of coffee with very good tolerance to number of stains of rust.

For the past 30 years, various areas of the world have been developing signature Geographic/ Estate Arabica coffees for the Specialty coffee market, which continues to expand rapidly at rates approaching 15 % per year. (Brazil Specialty Coffee Association, 2007).This trend, combined with an explosion of coffee consumption in the past 5 to 10 years, especially in Asia, and overall growth in consumption in the world market of 1.5% p.a., is continuing to drive demand and keep Arabica coffee prices high in the world markets. Sri Lanka has an excellent opportunity to develop such coffees and in a small way one local group Hansa is already producing small amount of very high quality Arabica coffee. Arabica Coffee Returns are attractive with a break-even point of 6 years. Arabica coffee it is an ideal smallholder based industry linked to larger nucleus estate enterprises for dry processing and local and export marketing. The challenge is to expand the high quality Specialty Arabica coffee industry.

However, a number of constraints have to be overcome including:

- Limited number of high quality Arabica coffee varieties in country—only S9 and HDT (Hibrido De Timor) at present and some older unidentified Arabica lines.
- Phytosanitary limitations on coffee seed imports must be lifted to allow in clean planting material under quarantine supervision.
- New varieties will need to be introduced and adaptation trials conducted; time-span 6 to 8 years for evaluation.
- R&D capabilities of DEA are very limited for coffee, and ideally, a highland centre for coffee needs to be established, resourced and staffed, or at least a better, much improved capability within DEA for providing better up-to-date coffee research, development, information, extension and training support to the coffee sector.
- New processing, cup tasting and post-harvest management, quality improvement and processing technologies are not present in Sri Lanka and will have to be introduced and personnel trained and the technologies rapidly extended to the industry via improved extension and training.
- A GAP and GMP will need to be established for entering in to key world markets and Fair Trade Specialty Coffee.
- Suitable tracts of land with a minimum area of 40 ha (100 acres) with good soils and appropriate climate will have to be identified and made available at locations around 1200 m.a.s.l. to provide a nucleus as a base for the industry to grow and brand market high quality Sri Lankan Arabica coffee. Sri Lanka has adequate lands to meet these requirements if they can be released by GOSL or diverted away from tea.
- Currently there appear to be no GOSL incentives for investment in Arabica coffee development by private sector with or without out-growers. GOSL needs to develop clear policy and incentives for encouraging Arabica coffee development and exports for Sri Lanka.

To address these constraints and develop the excellent opportunities for production and marketing of high quality Specialty Arabica coffee in Sri Lanka the strategy proposed is for the ADB Agribusiness Development Project to provide firm, catalytic underlying matched grant funding and or loan funding and TA support.

Part of the TA support is to be provided by international coffee specialist consultants.
2. **Objectives**

To assist Sri Lanka to upgrade and regenerate a high quality Specialty Arabica coffee industry for which it was famous in the 18th and 19th centuries. To provide opportunities for agribusiness Arabica nucleus estate development, linked to smallholder producers in areas above 1200 m.a.s.l., and improve incomes and livelihoods of smallholder farmers via new enterprise development.

3. **Scope of Work**

Under the guidance of the Team Leader/Deputy Leader, in conjunction with the PPTA Economist, and Marketing Specialist the International Coffee Processing Specialist Consultant will focus on the following.

- Work with Department of Agriculture (DEA) specialists and the key pilot nucleus estate private sector group and smallholders to set up a nucleus estate pilot plant for wet processing/drying and dry processing of parchment and production of high quality Green Bean (GB) for local roasting and export. Provide essential advice on storage of parchment and GB coffee.
- Help design essential facilities at the nucleus estate for wet and dry processing and provide all specifications for equipment procurement including preferred supplier sources.
- Help commission all equipment and processing facilities and train key staff in ideal operation and maintenance of all wet and dry processing operations including drying and storage.
- Assist DEA in designing essential facilities for sample wet processing and drying and dry processing of sample lots of coffee. Provide all specifications for equipment and indicate preferred equipment and suppliers.
- Assist DEA with the set up of a coffee quality laboratory and lab roasting and tasting facility and train key staff in laboratory operations and tasting. Provide all specifications for equipment and indicate preferred equipment and suppliers.
- Help prepare a Strategic Vision for the development of a high quality Arabica coffee industry in Sri Lanka via consultation with all stakeholders and government agencies.
- With DEA and private sector cooperation evaluate the existing varieties of Arabica coffee in the existing production areas, carefully noting management practices, soils, climate and altitude of each GPS logged location. Use standard wet processing, drying and sample roasting techniques for all samples and send the best samples of GB to key international buyers.
- Provide advice to DEA and best practices and assist in preparation of new GAP/GMP coffee manuals and CDROMS for Arabica coffee in Sri Lanka.
- Provide advice to smallholders on pulping/demucilaging, drying and storage of Arabica coffee on-farm for sale. Participate in training/field days on coffee quality, processing and tasting.
- Recommend key publications etc., for acquisition by DEA and the nucleus estate on Arabica coffee and Specialty Coffee including CDROMS manuals etc.
- Assist with any other relevant and reasonable requests made by the Team Leader/Deputy Team Leader.

4. **Working and Reporting Schedule**

**Duration of Input:** 6 months over 6 years-5 missions

**Duty Station:** DEA and Nucleus estate.

**Reporting:**

At the completion of each mission provide a comprehensive, concise draft report with a summary of main findings and conclusions with recommendations for follow-up. Include an itinerary and list of persons met. Draft reports are to be completed before departure.
5. Qualifications

At least 10 years experience in commercial/semi-commercial Arabica coffee processing technologies for production high quality coffee.

Extensive experience in developing countries in the Asian/Pacific region.

A good working knowledge of all practical aspects of wet processing, drying, dry processing, storage and coffee quality assessment and tasting and development of commercial international markets.

A University degree in Agricultural Engineering, Agriculture or a closely related discipline from a world recognized university.

A proven track record as evidenced by international assignments, activities, reports, publications etc.

Fluent in written and spoken English.

G. International Coffee Breeder/Agronomy Specialist (Cost - $66,000)

1. Background

The Government of Sri Lanka (GoSL) formally requested the ADB to provide assistance in the formulation of an Agribusiness Development Project, to follow through on the activities implemented under the Second Perennial Crop Development Project (SPCDP). The objective of this earlier project was to i) support further perennial crop development, and ii) institute measures that would ensure sustainability of credit facilities and extension services for perennial crops. The ADP is considered a logical progression of these activities and support is being provided to the GoSL to consider underlying problems in the sector. This is being implemented through a Project Preparation Technical Assistance (PPTA) designed to i) assess in detail the constraints and impediments to the development of the agribusiness sector in Sri Lanka, ii) propose strategies for overcoming the constraints that have been prioritized by the sector stakeholders, and iii) recommend design and the implementation arrangements for the project.

Under the design and implementation of the project, one of the proposed interventions under Component 3. Agribusiness Infrastructure and Development, is 1. Nucleus Estate Pilot Scheme for Arabica Coffee Development with Supporting R&D and Outreach. This intervention is a PPP initiative linking the Department of Export Agriculture (DEA) to private sector agribusiness and smallholder groups via a proposed Nucleus Estate Pilot Scheme.

The reason for this support is, that in the past Sri Lanka was a very large producer of high quality Arabica coffee with some 16,700 acres in 1867. However, from 1869 onwards the Arabica coffee was devastated by coffee rust disease. Coffee bushes were not grown under shade and often at too low an elevation and decline from the rust was very rapid. Tea development then replaced coffee in the plantations. Nowadays we know a great deal more about how to manage coffee rust by variety, altitude and shade and there are also lines and varieties of coffee with very good tolerance to number of stains of rust.

For the past 30 years, various areas of the world have been developing signature Geographic/Estate Arabica coffees for the Specialty coffee market, which continues to expand rapidly at rates approaching 15% per year. (Brazil Specialty Coffee Association, 2007). This trend, combined with an explosion of coffee consumption in the past 5 to 10 years, especially in Asia, and overall growth in consumption in the world market of 1.5% p.a., is continuing to drive demand and keep Arabica coffee prices high in the world markets. Sri Lanka has an excellent opportunity to develop such coffees and in a small way one local group Hansa is already producing small amount of very high quality Arabica coffee. Arabica Coffee Returns are attractive with a break-even point of 6 years. Arabica coffee it is an ideal smallholder based industry linked to larger nucleus estate enterprises for dry processing and local and export marketing. The challenge is to expand the high quality Specialty Arabica coffee industry.

However, a number of constraints have to be overcome including:
Appendix 4

ADB TA 4800 SRI: PPTA for the Agribusiness Development Project
Draft Final Report

• Limited number of high quality Arabica coffee varieties in country—only S9 and HDT (Hibrido De Timor) at present and some older unidentified Arabica lines.
• Phytosanitary limitations on coffee seed imports must be lifted to allow in clean planting material under quarantine supervision.
• New varieties will need to be introduced and adaptation trials conducted; time-span 6 to 8 years for evaluation.
• R&D capabilities of DEA are very limited for coffee, and ideally, a highland centre for coffee needs to be established, resourced and staffed, or at least a better, much improved capability within DEA for providing better up-to-date coffee research, development, information, extension and training support to the coffee sector.
• New processing, cup tasting and post-harvest management, quality improvement and processing technologies are not present in Sri Lanka and will have to be introduced and personnel trained and the technologies rapidly extended to the industry via improved extension and training.
• A GAP and GMP will need to be established for entering into key world markets and Fair Trade Specialty Coffee.
• Suitable tracts of land with a minimum area of 40 ha (100 acres) with good soils and appropriate climate will have to be identified and made available at locations around 1200 m.a.s.l. to provide a nucleus as a base for the industry to grow and brand market high quality Sri Lankan Arabica coffee. Sri Lanka has adequate lands to meet these requirements if they can be released by GOSL or diverted away from tea.
• Currently there appear to be no GOSL incentives for investment in Arabica coffee development by private sector with or without out-growers. GOSL needs to develop clear policy and incentives for encouraging Arabica coffee development and exports for Sri Lanka.

To address these constraints and develop the excellent opportunities for production and marketing of high quality Specialty Arabica coffee in Sri Lanka the strategy proposed is for the ADB Agribusiness Development Project to provide firm, catalytic underlying matched grant funding and or loan funding and TA support.

Part of the TA support is to be provided by international coffee specialist consultants.

2. Objectives

To assist Sri Lanka to upgrade and regenerate a high quality Specialty Arabica coffee industry for which it was famous in the 18th and 19th centuries. To provide opportunities for agribusiness Arabica nucleus estate development, linked to smallholder producers in areas above 1200 m.a.s.l., and improve incomes and livelihoods of smallholder farmers via new enterprise development.

3. Scope of Work

Under the guidance of the Team Leader/Deputy Leader, in conjunction with the PPTA Economist, and Marketing Specialist the International Coffee Breeder/Agronomist Specialist Consultant will focus on the following.

• Work with Department of Agriculture (DEA) specialists and the key pilot nucleus estate private sector group and smallholders to identify the existing Arabica coffee varieties present in Sri Lanka.
• Suggest key high quality Arabica coffee varieties for introduction for production of high quality Specialty Arabic Coffee.
• With DEA and the nucleus estate define an area on the estate for evaluation of existing and new varieties at high altitude and in at least 4 other locations.
• Help design and establish a mother tree Arabica coffee collection at the nucleus estate and at the DEA Export Agriculture Station at Matale.
• Advise and assist with the design of an efficient Arabica coffee propagation facility, 5,000sqm under shade and polythene cover, at the nucleus estate and smaller facility at the DEA Export Agriculture Station at Matale.
• Provide key advice on propagation techniques of Arabica coffee and their successful rearing along with propagation of recommended shade trees for supply to the estate and out-grower smallholders.

• Assist with the compilation of a GAP Arabica coffee manual.

• Organise for farmer training field days on nurseries and establishment of young coffee plants and shade trees in the field, along with pruning and training, fertilizing etc.

• Assist with any other relevant and reasonable requests made by the Team Leader/Deputy Team Leader.

4. Working and Reporting Schedule

**Duration of Input:** 3 months over 6 years-4 missions

**Duty Station:** DEA and Nucleus estate.

**Reporting:**

At the completion of each mission provide a comprehensive, concise draft report with a summary of main findings and conclusions with recommendations for follow-up. Include an itinerary and list of persons met. Draft reports are to be completed before departure.

5. Qualifications

At least 10 years experience in Arabica coffee breeding and selection for production high quality coffee with desired traits.

Extensive experience in Arabica coffee in developing countries in the Asian/Pacific region.

A good working knowledge of all practical aspects of coffee selection, propagation and field management, including key pests and diseases.

A University degree in Agriculture or a closely related discipline from a world recognized university.

A proven track record as evidenced by international assignments, activities, reports, publications etc.

Fluent in written and spoken English.

H. International Coffee R&D Specialist (Cost – $88,000)

1. Background

The Government of Sri Lanka (GoSL) formally requested the ADB to provide assistance in the formulation of an Agribusiness Development Project, to follow through on the activities implemented under the Second Perennial Crop Development Project (SPCDP). The objective of this earlier project was to i) support further perennial crop development, and ii) institute measures that would ensure sustainability of credit facilities and extension services for perennial crops. The ADP is considered a logical progression of these activities and support is being provided to the GoSL to consider underlying problems in the sector. This is being implemented through a Project Preparation Technical Assistance (PPTA) designed to i) assess in detail the constraints and impediments to the development of the agribusiness sector in Sri Lanka, ii) propose strategies for overcoming the constraints that have been prioritized by the sector stakeholders, and iii) recommend design and the implementation arrangements for the project.

Under the design and implementation of the project, one of the proposed interventions under Component 3. Agribusiness Infrastructure and Development, is 1. Nucleus Estate Pilot Scheme for Arabica Coffee Development with Supporting R&D and Outreach. This intervention is a PPP initiative linking the Department of Export Agriculture (DEA) to private sector agribusiness and smallholder groups via a proposed Nucleus Estate Pilot Scheme.
The reason for this support is, that in the past Sri Lanka was a very large producer of high quality Arabica coffee with some 16,700 acres in 1867. However, from 1869 onwards the Arabica coffee was devastated by coffee rust disease. Coffee bushes were not grown under shade and often at too low an elevation and decline from the rust was very rapid. Tea development then replaced coffee in the plantations. Nowadays we know a great deal more about how to manage coffee rust by variety, altitude and shade and there are also lines and varieties of coffee with very good tolerance to number of stains of rust.

For the past 30 years, various areas of the world have been developing signature Geographic/Estate Arabica coffees for the Specialty coffee market, which continues to expand rapidly at rates approaching 15% per year. (Brazil Specialty Coffee Association, 2007). This trend, combined with an explosion of coffee consumption in the past 5 to 10 years, especially in Asia, and overall growth in consumption in the world market of 1.5% p.a., is continuing to drive demand and keep Arabica coffee prices high in the world markets. Sri Lanka has an excellent opportunity to develop such coffees and in a small way one local group Hansa is already producing small amount of very high quality Arabica coffee. Arabica Coffee Returns are attractive with a break-even point of 6 years. Arabica coffee it is an ideal smallholder based industry linked to larger nucleus estate enterprises for dry processing and local and export marketing. The challenge is to expand the high quality Specialty Arabica coffee industry.

However, a number of constraints have to be overcome including:

- Limited number of high quality Arabica coffee varieties in country—only S9 and HDT (Hibrido De Timor) at present and some older unidentified Arabica lines.
- Phytosanitary limitations on coffee seed imports must be lifted to allow in clean planting material under quarantine supervision.
- New varieties will need to be introduced and adaptation trials conducted; time-span 6 to 8 years for evaluation.
- R&D capabilities of DEA are very limited for coffee, and ideally, a highland centre for coffee needs to be established, resourced and staffed, or at least a better, much improved capability within DEA for providing better up-to-date coffee research, development, information, extension and training support to the coffee sector.
- New processing, cup tasting and post-harvest management, quality improvement and processing technologies are not present in Sri Lanka and will have to be introduced and personnel trained and the technologies rapidly extended to the industry via improved extension and training.
- A GAP and GMP will need to be established for entering in to key world markets and Fair Trade Specialty Coffee.
- Suitable tracts of land with a minimum area of 40 ha (100 acres) with good soils and appropriate climate will have to be identified and made available at locations around 1200 m.a.s.l. to provide a nucleus as a base for the industry to grow and brand market high quality Sri Lankan Arabica coffee. Sri Lanka has adequate lands to meet these requirements if they can be released by GOSL or diverted away from tea.
- Currently there appear to be no GOSL incentives for investment in Arabica coffee development by private sector with or without out-growers. GOSL needs to develop clear policy and incentives for encouraging Arabica coffee development and exports for Sri Lanka.

To address these constraints and develop the excellent opportunities for production and marketing of high quality Specialty Arabica coffee in Sri Lanka the strategy proposed is for the ADB Agribusiness Development Project to provide firm, catalytic underlying matched grant funding and or loan funding and TA support.

Part of the TA support is to be provided by international coffee specialist consultants.

2. Objectives

To assist Sri Lanka to upgrade and regenerate a high quality Specialty Arabica coffee industry for which it was famous in the 18th and 19th centuries. To provide opportunities for agribusiness Arabica
nucleus estate development, linked to smallholder producers in areas above 1200 m.a.s.l., and improve incomes and livelihoods of smallholder farmers via new enterprise development.

3. Scope of Work

Under the guidance of the Team Leader/Deputy Leader, in conjunction with the PPTA Economist, and Marketing Specialist the International Coffee R&D Specialist Consultant will focus on the following.

- Work with Department of Agriculture (DEA) specialists and other international consultants the nucleus estate and key out-growers, completely review the current Arabica coffee R&D program of DEA. The review must take into account the needs of the newly emerging coffee industry and cover all major areas of R&D including all aspects of production, pests and diseases, management, breeding/selection, processing and quality evaluation. The key focus should be dedicated applied/adaptive R&D with practical outcomes for farmers and processors. Produce a complete prioritized Arabica Coffee R&D&I&E&T Program Log Frame for Operational Program Planning and Monitoring for each major area of research.

- Coordinate and compile with key staff and international consultants a new GAP/GMP technical manual on Arabica coffee and CDROMS to be published and used as he basis for training of farmers and private sector processors etc.

- Collaborate closely with the international plant breeder/agronomist and coffee processing specialist on development of new R&D initiatives and training events for farmers and private sector processors. Assist in running of farmer training.

- Assist DEA and the international coffee processing specialist with the set up of a coffee quality laboratory and lab roasting and tasting facility and training of key staff in laboratory operations and tasting and evaluation of coffee samples.

- Help with preparing the Strategic Vision for the development of a high quality Arabica coffee industry in Sri Lanka in collaboration with other consultants and via consultation with all stakeholders and government agencies.

- Recommend key publications etc., for acquisition by DEA and the nucleus estate on Arabica coffee and Specialty Coffee including CDROMS manuals etc.

- Provide advice on selection and production of commercial intercrops for Arabica coffee in the establishment years.

- Assist with any other relevant and reasonable requests made by the Team Leader/Deputy Team Leader.

4. Working and Reporting Schedule

Duration of Input: 4 months over 6 years-5 missions

Duty Station: DEA and Nucleus estate.

Reporting:

At the completion of each mission provide a comprehensive, concise draft report with a summary of main findings and conclusions with recommendations for follow-up. Include an itinerary and list of persons met. Draft reports are to be completed before departure.

5. Qualifications

At least 10 years experience in organization and management of research programs in tree crops, including Arabica coffee production and processing and managing international project interventions.

Extensive experience in developing countries in the Asian/Pacific region including experience with short term horticultural crops or industrial crops suitable for intercropping in coffee.

A good working knowledge of all practical aspects of coffee production and wet processing, drying, dry processing, storage and coffee quality assessment and tasting and development of commercial international markets.
A University higher degree in Agriculture or a closely related discipline from a world recognized university.

Good experience in preparation of GAP/GMP manuals for training of farmers and private sector personnel.

A proven track record as evidenced by international assignments, activities, reports, publications etc.

Fluent in written and spoken English.

I. Standards, Branding and Gap Consultant (8 person months – Cost - $176,000))

1. Candidate Profile

The Standards, Branding and GAP Consultant will have at least 10 years experience specifically in the development of agro-based product standards and the elaboration of Good Agriculture Practices (GAP) and will have skills in marketing particularly with respect to product differentiation through branding and niche market opportunities. The consultant will have strong managerial, analytical and interpersonal skills and a proven ability to communicate clearly both verbally and in writing.

2. Job Description

The consultant will:

(i) undertake a review of existing Sri Lanka agro-based product standards as developed by the Sri Lanka Standards Institution (SLSI) and make recommendations for amendments and revisions and the elaboration of new standards related to agribusiness development and opportunities. Regarding existing standards pay particular attention to such factors as grade differentiation, post harvest protocols, labeling and analytical quality tests required,

(ii) in collaboration with the Spices Council develop the concept of branding for products that can be differentiated for higher value markets, using the Council’s experience identify the markets and recommend the work to be undertaken to achieve the objective of gaining price premiums for quality Sri Lankan products,

(iii) in conjunction with the National Agribusiness Council, identify other agro-based products that could benefit from branding and develop an action plan to implement the branding strategy,

(iv) with SLSI, Ministry of Agriculture and Agrarian Services (MADAS) and the private sector, develop a draft Good Agricultural Practices blueprint based on Sri Lanka production and environmental conditions and in line with international specifications, develop an action plan for GAP implementation and for the future Sri Lanka GAP benchmarking against EurepGAP and

(v) present short training courses on branding and GAP to demonstrate the benefits of such exercises in light of the existing global market.

3. Qualification

University degree or equivalent qualification in marketing, agribusiness or agricultural marketing

J. Quarantine and Risk Assessment Consultant (6 person months – Cost $132,000)

1. Candidate Profile

The Quarantine and Risk Assessment consultant will have at least 10 years experience in inspection and quarantine relating to animal and plant health and be conversant with risk assessment and risk management practices for the release of plant and animal products, as recommended by International Plant Protection Convention (IPPC) and Office Internationale des Epizootics (OIE) and the Revised Kyoto Convention. The consultants will have strong managerial, analytical and interpersonal skills and a proven ability to design and present training courses.
2. Job Description

The consultant will:

(i) work closely with the Department of Agriculture’s Plant and Animal Quarantine Departments.

(ii) study prominent Sri Lanka cases regarding the prohibition of entry of plant material and live animals on the basis of risk and compare the examples with other plant material and live animal bans around the world.

(iii) prepare training courses relating to risk assessment and risk management and the use of post-entry quarantine facilities to facilitate the import of plant material and live animals, related to IPPC and OIE guidelines. Give practical examples of the risk assessment and risk management process.

(iv) assess both department’s pest diagnosis and identification capability and provide material and training related to the identification of plant and animal pests that are of economic important to inspection and quarantine agencies.

(v) develop training manuals relating to (i) risk management and (ii) the design and management of post-entry quarantine facilities.

(vi) Review the laws relating to plant and animal health such as (i) Animal Disease Act (ii) Animal Feed Act and (iii) Animals Act (iv) Plant Protection Act and (v) Seed Act and in light of the strict quarantine regulations determine if there is any scope for flexibility in the existing legal framework. Make recommendations regarding any amendments required to the existing legal framework in light of recent global developments.

3. Qualification

University degree or equivalent qualification in agriculture with specialization in inspection, quarantines and risk management.

K. Organic Production and Certification Consultant (8 person months – Cost - $176,000)

1. Candidate Profile

The Organic Production and Certification Consultant must have at least 7 years experience in developing and managing organic production programs and have been a lead auditor for an organic certification body that is or was internationally accredited. The consultant will have strong managerial, analytical and interpersonal skills and a proven ability to design and present training courses.

2. Job Description

The consultant will:

(i) work closely the Ministry of Agriculture and Agrarian Service’s (MADAS) Department of Agriculture to implement the National Organic Standards and Certification Program.

(ii) With the incumbent national program manager assist the person in the management and give advice on work and activity schedules, make recommendations on any program revisions that may be required and develop an action plan to achieve the perceived program targets, particularly with respect to establishing a national organic certification body and monitoring and managing farmer’s organic conversion.

(iii) Design and present “Train the Trainer” courses for the department’s field staff, to ensure that they have the capacity to undertake organic and awareness training courses for farmers.

(iv) Attend some farmer training courses to assess the capability of the newly trained field staff and make recommendations accordingly if revisions are to be made to the training course content.

(v) Develop a training manual for organic farmer training which can be used by the trainers.
3. Qualifications

University degree in agriculture and a qualified organic production auditor or assessor accredited to International Foundation of Organic Agriculture (IFOAM).

L. International Marketing Specialist

1. Background

Under the above referenced Technical Assistance program, the ADB provided support to the Government of Sri Lanka (GoSL) for the formulation of an Agribusiness Development Project (ADP). This was intended to follow through on the activities implemented under the ADB funded Second Perennial Crop Development Project (SPCDP) which had the objective of i) supporting further perennial crop development, and ii) instituting measures that would ensure sustainability of credit facilities and extension services for perennial crops. The various interventions under the ADP include the establishment of the Marketing, Innovation, Development and Ancillary Support (MIDAS) sub-component.

The rationale for the MIDAS approach has been developed to address the limited presence of integrated and vertical supply chains, reduce the number of intermediaries in the marketing chain, limit the level of post-harvest losses, and support the development of demand-driven production with the objective of a more equitable distribution of returns to supply chain participants.

The MIDAS sub-component is intended to be structured under a Project Implementation Unit (PIU) and implemented through a Lead Service Provider (LSP) and four Individual Service Providers (ISPs). These contracted service providers will undertake day-to-day responsibility for coordinating the business and technical support to be provided.

2. Objective

(i) The objective is to identify market opportunities in terms of destination, supply window, volumes, target price and quality criteria and to match this data with potential areas of production. These activities will be complemented by the organization and development of smaller producers into a critical mass to allow the application of economies-of-scale which currently inhibit growth and restrict the transition to medium-scale operatives to meet market opportunities. The nomenclature or designation of these groups is less important than the nature of their activities. They may be termed Farmer Based Organizations (FBOs), Community Based Organization (CBOs), Cluster Groups (CGs), Growers Associations (GAs), Co-operatives, etc. The essential element is that they are market-driven, motivated and willing to cooperate to meet a common objective – the development of viable agribusiness ventures. Depending on the nature of the activity they may be considered as stand-alone businesses or be considered as satellite operations of a larger nucleus out-grower operation.

(ii) To support this objective, the sub-component makes provision for a series of marketing visits (8), baseline surveys (6) and market studies (6), together with a number of business and technical support initiatives. These initiatives incorporate a number (168) of training courses in appropriate subjects, a number of study tours (8), matched grant funding (50:50) for the introduction of appropriate technology, product development, research and development, market research and identification, packaging development and logistics and transportation.

3. Scope of Work

Working under the guidance of the MIDAS Project Implementation Unit (PIU), and in consultation with the LSP and the ISPs, the Marketing Specialist will focus on the subject matter outlined below:
(i) Assist in determining the existing marketing mechanisms employed by target beneficiary producer groups, current deficiencies and opportunities for strengthening their marketing capacities.

(ii) Identify potential national, regional and international marketing opportunities and develop more detailed assessments through structured marketing visits. These selected visits should determine specific product profiles, market opportunities, quality criteria, potential importers and supply chain systems, current and future volumes, seasonality of supply, the marketing window and the competitive position in relation to other suppliers/nations.

(iii) Develop a detailed database of existing and potential opportunities and maintain and foster commercial linkages between key buyers/importers and producer groups.

(iv) On the basis of the commercial opportunities identified develop distinct and structured marketing proposals for target beneficiary producer groups, linked to identified opportunities, and act as a mentor and provide hands-on support.

(v) Assist in identifying the requirements of baseline surveys and market surveys required, on a needs basis, under the project and support the LSP and ISPs in formulating and analyzing these.

(vi) Determine the capacity building needs of the LSP and ISPs, to support the marketing needs of target beneficiaries, and provide in-house training if required.

(vii) Assist the LSP and ISPs in formulating market related training programs for target beneficiaries and jointly develop structured training modules to support the LSP/ISPs in the delivery of these courses.

(viii) Propose and prepare a series of study tours, to regional markets, to provide exposure to target beneficiary producer groups on the practical aspects of satisfying the requirements of supplying these markets.

(ix) Assist in establishing the qualifying criteria for matched grant funding support and the screening mechanisms for marketing related funding applications. In addition, develop a monitoring framework to assist in identifying the benefits accruing from these interventions and the overall impact.

(x) Any other related marketing functions reasonably requested by project management.

4. Duration and Timing of Inputs

(i) A total input of 24 person months is envisaged during the first three-years of the project.

(ii) The first year is structured to allow for full-time support during this period with the remaining twelve-person month inputs to be phased over PY2 and PY3. The actual timing of these subsequent inputs will be agreed with management and will be linked to key planned activities and project needs.

5. International Marketing Specialist Qualifications

(i) The International Marketing Specialist should hold a degree in marketing or agribusiness from an internationally recognized university.

(ii) Should have at least 15 years experience in the marketing of agricultural crops and commodities related to the agribusiness sector. Together with an understanding of the sector and small producer groups in island economies, in particular, and Sri Lanka, specifically.

(iii) Geographic experience in the Gulf and Middle East, a comprehensive understanding of marketing structures across the region. Prior experience in identifying market opportunities and mobilizing small producer groups to meet the market opportunities identified.
APPENDIX 5
PROJECT JUSTIFICATION AND ECONOMIC ANALYSIS

A. Background

The Agribusiness Development Project covers a wide range of activities that are interlinked, from the supply of inputs for agricultural production, the actual production process and the subsequent marketing and distribution. As defined for the current project, the activities include (a) the supply of farm inputs (b) commercial farm production such as cultivation, and post harvest processing (c) storage, transport, marketing and related logistics and (d) services required such as research and extension, finance and the transfer of technology.

B. Project Justification and Beneficiaries

The project seeks assume a key role in the conversion of the existing subsistence basis of agriculture in Sri Lanka to one of commercial orientation. This process will not be limited to “corporate” farming-all project sub-sectors have major components that are designed to uplift the living standards of the small farmer or processor. The target groups therefore comprise small farmers, commercial farms, traders, processors, those involved in logistics and exporters. The emphasis on introducing new technologies and crops will increase value addition at farm level, expand employment opportunities and increase agricultural output and exports. With the change of farming systems from subsistence basis to a commercial basis, rural incomes will increase. The project will also emphasize the development of exports of agricultural products with a focus on high value crops.

1. Horticulture

The potential for the cultivation of fruits and vegetables in Sri Lanka has not been exploited effectively in the past. Per capita consumption is low for both categories, while the island has not been able to realize the benefits of a developed export market for these products. The project will provide credit funds for the cultivation of a large number of fruit and vegetable varieties provide support for research and extension and also improve marketing and distribution chains. Support will also be provided for the development of value addition for the raw produce. The project will support the growth of the nucleus farm/smallholder model, to eliminate the inefficient small farm production model that is widely prevalent in the island. The project will support investments in modern research and development thereby introducing a multifold improvement in productivity especially for fruits and vegetables. The full potential of the traditional coconut farming model in Sri Lanka has not been realized, an aspect the project will addressed by supporting investment in the production of high value virgin coconut oil which has a lucrative export market.

The interventions proposed by the project will vastly improve the returns to farmers, processors and exporters by (a) increasing productivity and (b) improving prices through the cultivation of improved varieties and appropriate post-harvest technologies. The introduction of a range of new products and processes will result in a more diversified rural economy that is better able to withstand price fluctuation of traditional crops. The novelty of the proposed investments will also attract rural youth back to agriculture, reversing the recent trend where working in agriculture is viewed with reserve by youth.

2. Floriculture

Despite growing demand, the ratio of floriculture exports to total agricultural exports in Sri Lanka has been constant for the last decade. Exports mostly comprise foliage, when 50 percent of global consumption is in cut flowers. Sri Lanka has therefore being a substantial under-achiever in the floriculture sector. The project includes several interventions to expand the production and export performance of the floriculture sector. These will have wide ranging economic benefits such as expansion of exports, the involvement of a wider segment of the rural population in floriculture and increases in the production of more remunerative floriculture products.
3. Dairy and Livestock

The development of the dairy sector has assumed significance recently due to the steep escalation in the price of imported milk powder that accounts for the bulk of consumption. The project seeks to intervene in the dairy sector in several ways to increase output and improve the collection and marketing system. The project will support large and medium-sized farms to expand production and will assist in the formation of public-private partnerships on under utilized government owned land. These investments will yield benefits by increasing the production of fresh milk. High quality breeding cattle will be provided with project assistance to improve the quality of the national herd. Training in dairy production as well as in small scale processing will be provided to enable rural dairy farmers to improve their incomes.

4. Spices

The spices sector in Sri Lanka also suffers from low production volumes, poor quality of produce, an inefficient post-harvest chain, poor processing capability and limited market access. The project proposes to address these constraints in several ways. The clustering of small producers will ensure marketable volumes of spices and enable higher prices, thereby increasing the incomes of a significant segment of the rural population. Investment in improved primary processing will also yield better returns to producers. Secondary processing and packaging will be encouraged through both investments and training. Reforms of the sector is also envisaged by better integration of producers, traders and exporters, leading to an increase in the efficiency of the entire value chain.

5. Supply Chain Development

There is a very high loss in post-harvest fruits and vegetables due to weaknesses in the supply chain, with estimates ranging from 20-50 percent. These weaknesses arise from the traditional nature of the existing supply chains. The supply chain for spices is more efficient, while that for the dairy sector is characterized by a large number of highly disbursted small producers. The project proposes the establishment of a Marketing Innovation, Development and Ancillary Support (MIDAS) program and a Marketing Information System. The implementation of these programs will greatly reduce post harvest losses, and encourage small producers to develop economies of scale that will in turn improve rural incomes.

C. Indicative Subproject Analysis

1. Approach and Methodology

The TA consultants have identified approximately 200 interventions under the various sub-sectors that have been considered for the project. Apart from the sub-sectors such as horticulture and spices, there are many different types of activities ranging from research and extension to the strengthening of the agribusiness infrastructure. During implementation, project stakeholders are expected to identify priorities from the proposed list of interventions and the direction of the investments is expected to be demand driven. Due to this diversity, a mix of interventions that reflects the project cannot be identified at the planning stage and an integrated cost-benefit analysis for the project is not realistic. Due to this constraint, representative sub-projects have been identified for the purpose of financial and economic analysis.

The representative sub project models are based on projected cash flows over a period of 25 years for the agricultural investments, providing an adequate period due to most of the crops belonging to the perennial category.

The analytical framework includes the following:

(i) The analysis is conducted in constant 2007 prices.
(ii) The indicator used is the financial rate of return (FIRR) for financial analysis and economic internal rate of return (EIRR) for economic analysis.
(iii) All cash flows are first derived using financial prices. For economic analysis, the cash flows are converted to economic prices.
(iv) The analysis uses the foreign exchange numeraire where economic prices are expressed at border value terms. Non-traded items are converted to border values by means of a conversion factor. A standard conversion factor (SCF) of 0.9 is used in the analysis. To eliminate market distortions in the economic analysis, transfer payments such as taxes, duties and subsidies are removed from the financial prices in order to derive the economic prices.

(v) Due to a general shortage of labour in the agricultural sector, farmers pay market wage rates for workers, hence the economic price of labour is considered to be the market price for labour.

(vi) Due to the diversity of the interventions, the project target groups do not comprise any single farming system where the new investments will be incremental to any existing agricultural activity. For this reason, the cash flows are non-incremental by necessity.

2. Assumptions

The forecasts of commodity prices in constant terms published by the World Bank are used as the basis for the price forecast of fertilizer (urea and muriate of potash). The prices are converted to farm gate basis by adding freight costs, insurance, duties, handling and transport. The plant establishment costs, costs of crop maintenance and yields are based on farm models and other information provided by the Department of Agriculture and the Department of Export Agriculture, with added information provided by the TA sector specialists.

The dairy farm model is based on the all-island dairy farm model developed by the TA dairy specialist with costs and other assumptions derived from surveys. Two models were developed with and without family labor. The results shown are for the model that includes family labor as a cost. The farms are small, with 4-5 cows. The investments are in the construction of shelter for cattle and the development and maintenance of pasture. The virgin coconut oil (VCO) model is based on the assumptions used for a similar model in the Philippines, with prices and costs suitably adjusted for Sri Lanka. The VCO operation is relatively small scale, with a processing capacity of 350 nuts per day.

3. Results of Financial and Economic Analysis

Table 1 shows the results of the financial and economic analysis. Using a cut off economic internal rate of return of 12 percent, all the selected interventions are seen to be economically viable, with Arabica coffee showing a marginal reduction from the benchmark rate.

<table>
<thead>
<tr>
<th>Selected Interventions</th>
<th>Financial and Economic Rates of Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FIRR</td>
</tr>
<tr>
<td>Orange</td>
<td>25%</td>
</tr>
<tr>
<td>Pineapple</td>
<td>52%</td>
</tr>
<tr>
<td>Papaya</td>
<td>26%</td>
</tr>
<tr>
<td>Arabica Coffee</td>
<td>10%</td>
</tr>
<tr>
<td>Cocoa</td>
<td>15%</td>
</tr>
<tr>
<td>Cardamom</td>
<td>39%</td>
</tr>
<tr>
<td>Cinnamon</td>
<td>17%</td>
</tr>
<tr>
<td>Small Scale Dairy Production</td>
<td>4%</td>
</tr>
<tr>
<td>Virgin Coconut Oil</td>
<td>23%</td>
</tr>
</tbody>
</table>
Since the foreign exchange numeraire has been used, the economic rate of return of exportable products is much higher than the products with a purely domestic market. Beverage crops are seen to show lower rates of return than fruit crops and spices. Crops such as Arabica coffee will be viable only in the premium end of the market. The prices of Arabica coffee show a long term decline, while cocoa prices are stable according to the current commodity price forecasts published by the World Bank.

Small scale dairy production shows a marginal financial rate of return, but is attractive from an economic perspective since the possibilities for import substitution is reflected in the economic price of milk. The dairy models show very high rates of return if family labor is not assigned a cost. Therefore, small scale dairy farms, with improvement of breeding stock as envisaged, are highly viable where the family has no opportunity cost in providing labor. This will be more relevant if the current trends in the world prices of milk powder, accounting for the bulk of domestic consumption, continue to maintain the current high levels.

4. Sensitivity Tests

Table 2 shows the results of sensitivity tests carried out on the economic models developed for the analysis.

<table>
<thead>
<tr>
<th></th>
<th>Base EIRR</th>
<th>Investment Costs Increased by 20%</th>
<th>Operating Costs Increased by 20%</th>
<th>Selling Price reduced by 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td>27%</td>
<td>24%</td>
<td>26%</td>
<td>23%</td>
</tr>
<tr>
<td>Pineapple</td>
<td>51%</td>
<td>43%</td>
<td>45%</td>
<td>36%</td>
</tr>
<tr>
<td>Papaya</td>
<td>23%</td>
<td>19%</td>
<td>3%</td>
<td>(-ve)</td>
</tr>
<tr>
<td>Arabica Coffee</td>
<td>11%</td>
<td>10%</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Cocoa</td>
<td>16%</td>
<td>15%</td>
<td>15%</td>
<td>13%</td>
</tr>
<tr>
<td>Cardamom</td>
<td>42%</td>
<td>39%</td>
<td>40%</td>
<td>37%</td>
</tr>
<tr>
<td>Cinnamon</td>
<td>20%</td>
<td>19%</td>
<td>14%</td>
<td>11%</td>
</tr>
<tr>
<td>Small Scale Dairy Production</td>
<td>14%</td>
<td>9%</td>
<td>8%</td>
<td>(-ve)</td>
</tr>
<tr>
<td>Virgin Coconut Oil</td>
<td>24%</td>
<td>18%</td>
<td>10%</td>
<td>2%</td>
</tr>
</tbody>
</table>

The sensitivity tests were conducted by changing key parameters by 20 percent to observe changes in the economic internal rate of return. Most of the commercial agriculture interventions are seen to be robust to increases in investment and operating costs, with the exception of papaya which is highly sensitive to changes in operating costs as well as selling price. Both small scale dairying and virgin coconut oil are sensitive to selling price.

D. Overall Project Impacts

1. Income

The most significant direct impact on income that will be brought about by project activities is through the credit facilities that will be made available under the project, especially for the cultivation of commercial crops. The experience of the two preceding projects in the sector shows that a large proportion of the beneficiaries will be small and medium farmers, who will be induced to take up
commercial agriculture due to the availability of concessionary credit under the project. Several concepts introduced under the project will benefit disadvantaged groups and subsistence farmers. Grant funds will be available to meet part of the costs for investments in under-developed regions where most farmers are engaged in subsistence agriculture. The concept of nucleus farms, a key strategy under the project, will be an instrument whereby modern farming and processing technology will be transferred from large scale investors to small farmers. The large volume of training that is envisaged will indirectly contribute to the increase of farmers' incomes.

The project has several initiatives to improve farm gate prices and thereby improve farm incomes. The emphasis on primary processing in the spices sector is one such example, whereby farmer incomes will increase due to better quality of primary produce being introduced to the value chain.

2. Employment

The agriculture sector in Sri Lanka is characterized by the contradiction that shortages of agricultural labor coexist with a high rate of youth unemployment in the rural sector. Youth in Sri Lanka have no interest in engaging in traditional agriculture due to low returns as well as a negative social image that is associated with agricultural labor. The project proposes a large number of interventions that are expected to reverse this trend. A number of new crops and agricultural activities are proposed that will yield higher returns and will attract youth due to the novelty of the ventures proposed. Among these are high value vegetables under protected agriculture, floriculture under nucleus estate models and small scale dairy processing units not currently available in Sri Lanka.

3. Development of Infrastructure

The project has provided for major investments in improving the infrastructure and operational environment of the agribusiness sector in Sri Lanka. These investments are wide ranging and will improve the overall efficiency of the sector, provide incentives for new investments and establish strong supply chain linkages. Finance will be provided to the agricultural institutions of the government to upgrade research facilities, develop mother orchards to enhance the availability of planting material and improve the information technology capability to serve farmers.

The project includes proposals for the establishment nucleus farms for a diverse range of crops. These will be an inducement for small farmers to participate in the cultivation of new commercial crops, and also introduce economies of scale that has been identified as a key bottleneck for the development of commercial agriculture. Demonstration farms are also proposed for several product sectors. The level of technology of support institutions for the development of agribusiness have been inadequate, which the project will address by providing equipment and training to institutions engaged in the development of technology and the establishment of standards, certification and quality. The component for spices will provide investment funds for the establishment of large scale cleaning and grading units and quality management laboratories.

4. Improvement of Agricultural Marketing

A key reason for the prevalence of poverty among the rural population in Sri Lanka is the lack of access to agricultural markets. Around 20-50 percent of agricultural produce is lost due to spoilage. This results in lower incomes to producers and higher prices to consumers in urban areas. The project has made provision for finance for investment in transport and logistics, with sufficient use of grant funds to induce investments in this area.

Another aspect of marketing the project will address relates to the development of export marketing. At present, the growth of export of primary agricultural products is hampered by poor information, inadequate packaging, lack of sufficient quantities, inferior varieties and lack of facilities for certification as demanded by leading markets. The project will provide support for market research, product and packaging development, establishment of certification facilities and training. These activities will have backward linkages to farmers and improve their returns from agriculture.
5. Poverty Reduction

More than 70 percent of farms in Sri Lanka are less than 1 hectare in size, illustrating the role of the small farmer in agricultural production. Similarly, agricultural households account for about half of the poorest households in the rural sector. The type of interventions proposed under the project will have a significant impact on the elimination of poverty in the rural sector. The project provides concessionary loans and grants to agribusiness activities, with added incentives for farmers in the poorest regions. The adoption of high value crops will improve incomes. Farm level primary processing and value addition, which the project will support, will also contribute to the elimination of poverty and dependence on commodity price fluctuations. Improvements under the project to the marketing infrastructure and supply chain will reduce post harvest losses and enable easier access to markets.

E. Conclusions

Despite the availability of a range of favorable agro-climatic regions, agriculture in Sri Lanka has had a focus on traditional crops and has failed to exploit the opportunities offered by global markets. The emphasis on subsistence agriculture, poor infrastructure and value chain, lack of demand driven research and restrictive regulations in several areas have limited the commercialization of the sector. The project proposes a wide ranging mix of interventions that are designed to improve productivity and eliminate most of the identified bottlenecks.