REPORT ON PERFORMANCE REVIEW OF SRI LANKA CASHEW CORPORATION WITH SPECIAL REFERENCE TO CASHEW RESEARCH PROGRAM

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Sri Lanka Council for Agricultural Research Policy
Ministry of Agriculture
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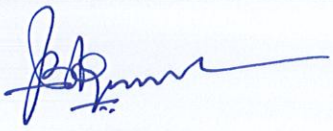
1	**Professor S J B A Jayasekera (Chairman)** *Vice-Chancellor, Horizon Campus, Malabe* *(Former Vice-Chancellor and Professor of Horticulture Wayamba University of Sri Lanka)*	
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30th September, 2020

Executive Summary

Contribution to the Economy

The Sri Lanka Cashew Corporation (SLCC) has taken a lead role in Cashew research and development in the country since 1997. Even though the Corporation was established in 1972, it could make its active contributions to research only from 1997. Since then SLCC has developed several technologies that had made a considerable impact on cashew production in Sri Lanka. The most outstanding output has come from varieties developed for several agro ecological regions in the country. The varietal characteristics developed had exhibited a wide range of yield performance and agronomic characteristics. Hence, the scientific program had been relevant in meeting a food requirement of the country. However, with an increase in cultivated extent and with another 200% yield increase during the next decade or so, it would be possible to increase production by 2030 as planned, as there are plans to increase the extent under cashew and introduce new improved varieties during the next 5 to 10 years.

Assessment of the management aspects

The Chairman and the General Manager of SLCC are members of the Board of Directors of SLCC and attend meetings regularly to discuss and take necessary actions and decisions in planning and implementation of the research and development activities of the Corporation. The Chairman, General Manager and the divisional heads are involved in planning activities of the Corporation. Even though the stakeholders do not get involved in setting up strategic plans of the corporation, their concerns are taken into consideration. Planning of research projects are mainly derived from identified objectives and strategies and the rest through a special committee known as 'Cashew Research and Management Committee (CRMC)'.

This committee comprised of researchers from the Faculty of Agriculture and Plantation Management, Wayamba University of Sri Lanka. Breeders, Soil Scientists, Physiologists, Agribusiness experts, Food Scientists etc. are in the committee as members. A senior Professor from the same faculty would chair the committee. Other members are from the SLCC representing different divisions, such as, research, extension, plantations, marketing etc. The Corporation's main source of funding is the Government, and its allocation for research had been declining and insufficient. Project management and quality assurance aspects of the Corporation can be categorized as moderate. The effectiveness of administrative procedures, found to be strong. However, there are areas, such as resource allocation at different levels, availability of equipment, technical staff, capacity building and infrastructure facilities, that are not at optimum level. Furthermore, there is a shortage of research officers trained at PhD/MPhil level, and the officers in the research division are young and lack experience. Training of staff at all levels had been poor in the recent past. Little training opportunities were available for research staff at

postgraduate level. Also, training provided to technical, administrative and financial officers too have been limited. Hence HRD aspects of the Corporation had been at moderate level.

The ability of the Corporation to carry out its research mandate is well recognized but, the physical facilities such as buildings, roads, housing, laboratories, fields, equipment, etc. are not at optimum condition and need to be improved further. Research Centers have not been provided with sufficient funds for improvement of infrastructure. The Corporation does monitor and evaluate its own administrative, accounting and R&D activities internally. However, monitoring and evaluation procedures are not fully supported by a Management Information System (MIS). The Head Office, the Research Centers and the regional offices are not interconnected each other through an MIS.

Assessment on Output

Several technologies have been developed by the researchers. The most outstanding output is development of 11 high yielding improved cashew varieties. The crop improvement program of the corporation is commendable but need to get the maximum benefit from them by producing and distributing more planting material among growers. The other recommendations focus on pest management, agronomic practices as well as fertilizer application. All varieties developed are capable of giving 20 – 25 kg/tree under rain-fed conditions at farmer level. However, due to limited staff, no extensive surveys have been carried out to evaluate the impact of adoption of these technologies, and cashew in general, on the farmers' economic, health, education and living conditions. Especially given that Corporation has a responsibility to support the 2030 SDG agenda, this information is vital.

Technologies developed by the Research Division are transferred to the stakeholder through the Regional Offices. The officers of the regional offices organize limited number of training programs, for the industry as well as for the farmers. Although these programs are conducted by the Corporation, a facility such as a training center or other training facilities are not available within the corporation or at regional offices. The Corporation has prepared several reports, training manuals and advisory leaflets to be distributed among stakeholders. They also disseminate their recommendations by participating in events (e.g. exhibitions) organized by other organizations such as, schools, universities, provincial councils, other departments and ministries.

Only a couple of researchers in the corporation have published their research findings in reputed journals. Most of them have jointly published with Wayamba University staff and some have presented and published their findings in international and national conferences, workshops and seminars. Steps have not been taken to protect Intellectual Property Rights (IPR) or Breeder's Rights (BR).

All activities done by the Corporation is service oriented, targeting the cashew farmer and the cashew industry. Farmer training programs, demonstrations, in-plant training programs for university students, etc. can be considered as services rendered by the SLCC.

The welfare facilities provided to the staff by the institute were at moderate level. Due to delay in obtaining approval and lack of funds for several benefits that staff should get, have not been materialized, including promotions. There is no system at SLCC to appreciate/acknowledge work done by the staff. This also has added to frustrations. The staff has limited opportunities to develop their career path. This is an area that needs to be studied by the management and give suitable solutions.

Recommendations

The review team has identified both internally and externally controllable methods to improve management and research output and made a list of recommendations. They are summarized below.

SLCC should make improvements to the action plan and strategic plan while maintaining a constant dialogue with the policy makers, administrators, stakeholders, researchers and extension workers. It should also develop a formal monitoring and review process on projects, improve the existing management information system (MIS), develop social interaction through 'Team Building' activities, develop criteria for goal setting and performance appraisals for officers, and take steps to train staff regularly at all levels.

Further, SLCC should develop mechanisms to review, evaluate and update its infrastructure, activities and performance regularly. It should encourage scientists to carryout multidisciplinary projects/activities, foreign collaborative projects and ensure that projects do not suffer due to inadequacy of officers, infrastructure, equipment, instruments etc. and scientists/researchers must have access to adequate scientific information. Board of Directors need to fill all vacancies. As the apex body of Cashew Research and Development in Sri Lanka, the SLCC need to take steps to maintain strong and efficient links with key partners and stakeholders, and to change the mandate of SLCC to establish a separate research, extension and training arm with an outreach programme directly reporting to the Corporation to upgrade the research and extension planning, while establishing a well-equipped Resident Training Centre, with facilities to train farmers. SLCC needs to initiate a system to obtain IPR, BR and patent rights for all technologies developed.

SLCC needs to conduct surveys on adaptability, acceptability, and attitudes of farmers on adoption of technology. With reference to SDGs, baseline information of present status of the farmers' needs to be documented.

Immediate action is required to initiate/expedite PhD level training of the existing staff or new recruitments in fields of Agronomy, Breeding, Plant Protection, Soil Fertility Management, Economics etc. Research laboratories will need better, modern and state of the art infrastructure. Emphasis on mechanization is needed (as labour is getting scarce) to make cashew cultivation attractive to younger generation and transfer technology to facilitate their adoption. A team of staff from SLCC and Industry should visit other countries to assess the machines, and recommend to import, for use in future.

Action needs to be taken by the administration to facilitate certain activities in relation to welfare of the staff and re-visit Schemes of Recruitment (SOR) in relation to promotions of staff, and develop an incentive or a reward scheme for appreciation and recognition of work done by the staff.

Abbreviations

AGM	Assistant General Manager
BOD	Board of Directors
BR	Breeders' Rights
CDO	Cashew Development Officer
CRMC	Cashew Research Management Committee
DGM	Deputy General Manager
FAPM	Faculty of Agriculture and Plantation Management
GM	General Manager
HRM	Human Resources Management
IPR	Intellectual Property Rights
ICT	Information and Communication Technology
ISI	International Science Index
M&E	Monitoring and Evaluation
MIS	Management Information System
RM	Regional Manager
R&D	Research and Development
SDG	Sustainable Development Goals
S&T	Science and Technology
SLCARP	Sri Lanka Council for Agricultural Research Policy
SLCC	Sri Lanka Cashew Corporation
SOR	Scheme of Recruitment
WUSL	Wayamba University of Sri Lanka

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1. Introduction

Background and History

Cashew (*Anacardium occidentale* L) was introduced from Brazil to Sri Lanka by early Portuguese Settlers in the 16th century and later spread as a dry land crop in the drier parts of the country and now has become an important agricultural crop. However, cashew cultivation caught the eyes of agriculturists only after the independence, particularly after the establishment of Sri Lanka Cashew Corporation (SLCC). Currently, cashew has taken over as a key agricultural crop in many areas of the drier parts of the country as it has the capacity to tolerate drought well than any other crop. It needs less water compared to other agricultural crops. Hence, cashew has become an important commercial crop in the dry zone of Sri Lanka. The crop has shown some progress over the past several decades, but there is vast scope for improvement.

It is cultivated in every district in the country and the total cultivated extent in 2019 was 66,440 ha and the production was 12,000 MT of raw cashew and 2,400 MT of kernels (Annex 1). During the past five years, the extent and the production were showing an increasing trend, but at a slower pace and was not up to the expected level (Annex 2). The export and import statistics show a reducing trend for both exports and imports (Annex 3). Even though, cashew has a tremendous potential and demand in the international market, Sri Lanka has not been able to exploit the situation and produce sufficient quantities of cashew to the international market. This is an area that policy makers and administrators need to give high priority in future as only 50% of the demand in the world market is supplied by the cashew growing countries. Further, Sri Lankan cashews are regarded as best quality nut in the international market due to its unique texture, colour, taste and flavour. Distribution of cashew cultivation patterns by growers are given in Annex 4.

Sri Lanka Cashew Corporation (SLCC) was established under the state Agricultural Corporations Act No. 11 of 1972 and the Extraordinary Gazette No. 60/7 dated 25th May, 1973. From its inception, the SLCC is functioning as a public enterprise mainly providing services to the industry while engaging in commercial activities on a profit earning basis.

Later the SLCC had to function under several ministries such as Ministries of Plantation Industries, Cooperatives, Supplementary Plantation Crop Development, Minor Export Crop Promotion and Public Enterprise and Kandy City Development (MPE&KCD). At present SLCC is functioning under the ***State Ministry of Development of Sugarcane, Maize, Cashew, Pepper, Cinnamon, Cloves, Betel Production and Promotion of Allied Products and Exports.***

SLCC has its Head Office at Rajagiriya, and its research programs are being conducted at Kamandoluwa and Achchigewatte Research Stations. There are ten regional offices in Puttalam, Hambantota, Anuradhapura, Nalanda (Matale), Moneragala, Mahiyanganaya, Ampara, Batticaloa, Kilinochchi, and Mannar where Cashew Development Officers have been posted to

carryout extension work by disseminating the knowledge and technologies. In addition, central plant nurseries have been established in Mihintale, Dambulla, Kamandoluwa, Kiran (Hardy), Kumbukkana, Aluththarama and Chandrika Wewa, and seed gardens are established in, Maha Oya, Suduwathura Ara, Kondachchi, Thiriyaya and Mankerni to undertake activities for planting material production. There are two cashew processing centres located in Nedagamuwa and Puttalam. The main mother plant nursery and field gene bank is located in Elluwankulama. (Annex 5 and 6).

The SLCC is mandated to conduct research on cashew cultivation and processing for the development of the cashew industry in Sri Lanka. Three technical divisions, namely, Research & Extension, Marketing & Processing and Plantation Management carry out research, technology transfer and development functions of the corporation. Administration, Finance, Policy & Planning and Internal Audit Divisions provide administrative and financial management supporting services for smooth functioning of the Corporation (Annex 7).

The SLCC continues to carry out the research and development functions on development of new cashew varieties, crop and land management practices for efficient utilisation of land and other resources for cashew farming, soil management for maintaining soil fertility and soil conditions, pest and disease management for minimising crop losses in an environment friendly manner and development of machinery to reduce costs and to increase profitability of cashew farming with minimum damage to the environment. In addition, studies on effective utilisation of by-products of cashew industry, development of co-products and value addition are undertaken to diversify the industry.

Further, the corporation also focuses on strengthening its trained manpower for scientific, technical and administrative support along with infrastructure development to undertake cashew research, development and extension activities, to continue with its mandated functions.

Vision

"Making Sri Lanka one of the leading cashew exporting countries in the world through production of high quality Cashew'

Mission

"To develop the cashew industry towards a long term commercial viability by providing professional guidance to farmers and, to develop cashew cultivation, production, processing technology, value addition, researches and marketing activities".

Goals

The goals of SLCC are as follows.

- Expand cultivation and increase yield.
- Increase productivity in plantations and processing industry
- Establish a globally accepted brand image for Sri Lankan cashew
- Value addition and new product development.
- Export promotion

- Be a reliable facilitator to the industry at national level.
- Move towards becoming a self-sufficient profit making State Corporation

Objectives and Strategies

Based on the above mentioned goals, SLCC has developed specific objectives, and strategies to achieve them as given below.

- Develop new varieties and improve crop management practices.
- Undertake activities, investigations and research pertaining to cultivation, processing and marketing of cashew and cashew products.
- Undertake technology transfer and marketing of cashew and cashew products
- Promote cashew processing through establishing new machinery and factories with quality standards
- Facilitate purchase, distribution, sale and exportation of cashew and its products
- Train officers to facilitate all aspects of cashew production and development
- Ensure modern infrastructure, library and information communication technology (ICT) facilities for research, and technology transfer and development, and provide the staff with congenial working environment
- Strengthen marketing and development activities to reach international market
- Ensure efficient utilisation of land, soil and water resources with minimum environmental degradation by, increasing awareness among all stakeholders
- Improve processing efficiencies of cashew and of its by-products
- Diversify and introduce value added cashew-based products and promote them
- Increase stakeholder knowledge on cashew technology and provide necessary institutional coordination and support for adoption/commercialisation of such knowledge
- Lead and guide relevant authorities for formulation and implementation of policies and regulatory measures
- Increase output-capacity of scientists and other staff of the institute
- Expand cultivation and increase productivity

Research Division:

Vision

Be the cashew leader in technology improvement

Mission

Develop technology for cultivation and processing of cashew, and cashew allied farm products

Objectives

1. Develop high yielding, drought and pest resistant cashew varieties that require minimal use of agro-chemicals to meet grower needs.

2. Improve agronomic and crop husbandry practices, in line with conservation of environment, to increase returns of farmers.
3. Improve productivity and value addition by introducing efficient processing and packaging methods to meet customer needs.

The crop improvement programme is the highest priority area of research to develop and release new cashew varieties, with high nut yields, pest and disease resistance, and suitable for cultivation in different agro-ecological regions in the island to increase productivity, profitability and sustainability of local cashew industry.

Further, the cashew research and resource management focus on making recommendations on all management practices to maximise the realisation of the genetic potential of the new varieties, i.e., increase yields with high quality, minimise costs and adverse effects on environment and to maximise and diversify farms for increasing income with greater stability by more efficient utilisation of land, soil and water.

The crop nutrition is to improve and maintain soil conditions required for optimum crop nutrition for improving yield and quality of cashew at a minimum cost and also to minimise soil degradation.

The research on crop protection is required to minimise/prevent crop damages due to pests and diseases and thereby to improve yield at a minimum cost.

The development and/or introduction of mechanization for cashew cultivation and processing, for both small-holders and large scale farmers and processors, would help them to carry out the operations easily and at a minimum cost.

Research on processing and product development is required to improve processing efficiencies of cashew and its by-products and to diversify cashew-based products to maximise income by minimising costs, increasing value addition, etc. with minimum adverse effects on the environment.

2. Purpose of Review and its Scope

Purpose and Objectives

The main purpose and objectives of this review were,

- To assess the quality, cost effectiveness, relevance and impact of the scientific programs carried out by SLCC in order to ensure that Government funds are being effectively utilized to address the sector needs.
- To look into the appropriateness of the research agenda of SLCC in meeting the emerging challenges in the future and in particular with 2030 sustainable developmental goals (SDGs) and also national targets ensuring food and nutritional security.
- To look into all aspects of SLCC functions directed towards research and development, dissemination of technology through extension and services offered to its stakeholders and its impact and usefulness to address the timely needs.
- To identify any deficiency in the procedures adopted by SLCC in recognizing the research needs of the sector
- To give advices on effective planning and implementing of future programs of SLCC

Scope

To achieve the above objectives, the Review Panel paid particular attention to following aspects:

1. The mission of SLCC and its interpretation with respect to;
   - SLCC's cashew research and development activities focusing on immediate and long term needs in Sri Lanka
   - Transferring technological recommendations/Research outcomes to relevant stakeholders.
   - The policies and directive of SLCARP and relevant Ministry regarding the appropriateness of Mission of SLCC in the light of important changes taking place in production and product development in Sri Lanka
   - Appropriateness of the roles of relevant partners in the formulation and implementation of research strategy and priorities of SLCC
   - Conservation of natural resources, impact of SRI practices on natural environment and long-term environmental sustainability.

2. The objectives and relevance of the present program of work, budget and its forward plans for the next five years in relation to;
   - The mandate of SLCC and its criteria for allocation of resources and planning procedures adopted by the Institution and the mechanisms for their formulation
   - The rationale for its present allocation of resources among research, extension, information exchange and other activities

3. The content and quality and relevance of the scientific work with particular reference to:

- The results of research during the past 5 years and their practical applicability and economic feasibility including the impact on the Relevant Sector
- The current and future research plan and the role of the various scientific disciplines therein
- The degree and extent to which the specific needs of the various stakeholders were studied and analyzed in the formulation of the past and current research plans
- The information exchange and extension programs and the participation of the research staff therein
- The adequacy of research support and facilities
- The management of the scientific and financial resources of the institute and the coordination of its activities
- Level of national and international recognition of the institute and its scientific staff
- Cooperation/collaboration with universities, regional and international research organizations
- Adequacy of publications of research findings

4. The impact and usefulness of the institute activities in relation to:
   - The recorded and potential impact of research
   - Cooperation with other research institutes and with national development programs, private sector organizations and other stakeholders

5. Examine the extension program of the institute to determine;
   - Its effectiveness in the relevant sector
   - The effectiveness of its information exchange programs and the timelines, quality and relevance of the technologies generated and its publications
   - The effectiveness of transferring technological recommendations based on research outputs
   - Mechanism adopted to get the feedback of stakeholders on research outputs and then planning future R&D
   - The identification of problems and constraints impeding the extension programs/dissemination of technological recommendations to the stakeholders.

6. The quality and effectiveness of the management of the institute in relation to;
   - Constitution of research, advisory or sub-committees of the Board
   - Adequacy in coordination to ensure excellence of the research program and related activities
   - Competency and professionalism of the directorate and the senior management of the institute and the definition of roles, organization and quality of the leadership of the institute and rapport with staff
   - Nature of the budgetary review and evaluation processes and the involvement of important stakeholders in the above stability of funding and the relationships between budget, institutes policies and plans and the effectiveness of utilization of resources

- Procedure for determining staffing requirement at all levels for selection evaluation and compensation of staff
- Administrative of fiscal, purchasing and supply, personal computers, housing and other facilities including transport and general management services and their effectiveness in supporting the scientific staff

7. Services provided by the institute
   - Consultancy and Advisory Services
   - Laboratory Services
   - Pest Control and Fumigation of warehouses

8. Overall analysis through;
   - A SWOT analysis to identify internally controllable and uncontrollable factors

3. Procedure Adopted for the Review

A review team, comprising 3 members, identified by SLCARP in consultation with the SLCC were formally appointed to review the progress of the institute. The team was guided by the directions given in the guidelines provided by the SLCARP.

The review process had 5 distinctive phases as below.

1. Preparation for the review
2. Visit of review team to the institute
3. Meeting with the stakeholders
4. Preparation of draft report by Review Team
5. Preparation, submission and presentation of the final review report by the Review Team to SLCARP

Preparation for the review

1. After identification of the institute to be reviewed, SLCARP forwarded a copy of the format of Self–Assessment report to the General Manager, SLCC
2. The SLCC completed the Self–Assessment Report and submitted to SLCARP.
3. SLCARP and the institution agreed on the composition of the review panel identified from the trained reviewers and appointed them.
4. Copies of Self-Assessment Report were sent to the members of the Review Team to study.
5. Chairman, SLCARP met the Review team and the General Manager of SLCC, separately in advance of the visit to the SLCC, to identify lines of inquiry and further information and documentation they need during the review visits. The team also identified individuals and groups they wish to meet during the visits and agreed with the General Manager on dates and time schedule for the review visits.
6. The dates and places visited were as follows:
   05th February 2020: Visit to the Head Office at Rajagiriya. Meeting all officials at the Head Office.
   (***Note:*** *Due to outbreak of Covid-19 pandemic, the initially planned visits during the months of March, April and May had to be either cancelled or postponed until the situation became normal).*
   31st July 2020: Visit to farmer fields in Puttalam area, Puttalam Regional Office, Processing Factory, Meeting Regional Manager and CDOs, stakeholders, large and small scale farmers, large and small scale processors, SLCC Plantation and the research center at Karadipuwal, Elluwankulama Mother-plant Garden, Research Center and planting material production unit at Kamandoluwa .
   19th and 20th August 2020: Visit to farmer fields in Batticaloa area, Meeting with Regional Manager and CDOs, individual farmers, farmer organizations and large scale processors (Annex 8).

Visit of Review Team to the SLCC

1. Initial meeting of the Review Team with the Chairman (SLCC), General Manager (SLCC) and a group of management staff was held for a briefing with the review team and the Chairman of the review team explained the objectives of the review, clarifying the purpose. A presentation was made by the Assistant General Manager of the SLCC on management, operation, organization, major scientific activities of the institution and contributions to national development.
2. The review was conducted based on the documents provided and the discussions held with the staff of the corporation. Information was gathered through following methods (Annex 9).
   a) Visiting divisions, laboratories, processing centers, farmer fields, processors etc.
   b) Discussions held with members of different categories of staff (scientific staff, administrative staff, finance staff, marketing staff, extension staff, audit staff, plantation staff, technical staff, Cashew Development Officers, members of the Cashew Research Management Committee, field workers and minor staff).
   c) The uses of multiple methods and crosschecking or 'triangulating' the results were adopted during the review. Triangulation refers to the use of different information sources, methods, types of data, or evaluators to study an issue from different perspectives and thereby arriving at more reliable findings.
   d) Studying the supporting documents submitted by the officers of the corporation.
   e) Discussions were held from time to time among members of the review team on the overall observations, findings and conclusions before preparation of the final report.

Meeting stakeholders

Several meetings were held with cashew farmers and representatives of farmer organizations by inviting them to common places in the area. Meetings were also held with the industry representatives (processors and large scale growers) at different locations in Puttalam and Batticaloa districts. Precautions were taken not to gather too many people in one place to abide with the health regulations imposed by the Government. These meetings were coordinated and organized by the Research Officer, Regional Managers and CDOs (Annex 9).

4. Outcome of the Review

Assessment on Management Aspects

a) Institutional Response to External and Internal Environment in Planning Organizational Strategy

SLCC, being a government institution and presently functioning under the State Ministry of Development of Sugarcane, Maize, Cashew, Pepper, Cinnamon, Cloves, Betel Production and Promotion of Allied Products and Exports, and administered by the Ministry of Plantation Industries. Hence, it is the responsibility of the corporation to follow government policies and development goals already in place. The Chairman and the General Manager (GM) of the SLCC are members of the Board of Directors (BOD) of the SLCC and attends meeting regularly to discuss and take necessary action and decisions in planning and implementation of the research and development activities of the corporation. Further, the research mandate of the corporation is clear to all and is responsive to changes in government policies and strategies. The corporation has identified its own strengths, weaknesses, opportunities and threats and they are being always considered in planning out the activities of the corporation in consultation with BOD (Annex10). The GM and the divisional heads are involved in planning activities of the corporation. Even though the stakeholders do not get involved in setting up strategic plans of the corporation, their concerns are taken into consideration, which is an outcome of meetings with the industry and research staff. Approximately 50% of the funding for the institute is allocated from the treasury funds while, 50% is obtained from other sources such as services (sale of planting material and cashew products) carried out by the corporation (Annex 11). It was observed that only Rs. 3m has been allocated for research and government allocations for capital items had been declining and part of the requirements were fulfilled by using the earned funds. A corporate plan, a strategic plan and an action plan of the SLCC were available at the corporation. Further, the thrust areas, goals, objectives, and strategies have been identified by the corporation. The corporation had not been reviewed by an independent group before.

Table 1: Assessment of Institutional Response to External and Internal Environment in Planning Organizational Strategy

Management practice	Level of Practice *Strong/ Moderate/ Weak*	Comments / Evidence
Government policies and development goals are used/considered to establish goals and plan organizational strategy for the institution	***Moderate***	***No specific outcome indicators identified on how government policy and development goals are incorporated Further, Due to frequent changes in Ministries, continuity in the organizational strategy had been adversely affected***
The organizational mandate (as specified by the relevant Act) is considered in strategic planning	***Moderate***	***Organizational mandate considered for research***
Factors such as strengths, weaknesses, threats and opportunities are considered in strategic planning	***Moderate***	***Even though the weaknesses and threats have been identified, only the strengths and opportunities are considered in strategic planning***
Stakeholders needs are taken into consideration in strategic planning	***Moderate***	***Industry and Farmer needs are considered to a lesser extent.***
The Board of Directors is involved in strategic planning	***Moderate***	***Limited involvement of BOD in strategic planning***
The extent to which staff members are involved in strategic planning	***Moderate***	***Decisions taken at Staff meetings with Heads of divisions also taken in to consideration.***
Government allocations are considered in strategic planning	***Strong***	***Only Government allocations are considered in strategic planning as alternative funding opportunities are minimal and not always guaranteed***
The extent to which policies and plans of the organization are reviewed and updated	***Moderate***	***No evidence to show updating of policies. Corporate Plan need to be updated with new policies, goals, objectives etc.***

b) Planning Research Programs and Setting Priorities

The BOD of SLCC considers the national development goals at a moderate level when planning research programs and setting up priorities. The decisions are taken at both Ministerial and Corporation levels. The GM and the Heads of Divisions take the responsibility in program planning in line with Ministerial and Corporation decisions. When priorities are discussed and decided, taking inputs from stakeholders is not a regular or standard phenomenon. During the planning stage, requirement of funds and equipment are considered and measures are taken to request necessary amounts.

When planning research programs, the ultimate objective is to develop varieties and technologies that can be given to the stakeholders (principal stakeholder is the farmer and there after the industry). Hence, once a recommendation is developed and proved to be acceptable and economical to the stakeholder, it needs to be commercialized quickly. However, acceptance of new technology is a slow process as the present extension programs do not provide sufficient/efficient service to make them popular quickly and enhance acceptance level. The number of officers involved in this process is insufficient and are not fully trained. The efficiency of the procedure in approving new research programs is moderately effective. It is also noted that area based information on socio economic and commercialization aspects of stakeholders is not available and not used in planning.

Table 2: Assessment of planning research programs and setting priorities

Management practice	Level of Practice *Strong/ Moderate / Weak*	Comments/ Evidence
National development goals are considered in planning research programs and setting priorities	***Moderate***	National development goals are considered at moderate level.
Board of Directors participate in planning and priority setting of program	***Moderate***	The GM of the institution has a say in priority settings. The proposals from CRMC are considered
The extent to which the staff of the institution participate in programme planning and priority setting	***Strong***	The research staff participate in these meetings. Cashew Research and Management Committee (CRMC) is in place where university staff participate in research planning.
Stakeholder interests are considered in programme planning	***Moderate***	Limited evidence to show participation of stake holders. Minimal farmer involvement

The extent to which programmes are planned and approved through appropriate procedures	***Strong***	Acceptable procedures followed
The extent to which the availability of funds (government allocations and other funds) and generated funds are taken into consideration in planning programmes	***Moderate***	Government allocations (limited) and other funds considered in planning programmes. No real consideration of generated funds to be utilized for research
The obtaining of necessary equipment is considered in planning programmes	***Weak***	It is inadequately considered due to lack of funds.
Stakeholders are represented in the Corporation's planning and review committees.	***Weak***	No evidence
The extent to which socio economic and commercialization aspects are considered in programme planning.	***Weak***	There is no evidence that information on socio economic and commercialization aspects available and used in planning.

C) Planning Research Projects

Planning of research projects are mainly derived from identified objectives and strategies, and the rest through the CRMC. CRMC meetings are held once in four months. At these meetings, the requirements and problems in relation to cashew research and production are discussed in detail and research projects are planned accordingly. These can be short term, long and/or medium term projects. Further, the CRMC discuss, prioritize and decide on individual projects. At this stage, multidisciplinary approach is not common due to shortage of research officers (Annex 12). The projects are carried out on many different disciplines such as, breeding, pathology, entomology, soil and plant nutrition management, processing, food technology etc. Formation of formal committees or establishment of research clusters would help to plan and implement individual projects efficiently and allocate resources effectively. It would be also advisable to seek broader scientific linkages with national and international universities and research institutes in future in planning and implementation of research activities. The only links are with Wayamba University of Sri Lanka for research and with National Institute of Plantation Management, Athurugiriya for training. It is noted that the model developed in collaboration with Wayamba University, is effective, which could be extended to other universities as well.

SPECIAL NOTE on CRMC

'Sri Lanka Cashew Corporation and the Faculty of Agriculture and Plantation Management of Wayamba University of Sri Lanka initiated the Cashew Research Project in 1997. ***The Cashew Research Management Committee (CRMC)*** *was formed and it became the forum to discuss, plan, implement and monitor the collaborative cashew research program. The CRMC is a recognized body within the Institutional structure of the SLCC but no evidence to show BOD approval for CRMC. The CRMC is represented at BOD meeting by ex-officio members of the CRMC i.e. Chairman and the General Manager. Dean, Heads of Departments and relevant subject specialists from the Faculty of Agriculture and Plantation Management serve as members of this committee. All the members of CRMC make voluntary contributions. The committee appoints the Chairman of CRMC from among its members. The research problems and project proposals are emanated through discussions in the committee which meets usually once in every 3 to 4 months. All the Priority projects are selected for implementation using SLCC funds. Guidance will be provided by the University researchers, and the Research Officers/Assistants of SLCC bears the responsibility of implementation.'*

Table 3: Assessment of Planning Research Projects

Management practice	Level of Practice *Strong/ Moderate/ Weak*	Comments/ Evidence
The staff is provided with guidance for project planning	***Moderate***	Guidance is provided through CRMC but not sufficient due to lack of research staff
Previous research results/data are used for planning projects	***Moderate***	No evidence in great deal to show that previous data / results are used adequately in Planning projects. But attempts are being taken to a certain extent
The extent to which the institution follows a formal process for preparation, review and approval of projects	***Moderate***	Considered at the quarterly meetings of CRMC. Not clear how much influence each research officer has in this regard

The extent to which organizational plans (e.g. medium-term plan, corporate plan, strategy etc.) are used to guide project selection and planning	***Moderate***	Organizational plans are discussed but CRMC guides the research project selection and planning.
Multidisciplinary projects/activities are encouraged by the institute	***Weak***	Multidisciplinary approach in carrying out research projects is weak, mainly due to lack of staff to handle identified disciplines. One Research Officer handles all disciplines
Foreign collaborations are encouraged and incorporated in planning.	***Weak***	No evidence to show foreign collaborations
Partnership with private sector is encouraged by the institution	***Weak***	The direct links with private sector growers (primary stakeholders), processors and exporters is limited
The extent to which basic research are considered when planning projects	***Weak***	Basic research is not considered in planning projects. Few studies on pests /vector lifecycles in developing effective control methods have been done
The degree to which adverse effects on environment are considered in planning projects	***Weak***	Few studies on predators of pests and diseases (E.g. Red ant studies)

d) Project Management and Maintenance of Quality:

Project management and quality assurance aspects of the corporation can be categorized as moderate. The effectiveness of administrative procedures, found to be moderate. However, there are areas, such as resource allocation at different levels, availability of equipment, technical staff, capacity building and infrastructure facilities, procurement procedures that are not at optimum level. In many occasions officers themselves spend quite a lot of time on preparing relevant documentation on procurement.

The officers are young and lack experience. There should be at least one or two research officers trained at PhD level (Annex 12). Hence, corporation should plan to recruit few more researchers to obtain the services of senior and experienced scientists from recognized institutions in planning research programs. The support staff also lacks training and updating on new techniques and equipment handling. Program reviews had not been taken place. Every effort is being taken to complete projects on time as scheduled. However, due to above mentioned factors and insufficient availability of facilities to access scientific literature, data bases, journals and other electronic material through internet, and printed information, the projects have suffered to a greater extent.

Table 4: Assessment of Project Management and Maintenance of Quality

Management Practice	Level of Practice Strong/ Moderate/ Weak	Comments/ Evidence
The effectiveness of the procedures for resource allocation at different levels (organization, divisions, programs etc.)	*Weak*	*Resource allocation for research seems weak and insufficient to take up major projects.*
Ensuring that instruments, equipment and infrastructure facilities are sufficient for implementation of projects	*Weak*	*More Infra-structure facilities and latest equipment needed to meet future challenges. No custom built laboratories.*
The effectiveness of administrative procedures and support for project implementation (procurement and distribution of equipment and materials, transport arrangements, etc.)	*Weak*	*Procurement process is not satisfactory due to frequent delays in procedures.*
Formal monitoring and review processes are used to direct projects towards achievement of objectives	*Moderate*	*Regular meetings (CRMC) to review progress of activities.*
The extent to which the researchers are supported by the required technical/field staff.	*Weak*	*The available support staff is insufficient to give a strong support to the researchers*
Ensuring that established field/lab methods, and appropriate protocols are used	*Weak*	*Laboratories are not well equipped. Depend on other research institutes and universities*
Research projects are completed within the planned time frame.	*Moderate*	*Some projects are extended due to reasons beyond control of ROs (e.g. Wild animal damage, wild fire etc.)*
Ensuring that researchers have access to adequate scientific information (scientific journals, internet, international databases, advanced research institutes, universities etc.) that strengthens the quality of research.	*Weak*	*No adequate internet facilities and access to scientific information especially the scientific journals.*
Ensuring that researchers have access to computers and necessary software	*Weak*	*Limited access to computers and internet, but necessary software seems inadequate.*

e) *Human Resource Management:*

The corporation recruits staff directly (for all permanent carders). The records revealed that the institute has not been able to fill vacancies of different carders. This has created a serious problem within the institute and the situation has been aggravated as no recruitments were done during the past few years. It has resulted in shortage of staff (56 vacancies) in all categories as many cadre vacancies exist in the corporation (Annex 13). Further, training of staff has become a serious problem, as the available training opportunities for staff are little. The Human Resources Management (HRM) aspect of the corporation is not strong but can be identified as moderate. The selection procedure for training is based on seniority and/or subject oriented. However, most of the officers are nominated by the corporation. The working environment is maintained reasonably well and staff is provided with moderate facilities. However, issues related to promotions, annual increments, transport, claims, welfare activities, incentives, bonuses, medical insurance, loan schemes (distress loan etc.), reward scheme, relevant training etc. have not been looked after in a satisfactory manner during the past several years. As a result, a frustration among all staff members is visible, both at the Head Office as well as in the research centers and regional offices. It has also been highlighted that several contractual appointments have not been regularized properly. Staff performance appraisals have not been conducted in the past. There is no formal system for such appraisal established in the corporation. Even though, a monthly instalment had been deducted from each staff member under a medical insurance scheme, such benefits have not been given to the staff members. Most computers are outdated and not updated with latest programs and software.

Table 5: Assessment of Human Resource Management

Management Practice	Level of Practice Strong/ Moderate/ Weak	Comments/ Evidence
The corporation maintains and updates staff information in a database (including bio data, disciplines, projects, experience, publications)	***Weak***	***No dedicated HRM functions assigned. Need to focus on goal setting, performance evaluation, reward and recognition, career path planning, to address internally controllable HR issues.***
The corporation, plans and updates its staff recruitments based on programme and project needs	***Weak***	***Corporation has not taken steps to fill vacant cadre positions and request cadre increase in areas where growth is anticipated to cope up with emerging issues***
The effectiveness of the selection procedures and the schemes of recruitment (SOR).	***Moderate***	***Guided by SOR, but there had been delays in promotional prospects for certain cadres as EB exams not completed***

Training is based on institution and program objectives and on merit.	***Moderate***	***Job requirements are considered in selecting for training, but need to consider the merit also in selecting for training programs***
The effectiveness of the procedures in promoting a good working environment and maintaining high staff morale.	***Weak***	***Promotional prospects and increments are being withheld for certain officers due to non-completion of EB exams and SOR requirements, resulting frustration among certain officers. Contract appointments need to be regularized.***
The effectiveness of staff performance appraisals	***Weak***	***No criteria developed for goal setting and performance appraisals. EB exams have been introduced.***
The effectiveness of rewards and incentive schemes in motivating the staff	***Weak***	***No regularized reward scheme. Needs to be introduced to motivate officers. The only incentive is commission on sale of planting material.***
The effectiveness of managing staff turnover, absenteeism and work interruptions.	***Moderate***	***There is no effective method especially to handle frequent staff turnovers and any work interruptions. Absenteeism and work interruptions minimal.***

f) Management of Organizational Assets:

The ability of the Corporation to carry out its research mandate is well recognized and equipped with necessary background, support and powers. The SLCC has become an important institute in Sri Lanka. The physical facilities such as buildings, roads, housing, laboratories, fields, equipment, etc. are in weak to moderate condition, but can be improved. Research Centers should be provided with sufficient funds for improvement of infrastructure.

Steps have not been taken to protect Intellectual Property Rights (IPR) or Breeder's Rights (BR). Though the SLCC jointly with WUSL has produced eleven (11) cashew varieties that are already been cultivated by the farmers in Sri Lanka, IPR or BR have not been obtained by the authorities of the SLCC. Planting material of some varieties have even been given to private sector for them to multiply and sell to the farmers with a profit margin.

Income generation is part of the mandate of SLCC. Funds have been generated mainly by sale of products, such as, planting material, cashew kernels, and other cashew products through its sales outlets, regional offices and nurseries.

Table 6: Assessment of Management of organizational assets

Management Practice	Level of Practice Strong/ Moderate/ Weak	Comments/ Evidence
The ability of the corporation to carry out its research mandate as per its vision and mission	***Moderate***	***Research activities are being carried out by the corporation with the assistance of researchers from Wayamba University***
Infrastructure (buildings, stations, fields, roads) is satisfactorily maintained.	***Weak***	***Research centres at Kamandoluwa and Achchigewatte are poorly maintained due to insufficient funds.***
Vehicles and equipment (lab, field and office) are properly managed and maintained.	***Weak***	***Need additional funds to manage research activities properly***
The effectiveness of procedures to ensure that equipment are in working order	***Moderate***	***Not very many equipment available.***
The effectiveness of the corporation's overall strategy in generation and proper utilization of funds	***Moderate***	***Fund generation through research is limited as it is more a service. Utilizing of funds allocated to research is good but insufficient.***
The extent to which the intellectual property rights of the corporation are protected	***weak***	***IPR and BR not obtained for recommendations. Recognition or a reward scheme could encourage researchers to engage in more research.***

g) Coordinating and Integrating the Internal Functions/Units/Activities:

No formal evaluation of the corporation or divisions had taken place since its establishment. However, internal communication and coordination mechanisms are in place. GM, DGM, AGMs and researchers regularly meet and discuss overall direction and coordination of activities. The different divisions and research centers are assigned with functions and responsibilities that are clearly defined. The R&D activities done and results achieved are reported and documented. The research output is presented and discussed at CRMC meetings and other forums.

Table 7: Assessment of Coordinating and Integrating Internal Functions/Units/Activities

Management Practice	Level of Practice Strong/ Moderate/ Weak	Comments/ Evidence
The extent to which Corporation is evaluated internally	***Weak***	***No periodic external or internal evaluation has been done before***
The effectiveness of internal communication and coordination mechanisms	***Weak***	***Improvements needed. Many officers and workers indicated that little communication and understanding exist among divisions.***
Responsibilities of research and management staff are clearly identified	***Strong***	***No overlaps***
Effectiveness of using appropriate reporting procedures and feedback in management at different levels	***Moderate***	***Meetings of the research staff to review progress of research. CRMC meetings held quarterly. But no indications of reporting and feedback mechanisms***

h) Partnership in Managing Information Dissemination:

The Corporation does disseminate information generated by researchers directly to the main primary stakeholder, i.e., cashew grower. Therefore, the information is disseminated through the regional staff. Even though, there are limited links through Regional Officers and CDOs, the linkage between the researchers and the farmer is not direct, and it does not work fast enough to meet the stakeholder requirements on time. It was also noted that the extension staff is more focused on subsidy farmers than other growers. Further, improved varieties are yet to be adopted in large scale by the growers. Provision of some irrigation facilities may increase establishment rate of budded plants. The only formal system to get the feedback and deliver the solutions to the stakeholder is through the regional offices, where extension arm is operational. If solutions cannot be given then and there, the corporation will be committed to undertake an in-depth study before providing a solution to the problem. Further, the corporation has taken necessary measures to disseminate information and recommendations to their secondary stakeholders such as, undergraduate and postgraduate students and school children etc.

Table 8: Assessment of Partnership in Managing Information Dissemination

Management Practice	Level of Practice Strong/ Moderate/ Weak	Comments/ Evidence
The corporation systematically plans and performs dissemination of information	***Moderate***	***Periodic interactions with the primary stakeholders through regional offices***
The extent to which the corporation plans and maintains linkages with key partners for sharing and dissemination of information	***Moderate***	***Only with primary and secondary stakeholders. Subsidy farmers are given priority. Less links with processors and industry***
The effectiveness of institutional procedures for technology transfer	***Moderate***	***Only through the regional offices and CDOs. Farmers are not fully satisfied with this mechanism***
The effectiveness of the system to obtain feedback from different types of stakeholders	***Moderate***	***Only through its own extension service, CDOs, and from periodic meetings, but not directly from growers***

i) Monitoring, Evaluation and Reporting Procedures:

Even though there had been no evidence to record that SLCC had been evaluated before, the corporation does monitor and evaluate its own administrative, accounting and R&D activities internally. However, monitoring and evaluation procedures are not fully supported by a Management Information System (MIS). The Corporation, Research Centers and Regional Offices are not interconnected among each other or through MIS. There is an understanding of activities within the divisions and research centers. The results of projects are adequately discussed internally and procedures are in place to report them through reports, seminars, training programs etc. The results further used in future project planning and decision making. The inputs of stakeholders are hardly entertained in monitoring and evaluation process.

Table 9: Assessment of Monitoring, Evaluation and Reporting Procedures

Management Practice	Level of Practice Strong/ Moderate/ Weak	Comments/ Evidence
The corporation monitors and evaluates (M&E) its own activities periodically	***Moderate***	***Internal HOD reviews***
M&E is supported by an adequate management information system (MIS), which includes information on projects (e.g. costs, staff, progress, and Results).	***Weak***	***No evidence. Though there is an IT officer at SLCC, he needs assistance and commitment to install IT systems/programs***
The extent to which research results and other outputs are adequately reported internally (e.g. through reports, internal program reviews, seminars).	***Moderate***	***Done at CRMC meetings. More information disseminations is required internally.***
External stakeholders contribute to the M & E process in the institution	***Weak***	***Not much involvement of the external or other stakeholders. (farmers, processors, industry)***
The extent to which the results of M&E are used for project/research planning and decision-making.	***Moderate***	***Up to a moderate level as indicated in reports published***

Assessment on Output/Outcome Aspects

a) Technologies developed:

Few technologies have been developed by the corporation. The most outstanding outputs are development of high yielding improved cashew varieties (Annex 14). The crop improvement program of the corporation is commendable but the varieties are yet to be adopted by the growers. Still there is a liking by the farmers for seedlings distributed by the corporation. The important characteristic of the varieties is high yield. Further corporation's recommendations focused on pest management, agronomic practices as well as fertilizer application. All varieties developed are capable of giving over 20-25 kg/tree under rain-fed conditions at farmer level from a 10 to 12-year-old tree, which is five times more than the average yield of an existing variety. There are also several other improved breeding lines in the pipeline, already tested for desired characteristics ready to be released after adaptive research trials. Breeding is a continuous process and corporation has made its significant contribution by developing and releasing high yielding varieties from time to time (Annex 14).

Even though technologies have been developed and introduced to the growers, their economic feasibility has not been carried out due to limited staff and no extensive surveys have been carried out to evaluate the impact of the adoption of these technologies on the farmers economic, health, education and living conditions. Especially given that the corporation has a responsibility to support the 2030 SDG agenda, this information is vital.

b) Technologies transferred to industry/entrepreneurs:

The SLCC has established systems and procedures to transfer recommendations (improved varieties and other research outputs) to the farmers and other stakeholders through its extension arm and regional offices. Once the varieties are recommended, researchers produce necessary quantities of budded plants and distribute them through research centers and regional offices. Several planting material production centers have been established in several parts of the country (Annex 6).

Similarly, the other recommendations and technologies developed by the corporation (Annex 15) are transferred through the extension arm with the help of regional offices. The officers of the corporation organize limited number of training programs for the farmers and processors (Annex 16). Although these programs are conducted, a facility such as a training center (except the one at Hardy plantation, Batticaloa) or other training facilities are not available within the corporation. The research and extension staff serve as the resource persons for these programs. The SLCC funds are utilized for these programs.

c) Information dissemination/extension:

The corporation has prepared several reports, training manuals and advisory leaflets (Annex 17) to be distributed among stakeholders. These documents give detail description of recommendations and technologies developed by the corporation. Further the corporation organizes adaptive research demonstrations for the stakeholders. They also disseminate their recommendations by participating in events (e.g. exhibitions) organized by other organizations such as, schools, universities, provincial councils, other departments and ministries.

d) Publications:

Only few researchers in the corporation have published their research findings in journals. Most of them have published in WUSL research symposia, and some have presented and published their findings in international and national conferences, workshops and seminars (Annex 18). SLCC has developed its recommendations and technologies into monographs and DVDs (Annex 17).

e) Patents:

Being a government organization, all technologies developed and released are given to the stakeholders free of charge. Though the corporation has developed varieties and distributed all over Sri Lanka, neither the breeder nor the institute has taken any measure to secure patent rights.

f) Services:

All activities done by the SLCC is service oriented, targeting the cashew farmer and the industry. Farmer training programs, demonstrations, in-plant training programs for university students, training programs for school children etc. can be considered as services rendered by the corporation. The processing and food technology center at Nedagamuwa has produced several cashew products which are sold at their sales outlets. However, little effort has been taken to transfer these technologies and market them to outside manufactures.

g) Staff training:

Training of staff at all levels had been poor in the recent past. Little training opportunities were available for research staff at postgraduate level. Hence HRD aspects of the institute had been at weak to moderate level. Though short term training on technological aspects had been effective, researchers' training needs on research management, HRM, project management etc. have not been looked after. Training for technical officers on handling and calibration of scientific instruments and their maintenance, laboratory maintenance, Labor management and farm management are areas to be considered. Financial officers need to be trained on financial management, and administrative officers too need training on administration related issues. Extension staff too need training. The farm managers and the officers involved in planting material production centers should also be trained well on farm management, labor management, maintenance of mother plant stocks, budding, grafting etc. Further, leadership training programs can also be considered for all categories of officers.

h) Other:

Awards – Records are not available on awards won by the staff in the past.

Rewards – No reward scheme is in place for appreciation and recognition of work done by the officers.

Welfare – The welfare facilities provided to the staff by the corporation were at moderate level. Due to delay in obtaining approval and short of funds, several benefits that staff should get, have not been materialized.

Incentives – There is no system at SLCC to appreciate/acknowledge work done by the staff. This also has added to frustrations. The only incentive mentioned was a payment made (commission) for sale of nursery plants. Some staff categories have no career path to develop and get stagnated in the same position for many years. This is an area that needs to be studied by the management and give suitable solutions.

Delays in Promotions – It was noted that most staff members have not got their promotions on time due to not passing EB exams or some other reasons.

5. Staff Strength of the SLCC

The present situation of the staff strength is not satisfactory. It is important to maintain a strong core of postgraduate level researchers in salient areas of research (breeding, crop protection, plant nutrition, food technology, physiology, economics etc.). There is only **one** Research Officer serving in the Corporation. Further, the corporation has not been able to maintain its full capacity of the carder during the past few years (Annex 13). This situation has adversely affected the research and development programs of the institute. The recruitment of staff for all categories had been delayed. The promotions to higher grades, too, had been delayed leading to frustration among the officers which is detrimental for the national development in the long run. Efforts should be taken by the management to look in to the avenues for postgraduate training positions leading to PhD, for the research staff.

6. Outcome of Stakeholder Meetings

As part of the review process, the Review Team had meetings with stakeholders representing farmers, farmer organizations and the industry. The meetings were held at the regional offices of Puttalam and Chenkaladi, and met the farmers and farmer associations in Wanathavillu, Eluwankulama, and several places in Batticaloa area. The review team met several small scale and largescale processors in Batticaloa and Puttalam areas. Processing center of SLCC in Puttalam was also visited by the team.

The stakeholders discussed matters pertaining to their own organizations/experiences and came up with suggestions how SLCC could make changes to its outlook by making significant contribution to develop cordial and beneficial collaboration with the stakeholders. Every stakeholder actively participated in the discussions which were carried out in a cordial and friendly manner. Although certain areas highlighted by the stakeholders were not within the purview of SLCC mandate, the key points that have relevance to SLCC are highlighted below.

Farmers and Farmer Organizations:

a. Close collaboration between SLCC and farmers is necessary. Most of them are unaware of activities carried out by SLCC and/or experiencing difficulties in contacting SLCC officials for advice or assistance. Hence, a formal mechanism needs to be developed to create more coordination between SLCC and the farmers.
b. It was revealed that, the Corporation put more effort on subsidy farmers than others. Subsidy farmers have become priority for SLCC.
c. SLCC needs to establish more demonstration plots/demonstrations to disseminate their technology among farmers. Presently it is happening but not effective enough. Establish more adaptive research programs in farmer fields.
d. SLCC needs to strengthen its farmer training programs for the benefit of majority of farmers.
e. Cashew farmers prefer seedlings as planting material. However, some farmers, including large scale farmers, who have cultivated recommended budded plants distributed by the corporation, have realized the usefulness of such varieties. Hence, corporation should do more extension activities to popularize these varieties to give the benefits to the farmers.
f. Largescale farmer should be equipped with modern machinery to overcome the shortage of manpower in the area (tractors, processing machinery etc.). They should be provided with some technical assistance.
g. There is a shortage of budded planting material in the country. To meet the shortage, SLCC distribute seedlings, which is not recommended in the long run. SLCC should always promote and market budded plants of recommended varieties. There is no mechanism for certification as in other crops. Well organized planting material propagation, certification and distribution mechanism should be introduced for cashew cultivation.
h. Application of fertilizers is important and farmers should be encouraged to apply fertilizer as per the recommendations. Research division and the extension arm should jointly work on this and convince farmers to apply fertilizers. Large scale farmers do apply but not always the recommended amounts.

i. Need for more extensive extension activities to cover all aspects of cashew cultivation. The extension officers need training on agricultural extension methodologies and cashew cultivation technology to carry out their work more efficiently and effectively.
j. Farmers wanted restructure the subsidy program and include several other items to the program. Fertilizer is one of them. Some even wanted fencing material to be included. They in fact, are willing to bear 50% of the total cost of fencing (Now the SLCC provides only the planting material under subsidy program).
k. Wild elephants, porcupines, wild boar and monkeys have become serious pests in cashew cultivation. The seriousness of these pests may vary from area to area.
l. Damage by *Helopeltis* is significant at times. Since, a single farmer cannot afford to buy -a power sprayer, farmer organizations need to be encouraged to purchase them to be used by all its members.
m. In drier areas ground water can be tapped using solar-powered water pumps to irrigate the crop. A suitable recommendation from researchers is needed on this matter for better establishment of the crop, especially for budded plants, during early stages. Further this facility can also be used for intercropping other field crops during the early stages enabling farmers to get an additional income.

Industry

a. There is scope for further improvement of relationship between SLCC and the industry.
b. SLCC research work on breeding, cultivation and other agronomic practices are well acknowledged by the industry.
c. Assistance of SLCC is needed to work out problems related cashew nut processing aspects and other by-products.
d. Processing industry needs more machinery, such as shelling machines, driers, ovens, packing machines and other machines for processing. SLCC should work on these and make suitable recommendations at a reasonable cost. A team comprising a group of staff from SLCC and the Industry may visit countries like Vietnam where machinery is being extensively used by the farmers, and identify appropriate machines to be used in Sri Lanka, after conducting a thorough testing on suitability of the same to Sri Lankan conditions.
e. The requirements of small and large scale processors are different. The large scale processors are equipped with necessary machinery and provide processed cashew kernels to the market in large quantities while others supply in small quantities. Small scale processors process about 200 kg of raw nuts per day (each machine can process 100 kg raw nuts per day). On the other hand, the capacity of a largescale processor is about 1-2 MT of raw nuts per day. They also stock the nuts during the season when the prices of raw nuts are low (Rs. 250-300 per kg during the season in 2020. This price has increased to Rs. 300-350 per kg towards end of the season i.e. August)). There are sophisticated machines available in other countries and these processors should be encouraged to use such machines to increase processing capacity, lower breakage percentage, improve cleanliness, good hygienic condition. Hygienic conditions in the processing centers are neither acceptable nor commendable.

f. Small scale processors need financial assistance (loans) from banks to purchase machinery and other small equipment needed for processing. Several small scale processors indicated the difficulty in getting loans from banks. Intervention of SLCC or the Ministry is much appreciated in obtaining loans from state banks.

g. Several by-products have been developed by researchers and processors. Among them, products from cashew apple need a mention. The cashew apple ready-to-drink juice, syrups and wine are in forefront. However, production of these products at commercial level is very limited. Researchers need to work more on these and improve their quality aspects, taste and marketability. The latest product, Cashew milk, has a good export market and already the researchers are working on it.

h. The cashew apple treacle is another product which can be marketed widely. It is already being produced and marketed in the eastern part of the country on a limited scale. Fresh cashew apples can also be sold. Farmers in the east sell fresh cashew apples at Rs. 100/kg during the season.

7. Overview of SLCC's Performance and Contribution to National Development

The SLCC has taken a lead role in cashew research and development in the country since its inception. Even though the institute started its activities in 1973, it could make its active contributions to research only after 1997. Since then SLCC has developed several technologies that have made an impact on cashew production in Sri Lanka. The most outstanding output has come from varieties developed. Cashew being a perennial crop, It is a bit too early to study the impact and will take a few more years. The breeding programs conducted by the corporation jointly with WUSL, is commendable and slowly and steadily, the varieties are being distributed to the farmers. As a result of adoption of these varieties for cultivation by the farmers, national yields of raw cashew and cashew kernel would increase in future. The real impact of these varieties on national production would take another 10-15 years. The varietal characteristics of the new improved varieties had exhibited a wide range of yield performance and agronomic characteristics.

The significant achievements of the SLCC during the period from 2005 include development and release of 11 elite cashew varieties for commercial cultivation and recommendation of planting methods and production of disease-free budded planting material, soil fertility management practices including chemical fertilizer application, integrated management of cashew pests, particularly by biological means (eg. Red ant), and efficient utilization of rainwater and irrigation water and use of intercrops during the early stages of crop establishment. To diversify cashew industry by increased value added products, SLCC has produced products such as cashew nut butter, ready-to-drink cashew juice, syrup, cashew wine etc. A researcher from WUSL has already developed cashew milk out of kernel and a leading businessman in the country has shown his willingness to produce cashew milk to the export market in a mega scale. This type of research should be encouraged. The product, 'Cashew Wine' needs to be improved and need to re-assess the production, quality control and marketing aspects. The review team strongly felt that the process should be handled by the private sector.

The knowledge and technologies developed have been transferred to growers and small scale processors by conducting training programs, demonstrations, and through extension printed materials and publications.

The SLCC has been successful in managing a subsidy program. Under this system there are around 100,000 farmers growing an extent of around 20,487 Ha. SLCC disseminate the technologies to the farmers through its regional officers and get the feedback with reference to the problems in the field. But this needs to be strengthened. Given that many Sri Lankan small holders of rice and other field crops face marketing problems (especially price fluctuations), the cashew industry has been able to guarantee a market and a stable price to all cashew growers as there is a huge demand for kernels not only in the local market but in the international market as well. Its cost of cultivation is relatively low with low harvesting costs. It is a hardy crop, which even withstood the forces of Tsunami of 2004, according to the farmers. This is a model crop with high potential

which can fit in to the drier parts of the country where no other cash crop can be cultivated. Even though, it is identified or known as 'Poor Man's Crop', its potential is high enough to make a poor man rich if handled and managed properly with assistance from relevant parties.

8. Recommendations

A. *On Management*

Internally Controllable -

a. Make improvements to the action plan and strategic plan of the Corporation with inputs from all relevant parties taking into consideration the emerging national and international trends in the Cashew industry.
b. Develop awareness among all staff members, on SLCC's mandate and responsibility and to act accordingly. The institute has a bigger responsibility and a major role to play at national level in all aspects of Cashew research and development.
c. Maintain a constant dialogue with the administrators, stakeholders (farmers and industry), researchers, extension workers, policy makers etc. and get their inputs in strategic planning and prioritizing research.
d. Develop a formal monitoring and review process on project basis towards achievement of objectives.
e. Board of Directors should look into the reasons for delay in promotions of some staff members as it has led to frustration and has adversely affected the output of the staff. Promotions should be made in line with SOR and EB.
f. Improve the existing management information system (MIS) of SLCC to enable all administrative, managerial, executive and other staff to get the full benefit.
g. Publish newsletters periodically in all three languages and disseminate research information throughout the country. Revive 'Cashew Bulletin'.
h. Develop social interaction within SLCC community through 'Team Building' activities such as, Out-bound and Leadership training, for all staff members so that they could participate together to develop avenues to build bridges of understanding and mutual respect.
i. Develop criteria for goal setting and performance appraisals for officers.

Externally Controllable –

a. Develop a mechanism to review, evaluate and update the corporation's policies and plans periodically, either externally or internally.
b. Increase the efficiency of fund generating mechanisms and programs. Funds generated should be used for future research activities of the institute and also for welfare activities.
c. Encourage scientists to, carryout multidisciplinary research projects/activities, foreign collaborative projects, apply for external research grants from NSF, NRC, CARP, etc. develop partnerships with private sector and give due recognition to researchers involved in such projects.
d. Ensure that projects do not suffer due to inadequate officers, infrastructure, equipment, instruments, facilities, space etc.

e. Ensure scientists/researchers have access to adequate scientific information that strengthens the quality of research. SLCARP may take the initiative in establishing a national resource centre for downloading important scientific publications from organizations such as Science Direct, Springer, Blackwell etc., and make them available to the researchers.

f. Develop a mechanism to train staff regularly at all levels (Administrative, Accounting, Research, Technical etc.). Postgraduate training at PhD level is critical for researchers. One or two PhD level trained officers are a must. Not a single PhD holder in the research division.

g. Board of Directors need to recruit staff in identified areas and fill all vacancies with qualified staff as early as possible.

h. As the apex body of cashew research and development in Sri Lanka, develop a mechanism to maintain strong and efficient links with key partners and stakeholders for sharing and dissemination of information and also to obtain feedback.

i. Lack of direct outreach research activities appears to be a major constraint regarding a realistic feedback for research planning. More interactions are needed at field level with farmers and the industry. Hence, develop an outreach programme directly reporting to the research division to upgrade the research planning. Further, establishment of well-equipped Resident Training Centre at a suitable place, with facilities to train farmers is recommended.

j. Initiate a system to obtain IPR, BR and patent rights for all technologies developed by the institute, including varieties.

k. Need to re-visit/study the cadre positions, qualifications and career paths of research staff etc. Make all officers clear about their SOR and the promotion scheme.

l. Introduce a CESS fund for research.

m. Many CDOs have no offices in DS offices or Agrarian Services Centers. This need to be sorted out at a higher level.

B. ***On Research***:

Internally Controllable

1. Establish a full-fledged Research Division/Arm.
   - *Headed by an official equivalent to 'Assistant General Manager' with adequate human and physical resources*
   - *Located in a suitable site with training facility*
   - *Allocation of annual research budget*
   - *With proper staff development program to build capacity of research staff enabling them to publish research findings*
   - *Launch short term (pest control), medium term (Agronomic) and long term (varietal development) research programs aiming at improving the productivity of cashew*

industry.

- Initiate more studies on value addition and processing, and their adaptability

- Action should be taken to research on using solar power pumps to tap water in drier areas without causing damage to underground water resources.

- Wild animal damage in research and farmer fields is a serious issue. It seems there is no easy answer. Management should give serious consideration to protect all research fields from these pests. Protecting breeding stocks from wild animals is important

2. Adaptive Research Facility

Establish a 'Network of Field Research' in cashew growing areas to conduct adaptive research and demonstrations of new technologies. It was observed that adaptive research component was not given priority due to certain practical issues. However, this component is important to check all recommendations are in order. The new varieties need to be tested through adaptive research trials to check their adaptability, yield performance, other characteristics and farmer acceptability.

3. Launch Socio-economic Studies

- Economic feasibility studies have not been studied on introduced technology. Establish studies on acceptability, adaptability, attitude of farmers on adapting new technology, cost of production, change in living standards with new technology and market research. There is also a need to document baseline information of the present status of farmers with reference to SDG's. The economic feasibility, consumer preference and marketability for newly processed cashew products too need to be carried out. These studies may be done in liaison with WUSL.

- The economic feasibility of new knowledge/technology should be disseminated to growers, processors, etc. and promotion of application of such knowledge/technologies should be undertaken to reap the benefits of the research findings. Development of cottage-level cashew processing and value addition has to be undertaken to help farmers to improve their livelihood.

4. Promote budded plants instead of seedlings

- Establish a bud wood nursery in a suitable location with favorable climatic and soil conditions (Eg. Naula)

- Adopt quick plant multiplication techniques (patch budding)

- Initiate steps to ban issuing seedlings to farmers by 2025

- Introduce, private sector nurseries closely monitored and supervised by SLCC

5. Strengthen Research – Extension linkage

- Commence routine research-extension dialogue

- Conduct regular training programs by research to update extension staff on new technologies

6. CRMC

After an early initiative in collaboration with Wayamba University, SLCC has not put serious efforts to promote Research. Hence, formalize the Cashew Research and Management Committee (CRMC), as a legal body, and regularize its decisions

7. Planting Material Certification Unit

Develop planting material production and distribution system with inbuilt Certification Unit (with varietal identification) in collaboration with private sector.

8. Cashew Nut Shell Liquid

Cashew nut shells are agro-wastes produced from cashew nut processing factories and contain about 30–35 wt% oil called cashew nut shell liquid (CNSL). This liquid is a mixture of four potential compounds, namely anacardic acid, cardanol, cardol and 2-methyl cardol. Various reactions have been developed to convert the components of cashew nut shell liquid into industrially important chemicals, which is a promising renewable resource for synthesizing various industrial chemicals. Efforts should be taken to extract CNSL and use for commercial purpose.

Externally Controllable

a. It is absolutely imperative for the development of research programs and, by and large, the development of the SLCC, the institute should have PhD level scientists in the fields of Agronomy, Breeding, Plant Protection, Economics and Plant Nutrition Management. Immediate action is required to initiate PhD level training of the existing staff in above areas or recruitment of new staff.
b. Although the basic equipment for research is not available, with the anticipated demand for extensive R & D activities with the targeted productivity improvement of cashew industry, the research laboratories will need better, modern and state of the art infrastructure. Hence, expansions and improvements are needed for laboratories in the near future.
c. Emphasis on mechanization is needed as labour is getting scarce to make cashew cultivation and processing attractive to younger generation, through use of solar powered water pumps, shelling machines, driers, ovens etc. SLCC can take the initiative with the support of industry in identifying, importing, testing appropriate machinery already developed in other countries. The machinery should be tested under local conditions before recommending to the farmers.
d. It is recommended a team of staff from SLCC and Industry visit countries in the region to assess the availability of more efficient machines, that suit Sri Lankan Conditions and recommend to both SLCC and the industry to import, test and make available for the industry. This is important, as there is already an acute labour shortage and the next generations of farm families are not willing to work manually.
e. Develop links with cashew research institutes in other countries (E.g. Vietnam) to obtain germplasm and other technology

f. The knowledge and technologies generated should be transferred to cashew farmers and processors in a formal manner and necessary facilitation for their adoption should be done. Developing social interaction between SLCC Officers, farmers and processors from the industry to build understanding and respect is important. Further the corporation should also get involved in small scale cashew processors in areas where cashew cultivation is already in progress.

2. General

a. SLCC has several large plantations in the North, East and South, where Eco-tourism concept can be practiced. Certain sections of these plantations can be developed as locations for eco-tourism that can attract foreign as well as local tourists. Corporation should look in to this aspect seriously and get necessary assistance and advice from relevant agencies to plan and implement of such a venture.
b. Delays in promotions, increments etc. and providing welfare facilities have caused frustration among staff. Hence, immediate action needs to be taken by the BOD and the administration to regularize these issues.
c. There need to be periodic meetings to enhance the knowledge base of the staff by making aware about activities of all other divisions.
d. Also the management might want to look at the transfer systems among divisions.
e. Special consideration should be given to management and maintenance of Cashew Plantations run by SLCC. Insufficient machinery (tractors, pumps, sprayers, etc.), labor, infrastructure, irrigation etc. in plantations have adversely affected the output
f. A reward scheme is not in place for appreciation and recognition of work done by the officers. This area needs to be looked into for a better reward scheme.
g. Several senior staff members from top management of SLCC, proposed that SLCC should be restructured in to the status of an 'Authority' ***(E.G. Sri Lanka Cashew Authority – SLACA).*** Even though, it is not the mandate of this review team to make such a recommendation, top officials and policy makers at Ministerial level may consider this request and study the situation in great depth by looking in to the pros and cons in establishing an 'Authority', and how it will affect in improving the present status and mandated activities of SLCC.

9. Proposed 'Road Map to Vision 2030', and Sustainable Development Goals and Targets for Cashew Research Sector

Research and Development Road Map to Vision 2030

1. *Expand cashew extent, and increase production up to 50,000 MT (Annex 19)*
2. *Distribute **ONLY** improved budded plants for planting*
3. *Increase yield up to 25 kg/tree*
4. *Minimise cost of cultivation and processing*
5. *Biological control of pests and diseases*
6. *Increase the level of diversification, both crop and processed products*
7. *Facilitate small and large scale processing industry*
8. *Develop new value added products and by-products*
9. *Adaptation to impact of Climate Change*
10. *Develop a Brand Name: **'Ceylon Cashews'***

Sustainable Development Goals and Targets identified under Vision 2030

SDG 1 – End Poverty

1.1: Eradicate poverty through increased farm income

SDG 2 – Zero Hunger

2.1: By 2030 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations

2.3: By 2030, double the productivity and income of small scale farmers

SDG 5 – Gender Equality

5.5 – Ensure women's full and effective participation and equal opportunities for leadership at all levels

SDG 8 – Decent Work and Economic Growth

8.3 – Promote development oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation

SDG 13 – Climate Action

13.3 – Improve education, awareness-raising and human institutional capacity on climate change mitigation, adaptation

10. Annexures

Annex 1: District-wise Extents and Production of Cashew in Sri Lanka – 2019

Sr.No.	District	Cultivated Extent (ha)		Production (MT)	
		Total	Harvesting	Raw Cashew	Kernel
01	Puttalam	15980	11985	2886	578
02	Kurunegala	12062	9047	2179	436
03	Matale	2590	1942	467	93
04	Polonnaruwa	1842	1382	333	66.6
05	Kandy	772	579	139	28
06	Badulla	2346	1759	424	85
07	Ampara	3408	2556	616	123
08	Moneragala	2737	2053	494	99
09	Hambantota	2728	2046	493	98.6
10	Ratnapura	726	544	131	26
11	Anuradhapura	7534	5650	1361	272
12	Batticaloa	3348	2511	605	121
13	Mannar	1087	815	196	39
14	Vavunia	1310	982	237	47
15	Trincomalee	2089	1567	377	75.4
16	Gampaha	1322	991	239	47.8
17	Kilinochchi	1608	1206	290	58
18	Galle	57	43	10	2
19	Matara	230	172	41	8.2
20	Colombo	10	7	2	0.4
21	Nuwara Eliya	158	118	28	5.6
22	Jaffna	313	235	57	11.4
23	Mulaitivu	1968	1476	355	71
24	Kegalle	182	136	33	6.6
25	Kalutara	33	28	7	1.4
	Total	**66,440**	**49,830**	**12,000**	**2,400**

(Source – SLCC)

Annex 2– Cashew extents and production in Sri Lanka (2015 – 2019)

Year	Total Cultivated Extent (ha)	Total Bearing Extent (ha)	Production (MT)
2015	55307	41480	8000
2016	57736	43302	9000
2017	60772	45579	8000
2018	63606	47704	8014
2019	66440	49830	12000

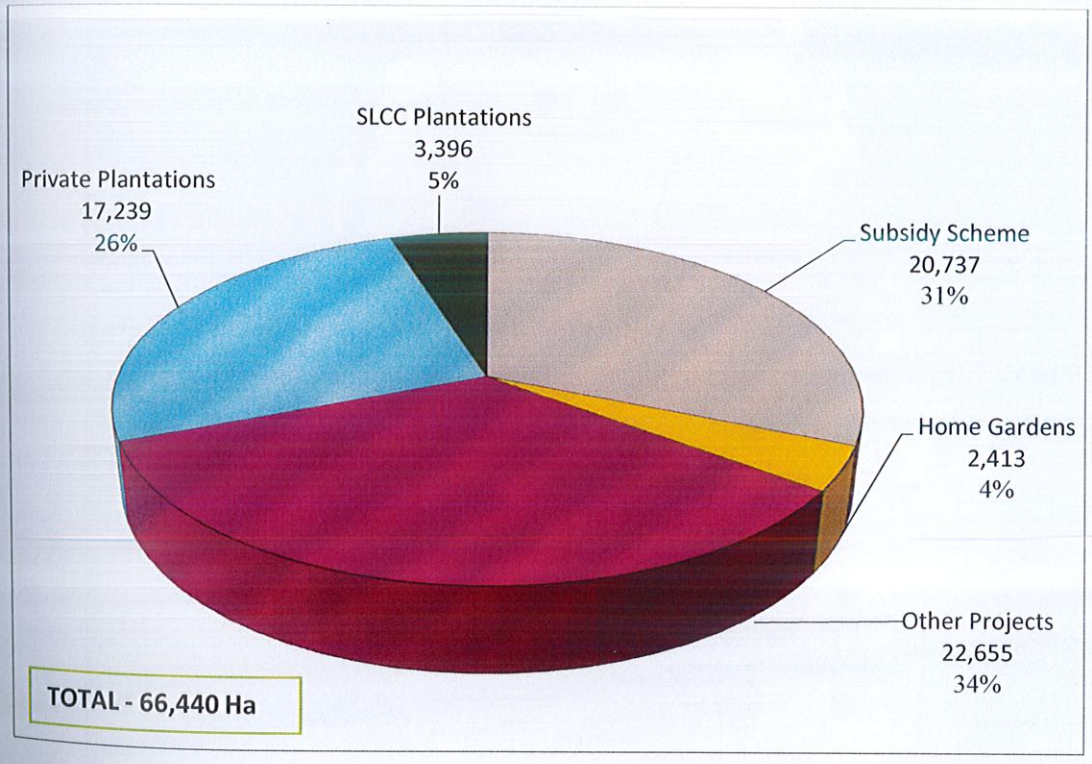
(Source – SLCC)

Annex 3: Cashew exports and imports (2015 – 2019)

Year	Cashew Kernel Exported		Raw Cashew Imported		Cashew Kernel Imported	
	Quantity (MT)	Value (Rs. m)	Quantity (MT)	Value (Rs. m)	Quantity (MT)	Value (Rs. m)
2015	105.66	174.06	2490.83	507.44	564.95	356.64
2016	57.64	99.98	1622.62	370.40	263.12	154.00
2017	59.04	143.51	2108.82	636.17	160.82	113.91
2018	60.81	144.62	2378.02	747.58	156.00	170.00
2019	47.40	93.57	527.26	138.53	0.826	1.93

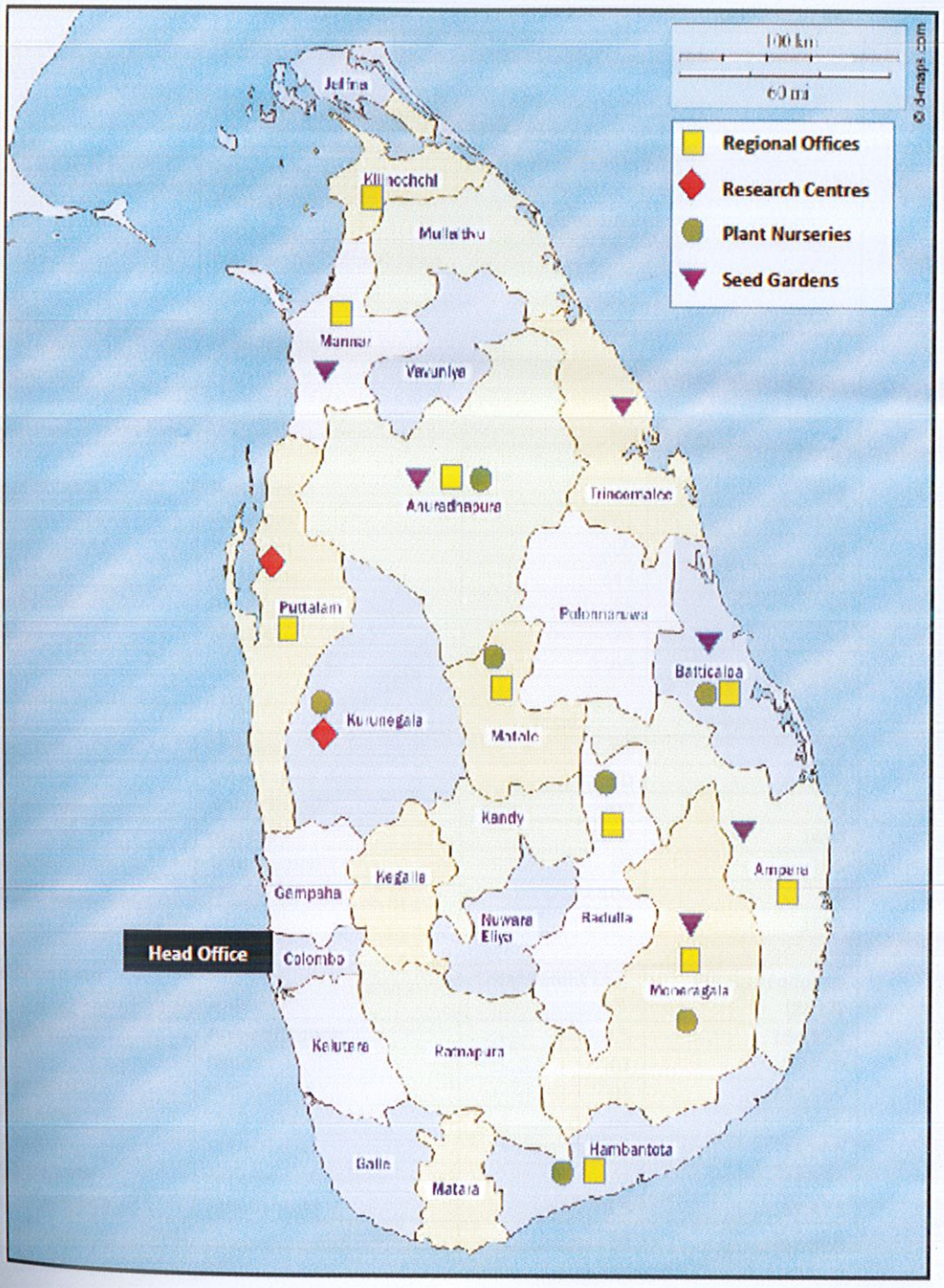
(Source SLCC)

Annex 4: Distribution of Cashew Extent by Growers (Ha)



(Source: SLCC)

Annex 5: Research Centers, Regional Offices, Plant Nurseries and Seed Gardens of SLCC



Annex 6– Regional Offices, Estates, Seed Gardens and Central Plant Nurseries of SLCC and their locations

Location	Districts Covered
Regional Offices	
1. Puttalam	Puttalam and Kurunegala
2. Mannar	Mannar and Vavuniya
3. Kilinochchi	Kilinochchi, Mulaitivu and Jaffna
4. Anuradhapura	Anuradhapura
5. Batticaloa	Batticaloa
6. Nalanda	Matale and Polonnaruwa
7. Mahiyanganaya	Kandy and Badulla
8. Ampara	Ampara
9. Moneragala	Moneragala
10. Hambantota	Hambanthota and Ratnapura

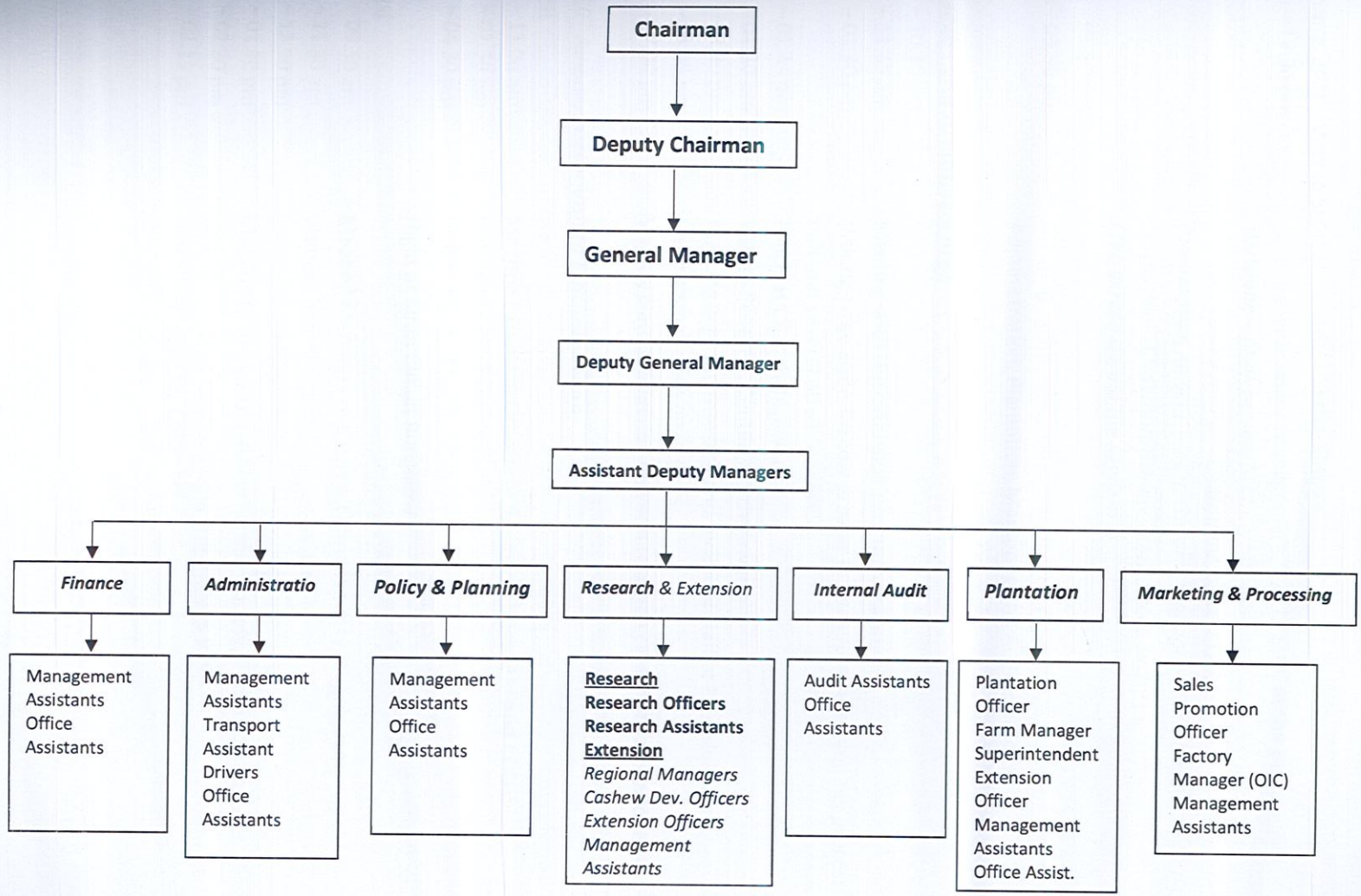
Estates/Plantations		Extent (Ac)	
		Total	Cultivated
1. Kamandoluwa	Puttalam	548	548
2. Achchigewatte	Puttalam	961	510
3. Elluwankulama	Puttalam	209	198
4. Hardy,Kiran	Batticaloa	343	194
5. Wilachchiya	Anuradhapura	25	17
6. Nalanda	Matale	75	50
Total		**2161**	**1517**

Seed Gardens		Total	Cultivated
1. Maha Oya	Ampara	81	53
2. Suduwathura Ara	Moneragala	50	21
3. Oyamaduwa	Anuradhapura	200	85
4. Kondachchi	Mannar	6000	1450
5. Thiriyaya	Trincomalee	50	05
6. Mankerni	Batticaloa	100	70
Total		**6481**	**1684**

Central Plant Nurseries		Total Extent (Ac)	Plants Produced (2017)
1. Mihintale	Anuradhapura	2.5	104,924
2. Dambulla	Kandy	03	24,976
3. Kamandaluwa	Puttalam	01	134,655
4. Hardy, Kiran	Batticaloa	01	6,846
5. Kumbukkana	Moneragala	03	14,950
6. Aluththarama	Badulla	02	23,634
7. Chandrikawewa	Hambantota	0.5	18,471
Total		**13**	**328,456**

(Source – SLCC)

Annex 7: Organogram of Sri Lanka Cashew Corporation



Annex 8: Schedule of Visits of the External Review of SLCC

***05th February, 2020* - Visit to SLCC, Head Office at Rajagiriya**

09.30 am – 12.30 pm	-	Meeting with Senior Management Staff of SLCC at the Board room *Welcome – Chairperson, SLCC* *Introduction to review – Chairman/ Review Team* *Presentation on SLCC – Asst. General Manager/Plantations* *Discussion – Chairman/Review Team to conduct* *(Tea served during the session)*
12.30 pm - 01.30 pm	-	Lunch
01.30 am – 03.30 pm	-	Meeting with the other staff of Research, Finance, Extension, Administration, Plantation, Marketing and Audit divisions

***31st July 2020* - Visit to Puttalam Area**

10.00 am – 10.30 am	Visit to Cashew processing factory of SLCC in Puttalam
10.30 am – 11.45 am	Meeting with the extension staff in Puttalam
12.15 pm – 01.30 pm	Visiting large scale cashew grower in Panadurawatte and his processing unit and several other farmers.
01.30 pm – 01.45 pm	Lunch at CB, Achchigewatte
01.45 pm – 02.30 pm	Visit to Research Center, Achchigewatte
02.45 pm – 03.30 pm	Meeting with the research and technical staff at Elluwankulama
04.00 pm – 04.45 pm	Visiting small scale processors
06.00 pm – 07.00 pm	Visiting plant production unit and research center at Kamandoluwa

19th and 20th August, 2020 – Visit to Batticaloa Area

19th August

10.00 am – 11.00 am	Meeting Extension Officers at Regional Office (RM and CDOs)
11.00 am – 02.30 pm	Visit to Farmer fields (small and large scale)
03.30 pm – 04.30 pm	Visit to Hardy Plantation, Kiran
	Night at Kiran Circuit Bungalow

20th August

08.30 am – 09.30 am	Meeting Members of Cashew Farmer Society, Kirankulam
09.30 am – 11.30 am	Visits to farmer fields
12.00 am – 12.30 pm	Visit to processing and treacle production plant
12.45 pm – 01.30 pm	Meeting Members of Cashew Farmer Society, Puthikudiiruppu
01.30 pm – 02.30 pm	Visit to a large scale processing and packing plant
02.45 pm – 03.15 pm	Lunch and leave for Colombo

Annex 9: Staff of SLCC and stakeholders interviewed during the review process

No.	Staff Category and Stakeholder Category	Number
01	Chairperson	01
02	General Manager	01
03	Deputy General Manager	01
04	Assistant General Manager (Extension)	01
05	Assistant General Manager (Plantations)	01
06	Assistant General Manager (Finance)	01
07	Assistant General Manager (Marketing)	01
08	Research Officer	01
09	Research Assistant	01
10	Regional Managers	02
11	Cashew Development Officers	08
12	Extension Officer	01
13	Plantation Officer	01
14	Sales Promotion Officer	01
15	Officer-in-Charge (Factory)	01
16	Manager (Hardy Plantation)	01
17	Management Assistants	07
18	Transport Assistant	01
19	Audit Assistants	02
20	Office Assistant	01
21	Small Scale Farmers	05
22	Large Scale Farmers	02
23	Members of Farmer Organizations	25
24	Small Scale Processors	02
25	Large Scale Processors	02
26	CRMC members	04
	Total	**75**

Annex 10: SWOT Analysis of SLCC

Strengths

1. Crop needs minimum inputs – comparatively less pests
2. Adaptability to dry areas.
3. Available Knowledge base
4. Improved links with the farming community
5. Availability of Genetic resources
6. Professional guidance from WUSL
7. Corporation owns large plantations and plant nurseries
8. Funds from Treasury
9. Availability of organized private sector and marketing channel
10. Cost of harvesting minimum

Weaknesses

1. Less priority for research and development
2. Shortage of experienced and trained staff
3. Difficulty in meeting the demand
4. Poor production from plantations
5. Insufficient production of planting material of improved varieties
6. Present subsidy does not encourage farmers to take up cashew
7. Lack of application of modern scientific technology for advanced research
8. Less attention for product development and standardization
9. Unavailability of strong strategic approach to promote exports
10. Lack of facilities for staff
11. Limited studies on socio-economic aspects
12. Extension activities effectively limited to subsidy farmers

Opportunities

1. Availability of large extents of lands for cashew expansion in North and East
2. Increasing demand for cashew in the world market
3. Health benefits of cashew
4. Stable and assured market
5. Potential for carbon trading and as a source of renewable energy
6. Strong private sector entrepreneurs already in cultivation and processing business
7. Small scale entrepreneurs are taking up cashew in rural areas
8. Most cultivations are organic
9. Research networking with universities, private sector and NGOs
10. By-products from cashew shell and apples
11. Low labour cost
12. Little Postharvest losses

Threats

1. High capital requirement
2. Frequent changes of Ministries under which SLCC had to work
3. Environmental factors (Climate change, floods and droughts) affecting the cultivation, especially during flowering
4. Younger generation moving out of farming
5. Difficulty in managing damages due to *Helopeltis* and Stem borer
6. Wild animal damage
7. Theft of harvest in the field (no fencing)
8. Mortality of budded plants during early stages due to lack of irrigation facilities

Annex 11 – Income-Expenditure Summary of SLCC (2020)

Expenditure			
	Item	**Rs. M**	**Rs. M.**
1	Subsidy Programme	20.00	
2	Development of Plant Propagation Centres	10.00	
3	Rehabilitation of existing Corporation Plantations	6.00	
4	Market Promotion	1.00	
5	**Research and Development**	**3.00**	
6	Pest Controlling Programme	0.75	
7	Human Resource Development	0.25	
8	Rehabilitation of fixed assets	2.00	
9	Acquisition of fixed assets	7.00	
	Sub-total		*50.00*
10	Processing Industry	14.92	
11	Maintenance of Corporation Plantations	30.00	
	Sub-total		*44.92*
12	Salaries & Recurrent Expenditure	65.98	
	Sub-total		*65.98*
	Total		**160.90**
Income			
	Government grant		
1	Recurrent		39.50
2	Capital		50.00
	Generated Funds		
3	Sale of Cashews		77.04
4	Sale of plants		4.00
	Total		**170.54**

(Source: SLCC)

Annex 12: Number of research staff at SLCC and their academic qualifications

Qualifications	No.
PhD	None
MPhil	None
MSc or equivalent	02
Basic Degree or equivalent	01
Total	***03***

(Source: SLCC)

Annex 13: Staff Cadre Position at SLCC (as at 31st December, 2019)

Staff category	Code	Cadre	Available Staff	Vacant Positions
Higher Management Grade	HM	02	02	-
Middle Management Grade	MM	07	05	02
Junior Management Grade	JM	26	19	07
Management Assistant Grade	MA	122	80	42
Minor Grade	PL	67	62	05
Total		**224**	**168**	**56**

(Source – SLCC)

Annex 14: Cashew Varieties Jointly Developed by WUSL and SLCC (2005 to 2020)

No.	Variety	Year of Release	Yield potential (kg/15 yr. old tree)	Size of Kernel	Kernel color
1	WUCC – 9	2005	15-20	Medium	Ivory
2	WUCC – 19	2005	15-20	Medium to large	Ivory
3	WUCC – 21	2005	15-20	Medium	Ivory
4	WUCC – 5	2007	15-20	Medium to large	Ivory
5	WUCC – 8	2007	15-20	Medium	Ivory
6	WUCC – 13	2007	15-20	Medium	Ivory
7	WUCC – 1	2012	15-20	Medium to large	Ivory
8	WUCC – 23	2012	15-20	Medium to large	Ivory
9	WUCC – 2	2020	20-25	Medium to large	Ivory
10	WUCC – 7	2020	20-25	Medium to large	Ivory
11	WUCC – 16	2020	20-25	Medium to large	Ivory

(Source –SLCC)

Annex 15: List of recommendations made by SLCC

1. Fertilizer recommendations
2. Pest and disease management
3. Small scale cashew Sheller
4. Intercropping cashew lands with cowpea, green gram, black gram, soybean, gingelly, chilies, ground nut and sweet melon
5. Increasing yield and profitability by improving farmer knowledge and adoption of best management practices.
6. High yielding improved varieties
7. Cashew value added products

Annex 16: Advisory Services carried out by SLCC

- Dissemination of knowledge to farmers, field officers and students
  - Promoting new improved varieties among growers.
  - Promoting intercropping with cashew, and integrated cropping systems for providing an additional source of income.
  - Promoting soil fertility management.
  - Reducing cost of production by promoting better agronomic practices.
  - Improvement of cashew quality by increasing farmer knowledge and adoption of best management practices.
  - Increasing profitability by promoting adoption of best management practices of cashew.
  - Reducing yield loses by improving knowledge and adoption of pest and disease management.
  - Improving knowledge and skills of cashew farmers and processors on entrepreneurship development.
  - Providing training/services at requests of stakeholders and conducting seminars, exhibitions etc.
- Providing budded plants of improved varieties
- Crop protection services
  - Pest and disease surveys
- Providing technical and policy guidelines for cashew industry development

Annex 17 – Audio-visual and Extension Material on Cashew Cultivation developed by SLCC

Advisory videos (DVDs) in Sinhala and Tamil

1. කජු වගාවේ කඳ පණුවාගේ හානිය.
2. කජු වගාවේ පොහොර යෙදීම.
3. නිවැරදිව කජු පැලයක් සිටවමු
4. කජු වගාවේ හෙලෝපෙල්ටිස් මකුණාගේ හානිය.

Advisory Publications – (in Sinhala and Tamil)

1. කජු වගාවේ කඳ පණුවාගේ හානිය.
2. කජු වගාවේ පොහොර යෙදීම.
3. කජු නවාන් වල පැල මැක්කාගේ පාලනය.
4. කජු වගාවේ කඳ හා මුල් විදින කුරුමිණියා.
5. කජු වගාවේ හෙලෝපෙල්ටිස් මකුණාගේ හානිය.
6. කජු වගාවේ කඳ හා මුල් විදින කුරුමිණියා කළමනාකරණය.
7. රතු දුඹුරු කජු මදුරුවා (හෙලෝපෙල්ටිස්) කළමනාකරණය.
8. කජු වගාවේ හෙලෝපෙල්ටිස් පාලනයට දිමියාගෙන් විසඳුම්
9. නිවැරදිව කජු පැලයක් සිටවමු10. හෙලෝපෙල්ටිස් මකුණා

Books - 7

Cashew Bulletin – 5 issues

Articles Published in Sinhala National Newspapers – 3

Annex 18 – Publications made by SLCC Research Staff (2015-2019)

Type	2015	2016	2017	2018	2019	Total
Journal papers						5
Conferences/Symposia	2		1	4		7
Books/Book Chapters						7
Postgraduate Thesis						3
Other						0
TOTAL						**22**

(Source: SLCC)

Annex 19 – Expected Production Plan of SLCC for Cashew (2019 – 2028)

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Productivity (kg/ha)	241	286	331	376	421	466	511	556	601	650
Extent (Bearing) (ha)	49830	51955	54081	56206	58332	60457	62583	64708	66834	68959
Production (MT)	12009	14859	17900	21133	24557	28172	31979	35977	40167	44823

(Source – SLCC)

11. Figures

Plate 1: Plant Nursery at Kamandoluwa Research Centre

Plate 2: The Review Team with Mr. Saman Herath, *(far left)* Research Officer, at Kamandoluwa

Plate 3: Discussions with Members of Kirankulam Cashew Farmer Society

Plate 4: Discussions with Extension Staff, Batticaloa

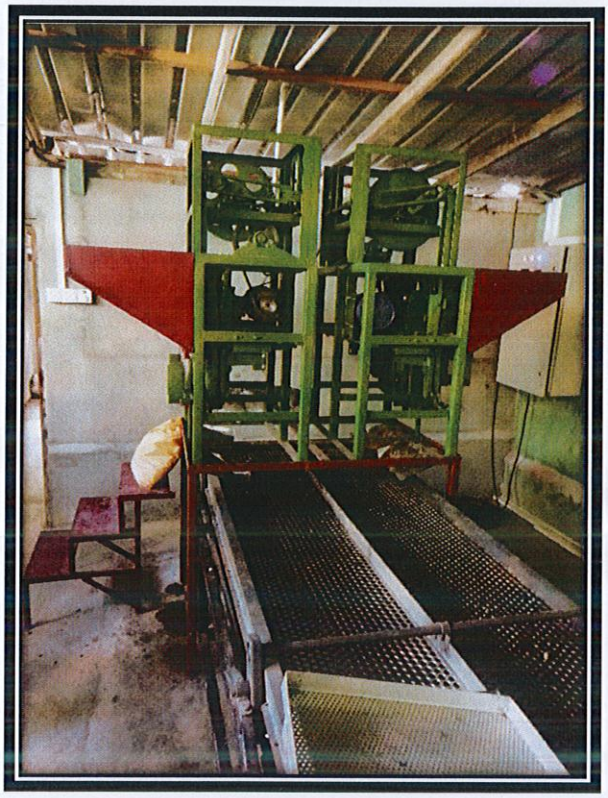


Plate 5: Large Scale Cashew Shelling Machine, Batticaloa

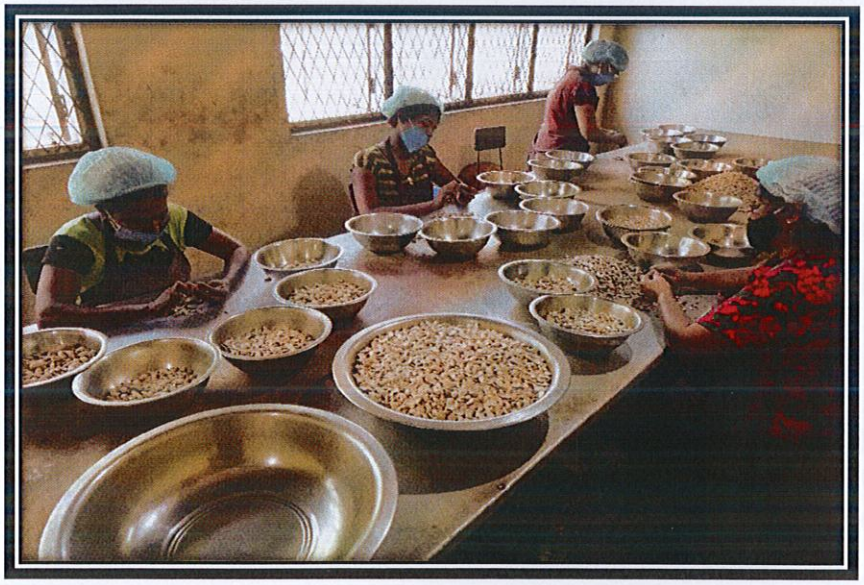
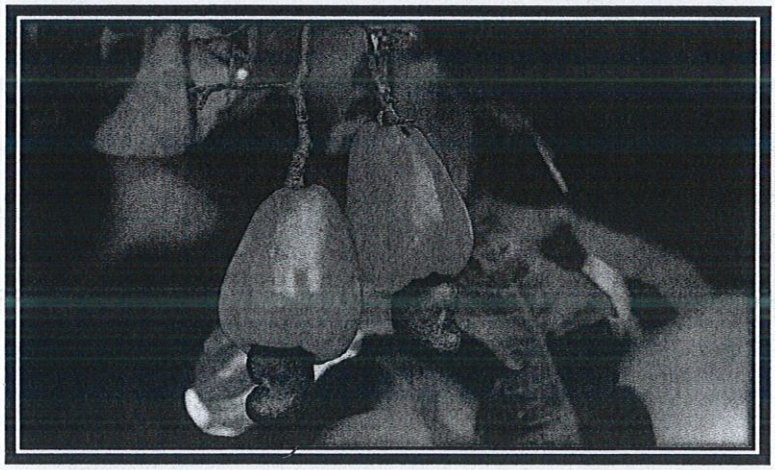


Plate 6: Sorting Shelled Cashews at SLCC Processing Factory, Puttalam

REPORT ON PERFORMANCE REVIEW OF SRI LANKA CASHEW CORPORATION WITH SPECIAL REFERENCE TO CASHEW RESEARCH PROGRAM

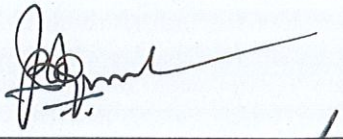
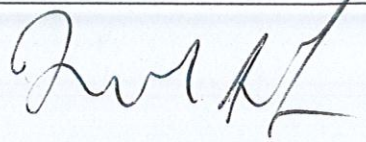
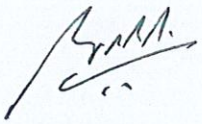
Conclusions and Recommendations

January-September, 2020



Sri Lanka Council for Agricultural Research Policy
Ministry of Agriculture
114/9, Vidya Mawatha
Colombo 07

Review Team

	Member	Signature
1	**Professor S J B A Jayasekera (Chairman)** *Vice-Chancellor, Horizon Campus, Malabe* *(Former Vice-Chancellor and Professor of Horticulture Wayamba University of Sri Lanka)*	
2	**Dr. Fredrick Abeyratne (Member)** *Former Deputy Director, Hector Kobbekaduwa Agrarian Research and Training Institute, and Retd. Head, Poverty-Governance Unit, UNDP, Colombo*	
3	**Dr. D S P Kuruppuarachchi (Member)** *Dean, Faculty of Management Studies* *Sanasa Campus, Kegalle* *(Former FAO Assistant Resident Representative, Colombo and Head, Department of Biosystems Engineering* *Faculty of Agriculture and Plantation Management* *Wayamba University of Sri Lanka)*	

Conclusions and Recommendations

1. Conclusions

Contribution to the Economy

The Sri Lanka Cashew Corporation (SLCC) has taken a lead role in Cashew research and development in the country since 1997. Even though the Corporation was established in 1972, it could make its active contributions to research only from 1997. Since then SLCC has developed several technologies that had made a considerable impact on cashew production in Sri Lanka. The most outstanding output has come from varieties developed for several agro ecological regions in the country. The varietal characteristics developed had exhibited a wide range of yield performance and agronomic characteristics. Hence, the scientific program had been relevant in meeting a food requirement of the country. However, with an increase in cultivated extent and with another 200% yield increase during the next decade or so, it would be possible to increase production by 2030 as planned, as there are plans to increase the extent under cashew and introduce new improved varieties during the next 5 to 10 years.

Assessment of the management aspects

The Chairman and the General Manager of SLCC are members of the Board of Directors of SLCC and attend meetings regularly to discuss and take necessary actions and decisions in planning and implementation of the research and development activities of the Corporation. The Chairman, General Manager and the divisional heads are involved in planning activities of the Corporation. Even though the stakeholders do not get involved in setting up strategic plans of the corporation, their concerns are taken into consideration. Planning of research projects are mainly derived from identified objectives and strategies and the rest through a special committee known as 'Cashew Research and Management Committee (CRMC)'.

This committee comprised of researchers from the Faculty of Agriculture and Plantation Management, Wayamba University of Sri Lanka. Breeders, Soil Scientists, Physiologists, Agribusiness experts, Food Scientists etc. are in the committee as members. A senior Professor from the same faculty would chair the committee. Other members are from the SLCC representing different divisions, such as, research, extension, plantations, marketing etc. The Corporation's main source of funding is the Government, and its allocation for research had been declining and insufficient. Project management and quality assurance aspects of the Corporation can be categorized as moderate. The effectiveness of administrative procedures, found to be strong. However, there are areas, such as resource allocation at different levels, availability of equipment, technical staff, capacity building and infrastructure facilities, that are not at optimum level. Furthermore, there is a shortage of research officers trained at PhD/MPhil level, and the

officers in the research division are young and lack experience. Training of staff at all levels had been poor in the recent past. Little training opportunities were available for research staff at postgraduate level. Also, training provided to technical, administrative and financial officers too have been limited. Hence HRD aspects of the Corporation had been at moderate level.

The ability of the Corporation to carry out its research mandate is well recognized but, the physical facilities such as buildings, roads, housing, laboratories, fields, equipment, etc. are not at optimum condition and need to be improved further. Research Centers have not been provided with sufficient funds for improvement of infrastructure. The Corporation does monitor and evaluate its own administrative, accounting and R&D activities internally. However, monitoring and evaluation procedures are not fully supported by a Management Information System (MIS). The Head Office, the Research Centers and the regional offices are not interconnected each other through an MIS.

Assessment on Output

Several technologies have been developed by the researchers. The most outstanding output is development of 11 high yielding improved cashew varieties. The crop improvement program of the corporation is commendable but need to get the maximum benefit from them by producing and distributing more planting material among growers. The other recommendations focus on pest management, agronomic practices as well as fertilizer application. All varieties developed are capable of giving 20 – 25 kg/tree under rain-fed conditions at farmer level. However, due to limited staff, no extensive surveys have been carried out to evaluate the impact of adoption of these technologies, and cashew in general, on the farmers' economic, health, education and living conditions. Especially given that Corporation has a responsibility to support the 2030 SDG agenda, this information is vital.

Technologies developed by the Research Division are transferred to the stakeholder through the Regional Offices. The officers of the regional offices organize limited number of training programs, for the industry as well as for the farmers. Although these programs are conducted by the Corporation, a facility such as a training center or other training facilities are not available within the corporation or at regional offices. The Corporation has prepared several reports, training manuals and advisory leaflets to be distributed among stakeholders. They also disseminate their recommendations by participating in events (e.g. exhibitions) organized by other organizations such as, schools, universities, provincial councils, other departments and ministries.

Only a couple of researchers in the corporation have published their research findings in reputed journals. Most of them have jointly published with Wayamba University staff and some have presented and published their findings in international and national conferences, workshops and

seminars. Steps have not been taken to protect Intellectual Property Rights (IPR) or Breeder's Rights (BR).

All activities done by the Corporation is service oriented, targeting the cashew farmer and the cashew industry. Farmer training programs, demonstrations, in-plant training programs for university students, etc. can be considered as services rendered by the SLCC.

The welfare facilities provided to the staff by the institute were at moderate level. Due to delay in obtaining approval and lack of funds for several benefits that staff should get, have not been materialized, including promotions. There is no system at SLCC to appreciate/acknowledge work done by the staff. This also has added to frustrations. The staff has limited opportunities to develop their career path. This is an area that needs to be studied by the management and give suitable solutions.

2. Recommendations

A. On Management

Internally Controllable

a. Make improvements to the action plan and strategic plan of the Corporation with inputs from all relevant parties taking into consideration the emerging national and international trends in the Cashew industry.
b. Develop awareness among all staff members, on SLCC's mandate and responsibility and to act accordingly. The institute has a bigger responsibility and a major role to play at national level in all aspects of Cashew research and development.
c. Maintain a constant dialogue with the administrators, stakeholders (farmers and industry), researchers, extension workers, policy makers etc. and get their inputs in strategic planning and prioritizing research.
d. Develop a formal monitoring and review process on project basis towards achievement of objectives.
e. Board of Directors should look into the reasons for delay in promotions of some staff members as it has led to frustration and has adversely affected the output of the staff. Promotions should be made in line with SOR and EB.
f. Improve the existing management information system (MIS) of SLCC to enable all administrative, managerial, executive and other staff to get the full benefit.
g. Publish newsletters periodically in all three languages and disseminate research information throughout the country. Revive 'Cashew Bulletin'.
h. Develop social interaction within SLCC community through 'Team Building' activities such as, Out-bound and Leadership training, for all staff members so that they could participate together to develop avenues to build bridges of understanding and mutual respect.
i. Develop criteria for goal setting and performance appraisals for officers.

Externally Controllable

a. Develop a mechanism to review, evaluate and update the corporation's policies and plans periodically, either externally or internally.
b. Increase the efficiency of fund generating mechanisms and programs. Funds generated should be used for future research activities of the institute and also for welfare activities.
c. Encourage scientists to, carryout multidisciplinary research projects/activities, foreign collaborative projects, apply for external research grants from NSF, NRC, CARP, etc. develop partnerships with private sector and give due recognition to researchers involved in such projects.
d. Ensure that projects do not suffer due to inadequate officers, infrastructure, equipment, instruments, facilities, space etc.
e. Ensure scientists/researchers have access to adequate scientific information that strengthens the quality of research. SLCARP may take the initiative in establishing a national resource centre for downloading important scientific publications from organizations such as Science Direct, Springer, Blackwell etc., and make them available to the researchers.
f. Develop a mechanism to train staff regularly at all levels (Administrative, Accounting, Research, Technical etc.). Postgraduate training at PhD level is critical for researchers. One or two PhD level trained officers are a must. Not a single PhD holder in the research division.
g. Board of Directors need to recruit staff in identified areas and fill all vacancies with qualified staff as early as possible.
h. As the apex body of cashew research and development in Sri Lanka, develop a mechanism to maintain strong and efficient links with key partners and stakeholders for sharing and dissemination of information and also to obtain feedback.
i. Lack of direct outreach research activities appears to be a major constraint regarding a realistic feedback for research planning. More interactions are needed at field level with farmers and the industry. Hence, develop an outreach programme directly reporting to the research division to upgrade the research planning. Further, establishment of well-equipped Resident Training Centre at a suitable place, with facilities to train farmers is recommended.
j. Initiate a system to obtain IPR, BR and patent rights for all technologies developed by the institute, including varieties.
k. Need to re-visit/study the cadre positions, qualifications and career paths of research staff etc. Make all officers clear about their SOR and the promotion scheme.
l. Introduce a CESS fund for research.
m. Many CDOs have no offices in DS offices or Agrarian Services Centers. This need to be sorted out at a higher level.

B. *On Research*:

Internally Controllable

1. Establish a full-fledged Research Division/Arm.

- Headed by an official equivalent to 'Assistant General Manager' with adequate human and physical resources

- Located in a suitable site with training facility

- Allocation of annual research budget

- With proper staff development program to build capacity of research staff enabling them to publish research findings

- Launch short term (pest control), medium term (Agronomic) and long term (varietal development) research programs aiming at improving the productivity of cashew industry.

- Initiate more studies on value addition and processing, and their adaptability

- Action should be taken to research on using solar power pumps to tap water in drier areas without causing damage to underground water resources.

- Wild animal damage in research and farmer fields is a serious issue. It seems there is no easy answer. Management should give serious consideration to protect all research fields from these pests. Protecting breeding stocks from wild animals is important

2. Adaptive Research Facility

Establish a 'Network of Field Research' in cashew growing areas to conduct adaptive research and demonstrations of new technologies. It was observed that adaptive research component was not given priority due to certain practical issues. However, this component is important to check all recommendations are in order. The new varieties need to be tested through adaptive research trials to check their adaptability, yield performance, other characteristics and farmer acceptability.

3. Launch Socio-economic Studies

- Economic feasibility studies have not been studied on introduced technology. Establish studies on acceptability, adaptability, attitude of farmers on adapting new technology, cost of production, change in living standards with new technology and market research. There is also a need to document baseline information of the present status of farmers with reference to SDG's. The economic feasibility, consumer preference and marketability for newly processed cashew products too need to be carried out. These studies may be done in liaison with WUSL.

- The economic feasibility of new knowledge/technology should be disseminated to growers, processors, etc. and promotion of application of such knowledge/technologies should be undertaken to reap the benefits of the research findings. Development of cottage-level cashew processing and value addition has to be undertaken to help farmers to improve their livelihood.

4. Promote budded plants instead of seedlings

- Establish a bud wood nursery in a suitable location with favorable climatic and soil conditions (Eg. Naula)
- Adopt quick plant multiplication techniques (patch budding)
- Initiate steps to ban issuing seedlings to farmers by 2025
- Introduce, private sector nurseries closely monitored and supervised by SLCC

5. Strengthen Research – Extension linkage

- Commence routine research-extension dialogue
- Conduct regular training programs by research to update extension staff on new technologies

6. CRMC

After an early initiative in collaboration with Wayamba University, SLCC has not put serious efforts to promote Research. Hence, formalize the Cashew Research and Management Committee (CRMC), as a legal body, and regularize its decisions

7. Planting Material Certification Unit

Develop planting material production and distribution system with inbuilt Certification Unit (with varietal identification) in collaboration with private sector.

8. Cashew Nut Shell Liquid

Cashew nut shells are agro-wastes produced from cashew nut processing factories and contain about 30–35 wt% oil called cashew nut shell liquid (CNSL). This liquid is a mixture of four potential compounds, namely anacardic acid, cardanol, cardol and 2-methyl cardol. Various reactions have been developed to convert the components of cashew nut shell liquid into industrially important chemicals, which is a promising renewable resource for synthesizing various industrial chemicals. Efforts should be taken to extract CNSL and use for commercial purpose.

Externally Controllable

a. It is absolutely imperative for the development of research programs and, by and large, the development of the SLCC, the institute should have PhD level scientists in the fields of Agronomy, Breeding, Plant Protection, Economics and Plant Nutrition Management. Immediate action is required to initiate PhD level training of the existing staff in above areas or recruitment of new staff.
b. Although the basic equipment for research is not available, with the anticipated demand for extensive R & D activities with the targeted productivity improvement of cashew industry, the research laboratories will need better, modern and state of the art infrastructure. Hence, expansions and improvements are needed for laboratories in the near future.
c. Emphasis on mechanization is needed as labour is getting scarce to make cashew cultivation and processing attractive to younger generation, through use of solar powered water pumps, shelling machines, driers, ovens etc. SLCC can take the initiative with the

support of industry in identifying, importing, testing appropriate machinery already developed in other countries. The machinery should be tested under local conditions before recommending to the farmers.

d. It is recommended a team of staff from SLCC and Industry visit countries in the region to assess the availability of more efficient machines, that suit Sri Lankan Conditions and recommend to both SLCC and the industry to import, test and make available for the industry. This is important, as there is already an acute labour shortage and the next generations of farm families are not willing to work manually.
e. Develop links with cashew research institutes in other countries (E.g. Vietnam) to obtain germplasm and other technology
f. The knowledge and technologies generated should be transferred to cashew farmers and processors in a formal manner and necessary facilitation for their adoption should be done. Developing social interaction between SLCC Officers, farmers and processors from the industry to build understanding and respect is important. Further the corporation should also get involved in small scale cashew processors in areas where cashew cultivation is already in progress.

C. General

a. SLCC has several large plantations in the North, East and South, where Eco-tourism concept can be practiced. Certain sections of these plantations can be developed as locations for eco-tourism that can attract foreign as well as local tourists. Corporation should look in to this aspect seriously and get necessary assistance and advice from relevant agencies to plan and implement of such a venture.
b. Delays in promotions, increments etc. and providing welfare facilities have caused frustration among staff. Hence, immediate action needs to be taken by the BOD and the administration to regularize these issues.
c. There need to be periodic meetings to enhance the knowledge base of the staff by making aware about activities of all other divisions.
d. Also the management might want to look at the transfer systems among divisions.
e. Special consideration should be given to management and maintenance of Cashew Plantations run by SLCC. Insufficient machinery (tractors, pumps, sprayers, etc.), labor, infrastructure, irrigation etc. in plantations have adversely affected the output
f. A reward scheme is not in place for appreciation and recognition of work done by the officers. This area needs to be looked into for a better reward scheme.
g. Several senior staff members from top management of SLCC, proposed that SLCC should be restructured in to the status of an 'Authority' ***(E.G. Sri Lanka Cashew Authority – SLACA).*** Even though, it is not the mandate of this review team to make such a recommendation, top officials and policy makers at Ministerial level may consider this request and study the situation in great depth by looking in to the pros and cons in establishing an 'Authority', and how it will affect in improving the present status and mandated activities of SLCC.