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## INCREASING THE EFFICIENCY AND THE EFFECTIVENESS OF AGRICULTURAL EXTENSION SYSTEM

April 2024

SDGs:



Country:

Sri Lanka

Project Code:

TCP/SRL/3801

FAO Contribution:

USD 130 000

Duration:

1 March 2021–31 December 2023

Contact Info:

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### Implementing Partner

Ministry of Agriculture.

### Beneficiaries

Farmers in Sri Lanka.

### Country Programming Framework (CPF) Outputs

Country Outcome 3: The capacity of concerned stakeholders to undertake policy formulation and to collect, analyse and utilize data and information for evidence-based decision-making is increased.



### BACKGROUND

After increasing by less than 5 000km<sup>2</sup> over nearly four decades, the agricultural land area of Sri Lanka has remained at roughly 27 400 km<sup>2</sup> for the last several years. This stagnation in growth is the result of land being converted for non-agricultural purposes. The potential to expand agricultural ventures is therefore not promising. In this context, the best available option is to increase the low production and productivity rates of existing agricultural activities in the country. This project aimed to boost productivity and production as well as the fruit and vegetable marketing system through the introduction of a strong and effective extension mechanism throughout the country and the dissemination of new technologies.

### IMPACT

The project significantly contributed to the enhancement of agricultural productivity, with special attention paid to the production of fruit and vegetables, while ensuring environmental sustainability and improving food and nutrition security. The increased access to modern technology and information and the capacities that were built under this project led to enhancements in the yields and incomes of farmers. The farmers were interviewed to ascertain how much the project impacted their livelihoods, and it was determined that incomes under protected cultivation increased by nearly threefold, whereas the open cultivation method doubled incomes.

### ACHIEVEMENT OF RESULTS

The project was designed with a clear approach that aimed to enhance productivity while ensuring environmental sustainability in agriculture. The project was structured on the basis of three Outputs to respond to the identified problem. These Outputs included actions such as: enhancing the use of modern technology among farmers; improving crop planning; and increasing and diversifying farmer incomes through the establishment of an efficient agricultural value chain.

Although the proposed target 80 percent of farmers with access to modern technology and information was not met, significant progress was made, particularly in the development of an IT-based platform for agriculture. An estimated 40–50 percent of farmers adopted new technology approaches. Further improvements are expected when the platform is fully operational, which is anticipated by the middle or end of 2024.

Officers from the Department of Agriculture (DOA) were trained extensively in land and crop management to conduct further training in their respective areas, and a virtual platform was established to enhance institutional coordination, considering that physical mobility was limited during project implementation.

Other key achievements include the development of Community-based Seed Production Programmes, through which seed production clusters were established and connected to existing marketing channels, as well as the promotion of hi-tech agriculture and training farmer leaders to subsequently train village-level farmers. Additionally, crop planning and agricultural production was improved through the enhancement of the Crop Look Forecasting System that provides real-time crop status information and production forecasts. This system aims to minimize production losses and excess production once fully implemented.

One of the main elements of success was the strengthening of agricultural value chains. To start the process, drawbacks in vegetable and fruit value chains were identified, leading to recommendations for improvement. This included organizing farmers into groups, strengthening farmer organizations, and connecting production clusters directly with market outlets, thereby increasing farmer incomes and diversification opportunities.





## IMPLEMENTATION OF WORK PLAN AND BUDGET

The project took the necessary actions to address the drawbacks detected in each phase and adapt the workplan, which was altered during the project's lifecycle owing to requests from the DOA to expand the scope of the project's work. The implementation of the workplan encountered various challenges and constraints, but the project achieved significant results. Two no-cost extensions were requested and granted to allow for the completion of certain activities

The project aimed to increase farmers' access to modern technology and information; however, the expected target was not reached, which could be due to various factors such as limited awareness, barriers to access, and the complexity of implementing new technologies. A significant achievement of the project was the development of an online platform to facilitate agricultural extension, crop planning, forecasting, gap certification, seed certification, and crop insurance. The initiation of this development was slow, leading to delays in implementation. Despite these challenges, the project played a pioneering role in introducing IT solutions to agriculture in the region.

In addition, the project conducted training programmes for officers of the DOA to enhance their capacity in land and crop management and established a virtual platform to improve institutional coordination among stakeholders. This approach helped overcome constraints related to physical transportation and optimized costs; however, further efforts are recommended to ensure effective collaboration and communication among different departments and agencies involved in agricultural development.

Finally, the project implemented Community-based Seed Production Programmes for both hybrid and open-pollinated varieties (OPVs), through which seed production clusters were established and connected to existing marketing channels to promote hi-tech agriculture. Challenges such as limited market access and inadequate infrastructure may have hindered the full realization of the programmes' objectives.



## FOLLOW-UP FOR GOVERNMENT ATTENTION

The Sri Lanka Country Programming Framework highlights the need for improved food habits to achieve balanced nutrition, with a particular focus on enhancing vegetable production. The project aligned with this priority by promoting the use of locally produced, high-quality seeds to boost productivity and improve food habits. Through the establishment of seed production clusters and value chain enhancements, the project increased efficiency and profitability for farmers. Extensive training programmes, supported by local consultants and DOA officers, facilitated the dissemination of advanced agricultural techniques.

While the project made promising strides, the full achievement of its results was pending at the time of writing, and efforts were underway to expand and enhance the IT system, with plans to integrate modules such as agricultural extension and seed certification. Collaboration with relevant authorities and stakeholders, including the Insurance Board and Ministry of Agriculture are recommended and should aim to integrate crop insurance and further enhance agricultural development. Through these measures, farmer incomes are expected to increase further and sustainable agricultural practices will be fostered.

## SUSTAINABILITY

### 1. Capacity development

The capacity-development aspect of the project primarily involved collaboration with the DOA and Provincial Department of Agriculture (PDOA). These government entities are already well established with legislation and protocols in place, and the key focus was on ensuring proper post-project monitoring and providing ongoing technical assistance as needed. Funding allocated by the government is typically utilized for these monitoring and post-project activities, thereby ensuring sustainability. The partnership between DOA and PDOA is robust and well established, facilitating seamless coordination and follow-up actions by the relevant PDOA.

### 2. Gender equality

The project made women visible as an important part of the target population. Equitable treatment of men and women was ensured with adherence to the objectives outlined in the FAO Policy on Gender Equality throughout the project's design and implementation phases.



### 3. Environmental sustainability

Environmental sustainability was given the utmost importance both in the project design phase and throughout its implementation. During implementation, low-toxicity pesticide usage was minimal – it was only used when required. In addition, Good Agricultural Practices (GAP) were promoted during project design and implementation.

### 4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

The project facilitated the generation of employment and entrepreneurial prospects for rural youth, women, and other identified groups through the development of the seed programme.

### 5. Technological sustainability

Extensive training sessions conducted by officials from the DOA and the national consultant ensured the dissemination of technology to various stakeholders. These training programmes equipped farmer leaders, private sector individuals, DOA and PDOA officials with the necessary skills to act as trainers and propagate the technology at the village level, particularly for those interested in seed production.

Moreover, agricultural extension and technology dissemination are routine and continuous programmes carried out by the DOA and PDOA. These activities are funded through their annual budgets, ensuring their ongoing implementation beyond the project’s duration. As a result, the adoption and sustainability of the introduced technology are expected to be maintained without further support from the project.

### 6. Economic sustainability

Both DOA and PDOA receive government funds annually for their programmes, including training activities. These funds will be utilized to support beneficiaries, including individual farmers, who wish to continue seed production activities. Through the DOA and PDOA’s seed certification and buyback programmes, farmers will receive assistance, enabling them to develop seed production into a profitable venture without requiring additional funds. Overall, the project’s economic sustainability is ensured by leveraging existing government funds and programmes to support beneficiaries, thereby facilitating the continued development of seed production activities.



## DOCUMENTS AND OUTREACH PRODUCTS

- ❑ **Department of Agriculture.** 2023. *Registration of Seed Producing Clusters.*
- ❑ **Department of Agriculture.** 2023. *Seed Certification Guidelines.*
- ❑ **Department of Agriculture.** 2024. *Digital Platform for Agricultural Planning and Crop Management.* <https://digital.doa.gov.lk/>.



## ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

<b>Expected Impact</b>	<b>Productivity Enhancement while ensuring the environmental sustainability, and improved food and nutrition security</b>		
<b>Outcome</b>	Increased farmers' access to the modern technology and information		
	<b>Indicator</b>	Percentage of farmers have access to the modern technology and information.	
	<b>Baseline</b>	30 %	
	<b>End Target</b>	80 %	
	<b>Comments and follow-up action to be taken</b>	The end target of 80 percent was not achieved; however, significant milestones, such as the development of the IT-based platform, occurred under this project. The target was too ambitious for a project with a short duration.	
<b>Output 1</b>			
	Use of modern technology by the beneficiaries / farmers improved		
	<b>Indicators</b>	<b>Target</b>	<b>Achieved</b>
	Percentage of farmers adopting new technology.	60 %	<b>Partially</b>
<b>Baseline</b>	20 %		
<b>Comments</b>	The percentage of farmers adopting new technology was between 40 and 50 percent at the project's end. It is expected that this will improve tremendously in a comparatively shorter period as the IT-based agricultural platform is expected to be completed by the middle or end of 2024. The technology spread into areas such as agricultural extension, crop planning and forecasting, gap certification, seed certification and crop insurance. The introduction of the technology went slowly at first, however, at the time of reporting, the advantages were being observed, as was a great deal of enthusiasm and dedication. In that sense, this project was a pioneering one in terms of the usage of IT in agriculture. Although the project has been completed, the remaining tasks are being supported by other projects, and the target will be most probably achieved by mid-late 2024.		
<b>Activity 1.1</b>			
	Demonstration of technology		
	<b>Achieved</b>	Yes	
	<b>Comments</b>	Six demonstration sites were established in collaboration with Hector Kobbekaduwa Agrarian Research and Training Institute and the DOA. The sites are expected to be maintained by the DOA.	
<b>Activity 1.2</b>			
	Training of trainers		
	<b>Achieved</b>	Yes	
	<b>Comments</b>	During the establishment of the demonstration sites, DOA officers were trained on every aspect of land and crop management, and they were expected to conduct training sessions on the topics in their mandated areas.	
<b>Activity 1.3</b>			
	Improvement of institutional coordination		
	<b>Achieved</b>	Yes	
	<b>Comments</b>	A virtual platform was established to improve institutional coordination. During the period of project implementation, physical mobility was limited due to the economic situation in Sri Lanka, hence, low-cost technology dissemination techniques were used. This approach was very promising, not only for classroom-type lectures, but also for field-level activity demonstrations.	
<b>Activity 1.4</b>			
	Community-based quality seed production programs (both Hybrids & OPV) implemented		
	<b>Achieved</b>	Yes	
	<b>Comments</b>	Four seed production clusters were established and connected to existing marketing channels. Hi-tech agriculture, including technology relevant to seed production, was promoted at sample sites for the benefit of 195 farmer trainees. These trainees are expected to subsequently replicate the training in their respective mandate areas.	



Output 2	Through crop planning agricultural production improved		
	Indicators	Target	Achieved
	Percentage reduction of wasted produce due to excess production.	70 % reduction of existing waste.	Partially
Baseline	30 – 40 % of the total production is wasted		
Comments	The Crop Look Forecasting System was greatly improved. Crop Look provides information on existing crop status at a particular time so that producers and farmers can plan and establish crops based on that information. In addition, it forecasts the production of each crop. Once the system becomes more popular and farmers are acquainted with the novel system, crop planning at island scale will be a reality, and excess production and loss will be minimized. This is expected to take at least another year or two, because the crop insurance module of the IT is system has not been established.		
Activity 2.1	Improvement of Crop Look Forecasting system through better utilization of seasonal weather forecasting system using web and mobile platforms and linking with crop insurance scheme for farmer		
	Achieved	Partially	
	Comments	As stated above, the level of achievement is promising, but the results were not fully achieved by the time the project was over. That said, the work on the system is being continued, and the DOA is fully dedicated to improving and continuing the building of the IT system with other modules such as agricultural extension, seed certification, and GAP certification. The crop insurance module is to be built collaboratively with the Insurance Board and the Ministry of Agriculture.	
Output 3	Through efficient Agricultural value chains, producers/ farmers income increased and diversified		
	Indicators	Target	Achieved
	Percentage of Producers/Farmers increased their income through value addition.	20 – 30 % of the farmers producers increased their income.	Yes
Baseline	Very low		
Comments	Drawbacks in value chains (vegetable and fruit production) were identified. Based on the report prepared documenting the drawbacks in the value chain, seed production clusters were directly introduced to DOA seed purchasing systems and to direct private purchasers without going through middlemen, which significantly increased beneficiary farmer profits. Under poly tunnels, for an 8-month period, farmers could produce 8 – 10 kg of hybrid seeds that will be able to sell for SLR 100 000 per kg, while their previous practices, consisting of cultivating vegetables, would result in a total of SLR 100 000 – 200 000 for the same period. Regarding OPV, farmers increased their income levels more than twofold.		
Activity 3.1	Identification of limitations/drawbacks in value chains (vegetables & fruits including supermarket chains) and recommendations for improvements		
	Achieved	Yes	
	Comments	It is recommended that value chains be shortened through the organization of farmers into groups and through the introduction of basic value-addition techniques.	
Activity 3.2	Strengthening farmer organizations and linking their production clusters with market outlets		
	Achieved	Yes	
	Comments	Beneficiary seed producers were directly introduced to seed buyers (DOA or private parties), and they were given a thorough explanation of the selling process.	

**Partnerships and Outreach**

For more information, please contact: [Reporting@fao.org](mailto:Reporting@fao.org)

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