ANNUAL RESEARCH FORUM 2025

SRI LANKA

HARTI

POLICY BRIEFS

MESSAGE FROM THE DIRECTOR

The Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI), established under Act No. 5 of 1972, continues to fulfil its national mandate to address agrarian issues through a socio-economic lens and to provide research and training that support the advancement of Sri Lanka's agrarian and rural sectors. Guided by our vision to be the national leader in generating and disseminating knowledge for sustainable agrarian and rural development, HARTI remains steadfast in its commitment to its founding objectives. This dedication is firmly embedded in our mission: *"To strengthen the agrarian and rural sectors through research and training."* As the only government research institute solely devoted to socio-economic research in the agrarian domain, HARTI plays a unique and indispensable role within the country's policy and development framework.

Our research focuses on timely and critical issues that influence the performance and resilience of the agrarian sector. The evidence generated through these studies provides essential insights for addressing challenges at national, regional, and community levels, and contributes significantly to shaping agricultural and rural development policy. We ensure that our research findings reach all relevant stakeholders—ranging from policymakers, including the Hon. Minister of Agriculture and government agencies, to extension officers, farmer organizations, and rural communities—thereby supporting informed decision-making across multiple layers of the sector. Through the effective use of our institutional resources and available strategies, we remain committed to delivering high-impact research and services that align with national development priorities.

In this context, the Annual Research Forum holds particular importance. It serves as a national platform to present and disseminate the research conducted at HARTI and to engage with our most responsible, influential, and long-standing partners in development. The research forum fosters constructive dialogue, facilitates knowledge exchange, and reinforces the role of evidence in policymaking. Through this forum, we aim to strengthen collaboration, expand understanding of key agrarian issues, and support the formulation of innovative, research-driven solutions for the continued progress of Sri Lanka's agrarian and rural sectors.

I extend my sincere appreciation to our research staff and the entire supporting staff who have worked with dedication and resilience, even under challenging circumstances, in advancing the Institute's vision and mission. Their contributions remain invaluable to the continued success of our work.

Prof. A.L. Sandika
Director/Chief Executive Officer

MESSAGE FROM THE ADDITIONAL DIRECTOR

Today, the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) proudly inaugurates its Annual Research Forum for this year. As the national institution mandated to generate and disseminate knowledge essential for addressing agrarian challenges and guiding the development of Sri Lanka's rural economy, HARTI has upheld a distinguished legacy. Over the past five decades, the Institute has made a remarkable and enduring contribution to agricultural policy formulation, resolving agrarian issues, and fostering sustainable development within the agriculture and rural sectors.

In keeping with its mandate, HARTI continues to conduct timely, relevant, and impactful socio-economic research each year. These studies are grounded in rigorous scientific methodology and address real and pressing issues affecting the agrarian sector. The findings presented at this year's research forum reflects the research conducted in 2024, offering valuable insights into contemporary challenges and providing essential evidence to support policy formulation and strategic decision-making.

As the Additional Director of HARTI, I wish to express my sincere appreciation to our Director, Prof. A. L. Sandika, for his visionary leadership, unwavering guidance, and dedicated efforts in steering the Institute towards the achievement of its mission and long-term goals. I also extend my heartfelt gratitude to our committed and highly qualified research staff for their diligence, intellectual rigour, and passion in generating and disseminating knowledge that contributes significantly to the development of the agrarian sector and the country's socio-economic progress. The unwavering support of the HARTI administrative and support staff is equally commendable, as their dependable contribution remains essential to achieving the institute's mission.

I extend my best wishes for the success of the Annual Research Forum-2025, and I am confident that the knowledge shared through this forum will continue to inspire informed policy decisions and strengthen the future of Sri Lanka's agrarian sector.

Dr. Chathura Jayampathi
Additional Director (Cover-up)

PREFACE

The Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI), as Sri Lanka's premier institution dedicated to agrarian-sector socio-economic research, continues to play a pivotal role in shaping evidence-based policy and strengthening national development discourse. Over the years, the Institute has made substantial contributions to rural development through its wide-ranging studies on agriculture, livelihoods, markets, social systems, and human resource development. These efforts have supported the formulation of strategies and policies that address both emerging challenges and long-standing issues in the rural economy.

The Annual Research Forum – 2025 marks another significant milestone in HARTI's commitment to advancing knowledge and fostering dialogue among policymakers, government agencies, academics, and development practitioners. This forum brings together the insights and empirical evidence generated through research conducted in 2024—a year that presented dynamic shifts in the socio-economic landscape of Sri Lanka's agrarian sector.

The findings presented through this forum not only deepen our understanding of key trends, constraints, and opportunities within the sector but also provide a robust platform for informed decision-making. By creating space for critical reflection, constructive discussion, and collaborative learning, the forum seeks to inspire innovative solutions and strengthen the policy environment required for sustainable agricultural and rural development.

HARTI extends the sincere appreciation to the researchers, partner institutions, and stakeholders who contributed to the studies featured in this year's forum. It is our hope that the knowledge shared here will meaningfully support the continued transformation and resilience of Sri Lanka's agrarian communities.

ACKNOWLEDGEMENT

HARTI proudly presents its Annual Research Forum for this year. As with all of HARTI's research and training initiatives, this forum is the result of dedicated teamwork, and every partner involved deserves sincere appreciation.

First and foremost, we extend our deepest gratitude to the Hon. Minister of Agriculture, Livestock, Land and Irrigation, the Ministry of Agriculture, and the Secretary to the Ministry, who also serves as the Chairman of the HARTI Board of Governors, for their continuous support and guidance in ensuring the smooth functioning of the Institute and the fulfilment of its founding objectives. We also express our heartfelt thanks to the Treasury and the Ministry of Finance, whose financial support sustains the very existence and progress of the Institute.

The HARTI Board of Governors, through its administrative direction and oversight, has played a vital role in steering the Institute toward achieving its goals.

We offer our special appreciation to the Director of HARTI for providing visionary leadership and inspiration to the entire HARTI community. The Additional Director, the Research and Training Committee, Heads of Divisions, and the research community also deserve sincere thanks for their tireless efforts, guidance, and commitment in making this research forum a success.

We extend our heartfelt gratitude to all our stakeholders, whose continued support strengthens and enriches the initiatives undertaken by HARTI. Finally, we express our profound appreciation to the entire staff of HARTI, whose unwavering support, dedication, and professionalism contribute to every endeavour of the Institute. Their continued commitment is deeply valued by the organizers of this research forum.

Organizing Committee
Annual Research Forum - 2025

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Dedicated Economic Centers in Sri Lanka: Functionality and Sustainability

HARTI

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Background

Dedicated Economic Canters (DECs) were established in Sri Lanka as part of a national initiative to enhance the agricultural marketing infrastructure. Their primary objectives were to ensure fair prices for producers, affordable food for consumers, and reduced transaction costs along the supply chain. Launched in 1999, these centers were designed to serve both producing and consuming regions through centralized, regulated marketplaces. Although 15 DECs are currently operational across the country, concerns have arisen regarding their effectiveness, governance, and ability to achieve their intended goals. This study was undertaken to provide a comprehensive assessment of the functionality and sustainability of all active DECs in Sri Lanka.

Given the vital role of DECs play in linking farmers to markets, this study holds significant relevance in today's policy context especially amid growing concerns over price volatility, post-harvest losses, and stakeholder dissatisfaction. It seeks to answer key questions about the institutional, administrative, and operational performance of DECs and evaluates their functionality and long-term viability.

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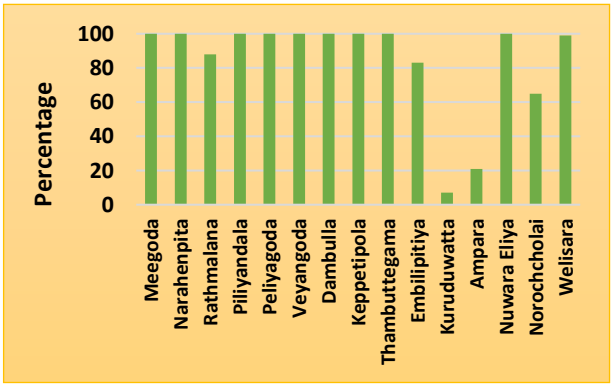
Methodology

The research employed both primary and secondary data sources, including key informant interviews, stakeholder surveys, direct field observations, and document reviews. A total of 390 respondents were interviewed, encompassing a diverse range of stakeholders such as DEC merchants, wholesalers and retailers, farmers, consumers, transporters, security personnel, and porters ("Nattami"). The study utilized the Market Functionality Index (MFI) as a framework to qualitatively assess nine critical dimensions of market performance: assortment, availability, pricing, supply chain resilience, competition, infrastructure, services, food quality, and accessibility. Further analysis was conducted on sustainability aspects, focusing on financial management, trade union involvement, management practices, and inclusivity.

Findings

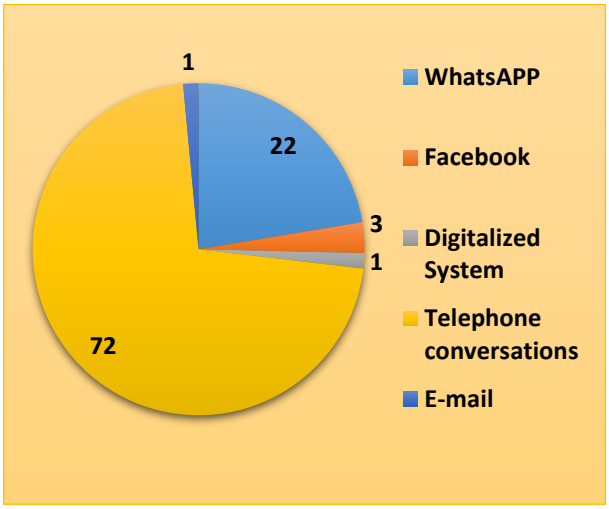
The findings highlight significant variation in performance across DECs. Well-functioning centres such as Dambulla, Thambuttegama, Keppetipola, Peliyagoda, Meegoda, Veyangoda, Narahenpita, Norochchole and Nuwara Eliya demonstrate operational maturity and strong stakeholder engagement. In contrast, centres like Embilipitiya, Ampara, and Kurunduwatta face issues such as underutilization, weak governance, and inadequate infrastructure.



Source: HARTI survey data, 2024

Figure 1: Functioning levels of the DECs in Sri Lanka

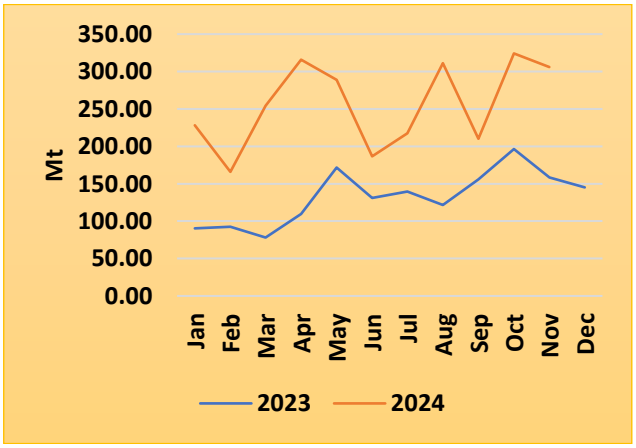
Many DECs lack basic facilities, including cold storage, packaging, protective roofing, sanitation, and waste management systems. Market inefficiencies are intensified by the dominance of intermediaries, limited pricing transparency, and the slow adoption of digital trading platforms.



Source: HARTI survey data, 2024

Figure 2: Source of Access to Information

Additionally, expired lease agreements, the absence of standardized governance frameworks, and low stakeholder participation further undermine the sustainability of these canters.



Source: Dambulla Municipal Council

Figure 3: Monthly Average Wastage Received from Dambulla DEC in 2023-2024

Post-harvest losses particularly in high-volume markets like Dambulla remain a major challenge, often driven by oversupply and insufficient storage facilities. Despite being

embedded within the national agricultural policy framework, there is a noticeable gap between policy objectives and ground-level implementation.

Recommendations

The operational disparities among DECs indicate the need for uniform standards in governance, infrastructure, and service provision. Without strategic intervention, underperforming DECs will continue to undermine national food distribution systems and farmer welfare. Revamping DECs is essential to support the national agricultural policy goals of market-led Agri-entrepreneurship and rural transformation.

1) Strengthen Infrastructure: Invest in cold storage, roofing, sanitation, and waste management and packing centers to reduce losses and improve hygiene.

2) Institutional Reforms: Establish a unified governing body, standardize lease agreements, and restructure management trusts.

3) Improve Transparency: Promote digital platforms for payments and price display to reduce information gaps and unfair practices.

4) Enhance Inclusivity: Simplify market entry for new entrepreneurs and provide targeted support for small-scale farmers.

5) Sustainable Practices: Develop robust west management system in collaboration with local authorities.

6) Monitor and Evaluate: Implement regular performance monitoring using MFI indicators to guide targeted interventions.

Agritourism as a Sustainable Livelihood Development Practice in Sri Lanka

HARTI

Policy Brief

2025

Background

Sri Lanka remains a predominantly agrarian nation, with many rural households relying on agriculture as their main source of income. However, the sector continues to face long-standing socio-economic challenges, including low and unstable earnings, seasonal underemployment, indebtedness, and limited opportunities for livelihood diversification. These constraints have increased the need for alternative income sources that can strengthen the economic resilience of farming communities. Agritourism linking agriculture with tourism has emerged internationally as an effective approach to enhance rural livelihoods by generating additional income, preserving cultural heritage, and expanding community based economic activities.

Sri Lanka's tourism industry has shown strong post-pandemic recovery, earning over USD 1.5 billion in the first half of 2024. The country's rich agricultural landscapes, biodiversity, and traditional farming systems provide substantial potential for agritourism. Despite this, the integration between agriculture and tourism remains limited. In contrast to countries such as Thailand, Malaysia, Indonesia, and India, where agritourism is widely practiced and supported by policy, Sri Lanka's initiatives are often dominated by large private operators, with minimal involvement from smallholder farmers.

Increasing real farmer participation in agritourism presents a timely opportunity to boost rural incomes, promote sustainable tourism, and support community development. This study examines how agritourism can function as a sustainable livelihood development strategy in Sri Lanka.

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Methodology

The study was conducted in the North Central, Central, and Southern provinces, selected for their strong tourism and agricultural significance. A mixed-method approach combining probability and non-probability sampling was used. Divisional Secretariats with high agritourism potential were chosen, and one community-based agritourism site from each DS served as the primary study location. Three surveys were administered: general farmers (170), agritourism farmers (209), and tourists (70), with farmer samples determined using Slovin's Formula. Data were collected from May–November 2024. Key Informant Interviews, Focus Group Discussions, and local and international Case Studies supplemented the survey data to strengthen analysis.

Findings

Agritourism Potential - Five agritourism subcategories were identified under the community-based tourism (CBT) approach: paddy tourism, vegetable tourism, combined paddy–vegetable tourism, spice garden tourism, and cinnamon cultivation and processing tourism. These sectors show strong potential for clustering, especially given the global appeal of Sri Lanka's spice and cinnamon industries. Notably, 70% of surveyed farmers expressed interest in diversifying into agritourism. Establishing integrated agritourism clusters that combine multiple sectors can enhance visitor experiences and optimize resource use, while community-based models can ensure equitable participation and benefit sharing.

Potential Benefits of Agritourism to the Farming Community - In all five sub-categories of agritourism, the majority of respondents (100%) identified additional income as the primary benefit. Job opportunities were a key advantage for 65% of participants. Meanwhile, 35% believed agritourism offered community engagement opportunities, 17% recognized its role in conserving traditional farming practices, and 11% viewed it as a way to increase awareness of farming activities.

Economic Impact - The monthly income from agritourism varies significantly across the five sub-categories. Paddy and Vegetable, Spice Garden, Vegetable, Paddy, and Cinnamon. The Cinnamon and Spice Garden sectors show the highest income potential. All participants in the Cinnamon sector earn above Rs. 100,000, with 50% earning more than Rs. 200,000. Similarly, 28% in the Spice Garden sector earn above Rs. 100,000, with 45% earning more than Rs. 200,000. Other sectors show a broader income distribution, indicating potential for growth. These differences highlight the economic advantage of high-value sectors like Cinnamon and Spice Garden, while paddy and vegetable-based tourism show moderate income potential, and require strategic development to improve profitability.

Community Participation and Empowerment - The analysis of agritourism in the study area reveals it is primarily family-driven, with family-owned businesses. There is no strong and efficient community-based approach. This highlights a strong tradition of individual family involvement in agritourism, the need for more efficient CBTs in the area. Community-based tourism is viable for these areas, Agritourism increases local employment opportunities, especially for women and youth, through hospitality, guiding, and handicraft production. Community-based agritourism initiatives strengthen social cohesion and promote rural heritage. Women represent only 20% of participants in agritourism projects, highlighting a gender disparity.

Tourist Preferences - According to survey data, farm tours are the most popular agritourism activity, with 93% of respondents involved. U-pick operations are offered by 41% of participants, while 39% provide farm stays or accommodation. Cooking demonstrations are offered by 56% of operators, and 73% serve meals at farm stays. Additionally, 25% provide multilingual tour guide services for diverse

visitors. Visitors primarily seek authentic rural experiences, local cuisine, and educational activities like farming demonstrations. Tourists prefer hands-on agricultural experiences, such as harvesting or cooking traditional meals. Fifty percent of international tourists indicated interest in spice and cinnamon tours, 60% cited Sri Lanka's spice and cinnamon sectors as key attractions, and 50% expressed interest in agritourism linked to traditional paddy and vegetable farming.

Infrastructure and Accessibility - Sixty percent of potential agritourism sites lack proper road access and visitor facilities. Only 30% of rural destinations meet the basic requirements for tourist comfort and safety.

Market Challenges - Forty percent of farmers involved in agritourism struggle with marketing their products directly to tourists. Twenty five percent of agritourism enterprises engage in selling value-added product sales, such as packaged spices.

Environmental Practices - Forty five percent reported issues with waste management and overuse of resources. Only 20% have adopted eco-friendly practices such as organic farming or renewable energy.

Policy and Regulation - Eighty percent identified the absence of a regulatory framework as a significant challenge. Less than 10% of government support programs specifically support agritourism.

Digital Marketing Gaps - Seventy-five percent of agritourism operators do not use digital platforms for promotion. Only 15% of tourists found agritourism sites online.

Training and Capacity Building - Only 15% of farmers in rural areas are actively engaged in agritourism initiatives. Eighty percent cited lack of awareness and training as barriers to participation. Eighty five percent of farmers reported needing training in tourism management and hospitality.

Tourists' Awareness in Agritourism Sector of Sri Lanka-

Website	36%
Hotels	9%
Tour guide companies	21%
Booking companies	6%
Through previous visitors	28%

The sample data shows various sources through which tourists become aware of agro-tourism businesses. The majority (36%) learn through websites.

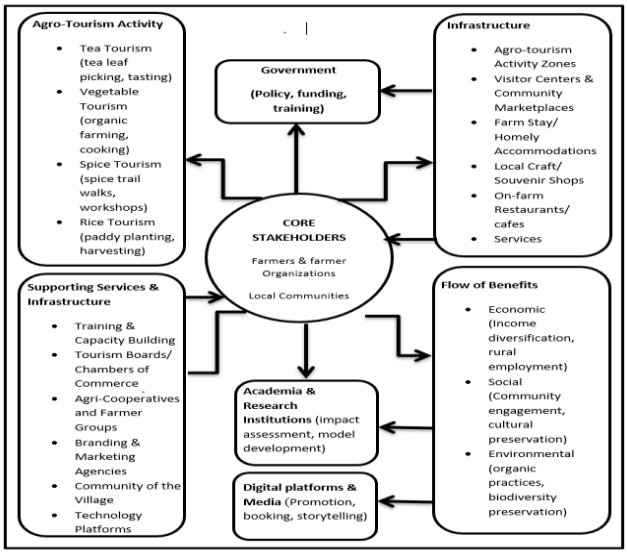
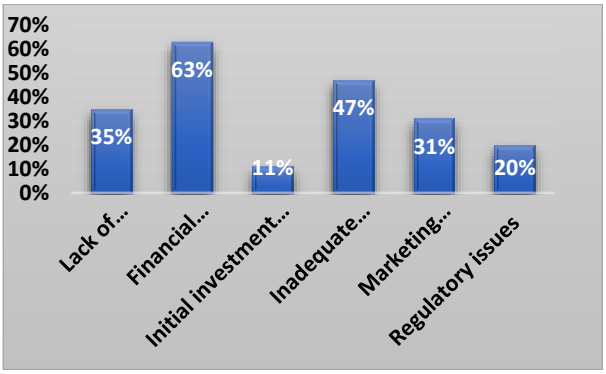


Figure 1: Sustainable Agritourism Network Model

Main Challenges Faced by Farmers Engaged in Agritourism



Expected Support from Stakeholders to Enhance the Business - Stakeholders are expected to support agritourism in Sri Lanka primarily through financial support (30%)., Other contributions include infrastructure

development (24%), marketing and promotion (19%), and training and education (16%).

Sectoral Contributions - Distinct agritourism sectors, such as paddy and tourism, spice and tourism, and vegetable and tourism, show varying economic and cultural appeal to tourists. Spice and cinnamon-related tourism has the highest potential for export-oriented product development and value addition.

Agritourism Network Model - These findings align with the Sustainable Agritourism Network Model (SANM) (Figure 1), emphasizing the need for coordinated stakeholder action, infrastructure development, digital integration, and inclusive community participation to realize full potential of agritourism in Sri Lanka.

Recommendations

Potentials - Agritourism subsectors such as paddy, vegetable, spice, and cinnamon tourism show strong potential for clustering. Create integrated agritourism clusters, implement community-based models with direct farmer involvement, and establish agritourism marketplaces to connect tourists with local producers and ensure fair benefits for rural communities.

Develop Agritourism Policies and Guidelines - Form clear agritourism policies, provide tax incentives and subsidies, and ensure coordination between tourism, agriculture, and rural development authorities to promote sustainable sector growth.

Strengthen Infrastructure and Facilities - Improve rural transportation, connectivity, accommodation, sanitation, and develop visitor centers and signage to support agritourism activities.

Capacity Building and Training - Provide training for farmers and rural communities on community-based tourism, hospitality, and tourism skills. Increase awareness of cultural and economic benefits and encourage knowledge-sharing to replicate successful models.

Promote Public–Private Partnerships (PPP) - Encourage collaboration among government agencies, private investors, and local communities. Support cooperative models that allow farmers to share resources and profits.

Control Digital Marketing and Technology - Develop online platforms and mobile apps for promoting agritourism destinations. Use digital tools for bookings, reviews, and visitor feedback.

Diversify Agritourism Activities - Promote experiences such as paddy cultivation, vegetable harvesting, spice and cinnamon tours, cooking classes, and cultural/traditional activities in agritourism packages.

Focus on Sustainability and Environmental Conservation - Encourage eco-friendly practices like organic farming and proper waste management. Ensure developments align with environmental conservation goals.

Enhance Financial Support and Microcredit Facilities - Provide low-interest loans, grants, and insurance schemes to support small-scale agritourism entrepreneurs and reduce financial risks.

Build Stronger Networks and Partnerships - Establish local and international agritourism networks and collaborate with universities and research institutes to advance innovative agritourism models.

Priorities Strengthening Community-Based Tourism Structures - Insights from case studies highlight the need to integrate agriculture, culture, and community engagement, improve infrastructure, enhance digital access, and provide skill development in tourism management, branding, and languages. Tailored financial incentives and startup

support can help communities adopt and expand sustainable agritourism.

Agritourism Rural Network Model - Policymakers are encouraged to adopt the Sustainable Agritourism Network Model (SANM) to integrate key stakeholders, infrastructure, and sector activities for coordinated and equitable rural tourism development.

Monitor and Evaluate Agritourism Initiatives - Establish monitoring frameworks to assess socio-economic and environmental impacts and use findings to improve long-term strategies.

Promote Sri Lankan Agritourism Globally - Brand Sri Lanka as a unique agritourism destination through targeted international campaigns featuring spice gardens, paddy fields, and other distinctive attractions.

Community-Based Tourism Benefits - Agritourism can generate employment for women and youth, strengthen social cohesion, and preserve rural heritage, making community-based tourism highly viable for these areas.

Evaluating the Impact of Entrepreneurship Development Programs on the Progression of Agro-Based Startups in Sri Lanka

HARTI

Policy Brief

2025

Background

Sri Lanka's agricultural sector, employing nearly one-fourth of the labour force, remains central to rural livelihoods yet continues to struggle with persistent structural constraints such as low productivity, limited value addition, weak market integration, and high vulnerability to climatic and economic shocks. Over the past two decades, the government of Sri Lanka has increasingly promoted entrepreneurship development as a strategy to modernize agriculture, diversify rural incomes, and address rural youth unemployment and post-crisis economic pressures. Multiple agencies now operate entrepreneurship development programmes (EDPs) aimed at skill development, technology transfer, and enterprise facilitation.

Despite this proliferation, the sustainability of agro-based startups remains low, with many enterprises stagnating after initial support. Evidence from previous literature and field actor's points to fragmented institutional mandates, unclear targeting, input-driven support, and weak follow-up systems as key contributors to poor outcomes. The current study was conducted to bridge this evidence gap and provide a rigorous assessment of how government-assisted EDPs affect agro-based enterprise progression.

In line with national development priorities, including agricultural modernization efforts, youth enterprise promotion, SME growth strategies, and the new push for rural entrepreneurship, the study evaluates the structural and functional effectiveness of existing EDPS and proposes a strengthened operational model for future programs. Findings are directly relevant for policy actors who are working with the focus of agro-based entrepreneurship development, while it could also be beneficial for others who provide diverse services in relation to entrepreneurship development in Sri Lanka.

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Methodology

Combined quantitative and qualitative approaches enabled capturing the multi-dimensional nature of entrepreneurship development. Kurunegala, Nuwara Eliya, Badulla, Kegalle, Hambantota, and Matale were selected to reflect agro-climatic and socio-economic diversity. A structured survey was conducted with 310 agro entrepreneurs who had participated in government EDPs within the past three years, to collect data on business performance, entrepreneurial traits, and the nature of support received. To assess causal relationships between program attributes, entrepreneurial characteristics, and business outcomes, a Structural Equation Modeling (SEM) was applied. Key informant interviews with policymakers, program officers, and technical experts provided insights into institutional logic, operational gaps, and implementation practices and enriched a rigorous and context-sensitive assessment of the effect of structural and functional dimensions of EDPs on business performance.

Key Findings

- **Fragmented institutional landscape**: More than 50 government and semi-government agencies engage in entrepreneurship promotion, resulting in:
  - ✓ Overlapping mandates
  - ✓ Duplication of training and financial schemes
  - ✓ Poor coordination and inconsistent standards
  - ✓ This complexity confuses beneficiaries and produces inefficiencies in programme delivery.

- **Beneficiary selection gaps**:
  Beneficiary selection often prioritizes:
  - ✓ Welfare eligibility (e.g., Samurdhi status)
  - ✓ Political referrals
  - ✓ Institutional convenience

  Which leads to mis-targeting, where individuals with limited entrepreneurial readiness are selected, while capable youth and women are excluded.

- **Input-Driven, One-Size-Fits-all focus**:
  - ✓ EDPs remain heavily input-focused, providing: trainings and one-off equipment or grants.
  - ✓ Support rarely aligns with: enterprise growth stage, sector-specific requirements' real business readiness or market demand

- **Weak Financial and Non-Financial Support Integration**:
  - ✓ Difficulties in accessing certification (GAP, GMP, HACCP)
  - ✓ Limited assistance with branding and packaging
  - ✓ Absence of market linkage support
  - ✓ Minimal help navigating credit and finance schemes

  Discrete supports does not translate into improved performance due to missing complementary linkage.

- **Limited mentoring and monitoring**: Most programmes do not include:
  - ✓ Systematic monitoring
  - ✓ Regular follow-up
  - ✓ Embedded coaching
  - ✓ Data-driven feedback loops

  Monitoring is often symbolic, and entrepreneurs lack real-time problem-solving support.

- **Equity Concerns**: Specific groups face additional barriers:
  - ✓ Youth: lack digital literacy, exposure, collateral
  - ✓ Women: mobility restrictions, exclusion from networks, institutional bias
  - ✓ Mid-stage enterprises: outgrow basic EDP support but lack pathways to scale

  Existing EDPs are not designed to accommodate these differentiated needs.

Statistical Evidence from SEM

SEM analysis confirms:

- ✓ Strong positive links between institutional support, entrepreneurial traits, and enterprise performance.
- ✓ Program design factors significantly influence sustainability.
- ✓ Without structured and functional support, enterprise growth is limited regardless of individual skills.

These empirical findings indicate that the challenges persist not entirely with entrepreneurs but also with programme design and institutional architecture.

Recommendations

Suggested Model - *The Value-Based Spiral Support System (VBSS)*

The study proposes a transformative operational model that reconceptualizes entrepreneurship development as a progressive, iterative journey rather than one-off intervention. The *Value-Based Spiral Support System (VBSS)* ensures entrepreneurs receive stage-appropriate support that evolves with their capacity, enabling upward progression while allowing re-entry for higher-order assistance as businesses mature.

Six Strategic Pillars of VBSS

1. Readiness-Based Beneficiary Selection: Replace welfare-based targeting with dual-criteria assessment combining social equity and entrepreneurial potential. Implement structured interviews and simple business proposals to ensure support reaches both vulnerable populations and high-potential startups while maintaining merit-based allocation.

2. Structured Onboarding and Incubation: Provide comprehensive orientation, feasibility validation, and behavioral training before deploying resources. This preparatory phase ensures entrepreneurs understand business fundamentals, assess market viability, and develop realistic expectations before receiving capital or equipment.

3. Lifecycle-Based Support Tracks: Design differentiated interventions including tailored inputs and guidance for startup (0-1 year), growth (1-3 years), and scale-up (3+ years) phases. Startup support includes basic business literacy, sector-specific technical training, and initial capital. Growth phase emphasizes quality improvement, working capital access, and market expansion. Scale-up focuses on export readiness, certification support, and strategic partnerships.

4. Market and Certification Facilitation: Establish District-level Market and Standards Support Units providing guided certification processes relevant to production and processing industries, branding assistance, buyer-seller networking platforms, trade fair participation support, and export documentation guidance.

5. Monitoring and Embedded Mentoring: Deploy trained Enterprise Development Officers (EnDOs) at the district level, offering continuous performance tracking via digital dashboards, one-on-one coaching addressing operational challenges, adaptive support responding to market changes, and periodic refresher training on emerging technologies.

6. Institutional Coordination and Digital Integration: Create a Central EDP Secretariat within the Ministry of Industries /Agriculture to harmonize EDP's objectives, prevent duplication, and ensure accountability. Establish District Entrepreneurship Cells (DECs) as decentralized coordination hubs. Implement QR-linked Entrepreneur ID system storing complete intervention history, enabling seamless inter-agency coordination, and generating real-time analytics for evidence-based policy adjustments.

Operationalizing the VBSS - Implementation Roadmap

***Immediate Actions (0-12 months)**:*

- Adopt National EDP Framework and establish VBSS principles - for harmonizing objectives, pool resources, and guide all agencies through a unified spiral-based approach.
- Establish Central EDP Secretariat and pilot District Entrepreneurship Cells - for facilitating ground-level responsiveness for certification, mentoring, and market integration.
- Initiate QR-linked digital registry – for transparent tracking, real-time monitoring, and evidence-based policy adjustments.
- Reform selection processes to ensure social inclusion and entrepreneurial capability – for enabling support for both vulnerable groups and high-potential startups.
- Pilot VBSS in 2-3 districts.

***Mid-Term Reforms (1-2 years)**:*

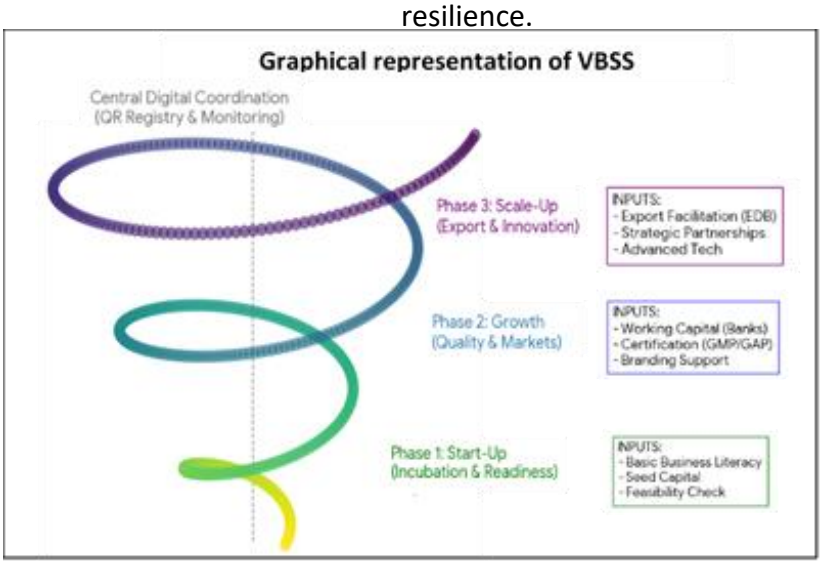
- Digitize all EDP operations with online applications and automated referrals;
- Scale VBSS nationally with quality assurance;
- Formalize public-private partnerships with exporters, certifiers, and financial institutions;
- Implement performance-based funding tied to outcome metrics;
- Mainstream gender- and youth-sensitive program tracks.

***Long-Term Transformation (3-5 years)**:*

- Integrate EDPs with agricultural modernization and export strategies;
- Establish district innovation hubs with laboratories and testing facilities;
- Conduct longitudinal impact evaluations;
- Develop entrepreneurship education pathways in schools and colleges.

Impact Outlook - Enterprise and System-Level Benefits

The implementation of the VBSS is expected to substantially elevate the performance and resilience of agro-based startups by improving business survival beyond the critical early years, enabling enterprises to obtain essential certifications, strengthening their entry into premium and export-oriented markets, and supporting profit growth together with meaningful employment expansion. At the systemic level, the VBSS framework enhances institutional coordination, promotes resource savings, ensures transparency through digital tracking and strengthens performance accountability through clearer institutional roles and specialization. Collectively, these improvements reposition EDPs as dynamic, inclusive, and results-driven mechanisms, capable of transforming fragmented, grant-led programmes into strategic drivers of agricultural modernization, rural youth engagement, women's economic empowerment, and national economic resilience.



Food Consumption Patterns of Urban Adolescents in Sri Lanka: Motives, Barriers and Implications for Healthy Eating Habits

HARTI

Policy Brief

2025

Background

Adolescence is a critical stage of life marked by rapid physical, psychological, and emotional development, during which adequate nutrition plays a vital role. In both developed and developing countries, adolescents' dietary patterns have increasingly shifted away from traditional foods toward a higher consumption of processed foods that are rich in sugar, fat, and salt. Evidence shows that these dietary shifts are associated with a rising burden of non-communicable diseases (NCDs), including obesity, diabetes, and cardiovascular diseases, among young people. Understanding these changing dietary trends is essential for designing effective nutrition interventions and strengthening public health policies aimed at improving adolescent health and well-being. Policymakers and key stakeholders must recognize these patterns in order to develop targeted strategies that reduce the risk of diet-related health problems.

In Sri Lanka, despite several existing initiatives, the consumption of unhealthy foods among adolescents continues to increase, particularly in urban areas. Existing school canteen guidelines and other government-led efforts have not been sufficiently effective in addressing these challenges, highlighting the need for more comprehensive and focused interventions. Furthermore, there is a significant lack of in-depth research on the specific dietary practices, social influences, and structural barriers faced by adolescents in Sri Lanka. This study seeks to address this gap by working closely with students and school principals to assess the factors and constraints shaping adolescents' food choices. Specifically, the study aims to investigate the food consumption behaviors and dietary patterns of adolescents in urban Sri Lanka by examining their consumption trends, identifying key influencing factors, and understanding the barriers and opportunities they experience. In addition, the study will explore appropriate strategies and policy options to promote healthier eating habits.

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Methodology

This study employed a mixed-methods approach, combining both primary and secondary data, and utilizing qualitative and quantitative research techniques. The study targeted school going adolescents in the age group of 15–19 years (Grades 9–12). Data was collected from 463 students in both government and private schools by using structured questionnaires, across three urbanized districts: Colombo, Gampaha, and Kandy. Key Informant Interviews were conducted with school principals, teachers, canteen staff, regulatory officials, and parents to obtain deeper insights into adolescents' food consumption patterns and the broader factors affecting their choices. A multistage random sampling method was used, selecting districts, educational zones, and schools. Descriptive analysis using cross-tabulation and a seven-day food diary to identify consumption patterns. A Likert scale assessed the influence of various factors on food choices, with responses categorized as "Agree/Strongly Agree" or "Disagree/Strongly Disagree."

Findings

- The diet of students is heavily reliant on cereal-based foods, particularly rice, with low daily consumption of fruits, green leaves, vegetables, and pulses. While there is a notable increase in the consumption of junk foods, fast foods, and sugary beverages (Figure 1).
- Over 50% of students skip meals, especially breakfast, due to busy schedules and lack of interest.
- 80% of students snack daily, indicating that snacking is a common habit among adolescents with government school students opting for cheaper, less nutritious snacks.
- Government school students engage less in physical activities due to academic pressures, while private school students are more active (Figure 2).

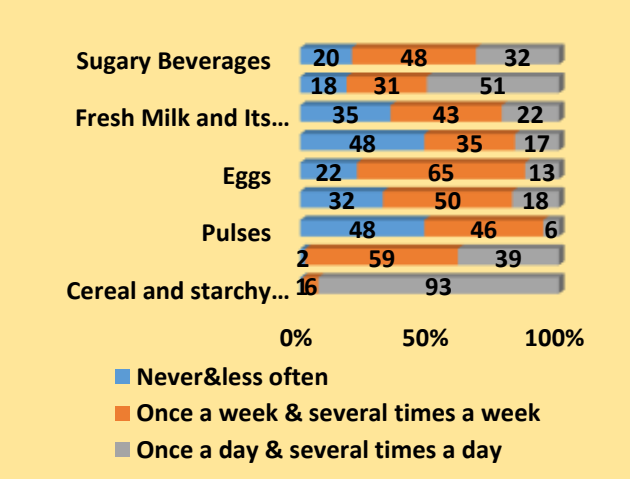

Figure 1: Weekly food Intake Frequency

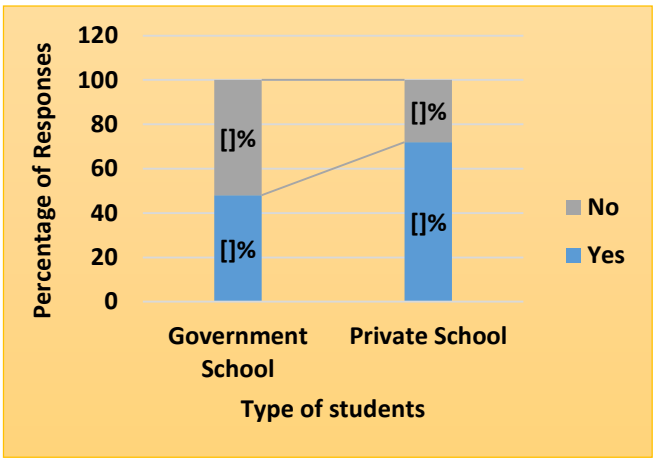

Figure 2: Physical Activity

Factors that influence food habits, preferences, and choices among urban adolescents

❖ Personal Attributes

Convenience, taste, emotional satisfaction, and limited nutritional knowledge heavily influence adolescents' food habits, with health-conscious decisions playing a minor role.

❖ Influence of School Environment

There is low adherence to healthy eating initiatives, with moderate peer influence and resistance to fast food bans (81.2%). Canteen committees are often ineffective, and most schools lack formal nutrition awareness programs. Healthy food initiatives, like fruit

juice bars, are sporadic, and government meal programs mainly serve primary students.

❖ Influence of Family Dietary Habits

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Eat breakfast at home before going to school	24.2	64.4	11.4
Watch television/ screens while eating at home	36.9	11.9	51.2
Parents' closely monitor what you eat	9.5	65.0	25.5
Parents are very health concerning	4.3	77.1	18.6
Have at least a meal at the dining table	31.3	9.1	59.6
Have takeaways often / Use ordered food often	71.5	20.1	8.4
Always dine out at restaurants with family	64.8	27.0	8.2
Plenty of Healthy food is available in the home environment	10.8	57.7	31.5

Note: SA-Strongly Agreed, A-Agreed, NAD-Neither Agreed nor Disagreed, D-Disagreed, SD-Strongly Disagreed

Family dietary habits may lack consistency in promoting healthy eating behaviors, with a notable inclination towards convenience-oriented practices and limited active health monitoring by parents.

❖ Social Influence

Peer influence, particularly through popularity and social media trends, plays a significant role in shaping food habits among adolescents.

❖ Economic Factors

Cost plays a significant role, with 65.2% agreeing that it is an important factor. Additionally, 76.9% are aware of the prices of the foods they buy, indicating a strong awareness of economic considerations. Affordability is a key preference, with 61.8% choosing affordable dining options. These results highlight that economic factor are a major determinant of food choices for the respondents.

❖ Cultural and Religious Influences

Cultural and religious influences appear to be insignificant for a majority.

Awareness of Healthy Eating Habits

- ❖ Lack of understanding of diet-related health risks.
- ❖ Overall, the significant percentage of neutral responses suggests a lack of strong opinions or limited knowledge about the importance of healthy eating.
- ❖ There is some awareness of the benefits of healthy eating habits, the high percentage of neutral responses across all statements suggests limited knowledge or strong opinions on these issues.

Barriers to Healthy Eating Habits

- ❖ Barriers to healthy eating among students stem from structural, social, cultural, and individual challenges.
- ❖ Structural issues include gaps in educational and agricultural policies, the influence of fast-food chains, and urbanization-driven changes in preferences.
- ❖ Social and cultural factors, such as negative perceptions of traditional foods, stigma around locally grown ingredients, and competition from unhealthy food sellers, further complicate dietary behaviors.
- ❖ At the individual level, limited awareness programs and societal shifts, including urbanization and increased female workforce participation, contribute to a growing reliance on processed convenience foods.

Recommendations

Policy and Governance: *Strengthen and enforce regulations to ensure healthier food environments*

- Strengthen canteen regulations, mandating healthier food options and banning unhealthy items.
- Introduce government guidelines for school canteens on hygiene, food quality, and affordability.
- Limit marketing of unhealthy foods targeting adolescents.

Awareness and Education: *Foster awareness of the benefits of healthy eating among students, parents, and community*

- Launch creative nutrition awareness campaigns using creative methods such as posters, assemblies, dramas, and short films in collaboration with the Ministry of Health.
- Integrate nutrition education into the school curriculum.
- Conduct public health campaigns targeting adolescents and parents to emphasize the importance of balanced diets.

Food Availability and Accessibility: *Increase access to affordable, nutritious food options in schools*

- Establish milk bars, fruit juice centers, and traditional food stalls in school canteens in collaboration with the Ministry of Agriculture.
- Considering the high frequency of snack consumption, schools could promote healthier snack options to support students' overall well-being. Practical strategies to encourage healthier habits such as making fruits and healthy snacks more accessible and fostering a supportive peer culture, may help bridge this gap.
- Ensure a balance between cost and quality to make healthy options economically viable for students and canteen owners.
- Implement a nutritious meal programme for upper-grade classes in selected schools.

Parental and Community Engagement: *Align parental and community practices with school initiatives to sustain healthy eating habits.*

- Work with parents to reduce junk food in lunchboxes and reinforce healthy eating at home.
- Use newsletters and informational brochures to educate parents on their role in promoting nutrition. Collaborate with local leaders and organizations to promote culturally appropriate dietary practices

Student-Centered Approaches: *Empower students to take ownership of their dietary habits*

- Gather student feedback on healthy food preferences and organize taste-testing events.
- Offer incentives for students who make healthier food choices

Addressing Social and Cultural Barriers: *Shift perceptions around traditional and locally grown foods to make them more appealing*

- Promote traditional, nutritious foods through school events and cultural programs to change perceptions of locally grown foods.

Structural Support: *Build infrastructure and resources to support healthy food practices*

- Provide funding for canteen upgrades to ensure hygiene and quality food preparation.
- Provide schools with resources to support healthy eating initiatives, including the development of school gardens where feasible.

Challenges and Potentials for the Advancement of Digital Agricultural Extension Services in the Domestic Food Crop Sector: Evidence from Kurunegala District

HARTI

Policy Brief

2025

Background

At present, agricultural extension services in the domestic food crop sector face numerous challenges that hinder the realization of their intended benefits. Consequently, digital agricultural extension services have emerged in recent years as an innovation that can transform extension into a more efficient and effective service, capable of addressing farmers' needs with lower operational costs to the government. A variety of digital agricultural extension tools have been developed within the research and extension system. However, difficulties associated with their use, coupled with barriers experienced by both farmers and extension officers, have prevented these tools from achieving effective success. This study aims to identify the obstacles faced by farmers and officials in implementing digital agricultural extension services in the domestic food crop sector, to explore the potentials available to overcome such challenges, and to propose practical solutions and strategies that can be adopted.

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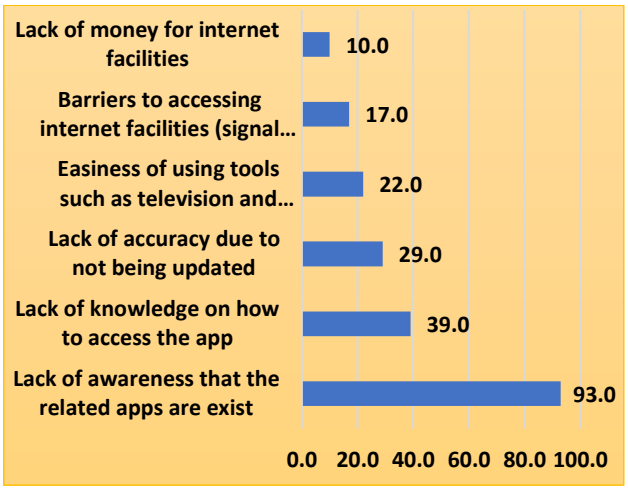
Methodology

This study, conducted in 2024, was based in the Kurunegala District and covered five Agrarian Service Centers (Maho, Nikaweratiya, Nagollagama, Kobeigane, and Rambe). Data were collected from agricultural extension officers attached to these centres and 128 farmers belonging to 10 farmer organizations engaged in cultivating various crops. Information was obtained regarding farmers' awareness of digital agricultural extension services, access to technology, and barriers to utilization. Data collection methods included face-to-face interviews, telephone discussions, focus group discussions, and short questionnaires. Both quantitative and qualitative analytical techniques were employed in processing the data.

Findings

The study provides evidence that, similar to other sectors in Sri Lanka, progress has been made in the use of digital tools and their benefits within the agricultural extension system of the food crop sector.

- Mobile phone usage is widespread among farmers, while digital tools and platforms developed by state, non-state, and private actors are also becoming increasingly integrated into farming communities. The National Agriculture Information and Communication Centre (NAICC) of the Department of Agriculture plays significant role in this regard.
- Within the district, 74% of farmers and all extension officers reported ownership of smart mobile phones. Among the farmers, 65% indicated that they use at least one digital agricultural extension tool to access agricultural knowledge and information.
- Social media platforms such as YouTube, WhatsApp groups, Facebook pages, and web-based radio (including the "Agri Radio" application) were the most commonly and regularly used tools.
- Extension officers also reported daily use of social media platforms to deliver extension services. However, both farmers and officers require further improvement in their ability to effectively use mobile applications for agricultural purposes.



Source: HARTI Survey Data

Figure 1: Challenges in the use of digital agricultural extension tools

Issues face by the Farmers and Officers

- The main issues faced by farmers and officials regarding the use of digital agricultural extension tools, such as Lack of adequate awareness among farmers of existing digital agricultural applications and tools designed to meet extension needs, primarily due to limitations in internet access, affordability, and disparities in digital literacy (93%), Problems of accuracy and reliability caused by outdated mobile applications and non-updated information (29%).

Recommendations

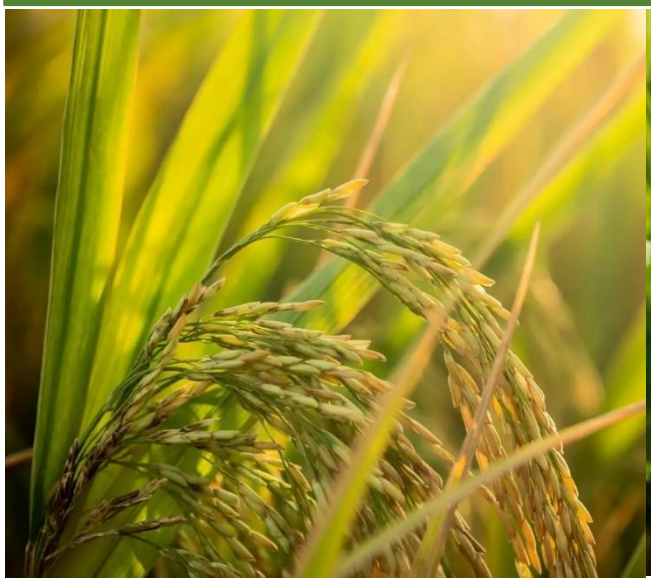
To minimize the challenges and weaknesses encountered by farmers and officials in using digital agricultural extension services in Kurunegala District, and to capitalize on existing strengths and opportunities, the following strategies are proposed:

- **Enhancing Digital Literacy of Field-Level Agricultural Officers –** Technical training should be provided to Agricultural

Instructors, Technical Assistants, and Agricultural Research and Production Assistants to strengthen their digital skills

- **Application of Digital Tools for Productivity and Climate Resilience –** The use of mobile-based disease diagnostics, precision irrigation systems, and real-time soil analysis can enhance efficiency, increase resilience to climate shocks, and reduce crop damage through timely interventions ,
- **Capacity-Building Programs –** Training and awareness programs should be conducted to familiarize farmers with the practical use of digital tools
- **Youth Participation –** There is a high level of interest in digital technology among rural youth, highlighting the need to integrate digital tools into school-level agricultural curricula. It is also essential to incorporate the specific agricultural needs and characteristics of youth groups when designing digital extension tools.
- Furthermore, creating an enabling environment that facilitates equitable access to agricultural knowledge and information is crucial. This can be achieved by strengthening and expanding existing digital agricultural extension services currently implemented through public–private partnerships, thereby ensuring that farmers receive information effectively and without disparities
- **Public Awareness –** Wider dissemination of information on digital agriculture through mass media should be promoted
- **Regulation and Oversight –** Dissemination of agricultural information through social media platforms should be regulated by state intervention
- **Regional Call Centres –** The feasibility of establishing agricultural advisory call centres in the Northern and Eastern Provinces should be examined
- **Application Updating –** Regular updates of mobile applications should be ensured.

Organic Fertilizer Use in Paddy Cultivation: Insights into Farmers' Practices and Preferences



HARTI

Policy Brief

2025

Background

Rice is the staple food of the Sri Lankan population and remains the country's most important agricultural crop, occupying the largest share of the total cultivated land. For decades, conventional paddy farming systems in Sri Lanka have depended heavily on chemical fertilizers to achieve higher yields and meet growing food demand. Although this approach has contributed to increased production, it has also resulted in serious negative consequences for soil health, water quality, biodiversity, and human well-being. Excessive use of synthetic fertilizers has been linked to soil degradation, nutrient imbalances, groundwater contamination, and long-term risks to farming communities and consumers. In response to these growing concerns, Sri Lanka has begun promoting integrated nutrient management systems, with particular emphasis on the incorporation of organic fertilizers as a sustainable alternative. These practices are expected to improve soil fertility, enhance microbial activity, and reduce environmental pollution while maintaining stable crop yields. However, the actual adoption of organic and integrated nutrient management practices among paddy farmers remains relatively low due to constraints such as limited knowledge, lack of access to quality organic inputs, labor requirements, and economic uncertainties. Therefore, the present study aimed to assess the current status of farmers' use of organic fertilizers in paddy cultivation, to evaluate their level of awareness regarding the importance of integrating organic fertilizers with conventional practices, and to identify their preferred types and methods of organic fertilizer application.

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Study Method

The study was conducted in 2024 by the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI). Primary data were collected from 428 paddy farmers across nine districts: Anuradhapura, Kurunegala, Ampara, Polonnaruwa, Trincomalee, Gampaha, Galle, Vavuniya, and Badulla, which represent the major paddy-cultivating regions in Sri Lanka. Additionally, Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) were conducted to gather supplementary data and insights. The study included farmers who use only inorganic fertilizers and those who use both organic and inorganic fertilizers to gain a better understanding of their preferences for organic fertilization practices.

Key Findings

Farmers' Adaption to Organic Fertilizer Application Practices

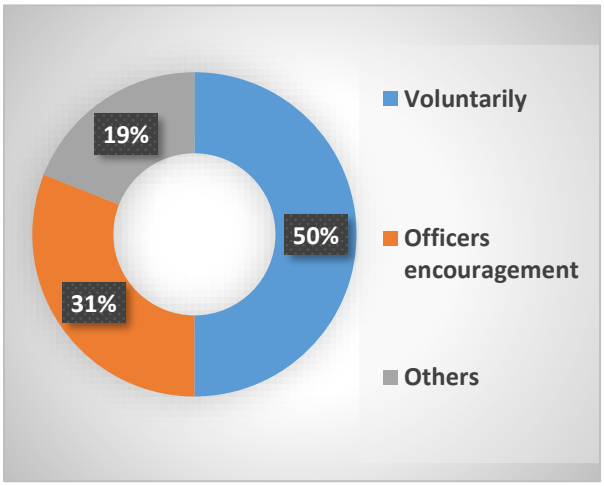

Figure 1: Motivation for Farmers' Adaption to Organic Fertilizer Application

The majority of farmers (50%) adopted organic fertilizers for paddy farming voluntarily, driven by personal interest, highlighting the importance of self-motivation in adopting such practices. Additionally, encouragement from agricultural officers motivated 31% of farmers to use organic fertilizers.

Main Types of Organic Fertilizers Applied

The majority of farmers used compost (47%) as their primary organic fertilizer, followed by liquid fertilizers (13%), poultry manure (10%), pellets (10%), burned paddy husks (8%), cow dung (6%), and green leaves (5%). Only 1% utilized biofilm fertilizers, indicating that most farmers continue to rely on traditional forms of organic fertilizers.

Determinants of Organic Fertilizer Rates

The majority of farmers (76%) determined the application rates of organic fertilizers on their own, often without proper knowledge, applying whatever quantity was available. Among the rest, 16% followed guidance from agricultural officers, 5% adhered to instructions from fertilizer companies, and only 3% utilized knowledge gained from training programs.

Self-production of Organic Fertilizers

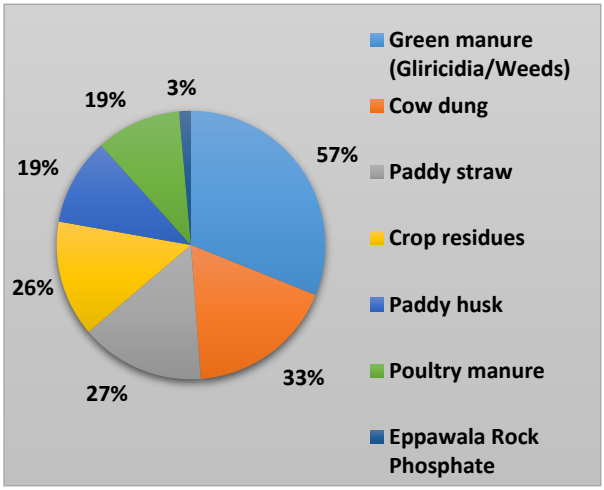

Figure 2: Raw Materials Used for Organic Fertilizer Production

A total of 47% of the farmers engaged in the production of organic fertilizer. The majority of farmers used green manure, followed by cow dung, paddy straw, crop residues, paddy husks, and poultry manure, relying entirely on locally available materials. However, they encountered various challenges in producing organic fertilizers.

Issues in Production of Organic Fertilizers

The main challenge in organic fertilizer production for most farmers (83%) is sourcing raw materials. Other issues include a lack of knowledge about production techniques (27%), insufficient space for large-scale production (11%), and the low quality of the fertilizer produced (11%).

Issues in Application of Organic Fertilizers in Paddy Cultivations

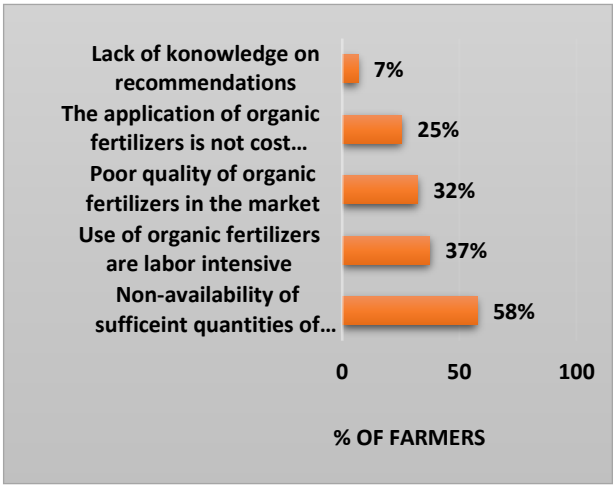

Figure 3: Issues in Applying Organic Fertilizers

The unavailability of sufficient organic fertilizers in the market is a major challenge for most paddy farmers (58%). Conventional organic fertilizers like compost, cow dung, and poultry manure require substantial labor, particularly on large-scale paddy lands (37%). Additionally, the poor quality of available fertilizers often leads to suboptimal results (32%), with some farmers reporting that the use of organic fertilizers is not cost-effective and fails to deliver expected benefits (25%). Farmers also face challenges in using organic fertilizers due to a lack of knowledge regarding the appropriate application rates (7%).

Farmers Preferences for Organic Fertilizers Application Practices

The sample paddy farmers were asked if they were willing to transition to eco-friendly fertilizer application practices in paddy cultivation, particularly incorporating organic fertilizers. They were asked to identify their most preferred options for such practices.

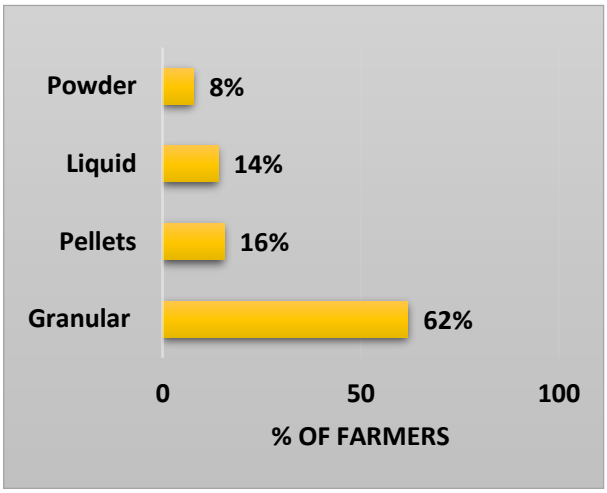

Figure 4: Farmers' Preference for Mode of Organic Fertilizers

The paddy farmers' most preferred mode of organic fertilizer was the granule type (32%), followed by pellets, liquid, and powder. The ease of handling and application of granular fertilizers was the primary reason for their preference. Overall, 86% preferred solid organic fertilizers.

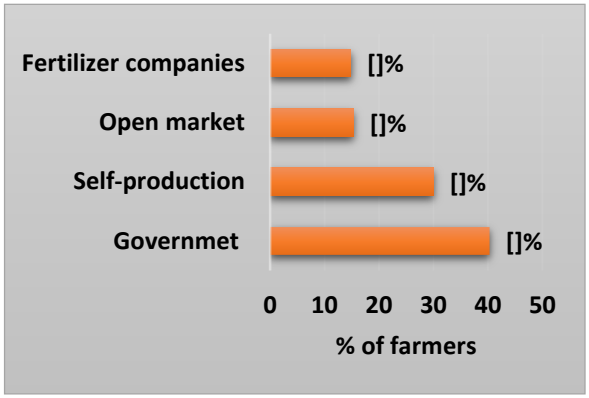

Figure 5: Farmers' Preference for Source of Organic Fertilizers

Majority of farmers' preferred choice for organic fertilizers is from the government (40%), particularly certified types, with 97% favoring certified organic fertilizers. Despite the negative experiences with government-provided organic fertilizers during the 2021 chemical fertilizer ban, farmers continue to trust and have confidence in government-supplied organic fertilizers. Overall, 70% of

farmers are willing to source fertilizers from external sources rather than producing them themselves, as they face various challenges in self-production.

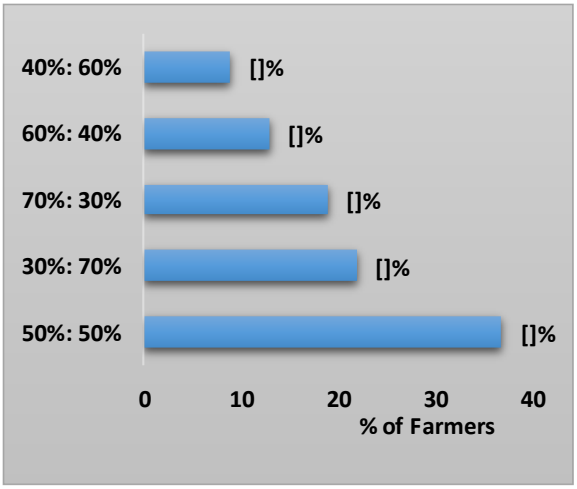

Figure 6: Farmers' Preference for Inorganic: Organic Fertilizer Ratios

In the sample, 81% of farmers preferred applying more organic fertilizers than the government's recommended ratio of 70:30 inorganic to organic fertilizers. Only 19% of farmers preferred adhering to the government's ratio. The majority, 37%, favored a 50:50 ratio, with an additional 20% increase in organic fertilizer. The results suggest that farmers are increasingly willing to apply more organic fertilizers in paddy cultivation.

The majority of farmers preferred to spend between 5000 to 10000 rupees per acre on organic fertilizers. Overall, 64% of farmers were willing to spend more than 5000 rupees. This indicates that farmers are increasingly allocating significant portions of their budgets, traditionally used for inorganic fertilizers, toward organic fertilizer application.

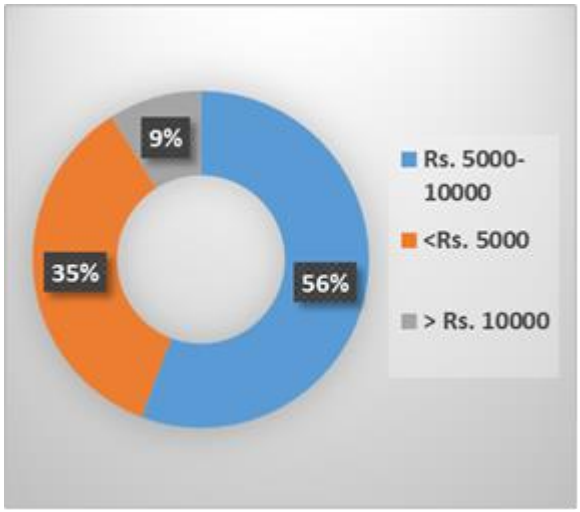

Figure 7: Farmers' Preference for Cost of Organic Fertilizers per acre

Policy Recommendations

To promote organic fertilizer adoption in paddy cultivation, key strategies include training programs to improve farmer knowledge, and demonstration farms to showcase benefits. Encouraging the use of diverse materials like green manure, crop residues, and organic waste can boost production. Establishing regional community-based production centers and promoting efficient composting methods such as vermicomposting will enhance quality and reduce labor. Ensuring a reliable fertilizer supply and incorporating farmer preferences into policies are essential for the successful and sustainable adoption of organic practices.

Building Climate Resilience in Paddy Cultivation of Sri Lanka: Farmer Adherence to Weather Information in Rainfed and Minor Irrigated Areas

HARTI

Policy Brief

2025

Background

Climate variability plays a major role in shaping agricultural productivity, rural livelihoods and economic outcomes at local, regional and national levels. Farmers regularly confront the challenge of making management decisions under uncertain conditions. In Sri Lanka, agriculture is particularly vulnerable to climate shocks and shifting weather patterns, often experiencing more severe impacts than many other nations.

Farmers face the ongoing challenge of making management decisions amid climate uncertainty. Hence, this study focused on examining whether and how smallholder paddy farmers in Sri Lanka incorporate weather information into their crop management strategies. It also aimed to ep[;'34valuate the potential benefits of using such information and to explore the opportunities and challenges in leveraging climate data to build more resilient agricultural systems.

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Methodology

Paddy farmers were chosen due to paddy's dominance in Sri Lanka and the sector's strong institutional support. This study conducted in 2024 based on a sample of 445 paddy farmers from the dry zone districts of Kurunegala (N=116), Anuradhapura (N=163), Ampara (N=44), Batticaloa (N=96) and Vavuniya (N=26) in Sri Lanka. This covered prominent rainfed and minor irrigated paddy cultivating districts in Sri Lanka

Key Findings

The study revealed that most of the paddy farmers in the sample were aware of the existing mechanisms for disseminating weather information in Sri Lanka. Key initiatives—such as *pre-season* meetings conducted by the Department of Agrarian Services (DAD), the *Wewgam Pubuduwa* program by the Department of Irrigation and the Climate Smart Irrigated Agriculture Project (CSIAP) by the Ministry of Agriculture — were identified as widely recognized and accessible within farming communities.

The study found that the majority of farmers (78%) primarily relied on television for climate-related updates. Digital communication methods, such as mobile apps, text messages and voice messages were also effectively reaching farmers. These findings highlight the successful integration of both traditional and modern communication channels in delivering climate information to the farming community.

Of the total sample, 97% of farmers reported receiving weather information primarily from government organizations. The Department of Meteorology (DoM), Department of Agriculture (DoA) and Department of Agrarian Development (DAD) were identified as the main sources. These agencies played a crucial role in providing weather information to support farmers' agricultural practices and decision-making.

Nearly half of the sample farmers relied on television for accessing weather information and around 28% used smartphones, particularly among younger farmers familiar with modern technology. However, about 8% of farmers did not use any technological devices to access weather information, indicating gaps in technology adoption among certain segments of the farming groups.

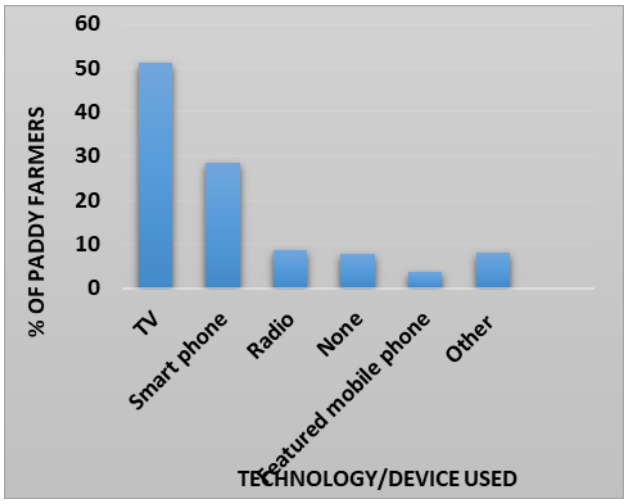

Figure 1: Technology/Device Used to Access to Climate Information

Weather forecasts were the most commonly shared form of weather information, printed media also proved highly effective, reaching all farmers in the sample. These findings highlight the widespread use of both electronic and traditional media in disseminating weather information to the farming community.

Findings reveal that 64% of farmers accessed weather information occasionally, while 31% accessed it frequently. Over half of the farmers (51%) found weather information sources to be highly accessible and 56% considered the information clear. However, language barriers impacted the clarity of communication, particularly in linguistically diverse areas such as Vavuniya, Batticaloa and Ampara were relying on a single language for dissemination was discouraged.

Of the total sample, 40% of farmers used weather information to inform their farming decisions. However, nearly 13% of farmers, despite receiving weather information, did not incorporate it into their decision-making, instead relying on their own experience and traditional knowledge, which they trusted more than external climate information sources.

The study revealed that weather information played a crucial role in guiding key agricultural decisions with 71% of farmers using it to determine land preparation timing and 70% for harvesting. These findings highlight how weather information helps farmers align their practices with weather patterns, thereby improving efficiency and productivity in paddy farming.

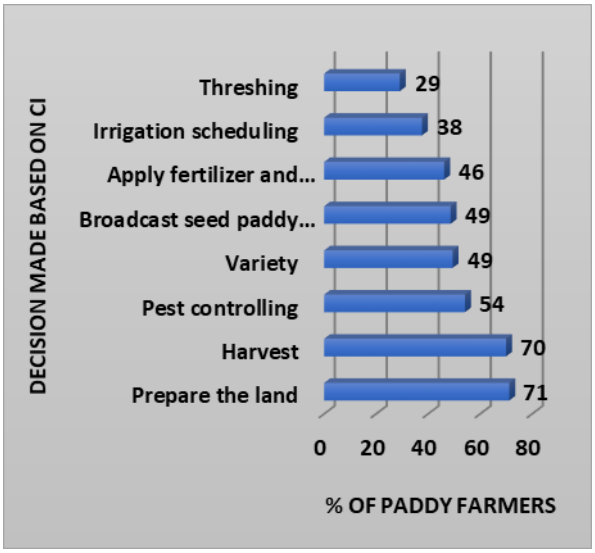

Figure 2: Decisions made based on Weather Information

Among the sample, 63% of paddy farmers used Weather information to mitigate crop losses caused by climate hazards such as droughts and floods. Additionally, 48% of farmers reported improved resource management, including more efficient use of land, labor and inputs by incorporating climate information into their decision-making.

The findings revealed that 53% of farmers did not receive regularly updated weather information while 33% faced poor network coverage and 30% lacked compatible electronic devices to access climate data. These challenges highlight the need for improved infrastructure, more consistent updates and the provision of appropriate technology to enhance weather information accessibility for all farmers.

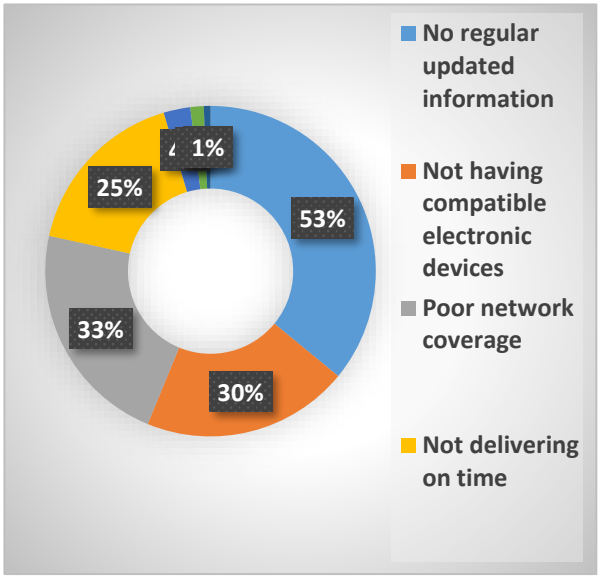

Figure 3: Problems Faced by Paddy Farmers in Accessing Weather Information

Of the total sample, 23% of farmers emphasized the need for more reliable and accurate weather information, 20% called for more frequent updates and 19% highlighted the importance of timely dissemination. These suggestions reflect farmers' desire for consistent, accurate and up-to-date weather information to support informed decision-making and strengthen the resilience of their farming practices.

Access to weather information for farmers is influenced by factors such as internet availability, regional disparities, clarity of communication and sources such as media and peer networks. In paddy cultivation, the usefulness of weather information for decision-making is shaped by the clarity of the

information, its perceived benefits, and the effectiveness of *pre-season* meetings and ease of access.

Policy Directives

- An attitudinal shift should be encouraged among farmers to build greater trust in the reliability and usefulness of weather information provided to them.
- Create awareness among agricultural extension officials about globally updated weather information prediction software (Copernicus).
- The existing government mechanism for weather information dissemination should be strengthened by establishing direct linkages among Agricultural Service Centers (ASCs), the Department of Meteorology and the Natural Resource Management Centre of the Department of Agriculture.
- Weather information dissemination should be promoted through contact farmers, as they are better positioned to understand and address the needs of their fellow farmers.
- Weather information dissemination through digital platforms should be made easily accessible, understandable and available in local languages.
- The use of digital platforms for weather information dissemination should be promoted by young, progressive farmers in the village.

Contractual Agreements in Mango and Pineapple Farm Gate: Sri Lanka

HARTI

Policy Brief

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Background

Producing and selling on a contractual basis is a common arrangement in agriculture all around the world. Contract can link farmers to a value chain and offer technical assistance, deliver inputs on credit, and reduce market risk, solving a number of constraints that limit small-farm productivity and income.

Increased market margins have been a serious problem to producers as well as consumers. Some of the practices that have reduced this scenario include contract farming and contract marketing. Though many have engaged in contracts, due to poor legal provisions and other factors, both producers and collectors have violated the contracts. Hence, research is needed to identify constraints to this system and provisions that are required to make contractual agreements in agriculture a success.

The objectives of this study were to evaluate agriculture contractual agreements prevailing in the Mango and Pineapple farm gate of Sri Lanka and identify the characteristics of contractual agreements to suggest policy measures to enhance the market linkages.

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Methodology

An island-wide primary data was collected from 396 Mango producers and 108 Pineapple producers in Sri Lanka using a multistage stratified random sampling technique. Aggregate self-reported method: S-method[1] and Visual Scale method[1] was used to rapidly estimate quantity loss.

The potential effects of participating in a contract, estimated using the propensity scores matching technique and ANOVA. The key informant interviews were conducted with leading fruit entrepreneurs to identify the contractual conflicts.

Findings

➢ "TJC" represents the predominant mango variety with 36.4%, followed by Karthacolomban at 38.4% and a smaller percentage, constituting 8.3%, allocated to "Villard" and other varieties includes 16.9 percent and consist with many varieties as Velleicolomban, Ambalavi, Kohu Amba, Malwana, Giraamba, Alfonso, Rata Amba, Papol Amba, Pol Amba, Wal Amba, Walu Amba, Apple Amba.

Table 1: Characteristics of Mango and Pineapple cultivation and income

	Mango	Pineapple
Income above 50%	8.8%	86.1%
Commercial cultivation	42%	99%

Source: HARTI survey data, 2024

➢ In Sri Lanka, mainly informal model and intermediary model contracts are observed,

Informal model: Individual entrepreneurs or collectors contracting informally with farmers on a seasonal basis

Intermediary model: A processor or major trader in fruit exporters or supermarkets formally or informally contracts with collector (or middleman) who then informally contracts with many farmers.

❖ Notably, only 0.5% of farmers have formal written contracts, while a majority (99.5%) relies on oral, informal contracts in Mango Cultivation. Same trend can be seen in Pineapple cultivation as well, where oral contracts predominate (99%). These contracts are performed under mutually convenient terms and conditions by buyers and producers. The oral contracts can be divided into four typologies as tree-based, fruit-based, weight-based, and volume-based in the mango farmgate, while in the pineapple farmgate, contracts can be divided as land-based, fruit-based, and weight-based.

❖ The ANOVA test indicates that there is no significant difference in loss or price received by the producer among contract types in both the mango and pineapple farmgate.

❖ The majority (82%) of the contract types do not mention the measures on unavoidable harvest loss, harvesting quality, contractual dispute settlement during the fruit harvest or pre-harvest.

❖ Commercial farmers and those growing high-demand varieties, such as TJC, are more likely to enter into contractual agreements.

❖ The PSM analysis showed that contract and non-contract farmers were largely comparable in terms of socio-demographic and farming characteristics. Still, it differed significantly in land size and proximity to market, two structural factors that may influence access to contracts and market power.

[1] https://doi.org/10.1016/j.foodpol.2020.101958

❖ These findings suggest that current contract farming models do not offer meaningful advantages for most smallholder farmers and fail to address key inefficiencies or vulnerabilities in the value chain. The informal nature of agreements, limited farmer bargaining power, price volatility, and absence of institutional safeguards restrict the effectiveness of contract agreements as a development tool

❖ The success of contract agreements in Sri Lanka's fruit sector is highly contingent on contract design, enforcement mechanisms, and institutional support.

❖ Models that integrate public–private partnerships, formal written agreements, and accountability mechanisms offer more sustainable outcomes.

Why do contractual conflicts occur?

The majority of the informal verbal contracts are trust-based. The written contracts are characterized by loose legal bindings and lesser emphasis on contractual obligations of both the buyer and the producer. The main reasons for contractual conflicts include,

- Side selling by the producers
- Uncertainty about selling quantities and quality parameters
- More frequent price fluctuations
- Small scale cultivation and non-commercial orientation of cultivations
- Less awareness and reluctance for contractual agreements created contractual conflicts

Around three third of the growers expect government full support and cooperation (36.1%) and substantial support on the regulatory framework, infrastructure development (28.3%) on contract farming.

Recommendations

- **Wider Government Interventions: S**ri Lanka characterized an informal model contract type that emphasizes that the success of the informal initiative depends on the availability of supporting services, which, in most cases, are likely to be provided by government agencies. Therefore, wider government intervention is recommended.

- **Promote Legally Enforceable and Transparent Contractual Agreements:** Encourage Contracts defining quality standards through specific, measurable indicators and attach supporting documentation. Replacing existing informal contracts with formal agreements that clearly outline the roles, responsibilities, and legal obligations of both parties.

- **Real-time Information: D**evelop the existing mango and pineapple value chains with a digital market platform that consists of real-time price data, having better contracts that are formal and emphasize responsible contractual agreements, product quality, pricing mechanisms, force majeure, and dispute resolution

- **Address Value Chain Constraints Beyond the Contract: T**hose include improving access to market information, supporting reliable access to inputs and services, and developing rural infrastructure.

- Despite their potential, contracts often fail to deliver meaningful improvements in income or risk reduction due to inadequate design and a lack of support mechanisms. By aligning contractual practices with international guidelines and strengthening institutional support, Sri Lanka can foster more resilient and efficient agricultural value chains in the mango and pineapple sectors.