



PROCEEDINGS

of the 6th
Graduate Research Showcase
GRS 2026

"NEXT-GENERATION FOOD SYSTEMS:

INNOVATIVE SOURCES, SMART TECHNOLOGIES, AND TAILORED NUTRITION"

**FACULTY OF LIVESTOCK, FISHERIES AND NUTRITION
WAYAMBA UNIVERSITY OF SRI LANKA**



6th August 2026

Wayamba University of Sri Lanka, Makandura, Gonawila, (NWP)

Key Highlights of the Sixth Graduate Research Showcase GRS 2026

“Next-Generation Food Systems:
Innovative Sources, Smart Technologies, and Tailored
Nutrition”

Organized by the
Faculty of Livestock, Fisheries and Nutrition
Wayamba University of Sri Lanka

August 6, 2026

6th August 2026

Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka

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Key Highlights of the
Sixth Graduate Research
Showcase - GRS 2026

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Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka

Sixth Graduate Research Showcase - GRS 2026

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Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka

FOREWORD

It is with great pride that I present the Proceedings of the Graduate Research Showcase (GRS) 2026, the sixth edition of this flagship event of the Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka.

GRS provides a vibrant platform for postgraduate scholars to present research highlights, share innovative research findings, and engage with the academic community. This year, 23 outstanding graduate students showcase work of scientific thoroughness, creativity, and real-world relevance. Their active involvement in organizing the event reflects the Faculty's commitment to research excellence, leadership, and professional skills.

The theme *“Next-Generation Food Systems: Innovative Sources, Smart Technologies, and Tailored Nutrition”* is timely. Amid climate change, population growth, and public health challenges, the research addresses sustainable production, climate resilience, food security, and nutrition through novel sources, precision technologies, smart processing, and personalized nutrition strategies. These contributions offer practical solutions for communities, the economy, and the food industry.

GRS strengthens the Faculty's research ecosystem by fostering dialogue, enhancing visibility, encouraging industry linkages, and building future scholars. It elevates the research profile of the Faculty and University.

I thank Senior Professor Buddhi Marambe for the Keynote Address, Professor E.M.P. Ekanayake for his support, and the Organizing Committee for their efforts.

May these proceedings record the intellectual energy of GRS 2026 and inspire further inquiry, collaboration, and excellence.

Dr. Thushanthi Perera
Editor-in-Chief
GRS 2026

6th August 2026

Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka

Message from the Vice-Chancellor – Wayamba University of Sri Lanka

It is with great pleasure that I extend my warmest congratulations to the Faculty of Livestock, Fisheries and Nutrition on the occasion of the Graduate Research Showcase (GRS) 2026, now in its sixth successful year. This flagship annual event serves as a vital platform for showcasing the outstanding research accomplishments of our postgraduate scholars while strengthening the academic vibrancy of the Faculty and the University at large.



This year, we are privileged to witness graduate students sharing key highlights of their research and showcase innovative products and technologies arising from their work. Their active involvement in organizing the event, under the guidance of the GRS Organizing Committee, reflects the Faculty's commitment to nurturing scholarly excellence, leadership, teamwork, and professional skills. I commend the Dean, the Faculty Research and Higher Degrees Committee, and the dedicated Organizing Committee for their vision and meticulous preparations.

The theme, "Next-Generation Food Systems: Innovative Sources, Smart Technologies, and Tailored Nutrition," is both timely and profoundly relevant. In an era of climate change, population growth, resource constraints, and evolving public health challenges, our graduate researchers are at the forefront of exploring novel food sources, smart technologies, and personalized nutrition solutions that advance food security and sustainability. GRS plays a pivotal role in elevating the University's research profile by fostering interdisciplinary collaboration, attracting potential industry partnerships and funding opportunities, and highlighting the institution's contributions to national development and global knowledge. This visibility not only enhances the University's reputation for excellence in higher education and research but also inspires future generations of scholars.

I extend sincere appreciation to Senior Professor Buddhi Marambe for his gracious acceptance as Keynote Speaker. To all participants, I encourage full engagement through insightful presentations, constructive discussions, and meaningful networking. I am confident that GRS 2026 will yield fruitful outcomes, advancing scientific frontiers and reinforcing our University's standing. My best wishes for a memorable and successful GRS 2026.

Prof. E.M.P. Ekanayake
Vice-Chancellor
Wayamba University of Sri Lanka

6th August 2026

Message from the Dean – Faculty of Livestock, Fisheries and Nutrition

It is a great pleasure to welcome everyone to the Graduate Research Showcase (GRS) 2026, the sixth edition of this flagship annual event organized by the Faculty Research and Higher Degrees Committee of the Faculty of Livestock, Fisheries and Nutrition.



GRS provides a valuable platform for graduate students to present their scientific work, exchange ideas, and receive constructive feedback from the academic community. The 2026 theme, “Next-Generation Food Systems: Innovative Sources, Smart Technologies, and Tailored Nutrition,” aligns closely with the Faculty’s core mandate. Researchers are tackling critical challenges such as sustainable production, climate resilience, food security and safety, and malnutrition through studies on alternative feed and food sources, precision livestock and aquaculture technologies, smart processing innovations, and personalized nutrition strategies. These efforts advance knowledge and hold strong potential for practical benefits to local communities, the national economy, and the food industry.

The event also strengthens the Faculty by raising its research profile, promoting interdisciplinary collaboration, and increasing national and international visibility. It opens doors for industry linkages, funding partnerships, and knowledge exchange, while fostering a vibrant research culture that inspires future scholars and reinforces the Faculty’s leadership in sustainable food systems.

Heartfelt thanks go to the GRS Organizing Committee for their dedicated work, to Prof. E.M.P. Ekanayake, Vice-Chancellor of Wayamba University of Sri Lanka, for his presence, and to Senior Professor Buddhi Marambe for delivering the Keynote Address. His insights will inspire our young researchers in the years to come.

I encourage all postgraduate students, supervisors, and academic staff to engage fully in this occasion. May GRS 2026 pave the way for stronger collaborations, impactful publications, and innovative solutions that uphold the Faculty’s commitment to excellence in food, nutrition, and agricultural production. I wish all participants a successful, stimulating, and rewarding GRS 2026.

Professor Gamika A. Prathapasinghe
Dean - Faculty of Livestock, Fisheries and Nutrition
Wayamba University of Sri Lanka

6th August 2026

Message from the Chairman – Faculty Research and Higher Degrees Committee

It is a matter of great pride to extend a warm welcome to all participants at the Graduate Research Showcase (GRS) 2026, the sixth edition of this flagship annual event of the Faculty of Livestock, Fisheries and Nutrition.



As Chairman of the Faculty Research and Higher Degrees Committee, I am delighted to see the continued growth of GRS as a premier platform for our postgraduate scholars. This year, 23 outstanding graduate students will present the highlights of their research, demonstrating innovation, scientific rigor, and real-world relevance. The active involvement of students in the planning, coordination, and execution of the event further reflects the strong research culture we are nurturing within the Faculty.

The GRS 2026 theme, “Next-Generation Food Systems: Innovative Sources, Smart Technologies, and Tailored Nutrition,” aligns with the Faculty’s vision and Sri Lanka’s national priorities. Postgraduate researchers are tackling challenges in sustainable livestock and fisheries production, climate resilience, food safety, and nutrition security through novel feed/food sources, precision technologies, smart processing, and personalized nutrition. These studies advance science and offer strong potential for practical benefits to communities and the national economy.

GRS strengthens the Faculty’s research ecosystem by fostering interdisciplinary dialogue, academic-industry collaborations, research visibility, and young researchers’ capacity. It drives high-quality publications, innovative solutions, and partnerships that raise the Faculty’s standing. Sincere thanks are extended to the Organizing Committee for their efforts, to Senior Professor Buddhi Marambe as Keynote Speaker, and to Prof. E.M.P. Ekanayake, Vice-Chancellor, for his presence and support.

I encourage all postgraduate students, supervisors, and academic staff to engage actively in presentations, discussions, and networking. May this event spark new ideas, foster collaborations, and inspire impactful research that advances the Faculty’s mission. I wish everyone a successful, productive, and memorable GRS 2026.

Professor Kumari M. Rathnayake

Chairman

Faculty Research and Higher Degrees Committee

Faculty of Livestock, Fisheries and Nutrition

6th August 2026

Message from the Keynote Speaker

Next-Generation Food Systems: Integrating Innovation, Intelligence, and Nutrition for a Climate-Resilient and Sustainable Future

The twenty-first century presents an unprecedented convergence of challenges that is reshaping the global food landscape. Climate change, environmental degradation, biodiversity loss, resource scarcity, rapid urbanization, demographic transitions, geopolitical instability, and shifting dietary patterns are collectively exposing the vulnerabilities of contemporary food systems. Although scientific and technological advances have substantially increased agricultural productivity over the past half-century, these gains have not translated into universal food and nutrition security. Instead, the coexistence of hunger, micronutrient deficiencies, obesity, and diet-related non-communicable diseases highlights the urgent need to transform food systems into resilient, inclusive, and nutrition-sensitive systems capable of sustaining both human and planetary health.



This keynote explores the scientific foundations and emerging frontiers of next-generation food systems, emphasizing the integration of innovation, digital intelligence, and nutritional science to address the interconnected challenges of food production, environmental sustainability, and public health. Rather than viewing food production as an isolated agricultural endeavour, the presentation adopts a systems perspective, recognizing food systems as dynamic socio-ecological networks that link natural resources, agricultural production, food processing, distribution, consumption, health, livelihoods, and environmental stewardship. Such an integrated perspective is increasingly recognized as fundamental to achieving the Sustainable Development Goals (SDGs) while responding effectively to accelerating global environmental change.

The presentation examines how advances in artificial intelligence, machine learning, digital agriculture, precision farming, robotics, remote sensing, biotechnology, genomics, and data-driven decision support are redefining agricultural production and food value chains. These innovations are enabling more precise, resource-efficient, and climate-resilient production systems while enhancing productivity, reducing environmental footprints, and strengthening adaptive capacity. Complementing these technological advances are innovations in alternative protein sources, functional foods, controlled-environment agriculture, circular bioeconomy approaches, and nature-positive production systems, all of which contribute to more sustainable and diversified food systems.

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Equally important is the rapidly evolving science of human nutrition. Advances in nutritional genomics, microbiome research, precision nutrition, and functional food development are transforming conventional approaches to dietary recommendations by recognizing the complex interactions among genetics, physiology, lifestyle, and environmental factors. Integrating these advances within sustainable food systems requires stronger scientific linkages between agriculture, nutrition, environmental management, and public health, consistent with the principles of the One Health and Planetary Health frameworks. Future food systems must therefore optimize not only agricultural productivity but also nutritional quality, ecosystem integrity, and long-term societal well-being.

Drawing upon global scientific developments while reflecting on emerging opportunities within Sri Lanka, this keynote examines how countries can leverage research excellence, technological innovation, policy coherence, and multi-stakeholder partnerships to build resilient food systems that withstand climatic, economic, and social disruptions. Sri Lanka's exceptional agro-biodiversity, diverse agro-ecological regions, strong scientific institutions, and expanding digital capabilities provide a unique foundation for pioneering context-specific innovations in sustainable food production and nutrition. However, realizing this potential requires sustained investment in research and development, strengthened science-policy interfaces, innovation-driven entrepreneurship, and interdisciplinary capacity building that bridges the natural, engineering, health, and social sciences.

Ultimately, the transformation of food systems will depend not on isolated technological breakthroughs but on the strategic convergence of scientific discovery, technological innovation, systems thinking, and evidence-informed governance. The challenge to the graduate researchers is to move beyond disciplinary boundaries and become architects of integrated solutions that simultaneously enhance food security, nutritional well-being, environmental sustainability, climate resilience, and socio-economic prosperity. By fostering interdisciplinary research, responsible innovation, and collaborative leadership, the next generation of scientists will play a pivotal role in shaping food systems that nourish people, regenerate ecosystems, and support sustainable development in Sri Lanka and across the globe.

Prof. Buddhi Marambe
Senior Professor
Department of Crop Science
Faculty of Agriculture, University of Peradeniya, Sri Lanka

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PhD Students

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Translating fisheries research into sustainable and economically viable inland reservoir fishery practices in Sri Lanka

Digamadulla D.S.^a, Jayasinghe J.M.U.K.^b, Amarasinghe U.S.^c, Wijenayake W.M.H.K.^a and De Croos M.D.S.T.^a

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^b*Department of Agribusiness Management, Faculty of Agriculture and Plantation Management, Wayamba University of Sri Lanka, Makandura, Gonawila (NWP), 60170, Sri Lanka;*

^c*Department of Zoology and Environmental Sciences, Faculty of Science, University of Kelaniya, Dalugama, 11600, Sri Lanka.*

Key-highlights

- Identified barriers limiting the adoption of research outcomes in Sri Lankan inland reservoir fisheries.
- Developed a framework to link research innovations with economically viable fisheries development.
- Evaluated technical, economic and institutional requirements for scaling up fisheries technologies.
- Proposed pathways to strengthen stakeholder engagement, extension services and market integration.
- Generated recommendations to enhance livelihoods and promote the sustainable management of reservoir fisheries.

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Reproductive biology and population dynamics of *Thenus orientalis* in Pethalai, Sri Lanka: Implications for sustainable fishery management

Wickramaratne I.U.^a, Thilakarathne R.M.G.N.^b and De Croos M.D.S.T.^c

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^b*Department of Oceanography and Marine Geology, Faculty of Fisheries and Marine Sciences and Technology, University of Ruhuna, Sri Lanka;*

^c*Department of Aquaculture and Fisheries, Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka, Makandura, Gonawila (NWP), 60170, Sri Lanka.*

Key-highlights

- Overfishing of *Thenus orientalis* ($F = 0.62$, $SPR = 0.19$) threatens sustainability; immature lobsters are caught, needing urgent size and effort controls.
- Reproduction peaks from September to April with the monsoon; Gonadosomatic Index (GSI) and ovarian stages support seasonal fishery closures (September-March, May-June) to protect breeders.
- Fishers in Pethalai face low income, high costs, low education, and price-fixing; alternative markets and livelihood options are urgently needed.
- *Thenus orientalis* shows lunar-linked behavior and depth preferences; New moon catch peaks and 20m depth hotspots justify spatial-temporal quotas.
- Fisher knowledge supports co-management; key actions: 60mm size limit, seasonal bans, local monitoring, and market reform to align goals.

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Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka

Behaviour-informed novel fishing gear application for giant freshwater prawn (*Macrobrachium rosenbergii*) in Sri Lankan culture-based fisheries reservoirs.

Pilagolla S.A.S.^a, De Croos M.D.S.T.^a, Amarasinghe U.S.^b, Clive J.^c and Perera H.A.C.C.^b

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^c*Centre for Sustainable Tropical Fisheries and Aquaculture, College of Science and Engineering, James Cook University, Townsville 4811, Queensland, Australia.*

Key-highlights

- Giant Freshwater Prawn (GFP) harvesting using gillnets in culture-based fisheries often results in physical damage and product rejection from high-value export markets.
- GFP trap interactions were quantified using lobster, cane, and opera-house traps, while nocturnal activity was assessed under green and red light using machine vision.
- GFP activity peaked at night and during moon phases, with green light increasing active behaviours (i.e., foraging and walking) and trap exploration ($P < 0.05$).
- The opera-house trap elicited the highest frequency of approach and entry behaviours, particularly under green illumination at night.
- The selectively-baited opera-house trap was field-tested and proved highly efficient, achieving a higher GFP catch rate while reducing bycatch ($P < 0.05$).

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Limnological classification for culture-based fisheries performance in tropical irrigation reservoirs

Adikari A.M.A.N.^a, Amarasinghe U.S.^b, Clive J.^c, Perera H.A.C.C.^b and De Croos M.D.S.T.^d

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^b*Department of Zoology, Faculty of Science, University of Kelaniya, Sri Lanka;*

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^d*Department of Aquaculture and Fisheries, Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka, Makandura, Gonawila (NWP), 60170, Sri Lanka.*

Key-highlights

- Culture-based fisheries performance varied substantially among reservoirs with contrasting limnological characteristics.
- SOM analysis identified five distinct reservoir types based on physicochemical and productivity-related variables.
- Conductivity, phosphorus, and chlorophyll-a emerged as key indicators of ecological variability among reservoirs.
- Stocking density and fishing intensity influenced fish production differently across reservoir clusters and cultured species.
- Reservoir-specific management can enhance production efficiency and support sustainable inland fisheries development in Sri Lanka.

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Food literacy and nutritional status among secondary school children in Sri Lanka: Baseline findings from a school-based nutrition intervention study

Karunanayaka M.M.S.^a, Indramali O.S.^a, Mohotti J.^b, Hunter D.^c, Perera T.^a and Silva K.D.R.R.^a

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^b*Department of Crop Science, Faculty of Agriculture, University of Peradeniya;*

^c*University of the Sunshine Coast, Australia.*

Key-highlights

- School food environment provides a valuable platform for improving food literacy and promoting dietary behaviours among school children.
- A baseline assessment was conducted among 1415 secondary school children in Kurunegala District to evaluate food literacy, diet quality, nutritional status and the school food environment.
- Students achieved a mean food literacy score of 71/100, indicating moderate levels of food literacy.
- Diet quality and nutritional status assessments revealed important nutritional concerns, with 31.7% of the students classified as undernourished (BMI-for-age < -2 SD).
- Baseline findings identified gaps in dietary practices and the school food environment, highlighting the need for integrated school-based interventions.

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Feasibility and impact of an AI-assisted mobile application for dietary assessment and nudging to promote healthy food choices among adolescent girls in Sri Lanka

Karunarathna H.M.N.J.^a, Perera T.^a, Gelli A.^b and Silva K.D.R.R.^a

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^b*International Food Policy Research Institute (IFPRI), Washington DC, USA.*

Key-highlights

- PlantVillage Food is a validated AI-assisted dietary assessment application with gamified nudges for healthier eating.
- This study examined the feasibility of PlantVillage Food (adherence, acceptability, usability) and its effect on food choices and diet quality among adolescent girls.
- High adherence to dietary recording (97%) and universal acceptability demonstrated the feasibility of using PlantVillage Food among adolescent girls.
- Exposure to gamified nutrition nudges showed increased fruit and vegetable and decreased sugar-sweetened beverage consumption among adolescent girls.
- Findings support the potential of using PlantVillage Food for dietary assessment and promoting healthier eating habits among adolescent girls in Sri Lanka.

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Dietary diversity and diet quality among women of reproductive age in selected rural and urban communities of Sri Lanka

Sitisekara S.M.H.D.^a, Ranathunga R.M.T.K.^a, Silva K.D.R.R.^a and Olney D.^b

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^b*Poverty, Health, and Nutrition Division, International Food Policy Research Institute, Washington DC, United States of America.*

Key-highlights

- Dietary diversity and diet quality among women of reproductive age (WRA) in Sri Lanka remain poorly characterized, particularly across rural and urban settings.
- Dietary intake was assessed among 2380 rural and urban WRA using phone-based multi-pass 24-hour dietary recalls in selected communities of Badulla and Ratnapura districts.
- Minimum dietary diversity was achieved by 55% of WRA, consuming an average of 4.7 out of 10 recommended food groups.
- Despite near-adequate dietary diversity, overall diet quality remained low (18/49 of the Global Diet Quality Score), with diets dominated by refined grains.
- Findings underscore the need for context-specific strategies to improve dietary diversity and overall diet quality among women in Sri Lanka.

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Investigation of red seaweed, *Kappaphycus alvarezii*, as a source of natural bioactives: Extraction, optimization, characterization, functional properties, and food applications

Simmaky S.^{a,b}, Srivarathan S.^b, Wijesekara R.G.S.^c and Gunathilake K.D.P.P.^a

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Key-highlights

- *Kappaphycus alvarezii* is a nutrient-rich, low-fat red seaweed containing the red pigment phycobiliproteins. It exhibited good solubility, WHC, and OHC, while its phenolic compounds contributed to antioxidant, antidiabetic, antibacterial, and anti-inflammatory activities.
- Carrageenan extracted at 0.67% NaOH concentration, 85.6 °C, and 83.37 minutes was considered the optimum condition, with high carrageenan yield, gel strength, and total antioxidant activity.
- NaOH-treated carrageenan showed a higher yield than hot water-extracted carrageenan; moisture, ash, acid-insoluble ash, sulphate content, gel strength, and viscosity complied with the FAO standard.

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- Biodegradable carrageenan film packages were developed using extracted carrageenan with good physicochemical, mechanical, and barrier properties.
- Muffin, noodles, and soupmix with 6%, 9%, and 8% of *K. alvarezii*, respectively, were sensorily acceptable, with enhanced nutritional profile, physicochemical properties, and bioactivity.

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Distribution of fish eggs and larvae (Ichthyoplankton) in natural, degraded and restored mangroves and seagrass beds in Sri Lanka

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Key-highlights

- This study evaluates the efficacy of pristine natural, degraded and restored mangroves and seagrass beds as essential fish habitats during the southwest monsoon.
- Fish eggs and larvae were sampled from one natural and one degraded seagrass bed, and from one natural, one degraded, and two restored mangrove habitats.
- A total of 503 larvae and 1,280 eggs were recorded, with significantly higher ichthyoplankton densities (individuals/100m³) observed in seagrass beds than in mangrove habitats.
- However, this difference is driven by significantly higher egg densities in seagrass beds as compared to mangroves, rather than by differences in larval densities.
- Among mangrove habitat types, degraded mangroves had significantly lower ichthyoplankton densities as compared to natural and restored locations.

6th August 2026

School gardening as a platform for agricultural and nutrition education: Evidence from secondary school students in Sri Lanka

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Key-highlights

- This study provides large-scale evidence on school gardening knowledge, attitudes, and practices among secondary school students.
- Students demonstrated highly positive attitudes towards school gardening and recognized its educational and nutritional value.
- Knowledge and practice levels were moderate, indicating substantial scope for enhancing engagement in school garden activities.
- A clear attitude–practice gap was observed, suggesting barriers to active involvement in school gardening.
- Findings provide baseline evidence to inform the development of nutrition-sensitive school garden interventions and related educational policies in Sri Lanka.

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MPhil Students

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Enhancement of bioavailability of phosphate by microbial methods to sustainable utilization of Eppawala rock phosphate

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Key-highlights

- Phosphate-solubilising microorganisms were isolated from soil samples and identified by using morphological characteristics and molecular biological techniques.
- The phosphate-solubilising ability of isolated microorganisms towards High-grade Eppawala Rock Phosphate (HERP) was evaluated by using both qualitative and quantitative methods.
- HERP solubilization was optimized by using the phosphate-solubilising fungus, which had the highest potential.

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- Preparation of biofertilizer and field application of the best-performing PSF was done with the rice variety.

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Enhancing bioavailability of Eppawala rock phosphate by chemical and physical methods to be used in poultry rations

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Key-highlights

- Eppawala rock phosphate can be used as a primary phosphorus source to synthesize calcium phosphate compounds such as dicalcium phosphate (DCP).
- DCP can be produced from various calcium carbonate sources, and eggshells represent one of the suitable alternative feedstocks for this purpose.
- The wet-precipitation method for DCP synthesis is critically dependent on maintaining appropriate pH.

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- Producing feed-grade DCP from Eppawala rock phosphate and eggshells provides a practical way to valorize underutilized local resources.

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Environmental impact assessment governance in Sri Lanka: A policy, legal and processes review

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Key-highlights

- Sri Lanka has a strong environmental impact policy–legal base, but implementation is weakened by institutional fragmentation and uneven follow-up.
- Comparison of major project approving agencies reveals procedural differences, creating inconsistencies in screening, approval, monitoring, and accountability.
- The Central Environmental Authority is the key agency, while sectoral agencies operate independently as per the mandate.
- Existing Environmental Impact Assessment procedures give limited attention to cumulative impacts, especially across connected aquatic systems and river-basin landscapes.
- Due to the presence of multiple project approving agencies, Sri Lanka lacks a centralised database on EIA.

6th August 2026

Potential of using marine microalgae as a source for omega-3 fatty acids for nutraceutical applications

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Key-highlights

- Microalgae lipids are a sustainable omega-3 source, but research in Sri Lanka is limited compared to global efforts.
- The present study evaluated the selected Sri Lankan microalgae as a potential source of n-3 fatty acids and optimized the lipid extraction protocol for further commercial exploitation.
- The systematic review and meta-analysis showed that *Nannochloropsis* sp., *Dunaliella* sp., *Phaeodactylum* sp., and *Isochrysis* sp. have the highest mean lipid content globally (mean lipid yield ~ 15.59%).
- Several identified Sri Lankan species, including *Chaetoceros* sp, *Rhizosolenia* sp. and *Bidulphia* sp., have commercial potential for n-3 nutraceuticals production.
- Optimized small-scale microalgae culture system and a lipid extraction method suitable for the local industry are proposed.

6th August 2026

Post-harvest losses in Northern Sri Lankan coastal fisheries: A multi-dimensional assessment of biomass, economic, and nutritional losses across sectors and seasons

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Key-highlights

- This study evaluated post-harvest fish losses across nine landing sites in four districts of the Northern Province over 19 months.
- Artisanal fisheries faced a 22.23% loss rate, more than triple the loss in multiday vessels (6.16%), due to a severe systemic lack of localized cold chain infrastructure.
- Physical loss was highest for white sardines in the Thalaimannar region, amounting to 24,669.47 kg.
- Market loss was highest in crustaceans, accounting for average market price declines of 675.43 LKR/kg for prawns and 586.54 LKR/kg for crabs.
- Point Pedro emerged as a major high-loss hotspot driven by climate stressors, including high seasonal rainfall of 872.50 mm and temperatures reaching up to 31.54°C.

6th August 2026

Unravelling polychaete and molluscan assemblages across restoration stages and water-quality gradients in Anawilundawa and Pubudugama mangroves, Sri Lanka

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Key-highlights

- Five polychaete species were identified from sediments of the Anawilundawa and Pubudugama mangrove restoration sites, with higher abundance closer to main water sources.
- A new bivalve species was recorded from Pubudugama and morphologically identified as *Indosphenia cochinchinensis*, increasing recorded mollusc richness at the site to 12 species.
- Cluster distribution of *Terebralia palustris* was evident in younger plots, while increasing the species density from 5.15 to 7.38 ind./m² from younger to older plots.
- The abundance of molluscs and polychaetes showed a positive correlation with salinity and pH levels of the surrounding water.

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Sustainable integrated multi-trophic aquaculture (IMTA) of pearl oyster, seaweed, and sandfish: An environmental and biological assessment in Northern Sri Lanka

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Key-highlights

- One-year IMTA trials successfully integrated sandfish, pearl oysters, and seaweed at three coastal sites in Northern Sri Lanka.
- IMTA improved growth and survival of cultured species compared with monoculture systems across all study locations.
- Sandfish attained up to 735 g with 100% survival, demonstrating strong production potential under IMTA conditions.
- Water quality, sediment quality, and seagrass cover remained stable, indicating low environmental impact of the IMTA system.
- Results confirm IMTA as a sustainable aquaculture approach for enhancing coastal livelihoods and ecosystem health in Sri Lanka.

6th August 2026

Investigation of fruit phenology and development of maturity & quality indices for pomegranate (*Punica granatum L.*) cv. Kalpitiya Hybrid

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Key-highlights

- Fruit weight and fruit volume increased continuously from 14 to 126 days after fruit set, reaching their maximum values near maturity.
- During maturation, especially after 84 days, nutrients were increasingly allocated to the edible portion, making aril weight increase faster than peel weight.
- Juice yield correlates strongly with fruit maturation time ($r^2 = 0.95$).
- Brix values became relatively stable from 70 to 126 days after fruit set.
- With the available first-season data, it is evident that 70-126 days after fruit set can be identified as the optimum harvest maturity window.

6th August 2026

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Evaluation and extraction of heme from bovine blood to be utilized as an iron supplement in animal feed

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Key-highlights

- Conducted an extensive literature review on heme iron extraction from animal blood sources.
- Identified bovine blood as a sustainable and underutilized source of highly bioavailable iron.
- Critically evaluated reported heme extraction, purification, and recovery methods.
- Identified key research gaps in the development of bovine blood-derived iron supplements.

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- Reviewed national regulations and biosafety standards governing the use of bovine blood as an animal by-product to ensure compliance for subsequent laboratory investigations.

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Investigation of plant-based ingredient supplementation on the nutritional, physicochemical and sensory properties of novel hybrid processed cheeses

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^c*RMIT University, 124 La Trobe Street, Melbourne, VIC-300.*

Key-highlights

- Incorporation of protein-rich legumes enabled the development of novel hybrid cheeses with enhanced nutritional value while maintaining desirable compositional and quality characteristics.
- A stabilizer blend of 0.7% carrageenan and 0.3% xanthan gum consistently improved texture, structural integrity and overall stability in hybrid cheese formulations.
- FTIR analysis confirmed protein–stabilizer interactions that enhanced the structural stability of hybrid processed cheese matrices.
- Optimized formulations achieved high consumer acceptability, demonstrating that plant-based nutritional enhancement can be achieved without compromising sensory quality.

6th August 2026

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Detecting endangered and CITES-listed shark species from the commercial dry fish trade using DNA mini-barcoding

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Key-highlights

- Shark dry meat contributes significantly to the Sri Lankan dry fish trade as a primary protein source.
- Sun drying and salting complicate morphological identification and degrade DNA quality, limiting traditional DNA barcoding (650 bp).
- DNA mini-barcoding protocol (150 bp) was applied to identify species from 65 dried shark meat samples.
- Sequencing results revealed 12 species, including nationally protected *Carcharhinus longimanus* and 11 CITES-listed species.
- Also, 70% of the recorded species were threatened, highlighting the need for monitoring and regulating the dry fish trade.

6th August 2026

Recovery of tropical seagrass ecosystems through time after cyclone and cyclone-induced flood impacts

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Key-highlights

- Cyclone and cyclone-induced flood disturbances cause acute impacts to tropical seagrass ecosystems that are already under pressure.
- We used a global dataset in a multi-level random-effects meta-analysis of log response ratios to assess responses to these disturbances.
- Seagrass followed a non-linear quadratic recovery trajectory where decline continues for several months and starts to recover approximately after 15 months post disturbance.
- Wave exposure, habitat type, and genus identity mediated seagrass response to the stressors, with *Thalassia* more resistant and *Halodule* more vulnerable.
- Seagrass recovery after storm damage is highly context-dependent, and potential recovery is determined by the local environmental conditions and severity of impact.

6th August 2026

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Collagen processing towards a greener approach: An alternative collagen recovery technique for high-cost dialysis

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Key-highlights

- In collagen extraction, collagen recovery using dialysis poses high costs.
- This study aims to develop a cost-effective, industrially scalable method to recover collagen from skin discards of yellowfin tuna.
- Therefore, an alternative collagen recovery technique using centrifugation was experimented with at the laboratory scale.
- SEM images, FTIR, and XRD spectra confirmed native collagen morphology and structure, providing promising scale-up potential.

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