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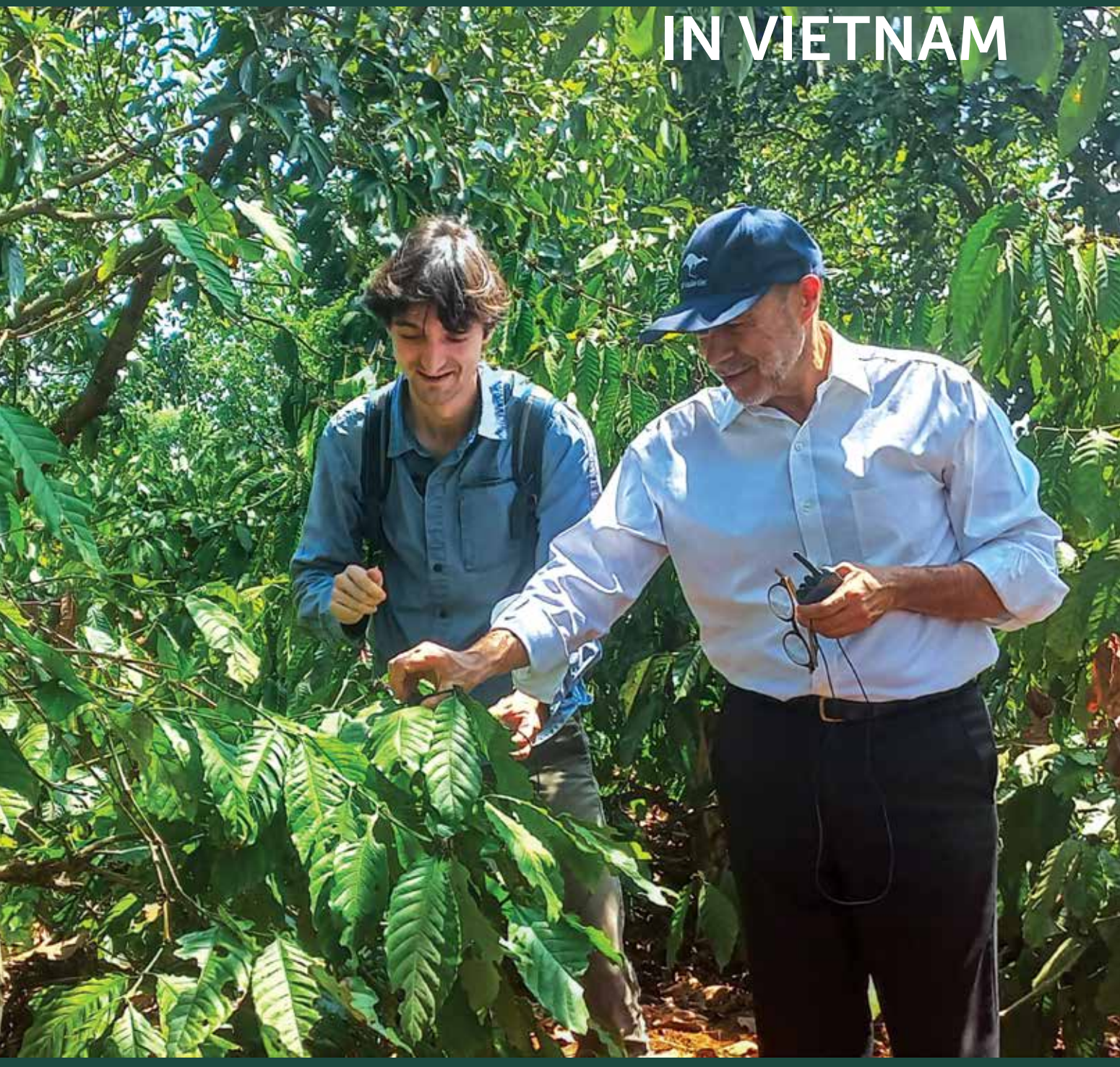

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***Front cover photo**: Australian Ambassador to Vietnam HE Andrew Goledzinowski (right) and Dr Clément Rigal from CIRAD visited the sap-flow experiment under the ACIAR-funded VSCOPE project.*

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Editorial note

Dear Readers,

We are delighted to present the latest edition of the ACIAR in Vietnam Newsletter, a publication dedicated to highlighting the achievements and impacts of our collaborative research projects in Vietnam and the region.

In this issue, you will find stories and insights from our researchers, partners and beneficiaries on various topics, including climate-smart agriculture, forestry biosecurity, livestock genetic improvement, premium market access for smallholder farmers and inclusive finance options for rural communities in Vietnam.

A strong focus of this edition is 'Strengthening bonds', underscoring the long-standing and fruitful partnership between ACIAR and Vietnam that has evolved over the last three decades. As Australia and Vietnam have elevated the bilateral relationship to a comprehensive strategic partnership, we also celebrate the enhanced cooperation between ACIAR and Vietnam through a new collaboration agreement signed between ACIAR CEO and Minister of Agriculture and Rural Development in March 2024. This is exemplified by the recent visit of ACIAR CEO Professor Wendy Umberger to Vietnam, during which many important meetings with valued Vietnamese partners have touched some of the most pressing challenges and opportunities facing Vietnam's agricultural sector and rural communities.

We hope you enjoy reading this newsletter and gain a deeper understanding of our work in Vietnam. We welcome your feedback and suggestions for future editions. Please get in touch with us at aciarvietnam@aciar.gov.au with any comments or questions.

Thank you for your continued support and interest in ACIAR!

ACIAR Vietnam team.

ACIAR Vietnam program 2024 – 2025: 32 active and pipeline projects

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Strengthening bonds – the evolution of partnership between ACIAR and Vietnam

Over the last 31 years, ACIAR has collaborated with Vietnam on more than 260 research projects, investing over $A184 million. This partnership has significantly contributed to Vietnam's goals of reducing poverty, empowering smallholder farmers, creating new industries and modernising its agriculture.

Today, Vietnam is on its way to becoming one of the world's leading food producers by 2050, focusing on efficient, environmentally friendly practices and quality.

A new level of partnership

In 2024, Australia and Vietnam elevated the relationship to a Comprehensive Strategic Partnership, marking the highest level of diplomatic relations after 50 years of collaboration. ACIAR continues to play a crucial role in enhancing this cooperation, particularly in agricultural research.

The Australian Ambassador to Vietnam, HE Andrew Goledzinowski, highlighted the efficiency of the ACIAR-Vietnam partnership, noting that every dollar invested by ACIAR has generated A$90 in value. This equates to more than A$16 billion in benefits for Vietnamese farmers, particularly smallholders. He also emphasised that the relationship has gradually evolved from a donor-recipient dynamic to a genuine partnership where both sides contribute and benefit.

Farmers in Northwest region of Vietnam increased their income 15 folds by adhering to good practice under the Viet-GAP accreditation program through 10-year ACIAR investment in the region.

Changing priorities

As Vietnam transitions to a high middle-income country with the ambition of developed agriculture, aiming at 'ecological agriculture, modern countryside, and civilized farmers', it still faces many challenges, such as climate change, fragmented production, and an aging rural labour force. ACIAR CEO Professor Wendy Umberger, during her visit to Vietnam in May 2024, noted the shared challenges between Australia and Vietnam, particularly regarding climate change impacts on agriculture.

'With a long coastline, Vietnam is witnessing significant changes and increasing impacts from climate change, such as drought, salinity intrusion, and overexploitation of underground water. These issues lead to emerging diseases severely impacting key agricultural products, such as rice, vegetables, and fruits,' said Professor Umberger.

'ACIAR is committed to supporting Vietnam in these areas, while enhancing mutual benefits for both countries. Vietnam and Australia are world exporters of agricultural products, so there are great opportunities for collaboration and learning.'

Salinity intrusion is one of the most pressing challenges in the Mekong Delta, Vietnam.

The new vegetable industry is a major employer of women and ethnic minority groups in Son La Province, Vietnam. In Moc Chau and Van Ho districts, 55% of the farmers are women and fully engaged in running businesses, planning, decision-making and marketing.

10-year strategy

Vietnam is striving to establish a world-class, climate-resilient agriculture industry by 2050 capable of supplying premium markets and ensuring rural living standards are on par with urban areas. These advances in food production will come primarily from agronomy improvements, guaranteeing high-quality products for exporting, reducing methane emissions from rice, and maintaining forests.

These objectives are aligned with the current ACIAR–Vietnam strategy, which focuses on helping the smallholder agriculture sector become more commercial and increasing private sector partnerships with farmers and researchers.

ACIAR will continue to invest strategically in Vietnam, focusing on geographical locations where Australian expertise can be best utilised, with Northwest Region, the Central Highlands Region, and the Mekong River Delta Region - current priority areas. Climate change significantly affects these regions, with disproportionate negative impacts on smallholder farmers and rural communities.

'While our focus is on addressing the pressing challenges facing these regions, we also aim to engage more women and cooperatives in sustainable agriculture production. These actors can spread research outcomes faster and more coherently, ensuring profits return to the community,' said Professor Umberger.

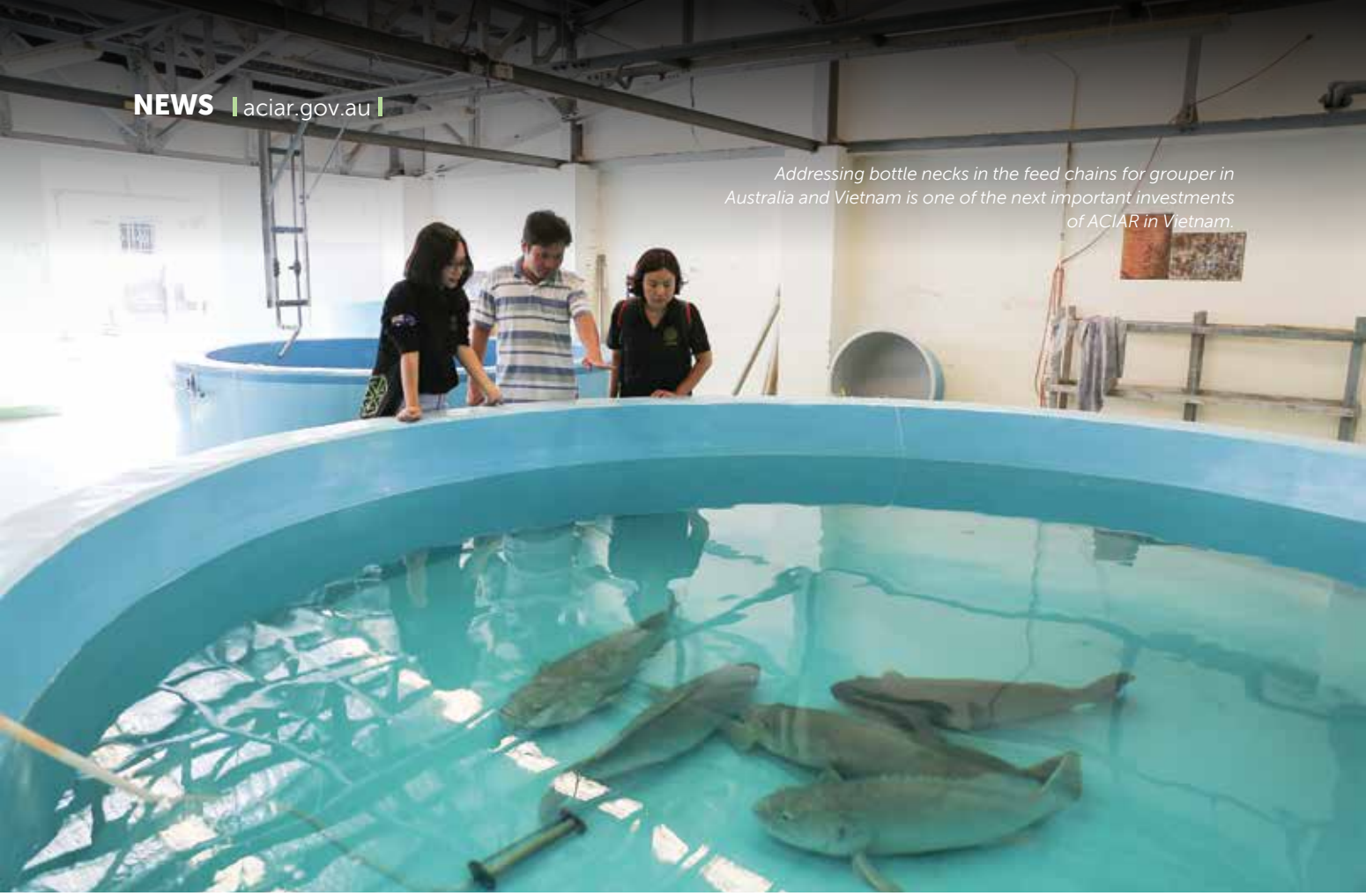
Strengthening the partnership

On 7 March 2024, Professor Wendy Umberger and Vietnam's Minister of Agriculture and Rural Development, Mr Le Minh Hoan, signed a 5-year agreement focused on sustainable agricultural development and enhancing mutual respect and collaboration. A subsequent Partnership Dialogue co-hosted by ACIAR and the Ministry of Agriculture and Rural Development (MARD) discussed future research priorities and strategic collaboration.

Vietnam's Vice Minister of MARD, Dr Phung Duc Tien, co-chaired the dialogue and emphasised Vietnam's commitment to working with ACIAR on strategic and scalable research for green growth and multi-value agricultural development.

The new MoU and ongoing practices highlight ACIAR's commitment to equal partnership and effective collaboration. During the dialogue, case studies and insights were shared, emphasising Vietnam-led partnerships, co-funding, research priorities, and the importance of capacity development.

The ACIAR-Vietnam Partnership Dialogue was co-chaired by (from left to right) Ambassador Andrew Goledzinowski, Vice Minister of MARD Dr Phung Duc Tien, and ACIAR CEO Professor Wendy Umberger.



Addressing bottle necks in the feed chains for grouper in Australia and Vietnam is one of the next important investments of ACIAR in Vietnam.

Looking forward: better livelihood and quality for smallholder farmers

The ACIAR Vietnam Country Office has been working closely with its research partners, particularly MARD, to develop new research partnerships.

In 2024-2025, in addition to more than 20 existing projects, ACIAR will invest in 8 new research initiatives totalling more than A$8 million. These projects include addressing bottlenecks in grouper value chains, scoping sustainable citrus industry development, and digital monitoring and quality assurance of Viet GAP in fruit chains.

Australia's Ambassador to Vietnam, Andrew Goledzinowski, said Australian support for agricultural research in Vietnam will also aim to reduce greenhouse gas emissions from farming, particularly methane from rice fields in the Mekong Delta.

'Now our focus is very much on climate change mitigation. Looking at the situation in the Mekong Delta region, we are trying to improve the situation of smallholder farmers in the lower income brackets,' said Ambassador Goledzinowski.

'We aim to improve their systems to get products to market and ensure they earn the maximum amount of money. We also want to improve equality and equity so that all farmers and all communities in Vietnam benefit equally.'

Ensuring livelihood equality for the most vulnerable communities in Vietnam is a primary focus of the ACIAR – Vietnam partnership.

Enriching partnerships: ACIAR CEO's engaging visit to Vietnam

In May 2024, ACIAR CEO Professor Wendy Umberger, along with an esteemed delegation, visited Vietnam for the first time in her position. Accompanied by ACIAR's General Manager for Research, Dr James Quilty, Senior Fisheries Advisor, Dr Chris Barlow, and Manager of Country Partnerships, Mrs Maree Livermore, the visit underscored ACIAR's unwavering commitment to its partnership with Vietnam.

A deep-rooted and diverse partnership

The CEO visit program was packed with high-level meetings, field visits, and networking events, reflecting the extensive and multistakeholder nature of ACIAR's collaborations in Vietnam. The delegation engaged with prominent Vietnamese leaders, including the Minister of Science and Technology, Dr Huynh Thanh Dat, the Vice Minister of Agriculture and Rural Development, Dr Phung Duc Tien, and the Vice Minister of Planning and Investment, Mr Do Thanh Trung. These meetings were pivotal in discussing ongoing cooperation, exploring new topics for research collaboration, and reinforcing the bond between ACIAR and Vietnam.

ACIAR delegation meeting with Dr Huynh Thanh Dat, Minister of Science and Technology in Hanoi, May 2024.

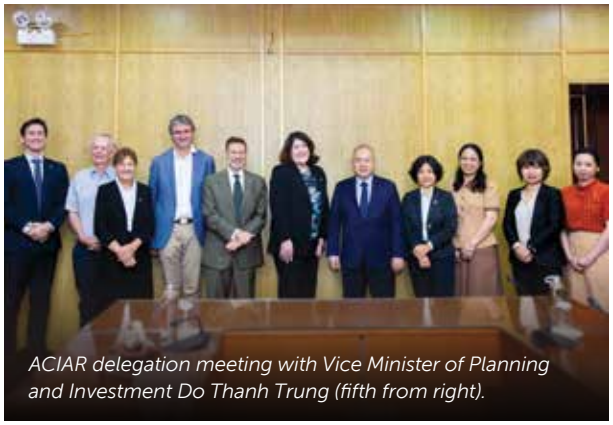
The Australian Ambassador to Vietnam, HE Andrew Goledzinowski, joined the delegation in all ministerial-level meetings and the visit to the Central Highlands, emphasising the robust relationship between Australia and Vietnam. Ambassador Goledzinowski's involvement was a testament to the strong support ACIAR enjoys from the Australian Embassy as a specialist agency of the Australian government in international agricultural research collaboration.

Dr Nguyen Van Bo, a member of Australia's Policy Advisory Council, also actively participated in the visit activities, adding depth to the discussions.

Advancing innovation and collaboration

During the meeting with Minister Huynh Thanh Dat at the Ministry of Science and Technology (MOST), the conversation focused on promoting innovation and building capacity for Vietnamese researchers. Dr Chris Barlow's participation in the delegation was particularly valuable, given MOST's strong

Partnership Dialogue co-hosted by ACIAR and MARD in Hanoi, May 2024.



ACIAR delegation meeting with Vice Minister of Planning and Investment Do Thanh Trung (fifth from right).

ACIAR delegation, joined by Australian Ambassador HE Andrew Goledzinowski and Australian Consul General Sarah Hooper (fourth and fifth from right, front row), visit farmer Do Van Anh (fourth from left)'s mixed farm in Dak Lak Province, May 2024.

interest in fisheries research. After this meeting, there have been ongoing discussions about the potential collaboration between MOST and ACIAR in the fisheries sector.

The Partnership Dialogue co-hosted by ACIAR and the Ministry of Agriculture and Rural Development (MARD) was extremely encouraging. Discussions among ACIAR key research partners in Vietnam focused on aligning research priorities, fostering multidisciplinary collaboration for greater impact, and streamlining approval and co-funding processes. These conversations are expected to guide future investments, ensuring that ACIAR-supported efforts align with Vietnam's agricultural and rural development goals.

The meeting with MPI Vice Minister Do Thanh Trung also discussed potential collaboration between ACIAR and MPI, focusing on policy research, particularly in areas related to food security, climate change, greenhouse gas emission reduction, and investment attraction in agriculture and rural development.

Impact on the ground

A visit to the Central Highlands provided a firsthand experience with the impacts of ACIAR-funded projects. The delegation interacted with farmers, cooperative leaders, and researchers involved in the VSCOPE project, a flagship investment of ACIAR in the Central Highland focusing on enhancing farming systems and value chains of coffee and pepper in the region. Farmer Do Van Anh, hosting one of the climate-smart irrigation trials in the Krong Nang District, DakLak Province, shared insights into the experiment, which uses sensors to measure the transpiration of coffee plants in monocropping versus intercropping systems. The results are promising, with intercropping reducing water consumption by 20-30% and offering additional income streams from crops like macadamia, pepper, and durian.

On this visit, the delegation also met with ACIAR partners: Tay Nguyen University, Western Highlands Agriculture & Forestry Science Institute (WASI), and DakLak provincial leaders to discuss future collaboration and share updates on ACIAR and Aus4Innovation's agricultural initiatives in the province.

The visit also allowed the delegation to connect with Australian alumni and colleagues from ACIAR-supported projects. Hearing how their experiences in Australia and participation in ACIAR initiatives have benefited them professionally and personally was heartwarming.

Women empowerment

During her visit, Professor Umberger also met with Ms Tran Lan Phuong, Vice President of the Vietnam Women's Union (VWU), focusing on potential cooperation to empower women farmers in Vietnam.

VWU has been a crucial collaborator in ACIAR-funded projects to enhance profitable, sustainable vegetable value chains for women farmers in the Northwest region of Vietnam, particularly through the safe production and marketing of indigenous vegetables.

Potential opportunities for future collaboration were explored, including supporting women-led businesses in agriculture and enhancing value chains by promoting trade and product consumption.

Media engagement

The visit garnered substantial media attention, particularly during the Partnership Dialogue co-hosted by ACIAR and MARD. Media engagement throughout the program highlighted the strong interest in the collaborative efforts between ACIAR and Vietnam.

The field visit to Soc Trang gave the symposium participants a firsthand experience of salinity intrusion in the Mekong Delta. Photo: ACIAR.

Supporting farmers to better cope with salinity

In March 2024, international researchers from diverse disciplines gathered in Can Tho City for the International ACIAR Salinity Futures Symposium. This event aimed to delve into the complex impacts of salinity on smallholder farmers in the region.

Co-hosted by Can Tho University (CTU) and Charles Sturt University and supported by ACIAR, the symposium provided an opportunity to reflect on three ACIAR-funded projects in Vietnam, Pakistan, and Bangladesh. These initiatives have equipped local farmers with new, profitable crop options and climate-wise soil and water management strategies to combat salinity challenges.

Salinity intrusion, a significant challenge exacerbated by climate change, most affects the low-lying river deltas. Large deltas face increasingly common and complex salinity issues in Vietnam, Pakistan, and Bangladesh, impacting land, soil, and water resources. These effects put immense pressure on freshwater supplies, food security, and the livelihoods of millions of farmers.

Held during the peak of the salinity intrusion season in Vietnam's Mekong Delta, the symposium underscored the urgency for actionable, scalable research. It provided a unique platform for three projects, implemented across four countries with varying natural and social conditions, to exchange research results, experiences, and lessons learned.

'Our focus on salinity is not to solve just a biophysical challenge but to support improved livelihoods. Balancing technical, policy, community, and scalable research is crucial. These practical and applied research for development projects is informing us about how agrifood systems are changing and how salinity-affected communities are responding. Each of the teams is working with affected communities to identify opportunities for more integrated farming system approaches, market opportunities, and other off-farm issues,' said Dr Neil Lazarow, ACIAR Water Research Program Manager.

Salinity is caused by climate change phenomena such as prolonged droughts, sea level rise, and human-induced factors like ineffective water management. 'Therefore, solutions for salinity resilience must be comprehensive,

interdisciplinary, and cross-sectoral, with farmers' livelihoods and economic benefits at the centre,' said Dr Nguyen Van Bo, Australia's Policy Advisory Council (PAC) Member. 'Salinity can also be seen as an opportunity; in some cases, saline water can be considered a resource,' he added.

The symposium aimed to provide farmers and scientists in the region with in-depth knowledge and forecasts of future climate change. It introduced necessary methods and equipment to help farmers minimize farming risks and helped scientists build natural resource management systems for delta areas.

Dr Veronica Doerr, ACIAR Climate Change Research Program Manager, emphasised the need to think forward to a future where climate change impacts will continue to increase. She highlighted: 'Should future research continue to focus on building the resilience of existing ways of farming, or should we consider transformation to new and different commodities and farming systems? These are key questions that need addressing.'

The symposium also served as a platform to apply and connect research activities, educate, and transfer scientific knowledge to local, national, and regional leaders and managers. The goal was to improve agricultural adaptation and recovery in areas affected by salinity, foster sustainable socio-economic development, and conserve natural ecosystems.

Dr Tran Ngoc Hai, Vice Rector of CTU, shared, 'Given the increasing complexity of climate change and saltwater intrusion in the Mekong Delta of Vietnam, CTU focuses on enhancing and upgrading our human resources, training activities, scientific research, and international cooperation in soil science and climate change to improve adaptability and sustainable development in the Mekong Delta.'

A highlight of the symposium was a field trip to some of the most salinity-affected areas in the Mekong Delta, sparking strategic discussions and forging stronger connections with real-life dynamics. This experience aimed to help shape a resilient future for communities living with salinity.

The International ACIAR Salinity Futures Symposium is a step toward a future where communities thrive in harmony with their environment.

ACIAR-funded projects featured at the symposium:

- Farmers' options for crops under saline conditions in the Mekong Delta, Vietnam (SLAM/2018/144)
- Cropping system intensification in the salt-affected coastal zones of Bangladesh and West Bengal, India (LWR/2014/073)
- Adapting to salinity in the southern Indus Basin (LWR/2017/037)

The symposium's poster session helps participants learn various aspects of the involved research projects.

Climate Change Ambassador Kristine Tilley visited ACIAR exhibition on projects that help addressing climate change in Vietnam.

Australian Ambassador for Climate Change meets ACIAR partners in Vietnam

From April 12 to 17, 2024, Australian Ambassador for Climate Change Kristin Tilley visited Vietnam to further cooperation and strengthen bilateral engagement on climate and energy, particularly following the elevation of the bilateral relationship to a Comprehensive Strategic Partnership, which now includes a dedicated climate and energy pillar.

In Can Tho, Ambassador Tilley witnessed Australia's support for climate adaptation and resilience in Vietnam, especially in the Mekong Delta and Central Highland regions, firsthand. ACIAR and its research partners had the opportunity to interact with her during an exhibition at Can Tho University showcasing some of ACIAR's active investments in Vietnam to address climate change.

The exhibition featured presentations on climate-smart irrigation for coffee and pepper value chains, discussions on exploring short-duration rice varieties and alternative crops that can grow in saline conditions, and strategies for engaging smallholder rice farmers in premium export markets. It also covered potential transformations with mangrove-based livelihoods and agribusiness options and quantifying greenhouse gas emissions and their economic value to support Vietnam's international commitment to net-zero emissions.

These projects highlight the collaborative efforts of Vietnamese, Australian, and international scientists working together to develop tailored solutions for various aspects and levels of climate change impacts in Vietnam.

The Ambassador engaged in insightful conversations with local farmers and businesses about their challenges and with researchers

about the importance of tailored approaches to ensure sustainable agricultural development and livelihoods for farmers.

'I am proud that the Australia-Vietnam Comprehensive Strategic Partnership includes a standalone pillar dedicated to climate and energy cooperation, the first of its kind for Australia. This strong commitment signals to the region and the world that Vietnam and Australia not only recognise the impact of the climate crisis but also the importance of boldly addressing the challenges and harnessing the opportunities to strengthen economies,' Ambassador Tilley said.

The ACIAR-supported projects featured in the exhibition in Can Tho on 13 April 2024 included:

- **SLAM/2018/144**: Farmer options for crops under saline conditions in the Mekong River Delta
- **CLIM/2019/150**: Supporting greenhouse gas inventories and targeted rice mitigation options for Vietnam
- **AGB/2019/153**: Planning and establishing a sustainable smallholder rice chain in the Mekong Delta
- **AGB/2018/175**: Increasing the sustainability, productivity, and economic value of coffee and black pepper farming systems and value chains in the Central Highlands region of Vietnam
- **SSS/2024/107**: The Economics of Reducing Greenhouse Gas Emissions in Rice Production in Vietnam: Assisting Policymaking for Green Agriculture Reforms
- **CLIM/2023/190**: Defining the potential for mangrove-based agribusiness transformation in the coastal Mekong Delta

Vietnam Climate Change Facts

- Vietnam ranks sixth globally in climate vulnerability due to climate variability and extreme weather events, as per the Global Climate Risk Index 2020.
- Temperature extremes are projected to increase significantly in Vietnam, leading to heightened impacts on health, livelihoods, and ecosystems, with particular vulnerability in low-lying river deltas where temperature impacts will be compounded by sea level rise, salinity intrusion, and intense cyclones and storms.
- The Mekong Delta is the most vulnerable region, with estimated economic losses of USD $10 billion in 2020 due to climate change, and potential losses of USD $17 billion by 2030 if significant action is not taken.
- Sea level rise and salinity intrusion particularly threaten the Mekong Delta, with saltwater already intruding up to 50km inland. In the coming decade, 6 to 12 million people are expected to be permanently displaced.
- Vietnam has committed to achieving net-zero emissions by 2050 and includes agricultural mitigation actions in its Nationally Determined Contributions (NDC), with a focus on rice and livestock, indicating policy efforts focus on mitigation in addition to the adaptation concerns highlighted above.

Pig biosecurity at the forefront of new Australia and Viet Nam joint alliance

By Vu Huong Mai and Jennifer Manyweathers

Vietnam's livestock sector has recently faced a storm of challenges, from relentless disease outbreaks and the upheaval caused by the COVID-19 pandemic to soaring feed costs. Notably, African Swine Fever (ASF) has had a devastating impact across the sector, leading to the death and culling of nearly 6 million pigs in 2019 and threatening continual disruption to the industry.

In June 2024, a landmark collaboration between Australia and Vietnam was launched to safeguard Vietnam's pig farming industry. The National Biosecurity Innovation Alliance for Pig Biosecurity, a combined venture between Australia's national science agency, CSIRO, through the Aus4Innovation program and Vietnam's National Institute of Animal Sciences, introduces a mission-critical platform for enabling innovation in pig farming.

The Alliance brings together stakeholders from across the pig innovation ecosystem to work together to improve the health and biosecurity of the pig industry in Vietnam, primarily including smallholder pig producers.

The pressing need to bolster Vietnam's pig farming industry against ASF has never been more urgent. Due to poor biosecurity measures, the epidemic is wreaking havoc on smallholders, who compose more than 80% of the industry. CSIRO and Charles Sturt University (CSU) joined forces with experts from Viet Nam's National Institute for Animal Sciences (NIAS) under the Ministry of Agriculture and Rural Development (MARD) to conduct a study to understand better the vulnerability of smallholder pig farmers to disease risks such as ASF.

The multidisciplinary team of disease and resilience experts, vets, statisticians, psychologists, human geographers, and animal health experts from Australia and Vietnam applied a novel approach, originally piloted in Australia, to help smallholder producers improve surveillance of biosecurity risks and diseases like Foot and Mouth Disease. The approach explores how practices and beliefs can impact both the likelihood of exposure to ASF and the capacity of smallholder pig producers to respond quickly and effectively to an outbreak in three provinces in the North of Vietnam (Ha Nam, Bac Giang and Hoa Binh).

The study of 162 farmers identified three risk factors that increased the potential for disease infection: the proximity of nearby farms, the frequency of checking water quality, and vehicle cleaning/disinfection protocols.

Building a collective understanding of smallholder risks and vulnerability to diseases is important for the Alliance, which includes national and provincial government representatives from the Ministry of Agriculture and Rural Development, Farmer Associations, researchers and the private sector, such as feed companies, to create pathways for joint action on biosecurity practices to reach smallholder producers. In addition, stronger connectivity among stakeholders is key for improving the capacity of the innovation ecosystem to respond effectively to health and biosecurity shocks and disruptions, such as AFS.

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Adapting to change: collaborative efforts to support shrimp farmers in the Mekong Delta

Nguyen Nguyen Minh and Jennifer Kelly

The Mekong Delta is the beating heart of Vietnam's aquaculture industry, powering 70% of its output and contributing to a third of the national GDP from agriculture. With aquaculture as the top agricultural priority, the region faces hurdles like climate change, market fluctuation, water scarcity and pollution when building a sustainable and competitive industry. These challenges, along with disease and digital transformation impact everyone in the value chain, from smallholder farmers to national processing corporations.

To support sustainable development, Can Tho University (CTU), backed by the Australian Government's Aus4Innovation program, launched the Mekong Aquaculture Innovation Cluster (MAIC) in 2022. This initiative is a cornerstone of the CTU's 2045 Sustainable Development for the Mekong Delta (SDMD-2045) agenda, providing a collaborative platform for innovation system actors to come together and address sustainable development challenges in the region.

MAIC focuses on boosting innovation and creating a competitive advantage for the shrimp industry through circular economy principles, digital transformation, green growth, and climate action. With over 550 members, the cluster fosters collaboration and innovation among shrimp farmers, cooperatives, relevant research institutions, local governmental agencies, and businesses to share knowledge and address priority actions for the aquaculture industry. This will allow the industry to be resilient to various changes and adapt to future sustainable development practices.

Since 2023, MAIC has focussed on professional shrimp farmer training courses to improve the professionalisation of the industry in the region by offering insights from leading experts at CTU, visits to state-of-the-art laboratories, and in-depth exploration of topics such as sustainable high-tech shrimp farming, nutritious food and health management for shrimp, eco-tourism, and aquaculture economics. One course participant emphasised the extensive knowledge gained through the training.

'At the end of the program, we gain more knowledge and experience in shrimp farming and farming management. We will try to be ambassadors to pass on this knowledge to other shrimp farmers as desired by the CTU and the project,' a participant said.

Gender equity, disability, and social inclusion (GEDSI) considerations have also been substantially embedded into these courses to ensure the industry's inclusive development.

The training program has now been expanded to several coastal provinces, including Soc Trang, Ca Mau, Bac Lieu, and Ben Tre, with the German Development Agency's (GIZ) support. Over 170 farmers, local agency officers, and businesses have participated, with more training planned for Tien Giang, Kien Giang, Tra Vinh, and Long An.

Joining MAIC is not just about enhancing individual skills and knowledge; it's about being part of the shrimp farming industry's transformative journey and contributing to the climate-change resilience and sustainable development of the Mekong Delta.

This work is an important part of Aus4Innovation, a ten-year (2018-2028) A$33.5 million flagship program to strengthen Viet Nam's innovation system to support inclusive and sustainable socio-economic development. The program is funded by Australia's Department of Foreign Affairs and Trade (DFAT), co-funded and managed by CSIRO – Australia's national science agency and delivered in a strategic partnership with Vietnam's Ministry of Science and Technology.

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Sowing the seeds of change to transform rice value chains

In March 2024, as Australia's and Vietnam's Prime Ministers formally elevated the bilateral relationship to a Comprehensive Strategic Partnership (CSP) in Melbourne, farmers in the Mekong Delta were preparing to plant the first crop under the Transforming Rice Value Chains (TRVC) program.

Implemented by the Netherlands Development Organisation (SNV) in Dong Thap, An Giang, and Kien Giang provinces, TRVC is one of the first programs implemented under the cooperation pillar on climate change under the CSP between Australia and Vietnam. This is also the first time Australia has a CSP that includes a specific area of climate change cooperation.

Using the Pay-for-Results (PfRs) mechanism, the TRVC project incentivises and attracts the participation of private enterprises in the rice value chains. The project aims to scale up innovative technologies to achieve higher economic outcomes for smallholder farmers and all rice value chain actors, improve rice quality and enhance social inclusion while reducing greenhouse gas (GHG) emissions and mitigating environmental footprints (i.e. methane and nitrous oxide) as co-benefits. These compounds are potent contributors to global GHG emissions, which drive climate change-related extreme weather events, including droughts and floods. Thus, the project will play a catalytic role in transforming rice production, trading towards sustainability, and bringing inclusive values to the most rice-intensive production provinces. It will also actively contribute to achieving sustainable and climate-resilient development in the Mekong Delta.

The first crop in 2024 sees 9 rice value chain companies and approximately 1,711 smallholder rice farmers implement GHG reduction strategies across 6,173 hectares. This is the first of six crops, with 200,000 hectares expected to be cultivated during the project's lifetime. TRVC is working closely with the Ministry of Agriculture and Rural Development to support national efforts to reduce GHG emissions from agriculture, which accounts for up to 30% of Vietnam's emissions. This includes aligning and sharing knowledge with the 1 million hectares of low-emissions, high-quality rice project.

Since the TRVC's launch in January 2024, many activities have been executed before the first crop. These include selecting rice value chain competitors and enrolling rice farming areas and smallholder farmers by private sector competitors. Additionally, three Project Management Units were established in provinces to support the project implementation on the ground and facilitate the collaboration among actors.

During six seasonal crops, a wide range of rice farming technologies, including changes in fertiliser usage, organic residue management, water management, tillage practices, and rice varieties, will be rolled out in the paddy fields of Mekong provinces. These measures aim to reduce more than 200,000 tons of CO_2e, 20-40% water consumption, and 20-30% chemical fertiliser and pesticides while increasing smallholder farmers' profit margins by 20-30%.

A highlight of the TRVC is the mainstreaming of Gender, Equality, Disability and Social Inclusion (GEDSI) in project activities. Competitors participating in the first crop were required to meet GEDSI criteria. The competition was complemented by pre-competitive activities promoting GEDSI and safeguarding requirements. This ensures that the project will achieve inclusive and equitable outcomes.

Starting the first crop is a milestone for TRVC's 5-year journey of transforming thousands of smallholder farmers to low-carbon and climate-resilient rice production practices in the Mekong Delta.

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Navigating success: developing a research roadmap for sustainable citrus farming in Vietnam

By Nguyen Thu Huong, ACIAR Vietnam.
ACIAR Project: HORT/2023/179

A new ACIAR-funded research initiative will explore opportunities to boost Vietnam's citrus production and exports.

Citrus is an important crop in Vietnam, accounting for over 21% of the country's fruit sector. While traditionally focused on domestic consumption, recent years have seen a remarkable surge in export value, with key products like pomelo and lime experiencing a 5-fold increase in just 8 years. This growth has sparked the Vietnamese government's ambition to significantly expand citrus exports.

While smallholder farmers are expected to play a crucial role in this expansion, they have encountered numerous challenges, including poor-quality varieties and seedlings, pest and disease infestations, soil degradation, market instability and fluctuating prices. These issues have resulted in high rates of tree mortality and negative net returns for farmers.

Ms Irene Kernot, ACIAR Research Program Manager for Horticulture, noted the significant impact of these challenges on farmers, observing that many have chosen to abandon their citrus farms or transition to alternative crops to safeguard their incomes.

'These ongoing challenges make farmers reasonably cautious about further investments in citrus. In response to their concerns, the new research project, led by Vietnamese research partners, will take a holistic approach in exploring pathways for comprehensive research to address their complex issues,' she said.

At the national level, the project provides substantial and timely support for Vietnam in realising its citrus development goals. The project aims to develop a research roadmap to support sustainable expansion of the citrus industry.

Dr Nguyen Van Liem, the ACIAR Project Leader from the Plant Protection Research Institute in Vietnam, underscored the need for an integrated and comprehensive approach in citrus research to effectively overcome existing barriers that have hindered the industry's development.

He explained that Vietnam has invested considerable efforts in citrus research. Yet, the focus has primarily been on developing and testing individual techniques, lacking multidisciplinary research capacity.

'We need to employ the diverse experts of seedling, soil health, pest management, orchard design to marketing, agribusiness to solve the issues the citrus industry faces.'

'Our research roadmap will bridge knowledge gaps on the causes of declining orchards, identify context-specific rehabilitation measures for target citrus production regions, identify market opportunities and develop climate-resilient development strategies. It will strive to contribute to Vietnam's food security, nutrition and livelihood improvement.'

Having extensive experience in doing research over the last 60 years to increase yields and quality, making citrus the largest fresh fruit export worth A$400 million annually, Australia is in a perfect position to support Vietnam in building stepping stones for its citrus industry development.

'By bringing Australian expertise to this project, we aim to build the core capacity of Vietnamese researchers to conduct multidisciplinary research, which will provide timely and crucial support for Vietnam in designing and implementing its citrus development strategies,' said Ms Kernot.

This capacity building strongly aligns with Australia's International Development Policy in seeking to maximise the value of Australian expertise.

'This research will also inform future collaboration between ACIAR and Vietnam in citrus research, with the ultimate goals of making a better life for smallholder farming communities,' Ms Kernot added.

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ACIAR team and research partners visiting an orange farm in Hoa Binh, Vietnam during their scoping activity. Photo: ACIAR.

From grower to trader: the remarkable journey of farmer Tran Phuoc Nhan

By Nguyen Hong Tin, Nguyen Hai Minh, Gomathy Palaniappan, Le Kim Ngan, Nguyen Thi Kim Thoa, and Jaquie Mitchell. ACIAR project: AGB/2019/153.

The research and development partnership, co-funded by ACIAR and SunRice, aims to establish a highly productive, sustainable, traceable, quality-assured value chain for tropical short grains in the Mekong Deta, benefiting rice-farming households and meeting established SunRice's market requirements.

In May 2024, rice farmers in Ninh Thanh Hamlet, An Tuc Commune, Tri Ton District, An Giang Province, were excited as they entered the summer-autumn harvest season. Among them, Mr Tran Phuoc Nhan stood out with a unique sense of joy. His income now comes not only from rice farming but also from his trading activities within the rice industry.

Mr Nhan's transition from a rice farmer to a regional rice trader has become a well-known success story. His journey serves as an inspiring model for local farmers and contributes significantly to improving community living standards, diversifying livelihoods, and fostering local socio-economic development.

With over 20 years of experience in rice farming, Mr Nhan is a seasoned farmer. He owns 60 hectares of rice land in Kien Giang Province and 18 hectares in An Giang Province. Each year, his family cultivates

Mr Nhan at his farm in the 2023 winter-spring cropping season. Photo: Can Tho University.

different rice varieties, such as DT8, OM18, and OM5451 in An Giang, and DS1 in Kien Giang, across three cropping seasons.

Before 2020, Mr Nhan usually sold his rice to various local traders and rice companies without formal farming contracts, leading to unsustainable business. He longed for opportunities to collaborate with reputable rice companies. Fortunately, through the local extension system, he was introduced to SunRice Group in 2021 and the Sustainable Mekong Rice project (AGB/2019/153) in 2022.

Under the pilot farming contract with SunRice Group, Mr Nhan began as a rice producer with 8 hectares and participated in a technical farming demonstration with Can Tho University on integrated pest management on 0.5 hectares, which aimed to achieve product quality below the maximum residue level (MRL).

In the winter-spring season of 2024, Mr Nhan contracted with SunRice Group for 18 hectares and coordinated with other farmers in his group, managing a total of 155 hectares. Together, they supplied over 1,150 tons of paddy rice to SunRice Group. Impressively, about 60% of the contract farming managed by Mr Nhan met MRL standards, earning a premium of 300 VND per kilogram of rice.

'In the past two years, thanks to project interventions, my agricultural production experience and the trust of local people have significantly improved,' shared Mr Nhan. 'This has enabled me to coordinate the transportation and supply of rice to collecting companies both locally and in other provinces of the Mekong Delta.'

Each season, Mr. Nhan supplies about 5,000-6,000 tons of rice to various rice companies, meeting the needs of smallholder farmers and supplying entities with diverse rice varieties.

'Thanks to the Sustainable Mekong Rice project support for rice farming contract and associated trading activities, my income has significantly increased, greatly improving my family's life quality. I am building a new house and investing in my children's university education. Apart from my own success, I have shared my farming techniques with other farmers in the community, encouraging them to sign contracts with SunRice Group to ensure stable output,' said Mr Nhan.

Looking ahead, Mr Nhan plans to expand his trading operations, broaden his network, reach new markets, and continue contributing to the community's development. His success not only elevates his family's standard of living but also inspires many other farmers. Local farmers now see the potential in combining rice farming with trading, fostering community growth.

Mr Nhan exemplifies the new-era farmer, one who dares to think and dares to do.

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Mr Nhan (first from right) with the project team at his farm. Photo: Can Tho University.

Promoting sustainable farming and supporting local livelihoods in the Central Highlands

Australian Ambassador to Vietnam Andrew Goledzinowski (right) and Dr Clément Rigal from CIRAD visited the sap-flow experiment under the VSCOPE project. Photo: V-SCOPE project.

By V-SCOPE project team
ACIAR Project: AGB/2018/175

> **It's something else to see it happening on the ground in the Central Highlands of Vietnam**
>
> *H.E. Mr. Andrew Goledzinowski*
> *Australian Ambassador to Viet Nam*

The Australian Ambassador to Vietnam, Andrew Goledzinowski, posted this on his X when visiting the ACIAR-funded V-SCOPE project sites in Dak Lak province in early May 2024. ACIAR CEO, Professor Wendy Umberger, also joined the visit.

The V-SCOPE project is a significant ACIAR investment in the Central Highlands, aligning with the ACIAR – Vietnam Research Collaboration Strategy 2017-2027. The project focuses on enhancing coffee and pepper farming systems and value chains.

Early findings have shown promising results. In 2023, continuous measurements of coffee tree transpiration in Buon Ma Thuot and Krong Nang revealed two key insights: (i) Farmers in monoculture systems can reduce irrigation by

Weather station at a V-SCOPE project site. Photo: V-SCOPE project.

about 40% compared to the current practice without affecting tree health and yields, except during unusually long and dry seasons when normal irrigation should resume, and (ii) Incorporating fruit trees and pepper poles in coffee farms creates a microclimate that benefits coffee, allowing for further irrigation reductions during the dry season. These findings are being discussed with farmers and local authorities, and further modeling and on-farm trials will be essential to confirm and disseminate the results.

The V-SCOPE project team is also testing soil improvement methods by applying lime and coffee-husk biochar on 30 coffee and pepper farms across the Central Highlands. These experiments aim to identify sustainable farming practices suitable for farmers with degraded soil conditions, leading to overuse of fertilisers and pesticides, and often resulting in poor crop health. Recent monitoring showed positive impacts on plant health and yields. Farmers reported softer soil, increased earthworm presence, better soil infiltration, and greener leaves in treated areas. Over time, improving soil health could reduce fertiliser use and enhance the sustainability of coffee and pepper farming systems.

Often overlooked in sustainability studies is the social perspective. The V-SCOPE project conducted a survey from April to August 2023, examining labor dynamics and agronomic performance in various systems, from monocultures to diversified systems with coffee, pepper, and fruit trees. Results showed that pepper harvest had the highest labor demand, significantly more than coffee. Most harvest labor is done by temporary hired workers, raising concerns about potential labor shortages. Despite high coffee and low pepper prices in 2022-2023, no significant differences in gross margin per hectare were observed. These findings highlight the complexity of agricultural management and the need for adaptive strategies, with diversification holding strong potential. Further research is being undertaken to optimise resource allocation and enhance the resilience of farming systems.

In 2023, the V-SCOPE project strengthened participatory action research with the private sector and enhanced public-private dialogue at local and national levels. An add-on to the project, also supported by ACIAR, titled 'Partnering with trading companies to sustainably enhance smallholders' livelihood in the Central Highlands of Vietnam through pilot chain interventions towards high-quality Robusta coffee,' has helped broaden private sector engagement to support value chain innovations. Two pilot models of high-quality coffee are now helping to improve input provision services. Two national multi-stakeholder policy dialogues have been organised, and a workshop on high-quality coffee market perspectives was co-organised

Participants at a training course on high-quality coffee processing in June 2024. Photo: V-SCOPE project.

with Simexco in Buon Ma Thuot. Additionally, four training sessions have been organised to enhance smallholder farmers' post-harvest practices, with around 200 farmers participating, approximately 40% of whom are female.

Building on its diverse research achievements, the V-SCOPE project is increasingly focusing on sharing and tailoring its results to various local farming and value chain conditions and needs. Since the end of last year, the project has been engaging with different stakeholders—farmers, cooperatives, local and global companies, local and central public authorities, development partners, and more—besides project partners. This engagement involves sharing preliminary analyses in workshops to transform research results into locally adapted technical guidelines and policy recommendations, addressing the complex challenges of sustainability for different stakeholders, especially smallholder farmers. This includes a series of participatory workshops with groups of farmers on farming practices and systems design in the three districts of intervention.

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About the VSCOPE project:

The ACIAR-funded V-SCOPE project has a vision of improving livelihoods among smallholders and rural communities, while managing natural resources and producing agri-food products more sustainably and fostering more inclusive agri-food market chains by working with the private sector and farmers. Its implementation is led by ICRAF (also known as World Agroforestry), in collaboration with relevant stakeholders and CIRAD, who also provides in-kind contribution through staff seconded to the project.

Building research capacity to minimise catfish food loss in the Mekong region

By Van Kien Nguyen and Kim Alexander.
ACIAR Project: CS/2020/209

The CS/2020/209 project, co-funded by ACIAR and IRDC, aims to identify current and future food loss and waste along catfish supply chains in the Mekong River Basin in Vietnam, Cambodia and Laos and develop interventions to reduce these losses.

Building capacity for in-country research teams

One of the primary goals of the project is to strengthen research capacity for in-country research teams. Researchers had the opportunity to engage in value chain research training, increase their knowledge of social research and data collection skills, and interact with businesses and stakeholders.

Teams were also trained in foresighting techniques, which involve risk analysis by visualising possible future developments in catfish supply chains.

Value Chain Research

Following the training, value chain research tools were developed and tested in preparation for data collection scheduled for July and August 2024. The primary research objective is to assess key value chains in the catfish industries of Vietnam, Cambodia, and Laos. Given the important roles that both men and women play in catfish processes, literature reviews on gender were conducted to inform the research.

In May 2024, the Adelaide University's Centre for Global Food and Resources held in-person workshop with country teams to identify high-value catfish chains, assess progress, and agree on the value chain approach, focusing on Vietnam's Mekong Delta. Each country finalised key catfish value chains for inclusion in research activities.

Initial stakeholder meetings and interviews were conducted with key informants along the supply chain. Physical and monetary losses were documented from catfish broodstock to fingerlings, through the grow-out stage, transportation, processing, and consumption. These losses were quantified in monetary terms, and other areas of loss were also documented, indicating significant losses throughout the catfish industries.

As this is preliminary research, a more robust, larger-scale survey will be conducted in July and August to refine the value chain analysis and gain deeper insights into food losses and waste, as well as losses in other supply chains.

However, the preliminary research has revealed significant losses in the supply chain, particularly during the fingerling, grow-out, harvest, transport, and processing stages. Consolidated interviews from fingerling farmers, grow-out farmers, transporters, and factories in An Giang Province in January 2024 provided the following information:

- Fingerling stage (90 days): The survival rate has decreased from 10-12% in the past to 2-3% currently, with the highest survival rate at 5%.
- Grow-out stage (8-10 months): Physical loss of fish is up to 30%-50%. Delayed fish harvest results in value losses due to increased feed costs and lower prices for oversized fish. Non-food losses occur when affluent from sediments and farm waters, which can be used to make organic fertilisers and artemia for fingerlings, are not adequately utilised.

Vietnam research team visiting Sao Mai Catfish Processing Factory in Dong Thap Province in February 2024. Photo: Trinh Thi Lan, AGU.

- Harvest on farm: 1-2% loss of fish, with a reduced sale price by 86% for dead fish.
- Transport: 4-5% loss from ponds to the boat, and 1-2% loss on the boat, with a reduced sale price by 86% for dead fish.
- Processing: Loss percentages vary depending on the uniformity and quality of the fish, the technical performance of fillet workers, and overall inventory. Waste occurs when by-products, such as fish blood, are not processed. High-value collagen products, previously wasted, are now being made from fish skins.

Lesson: multidisciplinary and intradisciplinary research in food loss

The project faced challenges in implementing new concepts like foresighting (risk analysis), value-chain mapping, and gender research in the catfish supply chain. However, comprehensive training from experts in these disciplines has significantly expanded the research capacity of the teams in the three Mekong countries. The interdisciplinary nature and inclusivity of the project have been key to this expansion.

By combining their skills, the research team has capitalised on their technical knowledge about aquaculture and farming, factory processes, and physical loss assessment. Economic and social researchers have brought expertise in economic loss analysis, stakeholder engagement, and collaboration with external partners (government and businesses) to understand food and non-food losses. The project aims to use this knowledge to develop robust interventions that minimize loss and waste in the catfish industries in the Mekong Basin.

Acknowledgements

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Integrating smallholder households and farm production systems into commercial beef supply chains in Vietnam

By Stephen Ives and Le Thi Thanh Huyen. ACIAR project: AGB/2020/189.

A new ACIAR-funded project, led by the University of Tasmania and Vietnam's National Institute of Animal Science, aims to explore how Vietnam's smallholder livestock farmers can benefit from the country's rapidly growing commercial beef sector.

With a population of 100 million people and a 35% increase in domestic demand for beef products over the last 5 years, Vietnam presents a significant opportunity for livestock farming communities to improve their livelihoods.

However, the commercial beef market is currently dominated by large agribusinesses, limiting opportunities for smallholders. This new initiative seeks to provide insights and strategies to help smallholders benefit from Vietnam's expanding beef sector, thereby enhancing livelihoods and nutritional outcomes at the household level.

Project inception meeting on 31 October 2023 at the National Institute of Animal Science (NIAS), Ha Noi.

The project held its inception meeting in October 2023 at the National Institute of Animal Science (NIAS), Ha Noi. The project team comprises researchers from NIAS, Vietnam National University (VNUA), the Centre for Regional Development (CRD), Focus Group Go, University of Tasmania and private consultants. Representatives from ACIAR, Vietnam's Ministry of Agriculture and Rural Development, provincial Departments of Agriculture and Rural Development (DARDs), farmers, and the private sector also attended the meeting.

The research team has adopted a distributed leadership model, recognising the unique skills and contributions of each member. For example, a recent training workshop was redefined as knowledge exchange to recognise equity among partners.

While the project focuses on beef cattle, its main objective is to investigate and pilot strategies and approaches that engage smallholder farmers, commercial operators and other stakeholders in collaborative and effective value chains for mutual benefit. Currently, the project is in its first phase, aiming to exploring industry trends, needs, demands, and opportunities for engagement and collaboration.

The project has initially selected two regions for its activities: Quang Binh and Hung Yen provinces. These regions were chosen after visits and discussion with local DARDs, feedlots, cattle fattening smallholders and slaughterhouse in Quang Binh, Hung Yen, Hanoi, and Ninh Binh provinces. Each selected province has its own unique attributes that will allow the research team to assess the impact of regional factors, urbanisation, market proximity, market linkages and the willingness to adopt innovative practices.

The localities and stakeholders involved in the fodder supply chains have been identified to improve the linkage of smallholder farms to the commercial beef supply chains. Initially, Thanh Hoa and Nghe An provinces, known for their forage supply to feedlots, are suggested to be added as study sites.

Economic forecasting will also be undertaken as part of the project to provide potential outcomes for chain participants based on different input scenarios.

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Improved chicken genetics promises better lives for Vietnamese poultry farmers

Ngo Thi Kim Cuc, Fasil Getachew, Ninh Thi Huyen, Nguyen Cong Dinh, Tran Trung Thong, Pham Van Son, Vu Chi Thien, Ngo Thi Le Quyen, Nguyen Thi Minh Phuong, Hoang Hai Hoa, Wondmeneh Esatu, Mulugeta Yitayih, Fred Unger, Tadelle Dessie.
ACIAR Project: LS/2019/142

Smallholder chicken farming, dominated by indigenous breeds, is essential to Vietnamese agriculture. It provides nutrition, income, jobs, and empowers women. Poultry meat is the second most consumed meat in the country, only after pork. Despite the high demand for poultry meat and eggs, Vietnamese farmers haven't been able to reap benefits because current productivity is low due to unimproved genetics, lack of inputs and services, capacity gaps, and poor market linkage.

ACIAR investment in poultry research for development

In 2021 ACIAR funded the Asian Chicken Genetic Gains (AsCGG) project, implemented by the International Livestock Research Institute (ILRI) and the National Institute of Animal Science (NIAS). AsCGG is a platform for exploring, testing, and delivering improved chickens for enhanced livelihood outcomes. Fifty brooded and vaccinated chicks of one of the four improved breeds (two dual-purpose and two layer type breeds) were issued to individual farming households.

AsCGG brooded and vaccinated chicks at eight-weeks of age to reduce loss of birds due to diseases and increase economic gains. Alongside the improved chicken breeds, the performance of local ecotypes of chickens is being evaluated at each household, generating information useful to make sustainable utilisation and conservation decisions on indigenous genetic resources.

AsCGG on-farm chicken value chains development activities are being implemented in Hoa Binh, Ha Nam, and Quang Binh provinces representing respective subregions (Northwest, Red River Delta and North Central Coast) in Vietnam.

Farmers received training on biosecurity, vaccination, housing, and feeding to improve flock health and productivity. Households were

AsCGG team issuing brooded chicks at eight weeks of age to farmers in Ha Nam. Photo: Tran Trung Thong, NIAS.

On-farm testing in one household in Hoa Binh, where an introduced dual-purposed type chicken breed was evaluated against a local ecotype. Photo: NIAS

organised into groups and innovation platforms to tackle challenges and access markets, involving the private sector. Researchers and private actors also received training.

Positive nutritional and financial outcomes

The improved breeds have shown significant productivity increases. While the local hens only lay 44 eggs at around 30 weeks, the new breeds lay an average of 75 eggs and are 20% heavier. This translates to substantial economic gains when the improved technologies, including genetics, feeds and management practices, are adopted widely.

Participating farmers are excited about the project. They appreciate the improved breeds' adaptability, high survival rates, and productivity. Preliminary results show superior meat quality and appearance. Farmers have started recognising the advantages of improved breeds over traditional ones and are eager to continue after the project ends.

The project has contributed to improving household nutrition, gender equity, and women's empowerment. Women now confidently manage the introduced chickens.

'The improved chicken breed weighs more and has more meat. Its meat is also chewy and delicious. My children like eating chicken with lots of meat,' said a women farmer participating in the project.

Data are being regularly collected and made available for public use on ILRI's data portal. Technical reports comprising approaches followed and quantitative evidence on nutritional and economic gains at household level will be released by AsCGG by the end of 2024 when the data collection activity is completed.

Future Prospects

The AsCGG project's integrated approach shows that innovations in genetics, health services, feed, training, and market development can significantly improve smallholder farmers' livelihoods in Southeast Asia. In future, strengthened public-private partnerships will help ensure sustainable chicken breed multiplication and delivery in the region.

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Rural finance options in Vietnam

By Alan de Brauw
ACIAR Project: AGB/2016/163

In remote areas of Vietnam, many smallholder farmers struggle to join agricultural value chains. They often don't have access to formal banking services or credit sources. Meanwhile, the demand for agricultural products is rapidly growing, both domestically and for export. Vietnam is in a good position to increase its exports of high value commodities like animal products, fruits, vegetables and spices, particularly if its new 'Green growth' policies can demonstrate that these products are grown sustainably.

One promising solution to increasing farmers' access to finance is using agricultural value chain finance.

Agricultural value chain finance offers financial products or services that help everyone involved in the value chain, from input suppliers to farmers to traders and processors. This model can make money more accessible by leveraging relationships within the value chain. It can also reduce the risks for farmers, buyers, and financial institutions providing loans. An agricultural value chain finance model works well for farmers who are ineligible for subsidised loans but have established relationships with companies needing their products.

In the ACIAR-supported 'Inclusive Agricultural Value Chain Finance' project, we had two main goals. First, we studied finance and financial regulations in the agricultural sector of Indonesia, Myanmar, and Vietnam. We made reports explaining how agricultural value chain finance could be affected by each country's policy and identified opportunities for agricultural value chain finance to help alleviate credit constraints on farmers. The report suggested two policy changes to encourage value chain finance. First, if banks had more flexibility in setting interest rates and loan terms, they could better tailor loans for agriculture. Second, allowing alternative forms of collateral, like strong ties between farmers and processors, could promote more lending. Additionally, working with farmer groups to teach simple business practices could enhance their participation in value chains.

The second project goal was to observe whether additional finance or different loan terms offered to farmers in a specific value chain would improve outcomes such as revenues, profits, and household income. We initially studied different value chains to find the best fit for our project. We chose the coffee value chain in Son La Province, focusing on minority farmers and including efforts to involve women in decision-making.

We collaborated with Lien Viet Post Bank for loans and Phuc Sinh coffee company for purchasing the coffee. We designed loan products with Lien Viet Post Bank that fit within policy limits and addressed

the costs within the coffee value chain. These loans allowed farmers to delay principal repayments until they started producing coffee beans. We also set up a system for Phuc Sinh to pay farmers directly into their bank accounts, ensuring repayment. The research included a randomised control trial to measure the impact of these loans compared to a control group that was not offered the loans.

Unfortunately, demand for the loans was low—less than 10% of farmers offered the loan took it. This led us to conduct focus group discussions to understand why the uptake was low. Several reasons emerged: some farmers had saved enough money from good coffee prices in recent years, making loans unnecessary. Others found Agribank loans more flexible, especially regarding repayment terms. Trust issues also played a role, as farmers were not familiar with Lien Viet Post Bank agents and found some loan requirements, such as automatic deductions from current accounts, unfamiliar. Lastly, Phuc Sinh was not as well-known as expected, and farmers preferred selling to a village buyer who then often, but does not always, sell to Phuc Sinh.

Even though the pilot did not yield as many successful loans as we expected, the project offers valuable lessons for policy, especially in promoting green growth. Investments at the farmer or farmer group level are needed to reduce emissions from rice production, and agricultural value chain finance can support these investments, especially through engaging with companies buying rice from those farmers. These companies can develop 'low-carbon' rice products for environmentally conscious consumers. Making credit more accessible to farmers through agricultural value chain finance can play a crucial role in upgrading and increasing the sustainability of agri-food value chains in Vietnam.

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Innovative partnership enhances forest biosecurity in South-East Asia

By Russell Warman, Nguyen Duc Kien, Morag Glen, Caroline Mohammed, Jeremey Brawner and Le Son.
ACIAR project: FST/2018/179

Vietnam has some of the largest timber plantations in South-East Asia, including around 2.6 million hectares of acacia and eucalypt trees. These plantations make significant contributions to Vietnam's timber and wood products sector. Therefore, it is essential to keep them healthy and protected from pests and diseases. The ACIAR-funded project 'Managing risk in South-East Asia's forest biosecurity' is working towards this goal.

Building on previous collaborations between the University of Tasmania and the Vietnamese Academy of Forest Science, this project aims to expand and strengthen capacity by exchanging knowledge and techniques to enhance awareness of the importance of forest pests and diseases. Our

Indonesian scientists were introduced the ploidy degree analysis using flow cytometry. Photo: Dr Mai Thi Phuong Thuy, IFTIB.

research focuses on breeding trees that are resistant to pests, disease and climate change.

A recent highlight was a 5-day workshop in Hanoi (23-29 October 2023) on tissue culture induction and inter-specific hybridisation. This workshop was organised by the Institute of Forest Tree Improvement and Biotechnology (IFTIB) at the Vietnamese Academy of Forest Sciences (VAFS) and involved Vietnamese scientist working with four Indonesian scientists and one scientist from the University of Florida.

Our goal is to develop better breeding programs for new, highly tolerant, and fast-growing Acacia and Eucalyptus trees. We are creating efficient methods to screen for disease resistance genotypes. In Vietnam, we are developing specific protocols for detecting Ceratocystis in Acacia and Cryptosporiopsis in eucalyptus. A virtual screening centre website will be created to support these protocols and link them with those developed by the Indonesian team, which includes partners from BRIN and several major Indonesian timber companies.

In addition to this scientific work, our project also collaborates with a related ACIAR-funded project, 'Building an Effective Forest Biosecurity Network in Southeast Asia' (FST/2020/123). These collaborations include building surveillance and diagnostic capacities, climate modelling of pest distribution changes, using drones for remote sensing, and developing a regional forest health network.

A recent example of the benefits of these collaborations was when plant breeding, pathology and silvicultural scientists from IFTIB visited the University of Tasmania for a workshop on remote sensing for forest health. They returned to Vietnam with new skills and set up drone-based monitoring of field trial sites near Hanoi. This illustrates the value of international partnerships and cross-disciplinary networking in improving forest health and biosecurity systems.

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VAFS scientist working with artificial inoculation on Acacia hybrid clones (left) and the variation in the Ceratocystis resistance between hybrid clones (right). Photo: Tran Thanh Trang, IFTIB.

Building an effective forest health and biosecurity network

By Dao Ngoc Quang, Simon Lawson, and Madaline Healey.
ACIAR Project: FST/2020/123

Forests provide goods, services, employment and income to nearly 2.5 billion people worldwide, playing a major role in securing the social and environmental well-being of people and the planet. However, both natural and planted forests are at risk of degradation and deforestation due to invasive weeds, diseases and insects. Each year, insect pest outbreaks alone damage around 35 million hectares of forest, globally, making them one of the most significant hazards to forest health.

In response to these threats, the Forest Protection Research Centre (FPRC) and the University of the Sunshine Coast (UniSC) researchers have been collaborating for 15 years to develop sustainable management solutions against invasive forest pests. Recently, their research collaboration has taken a preventative focus through an ACIAR-funded forest biosecurity project aimed at predicting and protecting forests from invasive threats.

Project partners at the Forest Science Centre of North-Eastern Vietnam (FSCNEV) botanical gardens.

Assoc. Prof. Quang checking a high-risk site trap, Hanoi.

Target beetles collected from traps, Hanoi.

The project, titled 'Developing an effective forest health and biosecurity network in South-East Asia,' focuses on increasing forest biosecurity capacity using a High-Risk Site Surveillance (HRSS) trapping program as a core learning activity. The HRSS network aims to establish a system to help countries intercept and identify potential invasive pests that may enter at high-risk sites such as airports and seaports, where goods and people are arriving and moving through.

By implementing the trapping system, technical, quarantine and biosecurity officers learn biosecurity techniques. The pest data collected is compiled into pest lists, which are used to prioritise pests as significant threats to be aware of. Additionally, the information is used to develop response and management plans in the case of an incursion. This information can be shared amongst the project network to alert neighbouring countries of pests to be alert for.

FPRC has played a dual role in this project, developing extensive pest lists based on the data collected from the surveillance system and acting as mentors to other project partners, supporting them building technical skills such as diagnostics and forest health surveillance.

As the project approaches its midpoint, the first and second round of HRSS trapping are complete. During the two trapping rounds in 2023 and 2024, the FPRC team have collected approximately 2,000 insect samples belonging to 40 species of bark beetles, ambrosia beetles and cerambycid beetles. This effort has resulted in 192 trap catches and 960 data points to inform current or new pests, potentially leading to a 30:1 return on investment in biosecurity activities based on figures from Australia. The team is expanding their surveillance capacity in planted forests in the north, ultimately doubling their protective efforts.

'We at FPRC look forward to contributing to the protection of Vietnamese forests and, more importantly, to a regional approach across South East Asia through the project network', said FPRC Director, Assoc. Prof. Dr Dao Ngoc Quang.

'FPRC is very fortunate to have a strong core forestry team that can lend support to our partners who are developing their diagnostics skills in forestry. We plan to host partners from Laos and Cambodia to further support their diagnostic capacity and forest health surveillance in planted forests in the north of the country. Forests are vital for livelihoods, economies and social well-being and FPRC plays a significant role in protecting forests,' Dr Quang added.

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ACIAR Capacity Development updates

We are excited to share recent developments and milestones from our Capacity Development program. This update aims to inform and engage our valued stakeholders about our ongoing efforts and future plans.

John Allwright Fellowship (JAF) 2025

The John Allwright Fellowship (JAF) program continues to be a cornerstone of our Capacity Development initiatives.

ACIAR received a high volume of applications for the 2025 intake of the JAF program. We are happy to announce that we have received many applications from Vietnam and ASEAN countries, a slight increase from last year's interested applicants.

The ACIAR Capacity Development team is currently reviewing applications and conducting the eligibility checks needed to progress them to the next stage of the selection process.

We anticipate announcing the outcomes in October 2024.

Successful applicants will continue to receive additional support and leadership development

opportunities throughout the JAF Support Facility (JSF) and JAF Executive Leadership (JAFel). For more information, visit the ACIAR website.

ACIAR Learn

ACIAR Learn is an online learning program that ACIAR provides to strengthen the capacity of agricultural researchers in developing countries.

The program was piloted in November 2021 before being rolled out in April 2022. Since its launch, it has supported 320 learners, achieving a 99% satisfaction rate and 70% completion rate across all its courses.

ACIAR Learn is open to any ACIAR alumni and members of ACIAR project teams. Check out our current course guide through the QR code for upcoming courses between now and the end of the year.

For more information on the ACIAR Learn, please go to ACIAR website with the QR code.

Meryl Williams Fellowship (MWF) 2025

The MWF program targets women leaders in agricultural science. This fellowship is designed to increase participants' leadership skills, confidence, knowledge, and capabilities and progress their leadership aspirations. Given the successes of the original program, in 2024, ACIAR will expand the program to six more cohorts. In alignment with discussions at the ASEAN Summit 2023, the first MWF cohort 2025 will focus on sourcing participants from ASEAN countries.

The Capacity Development team will provide an update via the ACIAR Vietnam Country Office in the coming months on how you can get involved.

Other general updates

We are seeking alumni feedback on developing a new Alumni engagement strategy! In 2025, ACIAR will launch our new Alumni engagement strategy on how we can continue to foster professional and collaborative research links across our growing alumni. We'd love to hear your suggestions based on your experiences. Send your ideas to *capacity.building@aciar.gov.au*.

Graduation of the Vietnamese John Dillon Cohort at ACIAR House, September 2023.

Dr Loan is checking an experiment to measure greenhouse gas emissions in the rice-shrimp model in Soc Trang Province.

Interview with a researcher

Dr Bui Thi Phuong Loan is the Head of the Modeling and Database Department of the Institute for Agricultural Environment. She has more than 25 years of experience researching climate change, greenhouse gas emissions and measures to reduce and adapt to climate change impacts in agriculture.

She is currently participating in the ACIAR-funded project 'Supporting greenhouse gas inventories and targeted rice mitigation options for Vietnam'. She is also an alumna of ACIAR John Dillon Fellowship (cohort 2021).

Hello Dr Loan! When did you start working with ACIAR? And what are the most important things you have learned while participating in ACIAR-funded projects?

I first participated in an ACIAR-funded project on treating heavy metal pollution in soil in 2010. I had a chance to attend the conference "ASPAC - Future Environment" in Canberra. But 2021 marks a new milestone on my journey with ACIAR, co-coordinating the project 'Supporting greenhouse gas inventories and targeted rice mitigation options for Vietnam', implemented by the Institute for Agricultural Environment (IAE) in collaboration with the Queensland University of Technology (QUT).

The most important thing I have learned from participating in the latter project is to research national emission factors for rice farming systems and sustainable agricultural greenhouse gas inventory systems, which are the basis for policy and actions to reduce greenhouse gas emissions in the rice sector.

Besides, the project has strengthened the capacity of Vietnamese scientists and experts to apply advanced technology and methods to monitor and evaluate emissions.

These achievements not only contribute to environmental protection but also support Vietnam in implementing our international commitments on climate change.

How about your experience with the ACIAR John Dillon Fellowship (JDF)?

Participating in the JDF program is a valuable experience for me. Our fellow group was quite special, being the first cohort dedicated to Vietnamese agricultural researchers and managers and taking place during the COVID period. Nineteen fellows came from many different backgrounds. We have gone through many challenges, from online to offline learning, but we always had the companionship of trainers from the University of New England and ACIAR.

The program provides opportunities to study with reputable trainees and work with scientists and experts in agriculture. Another special feature is that we can propose and implement practical agricultural research projects. Through that, I have learned and accumulated new knowledge, updated advanced methods and applied them to my work. The JDF program also helped me develop my leadership and project management skills, contributing more actively to environmental projects in Vietnam. This is an important turning point, allowing me to expand my horizons and make meaningful contributions to the community and society.

If you could choose only one word to describe your feeling working with ACIAR, what would that word be?

It is 'transformation'. Working with IAE, QUT colleagues and ACIAR has profoundly changed the way I approach and understand issues related to the environment and agriculture. Especially after participating in the JDF program, I have learned how to design and implement projects effectively and had skills to inspire and motivate my team.

Dr Loan and John Dillon Fellows-Vietnam cohort 2021 at their graduation ceremony in Canberra, September 2023

These learnings not only help me develop professionally but also better integrate into international cooperation, especially in implementing sustainable and effective solutions. This has 'transformed' not only my career but my view and ability to solve the huge challenges caused by climate change for the agricultural sector.

What are your plans for personal and professional development?

I will continue to expand and deepen research on climate change and greenhouse gas emissions in the agricultural sector. I want to focus on applying new and advanced technology to improve the efficiency of greenhouse gas inventory models, contributing to minimising environmental impacts. Besides, I also plan to cooperate with organisations to exchange experiences and expand cooperation networks.

I plan to have more project management and strategic leadership training to enhance my management and leadership skills. I also want to improve my international communication and negotiation skills to participate more effectively in international projects and conferences. Through that, I hope to become an influential expert in environmental research, contributing to agriculture development.

What are your hobbies when you have free time?

I have little free time due to busy work travels. I will spend time with my family, going to the market together and then gardening. I'm not as good at cooking as my two sons, so I always get to 'appraise' the dishes they prepare. Taking care of the small organic vegetable garden on the balcony is greatly relaxing. In addition, as a coffee lover, I not only enjoy it but also research how to recycle agricultural by-products to produce biochar. The research project on biochar, using by-products from rice and coffee plants, carried out by our JDF team, has been highly appreciated for its potential to promote environmental protection and circular agriculture development. This is useful for climate change adaptation and helps reduce emissions, fulfilling our commitment to a more sustainable future.

Interview with a farmer

Ms Dinh Thi Thuyen from Son Hoa commune, Tuyen Hoa district, Quang Binh Province has participated in the project 'Asian Chicken Genetic Gains' (LS/2019/142) since 2022. She is participating in a chicken-raising trial, comparing the local Lac Son chicken breed with the imported Sasso breed provided by the project.

Hello, Ms Thuyen! What do you like most about participating in the project?

First, we have been trained in chicken-raising techniques. We understand the stages from preparing the coop to choosing chicken breeds, raising chickens at growing and reproductive stages, and preventing and treating common diseases in chickens.

I have raised chickens for many years, but before, I only did it traditionally and relied on my own experience. I have gained a lot of new and highly practical knowledge from participating in the training. For example, in the past, when raising chickens in small quantities, we often did not prepare the barn carefully so that the chickens could avoid the rain. Plus, we did not have knowledge about vaccination, so the chickens were often affected by diseases and had high loss rates.

In addition, we also participated in a trial comparing the Lac Son chicken breed and the Sasso chicken breed, so we immediately applied the training

Ms Thuyen discussing with NIAS reseachers.

knowledge to the test chicken flock. We were confident that we could take care of the new chicken breed.

Our experimental chicken flock is nearly 50 weeks old now. Through practical observation and evaluation, I found that the Sasso chicken breed has a better productivity and growth rate than the Lac Son breed. It is also adaptable, and local consumers favour its appearance and feather colour. Especially in the reproductive stage, the Lac Son chicken breed has a lower egg yield, while the imported chicken breed has a higher, more stable egg yield and larger eggs. We tried and sold eggs from the imported chicken breed to the market, and people liked them a lot. We are very satisfied with the characteristics and productivity of this imported chicken breed.

What is the most important thing you have learned and used since joining the project?

Thanks to participating in the project, I have gradually changed my thinking. Previously, I only raised native chickens with low productivity because this breed is popular with consumers. I raised it primarily to serve my family without paying attention to its economic efficiency. However, since participating in this project, especially through the experiment of comparing the native and imported chicken breeds, I have realised that raising chickens can bring income to the family. We know how to choose breeds to increase and apply good breeding techniques.

For a woman like me who has only been focusing on taking care of the family, having income from livestock means a lot. I can care for my family's finances and children's education. Especially in addition to being equipped with animal husbandry knowledge, I also improved my social knowledge through group meetings and activities with the local Women's Union and the Fatherland Front; from here onwards, my credibility has increased. I was nominated to join the village's Fatherland Front Working Committee to disseminate my knowledge and practical experience to everyone.

How do you plan to develop your chicken farming business?

We will continue to raise chickens to complete the project's testing requirements. With the knowledge I have gained from the project's training class and the experience of raising experimental chickens, I am confident that I can continue raising chickens to provide food for my family and improve my income.

Do you have any suggestions for improvements regarding the project support?

I am very satisfied with the imported Sasso chicken breed. But as far as I know from the project staff, the chickens we are raising are commercial, and we cannot hatch them ourselves to get breeding chickens. After finishing the experiment, we want to continue growing this breed, but we need to know where to buy it. Therefore, I hope that the project will continue to sponsor the development of this imported chicken breed so that we can have a good supply of breeds to sustain our chicken farming in the future.

Thank you!

Ingredients

100 g	chicken breast
100 g	tomatoes
3	small kohlrabi
50 g	beech mushrooms
10 g	sprouts
50 ml	olive oil
10 ml	grape vinegar
	pepper, salt

Method

- Cut tomatoes in half. Peel off the outermost layer of the kohlrabi and cut in half. Clean and prepare the beech mushrooms and drain. Place all prepared ingredients on a plate. Mix well with olive oil, pepper and salt.
- Marinate chicken breast with olive oil, pepper and salt.
- Turn on the grill at the highest temperature. Grill the two sides of the chicken quickly on the hot grill then place it on a plate to rest for 5 to 7 minutes. Grill the chicken again for about 10 minutes at medium heat until cooked. Note: Do not over-cook otherwise the chicken will go dry. Let the chicken rest for 5 minutes and then cut into bite-sized pieces.
- Grill vegetables until they are cooked. In a mixing bowl, gently toss grilled vegetables with olive oil, grape vinegar and the chicken. Serve with sprouts.

Grilled Chicken and Vegetable Salad

Recipe by Chef Nguyen Manh Hung
Photo: Vu Bao Khanh

The Australian Centre for International Agricultural Research (ACIAR) is part of Australia's international development cooperation program. Its mission is to achieve more productive and sustainable agricultural systems for the benefit of developing countries and Australia. ACIAR commissions collaborative research between Australian and developing-country researchers in areas where Australia has special research competence. ACIAR also administers Australia's contribution to the international agricultural research centres.

ACIAR Vietnam is one of the 11 country/regional offices and we have been active in Vietnam since 1993.

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