



Australian Government

Australian Centre for
International Agricultural Research

ACIAR VIETNAM PROGRAM UPDATES FOR PARTNERS IN VIETNAM

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Low-cost digital tools help farmers target high-value markets

The ACIAR-funded project 'Piloting digital monitoring of VietGAP compliance and quality in vegetable value chains' (AGB/2021/153) developed and tested low-cost digital tools to help vegetable farmers in Son La province supply modern retail supermarkets and specialty retailers in Hanoi with VietGAP compliant, high-quality vegetables.

The project has demonstrated the technical feasibility and value of digital monitoring of VietGAP compliance and quality in Vietnam vegetable value chains.

Three cooperatives in Son La province, Tu Nhien (Natural Safe Vegetable Cooperative), Greenfarm Moc Chau, and Greenfarm Van Ho, have piloted the system with AEON and Mega Market supermarkets in Hanoi, and now have the skills and tools to use digital traceability and supply chain monitoring to their advantage. They are now empowered to target higher-value customers through improved vegetable quality and packaging.

These cooperatives used a smartphone app adapted by the project to collect vegetable crop production and handling information, including farmer, crop, cultivar, pesticide applications, planting and harvest dates, required for VietGAP compliance. They also used low-cost Escavox GPS-enabled temperature and humidity loggers to track

consignments and monitor conditions. The Hitachi virtual control tower, developed in Australia, was adapted to integrate and store these records and print QR codes to access data and track consignments through the supply chain.

The QR codes link to a concise summary of important details such as transport conditions (temperature, humidity, location, time), packhouse specifics, and crop-specific VietGAP records required for VietGAP compliance. The QR codes also allow consumers to see basic information about that particular item using a standard smartphone with no special software needed.

Consumers value the assurance that the vegetables they eat are safe. VietGAP, along with labelling and quality, gives them that assurance, and they are willing to pay for it.



Australian Senate committee met with project farmers from Moc Chau at an AEON supermarket in Long Bien, Hanoi, Vietnam April 2023. Photo: ACIAR.

Vietnam program 2022-2023



23 projects – Including 7 small research activities



A\$5 million invested in 2022-2023



20 Vietnamese partner organisations working with Australian researchers

ACIAR research with Vietnam contributes to:

- Long-term partnerships in research and technology development
- Improved agricultural research capacity for sustainable and equitable growth
- Improved skills, livelihoods and incomes of smallholder farmers
- Enhanced human health and nutrition
- More efficient use of natural resource in agricultural production
- Influencing policy for managing climate change

ACIAR Vietnam Active & Newly Completed Projects

AGRIBUSINESS

No	Project titles	Period	Budget by ACIAR (AUD)	Country	Commissioned Org	Vietnamese partners	Progress to date
1	Cassava diseases in mainland Southeast Asia (AGB/2018/172)	2019 – 2023	4,250,000	Vietnam, Lao, Cambodia	CIAT	AGI Hung Loc Research Centre (IAS)	<ul style="list-style-type: none"> 6 imported clones have been released as varieties for cultivation in the Southeast Region. Rapid multiplication technologies have been adopted by several government, educational, and industry partners in Hanoi, DongNai, TayNinh, DakLak. About 200 ha of CMD resistant varieties (mostly HN1) have now been planted in Tay Ninh. Modern technologies and approaches from the project have been successfully adopted by cassava breeding programs in Vietnam. 3,000 Vietnamese CMD resistant clones are under the selection process, with first release expected by the end of 2024.
2	Mekong catfish food loss (CS/2020/209)	2023 – 2026	1,441,701	Vietnam, Lao, Cambodia	HAPRI (UEH)	AGU (VNUHCMC)	<ul style="list-style-type: none"> The inception workshop of the project was organised successfully on 14th July 2023, with the participation of 102 people from government, private businesses, catfish associations, researchers from Vietnam, Lao PDR, Cambodia, Australia, ACIAR and the Australian Consulate in Ho Chi Minh City, Vietnam. The project was invited by Vietnam Association of Seafood Exporters and Producers (VASEP) and Vietfish to share the food loss in the pangasius catfish value chain in the Mekong River Basin.
3	Whole agriculture value chain financing (AGB/2016/163)	2018 – 2024	1,990,250	Vietnam, Indonesia, Myanmar	IFPRI	IPSARD	<ul style="list-style-type: none"> Conducted survey among 973 arabica coffee producers in Son La. Marketed loans to randomized group of farmers in collaboration with Lien Viet Post Bank. IPSARD and IFPRI have discussed joint relevance of potential results for Green Growth strategy.

AGRIBUSINESS

AGRIBUSINESS	4	Coffee and black pepper value chains in the Central Highlands (AGB/2018/175)	2021 – 2025	3,460,000	Vietnam	World Agroforestry	WASI, IPSARD	<ul style="list-style-type: none"> • New innovative to experiment upgrading high-quality Robusta designed with 2 key domestic coffee trading companies, Simexco and Vinh Hiep. This innovation was co-invested by ACIAR and the coffee companies and their cooperatives partners. • Experimental trial results confirm that intercropping/ agroforestry can result in substantial reductions (up to 30%) of irrigation for coffee compared to monocropping. • Following extensive greenhouse testing, 5 commercial bio-inoculants indentified effective for controlling Phytophthora with black pepper and 5 commercial bio-inoculants effective for controlling Meloidogyne for coffee.
	5	A sustainable Mekong smallholder rice chain (AGB/2019/153)	2022 – 2025	2,600,000	Vietnam	University of Queensland	AGU (VNUHCMC) CTU CLRRI SunRice Vietnam	<ul style="list-style-type: none"> • 146 farmers received various trainings about Maximum Residue Levels (MRL) compliance, rice production planning, and household economic management in the form of indoor classes and farmers’ field schools. • With the project’s assistance, 45 farmers under five cooperatives/farmer groups started to deliver wet paddy directly to the mill. • Provide evidence on impacts of seasonal variations on rice quality during transportation to help farmers and rice mills optimise the transportation process.
	6	Piloting digital monitoring of VietGAP compliance and quality in vegetable value chains (AGB/2021/153)	2022-2023	268,563	Vietnam	Applied Horticulture Research	NOMAFSI	<ul style="list-style-type: none"> • The integration of software tools in a cost-effective way allows Vietnamese farmers to achieve VietGAP compliant digital traceability for vegetables, which includes GPS enables temperature loggers to monitor cool chain performance. • There is now a higher level of traceability and transparency in the VietGAP value chains from Son La to Hanoi, which can be replicated in other supply chains. • Farmers in Moc Chau are now supplying higher value products, receiving a 40% price premium in the offseason compared to wholesale markets in Son La or Hanoi due to higher farm gate prices paid by modern retail.
	7	Integrating smallholders into commercial beef supply chains (AGB/2020/189)	2023-2027	2,780,000	Vietnam	University of Tasmania	NIAS VNUA, Hue University	
CLIMATE CHANGE	8	Greenhouse gas inventory and rice mitigation (CLIM/2019/150)	2023 – 2025	490,000	Vietnam	Queensland University of Technology	IAE	

FISHERIES

9	Increasing technical skills for supporting community-based sea cucumber production (FIS/2016/122)	2018 - 2023	2,565,000	Vietnam, Philippines	University of Sunshine Coast	RIA 3	
10	Carbon sequestration in bivalves (FIS/2020/175)	2020 - 2023	198,567	Vietnam	University of Tasmania	RIA 1	
11	Supporting grouper smallholders to improve their businesses (FIS/2021/121)	2021 – 2023	206,470	Vietnam	James Cook University	RIA 1, 2, 3	
12	Half-pearl industry development (FIS/2016/126)	2017 – 2024	1,450,515	Vietnam, Tonga	University of Sunshine Coast	RIA 3	
13	Forest biosecurity (FST/2018/179)	2021-2025	1,752,470	Vietnam, Indonesia	University of Tasmania	IFTIB	
14	Building an effective forest health and biosecurity network in South-East Asia (FST/2020/123)	2020-2025	1,638,171		University of the Sunshine Coast	FPRC	<ul style="list-style-type: none"> • High Risk Site Surveillance trapping set up at Cargo Terminal at Noi Bai International Airport and Hai Phong wood log market. • 18 species of bark and wood boring beetles recorded in the traps based on morphological identification. • Plans to extend the HRSS trapping in other high-risk locations, such as plantations of acacias, eucalypts and pine in the north near the Chinese border.
15	Vietnamese Native Tree Species for Improved Livelihoods (FST/2020/134)	2021-2022	230,000	Vietnam	Southern Cross University	VAFS, MLNR, TBU	<ul style="list-style-type: none"> • Project completed: Established a greenhouse in Muong La Nature Reserve in which >13,000 seedlings of native tree species were grown. • Determined the germination and growth requirements for five high-value local native tree species (including Fokienia hodginsii/Pōmu). • Established two local farmer-led nurseries at Chom Kau and It, engaging and training 30 local participants.

FORESTRY

LIVESTOCK SYSTEMS

16	Asian Chicken Genetic Gains (LS/2019/142)	2020 – 2024	2,000,000	Vietnam	ILRI	NIAS	<ul style="list-style-type: none"> Evidence from baseline surveys in Cambodia and Vietnam demonstrated the smallholder farmers’ higher interest in improved chicken breeds to enhance their production and productivity. Multisectoral stakeholder innovation platform established and operating. Promising chicken breeds (fertile eggs) have been introduced and will be start to delivered in July to selected farmers in three provinces of Vietnam for on-farm testing
17	Goat production systems and marketing (LS/2017/034)	2019 – 2023	1,800,001	Vietnam, Laos	University of New England	HUAF NIAS	<ul style="list-style-type: none"> 4 main surveys of goat meat consumers, restaurant owners, goat traders, and abattoir owners were completed in 10 provinces of Vietnam and 4 provinces of Laos in October 2022. A farmer survey had also been conducted in Laos. Analysis of the collected data has been underway by the project team and experts to understand the factors affecting the demand and pricing of Laos goats in Vietnam. The project’s final workshop will be held in October 2023.
18	Safe Pork: Market-based approach to improve the safety of pork (LS/2016/143)	2017 - 2023	2,000,000	Vietnam	ILRI	HUPH NIAS	<ul style="list-style-type: none"> Project completed: Simple and low-cost interventions developed and proved to reduce the level of pork contamination in traditional markets and slaughterhouses. These interventions are currently scaled and tested across 5 provinces of Vietnam. A pork cooperative from Hoa Binh enabled to deliver safer Ban pork to outlets in Hanoi. Capacity building on food safety included more than 600 value chain actors and other stakeholders. In addition, more than 10 peer reviewed papers have been published in international journals, with 2 PhD and 5 MSc students being graduated.
19	Global animal health governance: High-level consortium (LS/2021/157)	2022-2023	249,999	Vietnam, Bangladesh, Cambodia, India, Laos, Philippines	Kevin Bardosh LLC		

SOIL & LAND MANAGEMENT

20	Improving maize-based farming systems on sloping lands (SMCN/2014/049)	2017 – 2023	2,047,363	Vietnam, Laos	University of Queensland	SFRI NOMAFSI	
21	Farmer options for crops under saline conditions in the Mekong River Delta (SLAM/2018/144)	2020 – 2025	2,313,288	Vietnam	Charles Sturt University	CTU IAS	<ul style="list-style-type: none"> • Glasshouse and field experiments have identified suitable crops (quinoa, maize, betroot, watermelon) as alternatives to rice in the dry season. Farmers have earned additional source of income from selling upland crops e.g. maize and betroot. These crops have a 2- and 20-fold increase in profit compared with rice, respectively. • Field experiments demonstrated the beneficial use of mulches to decrease soil salinity and increase production of upland crops when rice can not be grown. • The use of Chameleon soil water sensors has enabled water use to be halved without loss of yield, and reduce time spent irrigating, representing significant savings in fuel, water and labour costs. • The project has created opportunities to engage in carbon sequestration and soil microbiology projects with Australian funding.
22	Understanding and addressing the sustainability of sloping land agriculture (SLAM/2021/152)	2021-2022	187,000	Vietnam, Laos	The University of Queensland	SFRI	
23	Gender transformative approaches to Agriculture Development in Vietnam (SSS/2018/139)	2018 - 2022	239,988	Vietnam	Murdoch University	Care Vietnam	<ul style="list-style-type: none"> • Project completed, lead finding: the gender transformative approach (GTAs) combined with agricultural and VSLA (Village Savings and Loans Association) components resulted in equitable sharing of household work, decision-making and coffee technical knowledge sharing between men and women within Thai ethnic minority farming households • The project trained 29 junior social scientists, including two Thai ethnic minority research assistants, in gender and participatory research methods to build capacity for in-country gender research. • Leading Recommendation: The implementation of GTAs should begin early in rural development programming to raise awareness of gender inequality and incorporate GTAs throughout the technical intervention to foster critical awareness among men and women to contest unequal distribution of and access to resources in rural contexts.

Upcoming projects

No	Project titles	Period	Budget by ACIAR (AUD)	Country	Commissioned Org	Vietnamese partners
1	Digital monitoring of VietGAP in fruit chains (AGB/2022/114)	2024-2027	2,100,000	Vietnam	Applied Horticulture Research	TBA
2	Agricultural Development Impact of Doi Moi (SSS/2023/138)	2023-2025	500,000	Vietnam	University of Sydney	IPSARD
3	Diversified livelihoods from native tree species in northwest Vietnam (FST/2023/150)	2024-2025	327,000	Vietnam	CSIRO	TBA
4	Scoping Vietnam's citrus industry priorities (HORT/2023/179)	2023-2024	500,000	Vietnam	PPRI	SFRI, FAVRI
5	Sustainable cassava production in the Mekong (CROP/2022/110)	2023-2028	3,500,000	Vietnam, Cambodia, Laos	CIAT	Hung Loc Research Centre (IAS)
6	Bottlenecks in the grouper supply chain Vietnam – Australia (FIS/2022/148)	2023-2027	2,500,000	Vietnam, Australia	James Cook University	RIA 2 RIA 1, RIA 3
7	Peri urban horticulture (HORT/2023/147)	2023 – 2025	400,856	Vietnam, Phillipines	World Vegetable Centre	FAVRI

Abbreviation

1	AGI	Agricultural Genetics Institute
2	AGU	An Giang University, Vietnam National University - HCMC
3	CIAT	International Center for Tropical Agriculture
4	CLRRI	Cuu Long Rice Research Institute
5	CSIRO	Commonwealth Scientific and Industrial Research Organisation
6	CTU	Can Tho University
7	FAVRI	Fruit and Vegetable Research Institute
8	FPRC	Forest Protection Research Centre
9	HAPRI	Health and Agriculture Policy Research Institute
10	HUAF	University of Agriculture and Forestry, Hue University
11	HUPH	Hanoi University of Public Health
12	IAE	Institute for Agricultural Environment
13	IAS	Institute of Agricultural Science for Southern Vietnam
14	IFPRI	International Food Policy Research Institute
15	IFTIB	Institute of Forest Tree Improvement and Biotechnology
16	ILRI	International Livestock Research Institute
17	IPSARD	Institute of Policy and Strategy for Agriculture and Rural Development
18	MLNR	Muong La Nature Reserve
19	NOMAFSI	Northern Mountainous Agriculture and Forestry Science Institute
20	NIAS	National Institute of Animal Science
21	PPRI	Plant Protection Research Institute
22	RIA 1, 2, 3	Research Institute(s) for Aquaculture No 1, 2, 3
23	SFRI	Soil and Fertilisers Research Institute
24	TBU	Tay Bac University
25	UEH	University of Economics, Ho Chi Minh City
26	VAFS	Vietnamese Academy of Forest Sciences
27	VNUA	Vietnam National University of Agriculture
28	VNU-HCM	Vietnam National University, Ho Chi Minh City
29	WASI	Western Highlands Agriculture and Forestry Science Institute

The Australian Centre for International Agricultural Research (ACIAR) is the Australian Government's specialist agricultural research for development agency, within the Australian aid program.

ACIAR delivers the knowledge and technology that underpins more productive and sustainable agricultural systems and more resilient food systems, for the benefit of developing countries and Australia. We do this by investing in bilateral and regional research projects, global research collaborations and building the scientific and policy capabilities of our research partners

Since 1993, ACIAR has collaborated with Vietnam to broker and fund research partnerships consistent with jointly agreed priorities. ACIAR has invested in 243 projects worth A\$157.5 million in Vietnam. The current program covers seven key research areas: agribusiness, climate change, fisheries, forestry, livestock systems, soil and land management, and social systems.

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