



ACIAR

IN VIETNAM



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Front cover photo: A H'mong ethnic women in Dien Bien province, northwest Vietnam, carries newly cut grass for her livestock at home. Photo: Khanh Long.

Back cover photo: A mangrove forest in Vinh Chau district, Soc Trang province. Photo: Minh Dong.

Editorial note

Dear Readers,

Welcome to the June 2022 'ACIAR in Vietnam' newsletter!

We are releasing this edition with a cheerful spirit as we celebrate 40 years of ACIAR and start seeing people travel again as the world develops better control of COVID-19.

Direct human interaction is irreplaceable in any collaborative process. We are excited to be working in person with our partners once again and to share the insights we have gained on collaboration through adversity.

In this edition, you will find stories of collaboration and innovation between Australia and Vietnam. As travel has become safer, Australian leaders have visited Northwest Vietnam to witness firsthand changes brought about by Australian Government-funded efforts, including some notable ACIAR-supported projects under our livestock and forestry research program.

In June, the Australian Commission for International Agricultural Research and the Policy Advisory Council (PAC) delegation will travel to Vietnam to explore the issues facing the country's agricultural development and discuss how to address these issues through international agricultural research. Dr Nguyen Van Bo, a long-standing member of the PAC, shares his thoughts on the benefits of this visit and the value of the enduring partnership between ACIAR and Vietnam in an interview on page 11.

Read on for interesting news across our agribusiness, fisheries, and social science programs, reflecting our multiple efforts to encourage greener and smarter farming practices in Vietnam.

We hope you enjoy this edition,

ACIAR Vietnam team





Ambassador Robyn Mudie visits ACIAR-supported beef cattle project in Dien Bien province.
Photo: Trong Chinh, VNA.

Australia commits to supporting Vietnam to develop sustainable agriculture systems

Australian Ambassador to Vietnam, H.E Ms Robyn Mudie, spoke with the Vietnamese national radio broadcaster, Voice of Vietnam, during her visit to Dien Bien province about Australia's commitment to supporting Vietnam's economic development, especially in the northwest region, through different avenues, including the agricultural research initiated by ACIAR.

VOV.VN – On behalf of Australia, ACIAR has supported Vietnam's agriculture development for almost 30 years through 200 agricultural research projects worth \$A126 million.

'Australia considers Vietnam to be one of the most important partner countries in Southeast Asia. We want to support a strong and sustainable future for this country, and agriculture is at the heart of Vietnam's economic development,' said Australian Ambassador to Vietnam, Ms Robyn Mudie, on bilateral cooperation in agriculture between

Australia and Vietnam during her visit to Dien Bien province and ACIAR-funded projects in this region.

Thank you for joining us today! Firstly, could you speak about Australia's support to Vietnam's agriculture sector through ACIAR – the Australian government's centre for international agricultural research?

We are very proud of ACIAR which has been operating in Vietnam for close to 30 years. Established in 1982, ACIAR's mission is to conduct agricultural research for more productive and sustainable agriculture systems in its partner countries and to help local communities build more resilient food systems for the benefit of the country and of the partnership with Australia.

ACIAR delivers this by investing in bilateral and regional research projects.

ACIAR invests in bilateral research projects which are shared with the local community, and it builds the scientific and policy capacity of local communities at the household and administration level. This approach helps develop the partnership in a very sustainable way because farming communities can work with the local authorities and agree on models which will work for that community into the future.

One important thing is that ACIAR projects have built knowledge about how to take a community from one state into a much more developed state.

As I said, ACIAR has been working in Vietnam for almost 30 years, having invested in more than 200 projects. In the northwest of Vietnam alone, ACIAR has invested \$32 million. The partnership between ACIAR and Vietnam is very important for Australia because Australia and Vietnam are strong strategic partners. We consider Vietnam to be one of the most important countries in Southeast Asia and we want to support a strong and sustainable future for this country. Agriculture is at the heart of Vietnam's economic development, so by investing in agriculture we're very confident that we're supporting Vietnam's economic development, and we're also supporting our partnership with Vietnam.

Can you share more details about the impact of the ACIAR-supported beef cattle intensification production project (LPS/2015/037) in Northwest Vietnam which is close to finishing?

I have had a really good visit to Dien Bien and seen some excellent examples of how Australian-funded activity is supporting the local community to build their capacity and to modernise their techniques so that they can produce a more sustainable and large-scale products to go into the market, which is very important work.

The beef cattle farming project has helped build capacity for farmers and producers by introducing new intensive methods of production and particularly feeding cattle and helping people to make a transition away from traditional practices which were not so efficient. In particular, the project has introduced some of the methods of producing large scale feed quickly and then storing feed over a long period of time. Making silage is very important because it enables farmers to maintain their herds throughout the

We want to develop people's capacity to understand their business, to be able to increase their knowledge and skills and to be able to take that knowledge and skills and put it back into the economy

year, even at times when natural feed is not readily available. This work builds a much more sustainable economic model for the community. The project has also introduced model farms which can then show other farmers how to adopt these techniques. We are encouraged to see a very strong uptake in communities, particularly when there is a cooperative model involved where the cooperative helps to lead the community into these new practices.

In addition, the beef cattle project has been led by the University of Tasmania in collaboration with the Vietnam National Institute of Animal Science and the local Department of Agriculture and Rural Development (DARD), underpinned by funding from Australia through ACIAR. It is a very strong partnership model involving many players and we're very proud that we can bring these leading techniques into the community.

One of the results of this project is that Dien Bien DARD - one of the lead players - has been able to secure further funding from the local government to continue this model into the future. They are moving away from the reliance on Australian funding and using everything they have learned to be able to build a stronger future based on a market-oriented approach to livestock development in the region.

UNLOCKING HUMAN POTENTIAL

In addition to supporting with communities with techniques, finance and agricultural expertise, ACIAR projects are considered to have effectively unlocked local potential, transforming the ways of thinking about sustainable development, and improving the human factors in the most disadvantaged regions of Vietnam. What do you think about this opinion?



Ambassador Robyn Mudie meets with ACIAR's Vietnamese research partners during her visit to Dien Bien province in April 2022. Photo: Trong Chinh, VNA.

Human resource capacity is at the heart of any successful economic development model and all of Australia's activities in Vietnam in the development sector are focused on human capacity as well as other factors.

First and foremost, we want to develop people's capacity to understand their business, to increase their knowledge and skills and to be able to take that knowledge and those skills and put them back into the economy.

The ACIAR approach works across many sectors and it focuses on capacity building and the provision of training and research, and all of this comes together to strengthen the human capacity of communities. More specifically, we take a strong focus on women because we understand that women are at the centre of economic development and if we do not support women to develop the capacity and the knowledge to lead their enterprises, then the economy will only be half as good as it could be.

In a region like Dien Bien and the northwest, we know that many ethnic minority women are leaders in their communities and their households. We want to support them to develop the practices that will help them to become much more prosperous and be able to support their families.

As women are a very important part of our approach, we focus on for making sure that we provide training equally to women and men.

The other technique that we have used here in this project in Dien Bien is to encourage the use of cooperatives and to get women involved in the cooperatives so that they have a voice as decision makers. And once that happens, they become leaders in their community, and we find that women make very strong strategic decisions about where to take their community's economic development. It's all part of a strategy which works and we're proud to lead in Vietnam.

With the current strong partnership, what is Australia's short-term and long-term plan to continue and improve the strong results in livestock, agriculture in particular, and the Australia-Vietnam partnership in general?

As I said, Australia and Vietnam are strategic partners and we work closely with Vietnam across three core pillars of defence and security cooperation, economic engagement and knowledge, and innovation and leadership. We find that these three pillars really support the country to go where we think it needs to go into the future. We are very committed to continuing our engagement with Vietnam across all three of those pillars.

Specifically, in this northwest region of the country, we have a strong focus on economic development, for which agriculture is central, in this part of the country, so we will continue our multifaceted partnerships with Vietnam, including through ACIAR. With that strong focus on agricultural research, we are committed to continuing to work with partners throughout the country in the long term, with a great focus on the northwest sector.

In the agricultural sector, we have a strong partnership with the Ministry of Agriculture and Rural Development and its research institutions in Vietnam. We are approaching this partnership from many different angles, supporting Vietnam's capacity to do its own research and develop its own models, which is suited to future economic development. What we have now is really a strategic, co-funding partnership rather than a donor recipient relationship.

Vietnam has great capacity to manage its own development into the future, and we've been very pleased to help it along the way and to continue to work into the future as strong partners.

VIETNAM IS MY SECOND HOME

You are going to finish your term in Vietnam soon. What's your message for people in Vietnam and for the relations between the two countries?

Australia and Vietnam are strong strategic partners and it's been a great honour and a privilege for me to lead this relationship during the past three years, including through the very challenging times of COVID-19. I've been very proud to lead our quick response to COVID challenges and to support Vietnam's economic recovery through many different avenues, including through agriculture, promoting gender equality, tackling issues that emerged through COVID such as gender-based violence.

In the future, we will continue to strengthen our partnership with Vietnam across all sectors. As I leave the country, I will look back with great pride at what we have achieved, at the people we have supported and the women we have empowered.

I hope that one of the legacies I will leave is a model of a strong woman leader who is visible, proactive and looks out for other women. That's something

I am very committed to doing and I know that will continue well after I go.

I will always feel a strong connection to Vietnam. I have been associated with this country for more than 30 years. I started studying in Vietnam at university and my first posting was here. I speak Vietnamese and I feel very close to the Vietnamese people and very proud to know them, and I will always admire their determination, their resilience, and their tenacity. With those qualities, I know that they will continue to take this country into a brighter future, and I'll be very happy to watch that happen from a distance.

I will be sad to leave, and as I always say when I'm speaking publicly, or when I'm asked about my relationship with Vietnam: Việt Nam là quê hương thứ hai của tôi.

Thank you for your sharing!



From 13-15 April 2022, an Australian delegation led by Australian Ambassador to Vietnam, H.E Ms Robyn Mudie, visited Dien Bien province, including the ACIAR livestock project. To increase income for smallholder cattle farmers, the project *'Intensification of beef cattle production in upland cropping systems in northwest Vietnam'* (2017-2022), funded by ACIAR and led by the University of Tasmania, in collaboration with the Vietnam National Institute of Animal Science and the Dien Bien Department of Agriculture and Rural Development, has successfully developed a number of techniques for growing and storing animal feed and fattening to support farmers in shifting from extensive to intensive farming, improving productivity and economic value. At the same time, the project has also supported a number of champion farmers to establish cooperatives for raising and trading beef and breeding cows to strengthen the link between farmers and the market, and develop the beef value chains in the region towards safe and high-quality products.

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Australian delegation visits projects in Northwest Vietnam



Australia's Deputy Ambassador Mr Mark Tattersall (first from left) discusses with Mr Leo Van Lech, Director of Thanh Cuong Cooperative based in Son La province. Mr Lech and his cooperative members have actively participated in an ACIAR project on market-based agroforestry development in Vietnam's northwest region. Photo: ACIAR

From 12 to 14 December 2021, a delegation from the Australian Embassy in Vietnam visited Northwest Vietnam to meet with local farmers and businesses who are benefiting from Australian Government-funded projects. The mission, led by Mr Mark Tattersall, Australia's Deputy Ambassador to Vietnam, had a chance to see firsthand how the projects are improving livelihoods and economic opportunities for local farmers, cooperatives and small businesses in the region, including those run by ethnic minority women.

The visit reaffirmed Australia's commitment to economic development in the northwestern provinces as a part of its long-term partnership with Vietnam through ACIAR, the Gender Responsive Equitable Agriculture and Tourism (GREAT) program, and the Aus4innovation program.

Since 1993, ACIAR has invested around A\$32 million through 20 international collaborative research projects in Northwest Vietnam to develop sustainable farming systems on sloping lands, diversify agricultural products, protect natural resources, and improve farmers' income. During this visit, the delegation met with farmers and local agricultural officers from Yen Bai, Son La and Dien Bien provinces who have participated in a 10-year ACIAR project led by World Agroforestry (ICRAF) to develop market-based agroforestry systems in the region. To date, 425 smallholder families participating in the projects have successfully applied agroforestry systems to increase income, while protecting the quality of their soil, land and environment.

The GREAT program is Australia's flagship, A\$32 million development investment in Vietnam to build

more inclusive business and market systems within the agriculture and tourism sectors in Son La and Lao Cai provinces, to ensure that local women and ethnic minorities actively participate in and benefit from related economic activities and growth. The GREAT agricultural projects have inherited ACIAR's research legacy over many years in these regions, including the agricultural technique savvy farmers and community-based farmer groups and cooperatives who have experienced many ACIAR project activities on farming techniques adoption and agribusiness

development. Despite the impact of COVID-19, the GREAT program has achieved positive results including 2,803 new jobs for women, 14,833 women joining business networks and A\$8.5 million co-invested by the private sector.

The Deputy Ambassador also joined with local farmers and businesses in a field visit, hosted by the Aus4Innovation program, to demonstrate CoolBot - an affordable cooling technology that helps maintain the quality of vegetables post-harvest. This investment builds on work done by both ACIAR and the GREAT program in the fruit and vegetable industries and is adding innovative technology to support farmers to access markets and increase their incomes. Initial results indicate that with cool storage and transport, vegetable losses could be reduced by up to 50% and economic benefits to users can potentially improve by up to 30%.

Meeting with the Son La Peoples' Committee, the Deputy Ambassador noted the close partnership between Australia and Son La, discussed Australian investment in the province and canvassed opportunities to further strengthen ties.

'The partnership between Australia and the northwestern provinces of Vietnam is deep and enduring. It comprises long-term development programming, strong people to people links, as well as substantial Australian investment in mineral resources that are critical to the clean energy transition', said Mr Tattersall. 'Australia will continue to strengthen these ties, including as we chart a shared course towards recovery from COVID-19 and deliver on Australia and Vietnam's shared commitment to move towards net-zero emissions by 2050.'



CGIAR-Vietnam strengthen partnership for sustainable agricultural development

By Nguyen Thi Quynh Chi and Fred Unger, ILRI – A member of CGIAR

Established in 1971, CGIAR is the largest global agricultural innovation network, bringing together 15 international agricultural research centres, who are dedicated to reducing poverty, enhancing food and nutrition security, and improving natural resources. Australia has invested in CGIAR since it was established and is among its top ten investors. In Vietnam, many CGIAR research centres are ACIAR's long-term and high-performing partners, including World Agroforestry (ICRAF), ILRI¹, CIAT², IFPRI³, IRRI⁴ and CIP⁵. These CGIAR centres have been working with ACIAR under the 10-year Australia-Vietnam research collaboration strategy across different research programs, including Agribusiness, Livestock, Forestry, Crops and Soil and Land Management.

In the last 5 years, CGIAR has implemented more than 100 projects in Vietnam in 40 provinces, an

investment of USD\$24 million (A\$34.2 million) benefitting more than 24 million people. Among these, ACIAR has invested in 14 research projects led by individual centres in the CGIAR network, with the total worth of investment close to A\$18 million. Research by CGIAR has had an impact on many fields of sustainable farming and livestock production, adapting agriculture to climate change, transforming food systems sustainably and improving human and animal health using a One Health approach.

In December 2021, CGIAR convened a coordination meeting with the Ministry of Agriculture and Rural Development of Vietnam (MARD). The meeting was chaired by MARD's Vice Minister Dr Le Quoc Doanh and Dr Jean Balie, Regional Director of CGIAR in Southeast Asia and the Pacific to review the relationship between MARD and CGIAR and

¹ILRI: International Livestock Research Institute | ²CIAT: International Center for Tropical Agriculture | ³IFPRI: International Food Policy Research Institute | ⁴IRRI: International Rice Research Institute | ⁵CIP: International Potato Center

discuss ways to further improve collaboration for sustainable agricultural development in Vietnam, also in the view of the upcoming transition to One CGIAR.

Vietnam has achieved commendable growth, especially in agriculture development. In the 2016-2020 period, the sector's total export turnover was at US\$190.32 billion (A\$263.85 billion). Notably, in 2021, despite being greatly affected by the COVID-19 pandemic, the export of agricultural, forestry and fishery products reached a breakthrough record of nearly US\$48.6 billion (A\$67.3 billion), up 15% compared to 2020 and exceeded the whole year target.

However, Vice Minister Le Quoc Doanh said that despite rapid growth, Vietnam still faces numerous important challenges that may prevent it from achieving sustainable development. A reliance on resource-intensive use, low quality preservation and processing of agricultural products, high post-harvest losses, limited linkages along the value chains, unstable market prices, dependence on the import market, degradation of natural resources and the environment, and precarious livelihood of farmers, are just a few of those challenges. To enter a new phase of development with many difficulties and challenges, Dr Doanh said: 'MARD highly appreciates and looks forward to continuing to receive help and support from donors and international organizations, especially CGIAR.'

The above-mentioned challenges raise the question of how Vietnam can develop more sustainably, making this Southeast Asian country a focus for future CGIAR work.

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'MARD highly appreciates and looks forward to continuing to receive help and support from donors and international organizations, especially CGIAR'

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This meeting came when CGIAR, a global strategic partnership to advance agricultural scientific research, is gearing up the transformation to One CGIAR to respond to today's global challenges, including optimising its contribution to many Sustainable Development Goals (SDGs). At the same time, MARD is developing the Strategy for Sustainable Agricultural Development for the 2021-2030 period with a vision to 2050. This meeting provided a unique opportunity to bring those strands together and contribute to the development of a holistic and comprehensive approach in the follow up of MARD-CGIAR partnership and collaboration, said Jean Balie, Regional Director of CGIAR Southeast Asia and the Pacific.

The meeting also provided the platform to present planned initiatives under the CGIAR structure. Overall, at least 9 out of 32 global CGIAR initiatives will include Vietnam as a focal country. The 'Protecting human health through a One Health approach', or One Health initiative, will build up on food safety work under the Safe PORK project, which is funded by ACIAR, with a focus on further scaling of tested interventions in the traditional pork value chain.

As a significant funder of and research partner to CGIAR, ACIAR has been deeply engaged in the CGIAR reform process at global to ensure CGIAR is well-placed to deliver the United Nations Sustainable Development Goals and the Paris Agreement. In Vietnam, ACIAR will follow up closely with the new strategy of CGIAR and MARD to ensure that the investment of ACIAR in this network to be optimised and meet the needs of the country.



ACIAR supports the SafePORK project led by ILRI in Vietnam to develop market-based approach to improving food safety in the country. Credit: Trong Chinh.

Standing on the shoulders of giants in international agricultural research collaboration



Dr Nguyen Van Bo (right) and Prof Andrew Campbell, ACIAR CEO, in a visit to Vietnam's Central Highlands in 2019 to start the research collaboration program in this region.

Dr Nguyen Van Bo has been a member of Australia's Policy Advisory Council (PAC) for international agricultural research since 2004. The PAC was established under the ACIAR Act 1982 to advise the Minister on issues related to agriculture in developing countries and solutions to these problems through the implementation of research programs and policy advice. Dr Bo

was Director of the Soil and Fertiliser Research Institute (1994-1999), Director of the Department of Science, Technology and Environment - Ministry of Agriculture and Rural Development (1999-2005), and Director of the Vietnam Academy of Agricultural Sciences (2006-2014).

Dr Bo has been associated with ACIAR and the ACIAR-Vietnam partnership for nearly 30 years.

Thank you, Dr Bo, for joining ACIAR Talk today! We often start our conversation with an interesting fun fact about our guest. What is your favourite drink of the day? And why do you love it?

I often drink warm lemon juice with honey in the morning. Before lunch, I will have a glass of red wine and a cup of coffee with milk in the afternoon. I also often drink seasonal fruit juices because Vietnam has many good fruits which are inexpensive and especially good for health.

It's interesting to see some key Vietnamese exports such as fruit and coffee in your favourite drinks list. What do you think about the future of these two industries?

Vietnam's fruit and coffee still have much room for development. Vietnamese fruit currently only accounts for 1% of the world market, while Robusta coffee has ranked first but is still mainly raw exported. Similarly, Vietnam is still mainly exporting fresh fruits, the processing and preservation are still poor, so these industries' added values are not high. I hope that the current ACIAR coffee and pepper value chain development project in the Central Highlands of Vietnam can help increase the competitiveness of Vietnamese coffee in particular.

A 30-YEAR JOURNEY WITH ACIAR IN VIETNAM

How did your journey with ACIAR begin?

I have known about ACIAR since the 1990s, when participating in seminars to report results of two projects on land management funded by ACIAR.

Back then, I was the Deputy Director of the Soil and Fertiliser Institute Research – a Vietnamese collaborating agency of these two projects. Although I was not directly involved in the project implementation, I was very interested to learn new approaches to doing research, identifying and solving problems through collaborative research. I also wanted to take the opportunity of working with Australian friends to improve my English.

You have participated in ACIAR projects in Vietnam in different positions and roles, from partner to advisor, what do you think are the success factors of the ACIAR-Vietnam partnership?

There are many factors that determine the success of this partnership. First, ACIAR cares about Vietnam's priorities, and based on that selects research topics that match the criteria of both sides. As a result, most ACIAR projects address pressing problems for Vietnam with proven effectiveness. According to a recent independent review, ACIAR has a return on investment of 10:1, meaning that every A\$1 invested in a research project generates \$10 in profit. Furthermore, ACIAR projects have a strong emphasis on environmental and social sustainability and often have components on policy development to ensure sustainability and adoption of research outcomes.

Secondly, I really like the project design method, in which the project proposals must go through many rounds of evaluation, feedback and suggestions before being approved. More recently,



Dr Nguyen Van Bo shares with ACIAR alumni at their annual meeting in April 2022. Photo: Duong Nam Ha, Vietnam National University of Agriculture.

ACIAR has taken a two-stage approach to project development: starting with a small research activity, as a scoping study to define the problem, and then developing it into a big project. During this process, all stakeholders will participate in this small research activity before developing the longer-term one. The pepper and coffee value chain development project in Vietnam (AGB/2018/175) is an example of this approach.

Finally, in addition to research cooperation and technology transfer activities, ACIAR also strongly invests in developing high-quality human resources for its partner countries. This has helped many Vietnamese scientists reach further into international cooperation.

What positive/important changes have you observed in the ACIAR-Vietnam partnership over the years?

Vietnamese partners have been participating more actively in the design and implementation of projects. Previously, research projects were usually initiated by Australian experts and Vietnamese scientists would be engaged later. But now that we have a 10-year ACIAR-Vietnam cooperation strategy, the two sides know each other's priorities well, so they can proactively choose more targeted issues.

I have also observed an increase in the scale of bilateral and multilateral projects involving Vietnam in terms of cost and duration, which will enhance the project impacts.

The Vietnam Program is moving from purely technical research projects to multidisciplinary, multi-target and value chains-focused projects, which is suitable with the general development of the world.

Last but not least, recent projects have paid attention to involving private enterprises right from the design stage. Businesses will not only contribute financially and resources, but they can help ensure the adoption of the project's results in production. This innovation is highly practical and very market-oriented.

JOINING PAC TO GIVE ADVICE ON RESEARCH PRIORITIES IN DEVELOPING COUNTRIES

Can you talk about the roles and influence of the PAC in addressing priority issues of Australia's partner countries through international research cooperation with ACIAR? How does the PAC



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consider the priorities of developing countries like Vietnam and balance those with Australia's?

Currently, the PAC has 11 members coming from many countries. The PAC members do not represent their own countries, but bring their expertise in various fields of agriculture. The PAC's mission is to advise the Australian Minister of Trade and Foreign Affairs and ACIAR on the development priorities of Australia's partner countries. The PAC will identify bilateral and multilateral research issues that will benefit partner countries and Australia the most, as well as some investment 'gaps', short-term, long-term and emerging issues that countries are facing. With the experience of PAC members, they will make recommendations related to ACIAR investment to ensure the highest efficiency.

Recently, the PAC has also started reviewing international research projects of research organizations that are regular partners of ACIAR, such as CGIAR, to avoid overlaps in investment and helping with resources coordination.

As for each partner country, ACIAR has been developing agreements and cooperation strategies over a 10-year period that clearly define the common goals and priorities of ACIAR and partner countries. In this direction, Vietnam and ACIAR have signed a 10-year strategic cooperation agreement for 2017-2027. In my opinion, this is a new and effective direction, helping to harmonize the interests of Australia and each partner country.

The PAC will have a regular meeting in Vietnam and a trip to visit ACIAR project areas in Vietnam, together with Australia's Commission for International Agricultural Research. What do you think this high-level visit means for the ACIAR-Vietnam agricultural research cooperation?



"After many years of working with ACIAR, I find myself more improved, in terms of expertise, thinking, communication, and management and leadership. I learned that a leader must protect equality and fairness in scientific research and promote the role of each participant, encouraging teamwork. This is quite different from the traditional leadership culture of Vietnam."



Previously, the PAC and the Commission only met in Australia, but as such, the members could not observe the reality in the partner countries, so there was the initiative to meet twice a year, in which one session would be in Australia and the other one in a partner country. This visit to in Vietnam is the fourth time we have had our meetings outside Australia.

This is the first time for Vietnam to host two high-level, strategic and policy advisory bodies from Australia and is an opportunity to show these senior advisors the problems that Vietnam's agriculture is facing and ACIAR should pay attention to.

I am glad that during this visit, the delegation will visit the Mekong Delta region, which is the most dynamic agricultural production zone of Vietnam. The Mekong Delta occupies only 13% of the area, but provides 95% of rice production, 70% of fruit and about 70% of export seafood of the country. This area is also the most affected by climate change, with rising sea levels leading to salinity intrusion. The lack of water from the upper Mekong River due to changes in the upstream dam system also leads to drought, reducing alluvium, making the regional production highly unstable.

During the visit, the delegation will also meet with leaders of the Ministry of Agriculture and Rural Development and the Ministry of Science and Technology. This is also an opportunity for the leaders of the Ministries to pay higher attention to ACIAR-Vietnam cooperation, and hopefully thereby to increase the co-financing between ACIAR and Vietnamese agencies in international research cooperation.

STANDING ON THE SHOULDERS OF GIANTS

ACIAR will celebrate 30 years in Vietnam next year. If you could choose one most important change that ACIAR has helped create in Vietnam, what would that be?

In my opinion, the most important thing is that Vietnamese scientists and research institutions have learned about professionalism and critical thinking from Australian scientists. Our Australian colleagues have an integrative mindset and a systems approach. For example, in the past, Vietnam was only interested in agronomic efficiency, but ACIAR will always consider the environmental and social impacts. Or previously, Vietnam paid little attention to gender issues, but now has a more diversified and integrated approach. Vietnamese partners have learned a more logical approach and thinking, which is more important than financial support because with the right mindset, scientists will solve problems more quickly and effectively now and in the future.

What makes you feel most excited about working with ACIAR?

After many years of working with ACIAR, I find myself much improved, in terms of expertise, thinking, communication, and management and leadership. I learned that a leader must protect equality and fairness in scientific research and promote the role of each participant, encouraging teamwork. This is quite different from the traditional leadership culture of Vietnam.

By working with foreign experts, especially those from developed countries like Australia, we can know how the world is approaching the issue that we are concerned about and what results have been achieved to not reinvent the wheel, or not to repeat some acknowledged failures. Through cooperation, we can access and transfer new technologies from the world to Vietnam.

Not only do we have privileged access to the knowledge that experts have accumulated over the years, through working with them we also learn about inter-cultural communication. In turn,



these knowledge and skills continue to help us integrate more deeply into the international research community.

I am reminded of one Isaac Newton's saying 'If I have seen further it is by standing upon the shoulders of giants,' which is probably reflect our generation's experience after so many years of working with ACIAR.

Can you share one good memory you have with ACIAR?

I have many good memories with ACIAR, including one that makes me feel happy and proud whenever I think of it. In 2015, Vietnamese farmers were overly excited about growing macadamia, calling it a billion-dollar tree. But at that time, we had limited knowledge of the macadamia tree in Vietnam, so it would be very risky if we developed it massively. As Australia had strong expertise in macadamia research, production and trade, I asked Dr Nick Austin, the then-CEO of ACIAR, to help bring Australian experts to share experiences with leaders of Vietnam's Ministry of Agriculture and Rural Development. Dr

Austin quickly responded by inviting two leading experts on macadamia, Mr Jolyon Burnett and Mr Brice Kaddatz, to visit Vietnam to conduct a study and present at the workshop on 4 June 2015 on the orientation of macadamia development, co-hosted by Vietnam's Vice Minister of Agriculture and Rural Development, Ha Cong Tuan, and Australian Ambassador to Vietnam, Mr Hugh Borrowman. Nearly a year after this workshop, on 5 April 2016, the Ministry decided to develop macadamia trees in two areas of Vietnam which had suitable climate conditions, namely the Northwest and Central Highlands. If back then, Vietnamese farmers had grown spontaneously in unsuitable climates, or without quality seeds, it would have had long-term consequences, especially when macadamia is a perennial crop. This event has made me realise that ACIAR is not only interested in long-term research but is also ready to support countries on emerging issues.

Thank you for your precious sharing. We wish you good health and continued companionship with ACIAR for many years to come!

Ramie strengthens women's economic future



Ms Luong Thi Dien tending the ramie plants. Photo: GREAT.

Ms Luong Thi Dien is Head of the Ramie Collective Group in Chieng Ken commune, Van Ban district, Lao Cai province in Northwest Vietnam. Ms Dien's family used to be very poor, like many other households in this small village of Xa Pho. As a result of a lack of options, many women left the village to go to the city to find work.

With support from the Australian Government-funded Gender-Responsive Equitable Agriculture and Tourism (GREAT) Program, Van Ban district Women's Union has implemented a ramie project in which people switched from growing maize and cassava to ramie. Ramie is a natural fibre used in textiles and is in strong demand among manufacturers in Vietnam and internationally.

At first, Ms Dien and other local women hesitated as they were worried there was no market for ramie. Many of the local people didn't even know what ramie is used for.

After being trained on tending and harvesting techniques and understanding the potential return on investment, Ms Dien began to feel more confident. When Gia Lan Cooperative, a local business introduced by GREAT's partner, Van Ban district Women's Union, committed to purchasing

the crop, she encouraged other women to switch to growing ramie.

Mr Tran Van Lien, Chairman of the Cooperative, explains that ramie can be more profitable than other crops. 'The seed cost is VND 40,000 (\$A2.4) per kilo. After sowing the seeds, the plants germinate and grow very quickly. After harvesting the mature plants, seedlings will grow out of the roots and can be harvested for ten years.'

Mr Lien is optimistic about the project because An Phuoc Company, a leading textile company in Vietnam, purchases all the processed ramie jute. After more than two years of project implementation, Mr Lien explained that ramie can bring in an income of VND 100 million (\$A6,000) per hectare per year.

'We work and earn income and my husband respects me more than before, so I feel we are much more equal. Our household finances have improved so my grandchildren can drink milk - they do not go hungry as my children did,' said Ms Dien.

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Liming experiment at Dak Doa district, Gia Lai province. October 2021. Photo: Nguyen Van Long, PRDC.

Agroecological technologies for sustainable coffee and pepper industries

By Nguyen Van Long and Pham Thu Thuy. ACIAR Project: AGB/2018/175

V-SCOPE project aims at increasing livelihoods for smallholders in the Central Highlands of Vietnam, including marginalised communities, through increasing the sustainability of the production and value chains of coffee and pepper.

Vietnam is the world's largest pepper producer and currently the second for coffee, yet there are many uncertainties owing to unsustainable farming practices. Over the past few years, the production of these commodities has been gearing toward short-term economic benefits, pushing the excessive use of chemical fertilizers and synthetic pesticides. Consequently, acidified and seriously degraded soils now heighten the risk of plant disease outbreaks in the Central Highlands – the largest production hub of coffee and pepper in the country.

In this context, changing farming practices is a critical need. The V-SCOPE project led by the

International Centre for Research in Agroforestry (ICRAF) and funded by ACIAR, is paving the way for innovative agroecological systems to replace the current inefficient and unsustainable practices.

'The V-SCOPE team forms a strong consortium that collaborates with industry partners to improve farming practices and reinforce the capacities of their agronomists and of the farmers they are working with,' said project leader Dr Estelle Biénabe - a senior agricultural economics researcher with ICRAF and CIRAD.

'This has created important opportunities for our research team to collaborate with leading coffee and pepper companies to monitor and experiment with improved practices, notably on soil fertility, soil remediation techniques and bio-inoculants in different farming contexts,' Dr Biénabe added.

In order to improve the soil quality, the project team started with studying the effects of liming on enhancing soil properties for pepper and coffee land in Gia Lai. The experiments were conducted on a small scale to evaluate the basic results which will be then widely applied to pepper and coffee gardens in three provinces: Gia Lai, Dak Nong and Dak Lak.

For more than 3 months, 10 pepper and 10 coffee farms have been limed with an amount of 2.5 tons of lime/ha as a part of the cooperation of the project with the ACOM company and farmers at Dak Doa district in Gia Lai province. The initial results show that the pH of the soil is improving monthly. This will help contribute to better soil and plant health.

Besides the degraded soil, soil-borne pests and diseases (SBPD) have also been identified as key constraints to coffee and pepper production. The

project team has their coping strategy for this: using the most advanced bio-molecular technologies to detect these pests and measure their incidence and, hence, better understand the drivers of SBPD spread and how to fight against them.

Specifically, the scientific group is experimenting at the Pepper Research and Development Center in Gia Lai to study the effectiveness of 17 bio-inoculants for controlling the fungi *Phytophthora capsici* and *Phytophthora tropicalis*. The experiment was conducted in nursery conditions, thereby, serving as a basis for expanding its scale in the field. 17 formulations of bio-inoculants include a control formula, a chemical prevention formula and 15 formulas using 15 biological products, respectively.

In addition to carefully selected bio-inoculants, the soil used in the experiment is clean soil that has undergone a steaming process to ensure optimally accurate results. The source site of *Phytophthora capsici* and *tropicalis* provided by the Plant Protection Research Institute was isolated from diseased pepper gardens and then cultured and inoculated at the Pepper Research and Development Center.

Preliminary investigations led by the International Center for Tropical Agriculture (CIAT)—a collaborating partner of this project—in 2019 revealed that the existing guidelines on soil remedies and control of pests and diseases are insufficient, especially for black pepper, despite the fact that Vietnam has been the largest exporter of the commodities for 18 years. To fill this knowledge gap, after testing and evaluating the effectiveness of liming and using biological products to prevent diseases and pests from the soil, the team will

be able to design a field guide to provide farmers with clear instructions on sustainable agricultural practices on a large scale, helping them to restore soil quality while cultivating more sustainably.

Effective collaborations like this among scientists, farmers and industrial partners can bring scientific innovations to life and empower a greener future.



Project experts checking infected coffee roots in the field at the experimental farm of the Pepper Research and Development Center (PRDC). From right to left: Dr Didier Lesueur (CIAT), Mr Nguyen Van Long (PRDC) and Mr Tran Xuan Ky, (IaKha experimental station). Photo: PRDC.

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Changing livestock farming for sustainable livelihoods in Northwest Vietnam

By improving the intensification farming practice and building market linkages of beef smallholder farmer in Northwest Vietnam, ACIAR research is helping increase the income of local farmers and develop the regional livestock value chains.

Smallholder farmers in Northwest Vietnam have a long tradition of free-grazing beef cattle production, thanks to large areas of wild forage. However, the grazing-based system has been in strong competition for land with the expanding crop production, such as maize and cassava. Furthermore, free-graze herds are also extremely vulnerable to long cold winters, diseases, and fatal falls from steep slopes that dominate the region.

In addition to being heavily dependent on a reducing natural feed source, local livestock production is limited in its marketability. Instead of selling the animals at the optimal age for market

price and production cost, farmers usually keep their cattle as savings accounts for family events, children's education, or unexpected financial crises. These traditional practices, coupled with poor linkages to urban markets, and limited information exchange on market demands and other opportunities along the beef cattle value chain, have denied smallholder farmers of real financial benefits, despite the growing demand of the domestic market for beef.

An ACIAR project, led by researchers from the University of Tasmania, commenced in 2015 to change the status quo of livestock production by increasing the efficiency of the farming systems and building linkages to urban beef markets.

'Improved efficiencies in beef cattle farming can help increase farmers' income, which can then be used for other benefits such as school fees,

healthcare costs or re-investment back into their farming enterprises. In this way, the project can help bring multiple benefits to the whole region,' said Dr Anna Okello, ACIAR Research Program Manager for Livestock Systems.

UNDERSTANDING THE SYSTEM

To develop more efficient and market-oriented beef cattle production, the project's first mission was to understand the social, economic, and policy context to build practical interventions.

'We spent four years of intensive research into the local farmers' livelihood assets, their ability to cope with economic shocks, their production, and marketing strategies, and institutional processes affecting their livelihood. We want to design practical farming systems that will benefit smallholder farmers in the end,' said ACIAR project leader, Dr Stephen Ives from the University of Tasmania.

On top of building a solid understanding of the systems, the project also supported farmers in growing nutritious grass and making hay to keep food longer and richer in nutrition content. This technique will enable farmers to shift from free-grazing to intensive production more confidently.

SEEING IS BELIEVING

'But the first real 'nudge' to help farmers in this paradigm shift from traditional cattle keeping to beef production and supply was through peer learning. We supported several Northwest farmers to travel to the Central Highlands to learn from their highly productive beef producer peers. Seeing the real-life benefits of effective production systems, they changed their mind and took action almost immediately after the trip,' said Dr Ives.

Other factors contributing to farmers' practice change is the highly enthusiastic local extension officers and the motivation of the farmers themselves. The domino effect happens when farmers see how other farmers benefit from growing nutritious grass and making silages. They come to the early adopters of new technologies to ask for seed sharing and growing experience.

Naturally, more Northwest farmers have shifted from free-grazing to stall-fed production systems, using grown forage and crop by-products. Through this more intensive system, farmers have been able to increase the frequency of cattle sales and their herd sizes.

'I used to drive 20 to 30 cows to the mountain and let them feed on natural grass. But I can't raise



Mr Vang A Cao and Mrs Mua Thi May in Tuan Giao district, Dien Bien province, enjoyed the stable income from livestock thanks to changing their production system. Photo: ACIAR.

The domino effect happens when farmers see how other farmers benefit from growing nutritious grass and making silages. They come to the early adopters of new technologies to ask for seed sharing and growing experience.

cows that way anymore because the local livestock herds are growing, and the grazing grounds cannot feed them all. Now my herd is in their barn. I plant grass to feed them and make silage to store food for the whole winter.' - Mr Vang A Cao and Mrs Mua Thi May in Tuan Giao district, Dien Bien province, shared.

They have benefited from growing high yield, nutrition-rich forage, and silage-making methods that ensure food supplies for livestock during the dry season. With the new farming techniques, they also significantly reduce the risk of losing their free-grazing cattle due to diseases, accidents and long, cold winter. Mr Cao and Mrs May happily shared that they can 'live well' with an income of about 100 million VND/year (A\$6,000) from livestock, in addition to other revenues gained from growing sugar cane and maize.

In the future, to encourage more smallholders in the Northwest to change to more sustainable production systems, building social capital is very important. Social capital means more opportunities for farmers to access information, increase business connections and build market linkages to increase their income. Therefore, the project has worked with leading farmers and community leaders to establish and manage farmer interest groups and farmer-led cooperatives.

NEW WAVES OF FARMER-LED BUSINESS IN THE VALUE CHAINS

Mr Do Duc Thang in Dien Bien district, Dien Bien province, has a medical college degree but is passionate about agribusiness. With support from the project, he has started making green forage and hay to support more intensive animal husbandry practices. In 2020, in collaboration with the Dien Bien Department of Agricultural and Rural Development and the project, Thang established the Dien Bien Livestock Cooperative, breeding and trading cattle and buffalo. The cooperative is now developing a closed chain in the region: cows from local farmers are collected, fattened if

necessary, slaughtered at cooperatives, and beef products sold in supermarkets. All products have certificates of origin and food hygiene and safety.

Another cooperative led by smallholder farmers in Tuan Giao district, Dien Bien province, functions as an effective broker, connecting local beef farmers with the traders and protecting trade equality. Farmers are happy to participate in a cooperative with a stronger voice in dealing prices with traders.

'The project has helped us with high productive farming techniques and facilitated cooperative forming. Now our people can stay home and make a good income from selling their cattle through our cooperatives. They don't need to do low-skill works in the cities,' Mr Quang Van Thuy, a founding member of the Tuan Giao Beef Cooperative, proudly said.

The project has been running since 2015 and will end on a high note. The province authority has approved a 29 billion VND (\$A1.7 million), 5-year strategy on a market-oriented livestock development program. This new program is an achievement of the technical team of DARD after many years of working with the ACIAR project team and becoming confident to take the lead in such a significant project. Their new program will focus on breed quality improvement, better feedstock and quality, and building value chains for local beef production.

The project, 'Intensification of beef cattle production in upland cropping systems in Northwest Vietnam' is funded through the ACIAR Livestock Systems Research Program and is led by the University of Tasmania in collaboration with the Vietnam National Institute of Animal Science, Vietnam National University of Agriculture and the Department of Agriculture and Rural Development in Dien Bien.

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Leveraging agricultural research for a safe vegetable industry in the northwest

By Nguyen Phi Hung, Bui Thi Hang, Bui Van Tung, Gordon Rogers and Le Anh Tuan
ACIAR project: AGB/2014/035

Since 2011, ACIAR has identified Moc Chau and Van Ho districts (800m above sea level) in Son La province, Northwest Vietnam, as appropriate production areas to grow off-season vegetables. During summer, the region has cool temperature with adequate arable land (40,000 hectares) and good roads to deliver to Hanoi and other cities for consumption. ACIAR has been investing in the vegetable industry in this region through different research projects, piloting VietGAP and strengthening linkages between growers and retailers, targeting supermarkets and certified safe fruit and vegetable stores.

The Gender Responsive Equitable Agriculture and Tourism (GREAT) vegetable projects funded by the Australian Government have run in the same area since 2018, involving the private sector, government research institutes and local state organizations. The GREAT projects aim to bring

benefits to thousands of vegetable growers, with a focus on women from ethnic minority groups, through scaling in the vegetable sector. To date, 6 GREAT vegetable projects have built 3.3 hectares of vegetable seedlings nurseries, distributed 18 million seedlings, established 5 greenhouses and 20 hectares of smart agriculture technology.

As a result of these collective efforts, vegetable production in Moc Chau and Van Ho is expanding rapidly, with 70,000 tons of vegetables produced each year and a net profit of 200–300 million VND (A\$12,000–18,000) per hectare.

GREAT partners have transferred more than 20 technical guidelines produced by 2 ACIAR vegetable projects (AGB/2009/053 and AGB/2014/035) to their farmers as common vegetable production guidelines to improve vegetable yields, quality and safety following the VietGAP standard. In addition,

Bringing benefits for ethnic minority groups, especially women, in the vegetable industry is a strong focus of the GREAT and ACIAR vegetables projects. Photo: GREAT.



Parameter	ACIAR (2011-2020)	GREAT (2018-2022)
Farmer groups	11	30
Farmer participation	238	1366
Area (ha)	63.68	150
Volume (tons)	8479	6189
Volume supply through high-value markets (tons)	5464	3540

Table 1: Impact of ACIAR and GREAT projects in the vegetable sector for Moc Chau and Van Ho Districts, Son La

information produced from agronomic research from ACIAR vegetable projects on varieties (tomato, cabbages, Chinese cabbage), optimum planting times (French bean, Hmong cabbage), optimum fertilizer practice, post-harvest practices (harvest time, packaging materials) and weed control, has also been effectively transferred to the GREAT partners and farmers.

GREAT vegetable project partners including Greenfarm, the Fruit and Vegetable Research Institute, Van Ho agriculture Department and Fresh Studio have expanded into larger production areas by establishing many new farmer groups and cooperatives, which required new techniques, skills and experiences of farmer groups/cooperatives in establishment and management. During 10 years of ACIAR vegetable projects, 10 farmer groups/cooperatives were developed in both Van Ho and

Moc Chau and served as a practical model for the GREAT partners.

GREAT partners have also benefited from the ACIAR achievements through the “Moc Chau Safe Vegetable” brand name owned by the Moc Chau Agriculture Department. The brand has established market channels linking 10 ACIAR farmer groups/cooperatives with supermarkets and safe vegetable stores in Hanoi such as Big C, Big Green, Bac Tom, Mega, and AEON. The GREAT partners have continued this work, retaining the diversity and reputation. The new and existing market channels have expanded the influence of the brand name to more customers and markets.

With the practical research approach, ACIAR vegetable project results have set a fundamental foundation for GREAT partners to adopt and transfer technology to their farmers and helped to develop



the expertise of local researchers and agricultural extension staff.

The adoption of new techniques by the GREAT projects is a result of cooperation between the ACIAR and GREAT project partners. ACIAR project experts from NOMAFSI, Fresh Studio, Applied Horticultural Research (AHR), and Focus Group Go (FGG) have been recruited as consultants to support GREAT partners. These technical experts have helped with key technical issues relating to value chains, markets and production. Some key achievements include:

- Identification of the common issues among project partners
- Creation of a Zalo group to share and update information among project partners
- Compiled and integrated the VietGAP practices for each vegetable variety (more than 20 technical protocols)
- 4 training sessions and 7 workshops on new vegetable technical practices, pests and disease management, development of production plan for each farmer group/cooperative and post-harvest (packaging, sorting, grading, packaging materials)
- Shared updated market information from ACIAR projects

The consortium enabled GREAT sector partners to discuss, connect and share information, and improve knowledge and production capacity. The main technical areas included produce quality, uniformity, safety, and productivity. The consortium

also provided an opportunity for common versions of sector practice standards to be developed and shared. The ACIAR team identified areas of market demand and exchanged market information to support farm production plans and to connect producers to buyers, for better access the market.

Looking forwards, GREAT and ACIAR can continue their collaboration to deliver more hands on technical practices, study tours with farmer observations, and a market information feedback exchange to transfer knowledge and skills on vegetable production to ethnic minority community in the remote areas. The GREAT project partners have also expanded production to areas with poorer infrastructure such as roads, irrigation systems, electricity, and lower level of skills and experiences of vegetable growers.

In addition, GREAT has partnerships with private enterprises at large scale and business models, which are require significant coordination and technical advice, input materials, safety control, and traceability management to be able to support and ensure appropriate benefit-sharing along the supply chains.

Finally, ACIAR and GREAT must enhance the linkage between value chain actors and share markets information with regular feedback to manage the quality, volume, and vegetable types from market retailers.

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Farm field and safe vegetable production training by ACIAR project staff for GREAT farmers in Moc Chau and Van Ho. Photo: Phan Huy Chuong, NOMAFSI



Mr Nguyen Van Duyen and his wife in Ta Niet prepare vegetables before delivering to markets. Photo: Bui Van Tung, NOMAFSI

Understanding agrichemical use in Vietnam and Laos

By Nguyen Nga, Nguyen Van Liem, Phan Thuy Hien, Lucy Carter and Monica van Wensveen
ACIAR project: SSS/2020/143



A safe vegetable farm in Son La province in Northwest Vietnam participates in an ACIAR-supported project (AGB/2014/035) to improve product quality and safety following the VietGAP standard. Photo: Khanh Long.

Pesticides, including herbicides, and fertilisers have been important tools in increasing agricultural yields and contributing to food and nutrition security.

While agrichemicals control pests, diseases, weeds and support crop growth, off-label use (too much, too little, or not administered appropriately) poses health risks to farmers, consumers, the broader community and the environment.

While information about the institutional and regulatory safeguards is available, little is documented about compliance or about drivers and considerations around agrichemical use in different production systems and country contexts.

The ACIAR-funded Small Research Activity Understanding agrichemical use in Southeast Asia brings together research teams from Vietnam (the Plant Protection Research Institute, Vietnam National University of Agriculture and the National Institute of Medicinal Materials) with colleagues in Laos (National Agriculture and Forestry Research

Institute and National University of Laos) and Australia to develop a better understanding of these issues.

There are two key components to the project: a targeted literature review from each country (with a cross-country comparison) and interviews with local agrichemical users, traders, agricultural staff (including extensionists) and local government staff and community leaders from two case study districts.

By approaching agrichemical use from the perspective of the user, the research teams aim to understand the gap between 'best practice' and actual practice and deliver new insights to inform practices towards safer, more effective and efficient use. A range of common themes or factors influencing decisions around agrichemical use emerged across both countries.

The literature review has now been completed. Research teams focused on: current policies, regulations, and institutions in Vietnam that are



A farmer in Dong Anh prepares pesticides for vegetable. Photo: Provided by farmers participating in the project.



Corner to store fertiliser in Moc Chau. Provided by farmers participating in the project.

relevant to agrichemical use; existing information on patterns of agrichemical use (the extent of use), practices (how they are used) and drivers determining agrichemical use; and existing conceptual frameworks that have been used to understand agrichemical use in Southeast Asia.

Agricultural intensification, increased commercialisation and climate change contribute to land-use change and increased prevalence of pests and disease. Social transitions such as rural out-migration and increasing engagement in non-farm livelihoods also play a role, changing labour availability and the search for labour-saving technologies, including agrichemicals.

The governments of both Lao and Vietnam are committed to reducing harmful use of agrichemicals and transitioning towards greener agriculture. However, there is evidence of challenges associated with implementation, such as limitation in local-level facilitation and extension due to remoteness or resourcing.

Market dynamics, including input supply and information chains, play a significant role in determining farmer options for agrichemical use and can undermine government goals. Consumer expectations in multiple markets are also creating different incentives for agrichemical use. For example: price incentives for niche organic products in domestic markets are often insufficient to cover the additional cost of organic production; farmers producing for export markets are careful to follow requirements set by exporters.

Within the literature reviewed, users of agrichemicals (predominantly farmers) are often viewed as having responsibility for effective and safe use and for managing exposure risk. However, there is

evidence that product formulation, labelling, and retail availability are inconsistent with expectations, standards and laws. At the same time, protective equipment and practices are often unavailable or impractical for farmer needs.

In this context, farmers are often aware of risks and make the best possible choices available based on their broader set of concerns and needs, given their access to information and resources. There is often a significant difference between recommended 'best practice' and farmer practice.

The research teams are now finalising and analysing interviews to better understand how farmers, traders and other local stakeholders make decisions about agrichemical use, and how they balance risks and benefits.

In Vietnam, two provinces were selected for case studies: Hanoi for low land, peri-urban agriculture, and Son La for upland and rural agriculture. In Hanoi, Dong Anh was selected to represent vegetable and rice growing districts. In Son La, Moc Chau district was selected for its large area of vegetable and fruit production.

In addition, the Vietnam research team will be conducting interviews with several vegetable and fruit export companies to understand the perspectives of large-scale businesses and the challenges they face with agrichemical use. The team will also share project findings with policy and research representatives who provide guidance, advice and networks as part of the project's Reference Panel.

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Genetic gains research to transform smallholder chicken farming in Southeast Asia

By Ngo Thi Kim Cuc, Hoang Hoa, Nguyen Thi Quynh Chi, Fred Unger and Tadelles Dessie
ACIAR project: LS/2019/142

A new International Livestock Research Institute (ILRI)-led initiative to improve smallholder chicken production in Southeast Asia has been launched.

The Asian Chicken Genetic Gains, or AsCGG, project will increase access to locally acceptable, adapted and highly productive chickens and avail new and proven technologies to increase chicken production in Cambodia, Myanmar and Vietnam.

Funded by ACIAR, the AsCGG project was introduced to livestock sector stakeholders in the 3 countries in a virtual two-day workshop in May 2021. The event also sought stakeholder feedback on the project's roll-out and implementation.

Dr Tadelles Dessie, ILRI Principal Scientist and the Principal Investigator (PI) of the project, stated that low-producing chicken genotypes typically dominate smallholder production systems and are an essential component of the livelihoods of poor rural households. 'It is important to strengthen smallholder chicken production to generate income, create jobs and improve nutrition for the poor who depend on them and to empower women, who are often the primary chicken farmers in these systems,' he said.

This 4-year partnership is between ILRI and national agricultural research and development



Project staff interview a farmer during baseline survey in Ha Nam province, Vietnam. Photo: Tran Trung Thong, NIAS



The innovation platform launches in Quang Binh province, Vietnam. Photo: Tran Trung Thong, NIAS



The innovation platform aims to bring together the key value chain actors that have interests in the smallholder chicken value chain development.



institutes in the 3 countries, including Cambodia’s National Animal Health and Production Research Institute (NAHPRI), Myanmar’s Livestock Veterinary and Breeding Department (LVBD) and Vietnam’s National Institute of Animal Sciences (NIAS). It will contribute to many of the agricultural development priorities of these countries, which target, among other goals, boosting the productivity of smallholder chicken farming and support value chain actors.

Despite the COVID-19 pandemic, the project team has attained several achievements, mainly in Vietnam and Cambodia. These include the completion of a baseline survey in November and December 2021 in three provinces of Vietnam that are Ha Nam (Red River Delta), Hoa Binh (Northwest) and Quang Binh (North Central Coast); characterisation of 3 indigenous poultry breeds and establishment of national innovation platforms both in Vietnam and Cambodia.

The innovation platform aims to bring together the key value chain actors that have interests in the

smallholder chicken value chain development. In Vietnam, the first national innovation platform was organised in September 2021 and 2 community innovation platforms were established in Quang Binh and Ha Nam provinces in December 2021. 3 meetings brought together about 100 participants from local authorities and poultry farmers. Participants discussed profitable small-scale chicken production systems, integrated with locally available feeding and improved environmental sustainability. Participants selected one famous breed for each province of Quang Binh (Ri Lac Son) and Ha Nam (Mong) to test throughout the project.

Hoang Thi Thom, a poultry farmer in Ha Nam province, said ‘The innovation platform is a good place for chicken producers and related actors in our commune to share experience and techniques on chicken raising and market information.’

Le Anh Tuan, Vice Chairman of the Son Hoa communal-level People’s Committee, Quang Binh province appreciated the initiative and committed to providing strong support to the project and hoped that the AsCGG project will contribute to the sustainable development of the local small-scale chicken system and help women and poor farmers to improve their income.

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From central to local level: Leveraging SafePORK impacts on food safety in Vietnam

By Le Thi Thanh Huyen, Nguyen Thi Quynh Chi and Fred Unger
ACIAR project: LS/2016/143

Commencing in 2017, the SafePORK project led by International Livestock Research Institute (ILRI) aims to develop and evaluate market-based approaches to improving food safety to reduce the burden of food-borne disease in informal, emerging and niche markets targeting small and medium scale pork value chains in Vietnam. In its final years, the project has achieved meaningful impacts regarding increasing food safety practice and income for smallholder pig farmers.

CREATING IMPACTS AT NATIONAL SCALE

SafePORK researchers provided substantial inputs to Vietnam's preparation for the United Nations Food Systems Summit (UNFSS) in September 2021. SafePORK results were incorporated in discussions and presented at the national and regional dialogues on UNFSS's Action Track 1—Ensuring access to safe and nutritious food for all. As a result, food safety gained strong attention during the UNFSS. The President of Vietnam, HE Mr Nguyen Xuan Phuc, also reflected this in his speech during the summit in New York.

Following the UNFSS, the SafePORK team joined a core group providing inputs related to food safety into the draft of the National Action Plan for Food Systems Transformation, a process facilitated by the Vietnam Academy of Agricultural Sciences under the Ministry of Agriculture and Rural Development.

ILRI/SafePORK also led a dedicated session on food safety at the quarterly meeting of Vietnam's Food Safety Working Group (FSWG) in December 2020. Since June 2021, ILRI has held the chairmanship of FSWG—a recognition of a decade

of pork safety research by ILRI and national partners predominantly funded by ACIAR under the former PigRISK and ongoing SafePORK projects.

IMPROVING MARKET LINKAGES AND FOOD SAFETY IN THE INDIGENOUS BAN PORK

In January 2021, Ban pig breed in Da Bac Ban Pig Cooperative was officially recognised by relevant authorities in Hoa Binh province and Department of Intellectual Property under the Ministry of Science and Technology, benefiting 90 Ban pig farms in Da Bac district, Hoa Binh province in the northwest Vietnam. Among these, 30 producers and 2 slaughterhouses participate in better market recognition under SafePORK.

To help promote the Ban pig trademark, in April 2021, the SafePORK project trained members of Da Bac Ban Pig Cooperative on good slaughter practices to improve pork safety. The training was co-hosted by the National Institute of Animal



A pig farm in Hung Yen province, Vietnam – one project site of the SafePORK project. Photo: Trong Chinh.

Sciences (NIAS) and Hanoi University of Public Health (HUPH). Participants learned about risks of cross-contamination on pork and regulations and hygienic slaughter practices. In addition, the SafePORK project provided pork handling tables and stainless-steel grids to avoid cross contamination on pork. After the training, the slaughter team has shifted from slaughtering pigs and filtering meat directly on the floor to using grids and tables for handling pork and keeping the slaughtering areas clean.

Before this training, 6 leaders of the cooperative had participated in SafePORK-led training on strengthening market connection and promoting production linkages in 2020, and visited Ban Pig Cooperation in Muong Pa, Hoa Binh province to learn from their experience.

In addition to capacity development, the SafePORK project also helped the cooperative reach potential private partners who might be interested in the recognised Ban pork. NIAS interviewed a series of food stores and introduced the Ban pork products to them. One of the interviewees, Happy Mart, a safe food store chain in Hanoi decided to visit the cooperative, following by the signing of a memorandum of understanding between 2 parties on price, order quantity, pork handling and delivery services. This will pave the way for the cooperative to establish a safe pork value chain with a certified collective trademark.

Xa Van Lam, President of the Ban Pig Cooperative in Da Bac district, said 'In the past, we merely sold live pigs to small-scale traders. Then, the store came to order and guided us on how to handle pork, which is far different from the way we normally did here, to meet Hanoi customers' tastes. Also, thanks to being trained by the SafePORK project on storing pork in a freezer and being provided with a freezer, we could meet the store's demand on pork safety. Now we sell pigs in more stable quantities and at higher prices than selling to traders from 10 to 15% so we are very happy.'

STRENGTHENING RISK COMMUNICATION ALONG THE PORK VALUE CHAINS

A major output of the SafePORK project in 2021 was wide-reaching risk communication training for targeted key actors in the pork value chains, creating strong impacts at the community level. Training topics covered food hygiene, meat inspection, food safety risks and risk communication.



Ban pig slaughterhouse starts using grids and tables for pork handling after SafePORK training. Photo: Fred Unger, ILRI.

More than 446 participants, of whom 301 were female, participated in various training or study visits. They were cooperative farmers, slaughterers, retailers, canteen staff, and local authorities. Among them, there were 98 local vet and public health staff who attended training of trainers (TOT).

A post-training evaluation demonstrated a significant increase of knowledge in targeted trainees.

Notably, many local canteen staff were engaged in risk communication activities this time thanks to a joint effort between ILRI and the Department of Agriculture and Rural Development (DARD) of Tien Lu district, Hung Yen province. After a successful training session targeting community members at the project sites in November 2020, Tien Lu DARD requested ILRI to provide similar trainings for the canteen staff, then curricula were modified by the SafePORK team, and a series of training sessions have been organised. A supporting handbook for canteen staff is currently being developed and will be launched mid-2022.

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Can eating more oysters help reduce the impact of climate change?

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Carbon dioxide is a major contributor to climate change. As oysters grow, they absorb carbon to build their shells. How much is this mitigating the industry's impact on climate change, and can this unlock additional economic value?

An oyster farm in Quang Ninh province, Vietnam. Photo: ACIAR.

Oyster aquaculture has proven highly successful in Vietnam. Oysters can be easy to farm and require minimal technology to produce healthy, nutrient-packed animals ready for local markets and tourists. Oysters also hold carbon in their shells in the form of calcium carbonate, which, in the face of climate change, has economic value and contributes to ensuring the sustainability of the industry. In addition to all of this, oysters are delicious!

The University of Tasmania-led ACIAR project 'Blue economy: Valuing the carbon sequestration potential in oyster aquaculture' aims to put an economic value on the carbon that is found in oyster shells. In doing so, the project will unlock further economic potential for oyster farming and allow carbon cycles within the industry to be fully explored.

Oysters, mussels and clams are 'bivalves' which means they have two outer shells. As the oysters grow, they take up carbon from the surrounding water and use it to build calcium carbonate shells. Calcium carbonate is about 12% pure carbon and has many uses. It is a common ingredient in cement, can be used to treat wastewater and as a calcium feed supplement for livestock, and can be applied to soil to control acidity. Oyster hatcheries in Vietnam also use shells in their production systems by allowing oyster larvae to attach to the shells and grow into young oysters, called spat, ready for farms. The Research Institute for Aquaculture No. 1 (RIA 1) in northern Vietnam is working in collaboration with Australian researchers and the oyster industry to explore the best ways to recycle oyster shells while keeping carbon trapped in the form of calcium carbonate.

The project activities include reviewing the status and opportunities to advance oyster aquaculture in northern Vietnam within the blue economy sector. The blue economy refers to the sustainable use of ocean resources for economic growth. This review includes a supply chain analysis where data has been collected along the supply chain, from hatcheries and farmers to consumers, that shows recent industry developments, production, and trends. This information has been used to identify areas where oyster shells can be recycled and used as a value-adding by-product.

The supply chain analysis shows that most people in the industry think that oysters are an environmentally sustainable seafood product and that selling oyster shells and meat products will increase profitability. At present, people in

the industry who have oyster shells available are primarily selling to oyster hatcheries. Surveys of the industry have shown that many believe that the best alternative uses for oyster shells in Vietnam would be as a mineral supplement in livestock feed, in soil management to reduce acidity, and in crop and vegetable production to support growth and vitality. These results demonstrate the untapped socio-economic potential of developing local products that use residual carbon-trapping oyster shells, which benefit rural and regional communities in Vietnam.

The upcoming activities in this project include exploring how much carbon is taken up by local oysters and the economic value of that carbon. By using a carbon economic value, the feasibility of oyster farming becoming more profitable by using oysters to take up and store carbon dioxide can be assessed. This project is working closely with the oyster industry, those along the supply chain, and government representatives and builds on past ACIAR projects which will see Vietnam's oyster industry expand and grow into a healthy and sustainable industry for years to come



Dr Cao Truong Giang, Mr Vu Van Sang, Ms Nguyen Thi Hong Ngoc from RIA 1 went to Van Don, Quang Ninh province, to do surveys on the supply chain of oysters in northern of Vietnam in December 2021. Photo: Vu Van In, RIA 1.

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Alumni invited to join ACIAR digital training platform

A new online learning program – ACIAR Learn (www.aciar.gov.au/aciarlearn) – is supporting agricultural researchers to learn new skills and further their ongoing professional development. Developed by ACIAR to enable researchers' greater access to learning opportunities, the program was initiated last year.

HOW IT WORKS



The journey of an ACIAR Learn Participant. Photo: ACIAR

After being successfully piloted in 2021, the program is now available to all ACIAR Alumni, who can enrol online at: <https://survey.app.uq.edu.au/baf33f54-a8df-42d0-ac1d-727f3bde3336>

The program provides the opportunity to build valuable research skills, connect with peers and fellow experts, learn from previous ACIAR-funded projects, and support their ongoing professional development journey.

Feedback from the program pilot has been taken on board to improve the program experience for upcoming participants. New courses have been added, offering a comprehensive suite of education options for agricultural researchers.

ACIAR Learn takes a novel approach to capacity building for researchers by providing phone-based learning delivered in bite-sized lessons that can be accessed in low bandwidth areas around the world. The app-based learning is complemented by group work and live sessions to enable greater connection and interaction between research peers.

Pilot participants using the program were able to connect with researchers from around the globe. Suva-based researcher Divinesh Swamy found that 'even though we were in different countries, the app enabled us to interact with one another online.'

Moana Masau, an engineered wood product technician also based in Fiji, enjoyed the flexibility that the program offered, with 24-hour access to e-learning materials enabling participants to learn at times that suit their schedules: 'it's not very quiet around my

house. It was convenient to be able to learn in my own time'.

The program has two streams. Stream 1 is for researchers working on an ACIAR project, with learning material tailored to both early career and senior researchers. Stream 2 is dedicated to alumni of ACIAR fellowships and scholarships who are seeking to further their professional development. This approach means all participants receive upskilling opportunities fit for their capabilities.

ACIAR Alumni can now enrol in several courses by expressing their interest at <https://survey.app.uq.edu.au/baf33f54-a8df-42d0-ac1d-727f3bde3336>.

ACIAR Learn is being designed, developed and delivered through a partnership between ACIAR, The University of Queensland (UQ) and Catalpa International.



Vietnam alumni resilient in pandemic response

ACIAR Alumni in Vietnam have united to share research findings commissioned in response to COVID-19 and its impact on the country's agricultural systems.

Eight alumni presented key results and experiences after leading research funded through the ACIAR Alumni Research Support Facility (ARSF), an initiative launched in April 2020 to support responses to the pandemic.

The insights were presented to the broader ACIAR Alumni network in Vietnam, who met in Can Tho City in April 2022 to plan capacity building activities and foster multi-disciplined research collaboration opportunities.

The meeting was only the second time the Vietnamese cohort of ACIAR Alumni has been able to hold a large in-person meeting since the beginning of the COVID-19 pandemic.

ACIAR General Manager for Outreach and Capacity Building, Ms Eleanor Dean, attended the event and was pleased to hear firsthand the impact of ACIAR capacity-building efforts, especially in responding to the impacts of the pandemic.

'It's inspiring to see ACIAR alumni in Vietnam driving cross-learning and multi-discipline cooperation, which is becoming increasingly important in dealing with today's complex issues. The ARSF funding for COVID-related impacts is also a great example of bringing the expertise of ACIAR Alumni together to contribute greatly to Vietnam's sustainable development and recovery from the pandemic,' said Ms Dean.

With ongoing support from ACIAR, the alumni network continues to grow as a professional community each year, leveraging what they have learned in Australia to improve Vietnam's agricultural research capacity.

During the COVID-19 pandemic, the group managed to 'meet' regularly, organising hybrid training sessions on project monitoring and evaluation for its members and a workshop on COVID-related impacts on Vietnam's agrifood system. The network also attended other forums and discussions initiated by the alumni's home institutions.

'Receiving an ACIAR fellowship and then being a part of the Vietnam ACIAR alumni network has



Australian Ambassador to Vietnam, H.E Ms Robyn Mudie, gives welcoming remarks to the event. Photo: Duong Nam Ha, John Allwright Fellow from Vietnam National Agriculture University

completely changed my way of thinking and working,' said Dr Pham Thi Hoa, a Meryl Williams Fellowship (MWF) alumna in Vietnam.

Being an alumna herself, Hoa has also received ARSF funding to study the adaptation strategies of vegetable and flower farmers in Lam Dong province in the Central Highlands of Vietnam.

'The Meryl Williams Fellowship that I participated in 2019 is far different from the other scholarships I have had, designed to empower women scientists in agriculture. I have applied the knowledge I gained from the MWF to my ARSF-funded research during the pandemic, pulling together my inner strengths to be resilient and creative at the same time,' said Hoa.

'Through the connection with the Vietnam ACIAR Alumni network and the larger ACIAR Alumni Network, I have realised the importance of networking and partnerships in strengthening research outcomes and making more practical recommendations,' she added.

Since 1993, ACIAR has supported more than 100 Vietnamese researchers to attain postgraduate qualifications in Australia through current fellowship programs—John Allwright Fellowship, John Dillon Fellowship, and Meryl William Fellowship.

'We're proud to see how much our alumni appreciate and love the community. Moreover, this community will continue to grow in numbers and quality as the younger researchers learn from more

senior colleagues,' said Ms Nguyen Thi Thanh An, ACIAR Vietnam Country Manager.

'Many alumni have achieved significant success and are being promoted to leadership positions in many disciplines and sectors, within government, research institutions, and the private sector,' she added.

With a strong commitment to building the capacities of agricultural professionals around the world, ACIAR has invested in individual researchers and institutions in its partner countries to implement agricultural research projects and co-lead the bilateral cooperation for agricultural development.



Ms Eleanor Dean (left) joins Dr Pham Thi Hoa (2nd left) and other Vietnamese alumni in Can Tho City as they plan their 2022-2023 activities. Photo: ACIAR



Dr Le Thi Thanh Huyen (right) instructs a farmer on making fresh food for cows.

Interview with a researcher

Dr Le Thi Thanh Huyen is a senior researcher of National Institute of Animal Science and the coordinator of the project 'Intensification of beef cattle production in upland cropping systems in Northwest Vietnam' (LPS/2015/037). Huyen is currently participating in the ACIAR's John Dillon Fellowship – Vietnam cohort (2021-2023).

Hello Dr Huyen, can you tell us when you started working with ACIAR?

I learned about ACIAR in 2008 when the agency was developing a project on overcoming technical and market constraints to the beef enterprise in Northwest Vietnam (LPS/2008/049). Back then, I was based in Germany, doing my PhD on the beef cattle production systems in the same region of Vietnam. ACIAR contacted me to discuss their project design, and we kept in touch through seminars and academic exchanges throughout the life of the project. I was also one of the reviewers for the mid-term review of another ACIAR project focused on smallholder beef enterprises in central Vietnam (LPS/2012/062). As a result of these experiences, I was very interested in the collaboration between

ACIAR and Vietnam and felt well-connected with the Australian and Vietnamese researchers working in the livestock sector.

In 2016, the University of Tasmania (UTAS) invited me to join phase 2 of the beef cattle production project in Northwest Vietnam. Of course, I was happy to take this opportunity and become the project coordinator.

What are the achievements that you feel most proud of in relation to the project?

I am most proud of our cooperation with and capacity building for local partners. We have worked closely with Dien Bien's Department of Agricultural and Rural Development (DARD) across many project activities. They have also acknowledged

this participatory approach as a unique character of this project and highly appreciated its impact on their human resource.

Thanks to participating directly in research activities, many DARD leaders and officers, including young researchers, have grown professionally and become much more confident.

DARD leaders have also developed a stronger vision for the livestock sector at a higher level. They have recognised three intensive techniques introduced by projects and have integrated them into their agricultural extension program. They have also developed a 5-year strategy for the market-oriented livestock development program for the region. All these factors will help to ensure the sustainability of the project outcomes.

What is your 'recipe' for a fruitful partnership?

It wasn't easy initially when we didn't have a deep understanding of each other, but we have always encouraged partners to discuss emerging issues openly. Listening is the key, and you must take action to solve the problems after listening to the concerned partners. We have strengthened our mutual understanding through this process, which is key to the success of our partnership. With that understanding, we identified shared goals, and everyone was clear on their responsibilities and knew everyone had a voice in solving any problem.

What do you like most working on ACIAR projects?

I love the friendly, open, and respectful working environment of ACIAR projects. ACIAR puts a strong emphasis on the ownership of Vietnamese partners, so I can proactively propose new ideas in project implementation. I believe many researchers and Vietnamese partners share this feeling with me.

How has COVID-19 impacted your research efforts?

I had some challenging experiences in doing the ACIAR project during the pandemic. There were some last-minute changes that I had never experienced before, which confused me with the uncertainty and difficulty in managing task changes. But on the bright side, we learned to adapt to the new situation and always designed plan B and plan C in activities.

Are you enjoying the John Dillon Fellowship so far?

The JDF program has a highly interactive, team and project-based approach, which has given us a great opportunity to learn from each other in building our leadership and management capacity. With the diversity of participants and the course content, we have a diverse and comprehensive lens to reflect on and sharpen our leadership skills. Such diversity also helps us strengthen our network and networking skills, which is critical for researchers, especially those in leadership and management positions.

We often hear of challenges faced by women researchers. But what do you see as the advantage of being a woman researcher?

We have many roles to play, from being a researcher and a project leader, to being a mother and wife, which can help us develop highly efficient time management skills.

What do you think about work-life balance?

I used to work 7 days a week, but I found out it was ineffective for long-term performance, not to mention the quality of my private life. I've learned to prioritize time for my personal life. I will have at least one Saturday or Sunday morning completely off from work. Since I set this priority, I find myself and my family healthier and happier.

What are your future plans?

I am interested in applying a gender perspective in my work, especially in leadership and management. Through the JDF program, I am finding new opportunities to explore this interest. I want to participate more in gender-related research in agricultural and rural development because ethnic and rural women are highly vulnerable, but play an important role in the sector and should have better support to use their strengths.

Interview with a farmer

Mr Vi Van Tham is a Thai ethnic farmer in Dien Bien district, Dien Bien province. He is the leader of a farmer's interest group established with the support of the project 'Intensification of beef cattle production in upland cropping systems in Northwest Vietnam' (LPS/2015/037).



Mr Tham visits his grass field. Photo: ACIAR.

Thank you, Mr Tham, for joining us today! How has your beef cattle production changed since you joined this project?

I used to raise cows in traditional ways – I would locate some large areas on the hills and let the cows free-graze. Back then, my cattle were vulnerable to long, cold winters with heavy rains. I also couldn't have them get vaccinated with this practice. Therefore, the risk of contracting diseases or having accidents was high, and the newborn death rate was also very high. I once lost 10 cows because of these risks.

But I have changed my farming practice since joining this project. The project has trained me with more intensive production techniques and supported me with grass seeds to grow more grass for the cattle. Thanks to the training and project support, I decided to shift to keeping the animals in the barn. Every day, my wife or I ride them to the hills for natural grass and exercise, but we will stay with them all day and get them back into the barn in the afternoon.

Now I can easily have the cows vaccinated and feed them fresh grass. I am very happy because our cattle are safe and getting bigger and healthier.

Did you and other members in the interest group face any difficulty in changing into more intensive farming practice?

There was, of course, some uncertainty in the beginning. But the project officers were very thoughtful and supportive. They carefully instructed

us on building the barn, growing grass, fattening techniques, and vaccinations for the animals. They provided us with grass seeds and trained us to make hay to store food for dry season when fresh grass is unavailable. With some pioneering members starting to follow the project's instructions, we saw the death rate because of cold and disease drop dramatically, and with the fresh grass, the cows grew bigger. Now we have 100% of the interest group members raising cows in barns and growing grass actively.

How has the improved beef cattle production impacted your family's life?

I normally have about 20 cows. Since I started applying more intensive farming techniques, the newborn death rate dropped, so the herd size is quite stable. I earn up to 120 million dong (\$A7,300) per year for selling cows for breeding and beef. My family also has income from raising pigs and cultivating maize, cassava, and rice. We can cover the university tuition for our two kids to study in big cities.

In addition, now that I have the cows in the barn, separate from our house, the domestic hygiene is better than before, when we had them tied to any place around our house. This change is good for our family's health.

And how do you think the beef project will help your community?

The government will increase the forest plantation, and people are growing more crops on hills, meaning that the natural feed for cattle will reduce dramatically. In the next 10 years, I predict that every farmer who has cattle will have to grow grass for feed. With the project support, our farmers can confidently apply intensive production techniques. We are going in the right direction.

Also, when the cattle farmers keep their animals in the barn, there will be a much lower risk of the animals destroying the crops, so that both cattle farmers and crop farmers are happy, with no conflict in our community.

Thank you! We wish you good health and higher farming productivity in the coming year!

Grilled Beef Spring Rolls

Ingredients

600-800 g	beef (preference - tenderloin or fillet)
300 g	lettuce
1 cup	basil
1 cup	Thai basil or mint leaves (can substitute with other herbs)
50 g	bean sprouts
1	cucumber (around 150 g)
1 package	rice paper

For marinade

3 bulbs	minced lemongrass
1 bulb	minced garlic
1 tbsp	vegetable oil
1 tsp	salt
2 tbsp	sugar
½ tsp	pepper powder

For dipping sauce

100 g	roasted and peeled peanuts
150 g	tomato
2	sliced chilli
4 cloves	sliced garlic
2 tbsp	water
2 tbsp	fish sauce
2 tbsp	sugar

Method

- Slice the beef.
- Marinate the beef with minced lemongrass, minced garlic, vegetable oil, salt, sugar and pepper powder for 20 minutes.
- Dipping sauce preparation:
 - + Combine peanuts and tomato into a blender and blend for 2 minutes.
 - + Preheat oil in the frying pan, add 2 garlic cloves and stir-fry until they turn light brown.
 - + Add the mixture of peanut and tomatoes to the frying pan. Add sugar and keep the stove at low-med heat for 3 minutes. Set aside the mixture in a bowl.
 - + Add lemon juice, garlic, sugar, fish sauce and chilli into the mixture. Stir evenly to mix all of the flavours together.
- Wash the vegetables and herbs. Trim to 5 to-7 centimetres length. Slice cucumber into 5 to 7 centimetres strips.
- Grill the marinated beef in the oven or on the grill (preference - charcoal grill).
- Prepare a flat plate. Place rice paper on the plate and add vegetables and grilled beef on top. Fold right and left sides of wrapper over filling. Fold bottom edge up over filling and roll up tightly. Serve with dipping sauce.



Recipe by Ms Nguyen Thi Xe, Phuong Chi village, Cat Tien commune, Phu Cat district, Binh Dinh province. This is a typical dish of Central Vietnam.

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 ten country/regional offices and we have been active in Vietnam since 1993.

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