Australia's National
Science Agency

How can an Innovation Club help the diffusion of technologies and foster collaboration in the Vietnam agricultural sector?

A case study and lessons for A4I from the Horticulture Innovation Club (HIC)

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February 2023

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Introduction

Agricultural public extension services have long been tasked with the delivery of technological change and innovation in Low- and Middle-Income Countries (LMICs) (Allahyari, 2009; Bose, 1962; Haug, 2007; Maunder, 1972). Since the 1960s, these services have grappled with the complex task of facilitating technology adoption for farmers in a variety of (highly different) development contexts, and represented the most common source of information for farmers in the Global South (Mapiye et al., 2021). However, the mainstream approach to technological change, namely, the transfer-of-technology" (ToT) model processes (Adekunle and Fatunbi, 2014; Asopa et al., 1997; Hartwich and Tola, 2007) has been increasingly questions. The approach mandated agricultural research organizations to promptly develop technologies that would address a bundle of issues plaguing LMICs -from poverty to food insecurity. These organisations then presented discrete "technology packages", widely applicable to a variety of contexts (Glover et al., 2019; Peters et al., 2001), to public extension services, who would in turn promote this finished product among farmers (Fig 1).

Despite its well-meaning purpose, the ToT approach has, since the beginning of the century, been deemed increasingly unsuitable to deliver a variety of increasingly pressing objectives, include poverty alleviation, food security and sustainable development more broadly (Allahyari, 2009; Douthwaite et al., 2001). Besides, it has been criticized for considering farmers as simple passive recipients in the process of technological change (they would simply adopt or discard the product) instead of recognizing their active participation in the technological change process through continuous experimentation and learning (Douthwaite et al., 2001; Glover et al., 2019). Additionally, it has been argued, the idea of "technology packages" largely overlooked the high level of context-specificity that characterizes each place, actors and dynamics (Klerkx and Leeuwis, 2008; Wigboldus et al., 2016). This increasing scrutiny has led to the emergence of alternative, more participatory approaches, where the agency of a multiplicity of actors is recognized and valued (e.g. farmers, extensionists, project managers, scientists). These novel approaches acknowledge that the level of context specificity requires careful consideration of context-appropriate technologies, and continuous reflection on how to facilitate the process of technological change (Glover et al., 2019; Hall, 2007; Kilelu et al., 2011; Klerkx et al., 2009).

Figure 1. Linear model of agricultural extension. Adopted from (Adekunle and Fatunbi, 2014; Asopa et al., 1997)

In recent years, increasing interest has been devoted to the potential of innovation platforms, which present an approach that moves beyond the ToT approach and the usual triad of research organisation-extension services-farmers. Understanding innovation in a system perspective (Dorai et al., 2015), these platforms are designed to reach out to a wider group of stakeholders (Nederlof et al., 2011) in and sometimes beyond agriculture (e.g. farmers, the private sector, policy-makers, researchers) to re-think the process of technology transfer and amplify the impact of both agricultural research and extension services by generating an "enabling environment" for fostering innovation - not only in terms of technologies, but more broadly intending practices, business models, and so on (Totin et al., 2020).

An innovation platform is defined as:

> *"A group of individuals (who often represent organizations) with different backgrounds and interests: farmers, traders, food processors, researchers, government officials etc. The members come together to diagnose problems, identify opportunities and find ways to achieve their goals. They may design and implement activities as a platform, or coordinate activities by individual members."* (Homann-Kee Tui et al., 2013)

Providing a critical space for learning and change by ensuring interconnectedness between multiple stakeholders and facilitating democratic dialogue, these platform have proved their potential to facilitate the adoption of new agricultural technologies (Totin et al., 2020). Besides, in contrast to the linear conceptualisation offered by the ToT appraoch, these platforms have been considered suitable to navigate the increasingly acknowledged non-linearity of the agriculture and food sector (Homann-Kee Tui et al., 2013), characterized by its complex, multi-scale and unpredictable challenges, as well as by the presence of actors with often contending interests and (Blake et al., 2019; Hall and Dijkman, 2019; IPES, 2015). Innovation platforms are designed to bring together different stakeholders to find solution to collectively identified issues (e.g. climate change) and provide a forum to explore opportunities and collectively implement solutions for those, in a highly participatory manner (Nederlof et al., 2011). They can ensure multiple actors agree and align to a common agenda and ensure continuous communications while building trust-based relationships (Dorai et al., 2015).

However, they also have pitfalls, and over the years, have been subject to numerous critiques (Dorai et al., 2015): for instance, previous case studies have highlighted how governance issues might arise, creating power asymmetries between different members of innovation platforms and shaping the agenda setting by fore fronting certain priorities and actions over others might emerge in the identification of common issues to be addressed (Cullen et al., 2013; Dorai et al., 2015). This is especially relevant in case external partners are involved (e.g. donor organizations), who might (even unintentionally) direct the platform towards pursuing outcomes that are misaligned to specific local/national priorities (Cullen et al., 2013; Dorai et al., 2015; Hendrickx et al., 2015).

Besides, without careful management, the diversity of the stakeholders in the platform might be neglected (for instance, specific stakeholders might be in a minority compared to others (Cullen et al., 2013) – or gender imbalances perpetrated (Mulema et al., 2015). Finally, it has been argued that, if the right stakeholders or partners for the platform are not identified (Hendrickx et al., 2015), and a clear organizational structure is not set up, these platforms might not have the necessary capacities to manage different elements of complexity (Dorai et al., 2015) that might arise along the way.

Acknowledging both advantages and pitfalls of innovation platforms, this report explores the case of an innovation platform in Vietnam – the Horticulture Innovation Club (HIC).

The report is structured as follows: the next section explains the Vietnamese context. Then, the following two sections are dedicated to illustrating the methodological choice and presenting the case study in detail. The HIC achievements are discussed, to finally draw a set of lessons for development practitioners and researchers that are interested in the diffusion of agricultural technologies in LMICs contexts.

Box 1: Vietnam, a changing landscape

Over the last 25 years, Vietnam has gone through a fundamental market reform to boost its economic growth (Fortier et al., 2013). The *Dổi mới*, or "Renovation", promoted a set of reforms for economic liberalization, which would at one increase the country's GDP and reduce poverty and food insecurity

across the country. The reform did, indeed, fundamentally change the agricultural landscape, boosting the economy through productivity increases, soaring agro-food exports, and decreases in poverty (OECD, 2015; Van Giap, 2019). Despite the positive outcomes of the reform, however, several challenges currently loom over Vietnam's agriculture and food sector, which employs 43% of the country's population (FAO, 2018). Food insecurity and poverty have remained widespread in rural areas (Fahad et al., 2022; Minh Do et al., 2018; Vu and Rammohan, 2022), and Vietnam is among the five most affected countries by climate change worldwide (World Bank and Asian Development Bank, 2020). Such changes in climate change are making rural livelihoods increasingly vulnerable (and are predicted to do more so in the future (Nguyen et al., 2021) to unpredictable floods and storms, erratic rainfalls, prolonged draughts and heatwaves that have become more frequent and severe in recent years (Tran et al., 2022). Besides, the modernization of agriculture (characterized by monocropping, high chemical input use, and widespread mechanisation) prompted by the *Dổi mới* has caused major land degradation and water use issues and, according to recent research, largely benefitted to large corporations and multinationals rather than small scale farmers and agricultural SMEs (Van Giap, 2019) (Fortier et al., 2013). As a response, the Vietnamese government has strengthened its focus on agricultural innovation, on the one side to boost growth and alleviate poverty, and on the other, to cope and respond to environmental degradation concerns and other sustainability issues (Duong, 2022; Quan et al., 2022; Thuy et al., 2022). More recently, during the UN Food Summit in 2021, Vietnam adhered to the new objectives proposed by the global sustainability transformation agenda (Dao, 2021; MARD, 2021; Nguyen, 2021) – which aims for opening more diverse, plural and sustainable pathways of development that can grant long-term environmental viability, social inclusion and fair economic growth (FAO, 2021). Yet, as the Government forefronts sustainability and resilience in its political agenda (Minkman et al., 2022), how to implement sustainability objectives in the Vietnamese agricultural landscape has remained ambiguous.

Methodology for the study

The case study explores the three-year evolution (2019-2022) of the Horticulture Innovation Club (HIC), Vietnam. The study adopts a qualitative approach to gain an in-depth understanding (Baxter and Jack, 2008) of the Club's history and the way it fostered its members' ability to access new technology and ideas from University research and elsewhere. To do so, it conducts semi-structured interviews with researchers (both from CSIRO and the Vietnam Academy of Agricultural Sciences), Small and Medium Enterprises (SMEs) owners, the Fruit and Vegetable Research Institute (FAVRI) personnel and farmers. The study has had ethical approval from CSIRO and ethical clearance was conducted prior to each interview.

The HIC story

The Club was set-up in 2019 as an "innovation pilot" of the Aus4Innovation program (A4I) program[1]. More specifically, the HIC was positioned within the Science Commercialisation Partnerships (SCP) stream, which is focused on the delivery delivering research and technology to market through science commercialisation approaches and research-industry partnerships in Vietnam's agriculture and food sector. SCP is testing multiple approaches to partnering – from traditional approaches like licensing and contracting, to non-traditional approaches like regional innovation clusters and graduate-industry programs for universities.

In this context, the club represented an unconventional opportunity for connecting agribusinesses and researchers in Vietnam's northern provinces and foster innovation in production and processing are creating value chain efficiency and new market opportunities, in the fast-growing Vietnam's agricultural context (box 2) (CSIRO, 2022). The HIC pilot was catalysed through funding from A4I and implemented in collaboration with the Vietnam Academy of Agricultural Sciences (VAAS) and its Fruit and Vegetable Research Institution (FAVRI). The HIC adopted a novel approach to foster technology adoption and support farmers in responding to multiple and interconnected agriculture and food system challenges that were unique to the Vietnam context. This is still an on-going project, which represents powerful lessons for fostering innovation in LMICs context.

Box 2. Vietnam and Australia's innovation partnership

As the Australia-Vietnam aid relationship continues its transition into an economic partnership, the Australian Government is increasingly focusing on the role that innovation can play in Vietnam's economic development. The current Vietnam Australia Aid Investment Plan (2015-2020) includes a four-year Aus4Innovation program (2018 – 2022) to enable a dedicated focus on innovation. The objective of the A4I is to create a partnership between Vietnam and Australia that strengthens the Vietnamese innovation system and prepares for Vietnam 2035. This will support Viet Nam's continued inclusive and sustainable growth. A key area of focus in the A4I is the agri-food sector, which is the largest one in the Vietnamese Economy. This important sector is facing a number of shocks and disruptions, including COVID-19, to changing consumer preferences and supply chain transformations to climate change. In particular, disruptions caused by COVID-19 have highlighted the importance and urgency of enhancing the resilience of the Viet Nam's agriculture and food innovation systems to continuously and rapidly adapt and transform in response to unexpected changes. Therefore, the A4I program is building both systems capacity and capability in science commercialisation and partnerships to enable innovation and support Vietnam's continued inclusive economic growth and continued progress towards the Sustainable Development Goals. Through a series of pilots (including the HIC), the theme aims to capture lessons and insights to support scaling discussions with different stakeholders, namely relevant policy makers and practitioners. (A4I, 2022a, 2022b; CSIRO, 2020)

[1] A partnership between the the Vietnamese Ministry of Science and Technology (MOST), and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) with the support Australian Department of Foreign Affairs and Trade (DFAT).

2019: The idea takes root – defining the innovation system challenge

The inception for HIC in 2018 was the recognition by the CSIRO Science commercialization team that farmers and SMEs were struggling to access knowledge on novel agricultural practices and technologies that could boost their profits – this was true for farmers in terms of agricultural practices, but also for SMEs in terms of doing business (for instance, selling fertilizers or machineries, or processing products). Similarly, it was difficult for farmers to access new solutions that could help them mitigate and respond to changes in climate and new pests. The CSIRO team started to investigate the reasons behind this, consulting with different stakeholders including the Vietnam Academy of Agricultural Sciences (VAAS), policymakers in the Ministry of Agriculture and Rural Development (MARD), local universities, but also businesses and farmers.

Part of the reasons that made the HIC idea revolutionary was the pre-existent vision of knowledge and technology transfer, linked to the history of agricultural extension in Vietnam. Like many other countries, extension services in Vietnam had a adopted a linear model for technology delivery, which was however increasingly falling short in different parts of the country in terms of providing the technology and information support that farmers needed (see box 3). There were many reasons for this: extension personnel struggled to reach more isolated rural areas; and they also had little knowledge on novel agricultural practices that were environmentally sustainable because of the traditional focus on technology to enhance productivity. In addition, many farmers reported that with the increasing number of agricultural technology options brought to Vietnam by foreign agri-business companies, extension services struggled to provide the relevant knowledge to farmers on the best uses, different benefits, and possible problems that could help them choose among this wide range of technology options.

One farmer reported:

> *"We did not know which technology to choose… So many options were available after big companies came to Vietnam! But we could not find anyone who could help us clearing our doubts"*.

Box 3. A look back: Vietnam's agricultural extension model

Since the 90s, Vietnam's agricultural production has grown exponentially. According to the International Rice Research Centre (IRRI) the production of rice has more than doubled between 1986 and 2008, and the country became the second largest global exporter of rice (Fortier et al., 2013; IRRI, 2007). The development of improved irrigation systems, the introduction of new crop varieties and the dissemination of advanced technologies have all contributed to the country's agricultural growth (De et al., 2006). Extension systems played a key role here. The government had made strenuous efforts to create state-led agricultural extension systems, adopting the Transfer of Technology model (Peters, 2001). In 1993, the Government of Vietnam directed each province to establish its own extension service, believing that technological change should be managed through central directives sent to technicians and managers at the cooperatives (Friederichsen et al., 2013). However, this quite top-down model was mostly oriented towards the transfer of individual technologies (Peters, 2001). This was later criticized for its inability to provide technologies that were appropriate to farmers (Friederichsen et al., 2013). Thus, in more recent years, Vietnam's government has acknowledged the need to go beyond technology transfer to instead build stronger networks and innovation capacities among agricultural sector players, particularly implementing an innovation system approach (Friederichsen et al., 2013). As recognized by the Vietnamese government (Government of Viet Nam, 2009; MARD, 2008), this will be important to to respond to pressing challenges, such as he steady

decline in cropping areas, or, even more evident the soaring impacts of climate change (Fortier and Trang, 2013).

The CSIRO team also found that the issue of access to knowledge and technology was not just the acknowledged challenge of the Vietnam agricultural extension system. Instead, it was also apparent that poorly developed linkages between universities and various agriculture sector actors was preventing farmers accessing and exchanging knowledge for, on the one side enhance productivity, and on the other, to respond to changes in climate happening in the country. In other words, there was a need to connect until-then-scattered stakeholders could exchange knowledge, share insights and experiences, and build a network of connections that could help them not only solve agricultural-related issues and doubts, but also promote and market a wide range of products.

The CSIRO team argued that stronger links between agricultural system actors (e.g., farmers, processing factories, researchers, policymakers) would be needed to accelerate agricultural innovation and that this would be an element of CSIRO's broader program intent on strengthening Vietnam's innovation system.

While the challenge was clear, means of addressing it needed further exploration. The CSIRO team started to consider the idea of innovation platforms, as a mechanism to foster agricultural innovation (Kilelu et al., 2013). This platform would group individuals (who often represent organizations) with different backgrounds and interests: farmers, traders, food processors, researchers, government officials etc. The members come together to diagnose problems, identify opportunities, and find ways to achieve their goals. They may design and implement activities as a platform, or coordinate activities by individual members (Homann-Kee Tui et al., 2013).

The CSIRO team recognized the value that innovation platforms could have for connecting farmers, extension officers, policymakers, researchers, and other stakeholders in the agricultural system. The team understood that these connections between the multiple actors in the agricultural sector were struggling to emerge spontaneously in the Vietnamese context and needed support to promote these connections in a more coordinated and organized manner. This could be achieved, it was argued, through the creation of an "innovation club", an idea that drew some on the core principle of an innovation platform as outlined above, but drew heavily on ideas in the innovation capacity literature dealing innovation hubs, clusters networks (Adekunle and Fatunbi, 2012; Dorai et al., 2015; Klerkx et al., 2013; Newton et al., 2020; Pigford et al., 2018; Totin et al., 2020). As a CSIRO team member reported:

> *"Many innovation platforms in Europe were mostly restricted to researchers. […] Here, we needed a platform that could connect all stakeholders: not only researchers or policymakers, but also farmers and SMEs, who were struggling to find support to produce and market their products".*

However, CSIRO faced several challenges for promoting the HIC's idea: first, it had to understand the Vietnamese agricultural context through a high-level systems analysis that would help flag opportunities for different innovation support approaches. Second, coming up with the idea of HIC, the appropriate partners would need to be identified, who would share CSIRO's innovation vision. Third, the idea needed to be shared and agreed upon with these partners to ensure a common vision for the club. Finally, CSIRO needed to secure catalytic funding to set-up the HIC.

2019: Early innovation club design considerations

After discussion with different stakeholders and visiting a number of already-existent platforms and in Vietnam, the CSIRO team identified an important lesson for the establishment and operation of the innovation club: namely, the need to make the club more institutionalised or embed it in a set of clear rules and procedures. Formal institutions represent an important factor for legitimacy in Vietnam's cultural and political context (Steer and Sen, 2010). The logic was that with a solid institutional structure, the club could increase its credibility to possible members. Thus, the CSIRO team brought on board a major partner for the club – the Vietnam Academy of Agricultural Science (VAAS). One of VAAS research institutes, the Fruit and Vegetable Research Institute (FAVRI), agreed to host the club (Box 1). FAVRI specialized in research on fruits, vegetables, and ornamentals for production in Northern and Middle central provinces in Vietnam. As many challenges were affecting fruit production in northern Vietnam, the "Horticultural innovation Club" (HIC) – or Câu Lạc bộ Đổi mới sáng tạo ngành rau hoa quả in Vietnamese, was funded in join collaboration between CSIRO and VAAS. CSIRO was then able to provide $20K as initial funding for the set-up of the club.

It was decided that VAAS would be the host institution for the club, while FAVRI would overtake the running of the club and its daily activities. It was agreed that the main purpose of the club would be to create a platform for researchers, universities, enterprises, cooperatives and individual farmers to explore and design new ways to produce their fruits and vegetables, and deliver them into both domestic and international markets (CSIRO, 2022). According to its statute, the Club would

> *"create a forum for sharing information about new technologies, opportunities for business, cooperation, commercialization of new technologies and enhancing members' competitiveness" to build an "innovative ecosystem" that can "identify and replicate initiatives and solutions to adapt to new situations such as Covid-19 epidemic or climate change", especially, but not only, through "new technology transfer in the fruit and vegetable industry" (Horticulture Innovation Club, 2021).*

A work plan for running the HIC was co-developed and adapted in close collaboration with VAAS, ensuring clear shared goals are identified, the network structure is strengthened, and novel tech and knowledge transfer approaches are explored. Through this continuous collaboration, the Club's mandate was designed jointly by CSIRO, FAVRI and VAAS, establishing the following objectives:

1. Creating a network of partners to promote innovation movement, develop new technology, participate in knowledge dissemination, transfer and commercialize new technology and innovation initiatives .
2. Connecting agencies, units and organizations related to innovation activities, coordinating with the organization of events for businesses, cooperatives, and researchers to develop strategies. Adaptation to climate change.
3. Develop training programs to strengthen capacity for innovation and creativity, with a focus on skills to adapt to adverse events of climate change.
4. Connecting funds and capital sources for innovation, creation, developing new technologies, creating opportunities for members in investing, cooperating in innovation projects.
5. Providing information and knowledge related to markets, marketing, production and business opportunities, and new technologies that can be transferred into production.
6. Developing a mechanism for forecasting challenges faced by SMEs and cooperatives and innovative, timely and effective adaptation strategy solutions.

Together with a clear mandate, the HIC also made specific effort to set-up clear governance arrangements, that would solidify its organisational structure and strengthen the coordination of its actions. A Board of Directors was elected at the club's founding congress, and included a Chairman, Deputy Directors, Secretaries, Advisory Boards. The purpose of the Advisory Board was given the right to re-evaluate activities and propose novel ones to maximize collective intelligence in the club. Besides, a club manager would be responsible for all activities of the club and to organize assignments of the different Club members (https://en.hic.org.vn/?p=56). If CSIRO was initially doubtful about the need to immediately establish such a formal structure, discussion with local partners was crucial to understand how this was extremely important in Vietnam. A member of the CSIRO team reported:

> *"we initially did not understand the need to go so deep in the governance structure. Only with the help of our partners we could understand how important this was in the country context".*

Thus, over a timespan of three months, clear governance structures were co-designed with the partners.

2020: First institutionalization attempts, and an unprecedented shock with a silver lining: the HIC in the Covid-19 context

The collaboration between FAVRI and CSIRO led to the first in person meetings in early 2020. However, suddenly, an unprecedented shock took place: in early 2020, the COVID-19 pandemic hit Vietnam, with significant repercussions for people working in the agricultural sector: lockdowns throughout the countries forced people (in agriculture and beyond) to stay at home, resulting in lower incomes, job losses, and poorer connection to markets (Slavchevska et al., 2022; WHO, 2022). As a countermeasure, the government of Vietnam promptly attempted to speed up digitalisation in the country, both within and outside working environments. At the same time, companies had little choice but to integrate digital technologies into their daily operations2 (Koch and Wekezer, 2022), while workers and the general public had to quickly learn how to use new digital tools in their daily lives (see Box 4).

The club however, set up only a few months before the pandemic, found itself in a situation of widespread uncertainty: with a country-wide lockdown, meetings in person (a key feature of the clubs proposed mode of operation) became impossible. To respond to this sudden change in circumstances, CSIRO and FAVRI together developed a work around to this unpredicted challenge: instead of in-person meetings, the club would host virtual weekly talk shows on Zoom or similar platform.

> *"All of a sudden, we had to cancel our flights to Vietnam – we could no longer oversee the Club in person. Covid changed everything. We did not know whether a talk show would work: the Club had just started, so it was all very new" says a member of the CSIRO team.*

Box 4. Vietnam's digital transformation during the pandemic

Digital technologies were a key enabler to facilitate home-based work, remote learning, and home supply delivery, which became essential during the pandemic (Dione, 2020). Covid accelerated Vietnam's already on-going digital transition, with both government and the private sector adapting quickly to the unexpected shock (Hosny and Sollaci, 2022). A World Bank report highlighted two ways

[2] For example, in internal administration, digital banking, or online marketing.

in which a fast digital transition could happen in the country (World Bank, 2021). On the one hand, through government's deliberative spurring. Following the outbreak, the government immediately stepped up efforts to streamline procedures and provide public services to citizens via digital means. The world bank reported that the number of digital services grew from 169 in March 2020 to over 1,900 by October 2020. As of February 2021, over 2,000 services had been standardized and integrated into the National Public Portal, ranging from drivers' licenses to tax and enterprise registrations, leading to a tenfold surge in the number of visits and transactions between the January 2020 and February 2021. On the other, through rapid responses from private companies. Vietnam's firms embraced ICT to enable remote work and to reach their customers during social distancing and mobility restrictions. Recent phone surveys by the World Bank show a sharp increase in the use of digital platforms, e-commerce websites, online social media, and specialized apps in response to the COVID-19 outbreak, rising from 48 percent of firms in June 2020 to 73 percent in January 2021. Over the same period, the number of firms investing in digital solutions—such as installing new equipment and software in their business operations—more than quadrupled from 5 percent to 21 percent.

This created an incentive for the general public to quickly learn how to use these services. For instance, recent research has highlighted how covid has prompted a wide number of consumers to buy smartphones that would allow the use of mobile applications, for instance, for accessing governments' services, ensure delivery of products, or shop online (Le, 2021). Thus, covid could be considered as a game-changer for Vietnam's digital ambitions.

The idea was that the virtual talk show would discuss a variety of topics in the horticultural domain – ranging from novel technologies to alternative farm practices (such as organic agriculture), to new ways of processing and marketing products. The structure of the talk show was as follows:

1. A presenter, usually a researcher, or a SME's owner would be invited to present;
2. The topic and the speaker of the talk show would be communicated to members of the HIC a week prior so that members could decide whether or not they wanted to join.
3. Participants were invited to submit questions prior to the talk show so that the presenter could prepare the answers in advance;
4. During the shows, the presenter would present his/her topic, but ample room would then be left to participants to ask questions (even ones not communicated previously) and discuss.

To join the meetings, club members only needed access to a smart phone and internet access had been dramatically improved. Researchers themselves helped farmer gain familiarity with these new digital tools. Besides, a major strength of the club was its ability to promote free and open communication amongst all talk show participants. As one FAVRI scientist reports:

> *"One researcher would usually chair the meeting and present an innovation. But, other researchers would be present. Thus, after the presentation was finished, everyone could talk freely and, while farmers and SMEs shared experiences on the possible use(s) of the innovation, other researchers might jump in the conversation to provide additional advice and insights. It was all very smooth and open, and everyone could talk and express his or her own concerns."*

If initially seen as a major obstacle for HIC's success, moving meetings online ultimately had a bundle of advantages. Firstly, most of the stakeholders were (as much of the rest of the country's population) constrained at home and had additional spare time. Secondly, meetings in person became "business as usual" in Vietnam. In the absence of this virtual approach and the proposed pre covid modus operandi moving to the club location was would have been costly and time consuming for many of the stakeholders living outside Hanoi. From this, a third advantage was that by moving meetings online, participants benefitted from an additional freedom: if the topic was not relevant to them, they could easily log-off, with "zero-regrets" over time and money. With no additional money or time required to reach the physical meeting place, stakeholders felt it was easier to join.

2021: Refining HIC's operations: An expanding network for knowledge and innovation

Figure 2: Some of the talk-show titles

The numbers of participants in the club grew exponentially over a brief period of time, raising to approximately 800 users in just a few months. A Zalo (i.e. the Vietnamese equivalent of WhatsApp) group was set up to further facilitate contacts among stakeholders, promote posting of relevant information, and encourage dialogue around topics discussed at the talk show, or share information around new products, either around past and future talk show sessions, or around pressing agricultural issues (see box 5). Researchers increasingly communicated with farmers, as the club encouraged open dialogue and, by being online, eliminated divisions between participants.

SMEs and farmers could freely consult with researchers or University faculty members. When required, they could contact experts privately before/after the talk shows to inquire about specific problems or issues:

> *"I scheduled a private call with her [name of the researcher]. She went to her lab and conducted specific tests to find out which crop varieties were more suitable for my soil. Then, she gave me some options on which ones to choose", says a female farmer.*

Compared to other platforms, the HIC made experts' active participation a core strength, ensuring interactive dialogue between all stakeholders.

> *"Some platforms already exist to connect farmers and SMEs in Vietnam. But, in none were scientists involved", one SME owner reports. Another says, "when we got to know that Australian researchers were involved, that was a big incentive to join!".*

Box 5. from solving pressing problems… to unexpected new knowledge on sustainability

Oranges are very popular in Vietnam. They account for the highest share of fruit expenditures in all cities, especially cities in northern Vietnam, where more than 30% of fruit expenditures were on orange/citrus products (University of Adelaide, 2019).

One orange producer near Hanoi joined the club in 2020, worried by a number of diseases that were increasingly affecting his orange production.

By sharing his problems with experts and actively exchanging knowledge with other fruit producers in the HIC, he learned how to take better care of his plants when they got sick, thus reducing his losses. However, in the process, he also became aware of something much more important. If before, he used to produce oranges by using chemical inputs to avoid pests and diseases and maintain productivity, he learned about the dangers of these products. By taking part to the talk show, he became increasingly aware of the importance of more natural and sustainable agricultural practices, as a way to protect both the soils and consumers' health. Concomitantly, he started to see changes in consumers following the Covid pandemic. Consumers, especially in cities, became more demanding in terms of food safety and pesticide-free production. Therefore, by relying on help and insights from the HIC, he decided to try more natural production methods that would only using minimal chemical inputs. After seeing the benefits of this, he switched to fully organic production, learning how to market his now pesticide-free products for a premium price. Now, he shares his experiences with neighboring farmers and friends, urging them to join the club and learn more about sustainable production.

Many SMEs owners reported that they were able to build a strong network of peers through the club, while benefitting from experts "advice on a broad range of topic, such as marketing strategies, novel processing techniques, or more suitable technologies for their businesses". At the same time, farmers explained that they could solve numerous challenges they were previously grappling. This was not only through experts' guidance, but also by sharing experiences and insights with other farmers facing the same issues. After the creation of the HIC, actors in the network started relying on each other not only for shared knowledge on technologies and practices, but also started purchasing products from each other instead of third parties. This benefitted many club members as neither researchers nor SME owners aimed to make profits, advice on technologies was based on experiences on what worked, or what didn't. One interviewee reported:

> *"Researchers did not aim to sell products. Rather, they advised us on technologies that were suitable based on their knowledge, and then we could draw from experiences of other club members using that same technology, to understand if it could work for us".*

Moreover, the online platform connected stakeholders that would otherwise be unlikely to meet because of physical distance:

> *"I would never have been able to meet Mr. [name of the SME owner]: we were way too far apart! We could only connect through the talk show, that's why I got to know about his products, which I now use in my farm."*

Box 6. Experiences from a lychee farm: novel technologies and safer food

In the heart of Vietnam's lychee capital – Luc Ngan, in the Bac Giang province, three agricultural young female entrepreneurs have created a cooperative to produce and market lychees. Lychee is a popular fruit in Vietnam, consumed both fresh and dried. The three women became member of the HIC during the first Covid lockdown in 2020 and have, since then benefitted from knowledge exchange and innovation promoted by the club.

Previous to their joining, they were using cooling drying techniques for their lychees. These technologies were supported by the government yet, they were found as "too expensive" and "not very practical" by lychees producers – these techniques took up to two years to dry the lychees. After attending one of the talk show sessions on drying and post-harvesting technologies, however, they learnt about an alternative, much faster- drying method. The women decided to try this alternative technique and, with the help of experts, were successful in producing higher quality lychees that took only 60 days to be properly dried. This was a fundamental innovation for the cooperative, which is now able to produce and sell products of superior quality in larger volumes (as the drying time is considerably reduced, more lychees can be dried and then sold in markets).

Besides, the women reported another key benefit from the club: thanks to experts' advice, they have become much more mindful about sustainability issues. They have reduced chemical input use, and at the same time, have become more aware of food safety issue – particularly, of new ways to prevent bacterial contamination in lychees during the drying process.

Thus, involvement in HIC allowed the women-led cooperative to not only switch to novel drying technologies that were more suitable to their needs, but also to acquire new knowledge on sustainability and food safety issues that are becoming increasingly important among Vietnamese consumers.

2022. Between present successes and future challenges

As the club expanded, additional challenges emerged. Specifically, follow the covid outbreak, an additional number of people in Vietnam became more conscious of the importance of healthy eating and pesticide-free products. As environmental viability was increasingly incorporated into policies, farmers and SMEs had to re-think practices, inputs, and products to be able to on the one side respond to land degradation and increasingly evident changes in climate, and on the other respond to sustainability concerns from the consumers' side. By leveraging network linkages and relying on experts' counsels, many were able to adopt new, more sustainable practices (box 4).

However, the HIC now faces three core challenges: the first concerns the future funding for the club; the second concerns the management and leadership; and the third revolves around the already-ongoing switch from online to offline.

First, the lack of stable funding currently represents an hinderance to the future of the club. A number of options are being considered:

1. HIC could ask its users to pay a fee for either specific talk shows, or in the form of an annual membership.
2. HIC could offer consultancy services for SMEs and farmers, which would be chargeable.
3. HIC could be funded by bigger enterprises taking part in the club, who be able to market their products to network's actors.
4. HIC could rely on donor's funding
5. HIC could seek funding from the public sector, specifically by accessing Government's funding.

However, each option has trade-offs:

1. HIC members thought a major strength of the club was that it was free. They could freely join sessions and decide whether to leave if they found the topic was no longer relevant. A fee might discourage participants' engagements.
2. HIC might not be able to finance itself through consultancies. Ad hoc personnel (e.g. researchers) would need to be fairly paid for their time and contribution. This might be difficult to organise and manage.
3. Funding from larger companies will give them advertisement and marketing privileges and guide the club in a more profit-oriented direction. However, it could result in the Club being captured and directed by the interest of large companies that may not be well aligned with farmers and SME's interest and broader considerations about inclusiveness and sustainability.
4. Donors' funding might shape the priorities and tie the club to a set of targets and deadline upon which funding would be granted. Again, autonomy and the ability of the club to evolve in response to its members needs could become constrained.
5. Government's funding might be the more viable option. However, this funding might then be dependent (and vulnerable) to changing policy and priority settings, giving the club a legacy of uncertainty.

The second challenge relates to the internal management and organisational structure of the club. SMEs and farmers both reported the need for clearer leadership. Until now, HIC was managed by FAVRI, but many members were not sure of who was the person tasked with the management of the club.

There was also indication from members that a more structured protocol for the Zalo group would be required: members have until now posted content based on implicit guidelines that such content should be related to horticultural topics, but a more definite set of rules would avoid issues of wrong posting. One of the interviewees reported:

> *"I like the Zalo group, the communication is very open. I like posting content about horticulture. But, sometimes I am not sure of what I can post, and sometimes, posts that I thought were relevant have been deleted".*

Third, while covid's impact on daily lives fades, and people go back to normal, many wish that some of the club activities take place off-line. Members have expressed interests in the possibility of fieldtrips to go and see how novel technologies operate, or more generally, discover new ways of doing things in practice. Another interviewee reported:

> *"The talk show is good because this way I do not have to travel to the meeting's location. However, I would like to see the technology with my own eyes, to understand how it really works, and how people are using it. Before the pandemic, the club organised some field trips, that were great to acquire new knowledge and discover new practices. More fieldtrips should be organised now that covid restrictions have been removed."*

A fourth issues concerns the emerging tensions associated with the selection of the thematic focus of the club's activities. Some members framed the role of the club as promoting new technology to farmers through a "show and tell" type approach ("farmers need to know about drones". Others framed the role of the club as focusing on emerging challenges and opportunities and using the club process to search for information, technology, and approaches to create solutions. The first framing is a legacy of the traditional research driven, technology transfer type extension models. The second is much more strongly aligned to an innovation driven approach based on searching for ideas old and new that help unlock challenges and opportunities. The idea situation sits somewhere between these two visions of the role of the club. Moving forward, the club will need to reflect on the role it wishes to play and use this to frame the way in which the thematic focus of its actives is selected and actioned. Thus, much of the club's future depends on its ability to remain competitive in terms of content and services offered, while securing reliable funding and clear leadership. Addressing these issues might be critical for the club to remain competitive and attractive to its members and compete with other emergent platforms offering similar contents.

A final consideration emerges around the role of CSIRO. If initially it was more involved in developing work-plans and help coordinating and running activities, CSIRO gradually shifted its role. On the one side, it became more proactive in terms of mentoring and independent objective advice on strategic direction setting and operational challenges (including MEL approaches to understand benefits of the club) to inform business model and address emerging sustainability questions. On the other, it kept actively participating in working group meetings and observe Board meetings, assuming a specific role of mediation of disputes among Club's core members an independent party. Currently, CSIRO's action is proving critical to facilitate good relationship between core members of the working group to maintain both diversity and collaboration. This showcases CSIRO's reflective approach in terms of responding to changing needs (both within the club itself, and the external context).

Navigating the Vietnam's agricultural context: what did the HIC achieve?

Even if only 4 years old, the club was able to unlock major benefits in the Northern provinces, under these aspects:

Foster innovation through peer-to-peer and expert-farmer leaning

First, undoubtedly, the HIC increased knowledge on novel technologies and practices. The club helped to promote technology adoption, especially in rural areas that extension services had struggled to reach. Previously, farmers and SMEs, struggled to choose from the wide menu of options that foreign companies were promoting. The HIC was a way for farmers and SMEs to make this choice. By leveraging experts' opinions, exchanging knowledge, and sharing experiences, farmers could make more informed choices, better evaluating benefits and trade-offs based on others' insights. In addition, the HIC was critical for opening the way to new practices and ways of doing things – allowing farmers to experiment with and try out different solutions in terms of producing, processing, storing and marketing the food. This was possible because farmers knew they could openly consult both their peers and researchers if they encountered issues. The club is, in a sense one of a kind in Vietnam. Whereas other emergent innovation clubs in the country offer the opportunity for peer-to-peer network, the club offers experts' independent and unbiased advice to farmers. The combination of peer-to-peer and farmer-expert open relationships was a major strength for the club in terms of fostering innovation capacities and more broadly strengthening the agricultural innovation system in the Northern regions.

Building relationships and trust while democratizing knowledge

The HIC was also successful under two other aspects – the build-up of new connections across a wide network of actors, while at the same time fostering democratic dialogue. The Club correctly identified the initial problem of SMEs and farmers in terms of accessing scientific knowledge to solve pressing issues. The club broke down barriers to information by ensuring different network actors were successfully connected and could rely on each other for knowledge sharing and exchange. Not only was HIC critical to both connect farmers to researchers with technical knowledge, it also recognized the importance of ensuring knowledge sharing (e.g. over experiences and practices) among network peers.

This is a stark difference from the traditional extension model where experts visit farmers to present an already finished technology. The HIC democratized the knowledge creation and sharing process, by ensuring not only that different actors build relationship of trust, but also that they can all communicate in a participatory and inclusive way. The knowledge that researchers provided and the experiences shared by farmers and SMEs held equal value. This was a core feature in the structure of the talk shows (as interviewees report, this was a key feature that set the HIC apart from other Clubs that had previously emerged in Vietnam). In practice this meant that the talk shows were a combination of expert advice and peer to peer discussion. The first part of the talk show aimed at presenting technical knowledge about either technologies or new agricultural practices, alternative marketing strategies, or other topics – with the presenter explaining the session's topic to the audience. However, the second part fostered open dialogue, with questions, insights and experiences shared by the diverse participants having equal weight and deserving equal attention. The Zalo group promoted the Club as an inclusive environment where all

members could freely talk to each other, raise issues and questions, and share thoughts. This helped to successfully build trust among very diverse, and previously sparse, network members.

Besides, even if it was not a central point of the analysis, it is important to highlight that the HIC was particularly attentive to the inclusion and participation of women farmers (the story presented in Box 5 can also be considered a story of gender empowerment, as highlighted in (HIC, 2022)).

Accelerating the digital transition and increasing sustainability awareness

The club also helped accelerating the digital transition currently happening in Vietnam. The fact that the meetings took place online prompted members to familiarize themselves with new digital tools. Younger members often helped older ones to access and learn how to use Zoom. The virtual meetings were, for many, a way to experience fist hand the new, unknown benefits of digital tools. Participants reported being able to make connections with members in remote or distant geographical locations, who they would have otherwise not met. As they did not have to travel to the meeting's location, this saved them both time and money. The possibility to leave the meetings freely, if the topic was not relevant to them, was an additional benefit.

Finally, the club helped raise awareness and knowledge on emerging sustainability issues. Interviewees reported that before the club, they had limited awareness on the importance of sustainable practices – or how to implement this. This is particularly relevant as sustainability issues become more prominent in the country, and consequently, is increasingly central for addressing the sustainability agenda to which Vietnam is adhering.

The HIC's corollary: Lessons on innovation and challenges ahead

The case study presents a story of a relatively young and ongoing project. Nevertheless, the case study presents important lessons for the development of a more inclusive approach to supporting innovation in LMICs that combines expert knowledge and users experience and needs and has explicit emphasis on targeting environmental sustainability issues. Several lessons emerge from this experience. The Club, its evolution and modus operandi is very much the product of the context in which it works. The nature of the challenge that the club sort to address, while not entirely unique, had some Vietnam specific features: particularly the crowded and confusing "information landscape" resulting from many companies selling products to farmers, and the limited ability of the existing extension services to help farmers navigate different information and technology offering. The club also helped reveal more about the information needs of farmers and SMEs. Technology is certainly needed, but so its information about market demands, product quality, regulatory compliance and so forth. The need for this wider suite of information types is well known. However, the importance of the revealing these broad informational needs in Vietnam helped challenge the existing narrative in research organisation that the key innovation in agricultural development is technological. Having revealed that innovation requires a broader suite of information types, a different conversation can then take place (at organisational and policy levels) about how to support innovation. The club was able to provide an alternative (and well-performing vision) of a different innovation approach. The lessons below could be critical for implementing innovation clubs and platform within and beyond the Vietnam's context.

Embarking the uncomfortable journey: the club as a way to challenge traditional visions of technology transfer

Having identified this challenge, the CSIRO team was then faced with the task of initiating a mechanism to deal with this. It is noteworthy that the CSIRO team didn't come in with a blueprint on how this should be done (there are many manuals on how to establish agricultural innovation platforms and similar collective innovation protocols). Instead, the team introduced broad principles to their counter-part organisations and then provided backstopping support to these organisations while they figured out how such ideas could be made to work in the context of Vietnam. The success of the HIC was largely based on the initial ability of CSIRO to embark on an "uncomfortable journey" (as defined by one of the CSIRO team members) that would help to overcome the established vision of technology transfer in Vietnam (linear technology delivery through extension) to offer a new vision of technology diffusion: a non-linear vision that continuously and iteratively reflects on how emergent challenges in the agri-food system context can be navigated – without setting "a priori" outcomes or vision of success, but instead, supporting continuous learning around the different and context-specific ways that could help farmers and agri-businesses navigate changing agricultural context. This also means choosing between a diverse and competitive menu of technology and information options provided by both public and private organisations, but not only: it also means strengthening the agricultural innovation systems to link different actors in a way that builds trust and develops actors' resilience for coping with continuously evolving situations.

The club and partnerships - or how these are key for fostering innovation (and avoid unknown pitfalls!)

Another major reflection emerges from the types of partnerships that CSIRO built. The CSIRO team did not come with a priori vision of how the club should work. Instead, it purposefully searched for partners who could share its less "conventional" vision of innovation as a process of experimentation. An example of this is the establishment of a governance structure at the beginning of the HIC story. If the CSIRO team was not aware of the importance of this – a unique feature of the Vietnam context- it was through partners' engagement (FAVRI and VAAS) and collaboration that the CSIRO team recognised that this specific feature could be identified. This was only possible because CSIRO had been successful in identifying the "right" sponsoring and implementation partners who could work collaboratively and provide critical insights on the contextual features and needs of Vietnam's agri-food sector. Had CSIRO failed to capture this previously unknown aspect, the HIC's story might have been very different. Instead, by jointly collaborating, CSIRO, VAAS and FAVRI could embed the club, its protocols, mandate and governance arrangements in ways that adhered to norms and accepted ways of working in its partnering organisations and in Vietnam more generally. This was undoubtedly time consuming and couldn't have been designed as part of an externally driven blueprint but was an essential element of success. Again, the role of the CSIRO team was fairly light touch and process driven and more about facilitating the development appropriate institutional arrangements than prescribing how the club should operate.

The club and the value of an experimental approach for responding to uncertain dynamics

At the beginning of the process of establishing the club there were many unanswered questions about how it would work and how it would need to evolve into an enduring part of the agriculture information and innovation landscape. CSIRO's support to establish and run of the club for 2 years allowed its partners to experiment with a different way of connecting farmers, SME and others with ideas. This has not only allowed those partners to demonstrate the value of an experimental approach that allows them to learn along the way. Some of this learning has been about how to develop the protocols and other institutional arrangements needed to operate the club. It has also been about identifying other aspects of institutional development needed to ensure the sustainability and scaling of the approach in terms of funding models, selection of focal themes, expansion and replication of the approach and the identification for opportunistic applications of the approach to support other government development and technology diffusion challenges and agendas. The role of CSIRO in this process of learning has not been to advise partners specific strategies. Rather is has been to support them in their own reflection and analysis of what is feasible and legitimate in the context of Vietnam.

The light touch and open-ended approach to facilitating the develop of the HIC is illustrated by the way the unpredictability of events such as Covid were navigated. In one sense the club was at the right place at the right time, finding alternative and creative solutions that allowed farmers and SMEs to respond to an uncertain context by proposing a range of diverse solutions that are interactively discussed and tailored to different, context-specific need. A more general point that emerges from this is the value of an approach that understands that "surprises" are inevitable and can be transformed in opportunities to experiment with new ways to do things.

Contending visions for the Club's future: scaling the club or scaling the approach?

As the Club gains increasing political attention, with policymakers in both North and South wishing to know more around its approach, major challenges emerge. One, already explained at the end of section 3, regards the Club's funding. However, a much deeper question that underpins this is if, and how, the club can be scaled. Scaling means "do more of the same somewhere else" (Wigboldus et al., 2016). The club is, indeed, a promising project, that invites reflection on how its experience could be replicated. However, Only through knowledge co-production and iterative dialogue with partners, club members, and other actors in the agri-food space and beyond, the club was able to navigate uncertainty and thrive. The club was never about implementing a priori objective or aiming to demonstrate success: instead, it was about experimenting with new ways of doing things, recognizing failures and capitalizing on fruitful solutions. This suggests that simply "transferring" the HIC model as it is in the Vietnam's horticultural sector might not only poorly reflect the Club's core ideas of contextual and continuous experimentation, but also might be unsuitable for contexts in which the circumstances, relationships, way of doing things and challenges are altogether different. This would invite a much more careful reflection on whether it is the Club model itself that needs to be scaled, or rather, the approach underpinning the club. Whereas "doing what the Club does somewhere different" might generate pitfalls, leveraging what learned through the club – or the importance of partnerships and network trusts, the value of revising what is known and how things are done, the need to adapt and respond to evolving circumstances and needs – might ultimately be a much better strategy.

Final remarks

The overall conclusion for development practice is that if contextualisation really matters in program design, the best people to understand national contexts are national partners. A core principle is that innovation support programs needs to be less about introducing new innovation models and more about facilitating partners to experiment with new ideas in a way that helps with adaptation and local institutional embedding. This is particularly important when the challenge and opportunity context is dynamic (which it inevitably is) and where the ability to continuously adapt approaches is a critical part of effective innovation capacity of organisation, and agricultural sub sectors such as horticulture more generally.

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Appendix I – Ethical Clearance and Participants 'information sheet

Introduction

My name is Costanza Conti from Reading University. I am working with CSIRO to undertake a study that enhances the Aus4Innovation programs understanding of what enables and constrains effective innovation support approaches and practices in supporting inclusive and sustainable growth in Viet Nam.

This interview aims to capture key insights, lessons, capability changes and institutional changes resulting from your engagement with the Science Commercialisation Partnership (SP) workstream which has become Resilient Agriculture and Food program theme ('RAF') during the transition phase of the Aus4Innovation Program

The findings will be used to inform case studies and discussions with policy makers around barriers and enables to building innovation systems capacity and scaling effective innovation support approaches and practices for inclusive and sustainable growth in Viet Nam.

The interviews will be approximately 30 to 45 minutes.

With your consent the interview will be recorded to assist with analysis of findings.

How will my information be used?

It is anticipated that the information obtained through the different activities will be published and/or presented in a variety of forums. This includes: (i) a report on findings, project reports, scientific papers and conference presentations; and (ii) policy discussions.

Confidentiality

All information provided by you will be treated confidentially. Your name and any other personal information will not be included in any report or publications (e.g impacts/ change stories) resulting from this interview unless we have explicitly sought your permission prior to use.

Any data collected as part of this study, including recordings and interview transcripts, will be securely stored as per CSIRO's Recordkeeping procedures.

Risk and benefits

Aside from your time, there are no anticipated risks for you in participating. There are also not likely to be any personal benefits to you, but your participation will help us improve how we undertake similar projects in future.

Please let Costanza know if you foresee any risks in participating.

Withdrawal from the interview

Participation is completely voluntary and you do not have to take part. Your decision whether to participate will not affect your current or future relationship with the researchers or anyone else at CSIRO. If at any stage during the interview you do not wish to discuss any topic raised, you only need to tell the interviewer and the topic will not be pursued. Similarly, you are free to stop participating at any time. In this case, any recordings or data will be erased and the information you have provided will not be included in the project reports or other materials produced. If you wish to withdraw after an activity has been undertaken and data collected, simply notify the interviewer Costanza (see details below) and your data will be destroyed. You may withdraw at any time up until publication of the final outputs.

Ethical clearance and contacts

This project has been approved by CSIRO's Social Science Human Research Ethics Committee in accordance with the Australian National Statement on Ethical Conduct in Human Research (2007). If you have any questions concerning your participation in the study, please contact the researchers via their contact details: Costanza Conti (c.conti@pgr.reading.ac.uk) who is undertaking the interview; or Mai Huong (huongmaivu77@gmail.com) with whom you have been working closely; or Project Leader Jennifer Kelly (Jennifer.kelly@csiro.au). Alternatively, any concerns or complaints about the conduct of this study can be raised with the Executive Manager of Social Responsibility and Ethics on (07) 3833 5693 or by email at csshrec@csiro.au.

Informed consent form

I _____ acknowledge that:

- I have agreed to participate in the interview being conducted by Costanza Conti on behalf of CSIRO.
- I have been provided with information about the interview and had any questions regarding my participation answered to my satisfaction.
- I understand my participation in the research will involve a 30 to 45 minute interview
- I have been provided with the contact details of the Khoa and CSIRO team and understand that I can contact them at any point during the project. I have also been provided with the contact details of an independent ethics officer at CSIRO should I wish to raise any concerns or complaints about the conduct of the research.
- I understand that my participation in the project is entirely voluntary and that I am free to withdraw from the interview at any time and without having to provide a reason for my withdrawal.
- I understand that I may ask for part or all of the information provided by me to be removed from documents until publication of the final outputs.
- I understand that the information I provide for this interview will be used for the following purposes:
    - to produce impact/change stories, project reports, scientific papers and conference presentations
    - to provide input into future CSIRO research on clubs in Vietnam
- I understand the information will be treated confidentially and any identifiable information will be shared with you prior to publication or use (e.g. impact / change stories).
- I understand information provided by me will be stored securely by CSIRO.

Name:_____

Signature: _____ Date: _____

We thank you for your agreement to participate in this research.

Questions

Name (optional) or first name only

How has the participant has engaged with the program:

The following questions can be used as interview prompts or the basis of a questionnaire.

1. What is the institutional history of the program?
    a. What was the starting context (what was working, what wasn't, policy and research context etc.)? What was the situation before the program was set up?
    b. Who were the actors involved?
    c. Who led the process and how was it governed?
    d. What were the core issues?
    e. What was the institutional problem?

2. What was the role of the project?
    a. What was the core rationale behind the project? What issues did it aim to tackle?
    b. What can you do now that you couldn't do before?

3. How has understanding commercialisation changed the ways it needs to be supported?
    a. What were the lessons learned by the different actors in the program?
    b. What was/is the role of commercialisation in the broader university agenda?

4. What were the contextual changes during the project?

a. What evolved / changed in the broader context (e.g. policies, economic and social changes)? How did this impact the program?

b. What changed within CSIRO's approach to respond to changes and or new needs over time? How was that a good or a bad thing?

5. What were the other changes brought about by the project?

a. What were the behavioural changes?

b. What were the institutional changes?

c. What were the practice/routine changes?

d. How did innovation capabilities change over time, not only at the individual but also at the institutional level?

e. How and why did these changes happen?

6. Insights on the role of CSIRO and its approach

a. How and why did CSIRO approach change over time to adapt to the changing context and tackle new issues?

b. What hindered CSIRO's action? What were the main challenges encountered for the organisation?

c. What can CSIRO learn from this experience?

7. Is there anything else you would like to tell us? Do you have any remarks, suggestions or critiques on the program that can inform future action?

Thank you for your time.

As Australia's national science agency and innovation catalyst, CSIRO is solving the greatest challenges through innovative science and technology.

CSIRO. Unlocking a better future for everyone.

Contact us

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For further information (

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