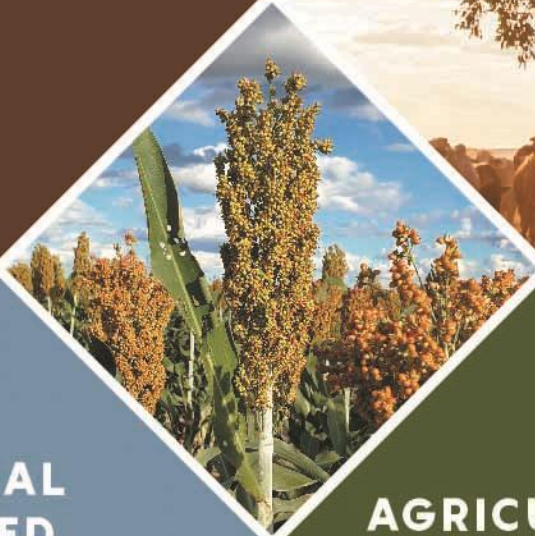


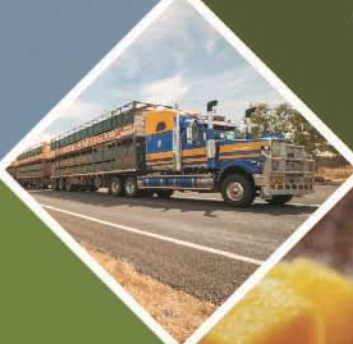
# NORTHERN HEALTH SERVICE DELIVERY



**TRADITIONAL  
OWNER-LED  
DEVELOPMENT**



**AGRICULTURE  
& FOOD**



## Translation of the Agricultural Supply Chain Collaboration Models- Recommendations and End-users' Guidelines

A/Prof Delwar Akbar, Prof John Rolfe, Dr Azad Rahman, Dr Trang Nguyen,  
Dr Peggy Schrobback, Prof Susan Kinnear and A/Prof Surya Bhattarai

**CRCNA**  
DEVELOPING NORTHERN AUSTRALIA



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The author(s) confirm(s) that this document has been reviewed and approved by the project's steering committee and by its program leader. These reviewers evaluated its:

- originality
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- compliance with ethical guidelines
- conclusions against results
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## Executive Summary

Queensland, particularly central and northern Queensland (CNQ), is one of the economically diverse and prosperous regions within northern Australia. Currently, about 135 thousand hectares of land are used for perennial and annual horticulture production in Queensland, while about 34.5 million hectares of land could be potentially used for horticultural production. About 16% of horticultural products grown in Queensland are currently exported. While there is an opportunity to grow more, current production has been saturated in the domestic market and even many producers have ended up oversupplying or dumping their produce. On other hand, the demand for Australian produce has been increasing in the Asian markets. Therefore, developing an efficient and collaborative export supply is one of the highest priorities for both state and federal government policymakers and the horticulture industry. The research team has developed a supply chain collaboration model for three selected horticulture industries, namely mango, avocado, and lychee, which is part of the ongoing project entitled “Exporting perishable commodities to Asia: Developing a stakeholder collaboration model”. These models were developed through the consensus from a panel of stakeholders participating in the first workshop. This study investigates the translation pathway of the Agricultural Supply Chain Collaboration (ASCC) models that have been developed during the first workshop. This study focuses, particularly on avocado and mango industries. The current horticulture export volume could be expanded by increasing the supply as well as by encouraging more farmers to participate in the export supply chain through vertical collaboration. It is expected that the improved supply chain management through collaborations of farmers with other entities in their supply chain will result in higher returns for Queensland's farmers. This report aims to examine the stakeholder panel consensus on the translation pathway, particularly the mechanism and processes of building leadership and operation skills for collaborative agricultural supply chain development and management.

This study adopts a qualitative approach which includes a literature review to identify the translation components of the selected ASCC models. This study only focuses on two ASCC models i.e., mango and avocado export supply chain collaboration models. This study used the same stakeholder panel from the first workshop on “Developing Stakeholder Collaboration Models” to collect data regarding individual perceptions and consensus of the panel members. The workshop process was designed to analyse three strategic components (i.e., leadership, business management, and supports) of translating the above two models into practice. The workshop was organised via online Zoom platform.

This study essentially investigates the translation of the research findings of the project, focusing on basic questions of why, who, how and what in relation to implementing the collaboration models in selected industries. A set of themes has emerged through an inductive qualitative analysis approach. Based on the identified themes, some recommendations have been made for the relevant stakeholders and actors in the ASCC. The key recommendations are:

- Developing a culture and environment of ASCC through information sharing and network building is essential for sustainable ASCC. Retaining collaboration partners is also crucial for sustainable ASCC and considerable for developing ASCC. Building and maintaining trust as well as risk-sharing are key for retaining collaboration partners and ensuring sustainable ASCC.
- Leadership in ASCC is important. However, all actors involved in the ASCC need to understand their contribution towards the collaboration and act accordingly in order to ensure the success of the collaboration.
- Leadership and business management skills could be enhanced through supply chain-focused short courses and the involvement of industry working groups. Attaining this goal could be challenging due to the lack of multi-level training programs and the different education levels of supply chain actors.
- It is difficult for producers to attend a training program to boost up their business skills due to their work commitment at the farm. It is recommended that cross-sector mentoring programs and on-farm face-to-face training could be beneficial for this cohort.
- Government support in the forms of network building and subsidisation is vital for the success of ASCC. Government subsidy on air freight could trigger the ASCC to reach the export market.
- Formal agreements and contracts among ASCC partners may or may not be important, depending on the nature of the collaboration. Formal agreements and contracts with overseas partners in export focused ASCC depend on the culture and norms of the participating countries.
- Given the COVID-19 and post COVID-19 situation, financial support from the government may not be obtainable for supporting ASCC. However, the government and industry could work together in transforming and restructuring supply chains to reach export markets.

The findings of this study have several implications for end-users, including producers, industry bodies, government, education providers, researchers, and all other actors in the supply chain. Some guidelines for end-users have been identified and listed. The findings of the current study need to be tested, through further research in which collaboration among and participation of regional producers in a selected industry is developed. It is indicated from the study that there is a requirement of developing a comprehensive training program to improve the leadership and business management skills of ASCC actors. The findings of the present study can be confirmed and supported by developing such training programs and trial run with a small cohort. Further research on the on-ground implementation, impact monitoring, and sustainability of ASCC can be warranted in the future.



## 1. Introduction

### 1.1 Background of the Project

Northern Australia is an under-explored but emerging economic region in Australia, with a huge diversity of land-uses and natural resources, supported with domestic road and rail connections, and water and air transportation from all over the globe. Central and northern Queensland (CNQ) is part of northern Australia and is one of the most prosperous economic regions within northern Australia. CNQ accounts for more than half of Queensland, includes huge volumes of agricultural production. Within Queensland, perennial horticultural land is underutilised because of low domestic demand for perishable agricultural commodities. This low-demand situation often results in an oversupply of some commodities, resulting in low prices and poor profitability. On the other hand, the demand for Australian perishable commodities is very high in Asian countries, particularly in China and South-East Asian countries. Exporting high value perishable agricultural commodities (HVPACs) to Asian markets, therefore, offers significant potential for positive economic activities in Queensland. Therefore, this project aims to examine the nature of, and processes involved with stakeholder's collaboration in planning and investment for exporting high value perishable agricultural commodities (HVPACs) of Northern Australia to Asian markets. This includes an exploration of multi-party collaborations in producing, processing, marketing, and exporting perishable commodities to Asian markets. This study also attempts to provide strategic guidelines for translational supply chain collaboration models for Queensland, which can also be used for other regions in northern Australia. To achieve the research aim, the key objectives were:

- To assess potential HVPACs that have high export value in the Asian markets (*this has been reported in A.1.1718097 CRCNA Milestone 5 Report*);
- To assess the theoretical, conceptual and contextual domains of agricultural supply chain collaboration (ASCC) as well as to develop agricultural supply chain collaboration models for the horticulture sector in Queensland, with a specific focus on avocado, lychee and mango (*this has been reported in A.1.1718097 CRCNA Milestones 11 -13*);
- To investigate Queensland horticulture farmers' willingness to participate in export-focused contract-based marketing agreements with downstream buyers as a form of closer vertical coordination. More specifically, to identify attributes of formal agreements that would encourage or discourage farmers' participation as well as farmers' individual characteristics which may affect their decision to seek closer vertical coordination with their product's supply chain (*this has been reported in A.1.1718097 CRCNA Milestones 18 and 20*);
- To identify consumers' preference and their purchasing behaviour for imported agricultural products through a literature review; particularly to identify factors affecting Chinese consumers' perceptions about purchasing imported horticultural products (*this has been reported in A.1.1718097 CRCNA Milestone 20 & 23 Reports*);
- To examine stakeholder's consensus on the translation pathway, particularly the mechanism and processes of building leadership and operation skills, for collaborative supply chain development (*this report – A.1.1718097 CRCNA Milestones 25 & 26 Report*); and
- To provide some result-based strategic guidelines for further implementation of the ASCC models and suggestions for future research (*to be presented in forthcoming Milestone 28 and 29 Report*).

### 1.2 Aim, Scope and Organisation of the Report

Effective supply chain management is characterised by inter-enterprise cooperation among all parties who are either horizontally or vertically involved in the supply chain. Supply chain collaboration (SSC) can be simply explained as the collective efforts of two or more parties to achieve common strategic goals and sharing both profit and risks. The "Exporting Perishable Commodities" project team formed a stakeholder panel in 2018 and developed three agricultural supply chain collaboration (ASCC) models (i.e., briefly described in the next section) in 2019 through a stakeholder panel workshop. After addressing the project partners and end users' feedback, the study further examines the adoption and implementation pathways of these models.

Therefore, this report aims to examine stakeholder's consensus on the translation pathway, particularly the mechanism and processes of building leadership and operation skills, for collaborative supply chain development.

The present study (i.e., the second workshop) only targets two industries, namely mango and avocado, for the development of translation pathway instead of three industries (i.e., mango, avocado and lychee) targeted in the first workshop. The reason for this is that while the mango industry has an established supply chain and the avocado supply is still developing, the lychee supply chain still has some degree of difficulties with market access and volume of supply. Although the



developed SCC models focus on two specific industries of mango and avocado, the overall findings are also expected to have some degree of translation to other perishable and tropical fruit industries in Queensland.

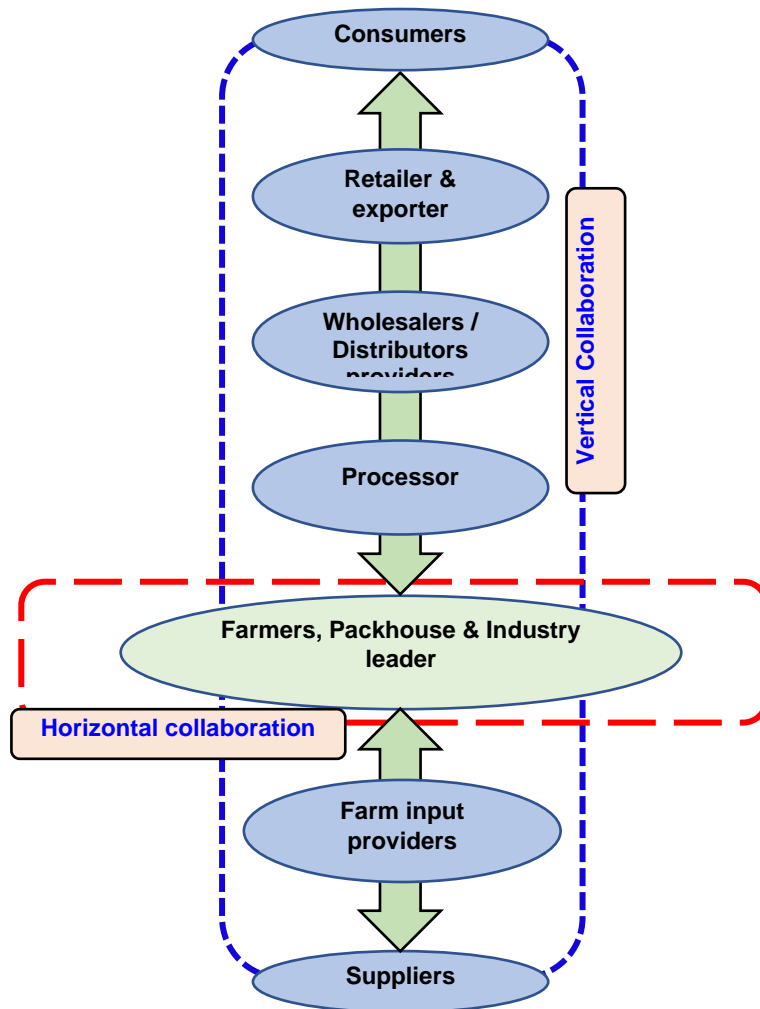
The report is organised as follows: An introduction (Section 1) is presented, followed by a summary of key concepts and two ASCC models (i.e., mango and lychee) in Section 2). Section 3 provides details of the research methods, followed by the results and analysis in Section 4. Section 5 presents the discussion and implications of the key findings and Section 6 concludes the report with some end-user guidelines.





## 2. Agricultural Supply Chain Collaboration Models (ASCCMs)

Agricultural supply chain collaboration involves trade-offs and choices made by the producers and other supply chain actors. Therefore, a framework that supports both horizontal and vertical collaboration is necessary for developing a sustainable ASCC (Matopoulos et al., 2007, Dania et al., 2016). A conceptual framework of agriculture supply chain collaboration was developed by Akbar et al. (2020) based on several scholarly studies and case studies (Barratt, 2004, Matopoulos et al., 2007, Liao et al., 2017). Horizontal collaboration amongst farmers helps to supply the right amount of produce at the right time, a scenario not otherwise possible for individual growers alone. The horizontal collaboration includes farmers, growers and growers' associations who may be involved collectively in a supply chain (Figure 1).



**Figure 1: Conceptual framework of agricultural supply chain collaboration**

(Source: Based on Barratt, 2004, Matopoulos et al., 2007, Liao et al., 2017)

Vertical collaboration engages farmers, farm input service providers, processors, wholesalers, retailers, exporters and consumers who are directly involved with the supply chain (Figure 1). This framework was used to develop and explore prospective agricultural supply chain collaboration models for the three selected horticultural products in Queensland (avocado, mango, and lychee). However, only two of the models (i.e., mango and avocado) are described briefly below.



The model presented in Figure 2 was developed for the mango industry and is based on the agreement of all or most of the participants during workshop 1 (see details in Akbar et al. 2019). All the participants agreed that producers should initiate the supply chain collaboration. It was also agreed that it could be a multiple leader-led collaboration and it is not necessary that a single actor (individual) has to initiate the collaboration. Emphasis is also given to the transparency of the collaboration model in terms of pricing, information sharing and risk-sharing. The existing mango supply chain is comparatively a mature supply chain. However, a further vertical collaboration among genetics, producers, processors, and exporters is highly desirable in order to maximise the exporting of the produce, and the producer- and wholesaler-led collaboration.

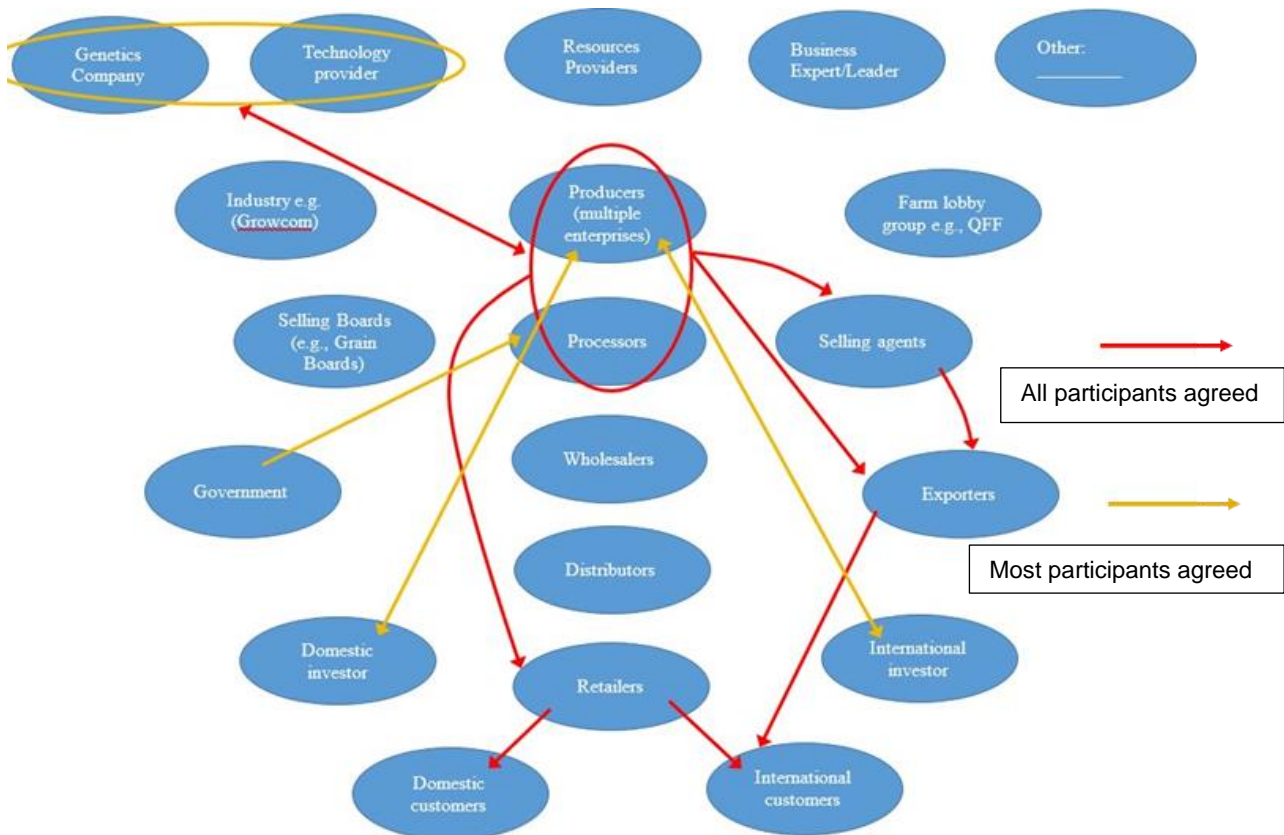
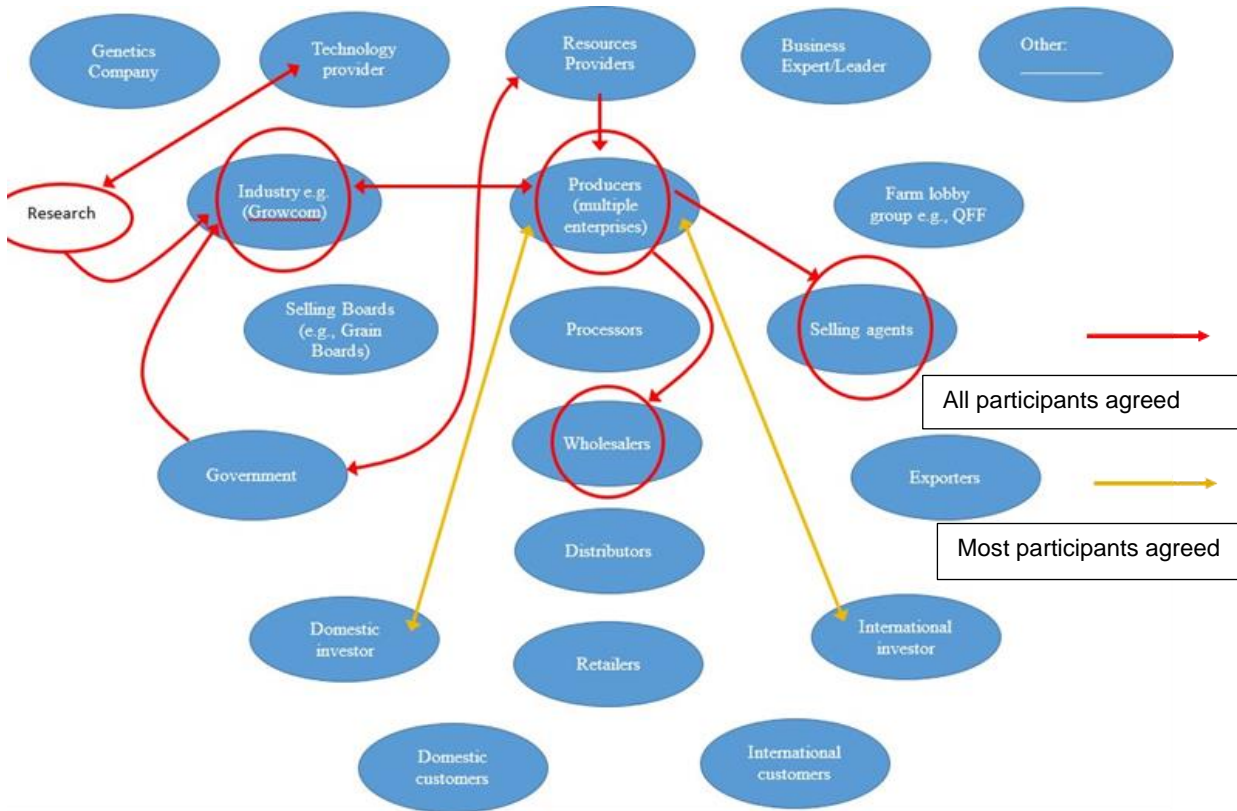


Figure 2: A collaborative supply chain model for mango industry, as identified during the workshop activity

The model presented in Figure 3 was developed based on the agreement of the majority/all of the participants in the first workshop (see details in Akbar et al. 2019). Initially, all members of the group agreed that producers should initiate the supply chain collaboration. They, however, further discussed and concluded that producers and processors should work collaboratively to successfully lead the supply chain, as this is a complex and emerging supply chain. Vertical collaboration among genetic and technology providers, producers, processors, and exporters are highly desirable, along with the support from research organisations and the government.



**Figure 3: A collaborative supply chain model for avocado industry, as identified during the workshop activity**

All participants agreed that developing leadership in initiating and sustaining the collaboration is the most important translation component of ASCC, which needs to be explored further for implementation of the key findings of these models on the ground. The second and third most important components are developing business management skills and designing government and industry supports. These three components have been closely examined in this study. The methodology employed to examine the components is described below.



### 3. Methodology

The research described in this report, which includes a review of past reports, applies a qualitative approach to identify the translation components of the three selected ASCC models. However, this study only focuses on two ASCC models i.e., mango and avocado export supply chain collaboration models. This study uses the same stakeholder panel as in the “First Workshop” to collect data regarding individual perceptions and consensus of the panel members.

#### 3.1 Workshop design

The workshop process was designed to analyse three strategic components (i.e., leadership, business management, and support) of translating the above two models into practice. These components were identified during the first workshop. A workshop-based survey tool was prepared based on a literature review and preceding reports of the same research project. The survey tool includes poll questions followed by open-ended discussion questions ([Appendix 1, 2](#)). A schedule of the workshop ([Appendix 1](#)) was sent to members of the stakeholder panel two months before the workshop was held to confirm their attendance. The stakeholder panel were identified during the first workshop based on their expertise in the industries relevant to the research project. In the piloting phase, the workshop questionnaire was circulated to the industry partners of the research project and their feedback was accommodated. This workshop was designed to be suitable for face-to-face interviews as well as for online discussion platforms.

#### 3.2 Data collection

There were three segments of the workshop, commencing with the project leader’s presentation on the ASCC models and the purpose of the workshop. This was followed by two concurrent data collection stages in which the participants were directly involved in the online rating (responding to poll questions) and the follow-up open-ended discussion. In the third stage of the workshop (open-ended discussion), the research team facilitated the discussion on consensus and disagreement about the most important mechanisms or ways of translations (as reflected in the poll results).

#### 3.3 Data analysis method

Based on the main topics of the poll, questions were grouped into three categories of themes (referred to the three main components of the workshop), namely (1) collaboration: why & who? (2) leadership and business management for collaboration, and (3) elements of collaboration: what, that were incorporated with other theme groups gathered from the follow-up discussion in an overall analysis structure. Quantitative analysis was conducted using simple descriptive statistics and presented in graphical and tabular form to interpret the findings.

An inductive approach was applied in order to analyse qualitative data (extracts of the follow-up discussion) in a systematic manner. Initial and random themes emerged from the data rather than being predetermined. After the primary coding, themes were refined and put in groups of different topics (e.g., reasons for participating in an SCC, strategies for creating leadership, strategic elements for enterprises, etc.), and then grouped into categories of themes (in line with the three categories of theme for quantitative analysis mentioned above). A category of theoretical themes was also created, where extracts of the follow-up discussion were connected with theoretical ideas and concepts of the agricultural supply chain collaboration models discussed previously (e.g., vertical collaboration, initial/ongoing SCC activities, leadership, collaborating partners, information sharing, building trust, etc.). Findings of the analysis are presented in the subsequent section.



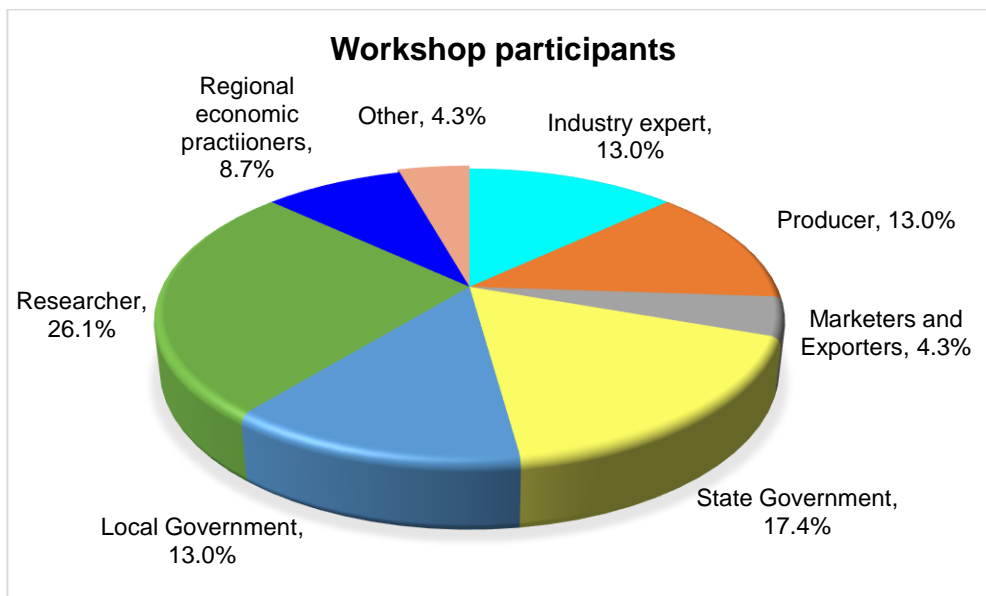
## 4. Findings and Analysis

This section first provides a brief description of the workshop participants, then presents the three main components of the workshop, including (1) collaboration – why & who? (2) leadership and business management for collaboration, and (3) elements of collaboration – what, drawing on the findings from the analysis of the workshop data.

### 4.1 Participants

**Question 1:** Which of the following sectors do you identify most with? (i.e., which one are you currently working in?).

Twenty-five persons in total attended the workshop activities via a virtual platform (Zoom). As shown in the chart (Figure 4), most of the participants were representing researchers (26.1 %), state and local government officers (17.4% and 13%, respectively) and producer/grower (13%). This group of participants reflects a relatively diverse cross-section of representatives (although there was no representative from the federal government).



**Figure 4: Workshop participants**

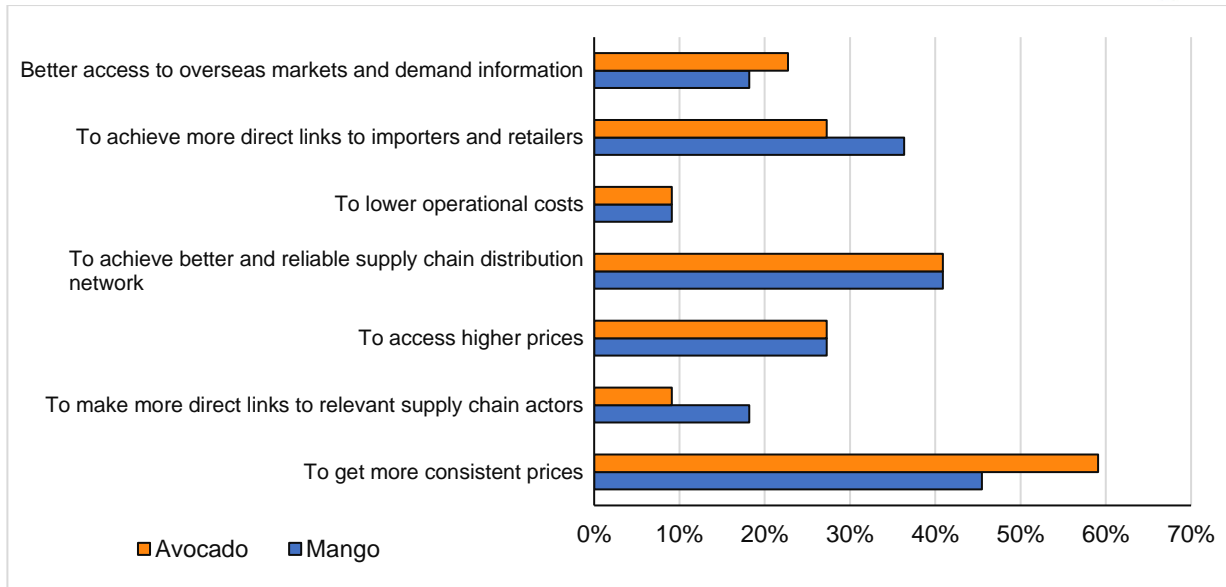
Participants were invited to take part in two activities during the workshop, including (1) an online pop-in poll, with results of every question followed by (2) a 20-to-25-minute follow-up discussion, which was led by a researcher. The pop-in poll was to collect participants' perceptions on what is needed for better management of export supply chains, which included 16 questions. Question 1 was to identify participants' sector background. Questions 2-15 focused on stakeholders' motivation for entering a supply chain collaboration (SCC), preferred leaders of SCC, strategies for creating leadership, strategies for developing business management skills, types of government support, strategic elements for enterprises in SCC, and who should pay the cost of building SCC (in relation to two case study industries, namely mango and avocado). The last question provided opportunities for further comments and suggestions on the related issues. The follow-up discussion was to clarify the participants' poll response for each set of questions and to provide supplementary information related to the response.

In the below sections, the main findings, are presented and ordered in reference to the poll questions, including two main parts: (1) poll results, followed by (2) related ideas and suggestions as presented in the follow-up discussion.

### 4.2 Collaboration- Why & Who

#### 4.2.1. Reasons for participating in a SCC

**Questions 2&3:** Thinking about the MANGO and AVOCADO industries, what do you believe are the two most important reasons why growers/stakeholders would want to enter a supply chain network or collaboration?



**Figure 5: Reasons for entering a supply chain collaboration**

The participants provided their opinion on growers/stakeholders' reasons for entering a supply chain collaboration. It can be seen from Figure 5 that the respondents were relatively consistent in suggesting the reasons why stakeholders in mango and avocado industries would consider joining an SCC. Among the options, about 59% and 45% of respondents thought that "to get more consistent prices" was the most important reason why avocado-industry and mango-industry stakeholders, respectively, decided to participate in an SCC. Whereas around 41% of respondents believed that "to achieve better and reliable supply chain distribution network" was a significant SCC motivation for both avocado-industry and mango-industry stakeholders. The least favoured options related to avocado-industry stakeholders' motivation were "to lower operational costs" and "to make more direct links to relevant supply chain actors", which were both rated by only 9% of respondents. These two options were also preferred by only 9% and 18% of respondents respectively when mango-industry stakeholders' motivation was taken into consideration. The results suggest that for many respondents, avocado-industry and mango-industry stakeholders had similar reasons to enter an SCC.

In the follow-up discussion, the participants did not give comments on the poll results but suggested that in addition to identifying the most important reasons why growers/ stakeholders would want to enter a supply chain network or collaboration, it was also significant to understand (1) how to retain growers/stakeholders in this collaboration, and (2) what might prevent them from staying in the network.

#### (1) Sustainable collaboration

The discussion on retaining growers/stakeholders and sustaining the network was initiated by an industry partner. The industry partner emphasised that individual businesses often had different drivers for participating in an export chain. Attracting and retaining the growers/stakeholders in the collaboration network is identified as key challenges in a sustainable collaboration (see Box 1). Workshop participants emphasised the sustainability of collaboration, which is important for facilitating and maintaining ongoing operational activities of an SCC. This is related to the issue of building and maintaining trust in an SCC.

#### (2) Factors that may prevent sustainable collaboration

Other participants agreed with the industry partner's idea about retaining stakeholders in the network and provided some examples about what may prevent them from staying in the team, including (1) undesirable experiences with SCCs and (2) restrictions of participation in SCCs. A state government officer, for example, highlighted the significance of the building and maintaining trust as well as sharing risks and rewards in (SCC) vertical collaboration in relating that when some businesses or farmers who got a taste of being part of an SCC lost their money, they then did not have trust nor see incentives to continue with the collaboration. For that reason, he believed that "having the right information at the right time" was important for team actors to make sense about what is distributed, and by that way, pointed to the issue of information sharing during an SCC's operational stage. In line with the discussion, the industry partner who raised the question of sustainable collaboration said that there were often restrictions of joining an SCC, which members had to comply with, such as ensuring consistent product quality. One of the state government officers also gave another example about how retailers implemented their own quality specifications, that locked suppliers into the supermarket and caused dissension and resentment among the parties (see Box 1). These examples of restrictions of participation in SCCs are related to joint identification of issues in an SCC's ongoing activities, which the actors need to handle.



**Box 1: Key comments on factors affecting and sustainability of collaboration**

**Box 1: Key comments**

**From an industry partner:** *“I think the hardest part for any collective group, whether it’s a grower Co-op or a Marketing Group or whatever is not attracting people into it; it’s retaining them into it. So it’s a sustainable business”.*

*“As a supply chain agreement if there’s a restriction or if there’s guidelines put on to everyone as to how to get that quality that the company wants that may not fit with their growing, with their production system as an individual supplier”.*

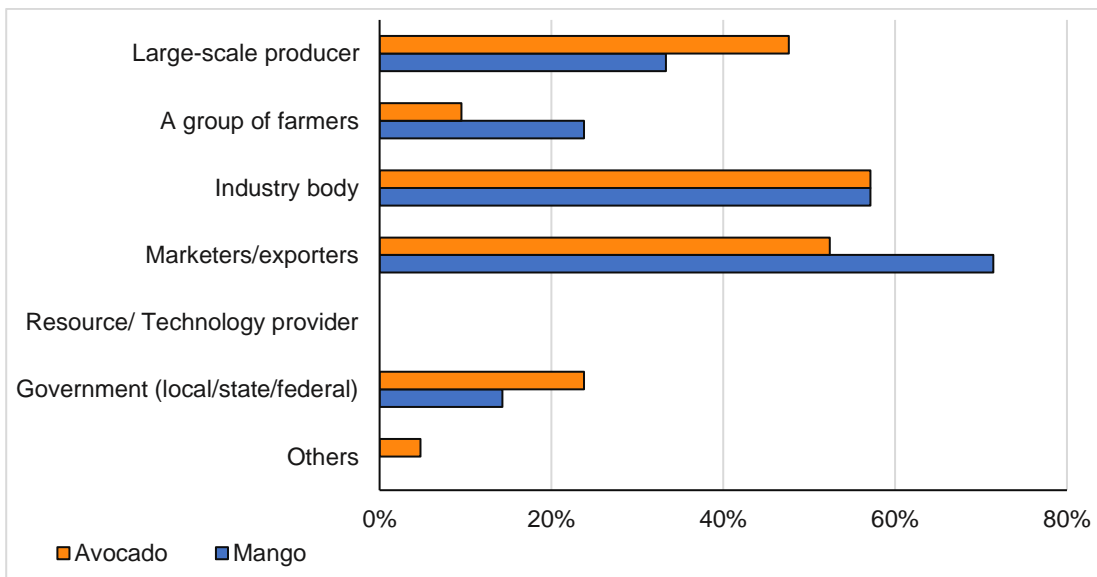
**From a state government officer:** *“Many businesses will put a toe in the water on doing exports and then they’ll pull back because one they find that there is various limitations to the way they set up their supply chain. And this is one of the factor is having the right information at the right time to do it”.*

Consistent price and a better distribution network are two key incentives that may attract the supply chain actors to get involved in the collaboration. However, the sustainability of the collaboration could be an issue because of undesirable experience, unavailability of information, lack of trust too much quality compliance, and lack of willingness to sharing the risks among the parties.

**4.2.2. Who should take the leadership role**

**Questions 4&5:** Thinking about the MANGO and AVOCADO industries, which of the following do you believe are best placed to lead an export supply chain collaboration?

Figure 6 illustrates the respondents’ perception on who could be best placed to lead an export SCC in both the mango and avocado industries. As is shown by the graph, many respondents consistently regarded marketers/exporters and industry bodies as the best leaders of an export SCC in both industries. Marketers/exporters and industry body were chosen as suitable SCC leaders in the avocado industry by 71% and 57% of respondents, respectively. Similarly, the industry body and marketers/exporters as an SCC leader in the mango industry was the highest and second highest-rated, with an average critical score of 57% and 52%, respectively. Among the options, resource/technology provider was not considered by most of the respondents as the one who could best lead a mango or avocado SCC. Interestingly, a small number (5%) of respondents chose the “others” option in relation to the leader of an avocado-industry SCC but did not clarify who they believed to be a suitable leader of this SCC. The results suggest that most of the respondents recognised the leadership role of marketers/exporters and industry body and did not highly regard this role as performed by resource/technology providers.



**Figure 6: Actors who are best placed to lead an export SCC**

The follow-up discussion on questions 3 & 4, which is about who is best placed to lead an export SCC, mainly focused on the poll results. One participant state government also suggested that “transporters” should be another option to be considered in this question, as transporters often had a big influence on the product quality, which was related to time matters in moving the product. The participants had arguments on the involvement of resource/ technology providers, industry bodies, and government in the leading role for the collaboration. However, they agreed that no matter who was

placed to lead an export SCC, all parties in the team needed to understand their role and contribution in the supply chain pathway.

**(1) Role of the resource/technology provider, industry body and government**

In discussing the role of resource/technology providers, a researcher (the discussion facilitator) suggested that although it was shown in the poll results that “resource/technology providers” were not highly regarded as a suitable leader of SCC, they, in reality, played a critical role in providing the plant breeding and connecting with actors in the chain, and therefore, could also have some market power. The state government officer also provided an example of what resource/technology providers like Calypso mangoes company often did in the market, such as marketing their cultivars and developing their whole chain and agreements with retailers (see Box 2). The researcher and government officer, perhaps, had more information about different actors in SCCs and the market, and they, therefore, attached more importance to the role of resource/technology providers, who were often received little attention from others regarding leadership ability.

Along the same line, the industry partner stated he was surprised that “industry body” was rated as one of the top favoured leaders of an export SCC. For him, industry bodies typically had a different role related to protecting and sustaining the future rather than driving commercial opportunities. However, he later said that he might misinterpret the question.

Two participants disagreed with one another, to a certain degree, about the role of the government as compared with the industry body in terms of the best SCC leader. The state government officer, for example, questioned why the role of government was not rated highly (as shown in the poll results). He believed that although the industry body was a very critical element in the network when it came to international negotiations, they needed information from the government because international negotiations were often conducted on a government-to-government basis. From the industry partner’s view, however, although the government could play an intricate role in enabling the process, they often did not involve in establishing commercial businesses (see Box 2). Therefore, both the industry partner and government have their important leadership roles but both roles are unique to each other.

**(2) Understanding one’s own role and contribution**

The industry partner then agreed with the discussion facilitator that both the government and the industry body had their own role in the process. He then concluded that everyone in the supply chain should understand their role and contribution to the success of an export SCC, and that they were on the same page with other partners in the collaboration network, otherwise there would be risks such as breaking deals or works undone overnight (see Box 2). He might, thereby, indicate the importance of enhancing trade literacy and knowledge among those who involve in the network in both the initial development and ongoing operational stages of their collaboration.

**Box 2: Key comments on leadership and role**

<p><b>Box 2: Key comments</b></p>
<p><b>From a state government officer:</b> <i>“Companies like calypso so we’ll buy the rights to a particular cultivar than they will Market that but also they will have the whole chain and agreements with retailers”.</i></p>
<p><i>“An industry body or a grower cannot go overseas and negotiate Market [00:30:21] access protocols for all his products at all. It’s always been done on a government-to-government basis”.</i></p>
<p><b>From an industry partner:</b> <i>“The government’s at two levels at least do have an intricate role in enabling things to happen, but it’s not their role to establish commercial businesses”.</i></p>
<p><i>“Everyone in the system of a supply chain collaboration needs to be supported in better understanding how it all works”.</i></p>

Though there were some disagreements among the participants, they pointed out the importance of understanding the role and contribution of all entities/actors in the vertical collaboration. As evidenced from the poll results and discussion, in addition to marketers/exporters, industry body and large-scaler producers, government and resource/technology providers were also able to lead an export SCC, and all could have an important influence on the network’s organisational goal in developing and maintaining an effective and sustainable SCC.

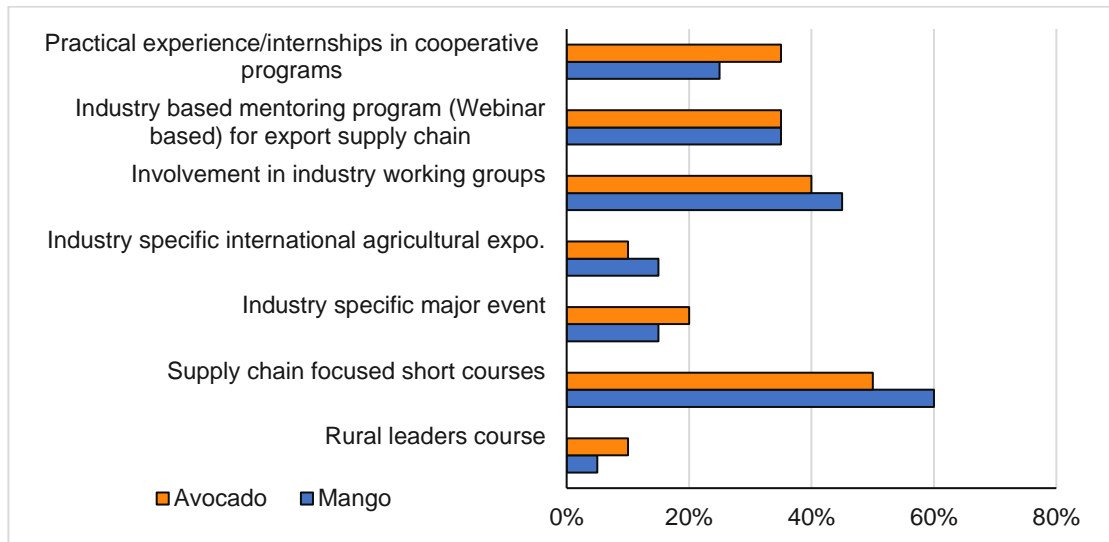




### 4.3 Leadership & Business Management for Collaboration- How?

#### 4.3.1. Strategies for creating leadership

**Questions 6&7:** Thinking about the MANGO and AVOCADO industries, which of the following strategies would be most useful as a way of creating leadership for agricultural export supply chain collaboration?



**Figure 7: Strategies for creating leadership for agricultural export SCC**

Figure 7 indicates the respondents' preference on strategies for creating leadership for agricultural export SCCs. As can be seen from the graph, many respondents considered "supply chain focused short courses" and "involvement in industry working groups" as the most critical leadership development strategies in both the mango and avocado industries. On average, about 60% and 45% of respondents believed that "supply chain focused short courses" and "involvement in industry working groups", respectively, could be applied for enhancing leadership skills for actors in a mango SCC; and around 50% and 40% of them, respectively, thought the two strategies could work effectively for actors in an avocado SCC. The "rural leader course" option was rated lowest, as only 5% and 10% of respondents considered this strategy as useful for actors in the mango and avocado industries, respectively, to learn about leadership in SCCs. The results suggest a considerable consistency among many respondents in evaluating the most and least workable leadership-development strategies for both mango and avocado SCCs.

Similar to questions 2 & 3, the participants did not give many comments on the poll results (except for a state government officer), but suggested more options which, in their view, were worth considered in leadership development. In addition to the options listed under the questions, they recommended that it would be useful to think about: (1) developing a comprehensive training program, (2) selecting course designers, and (3) considering learners of different levels. For them, perhaps, it was important to get potential leaders of an SCC well-prepared and well-equipped during the initial and ongoing stages of collaboration, so they could successfully manage and contribute to the SCC.

(1) Developing a comprehensive training programme: The industry partner believed that as trade literacy needed to be improved throughout the segments of the supply chain, it was necessary to organise consolidated training programmes about different aspects of export—which all stakeholders needed—were put together. The state government officer agreed with him, that a multi-level training programme could assist learners to delve deeper into the training, improve knowledge, gain more experience, and make progress (see Box 3).

(2) Selecting course designers: Another state government officer confirmed the highest rated option in questions 6 & 7, namely "supply chain focused short courses", that these short courses would be very useful, but also indicated that it was necessary to select the right people who were able to prepare and organise the courses effectively. He also suggested that the model of key position development in governmental organisations might be a useful reference for the selection of course designers (see Box 3).

(3) Considering learners of different levels: The first state government officer also demonstrated that in organising leadership courses, it was important to pay attention to learners of different education levels and make sure that they could

get the knowledge they needed. For him, the courses needed to be able to address different levels of different farmer categories (see Box 3).

**Box 3: Key comments on leadership training programs, course designers and learners**

**Box 3: Key comments**

**From an industry partner:** *“So a consolidated program of training and there's all sorts of avenues”.*

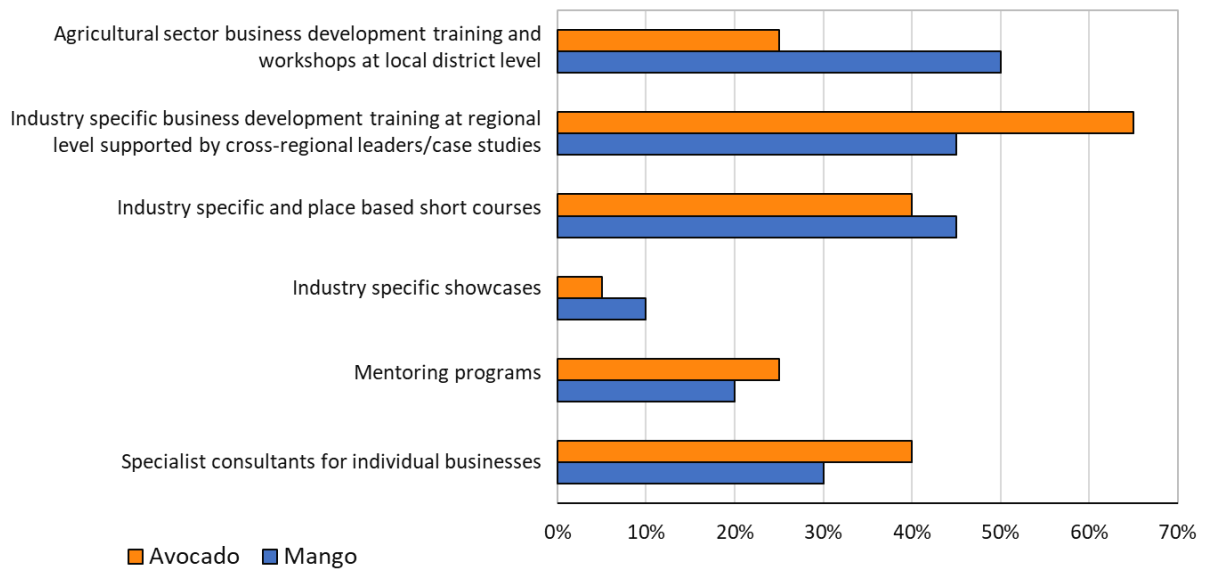
**From a state government officer:** *“It needs to be a training program that is probably has multi levels and within the various levels of training and everything else that people undertake a way of improving knowledge each time”.*

*“Bringing along those people you need to look at the lowest denominator and the education level of those and then lift them up”.*

**From another state government officer:** *“I think looking at the selection process for people that are going to be prepared to take this on and be able to take in the information for start”*

**4.3.2. Strategies for developing business management skills**

Question 8&9: Thinking about the different actors in a supply chain, how can general skills for business management be best developed?



**Figure 8: Strategies for developing general business management skills**

Figure 8 highlights the respondents’ opinions on strategies for developing general business management skills. As is illustrated by the graph, the rate of the three best strategies for people in the avocado and mango industries to improve these skills were slightly different. Specifically, 65%, 40% and 40% of respondents indicated the importance of “industry specific business development training at regional level”, “industry specific and place based short courses”, and “specialist consultants for individual businesses”, respectively, as the most effective strategies for actors in the avocado industry to enhance their business management skills. Whereas 50%, 45% and 45% of them identified “agricultural sector business development training and workshop”, “industry specific business development training at regional level”, and “industry specific and place based short courses”, respectively, as the best business learning strategies for actors in the mango industry. “Industry specific showcases”, by contrast, was the lowest rated strategy, and this suggests that many respondents did not highly regard this method as useful for avocado and mango people to develop their business skills.



In the follow-up discussion, the participants focused on two main issues: (1) the usefulness of cross-sector mentoring programmes and (2) the importance of on-farm & face-to-face training (as an additional option for the questions about business management skills).

(1) Cross-sector mentoring programmes: As shown in the figure, mentoring programs were not considered a useful strategy for developing business management skills for SCC actors by many respondents. A researcher participating in the discussion, however, believed that mentoring programmes were an effective way of training these skills. She gave an example of developing a model of mentoring in the Chamber of Commerce up in Cairns, in which they paired people with experienced managers who had a range of business skills. For her, the mentee would have opportunities to learn and practise cross-sector skills and different management styles, as they could work with business managers who were not from their sector (see Box 4). She might imply that it was important for SCC actors to have diverse skills, which were useful for them in working with diverse SCC partners in SCC.

(2) On-farm & face-to-face training: Other participants, in addition, suggested that it was important to organise face-to-face training sessions on the farm, as this was convenient for producers who were always busy with their work. The industry partner, for example, said that there should be more funding to deliver training sessions on the farm and believed that people could learn a lot from this kind of training. He provided an example from his own experience of working with farmers and understanding how they were doing. The state government office agreed with him and maintained that the government should support delivering information face-to-face, as this traditional way of learning was still useful, although this would be costly expensive (see Box 4).

#### **Box 4: Key comments on mentoring programs and face-to-face training**

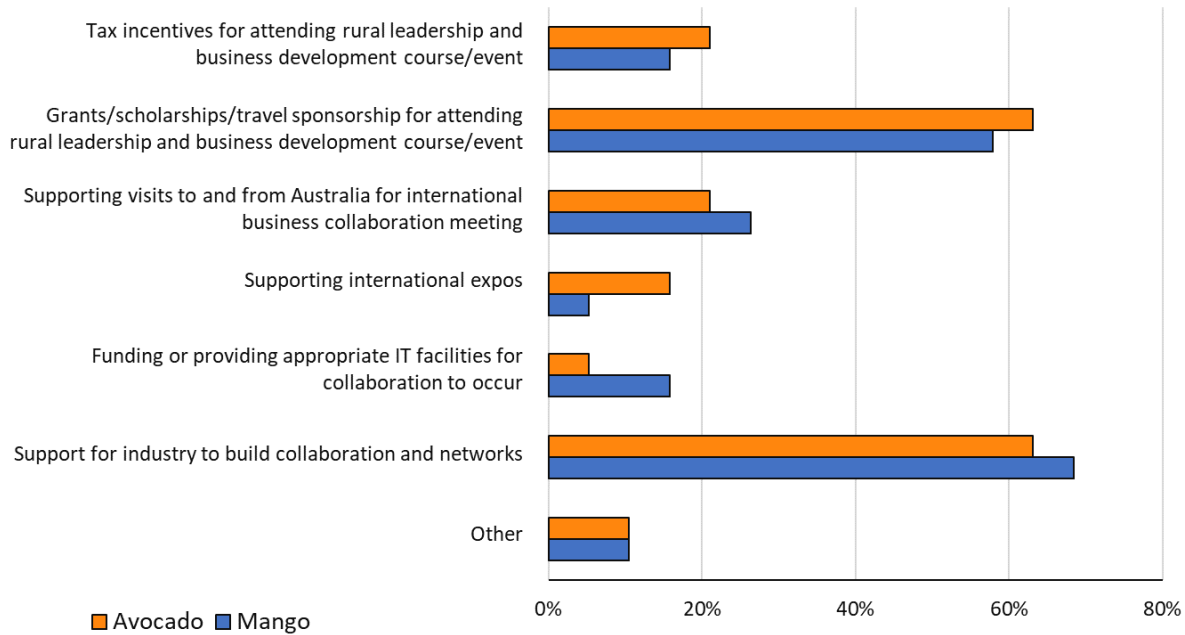
<p style="text-align: center;"><b>Box 4: Key comments</b></p> <p><b>From a researcher:</b> <i>“What they did is they got a cross-section of senior managers across a range of business skills and so these were more Like mentors coaches if you like you have mentoring up there, but this was an interesting model in that what they did is they paired people”.</i></p> <p><b>From an industry partner:</b> <i>“More funding to help deliver things face to face on the farm because everyone's too busy to actually go anywhere for a course”.</i></p> <p><b>From a state government officer:</b> <i>“We need to be more down at that face-to-face level with our Growers and we've tended to disregard that because it's being costly expensive”.</i></p>
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It is suggested from the poll results and discussion that that in addition to common courses and training programmes, traditional ways of learning (such as face-to-face delivery of information on the farm, as well as cross-sector mentoring) are also important for developing SCC actors' business management skills. It is also necessary to combine different strategies and approaches in preparing SCC actors with relevant business management skills for their initial and on-going collaboration activities.

#### **4.2.4. Government support**

**Question 10&11:** What types of government support could best help develop supply chain collaboration?

The respondents also provided their opinion on government support for developing SCC. The graph (Figure 9) shows a relatively high consistency among most of the respondents in choosing the two best types of government support, although there was still some variation in their rate of each support type in regard to industry (avocado or mango). Specifically, an equal percentage of respondents (63%) acknowledged that “grants/scholarships/travel sponsorship for attending rural leadership course/event” and “support for industry to build collaboration and networks” as the most critical support types for avocado-industry people. About 58% and 68% of them, respectively, rated these two support types as the most necessary for people in the mango industry. The lowest-rated support type for the two industries was, however, not the same. As indicated, “funding or providing appropriate IT facilities for collaboration to occur” and “supporting international expos” were considered by only 5% of respondents as useful for supporting SCC development in the avocado and mango industries, respectively.



**Figure 9: Types of government support for developing SCC**

The follow-up discussion participants highlighted the role of the government in developing SCCs, suggesting that the government should offer more support in terms of (1) collaboration and (2) subsidisation, and thereby, expected more governmental involvement in facilitating leadership development and opportunities for SCCs.

(1) Government support in collaboration: The state government officer agreed with the highest-rated option in the poll results, namely “support for industry to build collaboration and networks”. He mentioned how the government could support in building senior industry-development offices, where there were people equipped with cross-sector skills who could provide linkages with various organisations and funding, and networking with different people. He believed that it would help develop more collaboration across different agencies in Australia (see Box 5).

(2) Government support with subsidisation: In addition to the options under the question, the state government officer suggested another type of government support that the government could assist leadership enhancement activities for SCC actors by increasing subsidisation or incentivizes for export initiatives, that would help increase their SCC’s competitiveness. He gave an example of the US government who supported marketing initiatives, but they refused to call this support a subsidy. A producer who participated in the discussion also added that the government could support subsidising airfreight that would be useful to get the cost down and send their products overseas. It is, however, not clear whether the producer was relating to leadership enhancement and SCCs in suggesting this option (see Box 5).

**Box 5: Key comments on government support**

**Box 5: Key comments**

**From a state government officer:** “State government supporting what we call Linda senior industry development offices and there’s a big range of skills in these people. Yeah, across in the agribusiness sector. They can play a role in terms of providing linkages with various organizations, various Federal Government funding, state government funding”.

“Their federal government to Support that marketing initiative, but they called it a different term and they flatly denied that they were subsidizing in anyway”.

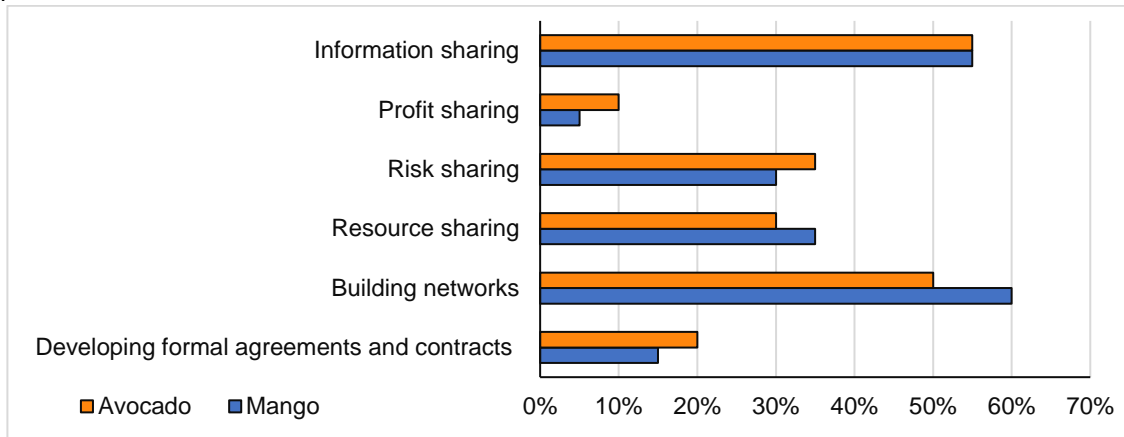
**From a producer:** “Is that something that could be possibly longer term to subsidize our air freight to get our cost down and getting it overseas”.



## 4.4 Elements of Collaboration- What?

### 4.4.1. Strategic elements

**Question 12&13:** How important are the following strategic elements for enterprises that are directly involved in supply chains?



**Figure 10: Strategic elements for enterprises in supply chains**

The participants' responses indicated several strategic elements that enterprises should consider when they were directly involved in supply chains. It can be seen from Figure 10 that many respondents agreed with one another about the two most critical strategic elements, namely "information sharing" and "building networks". Regarding "information sharing", 55% of respondents acknowledged that it was necessary for enterprises in both the avocado and mango industries to share information with other partners in their supply chain. Regarding "building networks", 60% and 50% of respondents thought that enterprises in the mango and avocado industries, respectively, should attach importance to networking as part of their SCC. In addition, although both "risk sharing" and "resource sharing" were the second and third preferred elements, they were in the reverse order in terms of the rate as compared between the two industries (avocado and mango). On the other hand, "profit sharing" was the least favoured element, as it was viewed by only 5% and 10% of respondents as important for mango and avocado enterprises, respectively, for involving in supply chains.

Similar to the discussion on questions 3 & 4, the follow-up discussion on questions 12 & 13 about the importance of different strategic elements for enterprises that are involved in supply chains mainly focused of the poll results. The participants expressed their perceptions on the poll response, which reflected different levels of consensus or disagreement about the issues. The participants, generally, agreed on the importance of (1) building networks and (2) information sharing, while had different views about (3) formal agreements and contracts.

(1) Building networks: The researcher who was facilitating the discussion commented on one of the highest-rated strategic elements, namely 'building networks', agreeing that those networks played an essential role in exchanging new ideas or insights from outside markets. He however suggested that this might be part of information sharing (related to another highly rated strategic element, namely information sharing, as reflected in the participants' response to the poll questions) (see Box 6).

(2) Information sharing: The researcher then moved on to the 'information sharing' issue. He believed that nowadays, there was a lot of information about price and production, which was available electronically. For that reason, it would be better to coordinate the information and understand it. The state government officer agreed with the researcher and gave an example of farmers who introduced QR code technology for traceability of products, but the farmers did not secure their blockchain cards properly. He also warned of the risk that overseas agents might gather the information from there. So, for him, it would be better to carefully think about building strategic information and networks. The researcher then came to the conclusion that it was important to have access to the information provided by networks of producers (see Box 6).

(3) Formal agreements and contracts: The participants also shared their different views on the issue of formal agreements and contracts, a relatively low-rated option in the poll results. The industry partner said he was "surprised" that this option was not higher up in the results. He believed that agreements and contracts could help ensure security for farmers, as markets could sometimes break away overnight. The researcher, however, suggested that formal agreements and contracts did not always mean security, as in the case of China where people often attached importance to informal relationships rather than formal contracts. The industry partner then concluded that it was important to understand how businesses often worked in different countries in terms of culture, and that understanding others' business culture was the key to security (see Box 6).



**Box 6: Key comments on building networks, information sharing, formal agreements and contracts.**

**Box 6: Key comments**

**From a researcher:** “So the networks that bring in new research on. New ideas or insights from outside markets”.

“There’s so much information is available electronically [...], but perhaps is a better might be better at coordinating it and making sense of it”.

“In China a lot of right relationships work best when it’s informal”.

**From a state government officer:** “You need some very very strategic and very careful thinking about your sharing how you build your networks”.

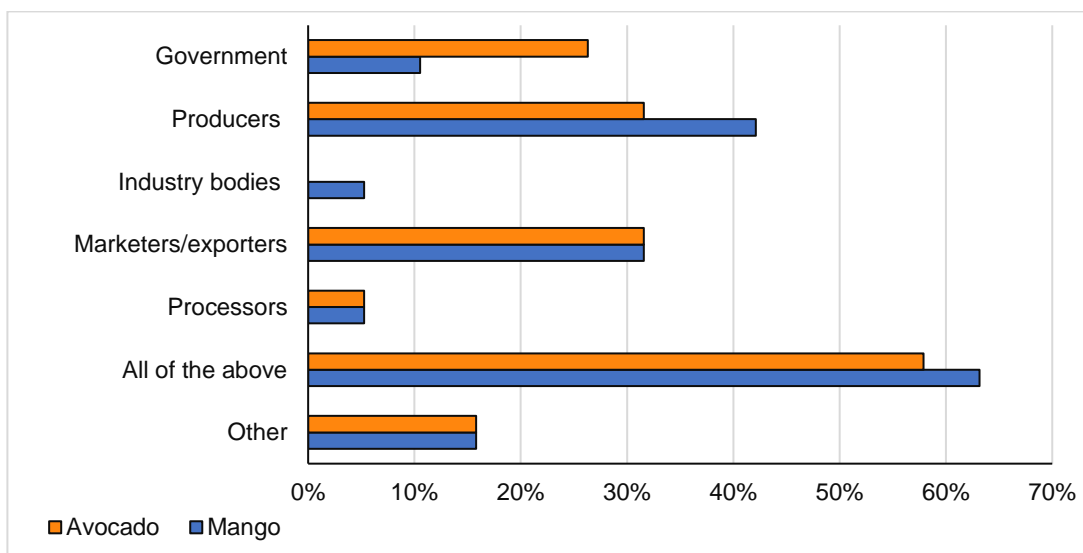
**From an industry partner:** “I’m a little bit surprised the documents and formal agreements, aren’t they a bit higher up? I think the critical to prevent Fairweather trading”.

The participants’ different levels of consensus and disagreement on the issues, as reflected in their discussion, first, point to the great importance of building networks and information sharing in building and maintaining an SCC, and second, indicate the necessity of reconsidering how formal agreements and contracts often work in different cultures. For them, perhaps, these elements were very strategic for a vertical supply chain collaboration to establish their initial development activities and successfully maintaining their ongoing operation. They might be, hence, of the belief that while networking and information sharing were useful for sustaining the SCC, understanding the issue of culture in dealing with agreements and contracts could be critical for the SSC’s competitive advantage and success.

**4.4.2. Who should pay for SCC**

**Question 14&15:** Who should pay most of the costs of building strong agricultural supply chain collaboration? Please nominate your first TWO CHOICES in each column.

The participants also provided their perceptions on who should pay the costs of building SCCs, as shown in Figure 11. Most of the respondents were highly consistent in agreeing that the government and all parties involving in the SSC should share these costs. For that reason, they chose the option “all of the above”, considering all suggested parties in the list as those who should pay for SCC activities. As indicated, the percentage of respondents who believed that “all of the above” should share the costs was relatively similar for the mango and avocado industries, with an average critical score of 63% and 58%, respectively. Although “producers” and “marketers/exporters” were also considered by many respondents as financial sponsors for SCCs in both the industries (which were the second and third highest rated options), the favoured option “all of the above” was the most considerable, given that “all of the above” also involved the other two options.



**Figure 11: Suggested financial sponsors who should pay the costs of building SCCs**



In their follow-up discussion on the money issue, the participants did not pay much attention to the poll results but focused on how the government could better financially support SCCs, given that they had to face a number of difficulties because of the COVID-19. They suggested that as they might not be able to move back to pre-Covid supply chains (the state government officer) and governments would spend more money on other areas (the researcher), the government and the industry needed to invest in transforming and restructuring supply chains domestically to reach export markets (the industry partner). The industry partner also emphasised that it was important to work collaboratively to maintain the ports/airports and regional hubs, that would allow the distribution of products overseas (see Box 7). Their discussion, although it was not related much to the poll results, highlighted the importance of understanding risks and uncertainties (COVID-19 is a typical example of these risks and uncertainties) in businesses and SCC, as well as of considering strategic responses to and management of the risks, that is critical for recovering and maintaining SCCs' business performance and collaboration activities.

**Box 7: Key comments on government support in the face of COVID-19**

**Box 7: Key comments**

**From an industry partner:** *“Government and Industry need to invest heavily in restructuring transforming and showing leadership in bringing everyone in the supply chain together”*

*“There's different ways to skin a cat on a subsidy if we're collaboratively working with government and our international trading partners on coordinating the imported goods so that we've got something coming in on a plane”.*

## 5. Discussion and Recommendations

Findings reported in the previous section suggest that although some participants had differences in viewpoints regarding the issues of leadership, strategies for enhancing leadership skills, and SCC strategic elements, there was, generally, considerable consistency among the participants in evaluating SCC issues regarding three main categories of subjects, including (a) collaboration – why & who, (b) leadership and business management for collaboration, and (c) elements of collaboration – what, that was reflected in their poll response and suggestions in the follow-up discussion.

Based on the findings, several issues—which can be seen as critical conditions for a successful translation of SCC models—have been identified. These issues are related to two strategic components, namely (1) the environment of SCC and (2) leadership and relationship in SCC. Implications and recommendations for translation SCC models are also included in the below discussion where relevant.

### 5.1. Environment of SCC

The environment of SCC refers to how an SCC can be successfully constructed and maintained, in which all stakeholders are able to participate in a positive and effective cooperation environment in the long run.

Formation of SSC and collaborating partners: One of the keywords for such an environment is, perhaps, “sustainability”, which is important in relation to SCC formation and collaborating partners. As it is indicated from the poll results, many respondents agreed that stakeholders would enter an SCC for “sustainable” reasons: “to get more consistent prices” and “to achieve better and reliable supply chain distribution network” (Figure 5). Many of them also believed that enterprises should attach importance to “building networks” as a strategic element of their SCC (Figure 7). It was also confirmed in the discussion by some participants that it was important to not only attract stakeholders to the SCC but also motivate them to retain in the collaboration (Box 1). This indicates the necessity of collaborative planning in the development of long-term sustainable solutions (Sagaris, 2017), where parties involved can see clear needs, purposes, incentives and benefits of collaboration, and have a desire for shared outcomes (Hrelja, Rye & Mullen, 2017; Rye & Isaksson, 2018).

One of the long-term sustainable solutions which need to be considered in collaborative planning is related to enhancing business management skills among the collaborating partners (members of the SCC). Many respondents agreed that “industry specific business development training at regional level”, “industry specific and place based short courses”, “specialist consultants for individual businesses”, and “agricultural sector business development training and workshop” were useful to develop such skills (Figure 8). In addition to these training programmes, courses and workshops, discussion participants highlighted the importance of cross-sector mentoring programmes and on-farm & face-to-face training (Box 4). They might be of the belief that internal development of required knowledge/skills and of collaborative mindset, as well as commitments to human resources (Brown et al., 2019), are a critical step for successful collaboration in the initial and ongoing stages of SCCs.

It is also significant to consider top-down support in the formation and maintenance of SSCs, which is also related to a favourable environment for a sustainable SCC. The majority of poll respondents were consistent in acknowledging that “grants/scholarships/travel sponsorship for attending rural leadership course/event” and “support for industry to build collaboration and networks” were useful governmental support types for developing an SCC (Figure 9). They also suggested that the government could provide with more assistance in terms of (1) collaboration and subsidization (Box 5). This demonstrates their acknowledgement of the role of top-down agents such as the government in facilitating leadership development and opportunities for SCCs.

Information sharing and identification of issues: In order to develop and maintain a healthy collaboration environment for SCCs, it is significant to pay attention to information sharing and identification of issues in all initial and ongoing activities of the SCC. It is indicated from the poll results and follow-up discussion that the respondents were consistent in acknowledging that it was necessary for enterprises, as well as other SCC members, to share information with the other partners in their supply chain (Figure 10, Box 6). In the light of the participants’ suggestions, it is hence necessary to develop transparent models for sharing and being exposed to information among actors in the vertical SCC, as well as for establishing effective market forecast and analysis, in all SCC stages. SCC members’ awareness about and mechanism of information sharing can be enhanced and developed through training, using different leadership/business skill management courses and programmes, as shown in the poll results.

Identification of issues can be related to identifying and responding to unexpected problems before and during the collaboration. Such issues were exemplified by some participants in their follow-up discussion, which were related to factors that may prevent stakeholders to stay in the SCC (including undesirable experiences with SCCs and restrictions of participation in SCCs) (Box 1) and difficulties due to the COVID-19. Their discussion pointed to the importance of involving all SCC actors not only from the early stage, to forecast difficult issues as early as possible (Pettersson & Hrelja, 2017), but also when unexpected things happen, to remedy the problems which may have a negative impact on their collaboration and economic security.



Risk sharing: As it is shown in the poll results, “risk sharing” was among the highly rated strategic elements for enterprises that are directly involved in the supply chain (Figure 10). The issue of risk sharing was also highlighted by some participants in their discussion on what the government and collaboration actors should do in the face of COVID-19 (Box 7). This illustrates the importance of understanding risks and uncertainties—created by the external environment—in businesses and SCC, which can have a negative impact on both the supply and demand sides, as well as of considering strategic responses to and management of the risks, that is critical for recovering and maintaining SCCs’ business performance and collaboration activities.

## 5.2. Leadership and relationship in SCC

*Leadership and role:* Leadership is important in establishing and managing an SCC. As suggested by the poll results, the majority of the respondents chose marketers/exporters and industry bodies as suitable SCC leaders (Figure 6). There was some disagreement about the government and industry’s leadership role between some participants in the follow-up discussion. The participants, however, agreed that different partners had their own role in the collaboration and network (Box 2). Their arguments indicate the importance of understanding and acknowledging the role, position and contribution of all actors in the vertical collaboration, where each party is a link of the chain. All actors, hence, need to understand their formal responsibilities, their goals and interests, and their own agency in the collaboration (Rye & Isaksson, 2018). For example, they all should be responsible for the cost of joining and building their SCC network. This is reflected in the highest rated option “all of the above” when the poll respondents considered who should pay for SCC activities (Figure 11). It is therefore suggested that establishing and maintaining a collaborative platform in which the collective responsibility and engagement are shared by all the participants (van der Heijden & Cramer, 2017) is critical for the success and sustainability of an SCC.

As such, it is necessary to enhance and develop leadership skills for all members of the SCC, who are the potential leader of the collaboration, as they need to learn more of other actors and their roles, as well as the conditions and constraints under which they may operate (Rye & Isaksson, 2018) when they are in the SCC. They need to learn how to act as a powerful change agent (van der Heijden & Cramer, 2017) who seek to manage the meaning of partnership (Selsky & Parker, 2010). In respect to this issue, many poll respondents considered “supply chain focused short courses” and “involvement in industry working groups” as useful strategies which could work effectively in supporting SSC actors’ learning and improving their leadership skills (Figure 7). Many of them also suggested that the government should provide more support in facilitating leadership development, and this reflects in their belief that government should offer more “grants/scholarships/travel sponsorship for attending rural leadership course/event” (Figure 9). Discussion participants, in addition, had different recommendations related to training programmes, course designers, and learners’ levels (Box 3). Their responses and suggestions illustrate the importance of knowledge and resources in developing a shared understanding of responsibilities and sustainable collaboration among those who would like to play the role of a more active and powerful actor in the network.

*Building and maintaining trust:* Establishing trust among contracting parties in the SCC network is an essential strategic element in agreement-based relationships, that is required for collaboration to work overtime (Rye & Isaksson, 2018) and critical for the success of the SCC. As one of the highly rated reasons for entering an SCC is “to achieve better and reliable supply chain distribution network” (Figure 5), reliability and trust are considerable elements for facilitating and maintaining ongoing operational activities of an SCC. Trust can be built through the accountability and “sharing” principle. It is shown from the poll results and discussion that many participants highly regarded the importance of “information sharing”, “risk sharing” and “resource sharing” (Figure 10), which are necessary for genuine interdependence in the SCC, and developing mutual trust for the collaboration between the involved actors (Paulsson et al, 2018).

For some participants, in addition, clear agreements and contracts were an effective way of ensuring trust, but for some others, the trust could be built in informal interactions and exchanges in many business cultures and countries (Box 6). For that reason, SCC actors also need to be accustomed to different cultures, which include dissimilar structures, ways of working, resources, knowledge and terminologies (Vlaar et al., 2006). It is evidenced from the participants’ discussion on agreements and contracts that collaboration in homogeneous groups who have a greater level of trust is often based on informal agreements, while collaboration among heterogeneous groups who hold more calculate attitudes towards each other tend to rely on formal contracts (Powell, 1990).



## 6. Conclusion, End-user’s Guidelines and Future Study

This study investigates the translation of the Agricultural Supply Chain Collaboration (ASCC) Models developed by the researchers during the first and second stages of the research project. The study was carried out through a stakeholder panel workshop. Most of the participants of the current workshop attended the previous workshop which focused on the development of ASCC models for horticulture industries, namely, mango, avocado, and lychee. Referring to and evaluating the maturity of supply chains in the three industries (mango, avocado and lychee), the research team mainly focused on the mango and avocado industries in this study and the associated workshop. The study essentially investigates the translation of the research findings of the project by asking basic questions of why, who, how and what. A set of themes has emerged through an inductive qualitative analysis approach. Based on the identified themes and findings, some recommendations for relevant stakeholders and actors in the ASCC are made. The key recommendations include:

- Development of the culture and environment of ASCC through information sharing and network building is essential for sustainable ASCC. Retaining collaboration partners is also crucial for sustainable ASCC. Building and maintaining trust as well as risk sharing are key for retaining collaboration partners and ensuring sustainable ASCC.
- Leadership in ASCC is important. However, all actors involved in the ASCC need to understand their contribution towards the collaboration and act accordingly, in order to ensure the success of the collaboration.
- Leadership and business management skills could be enhanced through supply chain-focused short courses and the involvement of industry working groups. Attaining this goal could be challenging due to the lack of multi-level training programmes and the different education levels of the supply chain actors.
- It is difficult for producers to attend a training program to boost up their business skills due to their work commitment at the farm. It is recommended that cross-sector mentoring programmes and on-farm face-to-face training could be beneficial for this cohort.
- Government support in form of network building and subsidisation is vital for the success of ASCC. Government subsidy on air freight could trigger the ASCC to reach the export market.
- Formal agreements and contracts among ASCC partners may or may not be important, depending on the nature of the collaboration. Formal agreements and contracts with overseas partners in export-focused ASCC depend on the culture and norms of the participating countries.
- Given the COVID-19 and post COVID-19 situation, financial support from the government may not be obtainable for supporting ASCC. However, the government and industry could work together in transforming and restructuring supply chains to reach export markets.

The findings of this study have several implications for end-users, including, producers, industry bodies, government, education providers, researchers, and all other actors in the supply chain. Some guidelines for end-users are presented in the following table (Table 1):

**Table 1: Implications of the key findings to the end-users**

End-users	Findings of the study	Guidelines for the end-users
Producer	Development of networks and building trust among ASCC actors are important for sustainable collaboration.	<ul style="list-style-type: none"> <li>▪ Working closely with the government and industry body to develop a strong network.</li> <li>▪ Enhancing trust among collaboration partners through information sharing and risk sharing.</li> </ul>
	Leadership skills and business management skills are important for collaboration. These skills can be achieved through training and working with industry working groups.	<ul style="list-style-type: none"> <li>▪ Selecting appropriate training programs based on producers’ education level and experience.</li> <li>▪ Attending cross-sector mentoring programs for enhancing skills.</li> </ul>



All other actors in the supply chain collaboration	The success of collaboration depends on the retention of collaboration partners.	<ul style="list-style-type: none"> <li>Developing trust by sharing information as well as sharing risk.</li> <li>Developing awareness about each partner's role and contribution in the collaboration</li> </ul>
	Any actor in the SC could lead the collaboration.	<ul style="list-style-type: none"> <li>No matter who is leading the collaboration, being proactive and aware of one's own role and contribution in the collaboration is important.</li> </ul>
Industry body	The industry body could potentially lead the ASCC.	<ul style="list-style-type: none"> <li>Working closely with producers and the government to ensure the success of the ASCC.</li> </ul>
	The industry body could play a vital role in providing training for different actors in the supply chain to enhance their leadership and business skills.	<ul style="list-style-type: none"> <li>Working closely with the government and education providers to facilitate appropriate training.</li> </ul>
Government	The government could provide support to build a strong network among actors in the ASCC.	<ul style="list-style-type: none"> <li>Working closely with the industry body to provide network support for actors in the ASCC.</li> </ul>
	The government could provide grants and scholarships for ASCC actors, which can assist them to attend business development courses.	<ul style="list-style-type: none"> <li>Developing guidelines for such grant and scholarship schemes and selecting appropriate training programs for funding.</li> </ul>
	The government could support export focused ASCC through subsidizing airfreight costs.	<ul style="list-style-type: none"> <li>Developing appropriate policies and guidelines to subsidize air freight costs and support export-focused supply chains.</li> </ul>
Education providers	Training programs of different levels are necessary to improve leadership and business management skills for ASCC actors.	<ul style="list-style-type: none"> <li>Developing comprehensive training programs for learners of different levels.</li> <li>Working closely with the government and industry body to develop on-farm and face-to-face training programs</li> </ul>
Researcher	There are implications of the findings in the post COVID-19 situation.	<ul style="list-style-type: none"> <li>Conducting research on transforming and restructuring supply chains domestically to reach export markets</li> </ul>

Findings of the current study need to be tested, through further research in which collaboration among and participation of regional producers in a selected industry is developed. It is indicated from the study that there is a requirement of developing a comprehensive training programme to improve the leadership and business management skills of ASCC actors. The findings of the present study can be confirmed and supported by developing such training programmes and trial run with a small cohort.

Although the present project mainly focuses on the initiation of ASCC; it is revealed in this study that the sustainability of such collaboration needs to be secured and attached importance. Further research on the sustainability of ASCC will be a follow-up of the current study.



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## Appendices

### Appendix 1: Workshop Schedule

#### **A.1.1718097 EXPORTING PERISHABLE COMMODITIES TO ASIA: DEVELOPING A STAKEHOLDER COLLABORATION MODEL**

#### **WORKSHOP 2: Translation pathway of agricultural export supply chain collaboration models**

**Date: Tuesday 27 October 2020, 10 am to 12 pm**

**Venue: Online, Zoom meeting ID: Meeting ID: 988 1374 2421**

#### **Agenda**

Session	Description
<u>Session 1</u> : 10:00 am – 10:20 am	<ul style="list-style-type: none"><li>• Welcome</li><li>• Acknowledgement of the First Nation people: <a href="https://staffnet.cqu.edu.au/our-uni/departments/oie/Pages/Acknowledgement-of-Indigenous-Country.aspx">https://staffnet.cqu.edu.au/our-uni/departments/oie/Pages/Acknowledgement-of-Indigenous-Country.aspx</a></li><li>• Housekeeping</li><li>• Introduction- Workshop aim and introduction of participant (name and organisation)</li><li>• Agricultural supply chain collaboration models- to be present by Associate Prof. Delwar Akbar</li></ul>
<u>Session 2</u> : 10:20 am – 11:50 am	<ul style="list-style-type: none"><li>• Structural discussion on the factors associated with the translation and implementation of the models –Prof John Rolfe.</li><li>• Open floor discussion on the translation pathway and policy recommendations.</li></ul>
<u>Session 3</u> : 11:50 am – 12:00 pm	Conclusion of the discussion and close of workshop.



Appendix 2: Interactive Workshop Survey & Discussion Tool

**A.1.1718097 EXPORTING PERISHABLE COMMODITIES TO ASIA: DEVELOPING A STAKEHOLDER COLLABORATION MODEL**

**WORKSHOP 2: Translation pathway of agricultural export supply chain collaboration models**

**Date: Tuesday 27 October 2020, 10 am to 12 pm**

**Venue: Online, Zoom meeting ID: Meeting ID: 988 1374 2421**

**[Format: Online pop-in survey with results of every part followed by 20 to 25 minutes open floor discussion]**

**Q1. Which of the following sectors do you identify most with? (i.e. which one are you currently working in?)**

- Industry peak body
- Producer/Grower
- Marketers and Exporters
- Federal Government
- State Government
- Local Government
- Researcher
- Other (Please specify)

**Part A- Collaboration- Why & Who?**

**Q 2 &3. Thinking about the MANGO and AVOCADO industries, what do you believe are the two most important reasons why growers/stakeholders would want to enter a supply chain network or collaboration? Please nominate your first TWO CHOICES in each column.**

Reason	Mango	Avocado
To get more consistent prices		
To make more direct links to relevant supply chain actors		
To access higher prices		
To achieve better and reliable supply chain distribution network		
To lower operational costs		
To achieve more direct links to importers and retailers		
Better access to overseas markets and demand information		
Other (please specify _____)		

**Q 4&5. Thinking about the MANGO and AVOCADO industries, which of the following do you believe are best placed to lead an export supply chain collaboration? Please nominate your first TWO CHOICES in each column.**

Potential leader	Mango	Avocado
Large-scale producer		
A group of farmers		
Industry body		
Marketers/exporters		
Resource/ Technology provider		
Government (local/state/federal)		
Other (please specify)		



**Part B- Leadership & Business Management for Collaboration- How?**

**Q 6&7. Thinking about the MANGO and AVOCADO industries, which of the following strategies would be most useful as a way of creating leadership for agricultural export supply chain collaboration? Please nominate your first TWO CHOICES in each column.**

Strategy	Mango	Avocado
Rural leaders course		
Supply chain focused short courses		
Industry specific major event		
Industry specific international agricultural expo.		
Involvement in industry working groups		
Industry based mentoring program (Webinar based) for export supply chain		
Practical experience/internships in cooperative programs		
Other (please specify)		

**Q 8&9. Thinking about the different actors in a supply chain, how can general skills for business management be best developed? Please nominate your first TWO CHOICES in each column.**

Strategy	Mango	Avocado
Agricultural sector business development training and workshops at local district level		
Industry specific business development training at regional level supported by cross-regional leaders/case studies		
Industry specific and place based short courses		
Industry specific showcases		
Mentoring programs		
Specialist consultants for individual businesses		
Other (please specify)		



**Q 10&11. What types of government support could best help develop supply chain collaboration?** Please nominate your first TWO CHOICES in each column.

Government support	Mango	Avocado
Tax incentives for attending rural leadership and business development course/event		
Grants/scholarships/travel sponsorship for attending rural leadership and business development course/event		
Supporting visits to and from Australia for international business collaboration meeting		
Supporting international expos		
Funding or providing appropriate IT facilities for collaboration to occur		
Support for industry to build collaboration and networks		
Other (please specify)		

**Part C- Elements of Collaboration- What?**

**Q 12&13. How important are the following strategic elements for enterprises that are directly involved in supply chains?** Please nominate your first TWO CHOICES in each column.

Strategic element	Mango	Avocado
Information sharing		
Profit sharing.		
Risk sharing.		
Resource sharing		
Building networks		
Developing formal agreements and contracts		
Other (please specify _____)		

**Q 14&15. Who should pay most of the costs of building strong agricultural supply chain collaboration?** Please nominate your first TWO CHOICES in each column.

Who pays	Mango	Avocado
Government		
Producers		
Industry bodies		
Marketers/exporters		
Processors		
All of the above		
Other (please specify _____)		
Government		





**Q 16. Do you have further suggestions about the below areas? Please include information that is industry-specific (e.g, for mango and/or avocado):**

- a) Ideas about leadership development
- b) Ideas about strategic business partnership development
- c) Ideas about business skill and management development