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**Smallholder farmers' agricultural support services system in  
northern Sri Lanka**

A dissertation presented  
in partial fulfilment of the requirements  
for the degree of

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**Thivahary Geretharan**

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## **ABSTRACT**

Smallholder agriculture is argued to be a key driver in the recovery and overall economic growth for rural populations in developing countries. There is little understanding on the agricultural support services accessed by smallholder farmers in the northern Sri Lankan context and what influence their access and why those support services are accessed by farmers. Further, little is known about how various agricultural support service providers are providing services to smallholder farmers in this context and what influence their provision. The research reported in this thesis examined and explored the smallholder farmers' agricultural support system in the northern context of Sri Lanka. The aim of the study was to contribute to enhancing the provision of support services to smallholder farmers in northern Sri Lanka. A single case study design was employed, and data for the study were collected primarily from semi-structured interviews. Secondary data were gathered from relevant documents. The data collected through interviews and documents were analysed using qualitative data analysis.

This research highlights that smallholder farmers are willingly, openly and without distrust engaging in relationships with commercial service providers despite having only limited experience in these types of interactions. Farmers value the standard of service but also seek to supply produce to a commercial trader with a well-recognised reputation. The service providers the farmers interact with are also linked to the particular farm enterprise they are engaged with and farm enterprises are differentiated on gender. The study further found that Government providers with no commercial interests are collaborated with providers with commercial interests associated with their interactions with smallholder farmers. In northern Sri Lanka it appears Government services are in no way seen as competitive with commercial service providers, rather for those commercial service providers who do not or are not in a position to provide certain services provided by Government they link farmers to Government to access these services. This linking to services adds value to the relationship between smallholders and commercial service providers.

The insights gained from the study into what support services are accessed by smallholder farmers and why are they accessing and how are agricultural support service providers providing services to smallholder farmers need to be considered when designing policies and development programmes to enhance the support service provision in the northern context as well as other parts of Sri Lanka.

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## ABBREVIATIONS

<b>Abbreviations</b>	<b>Full Phrases</b>
AAIB	Agriculture and Agrarian Insurance Board
ASS	Agricultural Support Services
BOC	Bank of Ceylon
CBSL	Central Bank of Sri Lanka
CBO	Community Based Organization
DAC	District Agricultural Committee
DAD	Department of Agrarian Development
DAPH	Department of Animal Production and Health
DCS	Department of Census and Statistics
DOA	Department of Agriculture
DS	District Secretary
FAO	Food and Agricultural Organization
FMS	Farmer Managed Society
FO	Farmer Organization
GDP	Gross Domestic Product
ha	Hectares
LKR	Sri Lankan Rupees
LTTE	Liberation Tigers of Tamil Eelam
Milco	Milk Industries of Lanka Company Limited
MoA	Ministry of Agriculture

NGO	Non-Governmental Organization
NLDB	National Agricultural Development Board
PC	Provincial Council
TRO	Tamil Rehabilitation Organization
UN	United Nations

# CHAPTER ONE: GENERAL INTRODUCTION

## 1.1. Introduction

This thesis presents the results of a case study that examines the agricultural support service system of smallholder farmers in northern Sri Lanka. The support services to smallholders in northern Sri Lanka are provided by multiple providers, including government, government-run, non-government and private commercial entities. The interactions and relationships between smallholder farmers and support service providers are shaped by various factors, including their historical experiences of service provision during the war. This chapter introduces the thesis by providing the background to the research problem and explaining why this research is important. The research aim, problem statement and research questions for this study are then set out. Next, a brief reflection on this research is described. In the final section, the structure of the thesis is outlined.

## 1.2. Background to the research

Sri Lanka is a developing country, and its agricultural sector is dominated by smallholder farmers. Around 71% of agricultural landholdings in Sri Lanka are less than two hectares and their landholdings produce over 90% of the country's food requirements (Esham & Garforth, 2013; Sangakkara & Nissanka, 2008). Within the Sri Lankan context, smallholder farmers are classified as those farmers who have ownership of or engage in farming less than two hectares of land (Rakotobe et al., 2016; WorldBank, 2013).

The agricultural support services in Sri Lanka are recognised as important to the wellbeing of the smallholder farming sector. Several authors (Adekunle, 2013; Bebe, Udo, & Thorpe, 2002; Poulton, Dorward, & Kydd, 2010; Pye-Smith, 2012) have argued that the provision of agricultural support services can strengthen smallholder farmers' capabilities through access to advice, information, inputs, credit, markets and related services. However, Pye-Smith (2012) and Morton (2007) have argued that smallholder farmers in developing countries are inadequately served by their agricultural support services, including extension and advisory services. This has been reported to be the case in Sri Lanka, especially in war-affected regions (Fernando & Moonesinghe, 2012; Goodhand, 2012; Wanasundara, 2006).



Smallholder agriculture is argued to be a key driver in the recovery and overall economic growth for rural populations in post-war situations in developing countries (Annor-Frempong & Olang'o Ojijo, 2012; Moore & McNamara, 2017). Recently Breisinger et al. (2014) and Pathmanathan, Chandra Babu, and Pal (2017) reported that agricultural productivity in post-war agrarian societies experienced a sharp decline compared to the pre-war situation. One of the main influencing factors for this decline is the destruction of the agricultural support system that supports farmers. However, several factors influence agricultural reconstruction in post-war regions. Among others, the provision of effective agricultural support services is important for agricultural reconstruction. Annor-Frempong & Olang'o Ojijo (2012) reported that a well-organized agricultural support service system would strengthen smallholder farmers' capabilities in farming and contribute to the recovery of the agricultural sector and the overall economic development of a region.

### ***1.2.1. North and East provinces of Sri Lanka and impacts of war on agricultural support services in these regions***

The North and East provinces are two of the nine provinces in Sri Lanka. Agriculture is the main livelihood activity of the people in these provinces (Bandarage, 2010; Cahn, 2006). According to statistics provided by the Department of Census and Statistics (DCS, 2016), there are 607,570 farmers engaged in smallholder farming in North and East provinces of Sri Lanka. This is around 15% of total smallholder farmers in the country.

The North and East provinces of Sri Lanka are the traditional homeland for the Tamil and Muslim communities, and they were the main theatre of operations for a civil war that occurred over the period of 1979 – 2009 (thirty years) (Goodhand, 2012; Mittal, 2015; Pathmanathan et al., 2017; Somasundaram & Sivayokan, 2013). To fully understand the impact of civil war on these regions, it is important to understand their recent history. The Liberation Tigers of Tamil Eelam (LTTE), a liberation movement, fought to make the North and East independent from the remainder of the country which is dominated by the Sinhalese Buddhist people. The Sinhalese constitute the majority of the central government and the Sri Lankan Military (Choi, 2012; Mittal, 2015; Pathmanathan et al., 2017). This war had a significant impact on the livelihood activities of the majority of farming households in the North and East provinces (Goodhand, 2012; Somasundaram &

Sivayokan, 2013). The people's livelihoods in these areas have undergone considerable degradation and have yet to fully recover from the impacts of the war (Goodhand, 2012; Somasundaram & Sivayokan, 2013).

The war severely impacted the agricultural sector in northern Sri Lanka. This includes extensive destruction of the physical infrastructure, environmental degradation, landmines in agricultural areas, a lack of farming implements, a reduction in agricultural services, and increased number of women smallholder farmers (CEPA, 2009; Fernando & Moonesinghe, 2012; Vasudevan, 2013). These impacts from the war resulted in a major reduction in the human capital, particularly the active labour force available for agriculture in the region. Further, other studies showed that most people in the North became victims of various land-related problems, which affect the livelihoods of many of the farming families. These problems include restricted access to paddy lands because the Sri Lankan Military declared these areas high-security zones for security reasons, displacement of local people from their land and reduced access to irrigation water (CEPA, 2009; CPA, 2005; Fonseka & Raheem, 2010; ICG, 2011).

The circumstances of smallholder farmers in the war-affected regions, especially in northern Sri Lanka, have changed from what they were prior to the war. For example, significant numbers of farmers who farmed paddy prior to the war have changed their production system to fruit and vegetable farming, as they cannot access their productive paddy lands (Pathmanathan et al., 2017). Further, the smallholder farmers in the region have received less support from government agricultural support service providers than elsewhere in the country during and after the war (Korf, 2004; Pathmanathan et al., 2017). The following section explains the Sri Lankan Government's involvement in smallholder farming sector development.

### ***1.2.2. The government's involvement in smallholder farming development***

In recent years, the Sri Lankan government has developed several initiatives to enhance agricultural development in order to bring about socio-economic prosperity to smallholder farmers in the country (FCCISL, 2012; MoA, 2015). It was identified that service provision is important for the reconstruction of the region. One of the objectives of the Sri Lankan National Agricultural Policy is to “enhance the income and living standards of farming communities” (Sri Lanka National Agricultural Policy, 2015, p. 3).

In addition, the Sri Lankan government also identified the agricultural support services sector as one of the areas that need to be considered under the national policy. The government's policy states that, it aims to "re-organized and strengthen the existing support service provision to farmers" (Sri Lanka National Agricultural Policy, 2015, p. 7) and "develop mechanisms for coordination among government, non-government and private institutions involved in agriculture and related activities" (Sri Lanka National Agricultural Policy, 2015, p. 9).

There are multiple support service providers engaged in agricultural support service provision to smallholder farmers in northern Sri Lanka. These include; government, government-run, non-government and private support service providers. According to Birner et al. (2009, p. 342) the agricultural support service provider includes "the entire set of organizations that support and facilitate people engaged in agricultural production to solve problems and to obtain information, skills and technologies to improve their livelihoods and well-being". The agricultural support service system in northern Sri Lanka is characterised by new providers such as private support service providers emerged in post-war.

The smallholder agriculture sector in northern Sri Lanka has undergone significant change since the war. The Government of Sri Lanka has introduced several policy initiatives and development activities to help improve the livelihoods of smallholder farmers in the regions impacted by war. Although the agricultural support services system is acknowledged as important for enhancing the income and living standards of farming communities, there is little known about this sector or how they interact with smallholder farmers. In particular little is known about the nature of the support accessed by smallholder farmers in northern Sri Lanka, what influences their access, and why they access these services. Further, little is known about how various agricultural support service providers provide services to smallholder farmers in northern Sri Lanka and what influences the nature of their service provision.

### ***1.2.3. Aim of the study***

This doctoral study aims to support smallholder farming development in northern Sri Lanka by describing the nature of current agricultural support system and to inform policy

makers and support service providers about how they can better assist the smallholder farmers in achieving development through agriculture in the region.

#### ***1.2.4. Problem Statement***

The thirty-year civil war that prevailed in northern Sri Lanka severely impacted smallholder farming in the region. The government has introduced policies to improve smallholder farming in these regions. The government has also identified the importance of the agricultural support services system in relation to enhancing smallholder farming development. Further, it is also clearly identified that there is a need for reconstruction and redevelopment in northern Sri Lanka. This doctoral study sets out to understand how the current agricultural support service system is helping smallholder farmers and smallholder farming development in northern Sri Lanka.

#### **1.3. Research Questions**

The questions set for this doctoral study are;

- (i) what support services are accessed by smallholder farmers in northern Sri Lanka and why?
- (ii) how are support service providers providing services to smallholder farmers in northern Sri Lanka, and why? and
- (iii) how can agricultural services support to smallholder farmers be improved in northern Sri Lanka?

To answer these research questions, this study will use a systemic lens for two key reasons. First, the agricultural support services system is a broader system made up of multiple actors or agricultural support service providers. This includes advisory services, technical support, input supply, insurance services and agricultural credit services. Second, the smallholder farmers' agricultural support services system is influenced by interactions between public, private, non-government and government-run actors. As such, the agricultural support service system is a broader system where interactions among multiple support service providers and smallholder farmers are taking place.

#### **1.4. Reflection on Research**

This doctoral research was initiated with the aim to contribute to smallholder farming development by studying the nature of current agricultural support services in northern Sri Lanka. As I am from the northeast part of Sri Lanka, I am well aware of the impacts

of the war on the farming sector. Further, I am familiar with the language and I am interested in the development of the region, particularly informing the multiple agricultural support service providers on how better they can support the agricultural development of northern Sri Lanka.

The structure of the thesis is illustrated in the following section.

### **1.5. The structure of the thesis**

This doctoral thesis follows the standard monograph format. It comprises eight chapters.

The subsequent section summarises the thesis structure.

- Chapter one provides a general introduction to the thesis. This chapter explains the background of the research and the research questions. Next, a reflection of the research is provided. This chapter ends with outlining the structure of the thesis.
- Chapter two presents an overview of contextual information to the research. It includes information about Sri Lanka, characteristics of the agricultural sector in Sri Lanka, the administrative structures of Sri Lanka, and evolution in the agricultural extension in Sri Lanka.
- Chapter three reviews the literature and theories related to the study. Initially, the innovation systems theory and the concepts of institutional logics are reviewed. This is followed by a review of researches carried out using innovation systems theory and institutional logics. The review of literature mainly focuses on the systemic approach in explaining the agricultural support services and interactions within the system.
- Chapter four explains the research methodology used for this study. Choice of the research design is initially explained. It is followed by reasoning the choice of case study design. Next, case selection is described. A detailed description of data collection is then provided. Subsequently, the data analysis used for the study is explained which is followed by a brief description of research integrity. Finally, a summary of the chapter is provided.
- Chapter five, the case description, provides key information to the research. First, background to Sri Lanka is provided. It is followed by the description about agriculture in Sri Lanka. Subsequently, a brief description of the north and east provinces of Sri Lanka and the smallholder agricultural sector in the case district is provided. Afterwards, a background to the conflict in the north and east

provinces of Sri Lanka is provided. The nature of the agricultural sector during the war period is then briefly discussed. Finally, an overview of the agricultural support service providers is provided, which include; government, government-run, private and non-governmental support providers.

- Chapter six illustrates the key findings in relation to the research questions of the study. First, the nature of support services provided by the support providers is reported. Subsequently, results on the smallholder farmers-support provider interactions are presented, followed by the results on interactions between multiple agricultural support service providers. Finally, a summary of the chapter is provided.
- Chapter seven discusses the main results by using the relevant literature. Initially, the key theoretical characteristics of the case are presented. Next, the types of agricultural support service providers in northern Sri Lanka is provided. The access to agricultural support services by farmers in the district is then discussed. It is followed by the discussion on the institutional factors that shape the interactions between multiple actors in the agricultural support system is provided. At the end, a summary of the chapter is provided.
- Chapter eight reports the key conclusions of the study. The key theoretical contributions of this doctoral study are then outlined. Next, implications, reflections on research design are discussed. Finally, future research is proposed.

## **CHAPTER TWO: RESEARCH CONTEXT**

### **2.1. Introduction**

This chapter provides contextual information for the research, which will be useful to interpret the findings. The chapter is divided into five sections; following the introduction, section 2.2 provides an overview of Sri Lanka, the country where the research is carried out, section 2.3 describes the characteristics of the agricultural sector in Sri Lanka, section 2.4 gives a brief context of the agricultural support services in Sri Lanka, and finally, section 2.5 provides a brief description on rural development in Sri Lanka and section 2.6 provides a summary of the chapter.

### **2.2. About Sri Lanka**

Sri Lanka is a small island nation in the Indian Ocean, located at the southern tip of the subcontinent of India. Comprising 2905 km<sup>2</sup> of inland water bodies, the country has a total area of 65, 610 km<sup>2</sup>. It has a maximum width of 240 km from east-to-west and length of 435 km north-to-south. Sri Lanka is located between 5°55' to 9°5' north latitudes and 79°42' to 81°53' east longitudes and, thus, has an equatorial climate. Sri Lanka is administratively divided into twenty-five districts under nine provinces (Eewaran, 2018; Marambe, Silva, & Athauda, 2017).

After 443 years of colonial rule by the Portuguese (1505 – 1658), the Dutch (1658 – 1796), and the British (1796 – 1948), Sri Lanka became an independent nation in 1948. The country introduced a republican form of government in 1972 under the name of Democratic Socialist Republic of Sri Lanka. With a nationally elected Executive President, a Parliament with 225 members, and a Cabinet of Ministers from within Parliament functioning at national level, the country has been governed by the constitution of Democratic Socialist Republic of Sri Lanka since 1978 (Marambe et al., 2017; WHO, 2015).

Sri Lanka comprises multi-cultural, multi-ethnic, and multi-religious societies. In 2018, the population of the country was 21.67 million (DCS, 2018b; UN, 2019), of which, 81% resides in the rural sector and 19% in the urban sector. Based on the United Nations World Urbanization Prospectus, the World Bank estimated that in 2016, 81% of the population

of Sri Lanka lived in rural<sup>1</sup> areas (DCS, 2010; FAO, 2018). The Sinhalese are the majority in the population (74.9%), followed by Sri Lankan Tamils (15.3%) and Sri Lankan Moors (9.3%). The rest of the population (0.5%) consists of ethnic groups of Burgher, Malay and Sri Lankan Chetty. The highest percentages of Sinhalese, Sri Lankan Tamils and Sri Lankan Moors are reported from southern province (95%), northern province (93.8%) and eastern province (36.9%), respectively (Marambe et al., 2017). The majority of the Sinhalese follow Buddhism, and most Tamils are Hindus. Christians of different denominations are found in both Sinhalese and Tamils. Muslims adhere to the Islamic religion. Tamils and Muslims speak Tamil, while Sinhalese speak the Sinhala language, and a large proportion of all communities speak English (Marambe et al., 2017). While Sinhala and Tamil are the two official languages of Sri Lanka, the Constitution defines English as a link language. English is widely used for education, scientific and commercial purposes (Ogrodnik, 2019).

Table 2. 1. Population of Sri Lanka

Category	Numbers	Men	Women
Total population	21 million	10 million (48%)	11 million (52%)
Total rural population	17 million (81% of total)	8.1 million	8.9 million
Households	5.2 million	Male-headed 76.1%	Female-headed 23.9%

Source: (DCS, 2018b; FAO, 2018)

### ***2.2.1. The location of the country***

Sri Lanka is a small island nation located south of India in the Indian Ocean (Jayatilaka, 2017). The island is situated between 5°55' – 9°5' north latitudes and 79°42' – 81°53' east longitudes (Eewaran, 2018; VRI, 2002). Sri Lanka shares maritime borders with India and Maldives. The land extent of Sri Lanka is 65 610 km<sup>2</sup> with a maximum length of 737 km and a maximum width of 225 km (VRI, 2002; WHO, 2015).

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<sup>1</sup> all lands that are not administered under a municipal or urban council, as well as smaller estates with landholdings of less than 20 ac are defined as rural (DCS, 2010)



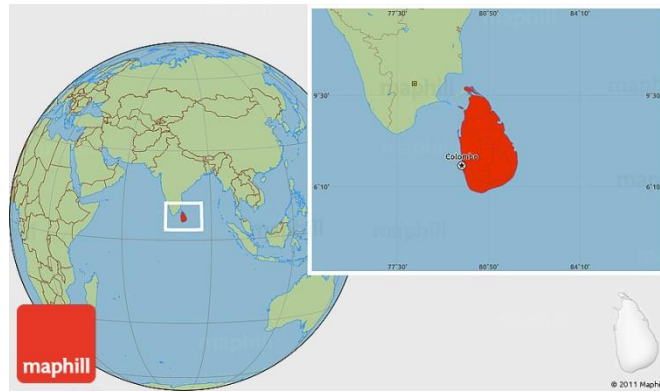


Figure 2. 3. Location of Sri Lanka in the World map

### ***Physical geography***

Physical geography varies across the country, from mountainous in the central region and flat in the north. The topography is divided into three main zones: low land, upland, and high land. Sri Lanka has a tropical monsoon climate, with monsoons occurring twice a year. Rainfall varies from up to 5000 mm/year in the wetter southern zone and under 1750 mm/year in the northern dryer zone. The average temperature ranges from 27°C in the lowlands and 15°C in the uplands (WHO, 2015).

The country is divided into three major climatic zones, namely, dry zone, wet zone, and intermediate zone. This classification of climatic zones is based on the pattern of annual rainfall, temperature, land use, soil type, and vegetation characteristics. The wet zone receives a mean annual rainfall over 2500 mm, the dry zone receives a mean annual rainfall of less than 1750 mm, and the intermediate zone receives in between (Eewaran, 2018).

### ***Demography***

Sri Lanka is home to 21.67 million people of whom 49% are male, and 52% female (UN, 2019). The population growth rate of the country is 0.913% (UN, 2019). From a larger macroeconomic standpoint, the country is divided into urban, rural and estate sectors. The rural population is 77.3%, while the urban and estate population constitutes 18.3% and 4.4%, respectively (CBSL, 2014). Five per cent of the population lives in Northern Province (DFAT, 2018). Sri Lanka's most recent census in 2012 estimated that 74.9% of the population was ethnic Sinhalese, 15.4% was Tamil, 9.2% was Muslims, and 0.5% was other (DFAT, 2018).

### ***2.2.2. The economic overview***

Sri Lanka is classified as lower middle-income country by the World Bank (DFAT, 2018; WHO, 2015). The real GDP growth was 4.7% in 2017. Its economy has shifted from a reliance on the agricultural sector (8% of GDP in 2016) to growing services and manufacturing sectors (67% and 17%, respectively in 2016). While poverty rates are relatively low (6-7% of the population), wealth and economic development are not evenly distributed. The western province is economically prosperous, while conflict-affected areas in the north and east remain economically vulnerable (DFAT, 2018).

The Sri Lankan society is predominantly agrarian. Although the country is moving towards industrialization, the agricultural sector is continuing to be an important sector in the economy of the country. Almost 80% of poor Sri Lankans live in rural areas and depend on agriculture for food and income. As such, it is evident that the higher poverty levels are associated with the rural agrarian sector. In 2016, around 4.1% of the population in Sri Lanka was living below the national poverty line (DCS, 2017). The National Poverty Line in 2016 was LKR 4, 166 (NZD 36. 18) and the highest poverty headcount was recorded in Kilinochchi district in 2016 (DCS, 2017). While categorised as a middle-income country, Sri Lanka masks a complicated situation with deep regional disparities in wealth and wellbeing. About 5.2 million people, equivalent to a quarter of the population, were estimated to be undernourished in 2014 (IPS, 2015). This persistence of rural poverty, indebtedness and vulnerability, high youth unemployment at 19% (DCS, 2013) and large-scale migration in search of employment, all indicate a high level of unevenness in growth and opportunity across the provinces and districts. Poverty and social exclusion are most prevalent in underdeveloped rural districts where agriculture is the major livelihood. The conflict-affected districts in northern and eastern provinces and peripheral districts which have been the most deprived experienced many years of exclusion from the benefits of steady economic growth and development which resulted in great social vulnerability (UNDP, 2012).

According to the National Output and Expenditure Analysis (CBSL, 2014), the agricultural sector in Sri Lanka is classified as a composite of two key components; (i) agriculture, livestock, forestry and (ii) fisheries. The predominantly agricultural economy in Sri Lanka that prevailed during the time of independence has now been transformed into a more diversified one. In 1950, the agriculture sector contributed 41% of GDP, while

the sector's contribution was only about 7.9% in 2015 (DCS, 2016; Marambe et al., 2017). On the other hand, the manufacturing sector (consisting of mainly tea, rubber and coconut) contributed 16% to GDP at the time of independence and was 26.2% in 2015. A significant change was observed in the contributions by the manufacturing and services sector. At the time of independence, the services sector contributed around 40% to the GDP, and rose to 56.5% in 2015 (DCS, 2016; Marambe et al., 2017).

Achieving the objectives of economic growth and equity was the main focus of development policy in Sri Lanka since gaining independence from the British colonial ruler in 1948. To attain economic growth, Sri Lanka restricted the import and encouraged domestic production. In order to achieve equity, various welfare programmes, including price subsidies on food, statutory price control on consumer goods and the provision of free education and health services were implemented (Marambe et al., 2017). However, the high welfare expenditure restrained the capital growth of the country and ability to invest, slowing economic growth and, ultimately, resulting in high unemployment and low wages. However, the welfare programmes implemented were able to achieve improvements in human development. Sri Lanka was ranked 73 in the UN Human Development Index in 2015 (UNDP, 2015, 2016), which is higher than any other country in South Asia, and grouped in the high human development category.

The growth in the GDP of Sri Lanka was 4.4% in 2016 and was lower than the rate observed in 2015 (4.6%). Overall, agricultural activities contracted to 4.2% in 2016 owing to inclement weather throughout the year; the rice sub-sector declined drastically by 31%, tea by 11.2%, rubber by 10.7%, other cereals by 10.5%, fruits by 3.7%, vegetables by 2.1% and oleaginous fruits by 0.6% in 2016. However, animal production grew by 6.3% in 2016 (DCS, 2018b; Marambe et al., 2017).



Figure 2. 2. Map of Sri Lanka

At present, the administrative structure of Sri Lanka consists of the district level at which the Government Agent functions, the division level at which the Divisional Secretary operates, and the village level at which ‘Grama Niladhari’ (or village level official) has been appointed (Marambe et al., 2017).

The following section describes the characteristics of the agricultural sector in Sri Lanka.

### 2.3. Characteristics of agricultural sector in Sri Lanka

The agricultural sector has continued to be a vital source of revenue for Sri Lanka, especially for the rural communities. Of the total land area of 6.55 million hectares in Sri Lanka, 2 million ha is agricultural land, of which 650, 000 ha is irrigated. The total cultivation area, including home garden and plantation, is estimated as 2.86 million ha (DOA, 2019; FAO, 2018). Production of paddy rice has dominated the domestic food sector of Sri Lanka. Other commercial field crops include; chilli, vegetables, onions, pulses, maize, tuber crops and other cereals. Farms located in central Sri Lanka also produce vegetables such as carrot, leek, cabbage, and potato. Tea, rubber and coconut are the main export crops of the country, while some spice crops are also grown for export purpose (DOA, 2019; FAO, 2018).

The dry zone is one of three climatic zones (dry, intermediate, and wet) that divide Sri Lanka based on variations in rainfall. It receives less rainfall than wet and intermediate zones and has pronounced dry periods. The dry zone covers 70% of the island's land area and is the country's agricultural heartland and the main area where the staple rice is grown. Small-scale farmers with landholdings less than two hectares dominate agriculture in this region. About two-thirds of the cultivated area in the country is rain-fed or irrigated by numerous semi-rainfed minor or reservoirs and diversions, collectively referred to as "village irrigation schemes". A number of studies confirm that smallholder farmers cultivating under village irrigation schemes are poorer (Eriyagama, Smakhtin, Chandrapala, & Fernando, 2010) and more vulnerable than dry zone counterparts who have access to major irrigation (Aheeyar, 2012).

### ***2.3.1. Traditional farming practices of Sri Lanka***

Farmers practised traditional forms of farming throughout Sri Lanka until the British colonization of the country in the later 1700s (Dharmasena, 2010). These traditional farming practices ensured prolonged land fertility and pest protection for crops. These practices include: (i) cultivation of traditional varieties, (ii) use of organic fertilizers (straw, cow dung, green manures) on their fields, (iii) practice of natural weed management techniques like, hand weeding and use of bio-pesticides, (iv) maintaining existing biodiversity, and (v) managing water without creating moisture (Dharmasena, 2012). The traditional farming systems throughout Sri Lanka were divided into two main sectors, paddy and Chena cultivation (FAO, 1999; Sandika & Withana, 2010). Chena cultivation, also known as shifting cultivation, was used extensively within the dry zone of Sri Lanka (Sandika & Withana, 2010).

Chena cultivation is an ancient cultivation practice in Sri Lanka dating back to early civilization. Under this cultivation practice, lands of natural vegetation are cleared, and drought-tolerant and short duration crops are planted. Crops like legumes, oil crops, grains, and vegetables are commonly grown under Chena cultivation (Sandika & Withana, 2010). Family labour, or neighbouring farmers, are the key labour source used for this cultivation practice. Although men primarily carried out this practice, women and children also contributed in different ways, such as chasing the birds and animals to protect the crops (Dilma, 2019; Sandika & Withana, 2010).

Livestock farming is one of the oldest economic activities in Sri Lanka and has been the main livelihood of the population (VRI, 2002) and carried out mainly in small farms (VRI, 2002). This farming system includes: cattle and buffalo farming system; goat farming system; poultry farming system; and pig farming system. More than 90% of the smallholder dairy farmers are members of either a dairy co-operative or a dairy society (VRI, 2002).

Many rural areas in northern Sri Lanka have undergone significant changes within their agricultural sector since the initiation of war (Karunaratne, 2003). Specifically, commercialization and globalization of Sri Lanka's economy market resulted in a farming system that was dependent upon machinery, and external inputs (Karunaratne, 2003; Landreth & Saito, 2014).

The pre-war agricultural system in the Northern Province was dominated by paddy cultivation, which has remained the mainstay for smallholder farmers (Pathmanathan et al., 2017). The supply of agricultural inputs like agro-chemicals and fertilizers was disrupted during the wartime and to meet their household food demand. As a result, smallholder farmers shifted their cultivation from paddy to home gardens (Pathmanathan et al., 2017). Home gardens refer to traditional land-use systems found around a human settlement where various plant and tree crops were grown by homeowners to meet the food requirements of the households (Devi & Das, 2013; Galhena, Freed, & Maredia, 2013).

The agriculture sector registered a growth of 7.9% for the year 2015 although it contracted in 2016 owing to bad weather. Sri Lanka has a dietary concentration on one staple commodity, rice. The opening of the north and east after the end of the war, which are mainly agriculture producing areas, should increase the availability of fruit and vegetables. Livestock rearing is spread throughout the country, however, due to cultural, market, and agro-climatic reasons, animals are concentrated in, or absent from some areas. Almost all livestock farmers, except some poultry farmers, are basically crop farmers with livestock as an integrated activity. Dairy is the priority livestock sector for development followed by poultry, which has expanded significantly in recent years (DAPH, 2016; Marambe et al., 2017).

***Rice:***

Development of the rice sub-sector was crucial to the economy of Sri Lanka as, part of being considered a staple food, a large number of rural families are being employed in the rice sub-sector. As Sri Lanka was dependent on imports for many years, there was a need to increase rice production to ensure food security and economic stability. Thus, much of the development effort has focused on infrastructures such as irrigation schemes, land settlements and support services such as agricultural extension, research, and fertilizer subsidies in order to increase rice production to achieve self-sufficiency and food security (Marambe et al., 2017). As a policy goal to achieve self-sufficiency in rice, the Sri Lankan Government removed the wheat import subsidy in 2004 and duty was added to wheat imports (USDA, 2012).

***Other field crops:***

After rice, other field crops are important for food and agro-industries. Two-thirds of Sri Lanka's fruit and vegetables are produced under rain-fed conditions, mostly in northern and eastern provinces of Sri Lanka. Some other field crops are part of traditional meals and formulated food supplements for pregnant women and children (FAO, 2018; Marambe et al., 2017). Other field crops are commonly grown as traditional crops in the dry and intermediate zones' farming systems (FAO, 2018; Marambe et al., 2017).

***Plantation:***

The key plantation crops in the country include tea, rubber and coconut. The main economic contribution from plantation crops in Sri Lanka come from the processing of tea, rubber and coconut. However, because of pest and disease outbreak and unpredictable weather conditions, there have been periodic production shortages (FAO, 2018).

***Livestock:***

Livestock production is a substantial component of a smallholder farming system in Sri Lanka. Generally, cattle, goat, sheep, buffaloes, chicken, pigs, ducks are raised by the livestock farmers. Throughout the years, the poultry industry in Sri Lanka has grown from a traditional backyard operation into a well-established commercial system. However, the majority of the poultry farmers in Sri Lanka are practising the backyard rearing system. The prominent growth of the poultry industry is mainly due to significant engagement and investment by the private sector (Alahakoon, Jo, & Jayasena, 2016; FAO, 2018).

Owing to reasons that poultry production can be carried out within the household premises and manageable with women's household responsibilities, there are now significant numbers of women engaged in small-scale backyard poultry production (FAO, 2018).

In the early days, raising of cattle was mainly undertaken by men. This was due to various cultural aspects of the communities, which are patriarchal in nature. In traditional extensive grazing systems, men usually accompany the cattle to various grazing lands. During that time, women are responsible for animal care and milking (FAO, 2018). However, due to land pressure, extensive systems have been changed to more intensive systems of rearing, which include stall feeding (Ratnayake, 2009). This makes the women, mainly rural women, engage in cattle and goat production systems and to earn additional income (FAO, 2018; Ratnayake, 2009).

Among the livestock holdings, 99% are categorized as smallholdings. According to the Ministry of Rural Affairs, the total number of farmers involved in livestock production is estimated at 700, 000. As estimated, 38% of the entire workforce of the country is engaged in agriculture (Ranaweera, 2010). The contribution of women in livestock management has been highlighted on many occasions (DAPH, 2011; Ranaweera, 2010). Although about 40% of registered dairy co-operatives are mainly comprised of women, they are rarely represented in the management of executive committees of the organizations (Marambe et al., 2017).

### ***Dairy:***

Cattle are reared in all agro-climatic zones in Sri Lanka. In the northern and eastern provinces, cattle are mainly raised for milk purposes and, in other locations, reared for multi-purposes. In the dry zone, cattle are also welfare for financial urgencies (Marambe et al., 2017). The top 12 districts having large cattle population are in the dry zone. However, cattle in these districts are local breeds and have low production. Importing milk products, especially powdered milk, is a major foreign exchange expenditure item in the national budget (Marambe et al., 2017).



### ***2.3.2. Decentralization of development activities***

The constitutional and legal provision for the establishment of Provincial Councils (PC) within Sri Lanka Unitary Constitution was made by the 13<sup>th</sup> Amendment to the Constitution (1987) and the Provincial Councils Act No. 42 of 1987 (Marambe et al., 2017). The PCs are headed by the Board of Ministers with a Chief Minister in charge, elected through General Elections and supported by Provincial Secretaries headed by the Chief Secretary. For its executive administration, the PCs are divided into five devolved subjects with technical ministries, which include; agriculture, livestock, irrigation, industry, roads, transport and health and education (Marambe et al., 2017; Perera, 2001).

The Department of Agriculture under the Ministry of Agriculture was regionalized based on an agro ecological region basis, with respect to research functions, further to their district level structure pertaining to extension and seed supplies. An administrative setup of District Agricultural Committee (DAC) was also established in all 25 Districts, and is chaired by District Secretaries. In these meetings, a research-extension dialogue is used to take place before planning and project implementation in the respective district (Marambe et al., 2017).

#### ***2.3.2.1. Governance in the crop production sector***

The Government has adopted several policy measures after independence aimed at improved growth in the agricultural sector. The Government's initial focus was mainly towards rice and institutional change. For example, Paddy Lands Act No.1 of 1958, Land settlement schemes in dry zone areas and colonization schemes were a few strategies adopted by the Government to achieve this (Marambe et al., 2017; Sandaratne, 2004).

The second phase of agricultural development was focused on an import substitution strategy with an emphasis on the cultivation of subsidiary food crops and livestock rearing (Sandaratne, 2004). According to Sandaratne (2004), this phase ran for almost two decades. Some of the regulatory features adopted by the Government were; Land Development Ordinance No. 19 of 1935, a highland colonization scheme for cash crops and village expansion schemes and youth settlement schemes. These initiatives boosted crop production in the country to a certain extent, with production subsidies and institutional support. The fertilizer subsidy was one of the essential elements in the support schemes. Land Reform law No. 1 of 1972, which imposed a ceiling to land was

another key initiative implemented by the Government (Marambe et al., 2017; Sandaratne, 2004).

The third phase of agriculture development of Sri Lanka began in 1978 with the liberalized policies of agricultural imports. To keep momentum of production, some food crops were highly protected by tariff and non-tariff barriers, even under the liberalized policy regimes. In 1996 all agricultural import restrictions were removed. The cheap imports depressed the farm gate prices in many crops and livestock products under the liberalized import conditions. The policy measures aimed at the shift from low-value to high-value production. The policy reforms consisted of various private sector investment incentive schemes; seed distribution, increasing trade, commodity market liberalization (Worldbank, 2003). In terms of a resource allocation point of view, both crop and livestock sectors were equally affected by most of the agricultural policies during most of the period during post-independence until 1978. This was mainly because both sectors come under the purview of the same Ministry, the Ministry of Agriculture. However, two main components that represent agriculture were finally separated into two ministries and two working departments (Marambe et al., 2017).

Table 2. 2. Government structure in the Central Government and Provincial Councils that directly deals with the non-plantation crop sector in Sri Lanka (as of 2020)

<b>Ministry</b>	<b>Department</b>	<b>Responsibility</b>
Ministry of National Policies, Economic Affairs, Resettlement & Rehabilitation Northern Province, Development and Youth Affairs	Department of National Planning	Policy development, planning and implementation. Provides national perspective to policies, programmes and projects
Ministry of Agriculture, Rural Economic Affairs, Irrigation and Fisheries and Aquatic	Department of Agriculture	Main institute under MoA. Responsible for maintaining and increasing productivity and production of the food crop sector. Functions include;

Resources Development (MoA)		research, extension, training, seed and planting material production, regulatory services on plant quarantine, soil conservation and pesticides. Consists of subject-specific technical institutes and centres, and agricultural schools.
	Department of Agrarian Development	Agriculture land management. Empowered by Paddy Land Act and Agrarian Development Act
	Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI)	A socio-economic research institute for agrarian sector-related research and training farmers, field workers and managers.
	Sri Lanka Council for Agriculture Research Policy (SLCARP)	Apex body to find and mobilize research capabilities of the National Agricultural Research System, Universities, Private Sector and others for generation and dissemination of appropriate technologies.
	Sri Lanka <i>Haritha Danaw Bim Sanwardhene Madyama Adhikariya</i> (Hadabima)	Authority specifically for conserving soil of uplands in the central hills and establishing cropping systems primarily in land settlement areas of uplands.
	Institute of Post-Harvest Technology (IPHT)	Develops and promotes post-harvest technology for rice/other grains, field crops, fruits, vegetables and spices.

Provincial Ministry of Agriculture	Provincial Department of Agriculture	Support agricultural through district-based staff.	district-level development
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Source: (FAO, 2018; Marambe et al., 2017)

The institutional arrangement of the crop sector is focused on the Department of Agriculture, which comes under the purview of the Ministry of Agriculture (central government). It is mandated to the Department to carry out research and extension of major food crops, including rice, other field crops, legume crops, root tuber crops, oil crops, vegetable and fruit crops. The provincial Department of Agriculture, which is located in all nine provinces of the country, is responsible for the extension activities which include information dissemination and farmers training.

#### 2.3.2.2. *Governance in the Livestock and poultry sector*

The institutional support for the livestock and poultry sector is provided by both the private and public sectors in Sri Lanka. The public sector is responsible for formulating policies for the sector. The Government authority that governs the sector currently is the Ministry of Public Administration, Disaster Management and Livestock Development. The Ministry functions with several agencies that come under its purview.

The Department of Animal Production and Health (DAPH) is the key operating arm of the Ministry, which is responsible for technical and scientific support for livestock production. The provincial DAPH is accountable for service delivery and farmer training. The National Livestock Development Board (NLDB) is responsible for breeding stocks, and the private sector provides most of the inputs needed by livestock farmers, value addition and marketing.

Table 2. 3. Government institutional structure in the Central Government and Provincial Councils that directly deals with the livestock and poultry sector in Sri Lanka (as of 2020)

<b>Ministry</b>	<b>Department</b>	<b>Responsibility</b>
Ministry of National Policies, Economic Affairs, Resettlement & Rehabilitation Northern Province Development and Youth Affairs	Department of National Planning	Policy development, planning and implementation. Provides national perspective to policies, programmes and projects.
Ministry of Public Administration, Disaster Management and Livestock Development	Department of Animal Production and Health (DAPH)	Responsible areas are; dairy, poultry, swine, goats, animal health, animal breeding, and veterinary research. Has subject-specific technical institutes, centres, and farm schools.
	National Livestock Development Board (NLDB)	Statutory board to manage and conduct the business of 30 livestock and integrated farms.
	Milco Ltd.	Government-run milk company, a successor to national Milk Board, the major milk collector and processor.
	Sri Lanka – Libya Agriculture and Livestock (Co.) Ltd.	Established to perform agricultural and livestock projects and to import inputs and machinery.
	Mahaweli Livestock Enterprises Ltd.	An enterprise to enhance income, employment and welfare in Mahaweli system ‘B’.

Ministry of Agriculture	Sri Lanka Council for Agricultural Research Policy (SLCARP)	Apex body to fund and mobilize research capabilities of the National Agricultural Research System, Universities, Private sector and others for generation and dissemination of appropriate technologies.
Provincial Ministry of Agriculture	Provincial Department of Animal Production and Health	Attends to DAPH's devolved field level functions.

Source: (Marambe et al., 2017)

### ***2.3.3. The Agricultural Policy intervention***

While safeguarding the livelihood of farming producers, the agricultural sector policy interventions are fundamentally aimed at achieving self-sufficiency in food through productivity enhancement. There are several crop-specific policies; most of them are paddy-specific, and limited number of policies are common to other crops. The national seed policy introduced in 1996 is aimed at reducing the cost of production and encouraging private participation in seed production. The national agricultural food policy of 2012-2016 was promulgated for fostering the agricultural research system, under the Sri Lanka Council for Agricultural Research Policy (SLCARP) (Marambe et al., 2017).

#### ***2.3.3.1. The evolution of land policies in Sri Lanka***

The Land Commission in Sri Lanka was established in 1927. Policies since the establishment of the Land Commission were directed towards appearing the land hunger where the cultivator was provided with the necessary minimum of land for cultivation, with the idea that farmers will continue to remain in traditional agriculture. Following this, the land colonization and land settlement policies were introduced with the aim to increase agricultural production. With the growth of plantation-based cash crops, the traditional agriculture from ancient times was neglected, which was part of the colonial economic strategy (Bastian, 2009).

A number of policies and acts have been introduced since 1956 to break away from the earlier policy of land settlement in the dry zone. The paddy land act No. 1 of 1958 was introduced with the aim to ensure greater security to the tenant farmers and to make sure that all paddy farms are cultivated (Herath, 2006).

The followings are key reforms under the Land Policy:

- Paddy Land Act No. 1 of 1958
- Land Reform Law No. 1 of 1972 - A ceiling was imposed on the ownership of land
- Agricultural Land Productivity Law No.2 of 1972 - to ensure the proper utilization and development of all acquired lands
- Agrarian Services Act No. 58 of 1979 - replaced the Agricultural Productivity Law
- Agrarian Development Act No. 46 of 2000 - replaced the Agrarian Services Act No. 56 of 1979 enabled the tenant cultivators to become owner-operators

The land settlements in Sri Lanka were established in accordance with the objectives of Land Reform, which took place in 1972. The two aims of the settlement scheme are; (i) To generate further employment and to increase the productivity of the acquired land, (ii) To decrease disparities in landholding and wealth. The Land Reform Act No.1 of 1972 limits the ownership of land to 50 acres per family except for paddy land where the ceiling is 25 ha (Amerasinghe, 1976).

#### *2.3.3.2. Land and water*

##### ***Land***

The non-plantation sector in Sri Lanka is characterized by small landholdings, mainly cultivating paddy. Around 1.65 million smallholder farmers who cultivate on average less than two hectares of land produce and contribute 80% of the total annual food production (FAO, 2018; WorldBank, 2016). According to the 2002 agricultural census, only 16 per cent of all owned land in the country belonged to women (DCS, 2002). Data from the same census shows that the majority of the farmers in Sri Lanka cultivate farms of around 2 ha in size and depend largely on subsistence farming for their livelihood (FAO, 2018).

Six per cent of the agricultural households in Sri Lanka are considered as landless (DCS, 2002). These landless farming households are paid for agricultural labour work (FAO, 2018). Lack of land access, especially to paddy land, limits women's access to various agricultural benefits like subsidies, credit and irrigation water (FAO, 2018). However, it is challenging to find more detailed data related to land and water entitlements for women, and more sex-aggregated data is not available (FAO, 2018). As land ownership is limited, women farmers have fewer opportunities to have membership in farmer organizations, especially paddy farmer organizations, which are responsible for regulating access to both minor and major irrigation schemes.

### ***Rights and inheritance of land in Sri Lanka***

People in Sri Lanka gain access to land in three various ways; (i) inheritance to private land or grants and permits to use the state lands, (ii) purchasing private land, (iii) the acquisition of grant or permit to use the state lands. In Sri Lanka, the Government owns about 80% of the land (FAO, 2018). The Matrimonial Rights and Inheritance Ordinance, 1876, which was amended in 1922, provides for equal rights to inheritance for male and female spouses. Upon the death of either spouse, the surviving spouse inherits half of the deceased spouse's property. The Land Development Ordinance, 1934, which was amended in 1983 and 1996, entitles the surviving spouse of a deceased person who holds a permit or grant to use state land to take possession of the land under the terms and conditions of the permit or grant without any gender discrimination. However, gender discrimination persists in several articles of this law. For example, the third schedule of the ordinance, which lists the order of inheritance, gives precedence to the male heir over the corresponding female heir (Marambe et al., 2017).

Inheritance does not prevent women from owning land. However, according to cultural practices, the youngest male very often receives the inheritance. Male succession is a massive barrier to land security of rural women. This has a significantly negative impact on widows and their households who can become highly vulnerable after the death of the husband (FAO, 2018; Marambe et al., 2017).

### ***Traditional and Customary laws***

Apart from the general law, there are three 'personal laws' which operate in the country: the Kandyan law, which originated from the Kingdom of Kandy in the central region of



Sri Lanka and applied to Kandyan Sinhalese; Thesawalami law, which applies in the Sri Lankan Tamil community in the Northern province; and Muslim law. Several aspects of traditional and customary laws and practices favour men and limit women's access and control over land and reduce women's opportunities to engage in and benefit from agriculture production. In Thesawalami law, women's guardianship passes from father to husband. Women have to obtain permission from the husband to dispose of any land they own, even when the property has been brought into the marriage by the woman (FAO, 2018; Marambe et al., 2017).

Paddy farmers are eligible to apply for the fertilizer subsidy provided by the Government if they have legal title to their paddy lands. Otherwise, if farmers do not have a land title, they need to produce documentary evidence showing their cultivation rights (Weerahewa, Kodithuwakku, & Ariyawardana, 2010).

### *Water*

Farmer organizations with the assistance of relevant Government officials (from the Department of Agrarian Development, the Irrigation Department) determine the allocation of water. This is a male-dominated exercise as they hold the positions of Farmer Organization presidents (FAO, 2018).

The next section describes the evolution of agricultural support services in Sri Lanka.

## **2.4. Agriculture support services**

### **Evolution of Agricultural Extension in Sri Lanka – under Central Government and Provincial Council Setup**

In Sri Lanka, the agricultural extension programmes commenced during the colonial period of Dutch in the 17<sup>th</sup> century, with the expansion of cinnamon crops aiming at the export market. The British further developed the system during the 18<sup>th</sup> and 19<sup>th</sup> centuries by the introduction at Botanic Gardens in Peradeniya and Gampaha, to spread out coffee, tea, and rubber. The system subsequently evolved as the establishment of the Department of Agriculture (DOA) in 1912. Further, research institutes were developed for tea, rubber, and coconut being the significant exports of the country. These were under the commodity extension approach. Under this extension approach, each institute was expected to carry out research and development of their relevant crop. In the later stages, sugar cane and cashew had joined this group. New extension units were established to cater to the

requirement of the growers. These include; the Tea Smallholdings Authority for tea; Rubber Controllers Development for rubber; and Coconut Development Authority for coconut (Marambe et al., 2017).

In the 20<sup>th</sup> century, the Department of Agriculture in Sri Lanka was responsible for carrying out research and extension of both crops and livestock in the country. Afterwards, based on the national requirement for a separate department, the Department of Animal Production and Health (DAPH) was established to support livestock production of the country. Thereafter, the Department of Export Agriculture (DEA) was established for the development of spices and beverage crops, and the Department of Royal Botanic Garden (DRBG) for floriculture sector development. The DOA are still involved in many crops such as rice, pulses, grains, oil crops, yams, fruits, and vegetables.

From the 1920s to 1980s – the DOA followed the Training and Visits (T & V) system, where a village extension worker was the primary point of contact for the farmers. With the 13<sup>th</sup> Amendment to the constitution of Sri Lanka in the late 1980s, the T & V system was first disrupted, because, according to the constitution, agriculture extension was announced as the fully devolved to the newly established Provincial Councils. Owing to this constitutional change, the DOA had to hand over extension activities to the Provincial Councils. This was heavily affected by the research-extension linkages, because, research activities remained under the DOA and extension activities under the Provincial Councils. From 1912, under the *Irrigation (Amendment) Act No. 48 of 1968*, the District Directors of Agriculture (DDA) have been appointed. Since then DDAs took over the overall coordination of agricultural activities at the District level activities in the country (Marambe et al., 2017).

The District Agricultural Committee, which is chaired by the respective District Secretary (DS) at the district level (which is the second level administration of the country) make decisions on all aspects of agriculture. The DDAs are appointed by the Ministry of Agriculture of the Central Government. They are responsible for liaising and coordinating agriculture-related activities among administrative units in the central, provincial and district levels (Marambe et al., 2017). An urgent decision by the Government during the late 1980s to absorb all extension officers who worked under the DOA, and who worked

closely with farmers to the public administration system to enhance the welfare of the public, resulted in low extension activities.

From the 1970s, credit and insurance were provided by the government to safeguard farmers from risk and uncertainties under the agricultural credit and agricultural insurance policies, respectively. The new Comprehensive Rural Credit Scheme (NCRCS) which was introduced in 1986, forms the basis of current subsidised agricultural credit. The state banks handle the scheme in Sri Lanka; Bank of Ceylon (BOC) and Peoples Bank. The agricultural insurance scheme presently covers mainly paddy, subsidiary food crops, betel, sugar, and livestock (Marambe et al., 2017).

The agrarian services and farmer organization policy of the national government were initiated to link all agricultural activities and provide services at the grassroot level. The main objectives of the present land policy are to hold untitled land under government ownership, distribute such crown lands for smallholdings' agricultural production purposes, as grants<sup>2</sup>, and to avoid further subdivision of these holdings with the policy objective to achieve self-sufficiency in rice. Issuing grants for the lands alienated under Land Development Ordinance (LDO) commenced in 1982 and grants were variously titled as follows (Marawila, 2007; Wanigaratne, 2006);

<i>Swarnabhoomi</i>	1982 – 1994
<i>Jayabhoomi</i>	1994 – 2002
<i>Isurubhoomi</i>	2002 – 2004 and
<i>Jayabhoomi</i>	since 2004

There are multiple key stakeholders in agricultural extension in Sri Lanka. These include: Department of Agriculture (DOA), Department of Animal Production and Health (DAPH), community-based organizations (CBOs), international development agencies, international NGOs, local NGOs and farm families (farmers). Table 2.3 illustrates each stakeholder's involvement in agricultural extension.

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<sup>2</sup> Grant is a permanent document which confers tenure close to that of a freehold title subject to several conditions that transfers require prior permission, prohibition of fragmentation and subdivision, inheritance restrictions, etc. (Marawila, 2007, p. 26)

The state operates two tiers of extension service providers, at national and provincial levels. The non-governmental sector consists of local and international agencies. All NGOs offer resources as well as strengthening local communities to help them engage meaningfully with the state so that they can obtain services such as advice. Farmers also provide extension information to each other, engaging in a peer-to-peer extension of sorts (Jayatilaka, 2017).

Table 2. 4. Stakeholders' involvement in agricultural extension in Sri Lanka

<b>Stakeholder type</b>	<b>Stakeholder's involvement in agricultural extension</b>
Department of Agriculture (DOA) under the Ministry of Agriculture, Rural Economic Affairs, Irrigation and Fisheries and Aquatic Resources Development	sets national policy priorities
Department of Animal Production and Health (DAPH) under the Ministry of Public Administration, Disaster Management and Livestock Development	sets national policy priorities
International development agencies (e.g. FAO, DFID, World Bank)	work through national state organizations and NGOs
Provincial DOA under Northern Provincial Council	responsible for extension work in the north
Provincial DAPH under Northern Provincial Council	responsible for extension work in the North
International NGOs	work with local agencies to provide communities with technical and financial help
Local NGOs	mobilize and empower communities to realize their needs
Community Based Organizations (such as Farmer Organizations) made of local community members	work to meet diverse needs

Farm families in communities	receive extension services to improve their livelihoods
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Source: (Jayatilaka, 2017)

The Government of Sri Lanka have taken several measures to protect and regulate the agricultural sector. Price support has been given for paddy and milk, while fertilizer subsidies are the primary input subsidy provided to paddy farming. The fertilizer subsidy programme was introduced in 1962 along with the introduction of high yielding varieties as a result of the Green Revolution (Semasinghe, 2014).

The following section describes the rural development in Sri Lanka.

### **2.5. Rural development in Sri Lanka – in view of agriculture**

In 2001, 20-25% of Sri Lanka’s population lived below the national poverty level (Worldbank, 2003), and it reduced to 6.7% by 2012/2013 (DCS, 2015). The majority of the population who lived below the poverty line were from the rural sector. Most of the rural development plans implemented by the successive governments of Sri Lanka were targeted at rural communities. A few examples of rural development programmes implemented by the Government during last 20 years include; *Janasaviya* (1989 – 1994); *Samurdhi* (1994 – 2004); *Divineguma* (2005 – 2014) and, again, *Samurdhi* (2015 – to-date). Both the Central Government and Provincial Councils carry out rural development programmes in Sri Lanka through relevant Ministries (Marambe et al., 2017). These are described below.

With the aim of poverty alleviation, the Government introduced the *Janasaviya* programme in 1989. It was the main poverty alleviation programme in Sri Lanka between 1989 – 1994. The main aims of the programme include; enhancing income-earning opportunities of poorer people through the state assistance provided. This includes agricultural activities, animal husbandry, development of infrastructure and banking (Nadeeka & Jayamini, 2014). Replacing the *Janasaviya* programme, the *Samurdhi* programme was launched in 1995. The main aim of the programme was to “get the low-income earning families to join the mainstream of the country’s economic process by encouraging them while subsidizing them financially to enable them to maintain their living conditions at least at the critical minimum level” (Nadeeka & Jayamini, 2014, p. 12). The Government initiated the *Divineguma* programme in 2005 with the aim of

eradicating poverty by using a threefold approach; subsidy approach, eradication of poverty approach, and integrated development approach. An important feature of this programme is its development-oriented implementation by aiming the overall development of the country, which includes providing financial subsidy to enable them to maintain a minimum level of income (DDD, 2016).

Most of the rural organizations are controlled by men than women to a greater extent in Sri Lanka. Further, most of the decisions in farmer organizations are taken by men. In some organizations, women are not even recognized as members (FAO, 2018). It was reported that women hold only 20 percent of any of the top three official positions (President, Vice President and Secretary) in mixed rural societies in Sri Lanka. This is even worse in the case of farmer organizations, where female presidencies are extremely rare (FAO, 2018).

Many women, particularly heads of households, obtain credit from microcredit companies with high-interest rates – approximately up to 20% per annum (FAO, 2018). Some women have obtained more than one loan (multiple loans), which is an account for ten times more than their income (FAO, 2018). Even though many banks offer a range of small loans on affordable terms, higher-value loans need (LKR 500, 000 and above) guarantors who are government sector employees and own lands as collateral and are beyond the reach of many rural women (FAO, 2018).

A minimal number of farmers have insurance for their farming activities. Some farmers have policies with the Agriculture and Agrarian Insurance Board (AAIB), and others have policies with the Federation of Thrift and Co-operative Societies (SANASA). Owing to male ownership of land and crops, mainly in the case of paddy, only males tend to have crop insurance policies (FAO, 2018).

## **2.6. Summary**

Sri Lanka is a developing country, with more than 75% of the population residing in the rural sector. The agricultural sector continues to be an important source of income and livelihood support for the country, especially for rural communities. The agricultural sector is dominated by smallholder farmers who own less than 2 ha of land. Rice is the staple food of the country. Other than rice, farmers also engage in fruit, vegetable, other

field crops and livestock production. The crop sector in the country is governed by the Ministry of Agriculture, Rural Economic Affairs, Irrigation and Fisheries and Aquatic Resources Development. The livestock sector comes under the purview of the Ministry of Public Administration, Disaster Management and Livestock Development. Agricultural support services, especially extension services, are carried out by government departments such as the Department of Agriculture and the Department of Animal Production and Health. Apart from that, other banks, private traders, microcredit companies and insurance companies also engage in agricultural support service provision to smallholder farmers in the district.

## CHAPTER THREE: LITERATURE REVIEW

### 3.1. Introduction

This chapter provides a review of the literature relevant to the research questions. The review focuses on the concepts that can be applied in understanding why and how interactions between multiple actors within the agricultural support services system are taking place in northern Sri Lanka and what influences these interactions. This study adopts a systemic approach, drawing on the theories of agricultural innovation systems, advisory and extension systems and institutional logics. A key feature of these approaches is the interaction between multiple actors in the system. Accordingly, this section reviews studies that have investigated the application of the concepts of agricultural innovation systems, advisory systems and institutional logics to help understand the agricultural support services system. The research questions set for this study are;

- (i) What agricultural support services are accessed by smallholder farmers in northern Sri Lanka, and why?
- (ii) How are agricultural support service providers providing services to smallholder farmers in northern Sri Lanka, and why?
- (iii) how can agricultural services support to smallholder farmers be improved in northern Sri Lanka?

The structure of this chapter is organised as follows; first, an introduction to the chapter is provided. This is followed by section 3.2 that outlines the rationale for adopting a systemic approach. Section 3.3 reviews the literature on the innovation systems approach. Section 3.4 examines the research into institutional logics. This is followed by section 3.5 that reviews the literature on actors and their interactions in agricultural innovation systems. Section 3.6 reviews the literature on the factors that shape the interactions between multiple actors, followed by section 3.7, which reviews the literature on agricultural advisory services. Finally, a summary of the section is provided in section 3.8.



### **3.2. Adopting a systemic approach – the rationale**

The agricultural sector in northern Sri Lanka is dominated by smallholder farmers (Marambe et al., 2017; Sangakkara & Nissanka, 2008; Vernooj, Houwers, & Zijlstra, 2015), and these are serviced by a wide range of agricultural support services providers. As such, the agricultural support service system comprises multiple actors (public, private, non-governmental organizations, and civil society actors) where interactions occur between the service providers and smallholder farmers and between the different service providers. Further, actors within the agricultural support service system provide a range of agricultural support services. These services may include the provision of advice, technical support, input supplies, agricultural insurance, and agricultural credit. This study adopts a systemic view to examine the interactions among various support service providers and smallholder farmers within the system of agricultural support services.

The agricultural innovation systems approach (Hounkonnou et al., 2012; Klerkx, van Mierlo, & Leeuwis, 2012; Schut, Rodenburg, Klerkx, van Ast, & Bastiaans, 2014) provides a systemic framework that is suitable for investigating the actors, their interactions and factors shaping their interactions within the agricultural support service system in northern Sri Lanka. Accordingly, the literature on the innovation systems approach is reviewed in the next section.

### **3.3. The Innovation Systems Approach**

This section reviews the concept of innovation systems and its relevance to understanding the agricultural support services system in post-war northern Sri Lanka. The concept of innovation is reviewed, and then a review of the concept of agricultural innovation systems (AIS) and its components is provided.

#### ***3.3.1. Innovation Systems and Agricultural Innovation Systems***

The concept of innovation systems has been used by innovation scholars (e.g. Freeman, 1987) since the 1980s. An innovation system was initially defined as “the set of agents involved in an innovation process, their actions and behaviours” (Lundvall, 1992, p. 13). The agricultural innovation system is set within a larger, complex system of social interactions among multiple actors, organizational cultures and practices, rules and norms (Ayele, Duncan, Larbi, & Truong Tan, 2012; Brooks & Loevinsohn, 2011; Kilelu,

Klerkx, & Leeuwis, 2013; Klerkx et al., 2010; Klerkx et al., 2012; Leitgeb et al., 2011; Schut et al., 2014; Spielman, Ekboir, & Davis, 2009). Spielman (2005, p. 12) incorporated the concepts of “knowledge and technology” into the definition and defined an agricultural innovation system as “a set of interrelated agents, their interactions and the institutions that condition their behaviour with respect to the common objectives of generating, diffusing, and utilizing knowledge and, or technology”.

Drawing on Spielman (2005)’s definition, Brooks and Loevinsohn (2011, p. 186) developed a definition for an agricultural innovation system as “the set of agents (individuals, organizations and institutions) that contribute to the development, diffusion and use of new agricultural technologies, that directly or indirectly influence the process of change in agriculture”. Moreover, because of the boundaries of an innovation system cannot be sharply determined and the distinctions among local, regional, national and even international systems innovation will be overlapping, Floys and Jakobsen (2011) argued that “a definition of the agricultural innovation system must, to a certain extent, be kept open and flexible regarding which subsystems should be included and which processes should be studied” (Floysand & Jakobsen, 2011, p. 330).

Drawing on the above definitions, for the purpose of this study, an agricultural innovation system is defined as a set of actors, which include government, non-government, private, and other community-based organizations and farmers, their interactions, and institutions that condition their interactions in the provision and access of agricultural support services. Innovation system theory identifies an innovation system as comprising actors, interactions and institutions (Asres, Solkner, Puskur, & Wurzinger, 2012; Ayele et al., 2012; Friederichsen, Minh, Neef, & Hoffmann, 2013; Hounkonnou et al., 2012; Spielman, Davis, Nagash, & Ayele, 2011). The following sections review the literature on these three components of an agricultural innovation system.

### ***Actors***

Actors in an agricultural innovation system were described by Spielman (2005, p. 12) as “the individuals and firms as well as the state and non-state agents”. In the present study, these include state and non-state agricultural support service providers and smallholder farmers. The current study identified and categorised the agricultural support service providers based on their mix of service provision to farmers, interactions with farmers

and how farmers access them. According to Ayele et al. (2012), an important aspect in relation to studying an agricultural innovation system is identifying and categorizing the actors and their interactions. This argument is further supported by Klerkx et al. (2012), who argued that it has become important in the agricultural innovation systems field to recognize the diversity of actors and their interactions. Further, Ayele et al. (2012) argue that the more diverse the actors, the better the opportunity to combine complementary capabilities, and this is significant to provide better services to farmers as there are complimentary service benefits. The following section provides a review of the concept of institutions.

### ***Institutions***

The agricultural innovation system includes the concept of ‘institutions’ (Hall, 2005; Spielman et al., 2011). Institutions represent the laws, conventions, traditions, routines and norms of society that determine how different actors interact with and learn from each other (Spielman, 2005). Agricultural innovation system studies analyse the activities and conduct of different actors in the system, the institutions that shape these activities and the interrelationships among the different actors in the system (Spielman, 2005; Spielman et al., 2009).

Institutions are sets of rules that exist to reduce uncertainties in human interactions (North, 1990) and are often referred to as “the rules of the game” in society (North, 1990). Rules are interpreted and acted on differently by different people. Institutions comprise formal rules (e.g. laws, standards, policies, and regulations) as well as informal norms and procedures (e.g. practices, codes of conduct) (Kucharski & Unesaki, 2018; van Paassen, Klerkx, Adu-Acheampong, Adjei-Nsiah, & Zannoue, 2014). According to Cleaver (2012) and Merrey et al. (2007), institutions refer to social arrangements that shape and regulate human behaviour and have some degree of permanency and purpose transcending individual human lives and intentions. Further, institutions are perceived to be dynamic in that they are constantly emerging, evolving and disappearing (Cleaver, 2012; Merrey et al., 2007; Rocheleau, 2001). Institutions regularize behaviour while enabling agency and change (Osei-Amponsah, van Paassen, & Klerkx, 2018; Thornton & Ocasio, 1999). Furthermore, it is argued that there are differences in how actors perceive, adhere to and act on these institutions (Merrey et al., 2007; Thornton & Ocasio, 1999). According to Carey (2000, p. 735), a standard definition of institutions states that

they are “rules and procedures (both formal and informal) that structure social interactions by constraining and enabling actors’ behaviour”.

Informal institutions are enduring systems of shared meanings and collective understandings that, while not arranged into documented rules and standards, reflect a socially constructed reality that shapes harmony as well as conflict and coordination among individuals in a society (e.g. culture, shared values, and non-codified standards) (Holmes, Miller, Hitt, & Salmador, 2013; Scott, 2005). Formal institutions represent structures of codified and explicit rules and standards that shape interaction among societal members (Holmes et al., 2013; North, 1990). Further, formal institutions (also known as “hard” institutions) can be regarded as universal and transferrable rules and generally include constitutions, laws, charters, bylaws, and regulations (Fukuyama, 2000; North, 1990; Rodriguez-Pose, 2013). Informal institutions (also known as “soft” or “community” institutions) include a series of features of group life such as norms, traditions and social conventions, interpersonal contacts, relationships and informal networks (Rodriguez-Pose & Storper, 2006).

How the agricultural innovation systems approach is used by various scholars is reviewed in the following section.

### ***3.3.2. The use of agricultural innovation systems approach***

In the present study, innovation systems theory was used as a framework for analysing what shapes the interactions between multiple actors within the agricultural support services system to identify services provided by support service providers in northern Sri Lanka and the agricultural support system as a whole. Although there are numerous studies undertaken in a developed country context using an innovation systems framework, a lesser number of studies that use this approach have been carried out in a developing country context (Asres et al., 2012; Ayele et al., 2012; Clark, Hall, Sulaiman, & Naik, 2003). For example, scholars such as Ayele et al. (2012) and Clark et al. (2003) used this approach to explain fodder innovation and post-harvest innovation in developing countries such as Kenya and India. In these studies, however, the approach was used to make recommendations that would enhance innovation processes within the innovation system that was being investigated (Chowdhury, Hambly Odame, & Leeuwis,

2014; Klerkx & Leeuwis, 2009; Spielman, Ekboir, Davis, & Ochieng, 2008; Van Alphen, Hekkert, et al., 2010).

Agricultural innovation systems thinking identifies that agricultural innovation happens as a result of collective interactions between multiple actors in the system (e.g. support service providers, smallholder farmers) and that it is influenced by various factors (such as formal and informal institutions) (Biggs, 1990; Leeuwis & van den Ban, 2004). Accordingly, it is argued that the innovation system cannot be clearly understood by separating these multiple actors and factors (Ekboir, 2013; Hall & Clark, 2010; Nelson & Nelson, 2002). Multi-stakeholder arrangements have been identified as mechanisms to enhance agricultural innovation (Adekunle & Fatunbi, 2012; Kilelu et al., 2013; Nederlof, Wongtschowski, & van der Lee, 2011). These multi-stakeholder partnerships are increasingly promoted to create innovation for smallholder farming development (Osei-Amponsah et al., 2018).

Formal and informal institutions influence support service provision within the broader agricultural support services system. These influences lead to institutional change, which can be examined using the concepts of institutional logics (Cleaver & de Koning, 2015; Jill & Gray, 2009; Thornton & Ocasio, 2008). Further, the research questions set out for this study are better answered by examining the interactions between farmers and multiple support service providers within the agricultural support services system. These interactions can be explored by using the concept of institutional logics. The next section describes the concept of institutional logics. It discusses, by using institutional logics, how actors in a system interact and how they navigate multiple demands and dynamics to resolve a common problem.

### **3.4. Institutional Logics**

This section reviews the literature on institutional logics. This concept has been used to analyse how actors interact to provide agricultural support services to smallholder farmers and how they navigate various demands and dynamics in their support service provision practices. In the first section, the concept of institutional logics is reviewed.

### ***3.4.1. Institutional logics***

The concept of institutional logics was initially introduced in organizational studies in the early 1990s but has now been accepted as an important concept in the field of sociology and other fields (Thornton, Ocasio, & Lounsbury, 2012). Scholars that use this concept view ‘society as an inter-institutional system’ (Thornton et al., 2012, p. 18), which allows them to emphasize and explain the pluralistic nature of institutions that are vary at different levels and between different individuals, organizations, and other types of groups (Ocasio, Thornton, & Lounsbury, 2017; Turner et al., 2016). This institutional perspective provides a “framework for analysing the interrelationship among institutions, individuals and organizations in a societal system” (Thornton et al., 2012, p. 2). Thornton and Ocasio (1999, p. 804) defined institutional logics as “the socially constructed historical patterns of material practices, assumptions, values, beliefs and rules by which individuals produce and reproduce their material subsistence, organize time and space and provide meaning to their social reality”. According to this definition, institutional logics provide a link between individual agency and cognition and socially constructed institutional practices and rule structures (Thornton & Ocasio, 2008). According to Thornton & Ocasio (2017), the various definitions of institutional logics, while varying in their emphasis, all accept a core metatheory; to understand individual and organizational behaviour, the logic must be located in a social and institutional context, and this institutional context both regularizes behaviour and provides the opportunity for agency and change (Thornton & Ocasio, 2017).

The institutional logics perspective is itself a method of analysis (Christiansen & Lounsbury, 2013; Thornton & Ocasio, 2008; Thornton et al., 2012). Further, institutional logic is a set of socio-material practices that constitute the organizing principles of a society (Kurtmollaiev, Fjuk, Pedersen, Clatworthy, & Kvale, 2018). Thornton et al. (2012) argued that an institutional logic is not a single invisible unit but a dynamic formation with continuous changes. These transformational changes may take the form of replacing one institutional logic with another (Rao, Monin, & Durand, 2003 ), blending dimensions of diverse logics (Ann & Lounsbury, 2005), or separating logics from a common origin (Jill & Gray, 2009). However, it has been argued that change in institutional logics is a slow process (Osei-Amponsah et al., 2018).

Thornton et al. (2012, p. 13) stated that “the historical contingencies of institutional logic emergence, re-emergence, and change are relatively unexplored topics”. Recent research into institutional logics focused on understanding how actors engage in more pluralistic environments where multiple institutional systems are in operation (e.g. Kraatz & Block, 2008), and they have started to focus on the interactions between the blending of institutional logics (Christiansen & Lounsbury, 2013). Such a pluralistic environment exists in the Sri Lankan agricultural support service system where multiple actors such as government, government-run, private and non-government entities are engaged in service provision. As the research questions guiding this study are related to how agricultural support service providers provide services to smallholder farmers and services are accessed by farmers, the interactions between these actors are central to the research. As such, the concept of institutional logics was used to explore the types and mix of institutions that were evident in shaping the interactions in the support services system.

The following sections review the studies into agricultural innovation systems and institutional logics. Initially, what has been reported in the literature on actors, interactions and institutions of agricultural innovation systems theory are reviewed.

### **3.5. Actors and their interactions in agricultural innovation systems**

The importance of interactions between multiple actors in an agricultural innovation system has been reported in the literature (e.g. Ayele et al., 2012; Hall et al., 2002; Kilelu, Klerkx, & Leeuwis, 2014; Spielman et al., 2011; Stelling, Millar, Phengsavanh, & Stur, 2009). These interactions include; (i) between farmers and agricultural support service providers (e.g. Ayele et al., 2012; Kilelu et al., 2014; Spielman et al., 2011) and (ii) between diverse agricultural support service providers (e.g. Clark, 2002; Hall et al., 2002; Stelling et al., 2009). The following sections review the literature on these two types of interactions.

#### ***3.5.1. The importance of interactions between farmers and agricultural support service providers***

The innovation systems approach highlights the significance of establishing interactions between multiple actors in order to generate innovation (Ayele et al., 2012; Spielman et al., 2011). For example, Ayele et al. (2012) researched fodder innovation systems in three developing countries, Ethiopia, Syria and Vietnam, and found that by linking fodder

innovation with market-oriented activities (that optimize productivity), fodder innovation can be sustainably enhanced. In their study, Ayele et al. (2012) identified the multiple actors involved in a Fodder Adoption Project (FAP), their roles and interactions, which helped develop fodder cultivation among smallholder farmers. The authors (Ayele et al., 2012) found that the interactions between various actors (farmers, extension workers, development agents, and government department officials) enhanced the flows of knowledge and information and strengthened individual farmer's capabilities for fodder innovation (through relevant knowledge and training regarding fodder production) (Ayele et al., 2012). In terms of institutional logics, multiple actors' logics aggregate together towards the fodder adoption. For example, farmers' logic is based on increased income through increased fodder production, extension workers and government department people's logics are based on knowledge transfer regarding fodder production, and development agents' logic is based on development of farm families through funding for the fodder enhancement project. All the actors interact together and through negotiations, their institutional logics aggregate together for the enhanced fodder production. However; the extent to which this is sustained after the conclusion on the project is unclear.

Innovation systems theory has been used to view and explore situations, for example, to find out how poor linkages between multiple actors constrained innovation (Spielman et al., 2011). For instance, Spielman et al. (2011), drawing on the innovation systems perspective, showed that in rural Ethiopia, the public extension had a strong influence on smallholder farmers that excluded the market-based actors and thereby hindered innovation. The authors showed that, even though public, quasi-public (Development agents) and rural service providers (government-backed credit and savings institutions) are closely connected in rural Ethiopia, because they are not networking with market-based actors the innovations are hindered.

Innovation systems theory has been used to identify the various support service demands of farmers and match them with relevant service providers (Kilelu et al., 2014). For example, in their study related to innovation support services in a smallholder commercialization project in Kenya, Kilelu et al. (2014) used the innovation systems approach to show how the various support service demands from onion farmers were fulfilled. The emerging needs from onion farmers were linked with support services such as seed companies, micro-finance companies and markets (Kilelu et al., 2014). In this



study, the networking between various actors was implemented based on their institutional logics. It was evident from the study that onion production was enhanced through the interactions between onion farmers and the different support service providers (Kilelu et al., 2014). Further, the authors (Kilelu et al., 2014) showed that matching demand and supply of innovation support services in a pluralistic system where multiple actors engaged in service provision is a complex process as multiple actors have competing interests. For example, input suppliers played an important role in training farmers and at the same time, they were also advised to purchase their company products.

Although Kilelu et al. (2014) highlighted the vital role played by the input suppliers in training farmers, various other studies (e.g. Glover, 2007; Poulton et al., 2010) found that these service providers specifically provided advice to enhance the sale of their products. Several innovation scholars (Kilelu et al., 2014; Labarthe, 2009; Parkinson, 2009; Van Mele, 2008) found that some of the demands of smallholder farmers were easier to identify than others. For example, Kilelu et al. (2014) found that connecting farmers with an input supplier to obtain the required inputs was easily achieved compared to determining who the farmers should see if they wanted to know how to manage a pest outbreak or obtain help in setting up an experiment to determine the best level of pesticide for a particular pest (Kilelu et al., 2014). This again depends on various institutional logics of farmers, input suppliers and other actors.

### ***3.5.2. The importance of interactions between diverse agricultural support service providers***

The importance of interactions between various agricultural support service providers was evident in various studies (Clark et al., 2003; Ekboir & Parellada, 2002; Hall et al., 2002; Stelling et al., 2009). Stelling et al. (2009) analysed what they call - learning alliances<sup>3</sup> between extension organizations in Laos that were set up to strengthen pig husbandry through improved legume production. The study highlighted that creating a network that connects individuals and their organizations from the government and non-governmental sectors has 'mobilized complementarities' (for example, field officers from NGOs and government extension officers) (Stelling et al., 2009). This process could also

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<sup>3</sup> Learning alliances are partnerships established between organizations such as research institutes, government agencies, private enterprise and Non-government organizations to identify, share and develop proven agricultural practices with farmers (Stelling et al., 2009).

be viewed through an institutional logic lens, for example, the NGOs' institutional logics were focused on poor and village farmers, but the Laotian Government's logics were focused on the district and agricultural environment. During interactions, their institutional logics blended together, NGOs work in rural community development and helping the poor while the Government works in agricultural technology and policy. Accordingly, the authors (Stelling et al., 2009) found that the interactions between multiple actors from different organizations in the system led to an increase in the numbers of farming households using legume technology and thereby increased farmers' use of legumes a supplementary feed for pigs. By working together, the field officers from the NGOs and extension officers from government organizations were able to do planning and allocation of resources, sharing of resources, sharing of knowledge, skills and ideas, which increased the motivation of farmers to work towards a common goal, which resulted in greater adoption of the technology by farmers (Stelling et al., 2009).

All the above studies revealed the importance of interactions between multiple actors in an agricultural service provision system. All of these studies also emphasized the role of diverse actors and their interactions within complex systems of innovation. The following section provides a review of factors shaping interactions between multiple actors.

### **3.6. The factors that shape the interactions between multiple actors in Agricultural extension and advisory system**

It is argued by innovation scholars (Hekkert & Negro, 2009; Klerkx & Leeuwis, 2009) that the innovation systems approach can help identify the characteristics of relationships and what influences them of interest in this research. Several factors have been identified in the literature that can facilitate or hinder the interactions between diverse actors (Lapple & Kelley, 2015; Lapple et al., 2016; Rand, Neri, & Knickel, 2009). For example, Kyle and Resnick (2018) found that in Nepal, rural villages were not evenly served by the government's agricultural services. The authors reported that apart from geographical proximity, local knowledge and intrinsic motivation<sup>4</sup> (Kyle & Resnick, 2018) played a significant role in shaping agricultural service access. In contrast, human resources, staff expertise and autonomy in administrative work (the authors referred to these factors as

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<sup>4</sup> Employees are strongly motivated to make a major difference in the lives of those they were hired to serve (Kyle & Resnick, 2018)

“traditional indicators of state capacity”) (Kyle & Resnick, 2018, p. 3) had little influence in shaping agricultural service access (Kyle & Resnick, 2018).

The following sections review the literature on trust attributes shaping the interactions between multiple actors.

### ***3.6.1. Trust attributes that shape the interactions between multiple actors***

This section reviews the literature on the role of trust in shaping the interactions between multiple actors in a system. The empirical evidence of trust attributes (e.g. longevity of interactions, competency in subject matter and loyalty) that shape the interactions between farmers and support service providers in developing and developed countries are considered. These are discussed under the subsections; the longevity of a relationship, competency in subject matter and accountability, approachability and loyalty.

#### ***3.6.1.1 Longevity of relationship***

How the longevity of their relationship shapes the interactions between farmers and agricultural support service providers has been reported by several scholars in both a developing country (e.g. Batt & Rexha, 2000; Masuku, Kirsten, van Rooyan, & Perret, 2003) and developed country context (Newman & Briggeman, 2016b; Sutherland et al., 2013). Scholars such as Batt & Rexha, 2000; Masuku, Kirsten, van Rooyan, & Perret, 2003 and Newman and Briggeman (2016a) examined the commercial relationship between farmers and input providers, whereas Sutherland et al. (2013) examined the advisory relationship between farmers and advisory service providers.

According to Batt & Rexha (2000), the ‘credibility’ component of trust was developed through a long-term relationship between potato farmers and potato seed suppliers. Meanwhile, Masuku et al. (2003) found a long-term relationship between millers and sugarcane farmers developed trust through the reliability of millers to sugarcane farmers. Whereas Newman and Briggeman (2016) found that long-term relationships between farmers and sellers develop trust through credibility and reliability. On the other hand, Sutherland et al. (2013), in their study related to the advisory relationship, found that farmers’ experience towards the advisory organization builds up the credibility of the organization, which in turn develop trust between both actors. Each study is discussed in detail in the following section.

A study of building trust in agribusiness supply chains in Asia by Batt and Rexha (2000) found that most smallholder potato farmers in Asia have adopted long-term coordination with potato seed suppliers towards securing a regular supply of seed potatoes. In this case, the expectations of the farmers in relation to securing an uninterrupted supply of seed potatoes and the marketing logic of the potato seed suppliers, which is to ensure a sustainable market for seed potato, are met by the trust that developed through the long-term interactions that occurred between both actors. The logic that shapes the trust-building here is the credibility of the potato suppliers that was established through long-term interactions between farmers and seed suppliers. The potato seed suppliers' credibility was enhanced through farmers' long-term interactions with them (Batt & Rexha, 2000).

The commercial relationship between sugarcane smallholder farmers and millers in the Swaziland sugarcane industry supply chain was examined by Masuku et al. (2003). They (Masuku et al., 2003) specifically examined factors contributing to the satisfaction of sugarcane growers in their relationship with millers. The study showed that there was a greater level of cooperation between farmers and millers when a high level of trust existed. Further, the authors (Masuku et al., 2003) specifically talked about the trust attribute that shaped trust between farmers and millers. This was the reliability of the millers in terms of the consistent provision of good quality seed potatoes and the provision of reliable market information. Regular interactions between farmers and millers fostered the development of trust. This in turn led to a higher level of trust on the part of the smallholder sugarcane growers to their relationship with the millers (Masuku et al., 2003).

Newman and Briggeman (2016a)'s study of farmers' perceptions of building trust among Kansas farmers in the United States found that the longevity of the relationship between farmers and sellers was a crucial factor shaping the relationship between the two actors. The authors (Newman & Briggeman, 2016a) found that the longevity of the relationship increased the level of trust between farmers and sellers. From their findings, the authors (Newman & Briggeman, 2016a) argued that the longevity of a relationship relates to the credibility and reliability components of trust. The authors (Newman & Briggeman, 2016a) further found that the credibility component of trust was better established and built by the sellers being honest and knowledgeable regarding products and services provided over a long period. Newman & Briggeman (2016a) further reported that the

reliability component of trust was mainly based on the perceptions of farmers that sellers should not over promise and under deliver products and services. As such, the expectations of farmers are fulfilled by the sellers.

Sutherland et al. (2013) in their study of commercialization and establishment of a trust in agri-environmental information and advisory services in England found that the interactions between farmers and government agencies were shaped by farmers' building trust in a government agency. The authors (Sutherland et al., 2013) argued that rather than the legal status of the organization, the longevity of the relationship contributed more to building trust, which in turn shaped the interactions between farmers and service providers. Further, the authors (Sutherland et al., 2013) found that the experiences that farmers had with advisors also influenced farmer-advisory interactions. For example, the previous positive or negative experiences farmers had with the advisory organizations was used to evaluate the credibility of the organizations and the advice they provided (Sutherland et al., 2013).

However, Sutherland et al. (2013) also found that the duration of the interactions did not impact on the level of trust between farmers and service providers. For example, farmers distrusted Defra; <sup>5</sup>a long history contributed to this distrust, including historical incompetency and the partial nature of advising officers (Sutherland et al., 2013). Farmers opined that most of the advice provided by Defra staff were not related to agri-environmental issues (e.g. agri-environmental advisors providing advice on how to deal with Foot and Mouth disease). In this case, the incompetence of staff in the subject matter led to distrust among farmers (Sutherland et al., 2013).

#### *3.6.1.2. Competency in subject matter and accountability*

Advisors' competency in subject matter areas was identified by various scholars (e.g. Ezezika & Oh, 2012a; Fisher, 2013; Hilkens, Reid, Klerkx, & Gray, 2018; Kemp, Williams, Gray, Gardner, & Kuiper, 2000) as an essential factor that shapes the interaction between farmers and advisory service providers. According to Ezezika & Oh (2012), the competency and accountability of advice providers influence trust-building. Whereas, Hilkens et al. (2018) found that advisor's competency in subject matter,

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<sup>5</sup> Department for Environment, Food and Rural Affairs

farmers' loyalty to advisors and farmers' competency in subject matter are crucial for developing trust between farmers and advisory providers. Likewise, James and Sykuta (2006) found that the competency and honesty of marketing service providers influence farmers' choice of marketing providers. The following section reviews each study in detail.

Scholars like Ezezika and Oh (2012a) report the competency of the advisory providers and accountability shapes the interactions and trust-building. They found in their study among stakeholders of an agricultural biotechnology public-private-partnership project across Africa, and the farmers were more specific on support providers' abilities to deliver services (Ezezika and Oh 2012a). Specifically, farmers' expectations were based on how the support service providers' accountability in providing available resources to all farmers was assured (as per the agreement they had made previously). Accordingly, it is about being accountable, and if they did not deliver what they said, there would be consequences. Further, the authors (Ezezika & Oh, 2012a) found that the technical competency of the service providers also influenced the relationships between farmers and support service providers (Ezezika & Oh, 2012a). Farmers in this study preferred to interact with service providers who were perceived as technically competent.

Hilkens et al. (2018)'s study of the relationship between dairy farmers and their financial management advisors in the New Zealand dairy sector found that the establishment of trust by farmers in advisors was shaped by their understanding of the advisors' knowledge of dairy farming. Further, the authors (Hilkens et al., 2018) found that having a long-term farmer-advisory relationship and developing farmers' loyalty to advisors were influenced by trust in the advisors. Furthermore, Hilkens et al. (2018)'s study highlighted that the advisor's trust in farmers' competency in farm management was also crucial for maintaining a long-term relationship. Conversely, the advisor's trust in the farmers was developed when farmers demonstrated competency in farm management and were transparent in their communication. For example, Hilkens et al. (2018) found that a banker's trust in the competency of a farmer in farm management was used as a criterion for the provision of a loan as well as then entering into an advisory relationship with a farmer. Various other scholars in developed country contexts (e.g. Fisher, 2013; Ingram, 2008; Kemp et al., 2000) also reported the importance of advisor's trust in farmers' competency in the field of advice.

A study of farmers' trust in producers and investor-owned<sup>6</sup> firms among corn and soybean farmers in Missouri by James and Sykuta (2006) found that farmers prefer to market their produce through cooperatives (producer-owned firms) rather than through investor-owned firms because of the honesty and competency of the cooperatives. James and Sykuta (2006) argued that trust was a key factor that explained the choice made by farmers to market through cooperatives rather than through investor-own firms.

A study of community trust in a water resources management agency carried out by Leahya and Anderson (2008) found that the social relationships between people in the community and the US Army Corp was shaped by an increased trust of the Corps. Leahya and Anderson (2008) specifically examined the relationship between the US Army Corp of Engineering and key community members in the Kaskaskia River watershed, which the Corps managed in Central Illinois. The people in the community were dependent on the Corps management for access to public land. The trust shaped the relationship between these two actors that community people developed with the Corps (Leahya & Anderson, 2008). It was found that the community's trust in the Army Corps was mainly because of their technical competency (Leahya & Anderson, 2008). Similarly, several other authors (e.g. Ensminger, 2001; Ingram, 2008; Lubell, 2007; Sligo & Massey, 2007) in the developed country context found that expertise of the advisors led to long-term relationship and this experience helped to build trust (interpersonal trust) with advisors.

In summary, in the developing country context, smallholder farmers' expectations were based on the accountability of the agricultural support service providers, which in turn shaped the interactions between those two sets of actors (Ezezika & Oh, 2012a). Though the importance of farmers' trust in advisors competency in a farmer-advisory relationship was reported by various scholars (e.g. Fisher, 2013; Hilkens et al., 2018; Kemp et al., 2000), the importance of competency of farmers in a farmer-advisory relationship was also evident in the literature (Hilkens et al., 2018).

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<sup>6</sup> Investor-owned firms are focused on financial returns to investors. Producer-owned firms are operated for the benefit of their agricultural producer members

The review of the above literature shows that the trust attributes are shaped by the long-term interactions and relationships between farmers and service providers and include credibility, reliability, honesty, and competency in the subject matter.

#### *3.6.1.3. Regular interactions / approachability*

Regular interactions between farmers and agricultural support service providers and the approachable nature of support service providers have also been identified as important factors shaping the relationship between both actors in a developed country context (Hall & Pretty, 2008; Sutherland et al., 2013). The Farming and Wildlife Advisory Group (FWAG) was a charity organization (a particular type of advisory provider) that provided agri-environmental advice and information to farmers in England Sutherland et al. (2013) FWAG was a charitable organization and did not seek to make a profit (Sutherland et al., 2013). The interactions and relationships between farmers and advisors from this organization were shaped by the trust that farmers developed with advisors. The trust was mainly based on the 'approachable' nature of the environmental officers. The farmers found that the environmental officers were approachable directly and able to make face-to-face interactions most of the time (Sutherland et al., 2013). Further, the authors (Sutherland et al., 2013) also found that the genuine and impartial nature of the advisors attached to the FWAG also shaped the relationships between farmers and advisors.

The government of the UK has changed the land management practices of farmers in the past (Hall & Pretty, 2008). However, according to Hall and Pretty (2008), the government's ability to encourage farmers to change their behaviour to become sustainable had mixed results. The impact of new land management policies has been lowest on intensively farmed arable land where the environmental impact of farming has been most significant (Hall & Pretty, 2008). Hall and Pretty (2008) in their study of changing relationships between farmers and government agencies during transformation in land management, found that farmers' relationship with government agencies has changed substantially over the past. Hall and Pretty (2008) found evidence for this relationship change, such as; (i) remembering the names of the staff who worked with them before the change, without notes or a diary, (ii) memory of the specialization of officers, (iii) recall of occasions whereby staff had influenced land management, and (iv) comments on the relative competence of different staff who worked with them before the change.



The authors found that the relationships were closer in the past (1960a-1980s), and the farmers had more face-to-face contact (Hall & Pretty, 2008). They further found that regular face-to-face interactions with Ministry officers led to developing interpersonal trust, as stated earlier. Agricultural knowledge of the Ministry officers was another key factor found by the authors that contributed to trust development between farmers and Ministry officers. Another important factor noted by the authors (Hall & Pretty, 2008) that shape the relationship between farmers and officers was accessibility, meaning the ability to contact known staff directly by telephone. The farmers referred to the earlier time (1960a to 1980s) where they were able to contact officers directly and how they assisted them in relation to the transition of land management. The authors found that the most significant impact of the land management changes was the loss of long-standing trust between farmers and government agency staff (Hall & Pretty, 2008).

Further, Hall and Pretty (2008) found that when farmers were describing the relationship with officers during post-2000, farmers referred to the physical distance between themselves and Ministry officers. Moreover, in recent days farmers admitted to a strong feeling of disrespect for most government agency staff (Hall & Pretty, 2008). Evidence for this significant change in the relationship included the inability to name a single government agency staff by most farmers. The farmers felt distance to government agencies because they hard to found staff, they found it difficult to get through on the telephone, and they felt the service they received was impersonal (Hall & Pretty, 2008).

Overall, face-to-face interactions with advisors enhance trust among farmers (Hall & Pretty, 2008; Sutherland et al., 2013). Further, both easy accessibility of the support service providers and physical distance between farmers and advisors (Hall & Pretty, 2008) also shaping establishments of trust between these two actors. This, in turn, shapes the interactions between farmers and support service providers.

#### *3.6.1.4. Loyalty of farmers*

Farmers' loyalty to support service providers is also reported in the literature (Kilelu, Klerkx, & Leeuwis, 2017; Stathers, Bechoff, Sindi, Low, & Ndyetabula, 2013) as an important factor in shaping interactions between farmers and support service providers. The Dairy Farmers Business Associations (DFBAs) are new local dairy producer

enterprises in Kenya. These enterprises were viewed as alternatives to dairy cooperatives (Kilelu et al., 2017). The DFBA are farmers-owned and managed enterprises that are expected to enhance the collective actions of dairy farmers. Each DFBA has a chilling plant to which farmers used to supply milk (Kilelu et al., 2017). A study supporting smallholders' commercialization by enhancing integrated coordination in agri-food value chains in a Kenyan context by Kilelu et al. (2017) found that dairy farmers' loyalty towards the DFBA was reduced as farmers were not satisfied with some of the actions taken by the association. For example, because the DFBA had insufficient transport services, farmers located in remote areas chose to sell their milk to buyers who collected milk at the farm gate (Kilelu et al., 2017). Further, during the wet seasons, processors in the association decreased milk prices and increased milk rejection rates, claiming poor milk quality. This discouraged farmers to sell through DFBA (Kilelu et al., 2017). In their study of marketing and entrepreneurship of sweet potato farmers in Sub-Saharan Africa Stathers et al. (2013) found that to maintain loyalty, sweet potato traders in the villages of Sub-Saharan Africa offered loans to sweet potato cultivation which were used by the farmers for cultivation and then repaid when they harvested the crops (Stathers et al., 2013). By this practice, sweet potato traders kept the loyalty among farmers and avoided farmers choosing to supply to a competitor. The loyalty shown by the support service providers to smallholder farmers also shaped the relationship between farmers and service providers.

The interest of current research is agricultural support service providers. A significant body of empirical work has focused on advisory provision alone rather than a component of a mix of services provided by service providers, as is the case in this research. Accordingly, this section reviewed the literature on agricultural advisory services.

### **3.7. Agricultural Advisory Services**

In a growing body of literature, agricultural advisory services are seen as an integral part of the agricultural advisory system embedded in an agricultural innovation system (Birner et al., 2009; Faure, Desjeux, & Gasselin, 2012; Hoffmann, Gerster-Bentaya, Christinck, & Lemma, 2009; Sanginga, Waters-Bayer, Kaaria, Njuki, & Wettasinha, 2009; Scoones & Thompson, 2009). In developed country contexts, farmers employ a range of methods when seeking information and the main one of these is the use of agricultural advisors (Ingram, 2008). In this context, the individual farm visit by an agricultural advisor

remains one of the powerful and effective methods of communication in the farming community. It is highly valued by the farmers, according to Ingram (2008), Kilelu, Klerkx, & Leeuwis (2017) and Sutherland et al. (2013).

### ***3.7.1. The interactions between farmers and agricultural advisory service providers***

Various scholars have assessed the relationships between different actors within the advisory system in developing country contexts (e.g. Shantanu, Uma, & Ram, 2004; Sinzogan et al., 2007; Snapp, Blackie, & Donovan, 2003). Several other studies (Anderson & Feder, 2004; Faure & Kleene, 2004; Rivera & Zijp, 2002; Saravanan & Veerabhadraiah, 2003) have identified the pluralistic nature of advisory services in developing countries. That is multiple actors provide advice to farmers across a mix of service provisions like, veterinarians, real estate agents, agronomists, Farm advisors, input providers and Government. Pluralism in agricultural extension, according to Sajesh et al. (2018), the presence of diversity of agencies, service providers, models and institutional arrangements (like public, private, NGOs and commercial based etc.,) providing to the information, advisory and support service needs of farmers. Faure and Kleene (2004) found that the advisory services to farmers in different African countries were managed by varied organizational structures. For example, the authors (Faure & Kleene, 2004) reported advisory services delivered by a producer organization, a supply-chain inter-professional body, and private providers. Further to this, various other authors (Anderson & Feder, 2004; Rivera & Zijp, 2002) have explored advisory services provided through contract farming. Saravanan and Veerabhadraiah (2003) showed that advisory services to farmers were delivered by various public sector centres, NGOs, input suppliers, and consultancy firms in India. However, based on their findings from a study of research and extension focus on farmers' constraints and opportunities in Zimbabwe, Snapp et al. (2003) found that, other than providing quality advice, each actor in an agricultural advisory system has their priorities. For example, to gratify the requirements of donors, an advisory service provider tried to promote the quick dissemination of technology and thus did not satisfy the farmers' advisory needs (Snapp et al., 2003).

### ***3.7.2. The interactions between diverse agricultural advisory service providers***

In developed country contexts, as the range and diversity of expert advisors and service providers has grown, this has encouraged cooperation but also competition (Compagnone & Simon, 2018b; Phillipson, Proctor, Emery, & Lowe, 2016). In their study of

cooperation and competition among agricultural advisory service providers in France, Compagnone and Simon (2018b) showed how advisors working in the same geographic area but belonging to different organizations engaged in relationships of both competition and cooperation. The authors (Compagnone & Simon, 2018b) found that as a diverse range of advisory services emerged, a pluralistic advisory system functions with multiple knowledge experts (Compagnone & Simon, 2018b).

In a study of inter-professional expertise in rural advisory networks, Phillipson et al. (2016) found that rural advisory experts need to be not only experts in their field but also experts at navigating the challenges and maximizing the chances that may arise during their work with other experts. Further, the authors (Phillipson et al., 2016) found three key skills of advisors; (1) networking and reciprocity, (2) dealing with other professionals and (3) ability in selecting experts to work with (Phillipson et al., 2016), through which advisers could avoid competition between different expert advisers (Phillipson et al., 2016).

The first skill is related to a willingness to work with other experts and openness (Phillipson et al., 2016), and these have to be taken on trust. Through reciprocity, the networking links were sustained. This involved the sharing of knowledge of a technical nature or information that would be of business interest. Based on their study, the authors (Phillipson et al., 2016) found that reciprocity also involved sharing business opportunities. For example, one expert may direct a client to another expert if she or he is unable to assist the client, and in return, they would expect the recipient to repay the favour. Reciprocity also involved making personal recommendations to clients of other experts they might use (Phillipson et al., 2016). Phillipson et al. (2016) further found that trust is essential in successfully keeping reciprocal relationships. The second skill identified by the authors (Phillipson et al., 2016) was related to acknowledging and endorsing the superior expertise of another profession in a particular area. For example, demonstrating their mutual expertise in front of their client simultaneously endorses both parties' expertise as well as their working relationships (Phillipson et al., 2016). To become an effective expert, advisers need to learn how to deal with other experts, the third skill identified by the authors (Phillipson et al., 2016). This ability in selecting other experts is part of the skills set of an influential adviser and is often based on long-standing

relationships developed over time and through personal contact with advisers in question (Phillipson et al., 2016).

### ***3.7.3. Determinants of access to agricultural advisory services***

Some studies assess the relationship between the existence of an advisory service system and farmers' access to advisory services in both developed countries (e.g. Agunga & Igodan, 2007; Faure et al., 2012; Ingram, 2008; Sutherland et al., 2013) and developing country (e.g. Moumouni, 2006) contexts. For example, in a study related to 'fit' between the advisory service offered and the demands of producers, Agunga and Igodan (2007) showed that producers who were involved in sustainable farming in Ohio, United States did not maintain good links with advisory service organizations because they were not happy with the services provided. A study of commercialization and trust in agri-environment information and advisory service in England by Sutherland et al. (2013) showed that if farmers employ paid advisors, their selection was based on factors such as knowledge of agriculture, and willingness to see the farmer's perspective (being "on their side" (Sutherland et al., 2013, p. 102)). Few earlier studies (Garforth, Angell, Archer, & Green, 2003; Ingram, 2008) have shown that some advisors tend to work in a "comfort zone" where they provide what the farmers want to know so that the advisor can maintain a good relationship and keep the farmers as a client. Further, the cost of advisory services also impedes advisory service access (Moumouni, 2006). Moumouni (2006) showed that in Benin, farmers perceived the requirements to pay for access to advice as immoral and corrupt, thus influenced the interactions between farmers and advisory service providers. This was in a context where advice traditionally was provided for free by government and non-government entities.

Further, some other studies (Hoang, Castella, & Novosad, 2006; Lahai, Goldey, & Jones, 1999; Saima, Asif, & Muhammad, 2005) have found the link between advisory service access and social criteria. Hoang et al. (2006) found that in Vietnam, the place of a farmer in social networks and her or his actual chances of accessing advisory services are defined by ethnicity, gender and social status. Furthermore, in developing countries, gender is particularly critical and was found by various authors who demonstrated the difficulties faced by women farmers in gaining advisory services (e.g. Lahai et al., 1999; Saima et al., 2005). The studies found that though male farmers involved in and aware of extension programmes arranged by extension agents than female farmers, female farmers overseen

by female extension agents have more access to extension activities than female farmers who are looked after by male extension agents. The female farmers supervised by female extension agents are satisfied with the service quality and credibility of the female extension agents (Lahai et al., 1999; Saima et al., 2005).

#### ***3.7.4. The role of farmers groups in accessing agricultural advisory support service provision***

The importance of collective action in advisory system support is evident in the literature (Bourne, Gassner, Makui, Muller, & Muriuki, 2017). A study carried out by Bourne et al. (2017) in eleven sites in three East African countries (Rwanda, Tanzania and Kenya) found that in the Bugesera District of Rwanda collective action in the farming community was low and the authors (Bourne et al., 2017) found that this condition was linked with historical events. The farming community in Bugesera District was strongly impacted by resettlement schemes before and after 1994 in Rwanda (Bourne et al., 2017). Further, the district was also one of the areas that was badly affected by the genocide in 1994. Both the new settlement and the post-conflict impacts interrupted the social network and local institutions in the district (Bourne et al., 2017). Further, the authors (Bourne et al., 2017) found that post-conflict interventions resulted in the emergence of farmer co-operatives that focused on specific produce and farmer groups to access NGO support. A very few farmer groups were explicitly formed for advisory access. In one of their study sites in Rwanda, the authors (Bourne et al., 2017) found that NGOs played an important role in advisory service provision.

The authors (Bourne et al., 2017) further found that, among the three study sites, the farming community in Mbarali district in Tanzania showed the greatest capacity for collective action. This farming community-built farmer groups for group savings and were operating loan activities. These groups were formed based on the training and advice provided by an international NGO. Bourne et al. (2017) found that this group strength was also linked with the Tanzanian government's socio-economic intervention. In 1960, Tanzanian President Julius Nyerere introduced the "Ujamaa Policy" based on collective agriculture. This scheme pushed people to move to village settlements (Bourne et al., 2017). The intervention was to optimise inputs and services through 'villagisation of production' (Bourne et al., 2017, p. 41). As such, the strong collective action was also linked to socio-economic interventions of the Tanzanian government (Bourne et al., 2017).

### ***3.7.5. Sources of agricultural advisory services***

Farmers in developing countries rely on various sources for agricultural advisory services. A study of agricultural advisory system performance assessment in three West African countries by Bourne et al. (2017) found that farmers were sourcing advisory services from diverse providers. The authors (Bourne et al., 2017) found that farmers in the Mbarali district in Tanzania were predominantly sourcing advice from local sources such as friends, family members and other farmers, rather than from Government extension agents (Bourne et al., 2017). In general, one extension agent was assigned to one village in Tanzania. Accordingly, information sharing between government extension agents and farmers were found to be low. Further, findings from Machakos district in Kenya showed that even though a large number of NGOs operated in the district, interactions between farmers and NGOs were mostly found to be absent (Bourne et al., 2017). The reason found by the study was, information from the NGOs, in many cases, reached the farming community through the government extension agents (Bourne et al., 2017). For example, United Nations Food and Agriculture Organizations' Conservation Agriculture programme (Bourne et al., 2017) in the district was delivered through the government extension agents (Bourne et al., 2017). It is evident that, in the case of agricultural extension, access is influenced by the number of staff per number of farmers.

A study carried out by Elahi, Abid, Zhang, ul Haq, and Sahito (2018) in a developing country context on farmers' access to and use of farm advisory services revealed that farmers rely more on informal sources such as family members and peer farmers for agricultural advisory services than public and private sources. In a study of small-scale farmers and their use of agricultural information sources in Northern Haiti, Zelaya, Harder, and Roberts (2016) found that basic knowledge of production was mainly attributed to parental sources passed down from parents to children. This knowledge formed the foundation of their day-to-day practices (Zelaya et al., 2016). Other knowledge was mainly gained from fellow farmers (Zelaya et al., 2016). Kiptot, Franzel, Hebinck, and Richards (2006) found a similar pattern for Kenya, whereby agricultural knowledge (agroforestry technology) was mostly along with kinship ties. In their study of understanding change at the farm level to facilitate innovation towards sustainable plant protection in urban West Africa, Probst et al. (2012) found that other farmers were considered the most important source of technical knowledge in relation to new pesticides, plant protection challenges, and planting bed preparation. Apart from that,

providing financial assistance during hardships and helping other farmers in their fields were also identified by the authors as general practices among peer farmers (Probst et al., 2012). In all these studies, farmers valued the advice and opinions of experienced farmers (Probst et al., 2012; Zelaya et al., 2016). Further, a study carried out by Bourne et al. (2017) on the assessment of agricultural advisory system performance found that extension agents were a source of agricultural information while community members, especially friends, family and neighbours, diffused the information through the community in Kenya.

Although the agricultural innovation systems literature explores the interactions between multiple actors and institutions that shape the interactions (for example, formal agreements, informal norms and values) they provide limited detail on how these interactions are taking place and how both formal and informal institutions are shaping these interactions. In that sense, the concepts of institutional logics (Christiansen & Lounsbury, 2013; Ocasio et al., 2017; Osei-Amponsah et al., 2018; Reay & Hinings, 2009; Schneider & Andreaus, 2018; Thornton & Ocasio, 1999, 2008; Turner et al., 2016) can be used to explore these interactions.

### **3.8. Summary**

A systemic approach that draws from the innovation systems theory and the concepts of institutional logics was employed to explore the agricultural support service system in northern Sri Lanka. Thus, the literature on agricultural innovation systems theory and institutional logics are reviewed. It was found from the review that available innovation studies have focused on a particular project or adoption of a particular technology and interactions between farmers and stakeholders of the project (mainly NGOs, development agencies, donors and particular government) or technology providers. However, none of the empirical literature discusses the whole system of agricultural support services, the mix of services provided and interactions between diverse actors within the system. As such, the present study is a significant contribution to the existing literature on agricultural innovation systems. Furthermore, another important gap identified from reviewing the innovation literature that they reveal the interactions between multiple actors within the innovation system but not the way in which those interactions actually take place. At this juncture, the concepts of institutional logics have been identified as relevant concepts to explore these interaction processes between multiple actors.



The empirical literature on institutional logics has also been reviewed in this chapter. These are emerging concepts in sociological studies, and several scholars used these concepts in their empirical work. However, the use of these concepts in the agricultural field, especially in the context of agricultural services, is very limited. The present study uses these concepts to explore the interactions between farmers and multiple actors within the agricultural support services system of northern Sri Lanka. This is a contribution to the existing empirical literature on institutional logics.

The agricultural support service provision, in this study, views through the innovation systems lens. In that sense, innovation is seen as service provision or an outcome of service provision. The study looks at agricultural support service provision as a multi-stakeholder process, multiple actors interacting and multiple factors shaping these interactions to draw on the language of innovation systems. Further, this study is exploring a system where it is likely reasonable to consider services provided as contributing to innovation or even constituting innovation, particularly when service provision is marked by an introduction of new relationships and services this also constitutes a form of innovation.

## **CHAPTER FOUR: RESEARCH METHODOLOGY**

### **4.1. Introduction**

This research aims to identify and describe the current agricultural support services system in northern Sri Lanka to inform policymakers about how they can better assist smallholder farmers in achieving regional development through agriculture in the region. The study seeks to answer the following questions;

1. What agricultural support services are accessed by smallholder farmers in northern Sri Lanka, and why?
2. How are agricultural support service providers giving support services to smallholder farmers in northern Sri Lanka, and why? and
3. How can agricultural services support to smallholder farmers be improved in northern Sri Lanka?

This chapter describes the research design used for this study. It starts with explaining the selection of a qualitative case study approach, followed by a description of data collection methods and data analysis. The procedures adopted to ensure the quality of the research are then detailed and are followed by a summary section.

### **4.2. Choice of the research design**

This study seeks to understand the nature of the agricultural support services system in northern Sri Lanka. As the study required an in-depth analysis of a complex system, a qualitative case study method was selected as the appropriate research strategy (Creswell, 2009; Davenport, Lealy, Anderson, & Jakes, 2007; Verschuren, 2003). Further, this study is focused on examining the interactions and relationships between multiple actors in the support service system (smallholder farmer-support service provider interactions, support service provider-support service provider interactions, and smallholder farmer-smallholder farmer interactions); how their interactions are shaped and what influenced their interactions. As such, the study seeks to understand the problem situation from a range of perspectives and a case study approach allows the author to do this (Cepeda & Martin, 2005; Denzin & Lincoln, 2005; Klein & Myers, 1999). In addition, a case study approach enables the researcher to understand the views of the participants by relating them to the context in which they are embedded and the reasons for their perspectives

(Barratt, Choi, & Li, 2011; Gerring, 2006; Gilbert, 2002; Snape & Spencer, 2003; Steins & Edwards, 1999).

Several scholars (Agarwal & Chhatre, 2006; Armitage, 2002; Edwards & Steins, 1999; McCay, 2002; Ostrom, 2000) have argued that understanding the research context is essential for understanding the institutional complexity in shaping agricultural support service access, as institutions are embedded in the context. As this research aims to understand the influence of local factors and the context of agricultural support services access by smallholder farmers and interactions between multiple actors, it is necessary to use an approach that allows researchers to design flexible research strategies suited to the research context (Denzin & Lincoln, 2005; Neuman, 2006). The qualitative case study approach enables researchers to design suitable data collection methods based on the specific research context for capturing meanings of the research participants' perspectives in detail, both in the forms of words and statements (Creswell, 2009; Silverman, 2005; Snape & Spencer, 2003).

The case study approach integrates well with systems thinking (Stake, 2003). Systems thinking is an approach and theoretical framework which guides this study. The broader complex system of agricultural support services which consists of interactions between multiple stakeholders within the system is context-specific and reflects a systemic view. A systems perspective acknowledges that a component of what makes a situation problematic is the multiple and various perspectives of actors involved in the situation. In this research, this includes smallholder farmers and state and non-state agricultural support service providers.

As Flyvbjerg (2001) reports, the case study strategy is widely acknowledged as an approach that will provide a "multiple wealth of details" (Flyvbjerg, 2001, p. 72), which is also the aim of this research. As such, the case study provides comprehensive depth and richness of data that were sought. Besides, several scholars have argued that, as a research strategy, the case study is a basis for insights and knowledge (Blaikie, 2000; Flyvbjerg, 2001, 2006; Stake, 1995, 2003). The following section explains the case study approach.

### **4.3. The choice of case study design**

There are different types of case study designs, as identified by scholars such as Stake (2003) and Yin (2009). Three types of case study designs have been identified by Stake (2003); (i) intrinsic (ii) instrumental, and (iii) collective. An intrinsic case study is the study of a case where the case itself is of primary interest in the exploration. The exploration is driven by an interest to know more about the exclusivity of the case, rather than to build a theory, or how the case represents other cases (Stake, 2003). In the instrumental case study design, rather than a specific case, a general issue is studied. Further, in this design, the researcher is usually interested in understanding how and why a phenomenon operates as it does (Stake, 2003). A collective case study is related to a study of multiple cases; two or more cases in one study (Stake, 1995, 2003).

This particular case is both intrinsic (O'Leary, 2005; Stake, 1995, 2003) and instrumental (Stake, 1995, 2003). An intrinsic case study is typically carried out to learn about a unique phenomenon. The agricultural support services system of northern Sri Lanka is a unique phenomenon in which interactions between multiple actors are taking place. The network of interactions and relationships between smallholder farmers and agricultural support service providers is particularly important as these farmers have experienced thirty years of war. Their support service demands have varied throughout this period and have not been explored. Likewise, the interactions between various support service providers and their service provision are also particularly important as there were multiple support service providers who emerged during and after the war in northern Sri Lanka. These interactions within the broader system of agricultural support services are a unique and interesting phenomenon. Accordingly, this study describes the phenomenon of interest, the agricultural support service system that exists in northern Sri Lanka. Further, in social science research, obtaining information relevant to the research problem generally requires identifying the types of evidence needed to test a theory, to evaluate a programme or, as is the case for this research, to precisely describe a phenomenon (De Vaus, 2001; Stephen, 2013).

As the case itself is secondary to understanding the phenomenon of interest; the agricultural support services system of northern Sri Lanka could also be argued as an instrumental case (Stake, 1995, 2003). Further, the insights from this case could be used to understand the current nature of agricultural support services in war-affected eastern

Sri Lanka and other developing country contexts. One of the characteristics of an instrumental case is the ‘relatability’ of the findings to another similar context (Blaikie, 2000, p. 222).

Except to identify the case and the specific type of case study that shall be implemented, one must consider whether to undertake a single case study or do a multiple case study (Gustafsson, 2017). A single case study of the smallholder farmers’ agricultural support service system in the northern Sri Lanka of one district was employed for this study. A single case study was selected because of the nature of the phenomenon in terms of the number of actors involved in the support service access and service provision and the need for an in-depth analysis. The existence of a phenomenon can intensely be described by single case studies (Dyer, Wilkins, & Eisenhardt, 1991; Gustafsson, 2017; Siggelkow, 2007). By employing a single case study method, the researcher can get a deeper understanding of the phenomenon (Dyer et al., 1991). By using a single case study, the researcher is able to explore the case with the ability to analyse the data within the specific case (Yin, 2009). In contrast, in a multiple case study design, the researcher studies multiple cases to understand the differences and similarities between the cases (Baxter & Jack, 2008; Stake, 2003).

#### **4.4. Case selection**

Defining the right case or cases is important to better address the research questions for a given study (Miles, Huberman, & Saldaña, 2014; O’Leary, 2005; Patton, 2015). According to Yin (2009), the selection of a case is guided by the research question/s of the study. Likewise, the selection of the case in this study is also driven by the research questions (Yin, 2009). The research questions and issues that organize this case are: What agricultural support services are accessed by smallholder farmers in northern Sri Lanka, and why and how are agricultural support service providers providing support services to smallholder farmers in northern Sri Lanka.

##### ***4.4.1 Criteria for selecting the case***

The case in this study is an agricultural support services system for smallholder farmers in northern Sri Lanka. The particular case is selected for three reasons. First, the potential insights of the case provide information regarding the current nature of the agricultural support services system in a northern context. Second, findings from the research can give

potential insights that more broadly inform the Government how they can better assist the smallholder farmers in the northern context of Sri Lanka.

Pragmatism is the third reason. As argued by O'Leary (2005) and Stake (2003), pragmatism is a reasonable consideration in case selection. The pragmatic reason for the case selection was the fact that the region is where the researcher lives and work. She was familiar with farming in the region, the incidence of war and had a professional and personal network with the regional organizations of interest in the research. This familiarity helped identify and gain access to research participants. Furthermore, the researcher's work experience in the agricultural field also meant the researcher had contacts and access to research participants in the service provider organizations. The researcher had also been living in this area for many years and had personal and professional networks within the community.

#### ***4.4.2. Case study site selection***

The case study site for this study was a district in northern Sri Lanka – the Kilinochchi district. The selection of Kilinochchi district as the study site was based on the following four criteria. First, agriculture must be an important income-earning activity within the district. Second, there must be a significant number of smallholder farmers in the district. Third, the district should have a mixture of farming systems (paddy, vegetables, fruits, home gardening and livestock). Fourth, multiple actors should engage in the provision of agricultural support services to smallholder farmers in the district.

The first and second criteria ensured that a district was selected where smallholder agriculture was an important element, and the researcher would have ready access to a large number of smallholder farmers. The third criterion provided the researcher with access to smallholder farmers from a range of farming systems. This was important to consider because the agricultural support service access and service provision in the study area were influenced by the type of farming systems (e.g. paddy farming, dairy farming, home gardening, dairy farming and home gardening). Likewise, the final criterion ensured a range of support service providers were operating at the district level. Apart from the above criteria, accessibility to the district was also considered as an important criterion for site selection as there were restrictions in time duration and fund allocation

for fieldwork. Based on these four criteria, Kilinochchi district from the northern province of Sri Lanka was selected as the case study site.

#### **4.5 Data collection:**

Data collection for this study was carried out in two stages. In the first stage, key informants who have a detailed knowledge of the agricultural support services system across the case district were purposively selected to provide useful background information on the case context and identify the research participants for the second stage. Key informant interviews were carried out to obtain an in-depth understanding of the context, identify the key actors in the support service systems, and identify research participants for interviewing in the second stage. Key informant interviews were completed before the interviews with smallholder farmers and agricultural support service providers in the second stage. Although the interview process was the same for all research participants, the topic areas that were covered differed, depending on the type of participants. Refer to the interview guidelines for the different types of research participants. Based on the information gained in the first stage, smallholder farmers and support service providers were selected for the second stage. The following sections describe the within-case sampling method and the data collection procedures used in the study

##### ***4.5.1. Sampling method:***

The study used purposive and snowball sampling to select research participants. These sampling methods are commonly associated with qualitative social science research (Miles & Huberman, 1994; Miles et al., 2014). The sampling process in the first stage was undertaken as follows where key informants were identified and selected based on:

- (i) their knowledge and experience about the interactions between smallholder farmers and agricultural support service providers in the case study region;
- (ii) their positions related to the provision of agricultural support services as recognised by other informants;
- (iii) their knowledge and experience of diverse farming systems in the region; and
- (iv) their knowledge and experience about war and the post-war context of the region.

Six key informants were identified for stage one of the research. They were Provincial Director of Agriculture of the X1, Veterinary Surgeon of the X2, Divisional Secretary of the X3, Assistant Commissioner of the X4, Assistant Director of Planning of the X5 and NGO coordinator X6. A summary of key informants who were interviewed in stage 1 is provided in Table 4.1.

Table 4. 1. A list of the interviewed key informants in stage 1

<b>Number</b>	<b>Key Informants</b>	<b>Official position</b>	<b>Date of interview</b>
1	KI 1	The Provincial Director of Agriculture of the X1	20. 11. 2017
2	KI 2	The Veterinary Surgeon of the X2	20. 11. 2017
3	KI 3	The Divisional Secretary of the X3	21. 11. 2017
4	KI 4	The Assistant Commissioner of the X4	22. 11. 2017
5	KI 5	The Assistant Director of Planning of the X5	23. 11. 2017
6	KI 6	The NGO Coordinator of the X6	23. 11. 2017

K1, K2, K3, K4, K5, and K6 are the pseudonyms of key informants

X1, X2, X3, X4, X5, and X6 are the pseudonyms of respective departments

Smallholder farmers were then selected to interview in stage II. To select farmers, a list of smallholder farmers was collected from both the Department of Agriculture (X1) and the Department of Animal Production and Health (X2). It was identified from stage one interviews (key informant interviews) that “physical distance” (geographical location) is an important factor influencing the interactions between smallholder farmers and support service providers. Accordingly, a transect sampling method (Navarro & Diaz-Gamboa, 2015) was employed to select farmer participants. As the maximum distance from Kilinochchi town, where almost all support service providers are located, and farming households is 30 km, smallholder farmers for the interview were selected from three different locations. Ten farmers were selected from locations that were: 1) less than 10 km, 2) between 10-20 km, and 3) greater than 20 km away from Kilinochchi town, giving a total of thirty farmers that were interviewed. The researcher had discussions with senior



officers and field level officers from the Department of Agrarian Development and Department of Animal Production and Health to select the most suitable farmers from every three locations for the interviews.

The farmers were selected on the basis of:

- (i) had they engaged in farming activities during and after the war and interacted with diverse agricultural support service providers; and
- (ii) they were representative of farmers in terms of different farming systems and gender.

The aim of smallholder farmers' interviews was to gain an understanding of how and why smallholder farmers within the case study access different support service providers. It also aimed to gain a mix of farmers' perspectives on the agricultural support service providers in northern Sri Lanka. The views and experiences of the selected farmers reflected their position as smallholder farmers in the Kilinochchi district. A summary of the farmers who were interviewed in stage II is tabulated in Table 4.2.

Table 4. 2. A list of interviewed smallholder farmers in stage II

No.	Pseudonym	Enterprise mix	Location	Gender	Date of interview
1	CDF 1	Dairy + Fruit	< 10 km	M	27. 11. 2017
2	CDF 2	Fruit + Vegetable	< 10 km	M	28. 11. 2017
3	CDF 3	Paddy + Vegetable + Fruit	< 10 km	M	29. 11. 2017
4	CDF 4	Dairy + Home gardening	< 10 km	F	30. 11. 2017
5	CDF 5	Dairy + Paddy	< 10 km	M	18. 12. 2017
6	CDF 6	Dairy + Home gardening	< 10 km	F	19. 12. 2017
7	CDF 7	Dairy + Paddy	< 10 km	M	19. 12. 2017
8	CDF 8	Dairy + Paddy	< 10 km	F	20. 12. 2017
9	CDF 9	Fruit + Vegetable	< 10 km	M	04. 01. 2018
10	CDF 10	Dairy + Paddy	< 10 km	M	05. 01. 2018
11	MDF 1	Dairy + Paddy	10 – 20 km	M	04. 12. 2017
12	MDF 2	Dairy + Poultry + Paddy	10 – 20 km	M	05. 12. 2017
13	MDF 3	Dairy + Paddy	10 – 20 km	M	06. 12. 2017

14	MDF 4	Dairy + Paddy	10 – 20 km	F	06. 12. 2017
15	MDF 5	Home gardening + Paddy	10 – 20 km	F	07. 12. 2017
16	MDF 6	Dairy + Home gardening	10 – 20 km	F	28. 12. 2017
17	MDF 7	Dairy + Paddy + Vegetable	10 – 20 km	M	29. 12. 2017
18	MDF 8	Home gardening + Paddy	10 – 20 km	F	15. 01. 2018
19	MDF 9	Dairy + Paddy	10 – 20 km	M	16. 01. 2018
20	MDF 10	Dairy + Poultry	10 – 20 km	M	16. 01. 2018
21	LDF 1	Dairy + Paddy + Vegetable	> 20 km	M	11. 12. 2017
22	LDF 2	Dairy + Home gardening	> 20 km	F	12. 12. 2017
23	LDF 3	Dairy + Paddy	> 20 km	M	12. 12. 2017
24	LDF 4	Home gardening + Poultry + Paddy	> 20 km	F	13. 12. 2017
25	LDF 5	Dairy + Home gardening	> 20 km	F	14. 12. 2017
26	LDF 6	Paddy + Vegetable	> 20 km	M	15. 12. 2017
27	LDF 7	Paddy + Vegetable	> 20 km	M	08. 01. 2018
28	LDF 8	Dairy + Vegetable	> 20 km	M	09. 01. 2018
29	LDF 9	Dairy + Paddy	> 20 km	M	09. 01. 2018
30	LDF 10	Paddy + Vegetable	> 20 km	M	10. 01. 2018

CLF – Close Distance Farmer; MDF – Medium Distance Farmer; LDF – Long Distance Farmer; F – Female; M - Male

Details and information on various support service providers were gathered from key informant interviews in stage one and farmer participants in stage two. They were selected on the basis of:

- (i) their involvement in various agricultural support service provision as recognised by smallholder farmers and support service providers (extension officers, private input traders);
- (ii) have been delivering agricultural support services during and after the war; and

- (iii) type of organization they have positioned – public, private, non-government and government-run organizations.

Ten interviews were carried out with agricultural support service providers in stage 2. Those interviews aimed to gain data on how and why various agricultural support services are provided to smallholder farmers and the service providers' perspectives regarding the system of agricultural support services in northern Sri Lanka. A summary of agricultural support service providers interviewed is provided in Table 4.3.

Table 4. 3. A list of interviewed agricultural support service providers in stage II

No.	Pseudonyms	Position and Organization	Organization type	Date of interview
1	SSP 1	Veterinary Officer of the Y1	Government	04. 01. 2018
2	SSP 2	Agricultural Officer of the Y2	Private	05. 01. 2018
3	SSP 3	Agrochemical traders of the Y3	Private	17. 01. 2018
4	SSP 4	Manager of the Finance company Y4	Private	18. 01. 2018
5	SSP 5	Manager of the NGO Y5	Non-government	18. 01. 2018
6	SSP 6	Manager of the Bank Y6	Government	22. 01. 2018
7	SSP 7	Manger of the Insurance company Y7	Private	25. 01. 2018
8	SSP 8	Manger of the company Y8	Private	26. 01. 2018
9	SSP 9	Former Dean of the Faculty Y9	Government	29. 01. 2018
10	SSP 10	Manager of the Y10	Government	29. 01. 2018

SSP 1-10 is the pseudonym of the support service providers

Y1, Y2, Y3, Y4, Y5, Y6, Y7, Y8, Y9 and Y10 pseudonym of the organization

#### ***4.5.2. Data collection***

The subsequent sections describe the data collection methods used in the study, the interview protocols, the interview process, and document collection.

##### ***Data collection methods***

The use of multiple methods of data collection is one of the characteristics of case study research (Hakim, 2000; Lewis, 2003; Punch, 2005; Stake, 2003). Stake (2005) and Yin (2009) identified at least six sources of evidence that can be used in case studies. These include documents, archival records, interviews, direct observation, participant observation and physical artefacts (Stake, 2005; Yin, 2009). Documents could be letters, memoranda, agenda, administrative documents, newspaper articles, or any document that is relevant to investigations. Direct and participant observations occur when a field visit has conducted a researcher during the case study. According to Stake (2005) and Yin (2009), this technique is useful for providing additional information about the topic being studied. The data sources for the study were semi-structured interviews and documents.

##### ***Semi-structured interviews***

Semi-structured interviews use a list of questions or topic areas, and there is an opportunity for further investigation using probing questions and other techniques (Alshenqeeti, 2014; Leech, 2002; Thomas, 2013). Owing to the flexibility of the method, the researcher can also control the direction of an interview (Berg, 2006; McDonough & McDonough, 1997). In addition, the semi-structured interview method has been used by various scholars (e.g. Asres et al., 2012; Davis, 2008) to collect data for studies that have employed a systemic perspective approach.

##### ***The design of the interview protocol***

The use of interview guidelines or protocols increases the reliability of the case study (Yin, 2009). An interview guide was used to ensure consistency of structure across the interviews in this research. This interview guide included topics and information that needed to be obtained from the research participants. Interview guidelines for this study were developed based on the literature and research questions set for this study. The guide was varied, based on types of the interviewees. Three different interview guidelines were developed for use during interviewing various groups of research participants. These include: (i) interview topic guidelines for key informants; (ii) interview topic guidelines

for smallholder farmers; and (iii) interview topic guidelines for agricultural support service providers. Examples of interview guides used in the interviews with all three groups of participants are included in Appendix A.

The objective of the interviews was not to get responses to set questions but to explore and probe the participant's recollection of history and experiences related to agricultural support service access, service provision and related interactions. Accordingly, by using probing questions, the researcher encouraged the research participants in storytelling, describing, and sharing their experiences. This approach was useful to gather more detailed description and explanations from research participants, especially smallholder farmers, regarding agricultural support services during the war period. At the end of each interview, the researcher clarified any information that was not clear during the interviewee's description. To ensure the accuracy of the interviews, clarification on several points was made at the end of each interview and, in a few cases, especially from support service providers, made over the phone.

Altogether forty-six semi-structured interviews were completed as part of this research. These include thirty interviews with smallholder farmers, six with key informants, and ten interviews with agricultural support service providers. All interviews, which were carried out in the local language (Sri Lankan Tamil), were digitally recorded (with each participant's consent). All recorded interviews were then transcribed in the local language to capture the exact context of the interviews. In contrast to what was expected by the researcher, all the research participants willingly consented to their interviews being recorded. However, a few support service providers requested to turn off the tape recorder when they were expressing views regarding services of other support service providers.

### ***The process of interview***

The general interview process was carried out after identifying the research participants, and the researcher contacted the participants to introduce them to the research topic. This included aspects like explaining who the researcher was; why the researcher was undertaking this research; what the research was about; and what the researcher wanted to interview the research participants in particular. Verbal consent to be interviewed was then obtained. After that, the researcher organized a convenient time and place with the participants for the interview. Upon arrival, using the information sheet, the study was

introduced and explained in detail to the participants. After that, as suggested by Esterberg (2002), the consent form was introduced to the participants and explained. This explanation included details of what information they would have about the research, their time commitment, that they could withdraw within two weeks of the interview, that if they did not wish to answer any question, they did not have to and, if they would allow the interview to be tape-recorded. Finally, they were asked to sign the consent form.

After obtaining the consent, the researcher then initiated the interview, as recommended by Patton (2015), by asking simple questions to get contextual information about the participant. The topic area from the interview guidelines were then covered after the contextual detail was gathered and the participant had relaxed. As suggested by King (2004), probing questions were asked to obtain further information relevant to the study. The researcher thanked the participants at the end of the interview.

The following is an example of the interview process with the key informants. Initially, the researcher asked some simple questions about the key informant.

01. What is your position in this organization?
02. What are your duties and responsibilities?
03. How long have you been in this position?
04. What is the central role of the organization to which you are attached?

After that, the researcher moved to ask questions to get a clear understanding of the context and then about the agricultural support services. The following are examples of the questions asked: (topics covered and questions asked).

01. Types of smallholder farming and support service
  - (i) How does smallholder farming vary across the district/villages?
  - (ii) How does support service access vary across smallholder farmers?
  - (iii) If it varies, why and what shapes this?
02. Type of support services accessed by smallholder farmers:
  - (i) Which support service do smallholder farmers access / which are not accessed, and why
  - (ii) How do smallholder farmers access services, and for what reasons

(iii) What influence smallholder farmers' access to support services.

03. Types of support service providers:

(i) How are support services provided to smallholder farmers;

(ii) What influences the provision of support services to smallholder farmers, and why

(iii) Which service providers interact, and which do not, and why.

The researcher then asked the interviewee if there was any other relevant information about smallholder farmers' support services that would help the researcher. In addition, they were asked who else the researcher should interview to get further details on agricultural support service access and service provision. For example, questions on:

(i) Who else you think I should interview to obtain further information on agricultural support services?

(ii) How can I get into contact with these people?

At the end of the interview, the researcher thanked the interviewee for their contribution to the interview and for their time. During the initial visits to Kilinochchi district, a locally-based assistant was identified with support from key informants. The research assistant provided support, such as arranging interview dates and times with the research participants, especially with the smallholder farmers. He also assisted with the data collection process.

During her data collection work in Sri Lanka, the researcher has reported the field activities, preliminary interpretations, and her views to her supervisors in New Zealand over the Zoom video conferencing and reviewed their feedback accordingly. Initially, these discussions were carried out once in two weeks (from the second week of October 2017 to the second week of December 2017) and once again in January 2018). The discussions and inputs from the supervisors were used to further improve the quality of data collection.

### ***The process of document collection***

As argued by Petty, Thompson, and Stew (2012b) and Stake (2003), document analysis assists the researcher to obtain detailed information about the study area as well as the

phenomenon being studied. Accordingly, documents including organizational reports, newspaper articles, policy documents, statistics, project documents and articles published on relevant websites were analysed for this research. These documents were collected from the District Secretariat, the Department of Agriculture (DOA), the Department of Animal Production and Health (DAPH), the Department of Agrarian Development (DAD), the offices of the other organizations who are involved in support service provision to farmers (NGOs, private organizations), Sri Lankan Government websites and other relevant websites. Further to these, documents were also collected during the fieldwork, which included the documents mentioned by research participants that might be useful for the study (The key documents used for the study are presented in the Appendix D).

Documents were drawn to ensure a degree of accuracy in reporting specific incidents during and after the war and the emergence of multiple support services provided by different agricultural support service providers as part of the historical context of the case. Further, relevant documents were analysed to get detailed information on government, private, non-government, and community-based organizations. Project reports of the organizations provided information on their interactions with other organizations in service provision. Furthermore, annual reports and progress reports of certain support service organizations provided details on services to smallholder farmers (for example, agricultural loans provided to smallholder farmers by the state and non-state banks). Documents such as the Farmer Organization Act provided information regarding formal rules and procedures of farmer organizations. Moreover, published documents from the organizations (example, leaflets, notices, farmer IDs and booklets) provided information on their interactions with smallholder farmers.

The process of data analysis is described in the next section.

#### **4.6. Data Analysis**

The qualitative data analysis techniques (Dey, 2005; Lacey & Luff, 2009) were used to analyse the data for this study. Dey (2005) described qualitative data analysis as an iterative process, which involves three main steps. These are; (i) describing the data; (ii) classifying the data; and (iii) connecting the data (Dey, 2005). Although there are various Qualitative Data Analysis (QDA) software programs available to manage and analyse qualitative data, the researcher found these were not the best tools for this study. The main



reason behind this was the researcher got greater benefit in using the original Sri Lankan Tamil transcripts than the translated summaries. However, the QDA software has no facility for using the Sri Lankan Tamil language. Accordingly, the researcher found the manual method of qualitative data analysis was suitable for this study. Therefore, the researcher used the raw data from original transcripts for the analysis.

The process of analysing the data was carried out through five steps. Data analysis was started with transcribing the interviews – the first step. All digitally recorded interviews were transcribed verbatim by the researcher. All forty-six interviews were transcribed in the local language (mother language) of the researcher, the Sri Lankan Tamil, to maintain the actual voices of the interviewees. Although the researcher spent significant time transcribing the interviews, she found it more useful to better understand the meanings and context of the data. Transcribing was done manually to produce handwritten transcripts. All the handwritten transcripts were scanned and saved for safety reasons. Line numbers were included in the margin of the transcripts to help analyse the data. After that, as the second step, all the transcripts were grouped according to similar characteristics (Table 4.4). Altogether, there were three groups of transcripts. These were: (i) key informant interviews; (ii) smallholder farmers’ interviews and (iii) agricultural support service provider interviews.

Table 4. 4. Classification of interview transcript groups

<b>No.</b>	<b>Groups</b>	<b>Transcripts</b>
01	Key informants	06
02	Smallholder farmers	30
03	Agricultural support service providers	10

In the third step of the analysis, the data were analysed for each group of transcripts. A summary description to each transcript was written to gain an overview of the raw data (Dey, 2005). The purpose of this process was to gain an overview of the raw data. The description of each transcript helped the researcher to obtain a general understanding of what interviewees said. A holistic sense of research data was gained from these exercises.

After completing the description, the researcher manually coded the data (the coding structure is attached in Appendix E) from a transcript from each group (i.e. key informants, smallholder farmers and agricultural support service providers). Coding (or classification) is a process of identifying and defining concepts and themes, which are relevant to the study (Dey, 2005). By carefully reading the transcript line by line, themes and concepts pertinent to the research questions and theoretical framework were identified (e.g. dairy farmers, civil war, microcredit, interactions between smallholder farmers and support providers, interactions between diverse support providers, input supply) by the researcher (Miles et al., 2014). Next, the transcript was re-read, line by line, and emerging themes and concepts related to support services were identified (e.g. support service access during the war, support provision, group savings, farmer organizations). After doing this, the researcher identified the themes and concepts that emerged across the transcripts (for example, informal arrangements between Cargills company and fruit farmers, the network between Milco and government banks, the relationship between paddy farmers and private input traders). The relevant quotes from the transcripts were also identified and noted during the coding step.

As the next step (fourth step) in the data analysis process, the researcher determined the relationship between identified themes and concepts – the process referred to as “connecting” (Dey, 2005). During this process, the researcher re-read the transcript, line by line, and identified relevant terms that connect data-bits of the transcript which represent identified themes and concepts (e.g. I did not get seeds from the Government seed sale centre because I had a negative experience with the quality of seeds they provided in the past; I prefer to obtain credit from microcredit companies rather than banks because .....). After doing this, based on information gathered through coding and connecting processes, a detailed description was written by the researcher. This detailed description was used as a sample to analyse the balance of transcripts within the particular group. Once this was done, the researcher wrote a summary of findings from the interview transcripts – the fifth step. The same procedures were followed to analyse the transcripts in other groups. These processes ended up with three summaries of findings from three groups. These summaries were then brought together, and, based on this, the researcher wrote a report. The report was then translated into English and was then discussed with the supervisors over several meetings. The researcher re-read the

original transcripts, which are in Sri Lankan Tamil, several times to clarify the questions which emerged during the discussion.

The literature review was continued throughout the process of data analysis. The review process also shaped the identification of themes and concepts. The findings that emerged from the analyses are presented in chapters five and six. Important quotes from transcripts and relevant documents were identified and included in the results. These results were then discussed in relation to the literature in chapter seven. Research integrity is an important aspect of any research, which involves conducting the study in a way that permits others to have trust and confidence in the methods used and the findings which emerge. The following section describes how the research integrity was accomplished in this research.

#### **4.7. Research Integrity**

According to Lewis (2003), research integrity can be judged by the transparency and validity of the study. As proposed by Lewis (2003), validity and transparency of the research are made by a transparent and detailed description of the methodology used for the study. Accordingly, a detailed description of the research methodology is covered in this chapter. Further, according to O'Leary (2005), research integrity also includes ethical considerations of the research participants, as well as the researcher themselves. The subsequent section covers the ethical considerations of this research.

##### ***Ethical conduct***

This study involves human participants, and, as such, accepted norms for ethical considerations in research involving human participants were followed. All required procedures of the Human Ethics Committee of Massey University were followed (Massey University, 2018). Prior to data collection, human research ethical approval (low-risk notification) from Massey University Ethics Committee (MUHEC) was obtained (Ethics approval number: 4000018149). Initially, the research participants were informed about the purpose of the study and confidentiality. Their consents were then obtained to be a part of the research as research participants (See Appendix B and Appendix C for a copy of the information sheet and participant consent form, respectively).

As direct quotes from the research participants are used in the thesis, the need to protect confidentiality is an important consideration. Research participants' names were replaced by using pseudonyms to assure their confidentiality. 'Protecting participants from harm' (Lewis, 2003, p. 68) is an important ethical principle in human research. This principle was considered throughout all interviews and ensured by adherence to the protocols stipulated in the ethics approval (starting from participant selection up to using the information provided by them).

#### **4.8. Summary**

A single qualitative case study method was adopted to identify participants' (smallholder farmers, key informants, and agricultural support service providers) diverse perspectives on the agricultural support services system in Sri Lanka. The qualitative case study approach provided the detailed, context-specific knowledge needed to make explicit and unravel the complex system of agricultural support services in the northern context. The single case study approach was selected for its intrinsic and instrumental values.

Semi-structured interviews with key informants, smallholder farmers and agricultural support service providers were carried out to collect relevant data for the study. In addition, documented data were also used. A detailed description of the theoretical perspectives of the research and methods used is provided in the chapter.

A manual method of qualitative data analysis was carried out. This data analysis was completed by using original transcripts in the language of Sri Lankan Tamil to avoid researcher bias during translation into English. The analysis process includes reading and re-reading the transcript data looking for emerging concepts and themes, and finding explanations for the emerging concepts and themes. The results of the analysis are reported in chapter six. The importance of research ethics is also documented.

## **CHAPTER FIVE: CASE DESCRIPTION**

### **5.1. Introduction**

This chapter focuses on the description of the key characteristics of agriculture in the case district – the Kilinochchi district. A description of the northern province of Sri Lanka and Kilinochchi district which includes a physical description, a socio-economic description of the smallholder farmers, agricultural practices, and the infrastructure facilities are initially provided. A brief background to the civil war that occurred in North and East Provinces of Sri Lanka is then provided which includes the LTTE (Liberation Tigers of Tamil Eelam) state structure and the impact of war on agriculture and livelihoods. This is followed by a description of agricultural support service providers in northern Sri Lanka, which includes government, government-run, and private support service providers. A summary of the chapter is then given.

### **5.2. About Northern province of Sri Lanka and Kilinochchi district**

The northern province includes the districts of Jaffna, Kilinochchi, Mannar, Mullaitivu and Vavuniya. The latter three districts together are called “Vanni region. The Vanni region was once the northern stronghold of the LTTE (Liberation Tigers of Tamil Eelam) and encompassed parts of the districts of Kilinochchi (to the north), Mullaitivu (the east), Mannar (west), and Vavuniya (south) (Pathmanathan et al., 2017).

#### ***5.2.1. Physical description of the case district – the Kilinochchi District***

The Kilinochchi district is one of the five districts in northern Sri Lanka. It is situated in the middle of the northern province of Sri Lanka (Figure 5.1). The borders of the district are as follows: the north boundary is Jaffna district, east and south boundary is Mullaitivu district, and west and south boundary is Mannar district (DS, 2016).



Figure 5. 1. Location of the Kilinochchi District in Sri Lanka

The district is in the dry zone of Sri Lanka. The area of the Kilinochchi district is approximately 1237 square kilometres within which 44 square kilometres are inland water resources. Even though Kilinochchi is located in a dry zone, the district supports large scale cultivation due to the presence of reservoirs and irrigation schemes. As farmers have access to this infrastructure, Kilinochchi is recognized as a major agricultural district in Sri Lanka (DS, 2016). Some 43,537 families live in the district, and the total population was 141,665 in 2016 (DS, 2016). The average annual rainfall for the district is 885.6 mm with average monthly rainfall of 73.8 mm and an average monthly temperature of 33.1°C (DS, 2016). The Kilinochchi district is administratively divided into four Divisional Secretary's divisions (DS divisions), each headed by a Divisional Secretary. The DS divisions are further subdivided into 95 Grama Niladhari<sup>7</sup> divisions (GN divisions).

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<sup>7</sup> A Grama Niladhari ('Village Officer') is a Sri Lankan public official appointed by the Central Government to carry out administrative duties in a GN division, which is a sub-unit of the Divisional Secretariat. The post was created in 1976 replacing the post of 'Village Headman' which was created by the British during the Colonial era.

Case data for this study were collected from three sites in the district: < 10 km; 10-20 km; and > 20 km from Kilinochchi town, the main agricultural service centre in the district. The site > 20 km from Kilinochchi town is a remote area with limited infrastructure. The villages located in this area have poor road access, limited transportation (with only a



Figure 5. 2. The road accessed by people



Figure 5. 3. The main mode of farmers' transport

morning and evening bus service) and, with only a primary school facility. This area does not have a hospital, police station, or any of the branches of the Government agricultural support service providers such as the Department of Agriculture, the Department of Animal Production and Health, the Department of Agrarian Development, or the banks. All of the agricultural support service providers are located 30 km away from this site at Kilinochchi town. Owing to the limited bus service, the use of buses by farmers to access service providers requires a full day away from their farms. Most smallholder farmers use a bicycle as their primary form of transport with a few farmers owning motorcycles. During rainy seasons, the roads are difficult to use because they are unpaved. In the dry season, it takes a smallholder farmer in a bicycle around one hour to travel from the villages to Kilinochchi town and, in the wet season, it takes about two hours. The smallholder farmers have to travel to Kilinochchi town to source inputs for their farming and to sell their produce.

### ***5.2.2. A socio-economic description of the smallholder farmers***

Farming is the main livelihood activity undertaken by the people in this location. Some farmers also earn income through fishing, running small businesses or working as labour for a daily wage. During the interviews, key informants in the district reported that more than ninety per cent of the households in the area depend on farming and livestock rearing for their livelihoods. Crop farming includes paddy, vegetables, fruit, and other field crop cultivation. Livestock farming mainly includes cattle (dairy), goats and poultry farming.

Most of the smallholder farmers in this location are practising a mix of at least two enterprises, with very few engaged in a single enterprise (for example, engaged only in paddy farming or dairy farming). Generally, both the husband and wife are involved in farming, except in women-headed farming households.

Most of the paddy farmers in this area own less than 2.0 ha of paddy land, whereas, other crop farmers who do not grow paddy own less than 1.0 ha of land. In the case of dairy farming, the average number of cattle reared by farmers ranged from one to five, with average goat numbers ranging from one to five, and the average number of poultry (chickens) was in the order of one to ten birds. According to the key informants, most of the farming households in the area were under the poverty line (earning less than LKR 4, 166 per month). The key informants stated that many of the smallholders rely on loans to fund their farming activities until they can sell their produce. The education level of the smallholders in the location was generally low, with the majority only completing primary education. According to the WFP (2012)'s report "Food security in the Northern and Eastern Provinces of Sri Lanka," Kilinochchi had the lowest median monthly income in the country, at 2, 189 LKR (the US \$ 14.74) per person, which is lower than the country's poverty line (Pathmanathan et al., 2017). Therefore, farmers in Kilinochchi district are impoverished.

### ***5.2.3. Agricultural practices in Northern Province and Kilinochchi district***

The Kilinochchi district is known as the largest agrarian region in the island, where paddy cultivation is most dominant in the Vanni regions (DCS, 2015). However, three decades of civil war severely impacted rice production in Kilinochchi district (Sarvananthan, 2007). Rice cultivation, as well as home gardening, represents two of the major agricultural practices in Kilinochchi district. Before the war, Kilinochchi was the agrarian hub of Sri Lanka and was known for its historical cultivation of rice, onions, eggplant and green chilli (Pathmanathan et al., 2017).

A diversity of farmlands characterises the Kilinochchi district. These lands include paddy, vegetables, fruit and other field crops. The district consists of 18, 247 ha of paddy land, 952 ha of vegetable land, 704 ha of fruit land and 819.5 ha is allocated for other field crop cultivation. Livestock population includes 35, 090 cattle, 8, 360 goats, 158, 650 chicken and 950 buffaloes (DCS, 2018a).



There are four major tanks and five medium tanks presence in the Kilinochchi district. All these are under the purview of the Northern Province Irrigation Department (DCS, 2016). The irrigation schemes mainly depend on rainfall runoff and river basins for water. The physical resource base suggests that the district has tremendous potential for agriculture. Groundwater is used for drinking purposes through dug wells. The use of groundwater through agro-wells is an integral part of the farming system, particularly in areas where surface water sources are absent for irrigation (Dharmasena, 2011). Some farmers use water pumps for paddy cultivation whenever a water deficit occurs. Having a water pump is advantageous to farmers to ensure a water supply to paddy cultivation if a stream or irrigation canal is found close by (Dharmasena, 2011).

### ***The smallholder agricultural sector in the case study district***

The Kilinochchi district has a rich agricultural history and is one of the major agricultural districts on the island from pre-historic times. Agriculture is the primary occupation within the district (Achchuthan & Rajendran, 2012; Dharmaratne, 2014; Pathmanathan et al., 2017). The majority of farmers within the district are smallholder farmers (Esham & Garforth, 2013; Sangakkara, 1988). For the purpose of this study “smallholder farmers” are defined as farmers who have up to 2.0 ha of land (Rakotobe et al., 2016; USAID, 2011; WorldBank, 2013). The most widespread staple crop of Kilinochchi smallholder farmers is paddy (rice) (Achchuthan & Rajendran, 2012; Pathmanathan et al., 2017). Apart from rice, the smallholder farmers are also engaged in vegetable, fruit and other field crop cultivation (Dharmaratne, 2014; Pathmanathan et al., 2017). Further, one of the common practices among smallholder farmers in the district is the operation of mixed enterprise farming system (DAD, 2014; DOA, 2019) where farmers engage in livestock rearing along with crop farming. Some farmers specialise and only cultivate crops or rear livestock (DAD, 2014; DOA, 2019). The practice of the mixed farming system is mainly to get continuous income throughout the year, avoid financial hardships through risk mitigation and nutritional and food security. They believe that if one crop fails or does not make a good price in the market, others would save them. Approximately 20% of the population in Kilinochchi district (over 13, 761 farmers) engages in livestock raising as a significant livelihood strategy and, therefore,, cattle, milking cows in particular, are a major livelihood asset for the population (Achchuthan & Rajendran, 2012; Dharmaratne, 2014; Pathmanathan et al., 2017).

#### ***5.2.4. The infrastructure (transport and communication) facilities in the district***

The smallholder farmers in the district establish their transport system with bicycles and motorcycles (Figure 5.4). Roads used by the people to access villages in the district are in awful conditions, especially during rainy seasons (Figure 5.5). Further, once a day, public transport is available to these villages, and most of these are agricultural villages. For these reasons, the smallholder farmers in the district face problems in transporting their farm produce from farms to the nearby town.



Figure 5. 4. The main mode of produce transport to markets by farmers



Figure 5. 5. The condition of roads during rainy seasons – road access to villages

This road/infrastructure condition also raises issues related to several essential facilities such as health services, education for children, and sourcing of farming inputs. The communication system has been improved with the use of mobile phones, and many farmers own at least a radio; some own television for their family entertainment and a communication medium.

#### ***5.2.5 Economic condition is North and East Provinces in Sri Lanka***

Agriculture and fisheries dominate the economy of the northern and eastern provinces of Sri Lanka. There are high levels of indebtedness of communities in both provinces. This is largely a result of a high uptake of self-employment loans from banks and microfinance companies at a high rate of interest in post-war periods (DFAT, 2018). Even a decade after the cessation of civil conflict, there is a significant presence of militarisation in the region. The military operates several commercial businesses including a domestic airline, hotels, and roadside rest points in Northern Province. According to the local communities in Northern Province, the involvement of the military in commercial enterprises undercuts local businesses. The military continues to occupy some fertile farming lands and restricts access to some fishing areas (DFAT, 2018).

The following section provides a brief background to the conflict that occurred in northern and eastern Sri Lanka and its impact on the Kilinochchi district.

### **5.3. Background to the conflict**

The armed conflict in Sri Lanka was one of the world's most protracted conflicts, lasting for three decades. Sri Lanka suffered from ethnic divisions during post-independence. The successive elected governments have failed to maintain peace among the country's culturally diverse ethnicities. As such, the conflict causes can be found in the failure of the state to cater to minority aspirations and Sinhala domination over the country (Lindberg & Herath, 2014). In 1956, the populist government addressed the strong feeling of deprivation and loss of opportunities felt by the Sinhala ethnic majority during British rule and made Sinhala the sole official language and Buddhism the state religion. With the language policies making Sinhala the only official language in 1956, university admission' reforms in the 1970s were disadvantageous to Tamil feelings of being second-class citizens (Lindberg & Herath, 2014). These measures drove a deep division between the two main linguistic groups; Sinhalese and Tamils (Bandarage, 2010; DeVotta, 2004; Hyndman & Amarnath, 2014; Jayatilaka, 2017; Swamy, 1994).

These divides have led to several cycles of violent uprisings, which occurred in almost regular intervals in the 1970s, 1980s and 1990s (Jayatilaka, 2017; Uyangoda & Bastian, 2008). These violent uprisings caused loss of life and assets and the displacement of Tamils. Marginalisation in education and employment and periodic violent uprisings forced Tamil political leadership to propose the mandate of a Tamil homeland. Subsequently, this political environment favoured the emergence of various armed liberation movements in Sri Lanka. The Liberation Tigers of Tamil Eelam (LTTE) is the pioneering and major movement, which lasted, and led the arms struggle of Tamils (Mittal, 2015; Pathmanathan et al., 2017).

The LTTE was formally established in 1976 (de Silva, 2012; Richards, 2014) for the purpose of founding a new country for Tamil-speaking people in north and east Sri Lanka. The first Eelam war broke out in 1983. Sporadic attacks on civilians and public property, coupled with the disruption of civil life, displacement of families, an outflow of refugees, all combined to make life extremely difficult for villages caught between the warring sides (Choi, 2012; Jayatilaka, 2017; Mittal, 2015; Pathmanathan et al., 2017; Richards,

2014). The decades-long civil war has killed tens of thousands of people and displaced an estimated one million people abroad (Amarasingam, 2014; Fuglerud, 1999). Finally, the war ended in May 2009 with a military defeat of the LTTE by the Government of Sri Lanka, and with massive loss of civilian life in northern Sri Lanka. The United Nations estimates that 40,000 – 70,000 people were killed during the final stage of the civil war (Harrison, 2012; ICG, 2010; Lindberg & Herath, 2014; Weiss, 2011).

### ***5.3.1. The structure of de facto state***

The LTTE was in full control of large areas, especially in northern Sri Lanka. Travelling from the government-controlled Sri Lankan areas to LTTE-controlled areas resembled a border crossing between two nations, with well-guarded border control posts where travellers were required to show identity cards, goods were inspected, and customs fees were collected. The LTTE ran a *de facto* administration, within the areas they controlled, which included revenue collection, police and judiciary, as well as public services and economic development initiatives (Stokke, 2006).

The political-territorial division means that Sri Lanka had a *de facto* dual state structure during the period (Richards, 2014; Stokke, 2006) while LTTE also exercised considerable influence over state organizations and officials in the government-controlled part of the north-eastern provinces. In the meantime, local government institutions and officials continue to function within the LTTE-controlled areas, which mean that there was a dual state structure also within the areas that were held by the LTTE (Stokke, 2006). In general, the LTTE state had a prime focus on guaranteeing internal and external security in the context of protracted warfare, but also there were key state institutions geared towards the welfare of the civilian population and economic development of the Tamil Eelam (Stokke, 2006).

### ***The social welfare functions***

Social welfare was the other state function of the LTTE's *de facto* government. There was a range of organizations servicing the welfare functions catering to the needs of war and the 2004 Tsunami affected people. The most prominent example was the Tamil Rehabilitation Organization (TRO). TRO was an LTTE-affiliated NGO which relied on international resources mobilization and partnerships to implement rehabilitation programmes. TRO's mode of operation had typically been to mobilize resources within

the Tamil diaspora, for a wide range of welfare-oriented programmes in north and east Sri Lanka (Richards, 2014; Stokke, 2006).

Additionally, there were the LTTE's departments in the health, agriculture and education sectors, which provided certain basic services to the civilian population and controlled the public services offered by the Sri Lankan Government. In addition to health and education, the LTTE also had a sector for economic development, called the Economic Development Department (EDD). EDD was responsible for agriculture, fisheries and industrial development and environmental conservation (Richards, 2014).

In 2004, the LTTE established Planning and Development Secretariat (PDS) and declared that it would be 'the pivotal unit that will identify the needs of the people and formulate plans and carry out the quick implementation with the assistance from the experts from the Tamil diaspora'. TECH (The Economy Consultancy House) was another welfare organization. It was established in 1992 as a non-profit NGO. Its specified objectives were to formulate and implement "economically viable, technically feasible and socially acceptable" projects to enhance the quality of life of the people (Richards, 2014; Stokke, 2006). TECH was funded primarily by local and expatriate Tamils and had international branches in countries with strong Tamil diaspora presence. In their work, the TECH collaborated with local and international NGOs, international agencies, local government agencies and the PDS. TECH's mode of operation resembled that of TRO, but had a stronger focus on economic development through utilization of projects, including projects in agriculture, fisheries, alternative energy, industrial development and environmental protection (Stokke, 2006). In 1994, the LTTE's finance sector established the Tamil Eelam Bank (TEB) (Richards, 2014).

### ***5.3.2. Impact of war on agriculture and livelihoods***

The effects on agriculture and livelihoods during the conflict were severe. Access to agricultural lands became difficult. The military set up several checkpoints and a large extent of land was taken over and declared high-security zones. Formally, these areas were deprived of their livelihoods and homes. Markets for selling produce and purchasing inputs ceased functioning, severely affecting production and disrupting cash flows and livelihoods (Jayatilaka, 2017). Any materials transported to the north and any product moved out from the district was subjected to detailed and lengthy security checks by both

the Sri Lankan military and the LTTE, at the border between the regions controlled by each of the two warring factions (Jayatilaka, 2017; UN, 2010). Farmers' Organizations, village development societies, women's village development societies and other forms of community-based organizations foundered as their members could not meet which resulted in breakdown of social relationships (Jayatilaka, 2017).

One of the agricultural systems most impacted during and after the war was paddy cultivation. Rice is the primary agricultural product in Sri Lanka, including the Northern Province, which was the epicentre of the conflict. Within the Vanni region, paddy cultivation is the dominant agricultural practice in Kilinochchi district, which is also the largest agrarian region on the island (Sarvanathan, 2007). However, three decades of civil war severely affected rice production in Kilinochchi district, which was responsible for nearly 12% of all paddy contributions to the Sri Lankan agricultural economy before the war began in the early 1980s (Pathmanathan et al., 2017; Sarvanathan, 2007).

During the war, there were restrictions on the use of agrochemicals and fertilizers for farming, and there was limited supply of both to the northern province by the Sri Lankan Government. The use of urea for farming was especially restricted because the Government of Sri Lanka believed that the LTTE was using the urea for the preparation of explosive products like landmines and bombs. Accordingly, they have restricted the use of urea for farming and limited the supply of agrochemicals and fertilizers to the districts of Northern Province. The agrochemical and fertilizers available were inadequate for the demand from smallholder farmers who engaged in the farm during that time, and smallholder farmers found it difficult to continue farming without enough fertilizer. Economic sanctions on urea and fuel led to exorbitant prices beyond the purchasing ability of smallholder farmers (Jayatilaka, 2017; Pathmanathan et al., 2017). The economic obstruction by the Sri Lankan Government from 1995; banning of transportation of 42 items to Northern Sri Lanka, which included fertilizers, agricultural implements, medicines and chemicals, has resulted in a reduction of agricultural productivity in northern Sri Lanka (Manoharan, 2006).

While the impacts of conflicts were experienced throughout the country (for example, suicide bombings, and attacks on public places, economic downturn, social issues with war and casualties), several districts in the dry zone were directly affected by the fighting

and resultant large-scale population displacement. The five districts in the northern province and three districts in the eastern province were directly impacted by the war. This is about 60% of the country's land area and around two-thirds of the coastline of the country. The end of the war in 2009 has allowed many of these districts to re-enter the economic mainstream. However, the severe challenge remains in a meaningful resumption of economic activities in this region (UNDP, 2015).

### ***5.3.3. Impact of three decades of civil war on the district***

The population in the Kilinochchi district, like the rest of the districts in the Northern and Eastern provinces of Sri Lanka, has been heavily affected by a civil war that occurred during the period from 1979 to 2009. The district experienced the most severe consequences of war and also was affected by the final decisive battles which took place during early 2009 (Dharmasena, 2011; Pathmanathan et al., 2017). The war severely impacted the agricultural sector in the district. This included extensive destruction of physical infrastructure, environmental degradation, landmines in agricultural areas, lack of farming implements, reduction in agricultural support services and an increase in the number of women smallholder farmers (CEPA, 2009; Fernando & Moonesinghe, 2012; Vasudevan, 2013). The increase in women smallholder farmers was owing to the death of, physical injuries to, and impact of post-traumatic stress syndrome on the men in the area as a result of military action (Fernando & Moonesinghe, 2012; Vasudevan, 2013). The war has disrupted local economies, damaged essential village-level infrastructure, collapsed input/output markets with dilution or destruction of community organizations and institutional networks. The entire population was displaced from their homes at the end of the war in 2009, and the majority lost all livelihood assets, including livestock (Dharmasena, 2011; Matthews, Parthipan, Pushparaj, Sivakumaran, & Weerasinghe, 2012).

The northern region was previously a major supplier of vital food crops to all over the country. Key agricultural, industrial, educational and cultural centres were located in this region. The war in the north disrupted the functioning of these institutions, destroyed infrastructure and resulted in enormous economic losses (Jayatilaka, 2017). Thousands of lives were lost, large numbers of women were widowed, and children orphaned, and many civilians were left physically disabled (de Silva et al., 2011). Over a million people were

internally displaced (Jayatilaka, 2017; UN, 2010). Nearly 40% of the population in the region were displaced once or several times (DCS, 2015).

Having spent several months under extreme hardship during the final stages of the war and in the Internally Displaced People's (IDP) camps, the population of the Kilinochchi district has suffered immensely, both psychologically and economically (Dharmasena, 2011). As a result of the civil war, there are around 40,000 war widows in the northern province of Sri Lanka. In terms of Kilinochchi district, there are 1680 war widows out of 7893 total widows, which represent 21% of the total widows. Further, 21.8% of the war widows are less than 40 years old, and 35 war widows are even less than 20 years old in the case district (Sajanathan, Rasnayake, Kamalrathne, Chamikara, & Gnanarathne, 2014).

#### **5.4. Agriculture in post-war context**

Ultimately, the civil war ended with the military defeat of the LTTE in 2009. The conflict-related damage was severe. In the post-war scenario, schools, places of worships, public transport and telecommunications systems are being reinstated. More importantly, the social fabric distorted by three decades of war and distrust has gradually been rebuilt. Large numbers of war widows, single-parent families and disabled persons are starting to return to a normal life, with support from the Government NGOs and numerous international agencies (Jayatilaka, 2017).

The public sector fills the main role in rebuilding post-war agriculture and providing agricultural extension. The main efforts made to rebuild agricultural extension services fall into several categories. Policy and planning are central to a post-conflict extension. The Department of Agriculture, under the Ministry of Agriculture, remains the key agency responsible for agricultural development; especially for the food crop sector. A master plan development for the agricultural sector envisages comprehensive rebuilding and restoration of production (Jayatilaka, 2017; NPC, 2015).

Another post-conflict approach used by the Government is the reinstatement of the operations of government departments. An important initial step is the refurbishment of the administrative system of the public and governance system to cover war-affected regions where these systems were breaking down. Currently, all the previous mix of systems is being brought under the domain of the state power (Jayatilaka, 2017; Marikar,



2012). The Food and Agricultural Organization of the United States (FAO) has provided support to restore agricultural extension work in the war-affected area of the north, initially, for a four-year period (FAO, 2009). These include strengthening community-level participation agriculture related decision making; strengthening the recruitment and training of extension personnel in the Department of Agriculture; providing relief as well as production inputs, assistance to rebuild required infrastructures; and improve extension training capacity (Jayatilaka, 2017).

National and international NGOs are key partners in development interventions in the region. The NGOs bring essential human, technical and human resources to the region. The post-war development work is coordinated and strictly controlled by a committee under the Ministry of Economic Development. This was the Presidential Task Force for the development of the north, which approves all projects in the northern region of Sri Lanka, including any conceived by NGOs or international development agencies (Jayatilaka, 2017).

The work of NGOs was severely restricted by the Government of Sri Lanka in the early post-war period through direct bans, or indirect means, even though these NGOs have been involved in providing relief and rehabilitation, as well as providing inputs for agricultural activities. The NGOs have worked closely with provincial administration but have not been allowed to work independently in local communities (Jayatilaka, 2017; UN, 2010).

Other approaches to more informal agricultural extension in the post-war regions include CBOs and knowledge sharing among farmers; CBOs including rural development societies, women's rural development societies, farmers' organizations, credit groups, and labour exchange system all have long histories in Sri Lanka (Jayatilaka, 2017). These grassroots' organizations, some of which are formal, and others informal, provide the social basis for collective action and solidarity in agriculture, but also more broadly to communities. In most of the villages, these organizations, which had been developed over a long period, were dissipated during the war. Rebuilding them and developing their democratic and participatory ethos is essential.

## **5.5. Overview of agricultural support service providers operated in northern Sri Lanka**

There are multiple support providers engaged in support provision to smallholder farmers in north of Sri Lanka. These include government, government-owned, non-government, private commercial and community-based organizations. The following section describes these organizations and their roles and responsibilities.

### ***5.5.1. Government support service providers Department of Agriculture (DOA)***

The DOA of Sri Lanka is one of the largest government departments, with a high-profile community of agricultural scientists and a network of institutions covering different agro-ecological regions ‘island-wide’. The DOA functions under the purview of the Ministry of Agriculture, Sri Lanka.

The major functions of the DOA include:

- Research, extension, production of seeds and planting materials, regulatory services related to plant quarantine and soil conservation and pesticides.

The objectives of the DOA are based on maintaining and increasing productivity and production of the food crop sector to enhance the income and living standards of farmers and make food available at affordable prices to the customer.

The vision and mission of the DOA are as follows:

**Vision:** - Achieve excellence in agriculture for national prosperity

**Mission:** - Achieve an equitable and sustainable agriculture development through development and dissemination of improved agriculture technology (DOA, 2019).

The management structure of the DOA includes three research institutions; Rice Research Institute; (ii) Field Crops Research and Development Institute, and (iii) Horticultural Crops Research and Development Institute and six technical service centres; (i) Seed certification and plant protection centre; (ii) seed and planting material development centre; (iii) extension and training centre; (iv) Socio-economic and planning centre; (v)

Natural resource management centre; and (vi) progress monitoring and evaluation unit (DOA, 2019).

***Department of Agrarian Development (DAD)***

The Department of Agrarian services was established on 1 October 1957. This department was established by Act No. 01 of 1958, and it is running as the Department of Agrarian Development, according to Act No. 46 of 2000.

**Vision:** - Sustainable Development of all agricultural lands and farming community of Sri Lanka

**Mission:** - Formulation and timely implementation of institutional facilitator, legal and management services for optimum productivity of all agriculture lands as well as sustainable development of farming community of Sri Lanka.

The Commissioner-General, who is responsible for maintaining a required level of performance of the department, has delegated his powers and responsibilities to his subordinates as the head of the department in order to fulfil those tasks. Seeds, cultivating material, plants, agro-equipment and other agricultural inputs were supplied to farmers via the Agrarian Services Centers and incomes were earned (DAD, 2014).

The Agrarian Services Act No. 58 of 1979 was enacted for the DAD, and was amended in 1991, it organized provisions to establish farmer organizations (FOs) to manage irrigation schemes. The DAD was empowered by the Agrarian Development Act No. 46 of 2000 and Agrarian Development (Amended) Act no 46 in 2011, to exercise its responsibilities and duties (Wijekoon, Gunawardena, & Aheeyar, 2016).

The new Agrarian Development Act No. 46 of 2000 has empowered the DAD to perform efficient agricultural land management by utilizing all agricultural lands in accordance with the agricultural policy. These include conservation of paddy lands from both national interest as well as ecological perspectives, formulate and implement the agrarian policy concerning agricultural land tenure and land use and undertake legal responsibilities to solve disputes in land tenure, execution of regulations to ensure the productivity, protection, conservation and sustainable management of minor irrigation works and irrigation water through farmer organizations and protection of all waterways. It is also

responsible for arranging meetings of owner cultivators to formulate the seasonal agricultural plan and legally enforce the decisions of owner-cultivators' meetings and safeguard the traditions and customs attributed to the rural community with respect to agriculture. Water management division in the DAD has the authority to conduct repair and rehabilitation of minor irrigation in the country with the assistance of all government, non-governmental and independent Organizations and development projects in the area, through Agrarian Development committees (Wijekoon et al., 2016).

### ***Department of Animal Production and Health (DAPH)***

The DAPH is a government organization, which is responsible for providing technical leadership to the livestock industry and its stakeholders in Sri Lanka. The DAPH is being functioned under the Ministry of Public Administration, Disaster Management, and Livestock Development. The Department was established under the Ministry of Rural Development in September 1978. The Department was created by the Government, which came into power in 1977 realizing the importance of the livestock sector in socio-economic development in Sri Lanka. With the establishment of provincial councils in 1988, most of the DAPHs field level functions were devolved 09 Provincial DAPHs (PDAPH) headed by Provincial Directors, 2817 divisional veterinary officers scattered throughout the country, which is functioned under PDAPH. Divisional Veterinary Offices managed by veterinarians are the central functional units of the DAPH. The DAPH provides technical expertise and back-up services to provincial DAPH. The DAPH presently functions through its 05 technical divisions such as: animal health, animal breeding, veterinary research, human resources development, livestock planning and economics, and support services section; (i) administration, and (ii) finance (DAPH, 2019).

**Vision:** - Be the premier organization leading the livestock sector towards socio-economic development of Sri Lanka

**Mission:** - Provide technical guidance and support to achieve sustainable development in the livestock sector by maintaining a healthy animal population and enhanced productivity, ensuring food safety and ensuring food security (DAPH, 2019).

### ***Insurance companies***

The agricultural insurance services are one of the agricultural support services which assists farmers to overcome risks and uncertainties faced in their farming. There are three key players in the Sri Lanka insurance industry: licenced insurance companies, informal insurance providers, and micro-insurance initiatives of the public sector.

### ***The formal insurance sector:***

The formal insurance sector in Sri Lanka is comprised of 30 registered (or licenced) insurance companies, 57 insurance brokers and 45, 492 insurance agents. The Agricultural and Agrarian Insurance Board (AAIB) that was established under the Agricultural, and Agrarian Act No. 20 of 1999 is the apex insurance provider to farmers in Sri Lanka. Operating under the Ministry of Agriculture, the AAIB caters to over 700, 000 farmers offering a range of insurance policies and benefits, including crop and livestock insurance policies, and benefits, as well as crop and livestock insurance. However, these schemes have not been developed using actuarial principles and are considered to be unsustainable (Heenkenda, 2011; ICMIF, 2018).

### ***Overview of the regulation of insurance industry Act No. 43 of 2000***

The formal insurance industry in Sri Lanka is governed by the regulation of the insurance industry Act No. 43 of 2000. The Insurance Board of Sri Lanka (IBSL) was established by the Act to regulate, supervise, and to develop the insurance industry. The IBSL is also responsible for advising the Government on the development and regulations of the industry and the implementation of government policies and programmes in relation to the insurance industry (ICMIF, 2018).

### ***5.5.2. Government-run agricultural support service provider***

#### ***Milk Industries of Lanka Company Limited (Milco)***

The Milk Industries of Lanka company was established in 1956 as the ‘National Milk Board’ under the purview of the Sri Lankan Ministry of Agriculture. In 1986, the National Milk Board was converted into ‘National Industries of Lanka Company Limited as a government-owned company. Again, in 2001, the company was named ‘*Milco (Private) Limited*’ (Milco, 2019).

### **Company Mission:**

‘To be a proactive partner in achieving the targeted growth in fresh milk production while strengthening the local dairy farmers’ (Milco, 2019).

Milk has a well-established collection network around the country. It consists of 72 milk collecting centres and 1700 Farmer Managed Societies (FMSs). There are about 70 000 dairy farmers who supply milk to Milco chilling centres directly or indirectly. The milk is valued and paid accordingly, mainly based on fat % and SNF % (Milco, 2019).

### **The goal of the company:**

- is to develop the dairy industry through increased productivity and uplift of socio-economic standards of the dairy farmers and get high-quality raw milk to meet the requirements of the company (Milco, 2019).

To achieve this, the company organizes the dairy farmers into self-managed societies called FMSs. Milco also provides other support services to their member farmers through FMSs. The following services are provided by the company:

- Daily testing of individual farmer’s milk for correct payment
- The correct price for milk supplied by farmers
- Supply of inputs at a subsidized or reduced price
- Training farmers on modern dairy farming
- Dairy extension services
- Linking farmers with the State banks
- Linking dairy farmers with insurance companies
- Assistance through social security fund (financial assistance on death of farmer, medical treatments or university entrance, marriage, grade one admission of a family member) (Milco, 2019).

### ***5.5.3. Private support service providers Nestle Lanka Private Limited (Nestle)***

Nestle is Sri Lanka’s largest fresh milk collection. The Nestle Company has been involved in fresh milk collection since the 1980s. Further, Nestle manufactures dairy

products such as Nespray and Milkmaid, and beverages Nestamalt, Milo and Nescafe. The company established in Northern Sri Lanka after the war in 2010 (Nestle, 2019).

***Aim of the company:***

Increasing local fresh milk production and helping the country become self-sufficient in milk production (Nestle, 2019).

***Other services provided:***

Conducting farmer training and dairy development programmes in Sri Lanka.

The company also provides equipment and medicines to dairy farmers (Nestle, 2019).

***Private Input traders***

Private input traders have only been operating in the northern Sri Lanka since the end of the civil war in 2009. These input traders are involved in farming input supply to smallholder farmers in the district. The input traders market farming inputs like fertilizers, agrochemicals and seeds. Smallholder farmers in the district able are to get hybrid seeds from private traders. Each private trader has their field officers. These field officers visit farmers' fields and provide services to farmers. In addition to the farming inputs, smallholder farmers in the district are also getting farming-related advice from field officers of the input traders.

***Cargills Ceylon Limited (Cargills)***

Cargills Ceylon Limited is the largest private supermarket chain in Sri Lanka and was established in 1844. It has improved the efficiency in the chain, thereby increasing its income as well as the pay to smallholders. With the support of service organizations in the production areas, Cargills developed an out-growers' programme to source its annual requirements of fruit and vegetables (IFAD, 2019).

Cargills begun sourcing fruit and vegetables directly from farmers in 1999. The vision and mission of the company are as follows:

**Vision:** - To be a global corporate role model in community-friendly national development.

### **Mission:**

Serve the rural community, customers, and all other stakeholders, through the core business food with love and another related business, based on three main principles:

- (i) reducing the cost of living
- (ii) enhancing youth skills; and
- (iii) bridging regional disparity by enhancing local and foreign markets (Cargills, 2018b).

### ***Microcredit companies***

Sri Lanka has a long history in having a rudimentary system of ‘microcredit’. “Cheettu” in Sri Lanka, operating at least since the early 20<sup>th</sup> century, is an informal, but an effective way of savings and capital accumulation and, therefore, functions as a basic method of microcredit for the poor. There are various institutions providing microcredits in Sri Lanka, such as microcredit companies, NGOs that engaged in microcredit business, and licenced banks. The banks and microcredit companies are regulated by the Central Bank of Sri Lanka. However, there were many microcredit providers not under the purview of regulatory authority (CBSL, 2019).

### ***The microcredit act No. 6 of 2016:***

For a decade, several attempts were made to enact legislation to regulate the unregulated institutions in the microcredit sector in Sri Lanka. At last, the Parliament enacted the Microcredit Act No.6 of 2016, which came into effect from 15 July 2016. The Act provided for the licensing, regulations and supervision of companies carrying on microcredit business, which are called licensed microfinance companies (LMFCs). LMFCs would be directly regulated by the Monetary Board of the CBSL. The Act provides for the registration of microcredit NGOs registered under the voluntary social service organizations Act No., 31 of 1980 (VSSO Act) by the Registration of Voluntary Social Service Organizations (CBSL, 2019).

The Act defines the ‘microcredit business’ as:

“accepting deposits and providing;

- financial accommodation in any form;
- other financial services; or



- financial accommodation in any form and other financial services mainly to low-income persons and micro enterprises” (CBSL, 2019)

There are more than 15 microcredit companies providing microcredits to smallholder farmers in the Kilinochchi district. The Monetary Board of Central Bank of Sri Lanka issued directions on the maximum rate of interest for microcredit loans for licensed finance companies on 3 December 2018 (Finance Business Act Direction No. 10 of 2018). According to the Act’s direction, the licensed microcredit institutions shall not charge a rate exceeding 35 per cent per annum (effective annual interest rate), inclusive of all other charges on microcredit loans (CBSL, 2018). Only women are permitted to borrow loans by forming small groups (Perera, 2016). *Cheettu* – Rotating Saving and Credit Association (ROSCA) are essentially a group of individuals who come together and make regular cyclical contributions to a common fund, which is then given as a lump sum to one member in each cycle (Perera, 2016).

In the immediate aftermath of the war, about 3-4 microcredit companies were working in northern Sri Lanka. After the change of Government in 2015, about 34 companies have been operating in the north, including companies run by politicians. The way the microcredit companies are treating the people is as much a violation of human rights as enforced disappearance. What happens to most women is that they borrow from one company and borrow from yet another company to pay off that debt. Therefore, it is a never-ending cycle. As of March-end 2019, around 170 women are reported to have taken their lives after being unable to meet debt repayments. In 2018 alone, 55 people in the northern province have taken their own life as a direct result of this debt repayment issue.

Examples of microcredit companies, which are operating in Kilinochchi district are, Berendina, Ceylinco Leasing Company, Vision Lanka Fund, LOLC, Commercial Leasing, Kanrich, MBSL, Nation Lanka and HNB Gramen.

The microcredit companies set up one woman’s house to function as a loan centre. From there, they give out and accept applications, take payments and supply information. However, there are no written acknowledgements given by the companies as the house is being used for this purpose. Further, the women in the home should act as the loan leader; again, a role that has no written confirmation (de Sayrah, 2019).

The following section provides a description of farmer organizations in Sri Lanka.

### ***Farmer Organizations (FOs) in Sri Lanka***

The agrarian Development Act is seen as providing a sound policy for the establishment and work of Farmers' Organizations, especially as it provides for the participation of FOs in the Agrarian Development Councils at the provincial and district levels. However, such provisions have never really been implemented. Overall, the Government's support to FOs has been found insufficient, and there is very little dialog, if any, between FOs and the Government. This problem is aggravated by the fact that genuine FOs lack both institutional (there is no national federation of FOs) and financial capacities. In contrast, the more powerful Agrarian Societies have strong political applications (IFAD, 2005). For the first time in Sri Lanka, the FO component was included in the USAID funded Gal Oya water management project (1979 – 1985) implemented jointly by the Irrigation Department and the Agrarian Research Aid Training Institute (ARTI) with the support of the Cornell University of the USA (Giragama, Sanker, & Samarakoon, 1999).

Officially, more than 15,000 FOs have been established nationally, registered under the Agrarian Development Act No. 46 of 2000 and falling under the mandate of Department of Agrarian Development. A further 1,007 organizations have been established under the Mahaweli irrigation scheme (which covers more than 450, 000 ha or 30% of Sri Lanka's landmass), initially to manage water use, and are registered under the Mahaweli Authority of Sri Lanka (MASL). Whilst no comprehensive maturity assessment of these various organizations has been undertaken in terms of their functions and services to their members, the overwhelming majority are restively immature or nascent. Further, the process of registration of FOs is cumbersome and lacks clarity, and, once registered, these organizations do not benefit from regular monitoring and support (IFAD, 2005, 2017).

In Sri Lanka, the FOs' structure has historically been focused on maintenance of irrigation schemes and water management, primarily for paddy farming, while also addressing social and welfare needs of the community (IFAD, 2017).

The Agrarian Development Act (No. 46 of 2000), Section 43, provides the details on the establishment of FOs. According to the Act, every person whose livelihood is agriculture shall be eligible for membership of a FO, if:

- (i) she/he is a citizen of Sri Lanka;
- (ii) she/he is not less than 16 years of age; and
- (iii) she/he is a resident of the area of authority of the FO in which she is seeking membership, or she has been engaged in agricultural activities in that area of the authority for a period exceeding two years.

Every FO shall elect its office-bearers.

According to the Agrarian Development Act, No. 46 of 2000- Section 47, every FO established in an Agrarian Development Council area shall elect a representative or representatives to represent its membership in the Agrarian Development Council established for that area (DAD, 2019). The Act provides for FOs to participate in the Agrarian Development Council, the district and provincial councils. The provisions of the policy are, however, not implemented, and there are no effective mechanisms to monitor its implementation (IFAD, 2005).

The members annually elect the board members of the FOs. The main positions of the organizations include the president, vice-president, secretary, deputy secretary, treasurer and an advisory board of six members. There is a distinct position of '*kama vithana*' held by a FO member farmer in each board. It is a position of a 'water controller'; whose responsibilities are limited to the operation of the sluice gate and distribution of the irrigation water.

The paddy farmers in the Kilinochchi district follow astrology in determining the timing of activities such as transplanting, ploughing, and harvesting. Hindu (religious) rituals are also followed to bless the successful harvest and to avoid disaster issues.

Each season, FOs in every district in Sri Lanka have a seasonal meeting to organize the irrigation strategy for the season. Besides, they may have additional meetings under special circumstances. Various officers of government departments also regularly participate in these meetings of the FOs. The FO president leads meetings, and decisions are taken in a collective manner (Abeywardana, Schütt, Wagalawatta, & Bebermeier, 2019).

## **5.6. Summary**

Sri Lanka has always been and remains predominantly an agricultural country. The case district, Kilinochchi, is one among the five districts in northern Sri Lanka. The district comes under the dry zone of Sri Lanka. Farming is the main livelihood activity undertaken by the people in the Kilinochchi district. The majority of the farmers in the district are practising a mix of at least two farming enterprises. The villages which are located far from the Kilinochchi town, have poor road access, limited transport and do not have any of the branches of the government agricultural support service providers like DOA, DAD, and DAPH.

The civil war that occurred in the northern and eastern Sri Lanka has severely impacted the agricultural sector of the district, including destruction of the agricultural support services system. The Government of Sri Lanka has initiated several policy measures to rebuild the agricultural support services system in the war-affected regions, which include the Kilinochchi district. Further, national and international NGOs and other development agencies are also key partners of development interventions.

The agricultural support services to smallholder farmers are mainly carried out by the Government, government-run, private and non-government organizations. The DOA, DAD, and DAPH are the key government-run organizations engaged in the provision of support services to farmers. Milco is the government-run organization providing milk collection and marketing to smallholder dairy farmers. Private entities were started to provide support services after the end of the civil war in 2009. These include: private traders, Cargills company, microcredit organizations, private banks and private insurance companies. The NGOs are the other group of organization providing support services to smallholder farmers in the district.

## CHAPTER SIX: RESULTS

### 6.1 Introduction

The research questions for this study are; (i) What agricultural support services are accessed by smallholder farmers in northern Sri Lanka and why? (ii) How are agricultural support service providers providing support services to smallholder farmers in northern Sri Lanka and why? (iii) how can agricultural services support to smallholder farmers be improved in northern Sri Lanka. This chapter describes the main results of the study. After the introduction, section 6.2 describes the nature of the services provided by the agricultural support service providers in the Kilinochchi district of northern Sri Lanka; section 6.3 describes the nature of interactions between smallholder farmers and support service providers; section 6.4 outlines the interactions between multiple support service providers in the district, and in the final section 6.5 a summary of the chapter is provided.

### 6.2 The nature of services provided by the agricultural support service providers in the Kilinochchi district

This section describes the nature of services provided to smallholder farmers by the agricultural support service providers in the district. The study found that there are multiple support service providers providing services to smallholder farmers in the Kilinochchi district. They can be broadly categorised under government, government-run<sup>8</sup>, non-government organizations and private commercial<sup>9</sup> entities (Figure 6.1).

The government organizations such as the Department of Agriculture (DOA), the Department of Agrarian Development (DAD) and the Department of Animal Production and Health (DAPH) are engaged in non-commercial input transactions, and they are mostly involved in the provision of advice to smallholder farmer groups. The government insurance company is engaged in providing insurance to crop and dairy farmers. The State banks are engaged in delivering agricultural credits to crop and dairy farmers.

Milco, a government-run milk collection centre, is engaged in commercial transactions. Milco is engaged with dairy farmers in milk collection and marketing. Apart from this

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<sup>8</sup> These organizations are owned by the government but are acting with commercial interest.

<sup>9</sup> Entities that are engaging with farmers and one of their institutional logics is making profit and along with that they compete for farmers as part of their institutional logics.

service, it is also providing services such as; (i) linking dairy farmers to State banks, (ii) linking dairy farmers to State insurance companies, (iii) linking dairy farmers to the DAPH, (iv) with the assistance of INGOs or development agencies, providing dairy farmers with medicines and Ca powder, (v) with the assistance of INGOs or development agencies, providing milking cans to their farmer clients, and (vi) certifying dairy farmers' membership in their organization.

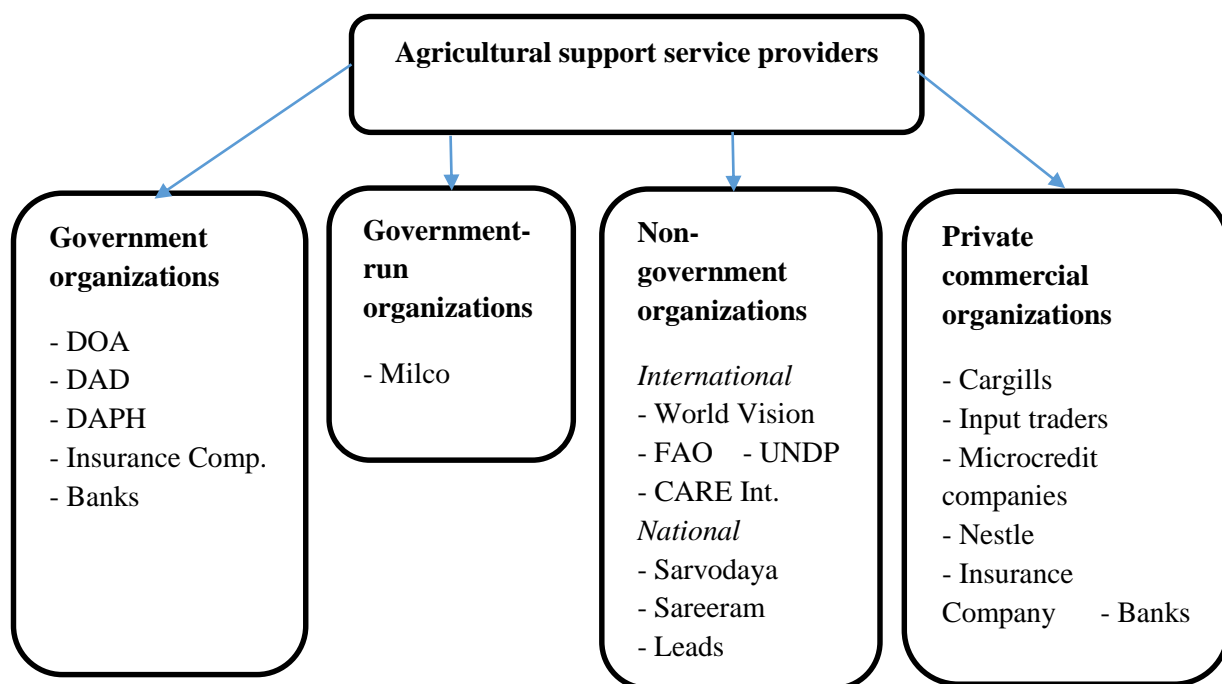


Figure 6. 1. A typology of agricultural support service providers in Kilinochchi district

The international NGOs and national NGOs are the other categories of support service providers providing support services to smallholder farmers in the district (Figure 6.1). Most of the international NGOs are providing priority to women farmers in their support service provision as they are a more vulnerable group in society. A number of private commercial service providers are operating in the district. These include; (i) Cargills private company, (ii) Input traders, (iii) Microcredit companies, (iv) Nestle private company, (v) Private insurance company, and (vi) Private banks.

Cargills private company is engaged in the collection and marketing of fruits and vegetables. According to the interview with an agricultural officer of Cargills company,

the company is also involved in providing seeds and seedlings (targeted inputs) to smallholder farmers who supply fruits and vegetables to their company. They further train their farmer clients on the quality production of fruits and vegetables. In some instances, like pest and disease attacks, the agricultural officer attached to the company provides advice to farmers.

A number of microcredit companies involved in provision of microcredits to smallholder farmers in the case district. Among them, a few companies (e.g. Berendina) are also provide information on financial management to their clients such as educating farmers on how to prepare a budget, how to calculate training interest rates and how to use ATM services. Nestle is a private company involved in milk collection and marketing. The company also distributes milking cans to their farmer clients with the assistance of NGOs and development agencies. The private insurance company<sup>10</sup> insures crops and livestock. The private banks are involved in the provision of agricultural credits to smallholder farmers in the Kilinochchi district. Even though there are several Community-based Organizations (CBOs) operate in the district, only one CBO called ‘Leads’ was engaging with smallholder farmers, especially women farmers, to form woman’s savings groups.

### ***The service mix of support providers in the district***

Figure 6.2 illustrates the service mix of multiple agricultural support service providers in the Kilinochchi district. The study found that although service providers provide primary service to smallholder farmers, they also tend to offer them a range of secondary services. Except for the government extension organizations, most of the other types of service providers provide advice as a secondary or associated service. The advisory systems literature focuses on various aspects of the provision of advice (Birner et al., 2009; Garforth et al., 2003; Hoffmann et al., 2009; Ingram, 2008) and makes limited mention of the other services offered by advisors except to note that if advice is the secondary service, such advisors are considered “embedded” and cautions against potential bias associated with the advice provided (Klerkx & Jansen, 2010; Klerkx et al., 2017).

The following section discusses figure 6.2 in detail.

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<sup>10</sup> Only one private insurance company was in operation during the data collection period in Kilinochchi district; Sanasa Insurance Company

Both the state banks and the state insurance companies are government organizations operating with commercial interests. The primary service of the state banks and the state insurance companies are providing cash credit and providing insurance services to smallholder farmers, respectively. However, both organizations providing advice to smallholder farmers as their secondary service.

Among the private commercial entities acting with commercial logic, the primary service provided by private banks and microcredit companies is cash credit to smallholder farmers. The primary service of a private insurance company is providing insurance service to smallholder farmers. This private entity is also providing advisory services to farmers as their secondary service. The primary service provided by private input traders is input sale to smallholder farmers. However, they are also providing material credit and advisory services as their secondary service. Cargills, a private produce procurement and marketing firm engaged in fruit and vegetable collection as its primary service. In addition, Cargills provides advice, training and free inputs as its secondary service to smallholder farmers. Nestle is a privately owned milk collection entity collecting milk from dairy farmers as a primary service. Further, it provides training, free inputs and advice as to their secondary service.



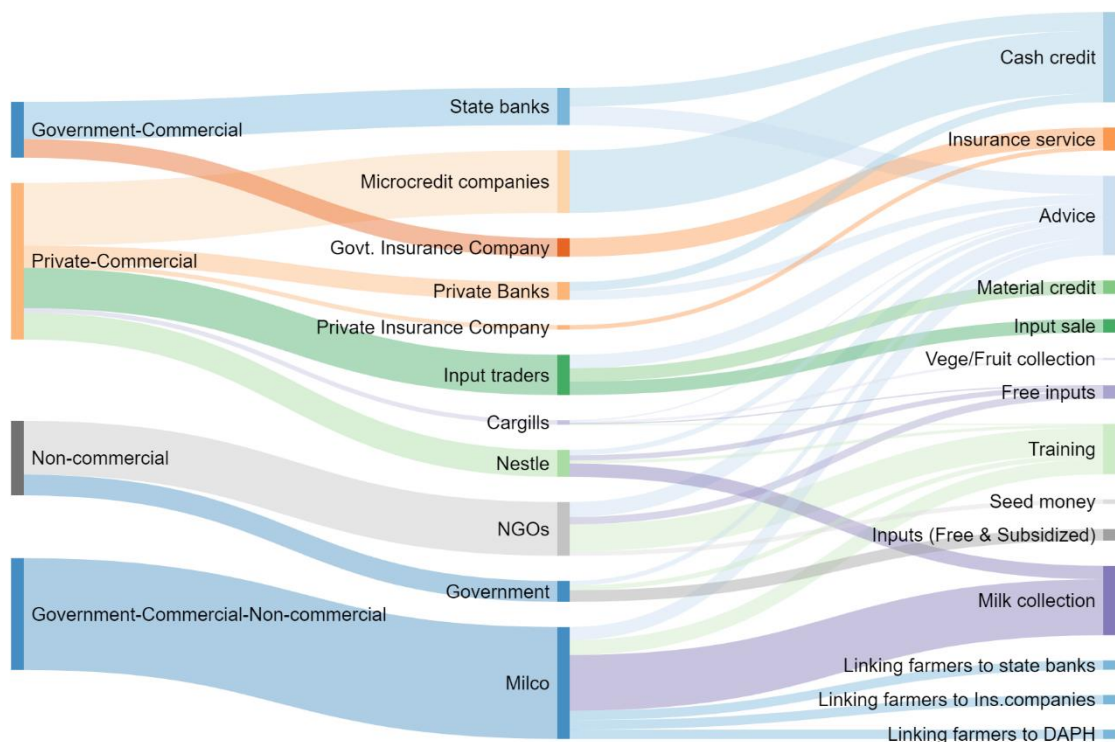


Figure 6. 2. The typology and mix of services provided by the support providers in northern Sri Lanka

Amongst the various support service providers in the district, the government organizations, and NGOs are not operating with commercial interest. These organizations are not involved with any financial transactions with farmers. Milco is a government-owned organisation, and its services are mostly commercially driven and involved commercial transactions with farmers. It is apparent from the interview with Milco area manager that the company’s services are mostly based on farmers’ needs. The company links the farmers with government banks to get credits, insurance companies to do insurance, and DAPH to get advice. However, the additional services provided by microcredit companies and Cargills are entirely based on the company’s agenda. Based on the smallholder farmers’ views, these companies are not responding to farmers’ needs.

*“ ...if we want to get loans, Milco link us to banks and enable us to get loans. Insurance and advice services were also arranged by Milco if we asked. Apart from purchasing fruits and vegetables and providing microcredit, Cargills and microcredit companies, respectively are however providing us training according to their agenda.... ” (CDF1)*

Amongst the commercial organizations most engage with farmers primarily either to source milk and/or other produce. For example, Milco and Nestle engage with dairy farmers primarily to source and buy milk, input traders engage with smallholder farmers primarily to supply inputs and earn money, Cargill's company engages with fruits and vegetable farmers primarily to get quality fruits and vegetables and microcredit companies engage with woman farmers for microcredit provision. Across all support service providers, the most important criteria that influenced farmer's perspectives on nature of their services, interactions were around a mix of services they are providing, quality<sup>11</sup> of services they are providing, their willingness to visit farmers' field and duty of care.

The following section describes the dynamics around the advice, a type of service provided by most support providers to smallholder farmers.

***The dynamics around the nature of advice:***

This section describes the nature of advice, including demand-driven or supply-driven advice and individual-based or group-based advice provided by support service providers to smallholder farmers. The advice provided by input traders was described as responsive to farmers' demands. As articulated by one input trader, "*I straightaway send the field officer to farmer field if a farmer needs any advice or information from us*". Even though the government departments involved in advising smallholder farmers, that advice are mostly supply-driven. For example, during the distribution of seeds or seedlings of certain crops, agricultural instructors from the DOA or subject matter specialists from the DAD provide advice (e.g. advice on how to plant, seed rate, and planting distance) to farmers crops. Likewise, most advices from the NGOs are associated with inputs provided by their organizations. However, the advice from the input traders is demand-driven, mostly based on the requests from the smallholder farmers.

From farmer and agricultural support service provider interviews, it was identified that most advice provided by either the government or non-governmental organizations (non-commercial organizations) was to groups of farmers rather than to individual farmers. On the other hand, one-on-one advice was provided by input traders (commercial

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<sup>11</sup> The end performance of the input or advice as providers said they would

organizations). According to the interview with the Milco area manager, Milco advised individual and groups of farmers. When linking dairy farmers with the DAPH for advice, Milco used to link both individuals and farmers as a group. This depended on whether an individual farmer or group of farmers need the service. For example, as the Milco area manager articulated, if an individual dairy farmer's cow was affected by a disease and needed advice, Milco linked the farmer with the DAPH. In the event of a pest attack to cows of more than one farmer, then Milco connects those farmers as a group to the DAPH for their advice. The dynamics around the Farmer Managed Societies formed by Nestle and Milco is described in the next section.

### ***Farmers Managed Societies (FMSs) of Nestle and Milco***

This section describes the dynamics around the operations of FMSs of Nestle and Milco. Nestle operates through collection centres which are mostly located in each village (in a location far from the main road of the district, one collection centre was established to cover three villages) of the Kilinochchi district. The collection centre is organized and managed by the secretary of the FMS, who is generally paid by Nestle. The secretary undertakes a range of duties, including; measuring and collecting the milk, examining the quality of the milk (by testing the fat percentage content and Solids Non-Fat (SNF) %) and determining the milk price. There are farmer presidents elected for each FMS. They act as an avenue for connecting dairy farmers (members of the FMS) with the Nestle area manager for the Kilinochchi district. The presidents convey messages both from farmers to the area manager and from the area manager to farmers. For example, during the latter stages of data collection, it was stated by dairy farmers that Nestle was reducing the duration and frequency of milk collections. This created negative views about Nestle among dairy farmer members. Their displeasure was conveyed to the area manager through the FMS president. The president also conveyed farmers' discontent to the Director of the DAPH because this government organization is responsible for providing technical leadership to the livestock industry.

Similarly, in the Kilinochchi district, Milco operates through collection centres located at the village level. These collection centres are mainly organised and managed by the secretary of the collection centre. Milco always appoints a female as the secretary to the collection centres as dairy farming in the district is dominated by female farmers. Milco

pays these secretaries. She looks after duties like measuring and collecting the milk, examining the quality of milk (test the fat % and SNF %), and figuring out the milk price. Further, from the interview with Milco area manager, secretaries of milk collection centres sometimes negotiate with the State banks regarding loan interest rates on behalf of their FMS member farmers. They are linking a group of farmers who are in need of credits with State banks, the individual farmer able to get a certain amount of credit according to her need, however. Furthermore, the secretary of the collection centre acts as a guarantor for the group of farmers and is responsible for on-time credit repayment by farmers to the bank. The following section describes the nature of competition between multiple commercial entities that exist in the district.

### ***The dynamics around the nature of competition between commercial organizations***

It was found that all the commercial support providers compete with each other for farmers, except Cargills and private input traders. Cargills is the only private company collecting fruit and vegetable from smallholder farmers in the district.

*“...we are the only private company getting quality fruits and vegetables from farmers. We do not experience any competitors to date.....”* (AO / Cargills Company)

The other commercial organization; Milco is competing for farmers with Nestle and *vice versa*. Microcredit companies are competing for farmers with other microcredit companies operating in the district.

*“...Milco and Nestle are the two milk collection centres operating in the district. They both are competing with each other for farmers....Milco is providing additional services to attract more farmer members....”* (DD / DAPH)

### ***The dynamics around gender in service access***

The multiple farming enterprises that exist in the district are gendered. This section describes this nature in detail. Amongst the multiple farming systems practised by farmers in the district, women farmers dominate the production systems such as dairying, home gardening and vegetable farming. As such, the majority of farmers, Milco and Nestle interact with are female (Table 6.1). Based on the production systems they involved, the

support providers the women farmer access for service are also varied. Further, paddy and fruit farming are dominated by male farmers. Private input traders are developing a service that covers both genders (Table 6.1). Most of the international NGOs which operate in the district have prioritised the provision of their services to women. Cargills is servicing female and male farmers. All the microcredit companies in the district are targeting women for their credit service.

Table 6. 1. The gender of smallholder farmers targeted by the agricultural support service providers in the Kilinochchi district

<b>Gender</b>	<b>SSPs</b>	<b>Female</b>	<b>Male</b>	<b>Both</b>
	DOA		√	
	DAD			√
	DAPH	√		
	State Banks			√
	Private Banks			√
	Microcredit companies	√		
	State Insurance Companies			√
	Private Insurance Companies			√
	Milco	√		
	Nestle	√		
	Input traders			√
	Cargills			√
	National NGOs	√		
	International NGOs			√
	Development Agencies			√

The following section describes the dynamics around the physical distance between farmers' field and location of support providers.

### *The dynamics around physical distance between farmer field and support service providers*

The distance between the location of a dairy farmer's farm and the various milk collection centres dictate who they supply milk to. This in turn, influences what services they have access to and the quality of that service. Some dairy farmers do not have a choice because there may be only one organisation collecting milk in their area.

*...I have no choice; I have to supply milk to Nestle. I have no bicycle though to carry the milk to that far [to the Milco collection centre]..... (MDDF 2)*

However, some dairy farmers used bicycles to supply their milk to the Milco collection centre even though the Nestle collection centre was nearby. This decision to supply milk to Milco rather than Nestle was based on the other support services provided by Milco, such as access to finance. One of the dairy farmers commented as follows:

*...I purchased this bicycle mainly to supply the milk to Milco. Otherwise, I need to walk too far by carrying the milk containers or have to supply the milk to Nestle. I like to supply to Milco so that I can get loans.... (LDDF1)*

The location of support providers such as Milco, Nestle and Cargills had a significant impact on whether farmers accessed the services of these firms. This is only because it defines whether smallholder farmers' produce can be supplied to that entity. However, in the case of Milco and Nestle, the type of service they are provided depending on whom you are near to. The location does not matter for the service offered by microcredit companies.

The following section describes the relationships and interactions between smallholder farmers and support service providers regarding various factors shaping the relationships.

### **6.3 Interactions between smallholder farmers and support provider**

This section describes the interactions between smallholder farmers and various agricultural support service providers in the Kilinochchi district. The interactions are discussed under the factors that influence the interactions between both actors. These factors include; (i) package of services provided by the support providers, (ii) the

relationships that smallholder farmers already had with agricultural support service providers, (iii) experience and relationship longevity between the smallholder farmers and support providers, (iv) multiple farming activities carried out by the smallholder farmers, (v) how new relationships of support providers introduced to smallholder farmers, and (vi) the expectations of smallholder farmers of support providers' interactions. The following section describes the interactions between both sets of actors based on the different services provided by the support providers

### ***6.3.1 Package of services provided by the service providers***

The purpose of this section is to describe how the interactions between smallholder farmers and support providers were influenced by the package of services provided by the various agricultural support service providers. Multiple agricultural support providers are operating in the Kilinochchi district. Although each service provider offers a primary service to the smallholder farmers (e.g. the provision of inputs or the provision of micro-credit), most of them are providing additional or secondary services that the farmers can utilise. (Table 6.2). This research found that the smallholder farmers' main reason for interacting with a support provider is the primary service they provide. However, the mix of secondary services provided by the support provider also influenced the interaction between both actors. As such, smallholder farmers' decisions to have a relationship with a support service provider is shaped not only by the primary service they provide but also by the package of other services they offer. For example, a dairy farmer who was supplying milk to Milco explains her interaction with Milco:

*“...I am accessing Milco primarily to supply milk, however, by having a membership with Milco I am eligible for other services provided by Milco. With the Milco membership only, I was able to get a loan from the Bank of Ceylon (a State bank), which is not possible on my own. Because I need to find collateral and a government servant should sign that collateral. Not all the government servants willingly sign for us. It is challenging to convince them. But it is possible by having membership with Milco...” (MDDF1)*

The dairy farmers in the Kilinochchi district interact with Milco milk collection centre to supply milk. However, Milco is also providing the dairy farmers who have a membership

with the Farmer Managed Society<sup>12</sup> with other support services, like linking dairy farmers with banks, Department of Agricultural Production and Health, and insurance companies to obtain loans and get advice, insure dairy cattle, respectively. Similarly, another dairy farmer who was supplying milk to Milco describes her interaction with Milco:

*“.....Milco links us with the DAPH. Some time back, there was an issue with my cows and because of that milk I supplied to Milco was not of good quality. My dairy cows were affected by some form of infection. Then what Milco did was they returned the milk and linked me with the Veterinary Officer. She investigated the cows, did vaccination, and provided some medicine to mix with cow feed. It took around three weeks to get clean milk from my cows. Milco re-engaged me, and I am continuing the milk supply to Milco....” (LDDF2)*

The majority of the smallholder farmers are purchasing their farming inputs from private input traders. Meantime, they are also approaching the private input traders to get advice and information on farming activities. A vegetable farmer describes his interactions with private input traders:

*“...I am purchasing vegetable seeds from private input company ‘A’ (mentioned the company name). Their seeds quality is good. I can get hybrid vegetable seeds from them. Several other vegetable and fruit farmers are also getting hybrid seeds from private traders. At the same time, they are good at providing advice and information. When I come across any issues in my farming, I used to contact them for advice. They are always ready to provide advice and information to us...” (MDVF1)*

Further, the government departments like the DOA, the DAD and the DAPH provide services like input supply and advice to smallholder farmers (Table 6.2). The banks and insurance companies mainly provide credit and insurance services to smallholder farmers interviewed. Furthermore, NGOs are primarily providing advice and input services to smallholder farmers. Apart from collecting vegetables and fruits, Cargills also offers

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<sup>12</sup> This is a requirement for the dairy farmers who supply milk to Milco to have membership with Farmer Managed Society (FMS) which was formed by Milco



other services like the supply of inputs (mainly seeds and seedlings) and advice (Table 6.2).

The government agricultural support service providers interviewed stated that they interact with female and male smallholder farmers during their service provision (Table 6.1). Paddy farming is a significant farming activity in the Kilinochchi district, and male farmers mainly and traditionally carry it out. The two main government departments involved in service provision to paddy farmers are the DOA and the DAD. Accordingly, most of the male farmers interviewed have interactions and relationships with these government departments. The main government department engaged in support service provision to dairy farmers is the DAPH. The department mainly interacts with female smallholder farmers as female farmers in the Kilinochchi district dominate dairying.

The manager of a private bank in the district stated that only a few paddy farmers visit their bank to obtain agricultural loans for paddy farming. Similarly, a State Bank manager from the district describes their interactions with paddy farmers related to agricultural loans:

*“....the number of paddy farmers applied for agricultural loans to our bank has reduced significantly. Because many of them are already identified as loan defaulters, they should not be loan defaulters in any banks. We have to check and confirm it. It is our bank policy. ....”* (State Bank Manager)

Table 6.2. The support services provided by the agricultural support service providers in the district<sup>13</sup>

SSP Services	DOA	DAD	DAPH	State Banks	Private Banks	Microcre dit comp.	State Ins. Comp.	Pvt. Ins. Comp.	Milco	Nestle	Input traders	Cargills	National NGOs	Int. NGOs	Dvt. Agn
<b>Input provision</b>															
Seeds	√	√	√						√	√	X	√	√	√	√
Seedlings	√	√									√		√	√	√
Watering cans		√											√	√	√
Sprayers														√	√
Milking cans														√	√
Fodder cuttings			√						√	√				√	
Medicines			√												
Ca powder											√				√
Fertilizer subsidy		√									√				√
Fertilizer											√				√
Agrochemicals											√				
<b>Advice/infor.</b>	√		√	√	√	√	√	√	√	√	√	√	√	√	

<sup>13</sup> The primary service is shown as an “X” and the secondary services are shown as a tick.

<b>Credit provision</b>				<b>X</b>	<b>X</b>	<b>X</b>									
<b>Insur. provision</b>		√					<b>X</b>	<b>X</b>							
<b>Milk collection</b>									<b>X</b>	<b>X</b>					
<b>Fruits &amp; vege. collection</b>												<b>X</b>			
<b>Linking SHFs to govt. banks</b>									√						
<b>Linking SHFs to Ins. Companies</b>									√						
<b>Linking SHFs to Govt. depts.</b>									√						
<b>Training provision</b>		√	√			√			√	√		√	√	√	√
<b>Women savings group formation</b>													√		

The following section describes how the relationship farmers already had with support providers shape the current nature of interactions between both actors.

### ***6.3.2 Interactions based on the relationships smallholder farmers already had with support providers***

#### ***Advice:***

One of the support services accessed by smallholder farmers and provided by all support providers in the district is advice. The smallholder farmers are mainly sourcing advice not from the support service providers but informal sources. The informal sources include; experienced farmers, progressive farmers<sup>14</sup>, family members and relatives. This is despite the fact that most of the service providers in the district provide advice to farmers as one of their services (Table 6.2). However, it was found that farmers would seek advice from support service providers if they could not obtain the advice they needed from their informal sources. One of the paddy farmers recounts his experience regarding who he approaches for advice on paddy farming:

*“...there were few incidents where I was not able to gain appropriate information from my family members and relatives. I could remember...incidents of some new pest and disease attacks. Then I approached the input traders whom I used to purchase agrochemicals. They advised to go for certain agrochemicals, and it worked well....”* (CDPF4)

A fruit farmer recalls his experience regarding who he contacts for advice on fruit farming:

*“...I used to contact experienced farmers in this area (mentioning four names of farmers) when I came across any farming issues. I value their experience in farming. Sometimes, I approach progressive farmers (explained as farmers who are open to practising new varieties, new techniques, and getting high yield) for information (especially technical information) and advice. They used to provide innovative ideas and information.....”* (LDFF1)

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<sup>14</sup> Farmers who are practising innovative techniques and obtaining high levels of production.

The farmers further articulated that if the informal institutional sources failed to provide the information they required, they would then approach support service providers (for example, crop farmers mainly go to private input traders and dairy farmers to Milco) for advice.

*“...In cases where I failed to get enough information; I just contact private input traders. Their responses were rapid, they visit the field and advise me.....”*  
(LDFF1)

However, the farmers’ relationships with support service providers for advice are different from their relationships with closer sources. The key reason for approaching informal providers is getting either information or advice. On the other hand, the primary purpose of having a relationship with private input traders (for crop farmers) and Milco (for dairy farmers) is to source inputs and to supply milk, respectively. As most of the crop and dairy farmers interviewed already have a relationship with these support service providers, they go to them to get advice. As such, the smallholder farmers in the district are also sourcing information and advice from the support providers with whom they have an existing relationship.

The dairy farmers interviewed are approaching either Milco or Nestle for information and advice, depending on whom they are supplying milk. Farmers rarely contact the DAPH for advice or other services and the reason given by farmers interviewed was, because their response was very slow and farmers viewed that it was very hard to find the right people; articulated by a dairy farmer *“good to approach Milco for advice....the DAPH people will not response...”* (LDDF1). The dairy farmers interviewed to contact the FMS secretaries of Milco or Nestle for advice as they have existing relationships with them. During such instances, the milk collection centres link the dairy farmers with the Department of Animal Production and Health as they do not have experts to advise farmers regarding the issues. The area manager of Milco explains this practice during the interview:

*“...our member farmers frequently contact the FMS secretary for advice; mostly related to diseases and milk quality. As we do not have dairy experts, we link them to the DAPH for advice....”* (Area Manager/Milco)

It is evident from the voices of smallholder farmers from all three locations and service provider interviews that this nature of interactions is similar across the district and similar to both female and male farmers.

The following section describes how smallholder farmers' past experiences with service providers and relationship longevity have shaped the interactions between these actors.

### ***6.3.3 Past experience and relationship longevity between farmers and support providers***

The purpose of this section is to describe how the current nature of the interactions between farmers and support providers is shaped by both their past experiences with service provision and the duration of the relationship they have with the service provider. The smallholder farmers' current expectations of service providers are similar across all three locations and similar for both female and male farmers. The farmers' current expectations about their interactions with support providers are shaped by their experience with the Agricultural Instructors and the Veterinary Officers from the government departments and the LTTE's *de facto* government during and before the war. All the farmers spoke positively about their historical relationships with these service providers. They explained that the nature of these relationships set the standard for the type of interaction farmers currently expect from support providers, irrespective of type. Further, the expectations smallholder farmers have in relation to commercial actors are similar to those they have for non-commercial actors. For example, a farmer who was growing paddy describes his expectations regarding the interactions with government, non-government and private commercial actors:

*“...not like these days, during the war and before the war, officers from the government agricultural departments and LTTE's agricultural section regularly visit our fields. At least once in two weeks, they used to visit and have discussions with us. During those days, we can wait for them to get solutions because they surely come. We had a feeling like someone is taking care of us. We are expecting the same interactions and care these days. We are expecting all their support to our farming....” (LDPF2)*

A similar view was expressed by a young dairy farmer who outlines what she heard from other farmers regarding their interactions with support providers during and before the war:

*“.... I heard from my relatives and other neighbouring farmers that during and before the war, the government agricultural officers used to visit and provide farmers with needed services during and before the war. The LTTE and government people did the same. I heard that during the war, the government and the LTTE’s people worked together and provided support services.....” (CLDF1)*

More recently (after the war), negative experiences with government support providers have led to the development of mistrust with government officers among the smallholder farmers of the Kilinochchi district. In contrast, positive experiences with the local private input traders have established trust between farmers and these support providers. Based on these positive experiences, the smallholder farmers perceive the private traders as a reliable source of inputs and advice. The following quote by a local fruit farmer describes a negative experience he had with government officers:

*“...these government department people are not reliable enough. Before two seasons, I have purchased 30 papaw seedlings from the seed and planting material sale centre of the Department of Agriculture. None of them turned up with fruit. I have contacted the people from the Department of Agriculture several times. The only answer provided was ‘wait and see for some more time’; for how many days? See their responsibility. Is this the way they respond? No! They are not reliable people. They have distributed us with poor quality seedlings. I will never approach these people for any services.....” (MDF2)*

Various other smallholder farmers also commented on the accountability of the support providers. Similar to the comment made by a fruit farmer, another vegetable farmer also commented on this issue. She was explaining her negative experience with the government seed and planting material centre:

*“...The whole set of eggplant seedlings that I have obtained from the seeds and planting material sale centre of the Department of Agriculture before two years*

*were of poor quality, and none of the seedlings provided fruit. I have visited the Department and reported the conditions, I think more than three times, but nothing happened. They have not even advised me about how I can further proceed with this terrible situation. How do they expect us to trust them and their products? (CDVF1)*

It was found that the Seeds and Planting Material Sale Centre of the Department of Agriculture were only providing local seeds to farmers and not hybrid seeds. The smallholder farmers stated that they were able to obtain hybrid seeds for different crops from private traders. Most of the farmers like to plant hybrid seeds because the resultant plants are more productive. As such, the smallholder farmers tend to source their seed from private input traders. One farmer summarised this trend - *“I am nowadays obtaining hybrid seeds from private traders. I wish to grow hybrid seeds as I can get more produce.....”* (MDVF1).

Another key aspect that emerged was that the experiences with service providers of other farmers they know often determined whether they would enter into a relationship with that service provider. As such, a farmer’s informal network of smallholder farmers strongly influenced their views about the different support providers. One of the smallholder farmers comment as follows,

*“...I am not willing to go to insuring my crops. My neighbouring farmer did insurance for his paddy with the Sri Lanka Insurance Board. He lost his entire crop due to a severe drought. I know how many days and times he ran behind the Sri Lanka Insurance Board. They just dragged the days by telling him several reasons, and finally, they did not pay back the compensation for him. This is not fair. They should act as how they agreed at the beginning when signing the insurance agreement. Then how can we trust these people and their insurance company.....”* (CDPF1)

Further, most of the smallholder farmers who were aware of insurance schemes view that they do not want insurance for either their crops or cattle. This is mainly because either their own experience and that of their peers with agricultural insurance companies have not been positive. This is because they are not reliable in terms of their service provision.



According to these farmers, they do not provide the service that they promised when farmers signed up for insurance. These past experiences led the smallholder farmers to Kilinochchi distrust the insurance companies. Overall, the relationship between the smallholder farmers and agricultural insurance providers are weak or non-existence in the district. Most of the farmers interviewed from far distances stated that they were not aware of the insurance schemes. One of the paddy farmers commented, “*I do not know about insurance. Where do I have to go to get this?*” (LDPF2). One dairy farmer articulated as “*No one told us about this insurance. I have no idea...*” (LDDF2)

Likewise, a paddy farmer commented about farmers’ experiences of the relationship with Microcredit Company and how these experiences influence other farmers’ decisions to have a relationship with these companies.

*“.....They are providing loans with very high-interest rates, and people who borrowed loans need to repay the loans with interest weekly. Is it possible? No...no..never. I know how the women who obtained a loan from the microcredit companies are struggling; misunderstandings with the spouse, between family members, family separation, and hiding within friends’ or relatives’ houses to avoid loan officers (because they do not have money in their hand to repay the loan obtained). In some worst cases, suicides also occurred in this district. After seeing and experiencing these incidences who is likely to approach these microcredit companies to get loans. ...”* (MDPF3)

From the farmer interviews, the relationship longevity is not found to be the only influencing factor that shapes the current interaction between smallholder farmers and support providers. Private input traders are comparatively new actors to farmers. They have been providing services to farmers only since after the war, (from 2010), and it is a new form of commercial relationship for smallholder farmers and private input traders. Although this is a new form of arrangement, the smallholder farmers interviewed are willingly engaging in the new relationship, and they do not doubt the relationship. One of the smallholder farmers who was doing vegetable farming comments about the services provided by input traders:

*.... you know these private company people are very smart. Their company seeds are good in quality, and most of us are getting a good harvest from their seeds. Presently many of the smallholder farmers in the district are getting seeds from the private traders, especially hybrid seeds.....” (CDVF1)*

One of the aspects shaping the interactions and relationship between farmers and service providers is smallholder farmers' expectations regarding what constitutes good support service provision. It was evident from the interviews that good service providers required visiting their farms and taking care of them and articulated as; *“they immediately came to the farm and provided with relevant information and advice...”* (MDF1). They stated that the private input traders fulfil their expectations. Accordingly, the smallholder farmers had positive experiences and continuing with the interactions. The private input traders are providing their services in all three locations in the district, and all farmers interviewed in all three locations expressed positive views on private input traders' services. Further, both female and male farmers said the same positive opinions regarding the interactions with private input traders during the farmer interviews.

Farmers are engaged in various farming enterprises, which influence the farmer–support provider interactions. The following section describes how smallholder farmers' involvement across multiple farming enterprises influences their interactions with multiple agricultural support providers.

#### ***6.3.4 The influence of a farm household's enterprise mix on which service providers they interact with***

The smallholder farmers across the district are involved in more than one type of farming system. Smallholder farmers from the same household access different agricultural support service providers and membership with different Farmer Organizations. The following quote from a dairy farmer gives an example of this:

*“....in our household, I engaged in dairy farming, and my husband is engaged in paddy farming. As I am supplying milk to Milco I have a membership with Milco's Farmer Managed Society. I am also interacting with Cargills as I am supplying vegetables to them. My husband has membership with paddy farmer organization of this area...” (CDDF2)*

The majority of the male farmers interviewed in the district are involved in paddy farming, and female farmers are engaged in dairying and home gardening. The main reason stated by farmers for this gender division was the labour requirement of the two farming systems. Paddy farming is much more labour-intensive and as male farmers mainly undertake such.

The type of support service providers accessed by the male and female smallholder farmers varies based on the production systems they are engaged with. From the interviews, the expectation about what constitutes a good support service emerged as similar for both male and female smallholder farmers. Moreover, most female farmers agreed that support providers should prioritise female farmers during support provision as they have to look after household duties such as cooking, looking after their children and elder parents.

Most of the international NGOs prioritise providing services to women farmers. This is because these NGOs (e.g. World Vision, Care International, UNDP) have a formal mandate to prioritise women, smallholder farmers. For example, in World Vision's Annual Report in relation to Sri Lanka, it is stated that: "...*providing service priority to the vulnerable sector of the society; children and women...*" (Annual report, World Vision Lanka, 2017) and they act accordingly. When the question was asked of staff from government departments (the Department of Agriculture, the Department of Agrarian Development and the Department of Animal Production and Health) about whether they prioritise service provision to female farmers, they stated that they do not have a written mandate to do this. However, they claimed that they were providing equal opportunities and facilities to male and female smallholder farmers. A farmer who was engaged in home gardening did not believe this was the case and expressed her views on how government departments treated women:

*"..... Sometimes it took a whole day to wait and get assistance from the government; I mean from the Department of Agriculture and Department of Agrarian Development. As a female, we need to look after several other duties. If we spent the whole day getting assistance like seeds and seedlings, who will look after the other works? However, I should tell that most of the international*

*NGOs provide priority to us. They initially announced our names and provided with farming inputs like seeds, watering cans and sprayers.....” (CDHG1)*

An ADP (Area Development Project of the World Vision Lanka, international Non-Governmental Organization) Manager explains their organizational mandates:

*“...we used to provide priority to women. As they are more vulnerable, our organization has a written directive to do so. As such, whenever we engage in support service provision; products and training, we prioritise women. I think most of the international NGOs are doing the same...I mean giving priority to women during the provision of seeds, seedlings, watering cans, sprayers and milking cans their support service provision....” (ADP Manager/ World Vision Lanka)*

The following section describes how smallholder farmers’ interactions with support providers are shaped by how new relationships of support providers are introduced to farmers.

### ***6.3.5 Introduction of support provider to smallholder farmers***

This section describes how farmer-support provider interactions are shaped by how new relationships of support providers are introduced to farmers. This is evident from the way the input traders introduced their company products. Input providers stated that they used to introduce a new product or process through a familiar mechanism to farmers. They are using local farmers who are trusted by farmers to introduce their new product or process. According to them, it easily diffuses from farmer to farmer. It makes farmers seek more services from the private input traders. A field officer of a private agrochemical company explains how new products of their company were introduced:

*“...we never introduce our company new products to farmers in a sudden. We used to introduce to experienced farmers and progressive farmers who are willing to practise new products. As other farmers trust these farmers, the information diffuses easily, and other farmers start to use the products....” (Field officer / Private Agrochemical Company)*

A part of the smallholder farmers' expectations regarding what constitutes a good agricultural support service is also shaped by the new relationships have been introduced by the new actors. Part of this is linked to their expectations from previous experiences, which happened during and before the war. It would also appear that the new relationships were introduced to the smallholder farmers in a way that did not conflict with their expectations (which includes regular farm visits and taking care). The smallholder farmers did not resist it, and again they trusted the reliability of this relationship. This trust leads them to engage with those new support service providers continuously, but not with microcredit providers. These experiences of smallholder farmers with the microcredit providers were not good. The following section describes the nature of the relationship between the smallholder farmers and microcredit companies.

When microcredit firms first began operating in the Kilinochchi district, the smallholder farmers interacted positively and willingly. This service is gender-specific because the microcredit providers are targeting only female farmers. Smallholder farmers in the region have practice norms for borrowing money that has evolved over many years. Farmers have borrowed money from informal sources such as friends, relatives and informal money lenders in their villages for farming purposes, and these loans are repaid after the crops are harvested. As such, the practice of borrowing money to purchase farming inputs already existed among the smallholder farmers. This practice was predominantly used by male farmers who engaged in paddy farming. Few women use this practice because they are engaged in small-scale farming, which requires much less capital. However, a few female farmers did borrow money from friends and relatives for farming purposes. According to interviews with women farmers, at the initial meeting with farmers, the microcredit providers set one farmer's home as a 'centre' for issuing the loan and collecting money. Further, according to the farmer interviews, their interactions with microcredit companies are shaped by the commercial microcredit company peoples' willingness to visit them in person and considering their interest. One of the women who did home gardening commented about how her dealings with a microcredit company developed:

*“...Initially, the company people came to the village and told me about their microcredit system. They wanted us to form a three-member group, and they told me that they have a policy that would lend microcredit only to women. Most of us*

*felt comfortable with that. They did not ask for collateral or guarantors. The arrangements seemed easy. By the very next day they have given the money to all three members. We were really happy.....” (LDHG1)*

The microcredit providers met the expectations of the smallholder farmers by quickly providing them with funds. So, initially, the smallholder farmers willingly engaged in the relationship. However, the subsequent experiences they had during their interactions with the microcredit providers were not favourable. This is related to the interest rates imposed by the microcredit companies. The microcredit companies imposed very high interest rates (ranged from 12.5 % - 27 % p.a.) on the farmers. Most of the companies also had a policy that required the farmers to make weekly loan repayments. The smallholder farmers in the district had had no experience with this commercial arrangement. They had limited knowledge about interest rates or how to calculate them. Further, because of the high interest rates, many of these farmers were not able to repay the loan every week. To settle the repayments on time, these farmers had to lend money from another microcredit company. This practice created several family issues, including stress, marriage separations and suicide. Furthermore, these negative experiences are shaping other smallholder farmers’ decisions regarding their interactions with microcredit companies. A farmer who was engaging in home gardening recalls how she started her interaction with a microcredit company and why her experience with it was very negative:

*“...[I] borrowed microcredit from Microcredit Company [‘X’]. We were not worried about interest rates at that time. After certain days, we only came to know that the company's interest rate is very high, 24%. Really speaking, I have no idea regarding the interest rate. We need to make the repayment weekly. They tell us the amount, and we used to pay. If one of our group members cannot make the repayment, then the other two members need to repay it. I faced difficulties with repaying the loan every week. Then I borrowed microcredit from another microcredit company to settle the first loan....” (LDHG1)*

A dairy farmer outlines why the microcredit company staff did not meet their expectations:

*“...these microcredit people are very tricky, you know. They are not telling the actual interest rates to farmers. They are not explaining their policy regarding interest rates and repayments to farmers in detail. Most of us are illiterate and are signing on the documents without knowing all this information. In the early days, we used to borrow money from friends and relatives or money lenders for farming activities. Then resettle the money after harvesting. We are used to this arrangement. But, microcredit companies have some different arrangements. We are not used to it. It makes it difficult to cope up with their system....” (LDDDF1)*

According to the interviews with microcredit company managers, they provide microcredit services in all three locations in the Kilinochchi district. Even though most of the women farmers who were interviewed stated that they had had negative experiences with a microcredit company, few farmers expressed positive views about borrowing microcredits. One of the dairy farmers explained her views on borrowing microcredit from a microcredit company:

*“...[I] just borrowed my second microcredit. If we use the credit for the exact purpose, we can get the income and be able to settle the amount. In my experience, I benefitted from the microcredit I borrowed in the first instance, so that got it a second time....” (MDDDF2)*

According to the above, some women farmers who borrowed from the micro-credit companies told them they needed the loan for farming inputs. However, they used the money for other reasons, including buying luxury items like televisions and mobile phones. Based on her experience, if farmers used the money for farming, they would repay the loan from their income.

The following section describes how the smallholder farmers’ expectations of service provision influence the interactions between both.

### ***6.3.6 Interactions based on the expectations of smallholder farmers***

This section describes the way farmers’ expectations of service provision shapes the farmers-support service provider interactions. These expectations are described under various attributes of expectations of smallholder farmers that are shaping the interactions

with support providers. These attributes are; face-to-face interaction, best interest at heart, and reliability. The findings related to these interactions are described below.

#### *6.3.6.1 Expectations for face-to-face interactions*

The smallholder farmers in this study strongly believed that direct face-to-face interactions help establish trust with various agricultural support service providers. Various smallholder farmers expressed this view of the relationship during farmer interviews. The following quote provides an example of this viewpoint:

*“...if they [support providers] directly visit our field and discuss with us, they can understand our real issues. These understandings and face-to-face interactions will help build trust between us. This is how our trust relationship established with support service providers during war...” (LDVF2)*

During their description of the expectation of relationship with support service providers, the smallholder farmers frequently referred back to the service provision experience they had with the LTTE's *de facto* government and officers from DOA, DAD and DAPH during the war. During the war, the LTTE's *de facto* government governed and administered all agricultural support service provisioning. For example, during the war, the Department of Agriculture was engaged in providing agricultural advice and technical support to smallholder farmers in the district. The LTTE administered this service. The officers from the Department of Agriculture directly visited smallholder farmers' fields and provided services to them. According to the interviews with the Department of Agriculture staff, who have worked during wartime, the LTTE strongly encouraged this practice. The Director of the DOA describes this practice as follows:

*“...the LTTE directed us to work closely with farmers. People from their economic and agricultural development department worked closely with us. We used to visit individual farmer's fields to get to know their issues and provide solutions, provide demonstrations and relevant training....” (The Director /DOA)*

These face-to-face interactions established and built trust with government agricultural officers. Irrespective of their location within the district, all the interviewed farmers described similar views on service provision during the war. A smallholder paddy farmer



compares their relationship with Department of Agriculture officers during the war and currently:

*“.....my current interactions with officers of the DOA are not like what I had during the wartime. Believe it or not, during those days, the DOA officers visited directly to our fields. They visited each and everyone’s fields and provided us with relevant advice. There were days when those officers worked together with us, did demonstrations in our fields, did trials in our fields. I still remember the officers’ names and their expertise. But, sorry...I cannot name any government officer’s name who is presently working at the Department of Agriculture or their expertise. The reason is simple. I do not know them. They do not visit our fields...”*

(MDPF1)

In contrast to the DOA, the farmers were very positive about the private input traders. Farmers stated that field officers from the input traders frequently visited smallholder farmers’ fields and provided support services such as advice on agrochemicals and fertilizers. For example, a vegetable farmer stated that if there is a pest or disease outbreak in their crops, what the farmer does is that she purchases and applies it if she knows the relevant agrochemicals. Otherwise, she consults or discusses with peer farmers or experienced farmers and acts accordingly. However, in most cases, what she does is she contacts the field officers from the input traders. The field officers visited the farmers’ fields and advised and recommended possible agrochemicals. The farmers stated that although the recommended brand of agrochemical is from the field officer’s input supply company, they were happy to adopt their recommendation because of the face-to-face interactions with the field officers. The following quote shows how one vegetable farmer viewed her relationship with a private agrochemical trader.

*“.....once my chilli plants were attacked by a new disease, which was almost new to our area. It was difficult to contact any Department of Agriculture personnel to discuss the issue. Then I contacted the private agrochemical company people. You do not believe it, they immediately visited my field and recommended two different insecticides, from which I have purchased one and applied it to my infected chilli plants. It worked well, and I have ended up with good results. Now you can imagine where I would go if my plants were affected by any pests or*

*diseases. Yeah... those field officers for sure. The face-to-face interactions with those field officers made us closer in relationship and interactions....” (LDVF1)*

Not all the farmers that were interviewed expressed the same views. Farmers located close (< 05 km) to Kilinochchi town articulated a positive relationship with the DOA staff. Those farmers stated that the agricultural instructors from the DOA frequently visit their fields. A fruit farmer located close to Kilinochchi town comments his relationship with the Department of Agriculture officers as follow:

*“...yes! I have good relationships with the DOA people. There is an officer in the department, especially for fruit crops. So, if I come across any issues regarding my fruit farming, I contact the officer. She used to visit my field.....” (CDFF1)*

The following section describes how smallholder farmers’ expectations regarding support providers on the duty of care for their interest shape their interactions.

#### *6.3.6.2 Best interest at heart*

The smallholder farmers in the Kilinochchi district trust service providers who illustrate a duty of care for their interests. The interactions and relationships are closer between the smallholder farmers and the agricultural support service providers where the smallholder farmers think that the support service providers care about them. The smallholder farmers frequently referred back to the days where the LTTE people acted with their best interests at heart.

One of the vegetable farmers who engaged in farming during the war explained how the LTTE people acted with the farmers’ best interests at heart. The following quote illustrates it.

*“.....the LTTE had a good regulatory and governance system, not only in agriculture; in law, security, banking, administration, education, and women’s needs etc. For me, the LTTE had a good vision regarding education and agricultural development. Among others, the LTTE strongly believed that the development of the region could be better achieved by agricultural and educational development. They encouraged and directed young women and men*

*to go for work in the agricultural field. They had provided well-planned service provision. Of course, they gave priority to family members of the LTTE combatants and then to other families. But it was justifiable during that time. One thing for sure, they never avoided farmers from other families but prioritised the combatant's family members. For example, there were days we have waited the whole day to get our inputs (seeds or compost). However, finally, we all have received things. The LTTE was very strict in serving combatant's families. Hope you can understand....” (MDVF2)*

During the war, fertilizer restrictions were imposed on farmers in the Kilinochchi district, but the LTTE organized various experts from relevant government departments to conduct demonstrations for smallholder farmers on how to produce natural fertilizers. Accordingly, the experts trained the farmers to produce organic fertilizers, compost, and organic liquid fertilizers by using neem seeds, etc. So, the smallholder farmers produced their fertilizers and continued farming. One vegetable farmer commented regarding this relationship as follows,

*“...during those days all agricultural services were provided to us in a well-organized manner. Of course, not all the support services were available to us, and available services were also not enough to fulfil everyone's resource demand. But available services were well organized by the LTTE. They had a separate division for agricultural development and people attached to the division used to visit our fields and have discussions with us regarding our emerging needs in farming. Whatever resources they had, I mean the agricultural and financial resources, they divided them according to our needs and distributed them. You won't believe, up to my knowledge, there were no complaints regarding the distribution of resources. The main reason was we were all satisfied with their activities and services....” (MDVF2)*

The way the smallholder farmers viewed the LTTE's support service delivery was explained by almost all smallholder farmers during the interviews. One dairy farmer whose family obtained an agricultural loan from the LTTE during the war commented on her experience as follows,

*“.....as we were not able to find enough capital for paddy farming, my father approached the LTTE’s agricultural division for an agricultural loan. The people attached to the division visited our paddy field and then to our home and discussed with my father and us. From the visit and discussion, they made sure of our financial conditions. Then they released the loan. The care they showed to all of us made us trust the LTTE and their activities. It led to a very close relationship with the LTTE....” (CDDF1)*

The next section describes how the reliability of support providers shapes smallholder farmers-support provider interactions.

#### *6.3.6.3 The reliability of agricultural support service providers*

This section describes how the reliability of support providers shapes the interactions between farmers and support providers. It was found that if the support provider is found to be reliable by a smallholder farmer, this will help establish trust between them.

During the paddy cultivation season, the input traders in the district provide inputs like agrochemicals and fertilizers to smallholder farmers on a loan basis. After harvesting the paddy, the smallholders pay back these loans to the input traders. This is an informal arrangement made by the paddy farmers and the input traders in the district. According to the voices of farmers and input traders, there is an understanding of the reliability of the arrangement. This arrangement exists across the three locations in the district. As stated by a paddy farmer during the interview, the arrangement has worked well over time:

*“....[I] used to get agrochemicals from the input suppliers on loan and pay back the money after harvesting paddy. This happens each paddy season, and we are used to this arrangement....” (MDPF1)*

The smallholder farmers interviewed in the Kilinochchi district indicated that they believe support providers should be reliable. The majority of the vegetable farmers, irrespective of location, articulated that the distribution of poor-quality seeds and seedlings by the seed and planting material centre of the Department of Agriculture meant that farmers

viewed the department unreliable. One farmer who was engaging in vegetable farming articulated this as follows:

*“....several incidences of poor quality seed distribution of the seed sale centre of DOA made us to see the department as not a good source for seeds....”* (LDVF1)

These incidents create distrust with government seed and planting materials suppliers, and this again shapes the relationship between the smallholder farmers and the government seed supplier. However, a small number of smallholder farmers still obtained seeds from the government department even though seeds are in poor quality. A vegetable smallholder farmer states as follows:

*“...I am getting seeds, I think for last 15 years, from the DOA. I never want to change it to private people. I don't like to grow hybrid seeds even....”* (CDVF2)

These farmers still obtained their seeds from the government department because they had a long-term relationship with the Department of Agriculture. They were reluctant to change from local seeds to hybrid seeds because they saw this as a risky change in practice. As such, a combination of the longevity of the relationship and risk averseness in relation to practice change meant that some of the farmers continued to obtain seeds and seedlings from the government department, even though it was unreliable.

The reliability of a support service provider from the perspective of farmers is also shaped by the relative performance (quality) of the products they supply. The following section describes this interaction.

The nature of interactions between the smallholder farmers and those who provide inputs as part of their service in the Kilinochchi district is shaped by a differentiation based on its quality. From its inception, the seeds and planting materials centre of the Department of Agriculture supplied seeds and seedlings to farmers in the Kilinochchi district. However, after the cessation of war in 2009 in the district, the private input traders are also selling seeds to smallholder farmers. Some smallholder farmers compared the quality of the seeds and seedlings supplied by the government seed centre and private input traders. The smallholder farmers interviewed mostly rely on private input traders because they supply good quality seeds compared to government seed suppliers. Some

smallholder farmers interviewed had positive experiences with private input traders regarding seeds quality during their previous cultivation seasons. The farmers are evidently differentiating the quality of seeds and seedlings and say that they can move easily from the government to private seed suppliers:

*“...not only based on my experience but also from several other farmers I know, we got high production from the seeds obtained from private input traders compared to seeds from the DOA. Now I only source seeds from private input traders...”(CDVF4)*

The prices of seeds provided by the private input traders are higher than those provided by the government department. However, some smallholder farmers are still happy to go for seeds supplied by the private input traders because of its quality. The reliable nature of the input traders resulted in close relationships and interactions between smallholder farmers and input traders. As such, the reliability of the agricultural support providers is shaping the nature of interactions between the smallholder farmers and support providers.

Another example evident from the data was how the smallholder dairy farmers' views on Milco (a government milk collection centre) and Nestle (a private milk collection centre) shaped the relationship and interactions between milk collection centres and dairy farmers. Milco and Nestle were the two milk collection companies collecting milk from the dairy farmers in the Kilinochchi district at the time of data collection. Some dairy farmers were supplying milk to Milco and some to Nestle. The supply decision was mainly based on the distance between a dairy farmer's fields and the respective company's milk collection centre. The dairy farmers preferred to supply their milk to the nearest collection centre. At the time of research, dairy farmers who supplied milk to Nestle stated their distrust of the company and expressed plans to move from Nestle to Milco. The main reason for the distrust was the restricted milk collection times introduced by Nestle at their collection points. Milk collection times had been from 6.30 am to 10.30 am, but were changed recently from 6.30 am to 7.40 am. As such, the women farmers who make up most dairy farmers are upset by this change because they would struggle to supply their milk in this reduced timeframe because of the other duties they have at that time of the day. The farmers believed that Nestle had purposefully restricted the time duration for milk collection to reduce the number of dairy farmers supplying milk to their

milk collection centres. According to these farmers, Nestle's relative performance and reliability around the nature of their services have been reduced. This influences the nature of interactions and relationships between the dairy farmers and Nestle private company. One of the dairy farmers who was supplying milk to Nestle during the research describes the situation as follows,

*“Recently, Nestle confined the time duration of milk collection from four hours to one hour. It is challenging to get the milk and supply to the collection centre within this one hour. As a female, I need to look after a number of duties every morning. I am always delayed, and it becomes a general practice that I carry the milk to the collection centre and return the milk to home as the collection centre closes. This is what happens nowadays to a number of dairy farmers who are supplying milk to Nestle milk collection points. You know some women dairy farmers need to walk to their cattle field to get the work done. Further to that, the Nestle people are started to blame us for our milk spoiling, and they easily return it. I think they are planning to close their collection centres near days. I have decided already. I will cancel my membership with Nestle and get a membership with Milco’s Farmer Managed Society and supply the milk to Milco. I have got distrust with Nestle.....” (MDDF2)*

The interactions and relationships between support providers and the smallholder farmers are shaped not only by the expectations of smallholder farmers regarding the interactions but also by the expectations of support providers. The following section describes the results related to these expectations.

### ***6.3.7 Smallholder farmers as opinion leaders***

This section describes how support service providers looked for opinion leaders in a farming community and how this shaped the interactions between support providers and smallholder farmers. During the interviews with input traders, they stated that they looked for opinion leaders and farmers respected by other smallholder farmers in the farming community. During their visits to villages to discuss new products, private agriculture input traders contacted experienced and large scale farmers to discuss their products. The input provider usually asked experienced farmers and those they viewed as “progressive” (that is,, farmers will try new products) to trial their products on a small scale. Upon their

satisfaction, they can adopt them. The input traders are not charging them at this stage. Because these farmers are respected in the area, other farmers, neighbours, and the younger farmers learn about the new products and are likely to purchase them. As such, some characteristics around farmers (more experience in farming, large cultivation extent) are seen to be positive and which some private input traders are targeting. The input traders consider these farmers as opinion leaders. They perceived opinion leaders as smallholder farmers who have more years of farming experience. They believe that the practices of these farmers are likely to be followed by other neighbouring farmers.

One of the field officers of a private input trader described this approach as follows,

*“... especially during introducing a new agrochemical or fertilizer, we look at the smallholder farmers’ experience in related farming, progressive farmers who are willing to try a new product. From my experience with the smallholder farmers in the district I would say if a farmer who is popular among other farmers in terms of experience, progressiveness or an owner of a large area of farm land, and if they adopted a new product and it succeeded, other farmers would follow that. Further, I also had the experience that if a farmer who is well respected by other farmers recommended practice to other farmers in the vicinity, most of them would follow it. This shapes my interaction with other farmers in the area.....”*

(Field officer of Input trader)

The next section describes the nature of interactions between the different support providers in the Kilinochchi district.

#### **6.4 Agricultural support provider – support provider interactions and relationships**

This section describes the interaction between various support providers, which include the government, government-run, non-government and private commercial support providers in the district and their interactions. The following section describes the interaction between various support providers to access smallholder farmers.

##### **6.4.1 Ways to access smallholder farmers**

A key finding from the agricultural support providers’ interviews was that they interacted with other support providers to deliver services to smallholder farmers. The officers from



NGOs like World Vision and UNDP and the development agency (FAO) stated that they access dairy farmers through Milco or the Department of Animal Production and Health (DAPH) to deliver their services. Similarly, they said that for their service delivery to crop farmers like vegetable and fruit farmers, they access them through the Department of Agriculture or the Department of Agrarian Development. In this case, the Department of Agriculture or the Department of Agrarian Development link the NGOs with the various Farmer Organizations' presidents. The NGOs were comfortable with this arrangement because they found it easier to access smallholder farmers in this way than if they had to approach farmers at the field. This was mainly because these organizations (DOA, DAD, DAPH and Milco) had a list of farmers in the district, including details about their type of farming, land area, number of cattle etc. The manager of World Vision NGO articulates how their organization accesses farmers.

*“...[we] used to contact Milco or the DOA to select farmers during our support provision. As they have the details of farmers it eases our service delivery and saves us time...” (Manager/World Vision Lanka)*

It was also evident from the smallholder farmers' interviews that there was a power dynamic operating in selecting farmers for service provision. The farmers explained the nature of the power dynamic during interviews. One of the vegetable farmers explains:

*“... if an NGO is willing to deliver seeds to a certain number (30) of groundnut farmers; initially, they contact the Department of Agrarian Development to select thirty farmers. Then the Department of Agrarian Development contact the president of the farmer organizations to select thirty groundnut farmers for distribution of seeds.....”(MDVF1)*

Because the NGO's must go through the presidents of the local farmer organisations to access farmers, the selection of those farmers is dependent on the presidents of those organizations. Some local smallholder farmers stated that the presidents' selection processes tended to be biased. They tended to select their friends, relatives and neighbours to be recipients of the service delivery. One of the vegetable farmers comments regarding the selection,

*“...I am not happy with the selection of farmers by our farmer organization president for service (input) delivery. They just select their family members, other relatives, friends and neighbouring farmers for the service provision. Our president is not genuine in the selection, they have the power and are using it. Some of us have no voice....” (LDVF1)*

The smallholder farmers further pointed out that after completing their service as the president of a farmer organization most of them nominate their friends or relatives to succeed them. Then the new president continues the same practice during his term as the previous president. This is a common practice in a number of farmer organizations in the Kilinochchi district. However, there were other farmer organizations where members expressed positive views about their organization’s president. One of the vegetable farmers stated her positive views on the activities of the president of her farmer organization.

*“...I am pleased with the activities of the current president. He is very genuine in my view. His selection of farmers for any service delivery is always justifiable. He used to select farmers who were actually in need of those services. In most of the times of farmer selection, there were gathering of all vegetable farmers at a point, and anyone can express their views regarding the selection. One of the other good things was, our president invites the Grama Niladhari<sup>15</sup> and if possible, the president of the Rural Development Society (RDS). These people know the conditions of the families in the village. Further, a member of the respective service providing organization is also present, so that they can know the selection procedure.....” (CDVF1)*

The following section describes how support providers act as intermediaries, linking smallholder farmers with other support providers.

#### **6.4.2 Intermediary action**

The area manager of Milco stated that their organization connects their smallholder farmers with other agricultural support providers that may be of use to them. By acting

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<sup>15</sup> the person responsible for the village administration

as a linking agent, Milco assists the dairy farmers with various other important services. As such, Milco played the role of a mediator. They linked their dairy farmers with government banks to access agricultural credit as part of this mediating service. Milco organised this through the dairy farmers' 'Farmer Managed Society (FMS)', and they also negotiated interest rates with the banks on behalf of their farmers. The area manager explains this service in the following quote:

*“...[we] facilitate our dairy farmer members to get loans from the state banks, we arrange farmers who need loans as a group, link them to banks and negotiating the interest rates. The secretary of the FMSs mainly do these negotiations....”*  
(Area Manager / Milco)

Milco was very particular in linking the dairy farmers with government banks and not with private banks. Since Milco is a government-run milk collection centre, it was only allowed to work with government banks (like the Peoples Bank and the Bank of Ceylon) instead of private banks or micro-credit firms. As articulated by the area manager of Milco, during the linking process, Milco is also providing the dairy farmers with another service that they are certifying FMS membership of those farmers who wishes to get loans to the banks. The area manager of Milco commented regarding this practice as follow:

*“...as we are a government-run company, the higher authority directed us to have all correspondence with government banks. Accordingly, we link the dairy farmer members with government banks such as Bank of Ceylon and Peoples Bank to borrow loans. Likewise, the payment for our farmer members for their milk supply is also carried out through government banks....”* Area Manager / Milco

Membership of the FMS provides Milco's dairy farmers with a number of benefits. Most smallholder farmers cannot obtain agricultural loans from the State banks because they do not meet the banks' eligibility requirements. For example, they need to provide two government officials as guarantors and complete much paperwork. In addition, it may take several weeks or months to access the loan. However, if they approach the State banks through Milco, they can get credit without guarantors and delays. In this case, Milco (specifically the secretary of the FMS) acted as a guarantor and the person responsible for the loan repayments of each farmer member of the group.

### ***6.4.3 Other relevant collaboration among various support service providers***

This section describes the network that exists between multiple support providers in the district and the reasons for their collaborations. Irrespective of the type of organizations, the support providers are networking among themselves for various reasons. These are described under different organization networks in the following section.

#### ***6.4.3.1 Milco and the Department of Animal Production and Health***

According to the Milco area manager, Milco was networking with the Department of Animal Production and Health for two key reasons. One is to arrange for subject matter specialists to train their dairy farmer members. For example, at the time of the research, Milco organised for their members to obtain training from the Department of Animal Production and Health on milk hygiene. Milco arranged resource persons (to run the sessions) from the Department of Animal Production and Health. According to the area manager this selection was based on the competence and expertise of the staff from the Department of Animal Production and Health. Milco organized the venue, and other relevant requirements for the training and the training were carried out by the Department of Animal Production and Health.

The second reason that Milco was networking with the Department of Animal Production and Health was to avoid duplication in dairy farmer selection for various service deliveries. As stated by the Milco area manager, several NGOs were accessing dairy farmers through Milco and the Department of Animal Production and Health to provide them with services (for example, distribution of milking cans) because these two organizations have dairy farmer members. While almost all the dairy farmers were having their memberships with the Department of Animal Production and Health some farmers supply their milk to Milco and some to Nestle in the Kilinochchi district. In cases where the Department of Animal Production and Health and the Milco were involved in selecting dairy farmers to supply milking cans, there might be some duplication in the farmer selection. As articulated by the area manager, Milco was always networking with the Department of Animal Production and Health before their beneficiary selection to avoid duplication.

#### *6.4.3.2 Milco and Agricultural Insurance Company*

Milco was networking with the government agricultural insurance board (Agricultural and Agrarian Insurance Board) to certify the dairy farmers' FMS membership. The Milco area manager explains that if a dairy farmer who has membership with their FMS wants to insure her cows with an insurance company, Milco needs to certify the particular dairy farmer's FMS membership to the respective insurance company. This membership certification is being recognized as a certification for insuring the cow of the specific dairy farmer.

#### *6.4.3.3 Milco and Non-Governmental Organizations*

As discussed in previous sections, Milco is networking with various NGOs to help their farmers to access multiple services. Further, Milco was also getting some assistance from the NGOs for their organization. For example, the manager of World Vision, an international non-governmental organization, stated that their organization provided Milco with a large milk collection tank to help with their milk collection in the Kilinochchi district.

#### *6.4.3.4 Microcredit company and government departments*

Microcredit companies were involved in the provision of microcredit to the smallholder farmers in the Kilinochchi district. According to the interviews with District managers of microcredit companies *Berendina* and *Allianz Finance*<sup>16</sup>, apart from their microcredit service, they are also involved in providing relevant training to their farmer clients. At the time of training, the microcredit companies were networking with relevant government departments based on the type of farmer clients (whether a crop farmer or dairy farmer) to arrange expertise from the departments. For example, the district manager of *Berendina* stated that their company was also involved in training their farmer clients. They used to arrange training programmes at their company premises, and these were based on the farmers' needs. For example, they organised the training on financial management, such as preparing farm budgets and calculating interest rates.

*“...based on the requests of farmers we used to provide training by arranging experts from DOA and DAPH...accordingly we are networking with relevant support providers...”* (Area Manager / *Berendina* Insurance Company)

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<sup>16</sup> Private microcredit companies

#### *6.4.3.5 Microcredit companies and private insurance companies*

The district manager of *Berendina* Microcredit Company explained that micro-credit companies have networked with private insurance companies. When a smallholder dairy farmer obtains credit from a micro-credit company to purchase a cow, they often want to insure that cow. The microcredit companies specify who the farmers must obtain insurance from and provide the link to these companies. The district manager explains the process as follows:

“...[we] are having a network with *Sanasa* insurance company. If any of our clients borrowed loan for purchasing cow and if they want to insure their animal, then we link them with *Sanasa* insurance company....” (Area Manager / *Berendina* Microcredit company)

#### *6.4.3.6 Cargills private company and various NGOs*

The agricultural officer of *Cargills* private company stated that their company was networking with the NGOs promoting fruit farming among the smallholder farmers in the district. *Cargills* private company is involved in purchasing good quality fruit and vegetables from the smallholder farmers. Few NGOs were supporting and encouraging the smallholder farmers to cultivate certain fruits like passion fruit, papaw and ash melon. These NGOs made informal agreements with *Cargills* regarding the purchase of these fruits from the smallholder farmers.

### **6.5 Summary**

This chapter describes the main results of the study. The findings from the interviews regarding the nature of services provided by the agricultural support service providers to smallholder farmers are initially provided. This provides details on various support services accessed by smallholder farmers in the case district and why they are accessing those services. Different factors that are shaping the interactions between smallholder farmers and support service providers are then provided. It is followed by the results on interactions between multiple support service providers in the district. It gives the details on how are agricultural support service providers in the district providing services to smallholders. It is evident from the results that a mix of institutional logic (for example, commercial and non-commercial logics) is used by various support service providers during their service provision. It is further evidence that support service providers use

various strategies to interact with other support service providers based on these institutional logics to provide services to smallholder farmers. The various institutional logics identified from the study and relevant strategies are discussed in the subsequent Discussion chapter.

## **CHAPTER SEVEN: DISCUSSION**

### **7.1. Introduction**

This chapter compares the findings from the study with the literature and uses information about the research context (Chapters Three and Two) to explain the differences and similarities. This chapter discusses the research findings in light of the research questions set for this study. The research questions are; (i) How are agricultural support providers providing services to smallholder farmers in northern Sri Lanka and why?; (ii) What support services are accessed by smallholder farmers in northern Sri Lanka and why? and (iii) How can agricultural services support to smallholder farmers be improved in northern Sri Lanka?. This chapter is structured into seven sections. Following the introduction, section 7.2 presents the main theoretical characteristics of the case. Section 7.3 discusses multiple agricultural support providers that exist in northern Sri Lanka. Section 7.4 discusses the nature of support services accessed by smallholder farmers. Section 7.5 discusses the institutional factors shaping the interaction between multiple actors. Section 7.6 discusses the factors shaping the nature of interactions between agricultural support service providers and smallholder farmers. Finally, section 7.7 provides a summary of the chapter.

### **7.2. The main theoretical characteristics of the case**

The important theoretical characteristics of the case are summarised in Table 7.1. The first point is that Sri Lanka is a developing country. The majority of the population are rural (nearly 77%) and primarily engaged in agricultural production and marketing (DCS, 2018b; Marambe et al., 2017). Agriculture is the livelihood of the majority in the rural sector, and it plays a crucial role in alleviating rural poverty (FAO, 2018; Marambe et al., 2017). As such, agriculture is the key income source for the majority of the rural people in Sri Lanka, especially in northern Sri Lanka, and agriculture continues to be the backbone of the Sri Lankan economy. Around 2 per cent of the population is classified as extremely poor in Sri Lanka and below the international poverty line of \$1.90 per day (World Bank, 2016). The farmers, especially smallholder farmers in Sri Lanka, are mostly poor and illiterate (CBSL, 2018; FAO, 2018). This is also the case in this study region.



Table 7. 1. Theoretically important characteristics of the case

<b>Characteristics</b>	<b>Case study classification</b>
<u>Context</u>	Developing country It is heavily reliant on agriculture Small farmers, poor and not well educated
<u>Farm characteristics</u> Farming system Average farm size Farm enterprises Spatial characteristics	Smallholder farming $\leq 2.0$ ha Mixed enterprises Gender-based farming enterprises Distance influence the support service access and provision
<u>Support services</u> Type of system Actors Extension service Service delivery method	Pluralistic system Multiple actors (Commercial & Non-commercial) Government extension service Group-based through Farmer Organizations One-on-One service provision
Civil war	Thirty years of civil war influenced service provision War ended in 2009
<u>Institutions</u> Culture	Patriarchal Division of labour based on gender
<u>Proximity</u>	Service providers are located in town area Distance between location of the service provider and farmers influences service provision

Sri Lanka has a Socialist government that continues to play a significant role in agriculture and agricultural development in all parts of Sri Lanka including the northern province. The Ministry of Agriculture, Rural Economic Affairs, Livestock Development,

Irrigation and Fisheries and Aquatic Resources Development is responsible for governing agriculture nation-wide. In particular, the Ministry is responsible for formulating and implementing related policies. According to the Ministry of Agriculture it is committed achieving its mission of bringing about prosperity by providing necessary guidance and coordination activities for sustainable development in agriculture (MoA, 2019).

In terms of the farm characteristics within the case study, the agricultural sector is dominated by smallholder farmers (FAO, 2018; Menike & Arachchi, 2016). These farmers own less than 2 ha of farmland (Esham & Garforth, 2013; Menike & Arachchi, 2016). The majority of the smallholder farmers in northern Sri Lanka are engaged in multiple farming enterprises, that includes a mix of paddy, vegetable, and fruit farming, home gardening and dairy farming. The practice of mixed farming system is mainly to get continuous income throughout the year, avoid financial hardships through risk mitigation and nutritional and food security. They believe that if one crop fails or does not make a good price in the market, others would save them. Approximately 20% of the population in Kilinochchi district (over 13, 761 farmers) engages in livestock raising as a significant livelihood strategy, and as such, cattle, milking cows in particular, constitute a significant livelihood asset for the population (Achchuthan & Rajendran, 2012; Dharmaratne, 2014; Pathmanathan et al., 2017). Further, there is a gender differentiation in farming activities. As a consequence of the labour required in different farming enterprises, some enterprises are dominated by male farmers (e.g. paddy farming), and some by female farmers (e.g. dairy farming) and this influences which support service providers are accessed by, and accessible to, men and women. Most of the paddy farmers in this area own less than 2.0 ha of paddy land, whereas other crop farmers who do not grow paddy own less than 1.0 ha of land. In case of dairy farming, the average number of cattle reared by farmers ranged from 1 – 5, with average goat numbers ranging from 1 – 5, and the average number of poultry (chickens) was in the order of 1 – 10 birds (Pathmanathan et al., 2017).

The support service system in the case study area is pluralistic. These actors include government, non-government (including national and international NGOs), government-run and private commercial entities. There is a mix of commercial entities, some are national and not reliant on farmers as clients and others are actively looking to build up the number of farmer clients and capture a secure farmer client-base. The government,

government-run, and non-governmental organizations were in operation before, during (1979 - 2009) and after the Sri Lankan civil war (from 2009) (government, government-run organizations – before, during and after the war; NGOs – from the mid-stage of the war and after the war), the private commercial entities only started operating after the war in the northern region. This means that smallholder farmers have only had experience of interactions with commercial entities (procurement and input supplier companies) since after the war.

The agricultural extension service in Sri Lanka is funded by the government and extension services are provided by government extension staff. However, several private and non-governmental organizations also provide advice to smallholder farmers. However, there are no fee-for-service extension or agricultural advisory services in Sri Lanka. Government extension agencies primarily provide group-based extension services that are managed through farmer organizations. However, a limited amount of one-on-one service provision is also carried out by government. For example, subject matter specialists from the Department of Agriculture may provide some one-on-one advice to a fruit farmer. In most cases the government agricultural support-service organizations in Sri Lanka access and/or communicate with farmers through farmer-organizations. The Department of Animal Production and Health is establishing dairy associations in different geographical locations to which dairy farmers have membership. Similarly, the Department of Agriculture and the Department of Agrarian Development are establishing farmer-organizations (e.g. paddy farmer-organizations, vegetable farmer-organizations) in different geographical locations. As such, the farmer organizations in the district facilitate access and communication between support service provider and farmers. Similarly, farmers were also contacting the support providers mostly through farmer-organizations, except in a few cases individual farmers contact the support provider.

Sri Lanka is a country that has been affected by thirty years (from 1979 - 2009) of civil war, and this has shaped agricultural support service provision to smallholder farmers and farmers' expectations of service provision in the post-war period, especially in northern Sri Lanka. The war occurred in the northern and eastern provinces of Sri Lanka. However, the war impacts were significant in northern Sri Lanka, where the final military operations were carried out (Goodhand, 2012; Mittal, 2015; Pathmanathan et al., 2017). During the war, the LTTE's *de facto* government provided agricultural support services

to smallholder farmers (Korf, 2006; Kubota, 2017), with assistance provided by government officials attached to the Department of Agriculture (DOA), the Department of Agrarian Development and the Department of Animal Production and Health. Although the de facto government is no longer there the people who were working in the Government departments are still the people who are in the departments. So, although the Government may have changed the people working with farmers in many instances are the same people.

The culture of the Sri Lankan population is patriarchal in nature. Because of the labour involved in different farming activities there is a division of labour based on gender in smallholder farming households. For example, paddy farming is predominantly carried out by male farmers and dairying is dominated by female farmers.

The following section describes the multiple agricultural support providers that exist in northern Sri Lanka and the nature of services provided by them. In terms of answering the research questions, the research has identified the value of looking at the mix of services, how they are provided in terms of understanding the nature of service provision to smallholder farmers and farmers' access to those services. Existing literature related to forms of service provision with farmers has tended to explore one aspect of the service, for example, advice (e.g. Fisher, 2013; Hilkens et al., 2018; James and Sykuta, 2006; Sutherland et al. 2013). Further, there are few studies in Sri Lanka or in other developing countries related to service mix and how they are provided to farmers.

### **7.3. The agricultural support service providers in northern Sri Lanka**

Agricultural support service provision to small-holder farmers is the focus of this research. The focus on a developing country has not been explored in the literature to date. The provision of advice has received extensive attention in the developing and developed country literature (Fisher, 2013; James and Sykuta, 2006; Hilkens et al., 2018; Kemp et al., 2000), however, it has in the main been analysed in isolation of other dimensions of the relationship between service providers and farmers (Fisher, 2013; James and Sykuta, 2006; Hilkens et al., 2018; Kemp et al., 2000), including small-holder farmers (Newman & Briggeman, 2016; Sutherland et al., 2013; Batt & Rexha, 2000). The types of services and mix of services (including advice) that constitute agricultural service provision and how these services are provided to small holder farmers and why in

Northern Sri Lanka is therefore an important contribution to the innovation systems and rural development literature. As there has not to date been an exploration of the mix of services provided to smallholder farmers, this section catalogues the type of providers in terms of commercial and public service/ non-commercial logics and the mix of services provided.

This section outlines the multiple types of support service providers that were found to exist in northern Sri Lanka, the service mix and the institutional logics reflected in the services provided and how the services are provided. The nature of how services are provided and what shapes service provision to smallholder farmers can be best illustrated by placing service providers on a continuum from those whose service provision reflects a public service logic to those whose service provision reflects a commercial logic, and the entities exhibiting a mix of logics along that continuum. Figure 7.1 illustrates the continuum.

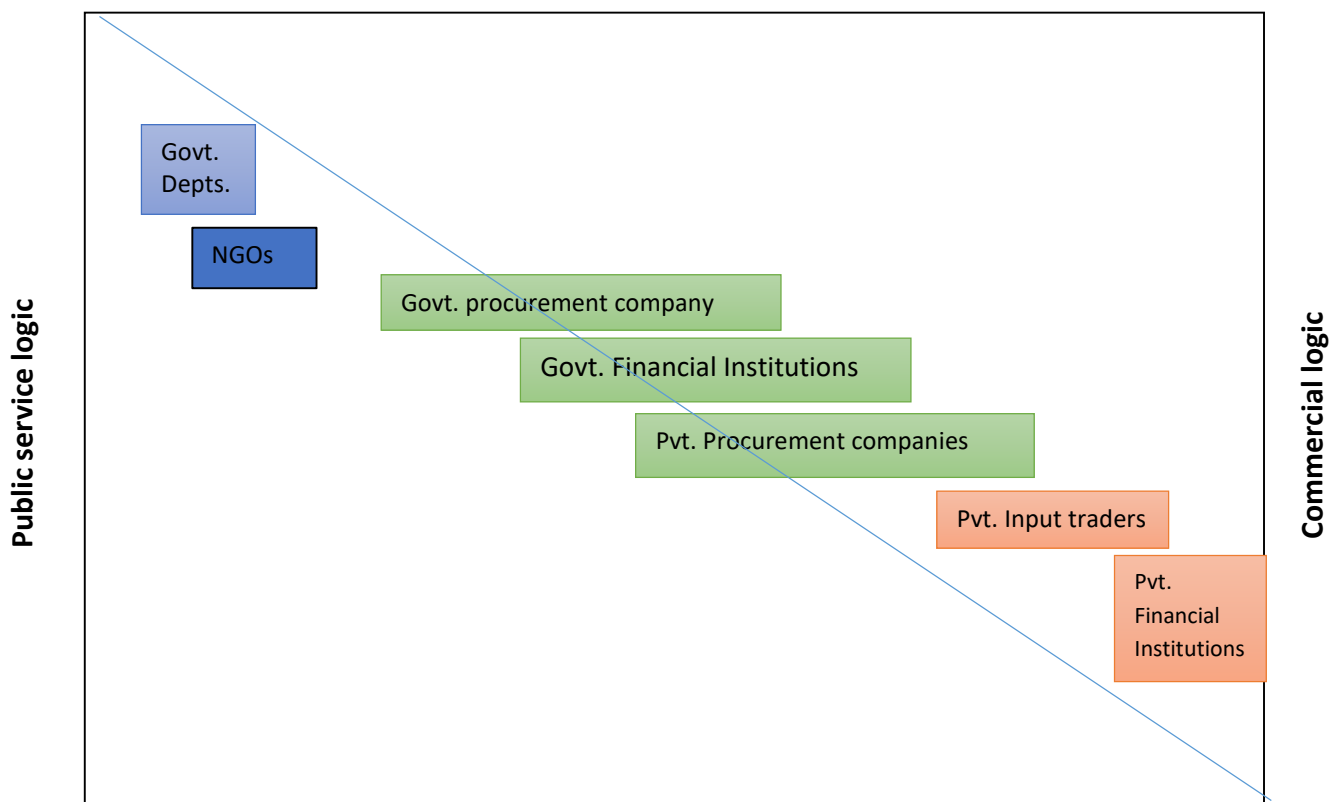


Figure 7. 1. The continuum of support service providers exists in northern Sri Lanka

A continuum of the support service providers is useful to explore the nature of interactions in terms of institutional logics. The support service providers in this research fall into a continuum based on their mix of services that reflect a mix of commercial and non-commercial logics. The two main institutional logics identified in the study are, 1) public service logic and 2) commercial logic.

### **Public service/ non-commercial logic shaping service provision**

The public service logic is evident in services that do not include any relationship with money, and accordingly there is no commercial component in that relationship. This is not to say the type of service provided is different to other support service providers for example supplying inputs. However, when inputs are provided by providers with a public service logic they are provided subsidised or for free rather than as part of a commercial transaction and smallholders have limited or no choice as to the type of input and there is no accountability for quality of service including quality of inputs. The primary services of SSP illustrating a public service logic are provided to farmers for free including advice and inputs. However, advice is generally not provided proactively in response to direct inquiries from farmers and the inputs that are provided are not in response to requests from farmers but are those made available and defined by the entity funding the inputs, either Government or NGOs. The government organizations and NGOs are servicing the smallholder farmers with a public service logic. Although NGOs may be primarily guided by a project logic, the nature of their interaction with farmers reflects more of a public service logic because NGOs in Sri Lanka are required by Government to provide services through Government department staff in for example the Department of Agriculture.

Among the support service providers who operate in northern Sri Lanka, some support service providers only operate with public service logics, some only with the commercial logic, and some with a mix of both public service and commercial logics. The government departments are operating with a public service logic which is a non-commercial logic with non-profit motivation. The primary service provision role of these organizations is providing advice to farmers (DOA, 2019; DAD, 2014; DAPH, 2019). Further, these organizations are also engaged in free and subsidized input provision to smallholder farmers (DAD, 2014; DAPH, 2019).

As highlighted above it is a requirement in Sri Lanka that NGOs (Non-commercial/ project logic) provide services not directly but through government personnel. This

arrangement is not unique to Sri Lanka with examples of NGOs in other countries working through the government networks of staff to access smallholder farmers. This arrangement means that smallholder's access to services provided by NGOs will reflect the extent of farmer networks and motivation of government personnel to proactively provide access for farmers to these services. The strengths, biases, or membership of farmer organisations (the key mechanism for government to access smallholder farmers) will also therefore impact on who accesses which services from NGOs as it does for Government services.

### **Commercial Logic shaping service provision**

The commercial logic constitutes the services that are related to making a profit or financial gain, in or through the relationship agricultural support service providers and farmers. The procurement and input supplying firms and financial institutions (banks, microcredit and insurance) are operating with a commercial logic in their relationships with small holder farmers in this research. These organizations' primary service to farmers is a commercial service.

The service mix provided by commercial service providers is identified in this research as being influenced by: the commercial strength of the provider including the presence or otherwise of direct competitors; the reliance on local farmer clients for commercial success; the demand from farmers for their services and the within organisational capability to provide services or links to services beyond their primary service to smallholders.

The procurement and marketing firms are primarily operating with a commercial logic in their service provision and relationship with smallholder farmers. However, there is variation among these firms in the way they operate. The mix of services and how services are provided is influenced by similar factors to that identified earlier in relation to commercial providers' mix of services. However, the need to enlarge the local smallholder client base and secure long-term commercial relationships with farmers emerged from this research as key aspects as shaping how services were provided. Input suppliers, Milco and Nestle were in a position where they were seeking to secure farm clients. Milco and Nestle were in direct competition with each other for dairy farmer clients but Nestle were not as strong commercially, nor did they apparently have the capacity to provide the mix of services or to be as responsive to farmer demands.

Nestle is primarily driven by a commercial logic. But they see the value of providing smallholder farmers access to other services, including advice and this adding value to their relationship with farmers. Similarly, apart from collection and marketing of milk, Milco also links dairy farmers to other services, including advice. As such, they are also adding value to their relationship with farmers. One of the key findings from this study is that service providers seek to add value to their relationship with farmers through the non-commercial provision (or linking to the provision) of certain types of services. Cargills on the other hand are not in competition with another commercial actor and have the advantage of having farmers demanding to supply product to them, they are in a strong commercial position and have the capability also to provide technical support to their farmer suppliers. Although they provide advice to farmers, they do so to ensure the quality of the product being provided to them rather than as a way to build a loyal client base.

The operations of the financial entities are mostly towards commercial logics and very much profit oriented. However, there are variations within the commercial logic in terms of the nature of the relationship, and whether they seek to build a relationship with farmers. A commercial logic primarily shapes the interactions between farmers and the state banks. At a broader level, the State banks also shape the context in which banking services are provided to smallholder farmers (e.g. determining the interest rate). In terms of their interactions with farmers, the state banks and the state insurance companies do not provide other services in order to build and add value to their relationship with farmers.

Input traders provide quality inputs. Part of the agenda in providing quality inputs (e.g. hybrid seeds) is to build and retain a client-base. The advice provided by the input traders is free of charge and responsive to the individual needs of farmers and is not limited to advice related to inputs or a commercial transaction with the farmer.

### ***The nature of advice provided by the support service providers***

Advice is provided directly and indirectly by a range of support service providers, from government to commercial organizations. For those providers for whom advice is not a component of the primary service provided to farmers (E.g. non-government) advice is adding value to the overall relationship service providers have with farmers. Three types of advice were identified in the study:



1. Advice on how to use the products provided by the service provider
2. Advice linked with ensuring quality of agricultural product supplied by the farmer
3. Advice beyond the primary service and in response to farmer inquiries (broader advice)

As is highlighted in this thesis those commercial service providers seeking to broaden their client base and retain long term relationships in the Kilinochchi district were proactive in the way they provided services including advice. This suggests that these providers were aware of the expectation's farmers have of 'good' service and worked to match these expectations.

Most agricultural support service provision to small-holders is identified as comprising multiple services and advice is a component of a high proportion of the service provider: small-holder interactions, but for different reasons. In the relationship between financial management service providers and farmers in New Zealand Hilken et al. (2018) highlighted that advice in the interactions was both an indicator of trust and a contributor to the building of trust. The centrality of trust to farmer advisor interactions has likewise been emphasised by other scholars (Newman & Briggeman, 2016; Sutherland et al., 2013; Batt & Rexha, 2000).

Advice as a component of services for those some service providers with a commercial logic adds value to the relationship between the service provider and farmers in line with the commercial agenda. This is particularly the case for those marketing companies who are seeking to secure smallholder farmer clients and retain them as clients in the longer term. The link between advice and long-term relationships has been highlighted by other scholars, in both a developing country (e.g. Batt & Rexha, 2000; Masuku, Kirsten, van Rooyan, & Perret, 2003) and developed country context (Newman & Briggeman, 2016b; Sutherland et al., 2013). but has generally also been associated with trust in the relationships. The lack of apparent distrust or need to build trust in smallholders' interactions with commercial and non-commercial service providers in this research distinguishes this research from that previously reported. It is likely that this characteristic is due to the relatively short period of time farmers in the Northern part of Sri Lanka have been exposed to commercial interactions with service providers and to date, apart from some microcredit providers, farmers have not had negative experiences in these interactions. Further, commercial service providers including marketers and input

providers are interacting in the Kilinochchi district with farmers in a way that meets farmers' expectations of service provision that is grounded in their experiences of government provision of services during the war. The expectations of smallholders that are not dissimilar to those reported by other scholars: a willingness by providers to be responsive to requests from farmers (e.g. Ezezika and Oh, 2012; Newman & Briggeman, 2016); one on one contact in farmers' fields (e.g. Fisher, 2013; Hilkens et al., 2018; Sutherland et al., 2013) quality of products (e.g. Agunga and Igodan, 2007 Masuku et al., 2003).

The following section discusses the support services provided by similar types of support service providers.

### *The nature of support services provided by similar types support service providers*

There is three procurement and marketing firms in northern Sri Lanka. Product procurement is the primary service to these three procurement and marketing firms. Apart from this primary service, these entities engaged in other secondary service provision. This secondary service mix includes the provision of advice, training, inputs and financial assistance.

For all procurement providers, advice was a dimension of the relationship with smallholder farmers. However, there were differences in advice provision that reflected advisory capability and capacity within the procurement providers. One company (Cargills) engaged in advice provision to smallholder farmers by using field staff (Agricultural Officer) positioned in the company. The advice is associated with ensuring smallholder growers that supply Cargills meet product expectations and reflects the commercial logic of the provider. The remaining procurement providers do not have inhouse technical capability to provide advice but instead act as an intermediary and link farmer who have a need for advice (both demanded and identified as required) to Government advisory services (Department of Animal Production and Health).

Similar to advice, training was provided as secondary service by the procurement firms. As with advice provision training was provided by Cargill's agricultural officers and the training provided was linked to their commercial logic and focused on how to produce good quality fruits and vegetables at the initial stages of cultivation. Further, smallholder

farmers in the district wish to supply their produce to Cargills mainly for two reasons, (i) to get good prices for their produce, and (ii) they can get a reputation as a client of Cargills.

Further to these services, three of these procurement companies provide free inputs to their clients. For example, the provision of milking cans to their member farmers by Milco and Nestle and provision of planting materials to their client farmers by Cargills. Milco also acted as an intermediary to link smallholder farmers with the state banks and state insurance companies to obtain loans and insurance services. It is likely Milco, as a commercial entity, but also government run was in a better position to link farmers to the state banks and state insurance company. The varied and multiple services Milco provided to and/or linked smallholder dairy farmers to in the area is argued to have increased the competitiveness of Milco compared to Nestle and gave it a unique advantage in this setting. In this research, although both actors reflect a commercial logic in their interactions with farmers, the public service logic demonstrated by Milco contributed to a commercial advantage.

This research has identified the value of looking at the mix of services, how they are provided in terms of understanding the nature of service provision to smallholder farmers and farmers' access to those services, whereas other literature has predominantly looked at one service, for example, advice. However, these studies may lose the richness of understanding of other components of the relationships.

The subsequent section discusses the nature of agricultural support services accessed by smallholder farmers in northern Sri Lanka.

#### **7.4. The nature of the support services accessed by smallholder farmers**

Gender influenced farmers access to service provision in this research. As different farm enterprises are the distinct domain of men or women some services were accessed by men and some by women. Dairying is a predominantly female activity and as a result those services provided by or through the Milk marketers (like Milco and Nestle) tended to be targeted and provided to women farmers. Likewise, for paddy and men. Where service provision was facilitated through farmer organizations biased and preferential targeting of services did occur in some instances. As men tended to dominate leadership of some

farmer organisations non family members and associated men tended to receive more services.

Further, women farmers who farmed further than 20 km from the Kilinochchi town, reported that certain support providers had ignored them during service provision. The majority of the presidents of farmer organizations are male, in most cases, they select their male friends and relatives for service provision. However, this was not the case for the women farmers from the dairying sector, as women are in-charge for the dairy farmer-managed societies. Various studies (Hoang et al., 2006; Lahai et al., 1999; Saima et al., 2005) have found that gender issues are particularly critical in support service access in developing countries. The authors of these studies (Hoang et al., 2006; Lahai et al., 1999; Saima et al., 2005) demonstrated the difficulties faced by women farmers in obtaining advisory services, specifically when they are supervised by a male extension officer.

In the current study, smallholder farmers are seeking advice and information from private traders, unlike other studies (e.g. Klerkx and Janson, 2010) there was no evidence of farmer concern around biased advice from these traders. Many of the farmers interviewed are not willing to approach the government sources advice, as their experiences with these entities were not positive. In the current study, the advisory services provided by private input traders are demand-oriented, which are based on farmer needs. However, most of the advisory services provided by government organizations are supply-oriented reflecting the public-service logic. As such, the government dictates what advice will be given to farmers, whereas private input traders provide advice to farmers on the areas they seek advice. In their study on fit between the advisory service provision and demands of farmers, Agunga and Igodan (2007) show that farmers in Ohio State of United States who are involved in sustainable farming do not maintain relationship and interactions with advisory service organizations because they are not satisfied with service provided. Majority of the farmers do not feel that the advisory officers neither understand the needs of sustainable agriculture farmers nor have the skills to assist them. Therefore, in both developing and developed countries it would appear that farmers will choose to not seek out free advice if it does not meet farmers' expectations of 'good' advice.

The smallholder farmers in the region accessed microcredit for various reasons. The key reasons that emerged from the study include; (i) ease of access /amount of effort required

to access the service; (ii) familiarity with implications of entering into and receiving the service; (iii) level of autonomy given to farmers as to how they utilize the service once accessed; (iv) amount of bureaucracy and paper work involved to get the credit; (v) and the degree of push used by the companies in targeting people. Several other researchers have studied the reasons smallholders access credit from microcredit companies (Case, Garrib, Menendez, & Olgiati, 2013; Gray & Dowd-Urbe, 2013; Krishna, 2010; Thornton, Kerslake, & Binns, 2010). The reasons found include; poverty, lack of capital and the need for money to meet social obligations like weddings and funerals. Microcredit companies have been highlighted by other scholars as acting in what could be argued to be a harsh and unethical manner (e.g. Cochrane and Thornton (2017)). This was not the experience of all smallholder farmers in this research, but it was for some. The lack of experience in dealing in this type of transaction was an important contributor as to why some smallholder farmers found themselves in difficulty with the microcredit companies. Some of the companies also did act unethically, targeting women for whom borrowing money was a completely new activity and then seeking redress without apparent concern for the individuals or the reputation of the microcredit companies name.

As with utilizing microcredit companies, many of the smallholder farmers interviewed in the Kilinochchi district had no experience or knowledge about agricultural insurance schemes. A few farmers had obtained crop insurance; however, when they did experience a drought, compensation was not paid. Accordingly, those farmers were not willing to insure their crops again. A number of studies were carried out on agricultural insurance schemes in developing countries in relation to a comparison between self-insurance and risk-insurance in India (Mushfiq & Rosenzweig, 2013), factors shaping the adoption of insurance in Ghana (Karlán, Osei, Osei-Akoto, & Udry, 2014), and index-based insurance for developing countries (Carter, de Janvry, Sadoulet, & Sarris, 2014). A study carried out by Ramiro (2009) in Africa, Latin America and Asia concluded that majority of the smallholder farmers in developing countries (as has been illustrated in this research) have simply no experience with the concept and practice of insurance. The role of a trusted intermediary in linking farmers to services they are unfamiliar with is highlighted in this research. Milco, though its association with Government, was linking farmers to state financial institutions.

All the above studies discussed are related to a particular support service and these studies have not researched the nature of interactions between smallholder farmers and agricultural support service providers.

### **7.5. The institutional logics shaping the interactions between multiple actors**

This section discusses the institutional factors shaping the interactions between various service providers and farmers in the Kilinochchi district. It focuses on institutional logics, and how they influence or shape relationships between service providers. It is evident from the current study that multiple support organizations interact with each other to achieve their goals in service provision. The interactions in this research are between service providers with public service, commercial and mixed logics. The interactions can be explained through the concept of institutional logics (Cleaver, 2012; de Koning & Cleaver, 2012; Jill & Gray, 2009; Kurtmollaiev et al., 2018). The institutional logics of the support providers influence the nature of their collaboration, and they act according to their institutional logic/s.

Commercial providers linked farmers to non-commercial provider but not to other providers with whom they are in competition. The collaboration (or linking) occurred when the primary service provided by the providers was not the same as the other provider. Linking or collaboration occurred when there was value inherent in the service farmers were linked to that reflected positively on the relationship between the smallholder farmers and the linking provider. Phillipson et al. (2016) highlighted the reciprocity and cooperation between advisory providers when the services that others provided differed to what they provided to farmers. The findings in this research reflect those of Phillipson et al. (2016) and likewise illustrate the influence a commercial logic has on the nature of cooperation between providers. This research further emphasises the value this cooperation between providers has on the relationship between smallholder farmers and providers.

Competitors with a commercial logic seeking to secure farmer loyalty in this research used the provision of advice (among other things) both directly and indirectly as a way to secure loyalty. The role of advice in building a trusted relationship has been identified previously (Fisher, 2013; Hilkens et al., 2018; Kemp et al., 2000; Newman & Briggeman, 2016; Sutherland et al., 2013) but it has also been highlighted as potentially undermining

the relationship if the advice is biased (e.g. Klerkx and Janson, 2010). The socio-political context in which these interactions are occurring is shown in this research to shape the nature of the interactions between providers and between providers and farmers and the role of certain services including advice in those interactions. The historical experiences of farmers with certain providers (e.g. Government) shaped farmers' expectations of service provision but also their willingness to engage with these providers and this reflects findings from elsewhere (e.g. Sutherland et al. 2013; Hall & Pretty 2008). The relative novelty of and lack of distrust farmers illustrated in engaging in commercial interactions in this research contrasts with farmers from other contexts with a history of interactions including negative experiences. The informal institutions farmers appear to associate with commercial interactions are the same as those they associate with non-commercial ones (Government) and these are based on their experience with Government (*de facto*) during the war. It is highly likely that with time and a different mix of experiences in these interactions, that there will be negotiation, alignment and modification of these institutions and also what constitutes the logics of the service providers.

The support service providers interact among themselves to create a service ecosystem. The level and nature of interaction is shaped by their institutional logic. The commercial service providers cooperate with other service providers with whom they are not in competition for a primary service they provide to farmers. They cooperate, but it seems like the cooperation adds value to their commercial relationships with farmers. These providers do not have internal capability to offer such service. Through their interactions, the commercial support providers are minimising transaction costs vis aggregating smallholder farmers. Even support providers with commercial logic also integrate as far as their business models are non-competing (Figure 7.2).

Government is a non-commercial service provider with a public service logic. It is a legislative requirement that NGOs work with and through government in Northern Sri Lanka. This is a form of cooperation but one that is mandated and is influences smallholders' relationship with NGOs. The government access farmers, not on one to one basis, but through establishing farmer organizations associated with types of enterprises (e.g. paddy and dairy). As such, NGOs find it easy of accessing farmers as these organizations have the names and other relevant details of respective farmers. It is likely

that complementarities exist for NGOs in working through Government, as they can access farmers through Government networks to farmers including farmer organisations.

There is a triangular relationship between government, NGOs and farmers. Similarly, there are other examples evident in the current study where the procurement agencies network with other actors in the system to provide services to farmers (Figure 7.2). As such, by interacting with other actors in the system, complementarities for each entity are realised. This emphasizes the role of multiple actors and their interactions within the agricultural support system.

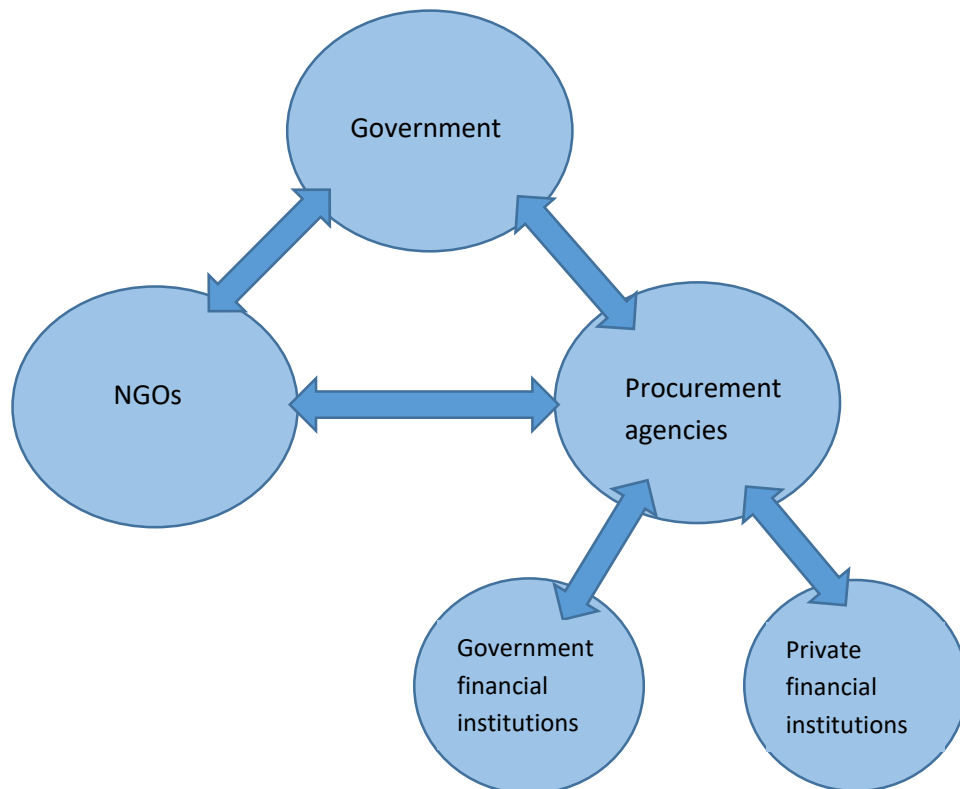


Figure 7. 2. Service provision ecosystem

There are number of examples of cooperation happening between certain types of support providers. Phillipson et al. (2016) found cooperation between advisory service providers when providers were not in direct competition. Even when the primary service to farmers was advice, when another provided a different type of advice (more highly specialised) providers cooperated (Phillipson et al. 2016). So, cooperation is not limited to providers



providing different services but also to those where the type of a similar service differs such that they are not in competition.

In the current study, the government cooperated with several support providers. In Sri Lanka the government continues to play a central role in service provision to farmers. Whereas, in the study carried out by Phillipson et al. (2016), which was carried out in UK, the government is not a part of the service mix, all service providers were private commercial operators although advice was not necessarily the foundation for their commercial relationship with farmers. In this research although the Government provides a similar type of service to smallholder farmers they are not viewed as competition by other commercial service providers. It is likely this reflects the view of many farmers that the overall quality of service of the government does not match their expectations compared to services provided by other providers with a commercial interest in their transactions with farmers. However, as highlighted earlier, when the service provided by government is not a component of the service provided by a commercial provider, linking farmers to government by the commercial provider is complementary for both government and other providers.

Input suppliers are commercial suppliers but were not found to collaborate with other providers in this research. Like procurement agencies, input suppliers are also seeking to build a loyal client-base. However, at the time the research was undertaken, although there were multiple input providers vying for smallholder clients a pool of prospective clients still existed and there was no evidence of competitive activity with providers other than input suppliers nor cooperation by the providers.

Input suppliers add value to their relationship with farmers through a number of means in addition to providing inputs; they provide credit and advice. In contrast with the dairy procurement agencies, the pool of farmer clients, was relatively small and there was competition amongst them for farmer suppliers.

Different institutional logics are evident in the various services support providers provided to farmers, and in the overall manner in which they interact with farmers and other providers. Both commercial and public service logics are evident in the institutional logic of Government, procurement and marketing firm, and financial institutions. The

mix of logics that comprise service providers' institutional logic, results suggest, shapes their interactions with farmers, how different services are provided and how they interact with other providers. The existence of a public service logic directly reflects the presence of government in service provision in the research context.

The importance of interactions between multiple support providers is evident in various agricultural innovation systems literature (Clark et al., 2003; Ekboir & Parellada, 2002; Hall et al., 2002; Stelling et al., 2009). All studies highlighted that creating a network, which connects individuals from multiple organizations has mobilized complementarities (Clark et al., 2003; Ekboir & Parellada, 2002; Hall et al., 2002; Stelling et al., 2009). Further, other scholars (Agunga and Igodan, 2007; Bourne et al., 2017; Fisher, 2013; Gray & Dowd-Uribe, 2013; Hilkens et al., 2018; Ingram, 2008; James & Sykuta, 2006; Kemp et al., 2000) have identified the types of services that are provided. However, they have not linked that services with a mix of services and also how they reflect particular institutional logics of the organization. For example, advisory literature talks about advice and other relationships, but does not show what other relationships and services. The current study demonstrates the range of services the support providers have provided.

#### **7.6 Factors shaping the nature of the interaction between agricultural support service providers and smallholder farmers**

This section discusses the institutional factors shaping the interactions between various agricultural support service providers and smallholder farmers in the Kilinochchi district. It focuses on trust attributes, and how they influence or shape relationships between service providers and smallholder farmers. It is evident in the study that trust attributes like loyalty, reliability, accountability and technical competency shaped the relationships between smallholder farmers and agricultural support service providers (Figure 7.3). The relationships between agricultural support service providers and smallholder farmers have one or more of these trust attributes, but in varying degrees. Accordingly, there are varying mixes of these attributes influencing farmers' relationships with support providers. From the perspective of smallholder farmers, their relationships with support providers are influenced by the particular mix of attributes and the relative level of them in the relationships.

The composition of trust attributes in smallholders' relationship with agricultural support service providers is influenced by the regularity of visits by the support providers to smallholder farmers' fields. The key thing identified here is that the composition of the trust attributes and the degree of them is influenced by the quality of the product, the responsiveness of support providers to demands and enquiries of farmers and their willingness to visit farmers' fields and whether or not they meet their expectations relative to historical experiences. Those expectations are also reflected in the responsiveness of support providers to farmer's demands and the quality of the products.

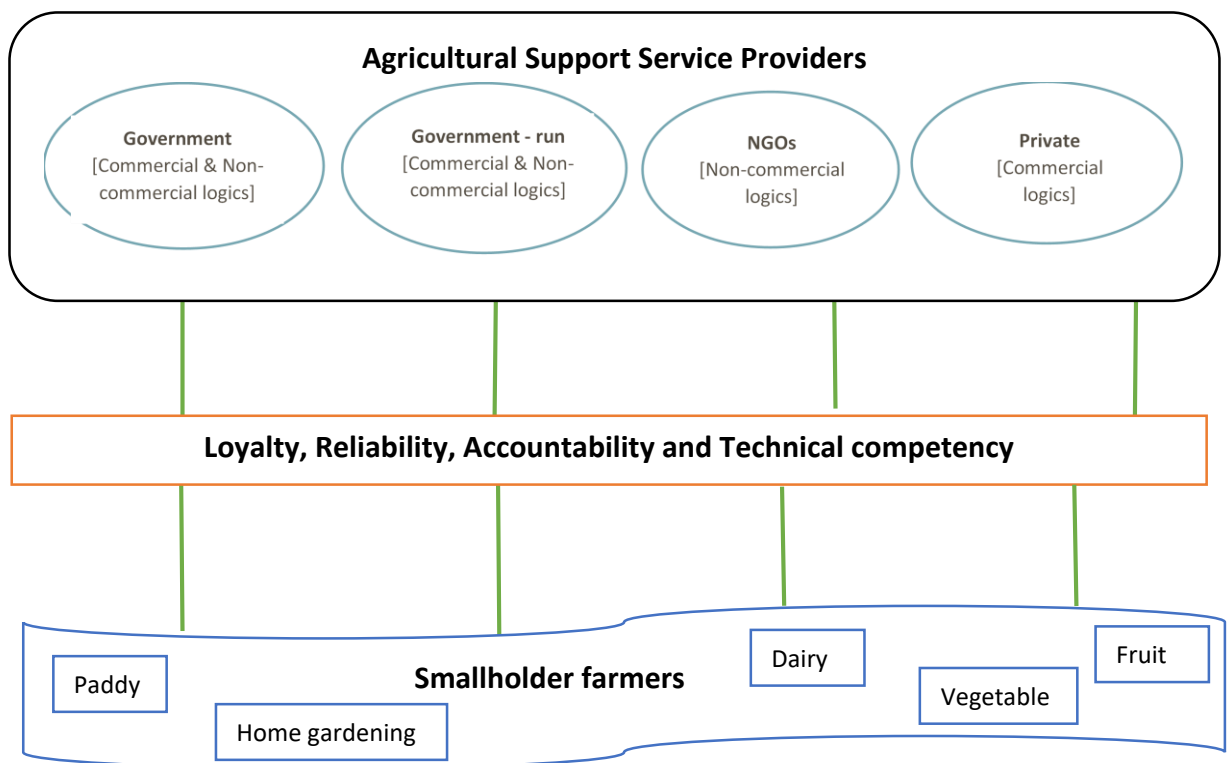


Figure 7.3. The nature of interactions between smallholder farmers and agricultural support service provider

As identified by other scholars (e.g. Ezezika & Oh, 2012a; Fisher, 2013; Hilkens, Reid, Klerkx, & Gray, 2018; Kemp, Williams, Gray, Gardner, & Kuiper, 2000), trust attributes help explain the nature of relationships between smallholder farmers and agricultural support service providers in Sri Lanka. The literature says that the trust attributes are both indicators of trust and contribute to building up trust (Hall & Pretty, 2008; Kilelu, Klerkx,

& Leeuwis, 2017; Stathers, Bechoff, Sindi, Low, & Ndyetabula, 2013; Sutherland et al., 2013). But the literature to date has not tend to provide details around mix of services (with advisory service or not) or the dynamics between the mix of services and how the services are provided and the role of trust attributes in the relationship between farmers and service providers.

The research has shown that it is important to differentiate between types of advice. Whereas other scholars tend to only differentiate types of advisers (Ingram, 2008; Kilelu, Klerkx, & Leeuwis, 2017) this research also highlights the role different forms of advice play in the relationships between service providers and farmers as well as the role of advice alongside other services. The following types of advice have been evidenced in the study.

1. Advice that is provided by the support providers in line with a commercial product.
2. Advice farmers seek from service providers not related to the product that suppliers are providing
3. Advice that is linked to the quality of the product being supplied to the support providers

I have deleted this as it is not clear what it means nor is it a complete sentence. The type(s) of advice present in a relationship shapes the relationships between smallholder farmers and support service providers but is also indicative of the nature of trust in the relationship as has been found by Hilkens et al. (Reference date). The smallholder farmers tend to show a high level of trust with the support providers who provide a mix of services and illustrate behavior farmers associate with good service – visiting farmers' fields, responsive, reliable. A component of the services provided in these trusting relationships is advice, but farmers also tend to seek advice from service providers with whom they have these relationships. However, the literature generally doesn't differentiate advice into different types of advice (e.g. Compagnone & Simon, 2018b; Ingram, 2008; Phillipson, Proctor, Emery, & Lowe, 2016; Sutherland et al., 2013).

Overall, farmers' expectations of support providers are influenced by historical experiences. The historical experiences of farmers in this study influenced smallholder farmers' expectations of support providers in terms of loyalty, reliability and

accountability (Figure 7.3). The results of the study suggest that the historical experiences provide the basis for trust attributes farmers seek in service provision. They influence smallholder farmers' expectations of the attributes; the level of loyalty, reliability, accountability and technical competency in their relationship with support providers. The historical experiences influenced smallholder farmers' expectations of support providers on technical competency. Further, the evidence strongly shows that the presence of commercial operators in the mix of service providers, particularly input providers, have influenced smallholder farmers' expectations of all support providers including Government. This would suggest that the specific attributes that constitute trust in the relationships between farmers and service providers is context and potentially also culturally specific. This is an area that requires further research.

The results are influenced by the relatively new introduction of the commercial logic for farmers in their relationships with support service providers and as stated above this has then influenced farmers' expectations of their relationship with government and non-commercial providers. The presence of a commercial logic is influencing farmers' expectations of the trust attributes. In terms of these trust attributes, the results suggest that when there is commercial logic and competition between commercial service providers the agricultural support service providers provide a mix of services in a way that will promote loyalty from farmers. The manner in which services were provided matched farmers historically formed expectations of good service and service providers realized the value of offering a mix of services to farmers including unbiased advice.

It is also highlighted that the presence of commercial operators (commercial logic) among support providers influenced smallholder farmers' expectations of these trust attributes in their relationship with all support providers, not just the commercial ones. In any particular context, the particular behavior of the support providers, the nature of their service and how they deliver that service might be viewed differently. The behavior and practices of support providers and the nature of that service in itself do not influence trust, but the extent to which how support providers provide their services and interact with farmers, matches the expectations of farmers influence trust.

There is a growing awareness of commercial relationships among the smallholder farmers in the study area. Now, there are elements where farmers can make choices between

multiple and different service providers, whereas previously government was the only service provider. Establishing loyalty is now becoming complicated because many other things contribute to it or influence it, and that was not the case previously. A wider breadth of considerations now influences farmers' loyalty to service providers, because there is a choice and a variety of service providers, and different mixes of services provided by the support providers. Furthermore, trust attributes have also been influenced by choice, having a diversity of service provision, having a choice across, the behavior of support providers, quality of products, and responsiveness. The results illustrate how the constituents of trust attributes are influenced by having a choice. Where farmers can choose, and there is a diversity of components comprising services in terms of what constitutes quality and the mix and types of services.

On the other hand, from the agricultural support service providers, their relationship with smallholder farmers is influenced by their logics. Trust attributes influence the support providers' relationship with smallholder farmers, and it varies among support service providers, i.e. the degree of and mix of attributes are varying.

### **The dynamics of post-war scenario**

It is evident from the study that, with the entrance of commercial service providers after the war there is a strong trend for farmers to willingly choose to use these providers ahead of government. However, the services provided by government are utilized when farmers are linked to them through commercial providers or when there is no alternative.

What may seem somewhat surprising, there was no evidence that smallholder farmers' willingness to engage with service providers had been influenced by their experiences during the war. Little evidence emerged in this research that indicated the effect of war on farmers' acceptance of service provision or support providers' interactions with farmers, except for the evidence that highlighted farmers' expectations around the service were very much based around their experiences of the service provision provided by the de facto government during war.

### **7.7. Summary**

The current nature of agricultural support services system of northern Sri Lanka is discussed in this chapter in relation to relevant concepts. The results from the study

illustrate that the broader context and support services system of northern Sri Lanka, in which interactions between smallholder farmers and agricultural support service providers and interactions between multiple agricultural support service providers are taking place. However, these interactions are shaped by various institutional factors, which result in the current nature of the support system including the presence of government as a service provider to smallholder farmers. These factors are discussed in this chapter. The current study views the support services system holistically where advice is a component of services to some support providers. The interactions between multiple support service providers, whether cooperation or competition, are shaped by the institutional logic of the respective organizations. Further, the smallholder farmers' current expectations for support service provision is in part shaped by their experience with support providers during the Sri Lankan war.

## **CHAPTER EIGHT: CONCLUSIONS**

### **8.1. Introduction**

This study was carried out to explore the smallholder farmers' agricultural support system in northern Sri Lanka. The three research questions this doctoral study answers are; (i) what agricultural support services are accessed by smallholder farmers in northern Sri Lanka and why?, (ii) How are agricultural support service providers providing services to smallholder farmers in northern Sri Lanka and why? and (iii) How can agricultural services support to smallholder farmers be improved in northern Sri Lanka?. This thesis answers the research questions from a systemic perspective drawing from innovation systems theory and the concept of institutional logic. As shown in the thesis, this theory has provided useful insights into the system of agricultural support services that currently exist in the context of northern Sri Lanka.

This is the final chapter of the thesis. This chapter initially provides answers and conclusions to the research questions and highlights the important theoretical contribution of this doctoral study. Subsequently, the practical implications and limitations of the study are outlined. Recommendations for future research and suggestions are presented finally.

### **8.2. Key conclusions**

The Sri Lankan agriculture sector is dominated by smallholder farming. The importance of agricultural support services to smallholder farming development is well acknowledged in the literature and confirmed by the findings of this research. Through support services, smallholder farmers can access inputs, advice, information, credit, insurance, training, and markets for their produce, all of which add value to them as farmers.

To date, little was known about the interactions between smallholder farmers and agricultural support service providers, how these interactions were taking place within a support services system and what shaped the interactions. This research addresses this gap by exploring the nature of service provider and smallholder interactions in northern Sri Lanka, where farmers have only recently experienced interactions with commercial service providers.

The key conclusions derived from the study are as follows;



- The agricultural support services system in northern Sri Lanka comprises multiple providers, including commercial, private sector and mixed interests in their relationships with smallholder farmers.
- There is not a single support provider providing only advice to smallholder farmers in this context. Advice to smallholder farmers is provided in combination with other support services. For example, input supply + advice; training + advice; and credit + advice. This service mix influences which farmers access and which support services providers are accessed by smallholder farmers.
- Although private input suppliers have only relatively recently been established in the area, farmers have easily and willingly embraced these providers and are discerning in their choice of provider based on service criteria established historically. This choice is based on their engagement with the Government before and during the war.
- The smallholder farmers' current expectations on agricultural support service delivery or expectations of what a good service is are very much shaped by their experience with support providers during the war. The support provision during the war was characterised by;
  - Frequent visits of support service providers to individual farmer's fields
  - Reliability in service provision
  - Duty of care and
  - Farmer-centred service provision

These characteristics set a standard among the smallholder farmers regarding "what a good agricultural support service is".

The multiple support service providers in northern Sri Lanka are interacting with each other in support service provision. Government providers with no commercial interests collaborate with providers with commercial interests associated with their interactions with smallholder farmers. In northern Sri Lanka,

it appears, Government services are in no way seen as competitive with commercial service providers. Rather for those commercial service providers who do not or are not able to provide certain services provided by Government, they link farmer clients to Government to access these services. This linking to services adds value to the relationship between smallholders and commercial service providers.

- The smallholder farmers value regular face-to-face interactions with service providers, technical competency, reliability and accountability.
- Smallholder farmers in northern Sri Lanka seek advice from service providers who are responsive to their needs, are technically competent, reliable and accountable in their overall service provision. They are reluctant to seek advice from those providers who have historically not in their opinion, provided a high standard of service – this in the main is Government.
- Access to services are influenced by gender, not only because of the gender of the service provider as others have identified but also as a result of the gendered work activity of enterprises in agriculture. When farming activities are gender-based, then access to services will differ on that basis.
- This research highlights that smallholder farmers willingly, openly, and without distrust, engaging in relationships with commercial service providers despite having limited experience in these types of interactions. Farmers value the standard of service but also seek to supply produce to a commercial trader with a well-recognised reputation.
- When a government is a service provider and not a competitor, then a complementary relationship is there.
- This research highlights that farmers' decision on entering a new relationship with agricultural support providers is shaped by their own experiences as well as the experiences of others in their vicinity.

- The current research suggests that moving from a sole reliance on government to a broader provision of services across all support providers would be advantageous. The government is merely moving towards this, and the current research supports that move.

### **8.3. Theoretical contribution to the literature**

This doctoral study significantly contributes to the existing body of support services literature. These contributions are illustrated and outlined below.

The study argues that agricultural service provision to smallholders predominantly comprises a mix of inter-linked and complimentary services that reflect either a commercial, non-commercial, or mixed agenda. Irrespective of the primary service provided to farmers, advice is frequently one of the services made available to farmers. For those providers who have a commercial interest and have competitor providers of their primary service, the provision of advice (or providing access to advice) is used as a strategy to enhance the loyalty in the relationship between smallholders and provider.

Advice is rarely provided as a sole service to smallholder farmers but is part of a mixed portfolio of services. When advice is the primary foundation for the relationship between smallholder farmers and the provider, when the provider is Government and/or does not have a commercial agenda in their relationship with farmers, the advice tends to be driven by the providers' agenda rather than solely responsive to the needs and or demands of farmers. To date most of the literature that has explored the relationship between farmers and advisors has focussed solely on the advice component of the interaction and has not considered the mix of services that may comprise the interaction. This literature has also proposed "embedded advisors" (Klerkx and Janson, 2010) and found that advice provided as a component of a commercial transaction or relationship is likely to be biased to the commercial interests of the provider. This doctoral research challenges this stance by highlighting that this may not always be the case. Responsive unbiased advice can be a component of a commercial transaction when the service provider is seeking to build a loyal client base and strengthen the relationship with the farmer. This research highlights as does the work of Hilkens et al. (2018) the need for more nuanced research into advice in interactions between farmers and service providers including but not only advisors.

Reliability, competency, and accountability are criteria used internationally by farmers in their assessment of the standard of service provided to them by service providers. Providers who are responsive to farmers requests for service, illustrate a genuine willingness to assist and make regular and direct contact with farmers are viewed positively by farmers. Farmers specific expectations of service provision by providers are shaped by past positive experiences of service provision generally. Alternatively, farmers who have experienced poor service that has not met their expectations from a certain provider are reluctant to re-engage with that provider unless their need for services are extreme (e.g. credit from microcredit providers).

The presence of a competitive commercial imperative in a service providers' interaction with farmers, this research would suggest, is likely to enhance the overall service mix provided to farmers. When a commercial imperative exists but not competition the responsiveness of service provision is likely to be less, and advice provided targeted to the commercial agenda of the relationship rather than to the particular needs or demands of the farmers.

Trust is an important component of the relationship between agricultural service providers and smallholder farmers. However, a unique insight from this research, when farmers' historical engagement with types of service providers has not included negative experiences that have created distrust in those providers, this research suggests that farmers do not need to build trust in the relationship over time. Trust exists from the beginning and needs to be eroded over time which is counter to the position reflected in the majority of literature where it is argued and shown that trust needs to be built over time in relationships between farmers and service providers.

The current research explores the nature of interactions, in places when the respective government is involved in service provision. The studies conducted by Phillipson et al. (2016) and Compagnone and Simon (2018) are based only around advisory service. The current research explores the nature of interactions between support providers in the context when the government is maintaining a strong place in service provision.

Other literature looked at the relationships between support providers when all were commercial, but, not necessarily in competition. The current study explores the nature of

relationships between support service providers and smallholder farmers, when government is in that space, government is not a competitor to those commercial support providers.

Collaboration between commercial providers does not occur when there is competition for smallholders between service providers. Competition will exist when providers offer the same type of service and are directly competing for the same farmer clients. Commercial service providers are likely to seek to collaborate with noncommercial service providers who offer services that complement the primary commercial service they offer farmers.

To date the literature looked at the nature of services around a single service and single logic (Advice and around commercial logic). In the study by Phillipson et al. (2016), they identify there were cooperation when a provider has particular technical expertise could offer a different service that referred to them, even though it is a different service.

The current study is looking at multiple dimensions of service around a primary service. It identified the dimension around service provision; the types of service, logics of service provider and the level of competition, where Phillipson et al. (2016) did not look at all of those dimensions.

The next section discusses the implications of the study.

#### **8.4. Implications of the study**

The expectations of the smallholder farmers need to be fulfilled by the agricultural support service providers if they are to build and maintain relationships with farmers. All types of support service providers, irrespective of whether government, government-run, private or non-governmental, if wanting to engage with farmers should understand and meet the expectations of smallholder farmers very particularly, they should know that the smallholder farmers prefer regular field visits and face-to-face interactions.

Smallholder farmers are happy to receive a mix of services from agricultural support service providers. If support service providers interact among themselves and provide a

mix of services to smallholder farmers, this is positively viewed by farmers. Accordingly, it is good to have linkages among multiple support service providers, so that if one aspect of service is lacking with a particular service provider then they can refer the farmer/s to another support provider where farmer/s can access that particular service.

If the support providers need to increase their client-base they need to be prepared to travel and provide service to all farmers near and far. The support service provision and service access should not be limited by distance. Further, to enhance support service provision it is important that the government should ensure that necessary infrastructure facilities (e.g. road access) are improved or reconstructed.

In a country where the support provision is differentiated as enterprise type, a development organization needs to identify, depending on the nature of service, which service provider they need to target. Further, when there are multiple support providers engaged in support service provision to smallholder farmers, they could work with all support service providers.

Development organizations or NGOs need to be careful about whom they choose because the relationship between farmers and support providers is linked to the multitude of things that comprise that relationship. What they can do is closely look both the mix of services they are providing and how they are providing that service mix.

The support service providers operated at different scales; some service providers operated at a local level, whereas others may operate at a district or national level. Therefore, in terms of development organizations, that is also a consideration depending on the nature of the change they are trying to bring about or farmers they are trying to target.

If the Government want to foster innovation or increased innovation of farmers' technology uptake, they would better enable NGOs to work through multiple service providers and not just limited to the Government. Because in Sri Lanka, there are multiple providers and farmers are choosing between in it at the moment, they do not suppose the Government as a service provider.

If the government intends to enable innovation and development by allowing NGOs to provide inputs, they would be better open with all other support service providers. So that inflow of development can go up.

If the Government looks for commercialization and privatization, they should foster the NGOs to work with other organisations, not limiting the NGOs to only work with the Government.

### **8.5. Reflections on research design**

Semi-structured interviews proved to be of value in obtaining data for this research. As the research progressed the semi-structured interview format surfaced information that was initially not anticipated or expected and has as a result added value to this research that would not have been gained had a survey questionnaire been administered.

After the war a characteristic of farming in the northern part of Sri Lanka was a much-increased number of women headed farming households whose husbands, fathers had been killed or injured during the war. Due to time limitations and the sensitivity of aspects of the impact of the war, this research did not explore the difference in service provision for men and women headed households across service provider type.

The advantage provided to me as a result of being fluent in the local language is very much acknowledged. Because of the fluency I was able to interact with smallholder farmers and support service providers in a conducive manner and collect relevant information, particularly with smallholder farmers.

### **8.6. Future research – Suggestions and Recommendations**

This research considers inputs, advice, information, insurance, credit, and marketing services as the agricultural support services to farmers. Under the marketing services, paddy purchasers (Millers) who visit the district from other districts to purchase paddy were not interviewed for this study. As these millers are from other districts and not located within case district, they were not interviewed. Further, services like, irrigation and research components of the support service system have not been included within this study. Therefore, one could include these components within the support services system when exploring a study related to agricultural support services system.

One of the characteristics of post-war is large number of women headed households and therefore research could focus on the nature of services that provided to women headed households compared to males and how it can be enhanced.

The smallholder farmers in the study area had mix of experiences with the service provided by microcredit companies. It is good to undertake a research on how farmers must be better prepared to engage in microcredit services, or the nature of service needs on that base.



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## **APPENDICES**

### **Appendix A. Interview guides**

#### **I: Interview guideline for key informants in the Kilinochchi District**

##### **Objectives/Purpose:**

- To get useful background information on the case district in terms of the variation and distribution across the villages / households
- To get information on types of smallholder farming systems, structure of households, various agricultural support services available to/accessed by smallholder farmers and what influences their access to support services
- To identify different groupings of farmers that may have different access to support services and understand the factors that determine this. Identify differences at the household, village and district levels (regional or not) and also identify if there are differences within a household.
- To obtain information about the support service providers that operate in the region, district, village, the nature of the support they provide and how it is provided.
- To understand the nature of the interactions that occur between service providers and why this is and also where interactions do not occur and why this is.

**Interview topic/ Information on:** Types of smallholder farming and support services

##### **Questions:**

1. How does smallholder farming vary across the district/villages?
2. How does support service access vary across smallholder farmers / across the district / across the villages / across households / within households?
3. If it varies across smallholder farmers, why & what shapes this?
4. If it varies across District, why & what shapes this?
5. If it varies across villages, why & what shapes this?
6. If it varies across households, why & what shapes this?
7. Within a household does it vary with different members? Why & what shapes this?



**Interview topic/Information on:** Types of support services accessed by smallholder farmers

**Questions:**

1. Which ‘support’ services do smallholder farmers access / which are not accessed and why?
2. How do smallholder farmers access services and for what reasons?
3. How does this vary across smallholder farmers?
4. What influences smallholder farmers access to support services?
5. What has shaped the support service access?
6. What differences exist between smallholder farmers that influence what services they access and how this is influenced?
7. Can smallholder farmers be grouped on the basis of the nature of the support they source?

**Interview topic/Information on:** Types of support service providers

**Questions:**

1. How are support services provided to smallholder farmers?
2. What influences the provision of support services to smallholder farmers and why?
3. What has shaped the support service provision?
4. Which service providers interact, and which do not and why?
5. What is the nature of the interactions that occur between service providers and why?

What is your thought about how agri support services could be shaped better? When you ask this question, they will reflect about the drawbacks of current state.

At the end of interview, **information on**

- Policy environment – involvement of government, development agencies, NGOs in projects related to service provision, how it influences support service access?  
– different time duration for different projects, different groups of farmers/beneficiaries (smallholder farmers) under different projects
- Acknowledgement and discussion on future contacts



## Appendix B. Information Sheet



### Smallholder farmers' agricultural support system in post-war Northern Sri Lanka – a system transformed

#### INFORMATION SHEET

##### Researcher(s) Introduction

My name is Thivahary Geretharan. I am a Senior Lecturer at Eastern University in the Faculty of Agriculture. I am presently on study leave and doing my PhD at Massey University, New Zealand. I am conducting research for my PhD on the smallholder farmers' agricultural support system in post-war Northern Sri Lanka. The smallholder agricultural sector in Northern Sri Lanka has undergone significant change. The Government of Sri Lanka has introduced several policy initiatives and development activities to help improve the livelihoods of smallholder farmers in these regions. However, little is known about how the current support system is assisting smallholder farmers in Northern Sri Lanka. This doctoral study aims to support smallholder farming development in post-war Northern Sri Lanka by understanding the nature of current agricultural support system and to inform policy makers and support service providers about how they can better assist the smallholder farmers to achieve development through agriculture in the region. The Kilinochchi district will provide the focus for a single case study that will incorporate semi-structured interviews, documentary analysis and observation. Up to 47 interviews will be completed with relevant key informants, smallholder farmers and agricultural support service providers. The collection of data for the research will be undertaken during October 2017 to January 2018.

The supervisors for my PhD are Dr Janet Reid, Dr David Gray and Dr Thiagarajah Ramilan from the Institute of Agriculture and Environment, Massey University.

Our contact details are as follows:

Thivahary Geretharan

Phone work: [REDACTED]

Email: [T.Geretharan@massey.ac.nz](mailto:T.Geretharan@massey.ac.nz)

Dr Janet Reid

Phone work: 0064 06 350 5268

Email: [J.I.Reid@massey.ac.nz](mailto:J.I.Reid@massey.ac.nz)

Dr David Gray

Phone work: 0064 06 3569099 ext, 84805

Email: [D.I.Gray@massey.ac.nz](mailto:D.I.Gray@massey.ac.nz)

Dr Thiagarajah Ramilan

Phone work: 0064 06 3569099 ext, 86266

Email: [T.Ramilan@massey.ac.nz](mailto:T.Ramilan@massey.ac.nz)

##### Participant recruitment

I am seeking your input into this research because you have been identified by me or by other participants in the research as someone with knowledge and information that will assist me to complete my research. Your selection will be because you have a professional involvement related to smallholder farming or support service provision to smallholder farmers and/or you have knowledge and experience likely to be of value to the research.

### **Project procedures**

With your agreement the interview will be tape recorded to ensure accuracy in data collection and to assist the data analysis process. The taped interviews will be transcribed and then analysed by using qualitative data analysis process. Your name and identity will not be stated explicitly in the research.

### **Participant involvement**

Interview will be undertaken at a time and location that is agreed by you. Interviews will be a maximum of 2 hours.

### **Participant's rights**

You are under no obligation to accept this invitation to participate in this research. If you decide to participate, you have the rights to:

- decline to answer any particular question
- withdraw from the study at any time
- ask any questions about the study at any time during your participation
- provide information on the understanding that your name will not be used unless you give permission to the researcher
- be given access to a summary of the project findings when it is concluded
- ask for the audio tape to be turned off at any time during the interview

### **Project contacts**

If you have any questions about the research or concerns about your involvement please do not hesitate to contact me or my supervisors.

### **Research ethics**

This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Dr Brian Finch, Director, Research Ethics, Telephone: +64 (06) 356 9099 ext. 86015, Email: [B.T.Finch@massey.ac.nz](mailto:B.T.Finch@massey.ac.nz)



**போருக்குப் பின்னரான வட இலங்கையில் சிறுபான்மை விவசாயிகளின் விவசாய ஊக்குவிப்பு அமைப்பு – மாற்றத்துக்குள்ளான ஓர் அமைப்பு**

**தகவல் படிவம்**

**ஆராய்ச்சியாளரின் அறிமுகம்**

எனது பெயர் திவாஹரி கிரிதரன். நான் கிழக்குப் பல்கலைக்கழக விவசாய பீடத்தில் சிரேட் விரிவுரையாளராகப் பணியாற்றுகின்றேன். தற்போது நான் கல்வி விடுமுறை பெற்று கலாநிதிக் கற்கையை நியூசிலாந்து மஸ்ஸி (ஆயுளநல) பல்கலைக்கழகத்தில் மேற்கொண்டு வருகின்றேன். இதற்கான ஆராய்ச்சியை போருக்குப் பின்னரான வட இலங்கையில் சிறுபான்மை விவசாயிகளின் விவசாய ஊக்குவிப்பு அமைப்பு பற்றி மேற்கொள்ளவுள்ளேன். வட பகுதியில் சிறுபான்மை விவசாயிகளின் விவசாய ஊக்குவிப்பு அமைப்பானது அங்கு இடம்பெற்ற போரின் காரணமாக குறிப்பிடத்தக்க மாற்றங்களுக்கு உட்பட்டுக்காணப்படுகின்றது. இப்பிராந்தியங்களில் சிறுபான்மை விவசாயிகளின் வாழ்வாதாரங்களை மேம்படுத்துவதற்காக பல்வேறு கொள்கை முயற்சிகள் மற்றும் அபிவிருத்தி நடவடிக்கைகளை இலங்கை அரசாங்கம் அறிமுகப்படுத்தியுள்ளது. இருப்பினும், இவ்விவசாயிகளுக்கு தற்போதைய விவசாய ஊக்குவிப்பு அமைப்பு எவ்வாறு உதவுகின்றது என்பது பற்றி சிறிது தான் அறியப்படுகிறது. சரியான தகவல்கள் அறியப்படவில்லை. இக்கலாநிதிக் கற்கையானது தற்போது காணப்படும் விவசாய ஊக்குவிப்பு முறைமை பற்றிய புரிந்துணர்வுடன் வட இலங்கையில் சிறுபான்மை அபிவிருத்திக்குத் துணை நிற்பதோடு, சிறுபான்மை விவசாயிகளுக்கு சிறந்த விவசாய ஊக்குவிப்பு சேவைகளை வழங்குவதன் மூலம் எவ்வாறு இப்பிராந்தியத்தின் விவசாய அபிவிருத்தியை மேற்கொள்ளலாம் என்பது பற்றி கொள்கை வகுப்பாளர்கள் மற்றும் ஊக்குவிப்பு சேவை வழங்குநர்களுக்கு அறிவிப்பதை நோக்கமாகக் கொண்டுள்ளது. இவ் ஆய்வானது கிளிநொச்சி மாவட்டத்தில் நேர்காணல், ஆவண ஆய்வு மற்றும் கவனிப்பு (முடிபுள்ளியைவழி) ஆகிய முறைகளின் மூலம் மேற்கொள்ளப்படவுள்ளது. இவ்வாராய்ச்சிக்கு சம்பந்தப்பட்ட முக்கிய தகவல் வழங்குநர்கள், சிறுபான்மை விவசாயிகள் மற்றும் விவசாய சேவை வழங்குநர்களுடன் ஏறத்தாழ 47 நேர்காணல்கள் மேற்கொள்ளப்படும். இவ்வாராய்ச்சிக்கான தகவல் சேகரிப்பானது ஐப்பசி 2017 தொடக்கம் தை 2018 வரை மேற்கொள்ளப்படும்.

மஸ்ஸி (Massey) பல்கலைக்கழகத்தின் விவசாய மற்றும் சுற்றுச் சூழல் நிறுவனத்தைச் சேர்ந்த கலாநிதி ஜேனட் ரீட் (Dr Janet Reid), கலாநிதி டேவிட் கிரே (Dr David Gray) மற்றும் கலாநிதி தியாகராஜா ராமிலன் (Dr Thiagarajah Ramilan) ஆகியோர் எனது கலாநிதிக் கற்கையின் மேற்பார்வையாளர்களாவர்.

எங்கள் தொடர்பு விபரங்கள் பின்வருமாறு:  
திவாஹரி கிரிதரன்  
தொலைபேசி (வேலை): XXXXXXXXXX  
மின்னஞ்சல்: [T.Geretharan@massey.ac.nz](mailto:T.Geretharan@massey.ac.nz)

கலாநிதி ஜேனட் ரீட் (Dr Janet Reid)  
தொலைபேசி (வேலை): 0064 06 3505268  
மின்னஞ்சல்: [J.I.Reid@massey.ac.nz](mailto:J.I.Reid@massey.ac.nz)

கலாநிதி டேவிட் கிரே (Dr David Gray)  
தொலைபேசி (வேலை): 0064 06 3569099, நடுவ 84805  
மின்னஞ்சல்: [D.I.Gray@massey.ac.nz](mailto:D.I.Gray@massey.ac.nz)

கலாநிதி தியாகராஜா ராமிலன் (Dr Thiagarajah Ramilan)  
தொலைபேசி (வேலை): 0064 06 3569099, நடுவ 86266  
மின்னஞ்சல்: [T.Ramilan@massey.ac.nz](mailto:T.Ramilan@massey.ac.nz)

**பங்கேற்பாளர்களின் ஆட்சேர்ப்பு**

எனது ஆய்விற்கு உதவுவதற்கான அறிவையும் தகவல்களையும் கொண்டிருப்பவர்களாக நீங்கள் என்னால் அல்லது மற்றைய பங்கேற்பாளர்களால் அடையாளம் காணப்பட்டுள்ளீர்கள். எனவே, இவ்வாய்விற்காக

உங்கள் உள்ளீட்டை நான் எதிர்பார்க்கின்றேன். சிறுபான்மை விவசாயத்தில் தொழில்முறை ஈடுபாடு உள்ளதால், 'விவசாய ஊக்குவிப்பு சேவையில் ஈடுபடுவதால் மற்றும்', அல்லது உங்கள் அறிவும் அனுபவமும் எனது ஆய்விற்கு மேலும் வலுவூட்டும் வாய்ப்புள்ளதால் நீங்கள் இவ்வாய்விற்காக தேர்வு செய்யப்பட்டுள்ளீர்கள்.

### ஆய்வு நடைமுறைகள்

தரவு சேகரிப்பின் துல்லியத்தை உறுதிப்படுத்தவும் தரவுப் பகுப்பாய்விற்கு உதவும் முகமாகவும் உங்கள் அனுமதியுடன் நேர்காணலானது ஆடியோப் பதிவு செய்யப்படும். பதிவு செய்யப்பட்ட நேர்காணல்களானது பின்னர் எழுத்து வடிவில் மாற்றப்பட்டு (வுசயனெசனிவள) தரநிலைப்பகுப்பாய்வு செயல்முறை மூலம் பகுப்பாய்வு செய்யப்படும். உங்கள் பெயரும் அடையாளமும் ஆய்வில் வெளிப்படையாகத் தெரியப்படுத்தப்படமாட்டாது.

### பங்கேற்பாளரின் ஈடுபாடு

நீங்கள் ஒப்புக்கொண்ட ஒரு இடத்திலும் நேரத்திலும் நேர்காணல் மேற்கொள்ளப்படும். நேர்காணலின் அதிகபட்ச நேரமாக 2 மணிநேரம் காணப்படும்.

### பங்கேற்பாளரின் உரிமைகள்

ஆய்வில் பங்கேற்பதற்கான இந்த அழைப்பை நீங்கள் கட்டாயம் ஏற்றுக்கொள்ள வேண்டும் என்ற கடமை இல்லை. ஆய்வில் பங்கேற்பது என நீங்கள் முடிவு செய்தால் பின்வரும் உரிமைகள் உங்களுக்குக் காணப்படும்.

- குறிப்பிட்ட எந்தவொரு கேள்விக்கும் விடையளிக்க மறுக்கும் உரிமை
- எந்தவொரு நேரத்திலும் இவ்ஆய்வில் பங்கேற்பதிலிருந்து விலகும் உரிமை
- ஆய்வில் பங்கேற்கும் போது எந்தவொரு நேரத்திலும் ஆய்வு பற்றி எந்தவொரு கேள்வியையும் கேட்கும் உரிமை
- நீங்கள் அனுமதியளிக்கும் பட்சத்திலன்றி எந்தவொரு சந்தர்ப்பத்திலும் உங்கள் பெயர் இவ்ஆய்வில் பயன்படுத்தப்படமாட்டாது என்பதைப் புரிந்து கொண்டு தகவல்களை வழங்கும் உரிமை
- ஆய்வு முடிவடையும் போது ஆய்வுச் சுருக்கத்தை தெரிந்து கொள்வதற்கான உரிமை
- நேர்காணலின் போது எந்நேரத்தில் வேண்டுமானாலும் ஆடியோப் பதிவை நிறுத்துமாறு கேட்கும் உரிமை

### ஆய்வு சம்பந்தமான தொடர்புகள்

இவ்ஆய்வில் ஈடுபடுவது குறித்து உங்களுக்கு ஏதாவது கருத்து இருப்பின் என்னை அல்லது எனது மேற்பார்வையாளர்களைத் தொடர்பு கொள்ளத் தயங்காதீர்கள்.

### ஆய்வு நெறிமுறைகள்

இவ்ஆய்வானது 'குறைவான ஆபத்துக்குட்பட்டது' என சக மதிப்பாய்வின் மூலம் மதிப்பீடு செய்யப்பட்டுள்ளது. இதன் காரணமாக, பல்கலைக்கழகத்தின் எந்தவொரு மனித நெறிமுறைக் குழுவாலும் பரிசீலனைக்கு உட்படுத்தப்படவில்லை. மேற்குறிப்பிடப்பட்டுள்ள ஆராய்ச்சியாளர்(கள்) இவ்ஆய்வின் நெறிமுறை நடத்தைக்குப் பொறுப்பானவர்கள்.

இவ்ஆய்வின் நெறிமுறை பற்றிய ஏதாவதொரு கருத்தை மேற்குறிப்பிட்ட ஆராய்ச்சியாளர்களை விட வேறொருவருடன் நீங்கள் பகிர்ந்து கொள்ள விரும்பினால், தயவுசெய்து பின்வருபவரைத் தொடர்பு கொள்ளவும்.

கலாநிதி பிரையன் பி(சு)ஞ்ச், இயக்குநர், ஆராய்ச்சி நெறிமுறைகள், தொலைபேசி: 0064 (06) 356 9099  
நடவடி 86085, மின்னஞ்சல்: [B.T.Finch@massey.ac.nz](mailto:B.T.Finch@massey.ac.nz)

## Appendix C. Participant consent form



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### Smallholder farmers' agricultural support system in post-war Northern Sri Lanka – a system transformed

#### PARTICIPANT CONSENT FORM

I have read the Information Sheet and have had the details of the study explained to me.  
My questions have been answered to my satisfaction, and I understand that I may ask  
further questions at any time.

I agree/do not agree to the interview being audio taped.

I agree to participate in this study under the conditions set out in the Information Sheet.

**Signature:**

**Date:**

.....

**Full Name - printed**

.....



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**போருக்குப் பின்னரான வட இலங்கையில் சிறுபான்மை விவசாயிகளின் விவசாய  
ஊக்குவிப்பு அமைப்பு – மாற்றத்துக்குள்ளான ஓர் அமைப்பு**

**பங்கேற்பாளர்களின் ஒப்புதல் படிவம்**

தகவல் படிவத்தை நான் வாசித்தேன். ஆய்வு பற்றிய விபரங்கள் எனக்கு விளக்கப்பட்டன. எனது கேள்விகள் அனைத்தும் திருப்தியாகப் பதிலளிக்கப்பட்டன. மேலும், எந்த நேரத்திலும் நான் தேவையான மேலதிகக் கேள்விகளைக் கேட்கலாம் என்பதையும் புரிந்து கொள்கிறேன்.

நேர்காணலை ஆடியோப் பதிவு செய்வதற்கு நான் ஒப்புக்கொள்கிறேன் ∴ ஒப்புக்கொள்ளவில்லை.

தகவல் படிவத்தில் உள்ள நிபந்தனைகளின் கீழ் இந்த ஆய்வில் பங்கேற்க நான் ஒப்புக்கொள்கிறேன்.

கையொப்பம்:.....

திகதி:.....

முழுப்பெயர்:.....

#### **Appendix D. Key documents used in the study**

1. Agricultural Environmental Statistics – 2002, Department of Census and Statistics, Colombo, Sri Lanka.
2. Annual Report - 2014, Central Bank of Sri Lanka, Colombo, Sri Lanka.
3. Annual report – 2011, Department of Animal Production and Health, Peradeniya, Sri Lanka.
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9. Annual Report – 2019, Central Bank of Sri Lanka, Colombo, Sri Lanka.
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15. Performance Report – 2016, Department of Divineguma Development, Sri Lanka.
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20. Sri Lanka National Agricultural Policy – 2015, The Ministry of Agriculture, Colombo, Sri Lanka.
21. Statistical Information - 2015, Northern Provincial Council, Office of the Chief Secretariat-Planning, Sri Lanka.
22. Statistical information – 2018, Department of Census and Statistics, Colombo, Sri Lanka.
23. The state of Animal Genetic Resources – 2002, Veterinary Research Institute, Peradeniya, Sri Lanka.



## Appendix E Coding Structure

