

Agricultural support service provision – the voices of smallholder farmers from post-war northern Sri Lanka

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Abstract. The thirty-year internal war that ended in 2009 had a major impact on the livelihood activities of smallholder farmers in northern Sri Lanka. The aim of the study was to contribute to enhancing the provision of support services to these smallholder farmers. The research reported in this paper examined the agricultural support system used by smallholder farmers. To date the advisory literature has tended to focus on the interactions between farmers and advisors or the networks between advisors. This research explores the agricultural support system by focusing on farmers' interactions with service providers and interactions between service providers. A qualitative data collection method was used for the study. All service providers deliver a mix of services and this shapes their relationship with farmers. The service providers the farmers interact with are also linked to the farm enterprise they are engaged with and farm enterprises are differentiated on gender. Trust emerges as influencing the nature of relationships and interactions between farmers and service providers.

Keywords: advisory service, agricultural support system, farmer-support service provider interactions, service provision

Introduction

Agricultural support services are recognised as important to the smallholder farming sector. It is argued that the provision of agricultural support services can strengthen smallholder farmers' capabilities through access to advice, information, inputs, credit, markets and related services (Bebe et al. 2002; Poulton et al. 2010; Pye-Smith 2012; Adekunle 2013). Based on smallholder farmers' views, Pye-Smith (2012) and Morton (2007) argued that smallholder farmers in developing countries are inadequately served by agricultural support services including both the extension and advisory services.

Smallholders dominate the Sri Lankan agricultural sector. Around 71% of agricultural landholdings in Sri Lanka are less than two hectares and these landholdings produce over 90% of the country's food requirements (Sangakkara & Nissanka 2008; Esham & Garforth 2013). The North and East provinces are two of nine provinces in Sri Lanka. Agriculture is the main livelihood activity of the people in these provinces (Cahn 2005; Bandarage 2010). According to the statistics provided by the Department of Census and Statistics (DCS 2016), there are 607,570 farmers engaged in smallholder farming in the North and East provinces of Sri Lanka.

North and East Sri Lanka were the main theatre of operations for a civil war that occurred over the period 1979 – 2009 (thirty years) (Somasundaram & Sivayokan 2013; Pathmanathan et al. 2017). The Liberation Tigers of Tamil Eelam (LTTE), a liberation movement fought to make the North and East independent from the remainder of the country. This war had a major impact on the livelihood activities of most farming households in the North and East provinces (Goodhand 2012; Somasundaram & Sivayokan 2013). The war severely impacted the agricultural sector in northern Sri Lanka. This included extensive destruction of physical infrastructure, environmental degradation, landmines in agricultural areas, a lack of farming implements, a reduction in agricultural services and an increase in the number of women smallholder farmers (CEPA 2009; Fernando & Moonesinghe 2012; Vasudevan 2013).

Smallholder agriculture constitutes the livelihood base and is a key driver for recovery and overall economic growth for smallholder farmers post-war. Providing agricultural support services to fulfil the needs of smallholder farmers is important because it is argued that a well-organized agricultural support service system strengthens smallholder farmers' capabilities in farming and it contributes to the recovery of the agricultural sector and overall economic development in post-war regions (Annor-Frempong & Olang'o Ojijo 2012).

Sri Lankan agriculture has undergone significant change post-war, with the Government introducing policy initiatives and development activities to support the recovery and development of smallholder agriculture and the agricultural support services system. However, little is known about the current support services system for smallholder farming in northern Sri Lanka, so there is a need to explore the current agricultural support services system to determine how to better assist smallholder farming development in the post-war context.

This paper reports on preliminary findings from a doctoral study that explores the support services system in northern Sri Lanka. The aim of the paper is to inform relevant support service providers and policy makers what influence the nature of relationships and interactions between smallholder farmers and service providers and is guided by the following research questions:

1. What support services are accessed by smallholder farmers in post-war northern Sri Lanka and why?
2. How are support service providers providing services to smallholder farmers in post-war northern Sri Lanka and why?

Theoretical framework and literature review

The agricultural support services system for smallholder farmers in post-war northern Sri Lanka comprises multiple actors (public, private, non-governmental organizations along with civil society actors). Interactions occur between these actors and smallholder farmers and between the different service providers. To examine the system, a theory that considers the interactions and relationships of smallholder farmers and support service providers is needed. Agricultural innovation systems (Hounkonnou et al. 2012; Klerkx et al. 2012; Schut et al. 2014) provide a systemic framework for investigating the support services system in northern Sri Lanka. This approach expands the analysis beyond the characteristics of actors and considers the broader context of support service access and service provision (Klerkx et al. 2012; Schut et al. 2014). According to Ayele et al. (2012) and Klerkx et al. (2012), an important aspect to studying an agricultural innovation system is identifying and categorizing the multiple actors within the system and their interactions.

Both the interactions between actors and the provision of services in the support services system are influenced by formal and informal institutions that constitute institutional logics of the actors. Thornton and Ocasio (1999, p. 804) defined institutional logics as 'the socially constructed historical patterns of material practices, assumptions, value, beliefs and rules by which individuals produce and reproduce their material subsistence, organize time and space and provide meaning to their social reality'. Institutional bricolage highlights an actors' agency to negotiate, align and modify the institutional logics under which they operate (Christoplos 2012; de Koning & Cleaver 2012). According to Cleaver (2012, p. 35), the concept of institutional bricolage can be used to explore and understand 'how institutions are usually formed and practiced'. She further reports that institutional bricolage is an adaptive process in which people (actors) modify the existing institutional arrangements (rules, norms and traditions). During this process, the different existing institutional logics are combined together to develop new institutional arrangements (Cleaver 2002). These concepts are useful to explain how actors in the system interact and how they navigate multiple demands and dynamics to resolve a common problem. Three different types of bricolage practices have been distinguished by de Koning and Cleaver (2012) that are performed by local actors in response to the introduction of new institutions; aggregations, alterations and articulation practices. Table 1 describes these bricolage practices.

Table 1. Three main bricolage practices performed by local actors in their response to introduced institutions

Aggregation	Alteration	Articulation
<p><i>Trigger:</i> the introduction of a formal institution. It is recombined with existing formal and informal institutions (values, traditions, & rules) in a process of recombination. This gives it additional meaning or purpose.</p> <p><i>Outcome:</i> the new and existing institutions are in harmony.</p>	<p><i>Trigger:</i> not necessarily the introduction of a new formal institutions, it can also be in response to changes in informal institutions.</p> <p>It occurs where actors adjust institutions so that they correspond better with their identities or livelihoods and other institutions to which they are adhering.</p> <p>It can range from small to extreme changes in an institution's meaning. Improvisations to ensure social applicability is an important aspect of this practice</p> <p><i>Outcome:</i> the institution is modified.</p>	<p><i>Trigger:</i> the introduction of a formal institution.</p> <p>If the new institution is in conflict with the actor's identity or other important formal institutions, the actors are likely to engage in articulation. In such situations, they assert existing identities, norms or other institutions and resist the introduced institutions.</p> <p>The introduced institution bounces off a shield of local perceptions of traditions and identity and is rejected by the actors.</p> <p><i>Outcome:</i> the formal institution is rejected.</p>

Source: de Koning & Cleaver (2012, p. 284-286)

The theory around innovation system, institutional logics and bricolage provides a useful framework for understanding the agricultural service provision system in northern Sri Lanka. The

agricultural innovation system theory was used to explore the interactions between multiple actors in the agricultural support in the post-war northern Sri Lanka and institutions that shape the interactions. However, innovation systems theory provides limited detail on how these interactions are taking place. In that sense, the concepts of institutional logics and institutional bricolage were used to explore these interactions. The remainder of this section reviews the empirical literature on service provision systems in relation to the framework.

Several scholars (Ekboir & Parellada 2002; Hall et al. 2002; Clark et al. 2003; Stelling et al. 2009) show the significance of interactions between multiple support service providers. For example, Stelling et al. (2009, p. 46) show that creating a network which connects individuals and their organizations from the government and non-governmental sectors has 'mobilized complementarities'. In this case, the NGOs institutional logics were focused on poor farmers, while the Government's logics were focused on district and agricultural environments. Accordingly, during interactions, their institutional logics blended together and NGOs worked in rural community development helping the poor while the Government worked toward agricultural technology and policy. Ekboir and Parellada (2002) examined the changes that encouraged the diffusion of zero-tillage cultivation in Argentina, a process that resulted from a series of events and interactions among public research organizations and private firms. The government's economic policy change led to a relative price change of grains to glyphosate which made zero tillage cultivation economically efficient (Ekboir & Parellada 2002). These studies found that interactions between multiple actors are important to enhance the performance of the support service system; however, the specific nature of these interactions was not explored in detail.

Many studies have tended to focus on a specific support service like the advisory service system. It is hard to find empirical literature that explores the whole system of agricultural support services and interactions between actors within the system. The advisory literature has tended to focus on interactions between farmers and advisors or networks between advisors.

The interactions between multiple actors in a support system are shaped by a number of factors and are explored by various scholars (e.g. Rand et al. 2009; Lapple & Kelley 2015; Lapple et al. 2016). Geographical proximity of farmers has been identified as having an impact on support provision (Rand et al. 2009) along with local knowledge and intrinsic motivation of support providers (Kyle & Resnick 2018).

Trust is recognised as an important factor in multiple actor interactions (e.g. Batt & Rexha 2000; Masuku et al. 2003; Hall & Pretty 2008; Sutherland et al. 2013; Newman & Briggeman 2016). In interactions between farmers and support service providers trust is recognised as being associated with the length of the relationship (Batt & Rexha 2000; Masuku et al. 2003; Sutherland et al. 2013; Newman & Briggeman 2016), and the regularity of face-to-face interactions (Hall & Pretty 2008; Sutherland et al. 2013). Support service providers' competency and accountability were also identified as shaping interactions with farmers (Kemp et al. 2000; Hall & Pretty 2008; Ezezika & Oh 2012; Fisher 2013; Renwick et al. 2014; Lapple et al. 2016; Hilken et al. 2018). The above review identified multiple actors in the agricultural support services system in post-war northern Sri Lanka and the nature of interactions between these multiple actors.

Research methodology

This study seeks to understand the nature of the agricultural support services system in post-war northern Sri Lanka. Because the study seeks to analyse a complex system in-depth, a qualitative case study method was the research strategy used (Verschuren 2003; Davenport et al. 2007; Creswell 2009). This research strategy allows researchers to design suitable data collection methods based on the specific research context in order to capture meanings of the research participants' perspectives in detail, both in the form of words and statements (Snape & Spencer 2003; Creswell 2009; Silverman 2013).

A single case of smallholder farmers' agricultural support services system was the case for this study. The case study site was a war-affected district in northern Sri Lanka – the Kilinochchi district. Kilinochchi is one of five districts in northern Sri Lanka. The district was one of the two districts where final military operations were carried out (Fernando & Moonesinghe 2012). A single case study made possible an in-depth investigation to unravel the dynamics of interactions between multiple actors in relation to the support services system as argued by Flyvbjerg (2001), Sigelkow (2007) and Gustafsson (2017).

Data collection was carried out in two stages. First, key informants who had a detailed knowledge across the case district were purposively selected to provide background information on the case context and to identify the research participants for the second stage. Information on different farming systems practised by smallholder farmers across the district and the types of support services provided by service providers were gathered from the key informants. Based on the

information gained in the first stage, smallholder farmers and support service providers were identified. The study used purposive and snowball sampling to select research participants. These sampling methods are commonly associated with qualitative research (Miles & Huberman 1994; Miles et al. 2014).

Data for this study were gathered between October 2017 and January 2018. Three interview guidelines were used to ensure consistency of structure across the interviews with key informants, smallholder farmers and support service providers. These interview guides include topics related to contextual information, information on agricultural support services, interaction between multiple actors in the area, and war history and its influence on agricultural support services. The interview guidelines were developed based on the literature review and research questions set for the study. Data collection consisted of semi-structured, face-to-face interviews with key informants, smallholder farmers and support service providers. Based on the number of smallholder farmers and support service providers available in the Kilinochchi district, seven key informants, 30 smallholder farmers and 10 support service providers were selected for the interviews.

All digitally recorded interviews were transcribed verbatim. Qualitative data analysis techniques (Dey 2005; Lacey & Luff 2009) were used to analyse the data. Analysis was carried out by reading the transcripts several times; identifying emerging trends and organizing them into major themes. Related themes were identified from the transcripts, which were in Tamil language. Identified themes were then translated to English. The relationship between identified themes and concepts was then made. The study received Low Risk Approval from the Massey University Human Ethics Committee (MUHEC).

Results

This study explores the agricultural support services system in the post-war northern Sri Lanka and this paper reports on preliminary findings from this study.

Support service providers to smallholder farmers

There are multiple support service providers who provide services to smallholder farmers in the Kilinochchi district. These providers can be broadly categorised as government, government-run, non-government, and private commercial entities. The government-run organizations differ from government organizations in that the latter do not engage in commercial transactions (Table 2).

Table 2: Support service provider category exists in post-war northern Sri Lanka

Agricultural support service providers			
Government organizations	Government-run organizations	Non-governmental organizations	Private entities
Department of Agriculture (DOA)	Milco	<i>International:</i>	Input traders
Department of Agrarian Development (DAD)		World Vision	Cargills Company
Department of Animal Production and Health (DAPH)		UNDP	Microcredit Companies
State Insurance Company		Care International	Nestle Company
State Banks		<i>Local:</i>	Private Insurance Company
		Leeds	Company
		Sarvodaya	Private Banks

The government organizations such as the DOA, the DAD and the DAPH are engaged in free input provision. The government insurance company provides insurance to crop and dairy farmers and the State banks provide credit to crop and dairy farmers.

Milco, a government-owned milk collection centre, buys milk from farmers. The international NGOs are working with the government, to supply free farming inputs and training to smallholder farmers. The local NGOs, apart from input provision, also establish small women's savings groups.

Private commercial service providers also operated in the district. These include; (i) Input traders, (ii) Cargills, (iii) Nestle, (iv) Microcredit companies, (v) Private insurance company, and (vi) Private Banks. Private entities have only been operating in the district after the end of the civil war in 2009. Cargills is engaged in collection and marketing of fruits and vegetables. Microcredit companies provide microcredit targeting smallholder women farmers in the district. Nestle is engaged in milk collection and marketing. The private insurance company provides insurance to crop and dairy farmers and private banks provide agricultural credit to smallholder farmers in the district.

Provision of mix of services

Interviews with smallholder farmers and support providers indicated that all support providers were providing more than one service to farmers (see figure 1). The smallholder farmers' primary basis of interaction with the support providers was based on the main service provided by the providers. However, the mixed services provided shaped interactions between actors. Smallholder farmers' decision to have a relationship with a support service provider was shaped by the package of services provided. For example, a dairy farmer who was supplying milk to Milco explains her interaction with Milco:

I am supplying milk to Milco. Membership with Milco enables me to obtain loan from Bank of Ceylon (a State Bank), which is not possible on my own. Because I need to find a government servant as collateral... (Dairy Farmer 1).

Similarly, another dairy farmer who was supplying milk to Milco describes her interactions with Milco:

Milco links us with DAPH. If we look for advice regarding farming, Milco connects us with DAPH people, which is sometimes not possible on our own... (Dairy Farmer 2).

This is supported by the comment made by another dairy farmer:

I purchased this bicycle mainly to supply milk to Milco. Otherwise, I need to walk too far carrying milk containers or I have to supply the milk to Nestle. I like to supply to Milco so that I can get a loan... (Dairy Farmer 3).

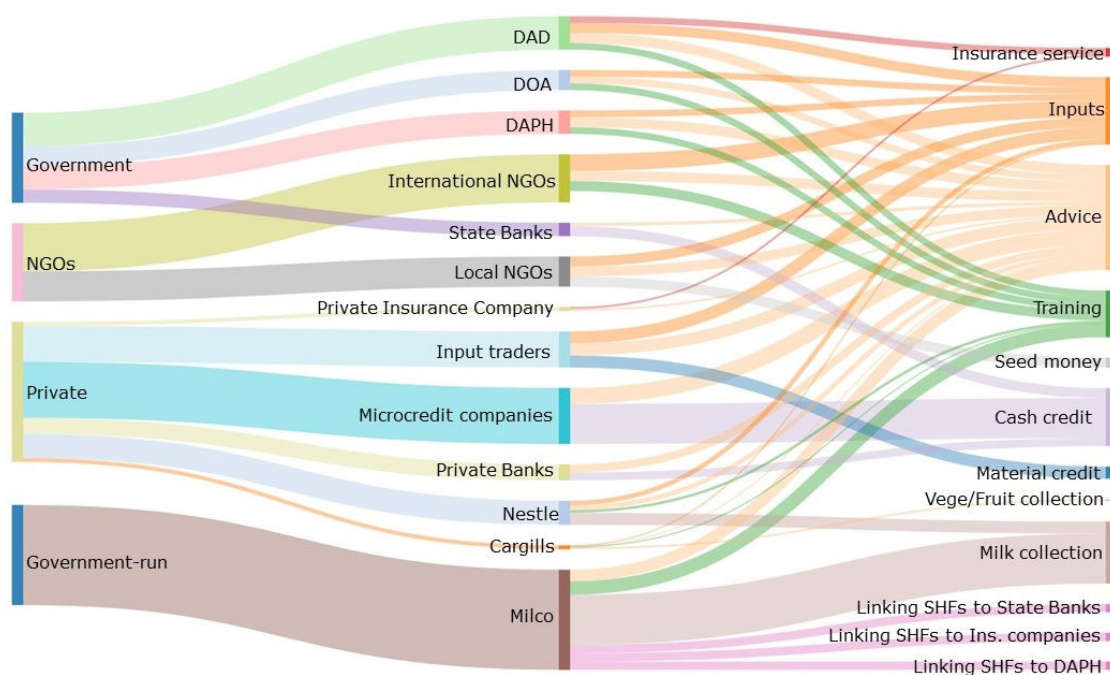
A majority of the smallholder farmers interviewed was purchasing their farming inputs from private input traders. They also approached private traders for advice related to their farming issues. A vegetable farmer described his interactions with private input traders:

I am purchasing seeds from private traders. I can get hybrid seeds from them and the seeds are good quality. At the same time, the officers are good in providing farming advice. I used to contact them for farming advice. They are always ready to provide advice (Vegetable Farmer 1).

Category of providers and mix of services provided

The following Sankey Diagram (Figure 1) illustrates the multiple actors engaged in service provision to smallholder farmers and the various services provided to farmers by each provider. Advice is a component of the service mix provided by all support providers; however it is not the primary relationship between farmers and support service providers. Likewise, training is provided by the majority of support providers in the district.

Figure 1. The service mix provided by the support providers in northern Sri Lanka



All of the private service providers exhibited a commercial logic in their service provision. Government entities like the state banks and state insurance companies also operated with a

commercial logic. Milco operates with both commercial and non-commercial logic. As Milco engages in milk collection and marketing, it operates with a commercial logic. At the same time, Milco also engaged in other service provision such as linking smallholder dairy farmers with the state banks, which enable the farmers to obtain loans and DAPH for getting farming advice. During these instances Milco operates with a non-commercial logic.

Regular visits by private input traders build trust between farmers and service providers. Further, smallholder farmers in the district trust the service providers who are competent in the subject matter. The following quote illustrates this:

Field officers from the private input traders used to visit our fields. These regular face-to-face interactions develop trust between us and help to have more trusted relations with field officers (Vegetable Farmer 1).

Multiple farming activities carried out by smallholder farmers

Most smallholder farmers in the district were involved in more than one farming activity. Consequently, they accessed different agricultural support service providers and were members of different farmer organizations. Support service providers establish their own farmer organizations in the district and farmers need to be a member of a farmer organization to access services. The following quote from a dairy farmer gives an example of this:

I am a dairy farmer and my husband is engaged in paddy farming. As I am supplying milk to Milco I have membership with Milco's Farmer Managed Society. My husband has membership with paddy farmer organization of this area (Dairy Farmer 3).

According to the interviews with smallholder farmers, male farmers interviewed were mainly involved in paddy farming and female farmers in dairying and home gardening. The main reason stated by farmers for this gender distinction was the labour involved in different farming activities. Paddy farming is labour-intensive and mainly undertaken by male farmers. Accordingly, the type of support providers accessed by the male and female farmers varied based on the production system. For example, paddy farmers mainly access the government departments (the DOA and the DAD) and dairy farmers access the government (the DAPH), government-run (Milco), and private entities (Nestle) for support services and consequently the packages of services differed.

Experiences during war

Farmers' current interactions with support service providers are shaped by the experiences they had with support providers during the war. Farmers experienced regular visits and face-to-face interactions with support service providers during war. These support providers were trusted and from the farmers' perspective had their interests at heart. This provided the basis for their assessment and expectations of interactions with support service providers after the war. This was expressed by various smallholder farmers during interviews, for example:

...if they (support providers) directly visit our field and discuss with us they can understand our real situation. Direct interactions definitely help build trust between us. This is how our trust relationship developed with support providers during the war (Vegetable Farmer 2).

During their description of expectations of their relationship with support providers, the smallholder farmers frequently referred to the service provision experience they had with the *de facto* government during the civil war (the LTTE's) and the officers from DOA, DAD, and DAPH during the war. During the war all agricultural support service provisioning was governed and administered by the *de facto* government. For example, during the war, the DOA was engaged in provision of agricultural advice and technical support to smallholder farmers in the district. The service provision was administered by the *de facto* government. The officers from the DOA directly visited smallholder farmers' fields and provided services to them. According to the interviews with the DOA staff who have worked during wartime, this practice was strictly encouraged by the *de facto* government.

One of the senior officers from the DOA describes this practice as follows:

The [de facto government] directed us to work closely with farmers. People from their Tamil Eelam Economic Development Organization worked closely with us. We used to visit individual farmer's field to get to know their issues and provide solutions, demonstration or relevant trainings ... (Officer / DOA).

The smallholder farmers interviewed trust service providers who illustrated a duty of care for them and those with whom they have a close relationship. One of the dairy farmers whose father obtained an agricultural loan from the *de facto* government during wartime, comments on her experiences:

As my father was not able to find enough capital for paddy farming, he approached the de facto government to get an agricultural loan. They verified our economic conditions and released the money. The care they showed to farmers and farming, made us trust them more... (Dairy Farmer 2).

Another vegetable farmer referred to the relationship as follows:

The de facto government had a separate division for agricultural development and people who were attached to the division used to visit our fields and had discussions with us regarding our farming needs (Vegetable Farmer 2).

Interactions and relationships that smallholder farmers interviewed had with support service providers shaped the support providers' reliability to farmers. This in turn established trust between farmers and support service providers.

Discussion

The current study explores the agricultural support services system that exists in post-war northern Sri Lanka. Three aspects of the results are highlighted in the discussion and they are the nature of services provided, interactions between diverse agricultural support service providers and factors shaping the interactions between multiple actors.

The nature of support services provided

All service providers in this study provide a mix of services to farmers. Advice is a service provided by all service providers; however, it is not the primary basis for any of the interactions between providers and farmers. The advisory literature has tended to focus only on advice (e.g. Garforth et al. 2003; Ingram 2008; Birner et al. 2009; Hoffmann et al. 2009; Sanginga et al. 2009). In the interactions between support providers and farmers, and on relationship where advice is the primary basis of the interactions. However, the term 'embedded advisor' is used by Klerkx & Jansen (2010) and Klerkx et al. (2017) to recognize advice provided in conjunction with another type of service. These authors caution against biased advice provided by embedded advisors, particularly when it is offered in conjunction with a commercial transaction. This research highlights that a commercial logic in an interaction with farmers does not necessarily compromise the value or reliability of advice because input suppliers were valued highly for their services including advice. This may reflect the relatively short time farmers in northern Sri Lanka have engaged in relationships with support providers that have a commercial logic. However, it may also illustrate the awareness input suppliers have of the value of a quality relationship with farmers for long-term loyalty.

Interactions between diverse agricultural support service providers

Different institutional logics are evident in the various services provided to farmers by service providers, and in the overall way they interact with farmers and other providers. Commercial and non-commercial logics are evident in the institutional logic of private entities and Government and Government-run entity. A duty of care logic is evident in the interactions between input providers and farmers but is clearly absent in the interactions between private microcredit providers and smallholder farmers. The mix of logics that comprise a service providers' institutional logic, preliminary results suggest, shapes their interactions with farmers, how different services are provided and how they interact with other providers.

Factors shaping the interactions between multiple actors

Trust, as argued by many other scholars (Rand et al. 2009; Lapple & Kelley 2015; Lapple et al. 2016; Kyle & Resnick 2018), is an important component determining the nature of interactions between farmers and support service providers. As in other studies (Batt & Rexha 2000; Masuku et al. 2003; Sutherland et al. 2013), regularity of visits and competency and knowledge of farming and farmers circumstances by support service providers contributed positively to trust in their relationship with smallholder farmers.

Conclusions

This paper provides some preliminary findings and some points of discussion from these preliminary findings. Multiple providers in the support services system in northern Sri Lanka provide packages of services, all of which include advice, but it is not the primary basis for the relationship. Trust emerges as influencing the nature of relationships and interactions between farmers and service providers and trust is related not only to longevity of relationship but also regularity of visits and the extent to which the expectations of smallholder farmers were fulfilled.

References

Adekunle OO 2013, 'Analysis of effectiveness of agricultural extension service in among rural women: case study of Odeda local government, Ogun State', *Nigeria Journal of Agricultural Science*, vol.5, no. 12, pp. 65-71.

- Ayele S, Duncan A, Larbi A & Khanh TT 2012, 'Enhancing innovation in livestock value chains through networks: Lessons from fodder innovation case studies in developing countries', *Science and Public Policy*, vol.39, no.3, pp. 333-346.
- Bandarage A 2010, 'Women, armed conflict, and peace-making in Sri Lanka: Toward a political economy perspective', *Asian Politics & Policy*, vol. 2, no. 4, pp. 653-667.
- Batt PJ & Rexha N 2000, 'Building trust in agribusiness supply chains: a conceptual model of buyer-seller relationships in the seed potato industry in Asia', *Journal of International Food & Agribusiness Marketing*, vol. 11, no.1, pp. 1-17.
- Bebe BO, Udo HMJ & Thorpe W 2002, 'Development of smallholder dairy systems in the Kenya highlands', *Outlook on Agriculture*, vol. 31, no. 22, pp 113-120
- Birner R, Davis K, Pender J, Nkonya E, Anandajayasekeram P, Ekboir J, Mbabu A, Spielman DJ, Horna D, Benin S & Cohen M 2009, 'From best practice to best fit: a framework for designing and analyzing pluralistic agricultural advisory services worldwide', *Journal of Agricultural Education and Extension*, vol. 15, no. 4, pp. 341-355.
- Cahn NR 2005, 'Women in post-conflict reconstruction: Dilemmas and directions'. *William and Mary Journal of Women and the Law*, vol. 12, pp. 335-377.
- CEPA 2009, *Rapid scoping study of supplementary welfare schemes in Sri Lanka*, Centre for Poverty Analysis (CEPA). Colombo, Sri Lanka.
- Christoplos I 2012, 'Climate advice and extension practice', *Geografisk Tidsskrift-Danish Journal of Geography*, vol. 112, no. 2, pp. 183-193.
- Clark N, Hall A, Sulaiman R & Naik G 2003, 'Research as capacity building: The case of an NGO facilitated post-harvest innovation system for the Himalayan hills', *World Development*, vol. 31, no. 11, pp. 1845-1863.
- Cleaver F 2012, *Development through bricolage: Rethinking institutions for natural resource management*, Routledge, New York.
- Cleaver F 2002, 'Reinventing institutions: Bricolage and the social embeddedness of natural resource management', *The European Journal of Development Research*, vol. 14, no. 2, pp. 11-30.
- Creswell JW 2009, *Research design: Qualitative, quantitative, and mixed methods approaches*, University of Nebraska-Lincoln, Lincoln, NE, USA.
- Davenport MA, Leahy JE, Anderson DH & Jakes PJ 2007, 'Building trust in natural resource management within local communities: a case study of the Midewin National Tallgrass Prairie', *Environmental Management*, vol. 39, no. 3, pp. 353-368.
- DCS 2016, *Economic Census - 2013/2014*, Department of Census and Statistics. Colombo, Sri Lanka
- de Koning J & Cleaver F 2012, 'Institutional bricolage in community forestry: An agenda for future research', in *Forest-people interfaces*, eds B Arts, S van Bommel, M Ros-Tonen & G Verschoor, Wageningen Academic Publishers, Wageningen, The Netherlands, pp. 277-290.
- Dey I 2005, *Qualitative data analysis: A user friendly guide for social scientists*, Routledge, London and New York.
- Ekboir J & Parellada G 2002, 'Public-private interactions and technology policy in innovation processes for zero tillage in Argentina', in *Agricultural research policy in an era of privatization*, eds D Byerlee & R Echeverria, CABI Publication, UK, pp. 137-154.
- Esham M & Garforth, C 2013, 'Climate change and agricultural adaptation in Sri Lanka: a review', *Climate and Development*, vol. 5, no. 1, pp. 66-76.
- Ezezika OC & Oh J 2012, 'What is trust?: perspectives from farmers and other experts in the field of agriculture in Africa', *Agriculture & Food Security*, vol. 1, no. 1, p. S1.
- Fernando P & Moonesinghe S 2012, *Livelihoods, basic services and social protection in Sri Lanka*, Secure Livelihoods Research Consortium, Overseas Development Institute, London, UK.
- Fisher R 2013, 'A gentleman's handshake: the role of social capital and trust in transforming information into usable knowledge', *Journal of Rural studies*, vol. 31, pp. 13-22.
- Flyvbjerg B 2001, *Making social science matter: Why social inquiry fails and how it can succeed again*. Cambridge University Press, United Kingdom.
- Garforth C, Angel B, Archer J & Green K 2003, 'Fragmentation or creative diversity? Options in the provision of land management advisory services', *Land Use Policy*, vol. 20, no. 4, pp. 323-333.
- Goodhand J 2012, 'Sri Lanka in 2011: Consolidation and militarization of the post-war regime', *Asian Survey*, vol. 52, no. 1, pp. 130-137.
- Gustafsson J 2017, Single case studies vs. multiple case studies: A comparative study, Available from: <www.diva-portal.org/> [17 July 2017].
- Hall A, Sulaiman R, Clark N, Sivamohan M & Yoganand B 2002, 'Public-private sector interaction in the Indian agricultural research system: An innovation systems perspective', in *Agricultural research policy in an era of privatization*, eds D Byerlee & R Echeverria, CABI Publication, UK, pp. 155-176.
- Hall J & Pretty J 2008, 'Then and now: Norfolk farmers' changing relationships and linkages with government agencies during transformations in land management', *Journal of Farm Management*, vol. 13, no. 6, pp. 393-418.
- Hilkens A, Reid JI, Klerkx L & Gray DI 2018, 'Money talk: How relations between farmers and advisors around financial management are shaped', *Journal of Rural Studies*, vol. 63, pp. 83-95.
- Hoffmann V, & Co. 2009, *Rural extension: Volume 1: Basic issues and concepts*, Margraf Publisher, Weikersheim, Germany.
- Hounkonnou D, Kossou D, Kuyper TW, Leeuwis C, Nederlof ES, Röling N, Sakyi-Dawson O, Traoré M & van Huis A 2012, 'An innovation systems approach to institutional change: smallholder development in West Africa'. *Agricultural systems*, vol. 108, pp. 74-83.

- Ingram J 2008, 'Agronomist–farmer knowledge encounters: an analysis of knowledge exchange in the context of best management practices in England', *Agriculture and Human Values*, vol. 25, no. 3, pp. 405-418.
- Kemp EA, Williams P, Gray DI, Gardner J & Kuiper D 2000, 'Rapport building in farm management consultancy: A case study', *Journal of Applied Systems Studies*, vol. 3, no. 1, pp. 194-217.
- Klerkx L, Petter Stræte E, Kvam GT, Ystad E & Butli Hårstad RM 2017, 'Achieving best-fit configurations through advisory subsystems in AKIS: case studies of advisory service provisioning for diverse types of farmers in Norway', *The Journal of Agricultural Education and Extension*, vol. 23, no. 3, pp. 213-229.
- Klerkx L, van Mierlo B & Leeuwis C 2012, 'Evolution of systems approaches to agricultural innovation: concepts, analysis and interventions', in *Farming Systems Research into the 21st century: The new dynamic*, eds I Darnhofer, D Gibbon & B Dedieu, Springer, Dordrecht, pp. 457-483.
- Klerkx L & Jansen J 2010, 'Building knowledge systems for sustainable agriculture: supporting private advisors to adequately address sustainable farm management in regular service contacts', *International Journal of Agricultural Sustainability*, vol. 8, no. 3, pp. 148-163.
- Kyle J & Resnick D, 2018, 'Delivering more with less: subnational service provision in low capacity states', *Studies in Comparative International Development*, vol. 54, no. 1, pp. 133-163.
- Lacey A & Luff D, 2009, *Qualitative data analysis*, The NIHR RDS for the East Midlands / Yorkshire & the Humber, Sheffield.
- Läpple D & Kelley H, 2015, 'Spatial dependence in the adoption of organic dry stock farming in Ireland', *European Review of Agricultural Economics*, vol. 42, no. 2, pp. 315-337.
- Läpple D, Renwick A, Cullinan J & Thorne F 2016, 'What drives innovation in the agricultural sector? A spatial analysis of knowledge spillovers', *Land Use Policy*, vol. 56, pp. 238-250.
- Masuku MB, Kirsten JF, van Rooyen CJ, & Perret S 2003, 'Contractual relationships between small-holder sugarcane growers and millers in the sugar industry supply chain in Swaziland', *Agrekon*, vol. 42, no. 3, pp. 183-199.
- Miles MB, Huberman AM & Saldana J 2014, *Qualitative data analysis: a methods sourcebook*, Sage Publications, CA, USA, pp. 275-322.
- Miles MB & Huberman AM 1994. *Qualitative data analysis: An expanded sourcebook*, Sage Publication, Thousand Oaks, CA, USA.
- Morton JF (2007), 'The impact of climate change on smallholder and subsistence agriculture', *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, vol. 104, no. 50, pp. 19680-19685
- Newman C & Briggeman BC 2016, 'Farmers' perceptions of building trust', *International Food and Agribusiness Management Review*, vol. 19, pp. 57-76.
- Pathmanathan H, Babu SC & Pal C 2017, *Building resilience for food systems in post-war community's case study and lessons from northern Sri Lanka*, International Food Policy Research Institute (IFPRI), Washington, DC, USA.
- Poulton C, Dorward A, & Kydd J 2010, 'The future of small farms: New directions for services, institutions, and intermediation', *World Development*, vol. 38, no. 10, pp. 1413-1428.
- Pye-Smith C 2012, *Agricultural extension: A time for change*, Technical Centre for Agricultural and Rural Cooperation (CTA), Nairobi., Kenya.
- Rand S, Tommaso N & Karlheinz K 2009, 'Socio-technical context, framework conditions and drivers of rural innovation processes, in *Innovation process in agriculture and rural development*, eds K Knickel, T Tisenkopf & S Peter, In-sight, SSP: 44510, pp. 22-38, Available from: < <https://www.ub.unibas.ch/> [17 July 2017].
- Renwick A, Läpple D, O'Malley A & Thorne F 2014, *Innovation in the Irish agrifood sector*, University College Dublin, Available from: <<http://www.ucd.ie/>>, [25 August 2018]
- Sangakkara UR & Nissanka SP 2008, 'Food security in Sri Lanka-agronomic implications and potentials', *Population*, vol. 2, p. 4.
- Sanginga PC, Waters-Bayer A, Kaaria S, Wettasinha C & Njuki J, 2009, *Innovation Africa: enriching farmers' livelihoods*. Earthscan., London.
- Schut M, Rodenburg J, Klerkx L, van Ast, A & Bastiaans L 2014, Systems approaches to innovation in crop protection - A systematic literature review, *Crop Protection*, vol. 56, pp. 98-108.
- Siggelkow N 2007, 'Persuasion with case studies', *Academy of Management Journal*, vol. 50, no. 1, pp. 20-24.
- Silverman D 2013, *Doing qualitative research: A practical handbook*. SAGE publications limited, Thousand Oaks, London, UK.
- Snape D & Spencer L 2003, 'The foundation of qualitative research', in *Qualitative research practises: a guide for social science students and researchers*, eds J Ritchie & J Lewis, Sage Publication, London, UK, pp. 1-23
- Somasundaram D & Sivayokan S 2013, 'Rebuilding community resilience in a post-war context: developing insight and recommendations-a qualitative study in Northern Sri Lanka', *International Journal of Mental Health Systems*, vol. 7, no. 3, pp. 1-24
- Stelling A, Millar J, Phengsavanh P & Stur, W 2009, 'Establishing learning alliances for extension: key learnings from Laos', *Extension Farming Systems Journal*, vol. 2, no. 1, pp. 1-10.
- Sutherland LA, Mills J, Ingram J, Burton RJ, Dwyer J & Blackstock K 2013, 'Considering the source: Commercialisation and trust in agri-environmental information and advisory services in England', *Journal of Environmental Management*, vol. 118, pp. 96-105.
- Thornton PH & Ocasio W 1999, 'Institutional logics and the historical contingency of power in organizations: Executive succession in the higher education publishing industry, 1958-1990'. *American Journal of Sociology*, vol. 105, no. 3, pp. 801-843.

Vasudevan R 2013, *Everyday resistance: female headed households in northern Sri Lanka*, Graduate Institute Publications, Geneva, Switzerland, vol. 19.

Verschuren P 2003, 'Case study as a research strategy: some ambiguities and opportunities', *International Journal of Social Research Methodology*, vol. 6, no. 2, pp. 121-139.