FARMERS IN SRI LANKA AND THEIR AGRICULTURAL DIVERSIFICATION PROCESS.

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PREFACE AND ACKNOWLEDGEMENTS

This research paper involves the farmers in Sri Lanka and the support provided in their agricultural diversification process. This report is written to fulfill the graduation requirements for the International Food Business Program at Aeres University of Applied Sciences in Dronten. I was responsible for the conduct and redaction of this research paper from February to August 2018.

The topic of this thesis came to me during the research period in Sri Lanka from February to May 2018. The three locations that I visited in Sri Lanka resulted in the input for this report. The local partners involved with the farmers in those areas helped me greatly with writing this report. Furthermore, my stay and activities at the different ZOA (local non-governmental organization) offices were very beneficial for my results. The staff working at these offices supported me both on academic level and personal level, by exposing me to the Sri Lankan customs and culture. Additionally, my internship coordinator located in Colombo, Mr. Modestus Karanurathne, has been a great support throughout my research.

I would like to thank my thesis and internship coach in The Netherlands, Daan Westrik, for his continuous support during my research period in Sri Lanka.

Note: The chapter Materials and Methods is altered after the assessment of the research proposal. The reason for choosing the sample size is added for the first sub-question, “Do the stakeholders have the feeling that they assist the farmers sufficiently, and how do the farmers use this assistance?

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SUMMARY

Sri Lanka is an island in the Indian Ocean largely involved in agriculture. The main crop grown on the island is paddy, the island is self-sufficient in producing this crop. Agricultural diversification would be a good option to reduce the dependence on the paddy production. Many different supporting parties are needed in the diversification process. Support for diversification is merely taking place at the higher levels and is lacking implementation at farm level.

The stakeholders involved in the agricultural industry are: government (DOA), non-governmental organizations (NGO's), buyers and cooperatives. In order to identify what type of support the farmers need from the stakeholders, further research took place. This resulted in the main research question: "What type of support do the farmers in Sri Lanka need in order to increase diversification on their farms?" The goal of this research is identifying what it is that the farmers need, in order to increase the diversification on their farms.

Three different research locations were targeted in this research, Uhana, Karadiyanaru and Periyamadu. The research showed that many of the stakeholders feel that the farmers are satisfied with the support provided by them. Contrary, many farmers are not satisfied with the support provided by the stakeholders. The research locations were also researched separately. A network of support was observed in Uhana. The cooperative was the base of larger stakeholder network. This supporting system was not observed in the other two research areas. The stakeholders were also separately researched. The NGO's and the DOA are valued as the best supporting stakeholders, they support the farmers with market incentives. The buyers were not involved with these market incentives and this while they are the ones that control the markets.

The most crucial recommendations are firstly the formation of a network of different stakeholders. Secondly the buyers need to become involved in the market incentives from the other stakeholders. The last recommendation is to prevent the overdependence on one stakeholder , this recommendation works together with the formation of a network of stakeholders.

1. INTRODUCTION

SRI LANKA & AGRICULTURE

Sri Lanka is an Island in the Indian Ocean of approximately 65,610 square kilometers. About one third of the labor force is involved in agriculture (UNDP, 2013). Sri Lanka became independent in 1948 and succeeding this, one of its major agricultural goals was to achieve self-sufficiency in most of the essential food crops. Before the independence of Sri Lanka, tea, rubber and coconut dominated Sri Lanka's exports. Simultaneously, substantial amounts of rice, wheat and other food products where imported (Bandara & Jayasuriya, 2007). In order to achieve self-sufficiency after the independence, the government used multiple strategies for the agricultural industry. The major incentives regarded topics such as irrigation, obtaining quality planting materials, agricultural practices, insurance and pricing. The strategies developed by the government were successful in improving farmers practices. Subsidizing fertilizer was a measure taken by the government, which resulted in higher yields for the farmers. A large focus for the government was to become self-sufficient in producing paddy, which is a product of rice. The result of this focus on rice was that the main resources were used for one crop and not for diversifying into other crops. The focus on the paddy production resulted in Sri Lanka becoming self-sufficient in paddy production, but no further progress in becoming self-sufficient in other crops (Bandara & Jayasuriya, 2007). After the introduction of an open market system in the early 1980's some of the earlier mentioned policies and strategies were relaxed. The subsidies were reduced and the private sector became responsible for the marketing of the agricultural produce (UNDP, 2013). In the 2000's the government adopted a trade liberalization policy where GATT, SATHA and other regional trade agreements promoted free trade. Sri Lanka experienced a rapid economic growth due to the free trade policies, but this was not the case for the agricultural industry. The local commodities produced by the farmers needed to compete with the imported products, and it lowered the farmers' income substantially (Jayawardane & Weerasena, 2001).

SRI LANKA & SOUTH ASIA

When Sri Lanka is included in a larger region such as South Asia, different agricultural factors can be observed. The human pressure on arable land is high in South Asia, this can be measured by the available arable land. For South Asia this is 0.23 hectares per capita, this in comparison to 0.6 hectares per capita for the world (Khan & Shah, 2011). Also much of the arable land in the South Asian countries is losing its essential productivity because of poor agricultural practices. Intensification of agriculture has been a method for promoting agriculture among the south Asian countries. The use of agrochemicals has been a large drive for the growth in the region's agricultural output. In addition with high yielding seed varieties and chemical fertilizers, this all resulted in "The Green Revolution"(Khan & Shah, 2011). Currently only three countries in South Asia still exceed the average consumption of fertilizer in the world: Bangladesh, Pakistan and Sri Lanka. In terms of agricultural output, the green revolution was of great advantage to South Asia, but adverse effects were also present. The damage to the environment and the social disruption where difficult to handle by the South Asian farmers. A larger focus on sustainable and ethical agriculture are needed to deal with the threats of climate change and loss of biodiversity (Khan & Shah, 2011).

PADDY PRODUCTION

Further to the self-sufficiency goals, paddy became one of the most important self-sufficient crop of Sri Lanka. Most of the farmers in Sri Lanka cultivate paddy, which becomes the product rice after harvesting. Paddy is chosen because it is easy to cultivate and to harvest. There is also a large rice consumption in Sri Lanka, thus most of the rice stays within the country (Wijetunga, 2016). According to the Department of Agriculture of Sri Lanka, rice occupies 34 percent of the total cultivated area in Sri Lanka. The average, annual amount of paddy planted is 870.000 hectares which involves 1.8 million farming families island-wide. Sri Lanka is sufficient in its domestic requirement for rice, 95 percent of the demand is fulfilled by the Sri Lankan paddy production (The Rice Research and Development Institute, 2017). Even though paddy is a simple crop to cultivate, there are many risks involved for the farmers. One of those risks being the climate. Droughts occur at various stages during the paddy cultivation season. Paddy can only grow with enough water, therefore droughts and paddy cultivation are a difficult combination. Farmers can lose a large percentage of their harvest to drought problems, which results in a significant loss in income for that season. Switching to crops that require lower

amounts of water would be a good way to mitigate this risk. Another risk is soil exhaustion. After cultivating one crop for several years, the soil gets exhausted. Therefore, it is better to rotate the crops among different fields. The soil is not only exhausted because of the paddy cultivation, but also because of the limited use of good quality fertilizer. Crop rotation and soil preservation to prevent soil exhaustion are also ways of spreading the risk for the farmers. When the income of the farmers is only based on paddy cultivation there is a risk of losing that income if problems occur during the cultivation (Wijetunga, 2016).

The size of the paddy cultivation is different per climate zone on the Island, thus the dependence on paddy cultivation is different among the different zones in Sri Lanka as well. There is the dry zone, intermediate zone and wet zone. The differences zones are visible below in Image 1. By mentioning these different zones it is evident that these distinct areas all require a different approach in terms of agricultural production (The Rice Research and Development Institute, 2017).

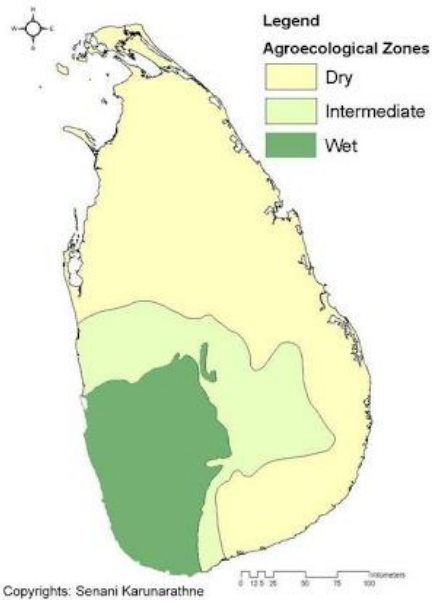

IMAGE 1 AGROECOLOGICAL ZONES SRI LANKA (UKUWELA, 2016)

There is an overlap in the different zones thus they do not systematically require different crops or agricultural practices. However, the different zones would mainly require different inputs such as water or fertilizer (The Rice Research and Development Institute, 2017). Farmers base their practices on the different agro-ecological zones, but there is an increasing trend of climate change happening in Sri Lanka. There are three major changes, gradual increase in air temperature, changes in pattern of rainfall and increase in frequency and severity of extreme weather events. Such changes make it difficult for the farmers to grow their crops as they used to. It also makes the cultivation more difficult in terms of planting periods and harvesting periods. The impacts of climate change on the agricultural production could be minimized by applying appropriate adaptation strategies such as micro irrigation, changing planting dates, reduction of irrigation depth and diversification (Menike, & Arachchi, 2016).

The problems with paddy are not only climate related. Market conditions for paddy are unfavorable for the Sri Lankan farmers. The farmers have limited power in the process of selling their harvested products and no storage facilities. The farmers in one area all sell the paddy directly after harvesting, due to the lack of storage facilities. This results in a surplus of paddy supply in the market during harvest season, causing low prices for the farmers. Furthermore, the farmers do not have any bargaining power for a good price of their harvest (Korale Gedara, Ratnasiri & Bandara, 2015).

OTHER AGRICULTURAL CROPS

Stretching the dependence on paddy cultivation does not mean that other crops are not cultivated in Sri Lanka. The cultivation of other crops can be made visible by showing the targets of the agricultural production and their actual achievement. Table 1 below illustrates the targets for cultivation of other agricultural crops in Sri Lanka for the Maha season 2017 – 2018. There are two cultivation seasons namely; Maha and Yala which are synonymous with two monsoons. Maha Season is during the North-east monsoon from September to March. Yala season is effective during the period from May to end of August. The largest crop targeted for cultivation during that period is Maize, followed by black gram (grain) and ground nut. Most of the targets are not expected to be achieved.

Crop	Maha 2017/18			
	Target (ha)	Achievement (ha)	Expected production from the achievement (mt)	% Achievement in extent from the target
Maize	87,744	69,500	243,888	79
Potato	3,343	1,257	20,723	38
Red Onion	3,779	1,181	18,083	31
Green Chilli	11,803	5,825	32,140	49
Finger millet	4,374	2,875	3,546	66
Green Gram	11,450	6,115	7,689	53
Cow pea	10,280	3,361	3,688	33
Black gram	15,861	9,823	8,621	62
Ground nut	12,640	8,723	11,406	69
Gingelly	4,848	1,187	864	24
Soy bean	1,567	392	632	25
Big Onion	296	43	596	15
Total	**167,985**	**110,281**	**376,265**	**66**

TABLE 1 TARGETS AND CULTIVATION EXTENTS AS AT END DECEMBER 2017 OF MAHA 2017/18 SEASON (DOA,2018).

The percentage of achievement is based on the amount planted by the farmers in the beginning of the season. Only the maize is having a high achievement rate of 79 percent (DOA, 2018).

When the cultivation of other crops is compared to the cultivation of paddy, large differences are visible. The target amount of Maize planted is 87.744 hectares (DOA, 2018). However, this amount is very low in comparison to the amount of paddy planted, which was 870.000 for the year 2017 production (The Rice Research and Development Institute, 2017). In order to become less dependent on the paddy cultivation and improve the situation for the farmers, other crops need to be cultivated at a larger extend, thus an increase in diversification. A need for diversification is further required when taking into account the need to become less dependent on the climate and to improve the self-sufficiency in agricultural production. However diversification at a large scale is not successful in Sri Lanka yet (Esham, Kobayashi, Usami & Matsumura, 2006). The road to diversification is not an easy one. The farmers struggle with various problems along the way, such as limited financial resources available, lack of distribution of knowledge among the farmers, providing good quality seed materials, and so on (Esham, Kobayashi, Usami & Matsumura, 2006). A World Bank Document about improving Farmers' Incomes in the Poorest Regions, described diversification as a very important aspect of poverty reduction (World Bank, 2009). Not only poverty reduction is the reason for the promotion of diversification, the farmers are facing the challenge of climate change. As explained in the information about paddy production, the farmers need to adapt to the climate change in order to continue their cultivation (Menike, & Arachchi, 2016). One of the solutions for reducing the poverty and to adapt to climate change at the same time would be to choose to diversify at farm level.

DIVERSIFICATION

Diversification is a good method to reduce poverty and to adapt the agricultural sector to climate change. Diversification is a change in agricultural activities. At the farm level, diversification will represent changes in the underlying characteristics of the farming system. These changes can be in social, environmental and economic contexts, as well as the constraints and opportunities that exist (Barghouti, Kane, Sorby & Ali, 2004).

The reason for choosing the path of diversification instead of alternatives such as specialization is to fulfill the total food demand of Sri Lanka and therefore reducing the poverty and adapting to climate change (World Bank, 2009). The amount of success on fulfilling the food requirements in Sri Lanka is made visible by showing the annual requirement versus the annual production, in table 2. Providing a view on what the Sri Lankans need in terms of food production is described by a report from the Presidential Task Force on the National Food Production (Presidential Task Force on National Food Production, 2016). By launching the Food Production National Program, the government is trying to reform the local food production system. The information from this program is beneficial as it shows the annual requirement and the annual production per agricultural crop. In this table only eight types of agricultural products are mentioned in the amounts of Million Metric Tonnes (Mn. Mt.) Spices such as turmeric and ginger are not cultivated at a large scale and are not able to be measured in this report (Presidential Task Force on National Food Production, 2016).

Crops	**Paddy**	**Maize**	**Groundut**	**Green Gram**
Annual requirement	2.27 Mn. Mt.	400.000 Mt.	26.000 Mt.	26.000 Mt.
Annual Production	2.71 Mn. Mt.	235.000 Mt.	21.516 Mt.	12.000 Mt.
	Soya Beans	**Big Onion**	**Chili**	**Potato**
Annual requirement	220.000 Mt.	235.000 Mt.	80.000 Mt.	160.000 Mt.
Annual Production	22.500 Mt.	104.000 Mt.	39.237 Mt.	80.000 Mt.

TABLE 2 ANNUAL PRODUCTION VS. ANNUAL REQUIREMENT (PRESIDENTIAL TASK FORCE ON NATIONAL FOOD PRODUCTION, 2016).

HORIZONTAL AND VERTICAL DIVERSIFICATION

Agriculture plays an important role in the lives of Sri Lankans, as more than one third of Sri Lankans are employed in the agricultural sector (The International Trade Administration, 2017). However, the sector is still largely concentrated on a limited range of crops. If the farmers want to increase the amount of crops cultivated at their farm they need to diversify. The effects from diversification can be both horizontally and vertically (Barghouti, Kane, Sorby & Ali, 2004). Indeed, horizontally by expanding the farm, which means utilizing all existing resources or expanding the amount of resources. Expanding the amount of resources would signify the cultivation of a larger range of crops by the Sri Lankan farmers. This would not necessarily result in a higher

income, but it would make the farmer more resilient towards sudden changes in the environment of their crop(s) (Barghouti, Kane, Sorby & Ali, 2004).

Diversifying vertically implies that the farm is moving higher or lower into the marketing and distribution channels, such as direct marketing (Barghouti, Kane, Sorby & Ali, 2004). The typical position of the Sri Lankan farmers in the marketing and distribution channels is low. They only cultivate the products and sell it in bulk as raw materials. Value added activities are rarely performed because they require initial investments and the farmers do not have the funds (Dorjee, Pingali & Broca, 2003). Money is not the only problem for performing value added activities. Another problem is knowledge; the farmers often do not have access to the knowledge needed to move higher in the marketing and distribution channels (Dorjee, Pingali & Broca, 2003). When this information is provided to them it often results in a power problem. The parties providing the knowledge want something in return. However, there are some success stories, when the farmers unite by forming a cooperative. With this cooperative the farmers are able to tackle the problems with vertical diversification as a group. United they are sometimes able to afford the investments needed and can perform value added activities successfully (Barghouti, Kane, Sorby & Ali, 2004).

CONSTRAINTS TOWARDS DIVERSIFICATION

The concept of horizontal and vertical diversification sounds promising for improving the situation for the farmers based on the theory provided in the previous section. During the 80s and 90s a pattern of agricultural diversification was observed at a national level. With this slight increase in diversification during the 80s and the 90s, different constraints where identified as well. A report about the increase of diversification categorizes the constraints in three different categories: Socio-Cultural Factors, Bio-Physical Environmental Factors and Economic Factors (Esham, Kobayashi, Usami & Matsumura, 2006).

Socio-cultural

The socio-cultural factors are determined by the status farming has in the Sri Lankan society. However, farming itself is also determined by those socio-cultural factors (Esham, Kobayashi, Usami & Matsumura, 2006). There is a trend of outmigration of people from agriculture, which has an unfavorable influence on the agricultural industry and therefore agricultural diversification. Another socio-cultural influence is the product orientation by farmers. The farmers are cultivating crops which are popular to grow among farmers rather than what is demanded by the market. Furthermore, the support services focus on crops that are easy to grow rather than focusing on market orientation. That is also why farmers do not produce in order to meet market demand, but they end up with routine production patterns and a limited range of crops. Sometimes the farmers do not have the ownership of the land and the land-owner is determining the crops cultivated on the field, which could be another socio-cultural factor. The religion of the farmers is also playing a role in the constraints to diversification. Buddhist farmers sometimes show reluctance to getting involved in livestock production. Indeed, one of the rules they live by is to not kill other humans or animals (Esham, Kobayashi, Usami & Matsumura, 2006). Due to the fact that Sri Lanka is largely mixed in terms of religion, each district is divided among different religions which all have a large effect on the agricultural practices in that area. The different religions per district can be found in Appendix 3 (Sarvananthan, 2016). Another socio cultural factor is the influence of the caste system (Klem, 2011). The caste system is followed by the Sinhalese and Tamils widely on the island. It is influencing various socio-economical, cultural, religious and ritual aspects and is mostly affecting the agriculture in Sri Lanka in terms of profession. Certain caste families are from origin farmers and will do so in the future as well. Being a farmer is not necessarily depending on your interest but based on caste and the occupation of the family (Riswan, 2014).

Bio-physical

The bio-physical environmental aspect is regarding the water issues in Sri Lanka. The non-rice (upland) crops cultivated in the paddy lands during the rainy seasons in Sri Lanka do not endure excess soil moisture and water saturated conditions. Thus this prevents the cultivation of upland crops in the paddy fields. When the option of irrigation mechanisms in the dry zone is considered, only 80.000 ha of such lands are available. In the Wet Zone the situation is even more difficult because of the high rainfall and frequent floods (Esham, Kobayashi, Usami & Matsumura, 2006).

Economical

For the economic constraints the middlemen play a large role. The input suppliers and market intermediaries often place restrictions on the aid they provide to the farmers. This can be in the form of negotiating fixed contracts for selling the harvest. The intermediary pressures the farmers by renting them a harvesting machine, which they need to repay this favor by selling the harvest to the intermediary for a lower price. Thus, this makes it difficult for the farmers to make independent and unbiased choices when they want to sell their products and has a direct effect on the diversification process. The farmers feel like they are improving, but the economic advantages of diversification in such situations are limited (Esham, Kobayashi, Usami & Matsumura, 2006).

STAKEHOLDERS IN DIVERSIFICATION

The diversification among the farmers in Sri Lanka knows many constraints. Overcoming socio-cultural, bio-physical and economic factors is something that the farmers cannot do without additional support. The public extension system has failed to address the diversification needs of the small farmers (Esham, Kobayashi, Usami & Matsumura, 2006). Researchers from the Sabaragamuwa University of Sri Lanka, state that when it comes to crop diversification, only 13 percent of the farmers receives support and technical assistance from official extension workers, such as Agricultural Instructors from the government (Esham, Kobayashi, Usami & Matsumura, 2006).

SUPPORT AND ASSISTANCE

GOVERNMENT

The next section will discuss the different supporting parties in the diversification process of the farmers in Sri Lanka. Even though the diversification is an important aspect of this research, the support needed by the farmers for diversification is the main topic. The reason for the emphasis on the support is that much more of that support is needed in order to increase the diversification among the farmers. The support offered for agricultural diversification is often received at higher levels. With incentives such as The Sri Lanka Diversified Agricultural Research Project (DARP), The National Policy on Agriculture and Livestock (NPAL) or The Center for Agricultural Research Policies (CARP), diversification is addressed at the higher levels. These higher levels involve the government departments in Colombo rather than the regional offices in the rural areas (Esham, Kobayashi, Usami & Matsumura, 2006). Reports written about the incentives for diversification claim that the projects are successful. Nevertheless, when the information about these incentives is screened at implementation at farmers level, limited or no results are available. The farmers are largely dependent on these policies developed by the government. Whenever policies change it can either mean a positive or negative change for the Sri Lankan farmers. Thus, the government is a large stakeholder for the support in diversifying the farmers (Esham, Kobayashi, Usami & Matsumura, 2006).

NON-GOVERNMENTAL ORGANIZATION

Support is not only taking place at higher level by government authorities. Indeed, the local Non-Governmental Organizations (NGO') active in the rural communities try to support the diversification, but are not always effective in promoting this at a larger scale. They do not have enough control in the areas and also have limited manpower. The NGO's where mainly active in Sri Lanka for relieve and humanitarian work. The Island has a difficult past with a long civil war and a tsunami and the NGO's helped with the recovery of the Island. Intentionally the activities where related to refugee camps, schools and reconciliation projects. In addition, many areas had limited agricultural activities, which had to be built up with the help of the government and NGO's such as ZOA. The situation of Sri Lanka improved and they are almost at the level of a mid-income country. Since many other countries in the world need relieve and humanitarian support, ZOA is withdrawing from Sri Lanka, they are transferring their power and tasks by creating small regional NGO's. Thus why ZOA does not have enough man power to tackle the support of diversification by themselves (ZOA, n.d.)

BUYER

The next stakeholder for the agricultural diversification process is the buyer of the agricultural produce. This stakeholder is of great importance for the Sri Lankan farmers as they buy their cultivated products. If the farmers want to diversify into other agricultural products they need the buyers to buy those products as well. The buyers are not only important for buying the products as sometimes they offer additional support services. Those services differentiate based on the crops and regions (ZOA,2018). An example of such services took place in Batticaloa district in the Eastern Province of Sri Lanka. The farmers are cultivating peanuts in that region and most of the work is performed by manual labor, but it is difficult to get enough manual labor to do the harvesting of the peanuts. That is why several buyers of the peanuts offer harvesting machines to the farmers, in return for a renting fee. Several farmers use these machines and harvest their peanuts successfully and pay the renting fee. When the farmers want to sell their peanuts, the buyers pressure the farmers into selling their peanuts to them for a lower price. Since the farmers used the machine they feel pressured into selling it to the buyers, even though they paid a fair renting fee. Offering supporting services is beneficial for the farmers because it makes their cultivation easier and they get motivated to grow more crops (ZOA,2018). Equally, working together as a buyer and a farmer is positive for vertical diversification, thus moving higher or lower in the physical distribution channels (Barghouti, Kane, Sorby & Ali, 2004). By themselves the farmers might be more vulnerable to the pricing tactics of the buyers, but united in a farmer's organization or cooperative will have a stronger position.

AGRICULTURAL COOPERATIVE

Uniting the Sri Lankan farmers in a cooperative or farmer's organization could be a good way of strengthening their position in the agricultural sector (Yegizbayeva et al., 2015). A cooperative is an organization which is owned and jointly run by its members, who share the profits or benefits (Businessdictionary, n.d). An article related to Regularities and Development Trends of Agricultural Cooperation in Central Asia states that many problems for small scale farmers can be solved by the development of agricultural cooperation. Farmers can unite based on the different crops they grow, their location or a joint interest for a certain type of farming (Yegizbayeva et al., 2015). Another article related to agricultural cooperatives shows the value of social capital as an asset for the farmers when they unite in a cooperative. Social capital means the network of relations among different people, so the farmers use the different contacts within their farming community. Since the farmers often have limited financial resources it is even better to let them be empowered by social capital rather than other forms of capital (Uphoff & Wijayaratna, 2000). A difficult aspect of the agricultural cooperatives and farmers organization is the financial resources. Even though they strengthen the position of the farmers, they often lack financial resources. Furthermore, when there are financial resources they create an internal hierarchy within the societies, which affects the reliability of the farmers' association (Yegizbayeva et al., 2015).

FARMERS

The last stakeholder is the farmer. The farmers in Sri Lanka are mainly cultivating paddy as explained in the previous section. The cultivation of paddy was stimulated by the government in order to meet the domestic consumption demand (The Rice Research and Development Institute, 2017). Sri Lanka is facing many challenges in terms of the livelihood of the farmers and the climate change. These challenges demand for a change in agricultural practices. Changing farmers practices is not easy, especially when the farmers have limited financial resources and knowledge. That is why the farmers can only change their practices, so diversifying, with the right type of support.

RESEARCH QUESTION

In this section about support many different stakeholders were discussed. Starting with the higher levels such as the government and later on discussing lower levels such as the farmers organizations. They all support the farmers in a different way and with that face different problems. The diversification incentives of the government often lack distribution to the actual farm level. The NGO's are pulling back from Sri Lanka because the GDP is improving, so they lack manpower and other resources. Buyers often combine their support to the farmers with an increase in power, which gives little economic advantages. Lastly the cooperatives have enough social capital but limited financial resources to support the farmers in diversifying. Thus, what is it that the farmers actually need and do not need? This results in the question: what type of support do the farmers in Sri Lanka need in order to increase diversification on their farms?

Main Question:

The main question is based on the topic of this research, “Farmers in Sri Lanka and the support in their agricultural diversification process”.

“What type of support do the farmers in Sri Lanka need in order to increase diversification on their farms?”

Sub-questions:

The sub-questions have the purpose of answering the main questions.

1. Do the stakeholders have the feeling that they assist the farmers sufficiently, and how do the farmers use this assistance?
2. How do the farmers value the current support provided to them in the diversification process?
3. Does the support provided to the farmers differ per cultivated crop(s)?
4. What is the influence of the factors related to geographical location on the assistance needed in the agricultural diversification process?

Objectives

The criteria that should be fulfilled by researching the farmers and their agricultural diversification process are based on the sub-questions mentioned in the previous section and further explained in the materials and methods section. This research is applicable for the parties involved in providing assistance to the farmers in their diversification process. Thus answering the sub-questions and by that answering the main question, need to happen in a way that it will support the farmers in increasing the diversification.

The goal of this research is identifying what it is that the farmers need, in order to increase the diversification on their farms. Thus, it goes beyond on what the government, buyers, NGO’s or cooperatives need themselves, but more on what they need to do to support the farmers. The farmers are central in this research, but they are not the ones who can directly solve the problem with the diversification. The stakeholders are needed to provide the support to the farmers and by that increasing the agricultural diversification. With this support the farmers can increase the diversification and improve their livelihood.

2. Materials and Methods

Continuing with the section about materials and methods, in this section it became clear how the research took place. The section regarding the materials is a description of the objects from where the variables were measured. The methods section is about which variables were measured, how and when the measurements took place. The materials and methods were described per sub-question. One general aspect which applies to all the sub-questions was the language. The population of Sri Lanka is divided between Tamil and Singhalese people. Both speak a different language and this language was not spoken by the researcher. Therefore, the researcher was assigned an interpreter, which was used for the translation. A different interpreter was used for each of the visited districts. This interpreter was not mentioned specifically in the sub-questions because it was not a factor in answering them, but because it is part of the materials used for this research and it does need to be mentioned.

Do the stakeholders have the feeling that they assist the farmers sufficiently, and how do the farmers use this assistance?

Research methods

The first sub-question was answered with qualitative and quantitative research methods. This sub-question addressed both the farmers and the stakeholders. For retrieving the quantitative information, a questionnaire for the different stakeholders was prepared and can be found in Appendix 1. The answers were obtained either via email, phone call or in person and were processed with the data processing program SPSS. A minimum of 12 stakeholders were targeted, 4 different stakeholders for each research location. The reason for choosing this sample size was the fact that in all three research locations these four stakeholders were present. Therefore these stakeholders could be easily compared among the three research locations. The qualitative research for this question took place with open interviews and observations with both farmers and stakeholders. The use of desk research had the purpose of providing more theoretical information for answering the sub-question.

Research locations

The research took place in three different locations in Sri Lanka, *the Ampara District, Batticaloa District* and *Mannar District*. Which were further explained in the sub-question concerning the geographical location. The parties who were locally involved in the research areas are explained in the next section below. No differentiation was made towards the levels of involvement in the agricultural industry or the diversification process.

Stakeholders

- **Non-Governmental Organization ZOA**. This NGO is active in all three visited districts and was working with the researcher on a daily basis. Different staff members were present at the different districts and therefore they all provided a different aspect on the assistance made available by the NGO. The researcher was accommodated at the ZOA facilities and that was also where the observations took place.
- **Farmers' societies or Cooperatives.** Each of the locations visited in the different districts has one or two cooperatives. Usually the cooperatives are based on one crop, but sometimes they try to promote cultivation of other crops as well. The information about the cooperatives was supplied by the director of the cooperative. They provided their insight on how they assisted the farmers with diversifying. The cooperatives were visited by the researcher for (open) interviews, and appointments were scheduled via ZOA due to the fact that they are already involved in the areas.
- **Buyers of agricultural products**. Each of the visited locations in the different districts had other buyers for the crops cultivated. This meant that the power and role of the buyers were different as well. In what way do the buyers provide assistance in the diversification process? In general, one or two buyers are contacted for information about the support provided by them. Conversations with the buyers happened via the phone, email or with a visit; this was dependent on their location.
- **National and Local Government Authorities**. The government authorities, regionally active, have different involvements in the farmers' practices. Not all the districts had the same local government systems. Finding the same persons responsible for a task in the three different locations was difficult. Therefore, a person responsible for the agricultural practices was targeted. Examples are Agricultural Instructors, Local Directors of Agriculture, Department of Agriculture Staff, and so on. The government parties are either visited by the researcher or visited the ZOA offices.

- **Farmers.** The farmers were important for the second part of this sub-question regarding how they are using the assistance provided to them. The availability of the farmers differed among the three different locations. But the goal was to interview at least twenty farmers at each location. This sample size was chosen with support from ZOA. Visiting all the farmers was a large task and for the time available in Sri Lanka this was indicated like a good amount. In the *Ampara District* all the farmers were visited individually by the researcher. In the *Batticaloa District* the farmers were visited together at one central location, their fields. In *Mannar* the farmers were visited individually at their farms.

How do the farmers value the current support provided to them in the diversification process?

Research methods

The next sub-question researched the current support provided to the farmer in the three visited areas. This question is related to the first sub-question about the assistance or support provided by the stakeholders in the diversification process. But it has a larger focus on how the farmers value that support and if it is sufficient for them. Both quantitative and qualitative research methods were used. The quantitative method was used to show how satisfied the farmers are with the support provided to them. This question is part of the questionnaire for the farmers provided in Appendix 2. The processing of the answers from this questionnaire happened with the data processing program SPSS. The qualitative methods used were open interviews and observations. The use of desk research was again limited, thus if desk research was used, it had the purpose of providing a more theoretical view.

Research locations

The number of farmers observed and questioned was a minimum of twenty farmers per district. The districts were the research took place were the same as mentioned in the first sub-question, *Ampara District, Batticaloa District and Mannar District*. For this sub-question the focus was mainly on the farmer. The reason for that is to get an insight in the way they valued their support system and to identify possible gaps in the support provided to the farmers. The farmers were either visited on their fields, observed during farmers meetings or invited to the office of the researcher.

Does the support provided to the farmers differ per cultivated crop?

Research methods

The third sub-question has a focus on support in relation to the crops cultivated. This was researched from a farmer's perspective and a stakeholder's perspective. For this question, both quantitative and qualitative research methods were used. The quantitative method was performed by the comparison of different crops against each other and the support received by the farmers for those different crops. The questionnaire used for the quantitative research for the farmers can be found in Appendix 2. The results of the questionnaires were processed with the data processing program SPSS. Continuing with the qualitative research for this sub-question, this process was similar to the first and second research question because observations and (open) interviews were used for retrieving the information. The questionnaire used for interviewing the different stakeholders can be found in Appendix 1. The reason for also choosing qualitative methods was to include experiences and opinions about the crops as an addition to the factual data. The use of desk research was limited, thus if desk research was used it had the purpose of providing a more theoretical view.

Research locations

The three different areas visited all include farmers diversifying in different crops. The farmers provided their input on what type of support they feel like they should receive for the diversified crop. The different stakeholders explained what type of support they are able to provide to the farmers for each crop. Twenty farmers minimum per region were questioned and observed. A minimum of 12 stakeholders were targeted, 4 different stakeholders for each research location.

Research crops

In order to make this comparison, three different products were researched on the farm level in the three different research areas visited. The different regions are, *The Ampara District, The Batticaloa District* and *The Mannar District.* These districts were researched more in depth in the last sub-question about the geographical location. The three different products are, turmeric, peanuts and papaya. These crops were chosen because

they are cultivated in the areas visited but also because they belong to different agricultural categories. Turmeric belongs to the spices, peanuts to ground-nuts and papayas to fruits.

WHAT IS THE INFLUENCE OF FACTORS RELATED TO THE GEOGRAPHICAL LOCATION ON THE ASSISTANCE NEEDED IN THE DIVERSIFICATION PROCESS?

Research methods

The last sub-question is addressing the factor of the location for the support in the diversification process. Answering this sub-question was through the use of quantitative and qualitative research methods. For the quantitative research method, the same questionnaire was used as for the other sub-questions. These questionnaires can be found in Appendix 1 for the stakeholders and Appendix 2 for the farmers. Both the farmers and stakeholders answered questions related to the support provided to the farmers. Those answers were then categorized within the different geographical locations. For the farmers a minimum of twenty farmers per district are targeted. For the stakeholders a minimum of 12 were targeted, 4 per district. The data processing from the questionnaires happened with the data processing program SPSS. The qualitative research method was used through observations and open interviews. For this the researcher visited the different stakeholders involved in the agricultural areas. When the researcher was not able to visit the stakeholders, open interviews took place via the telephone or E-mail. The use of desk research was again limited, if desk research was used it had the purpose of providing a more theoretical view.

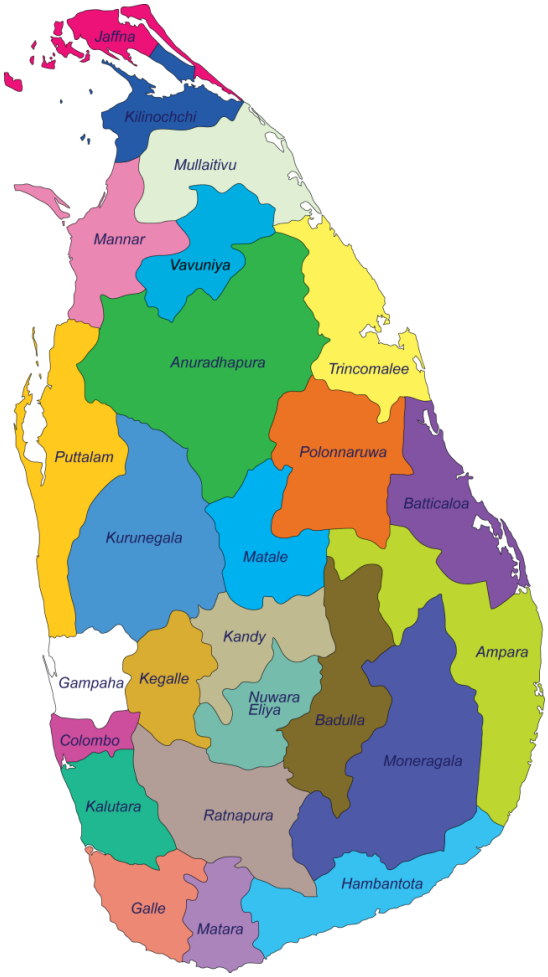

IMAGE 2, DISTRICTS SRI LANKA (GARDINER MAWATHA, 2017)

Research locations

The three areas visited during the research period will each provide results for the research in general. The areas visited are briefly mentioned in the first sub-question but will be further explained in this section. The stakeholders might vary per district based on the support present for the farmers. The locations visited will be described by district. The following locations are visited: *Ampara District*, *Batticaloa District* and *Mannar District*. These districts can be found on image 2. These districts all vary in terms of climate, ethnic groups, crops cultivated and ZOA involvement. In the *Ampara District* diversification is taking place for the crop turmeric. In the *Batticaloa District* peanuts are cultivated instead of paddy, and in the *Mannar District* the farmers are diversifying in the crop Papaya. The different crops cultivated will not be central in this sub-question, but their relation to the geographical location will be kept in mind when answering this question.

Research factors

Many factors are able to influence the diversification process among the farmers based on the geographical location. Sri Lanka is mainly populated by the Singhalese and Tamil population and among these different population groups there are several religions, the exact data of religions per district can be found in Appendix 3. Starting with *Ampara district*, the largest group is Buddhist, followed by Muslims, Hindu's and Christians. In *Batticaloa district* the largest group is Hindus, followed by Muslims, Christians and Buddhists. The last district, *Mannar*, the largest group is Christians, followed by Hindu's, Muslims and Buddhists (Sarvananthan, 2016). Having different sizes of religious groups in each district contributes to differences in agricultural practices among these districts. Another factor related to geographical location is how much the different districts are affected by the civil war. As mentioned earlier in this report Sri Lanka suffered from a civil war which lasted for almost 30 years. This caused large disruptions in agricultural practices over the whole island. The east and north of Sri Lanka were mostly affected by the war (Kubota, 2017) and the three different districts visited by the researcher are also located in the north and east of Sri Lanka. The last research factor is the climate related to the geographical location. As mentioned earlier in this report Sri Lanka knows different climate zones. Agriculture in the three different districts is practiced according to those different climate zones. *Ampara district, Mannar district and Batticaloa* district are all located in the dry zone, but they all have their dry period during a different time (Menike, & Arachchi, 2016). All the above-mentioned research factors will be researched in their relation to the diversification process in the different geographical locations.

3. RESULTS

In order to answer the sub-questions and with that the main questions, data was retrieved. During a three-month research period in Sri Lanka both farmers and stakeholders were researched. The researcher visited three different research locations in Ampara District, Batticaloa District and Mannar District. In these three different locations different farmers and stakeholders in the agricultural sector were observed and interviewed. 20 different farmers and 4 different stakeholders were interviewed per research location, thus a total of 60 farmers and 12 stakeholders. The answers to the questions asked during the interviews from both the farmers and stakeholders are processed with the program SPSS. Cross tabulation will be the main method for the four sub-questions, with the exception of a pie chart. The qualitative part of the sub-questions is based on observations during the interviews and by asking additional questions beyond the questionnaires presented in the appendices. There are some additional observations made about the situation in Sri Lanka, this information does not directly belong with the results for each sub-question, thus it is placed in the Appendices. Information about the farmers and stakeholders is available in Appendix 4 and a short description about the conflict is available in Appendix 5.

MAIN QUESTION: "WHAT TYPE OF SUPPORT DO THE FARMERS IN SRI LANKA NEED IN ORDER TO INCREASE DIVERSIFICATION ON THEIR FARMS?"

FARMERS SATISFACTION FROM A STAKEHOLDERS PERSPECTIVE AND USAGE OF THE ASSISTANCE BY THE FARMERS.

In this first sub-question the perspective of the stakeholders on the support provided by them is shown. Furthermore, the farmers perspective is researched by showing how the farmers use the assistance provided to them for the diversification process. Additional information about the stakeholders is visible in Appendix 5.

The stakeholders were asked how satisfied they think that the farmers are with the support provided to them, the full question can be found in the questionnaire in Appendix 1, question 5. In table 3 below, the result of the data analysis is visible. The total amount of stakeholders answering that the farmers where satisfied with the support provided to them is 9. The stakeholders answering that the farmers where not satisfied with the support provided to them is 4. Thus most of the stakeholders think that the farmers are satisfied with the support provided to them. Table 3 is organized per stakeholder, the answer yes for satisfaction is highest for the NGO's. The answer not satisfied is highest for the buyers. Based on this it is visible that the NGO's have the feeling that they do assist the farmers sufficiently and the buyers feel that they do not assist the farmers sufficiently.

Table 3: Type of stakeholder satisfied with the support provided to farmers

Type of stakeholder		Buyer	NGO	Government	Cooperative	Total
Answer stakeholder	Yes	2	3	2	2	9
	No	2	0	1	1	4
	Total	**4**	**3**	**3**	**3**	**13**

Continuing with how the farmers use the assistance provided to them. Showing how the farmers are assisted is fundamental in the process of discovering the support in the diversification process. The farmers identified the following types of assistance during the interviews.

Uhana, Ampara

- **Seed Materials:** In order to stimulate the cultivation of other crops, the different stakeholders provide at times seed materials to the farmers. With this seed materials being provided to the farmers at no cost, the cost of production is lower for the farmers, so it increases their profits. From the 20 farmers in total, 13 mentioned that they were assisted with seed materials.
- **Instructions to the farmers:** The involvement of the agricultural instructors of the government is high in Uhana. All 20 farmers mentioned in the interviews that they were assisted by the agricultural instructors. The agricultural instructors provide assistance to the farmers on how to grow turmeric and what to do when pests and diseases occur.
- **Market opportunities:** In order to create that additional profit, the diversified products need to be sold as well. The main buyer of the turmeric in Uhana is Ceylon Biscuits Limited. The cooperative (with support from ZOA) is trying to stimulate interaction and cooperation between the farmers and buyers such as Ceylon Biscuits Limited (CBL). During a cooperative meeting with all the farmers, CBL and ZOA, this interaction level was observed. In Image 3 such a meeting is shown, with the CBL representative visible below in the center of the image. The cooperative also joins forces when selling the turmeric, they collect the turmeric from all the farmers and sell it jointly to the buyers.

IMAGE 3, COOPERATIVE MEETING

Karadiyanaru, Batticaloa

- **Irrigation materials provided:** The farmers stated that peanuts need relatively limited amount of water but due to the dry climate in Karadiyanaru there is still some water needed. This is irrigated from the close by canals with pumps and a water hose. At least two-thirds of the farmers only recently resettled in this area and have limited financial and agricultural resources. In order to irrigate their crops properly, ZOA and other NGO's supported them with hoses and pumps for irrigation. The farmers stated that they pay a little amount of money for the materials supplied to them.
- **Selling the peanuts for seed purposes:** For market opportunities all 20 farmers mentioned the government seed farm. The government started a seed cultivation farm in Karadiyanaru. The agricultural director at this farm purchases part of the harvest from the farmers and uses it for seeding purposes. In return they supply the farmers with new seed materials for next year's cultivation. In this way the farmers both have market opportunities and good quality seed materials for next year.
- **Forming a cooperative/farmers organization:** In this region ZOA supported the formation of cooperatives among the farmers. Half of the farmers interviewed mentioned that they found it difficult to be part of a cooperative. They all sell the same products, so it is easy to see other as competition. Therefore, a neutral third party such as ZOA sometimes stepped in to get the farmers to cooperate. Two thirds of the farmers did state that they felt stronger towards the buyers being part of the cooperative.

Periyamadu, Mannar

- **Supporting the agricultural practices:** In this region the farmers had to start from scratch in terms of agriculture. About one-third of the farmers interviewed mentioned the difficulties with converting the jungle back to agricultural lands. Many inputs where needed in order to start agricultural production again, different stakeholders where involved in this process. All 20 farmers mentioned national NGO's such as ZOA and the FAO for assistance during this process. After the farmers started their cultivation, continuous support remained with the smaller local NGO, OPEnE.
- **Providing market incentives:** Not only cultivation and practices where a problem in this region, access to markets was a difficult issue as well. The farmers mentioned in the interviews that they were distant from market opportunities and had limited options for selling their produce. OPEnE tried to enable this by launching a project called village to market. With this project OPEnE tries to facilitate market opportunities for the farmers in Periyamadu. The goal of this incentive is to bring farmers in contact with buyers and create a sustainable farmer-buyer relationship.
- **Creating a sustainable livelihood situation:** The farming community consists of different religions in this area. All 20 farmers, both Hindu and Muslim, mentioned to be affected by the war in terms of family structure. About 5 out of 20 farmers stretched the importance of family for good agricultural practices.

The results of this sub-question showed that many stakeholders feel that the farmers are satisfied with their support. The NGO's interviewed in all three locations state that the farmers are satisfied with the support. However, in comparison with the buyers, none of them state that the farmers are satisfied with their support. In all three research locations the farmers are supported with market incentives or opportunities. The NGO's or cooperatives are mainly assisting with this type of support. Another type of support all the farmers interviewed are receiving is support for agricultural practices. In each of the research locations different agricultural practices in the diversification process are supported by the different stakeholders. A specific focus on livelihood situations is only present in the last research location, Periyamadu.

SUPPORT PROVIDED FROM A FARMERS PERSPECTIVE

The second sub-question analyzes the support for the diversification from a farmers perspective. The farmers are the party that need the support from the stakeholders in order to increase the diversification at their farms. That is why it is very important to describe the results from the interviews with the farmers in Sri Lanka. In order to provide a full image of the situation in Sri Lanka, additional observations about the farmers are placed in Appendix 4.

In order to measure how the farmers value the support, they were asked about their satisfaction for the support provided to them. The questionnaire for the farmers can be found in Appendix 2, question 9. The results are visible in figure 1.
The pie chart shows that more than two thirds of the farmers were not satisfied with the support provided to them for the diversification process.

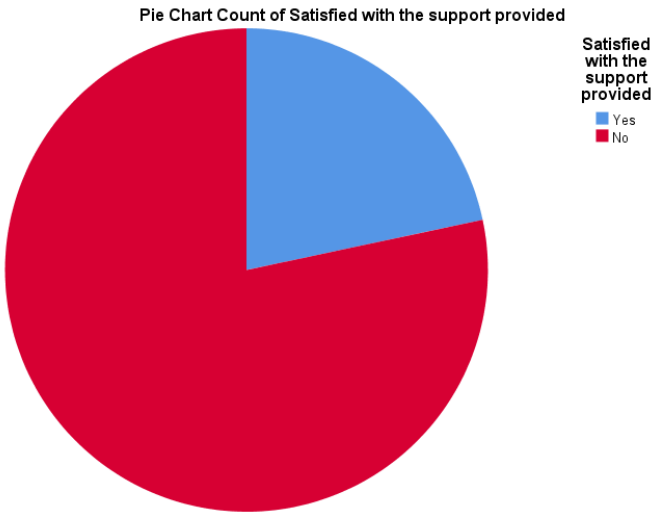

FIGURE 1, PIE CHART SATISFACTION FARMERS

The question about the farmers satisfaction regarding the support provided to them is only measuring a small aspect of how the support is valued. The farmers were also asked by which stakeholders they were supported for both diversification and agricultural practices in general. The results of this question are visible in Table 4 below. The largest number of farmers received support from the government followed by the national NGO's such as ZOA and the FAO. After that most farmers received support from a regional NGO, the bank or buyers of the agricultural produce.

Table 4: Support provided to the farmers per stakeholder

Support		**Yes**	**Yes**[a]	**No**	**No**[a]	**Total**
Type of stakeholder	National NGO	37	62%	23	38%	60
	Regional NGO	20	33%	40	67%	60
	Buyers	8	13%	52	87%	60
	Banks	9	15%	51	85%	60
	DOA	40	67%	20	33%	60
	Cooperative	19	32%	41	68%	60
	Total	133		227		

[a] Amount in percentage

How the farmers value the support provided to them cannot only be expressed in terms of statistics, the qualitative aspect requires some attention as well. The description of how the farmers value the support will be organized per stakeholder. During the interviews, several questions were asked regarding the support the farmers were receiving for diversification. Based on those answers, each stakeholder is described with two positive aspects and two negative aspects. Not only the farmers were taken into consideration, the input of the interviews with the stakeholders themselves is included as well. The bank will not be mentioned in this description. They were included in the answers to provide the full image of supporting stakeholders, but not discussed in the additional conversations for qualitative research. The bank was not active in all three areas and was therefore not included in the stakeholder questionnaires. The following information was retrieved from the interviews with both stakeholders and farmers:

National NGO

- **Positive:** During the interview with ZOA, they mentioned that they have long term projects for the farmers. ZOA also mentioned that they want to achieve sustainable long-term goals, that benefit the society as a whole. The farmers also mentioned the long-term support from ZOA during the interviews. 37 out of 60 farmers mentioned to be supported by ZOA for over 5 years. All 20 farmers in Uhana even mentioned to be support by ZOA over 10 years.
- **Positive:** ZOA is valued as a neutral party within the agricultural industry. The farmers mention that factors such as their religion, ethnicity, background are not important to ZOA, which ZOA states this on their website as well. Other supporting parties such as the government and buyers are not valued as neutral in comparison to ZOA. Due to the different ethnical groups it is difficult for the other supporting parties to remain neutral.
- **Negative:** The interviews with the farmers showed that the farmers are almost too dependent on ZOA, they feel that ZOA should always support them. Since ZOA has a long-term vision, they have difficulties with understanding that at some point they need to work on improvement themselves. ZOA is operating based on four core values: Loyalty, Human Dignity, Stewardship and Justice (ZOA, n.d). Issues with over-dependence were observed by interviewing a farmer who was only supported by ZOA in the beginning and not later on. This farmer mentioned to be satisfied with her practices and to not require any additional support, in comparison with the other farmers interviewed in that region, who kept asking for more support while they were already continuously supported. The farmers are easily disappointed when ZOA explains that manpower is limited and the budget is decreasing as well.

- **Negative:** The other NGO active in Periyamadu , the FAO, choose a different path of support for the farmers. About half of the farmers in Periyamadu explained during the interviews that the FAO only supplied planting materials, without any additional support or knowledge transfer. The farmers were of course happy with the support, but at the same time felt lost with the agricultural practices for the seeds. The result was a very low yield and the farmers being unmotivated to continue with the crops.

Regional NGO

- **Positive:** The regional NGO's have staff members who are from the local communities. In the interviews it became clear that this gives the farmers security. The farmers mentioned that they are pleased that the staff members understand the situation in the small communities.
- **Positive:** As mentioned in the stakeholder interviews with OPEnE, the regional NGO's have the same desire for long term involvement in the communities. Since the regional NGO's such as OPEnE are derived from ZOA, they are instructed to continue with the same vision. The four core values of ZOA are: Loyalty, Human Dignity, Stewardship and Justice (ZOA, n.d)
- **Negative:** The regional NGO's struggle with the same negative issues as the national NGO's. Again, the long-term vision is not only positive, it creates an over- dependence on the regional NGO. The farmers know that the NGO has the desire to offer support to them, and therefore they keep wanting more and more support.
- **Negative:** The regional NGO's are small and have a limited budget. Indeed, the NGO mentioned the finance issue during the interview. The farmers also noticed the budget issue with the regional NGO, they felt like the regional NGO does not have enough money to support them.

Buyers

- **Positive:** During the interview, the peanut buyer in Karadiyanaru mentioned that they opened a regional office with a regional sales representative. This is a step forward from only having an office in Colombo. The buyer mentioned in the interview that they want to become more involved and stimulate the peanut production in Batticaloa area.
- **Positive:** During the interviews in Ampara region the turmeric farmers mentioned a buyer who became involved in biodynamic, organic farming. About 5 farmers in Ampara region explained that this buyer stimulated and educated them about biodynamic agricultural practices for turmeric. The yield of these 5 farmers was compared to the yield of the other farmers in Ampara region and there was a significant difference. The average yield per acre for the non-biodynamic farmers was about 4000-5000 kg. The average yield per acre for the biodynamic farmers was 9000-10000 kg.
- **Negative:** There is a large amount of distrust in the relationship between the farmers and the buyers. The farmers mentioned in the interviews that the buyers cannot be trusted when they buy the products from the farmers. This was also identified by the buyers themselves: 2 out of 4 buyers mentioned that the farmers were not satisfied with their support.
- **Negative:** When there is a large involvement from the buyer in a certain region, such as Ampara, there is a lot of power for that buyer. The farmers mentioned to be worried about the farmer-buyer relationship, especially the 5 buyers involved in the biodynamic cultivation. The buyers can force the farmers to sell their produce for a lower price, because they are the ones that provide them with knowledge.

Department of Agriculture (DOA)

- **Positive:** The DOA mentioned their regional involvement by showing the different DOA offices in the different research locations. The DOA staff members work relatively close to the location of the farmers and their fields.
- **Positive:** All research locations had an agricultural instructor present. The three interviewees all mentioned that the agricultural instructors they employ are often active in the area for a longer period. They have a lot of regional expertise and know many farmers. The farmers themselves also

said in the interviews that the agricultural instructors provide them with knowledge, 40 out of the 60 farmers mentioned the agricultural instructors.

- **Negative:** The government structure is quite bureaucratic. The agricultural instructor in Periyamadu stated that actual officers in the field are limited, due to the large number of officers behind a desk. Furthermore, part of the farmers felt that a large amount of the DOA staff members were active in Colombo, which is not where a lot of the agricultural fields are located. Execution of policies such as The Sri Lanka Diversified Agricultural Research Project or the National Policy on Agriculture and Livestock were not observed at farm level. This was mentioned particularly by the farmers in Karadiyanaru. Karadiyanaru was also the region with the lowest involvement of the DOA, all 20 farmers did not mention the support from the agricultural instructors. The support they received from the DOA was only in terms of the government seed farm who bought their produce.
- **Negative:** All three different DOA staff members mentioned the restrictions from higher levels. The execution of supporting tasks for the farmers in the fields are compromised by such decisions. The farmers also felt like the DOA staff members were influenced by the decisions from people in higher levels. This was merely identified by the farmers who received support from the agricultural instructors. Not all 40 farmers mentioned this, about 25 out of those 40 farmers mentioned the restrictions for agricultural instructors. ZOA also mentioned the restrictions in their cooperation with the DOA. Incentives to support the farmers suddenly changed, even when progress was made for diversification.

Cooperative

- **Positive:** The main purpose of the cooperative identified by the farmers is to unite their members. ZOA also identified this aspect in the interviews: when the farmers form a cooperative, they become stronger towards other stakeholders. For example, The 20 farmers in Uhana, mentioned to feel stronger because of the cooperative. However, In Karadiyanaru and Periyamadu, the farmers felt less united due to internal division within the cooperative.
- **Positive:** The farmers in Uhana mentioned that knowledge transfer is happening within the cooperative. Cooperative meetings are organized with the different stakeholders involved, such as buyers, ZOA and agricultural instructors. During cooperative meetings the farmers can exchange information about pest management, higher yields, planting materials and harvesting methods. To other stakeholders the cooperative mentions: planting, harvesting times and methods.
- **Negative:** The limited budget of the cooperatives makes it difficult to create further change. When the farmers were questioned about the weaknesses of the cooperatives, financial resources were the largest weakness. All 60 farmers mentioned that they felt weaker as a cooperative towards the other stakeholders because they did not have the same financial resources.
- **Negative:** Internal hierarchies are taking place within some cooperatives. This was observed in the interviews with the farmers in Karadiyanaru and Periyamadu. When one farmer is wealthier than the others, he feels more important and wants to take a more prominent role within the cooperative. The less wealthy farmers, about 75 percent of the cooperative members, felt like the 5 richest farmers were making the decisions. This specific problem took place at the cooperative in Karadiyanaru. ZOA tried to step in and create fairness again, but they have not achieved this yet.

The results of the second sub-question show that 75 percent of the farmers are not satisfied with the support for diversification provided by the stakeholders. The Department of Agriculture and the NGO's are seen as the largest providers of support. The NGO is valued because of their long-term vision and their neutral position. That long-term vision is also identified as a negative aspect because it creates an overdependence on the support provided by them. For the Department of Agriculture their regional involvement and the agricultural instructors are seen as positive aspects by the farmers. The negative aspects identified by the farmers are the bureaucratic structure and the unreliability of the DOA due to their involvement with the government. The cooperatives are valued as a uniting stakeholder and a good partner for exchanging knowledge. The limited

financial resources and hierarchal problems are identified as negative aspects. The last stakeholders discussed were the buyers, the farmers identified the regional involvement of the buyers as a positive aspect. Many of the farmers did explain that they do not trust the buyers and are worried about misuse of power by the buyers.

SUPPORT OFFERED TO FARMERS FOR THE DIFFERENT CROPS

The research took place in three different research areas. In these research areas the farmers did not cultivate the same crops. The focus for this research is not specifically on crops, but on the support provided for the diversification into these crops. In Uhana, Ampara, the farmers are cultivating Turmeric as a crop for diversification. Turmeric is cultivated next to the conventional paddy production. In Karadiyanaru, Batticaloa, the farmers are cultivation peanuts, which started as a crop for diversification, but is now cultivated solely. In the last research location Periyamadu, Mannar, the farmers are cultivating papaya. In this region diversification took also place in chili, peanuts and turkey berry (local eggplant). The farmers preferred the papaya cultivation, thus why this crop is included in the research. Additional information about the farmers and their crops is available in Appendix 4.

The question concerning the support the stakeholders offer to the farmers for the different crops can be found in Appendix 1, question 3. This question was asked during the interviews with the stakeholders. The results of the data analysis of this question are in table 5 below. In the table it is visible how many stakeholders offer the type of support per crop. For the crop turmeric most of the stakeholders support the farmers with their practices, this means offering a broader range of support to the farmers. This broader range consists of irrigation equipment, plant materials, fertilizer, machinery and knowledge. For the peanuts the stakeholders equally support with practices and by buying the crops. For the papaya once again the farmers are equally supported by practices and by buying the crops.

Table 5 can also reflect on whether the type of support offered by the stakeholders is the same as the type of support provider they actually are. Starting with the buyers, all of the three buyers stated that their type of support was to buy the crops from the farmers. The NGO's for all the three different crops answered that they were supporting the farmers with their practices (irrigation, plant materials, fertilizer, machinery), thus supporting the farmers in more ways than just knowledge or materials. Earlier the NGOs already explained that they wanted to support the farmers on the long-term in multiple ways. The results of this table are also in line with their actual purpose. The cooperatives answered differently: the papaya cooperative answered that they supported the farmers by providing knowledge. The turmeric and peanut cooperative answered that they were supporting the farmers with practices. With this answer it is visible that the cooperatives are not equally involved for the three different crops. The government answered differently per crop as well. For the crop peanuts, the government was involved in buying the crops for seed purposes. For the other two crops the government answered that they were supporting the farmers with their practices. Thus, for the government, the support offered is also different per crop.

Table 5: Type of support from stakeholders vs different crops

Crops		**Turmeric**	**Peanuts**	**Papaya**	**Total**
Type of support	Supporting with practices [a]	3	2	2	7
	Buying the crops	1	2	2	5
	Providing knowledge	0	0	1	1
	Total	4	4	4	4

[a] Practices: Irrigation, plant materials, fertilizer, machinery

The second aspect of the quantitative research is about the best support from a farmer's perspective in comparison to the different crops. The results of the data analysis are in table 6 below. The national NGO is chosen most frequently for the best support of the crops turmeric and peanuts. For papaya the regional NGO is chosen most frequently for offering the best support. The department of Agriculture was mostly chosen for support by farmers that cultivate turmeric. The bank was only chosen most frequently for best support by the peanut farmers. In addition, the buyers where only valued best by the turmeric farmers.

Table 6: The best party for support vs different crops grown by farmers

Crops		**Turmeric**	**Peanuts**	**Papaya**	**Total**
Best party support	National NGO	9	12	1	24
	Regional NGO	0	0	18	18
	Buyers	4	0	0	4
	DOA	5	0	1	6
	Cooperative	2	0	0	2
	Bank	0	4	0	4
	Combination [a]	0	4	0	4
	Total	20	20	20	60

[a] Combination of all mentioned stakeholders

As mentioned earlier, the research took place in three different areas. The farmers in these areas all cultivated different crops. In order to determine if the support differs per cultivated crop, the three different crops are compared against each other in terms of the support received. The next section discusses the support provided by the stakeholders to the farmers. Both parties were involved in the interviews.

Turmeric: Turmeric is a high value crop part of the spices family. The farmers in Uhana, Ampara started their diversification with cultivating this crop. Visible in table 6 is that the national NGO is valued as the best supporting party for this crop. The diversification into this crop is most supported by assisting with the agricultural practices, 3 out of 4 stakeholders chose this supporting option in the interview. During the interview ZOA mentioned to be a large stakeholder in the support for turmeric cultivation. ZOA also mentioned that cooperation among the different stakeholders is going well in this region. The reason for the good cooperation is according to ZOA the strong cooperative influence. The cooperative is supporting the farmers by assisting the farmers with the marketing process. The cooperative collects the turmeric and sells it in bulk to the buyers. This makes it more cost effective for the farmers and gives the farmers a stronger position by uniting them. The buyer mentioned in the interview that they need large amounts of turmeric which saves transport costs. This enables the cooperation among the farmers as they know that they are not competitors from each other. The cooperative also mentioned in the interview that they organize meetings for the farmers and the stakeholders (image 3). The farmers used the cooperative meetings to share knowledge and problems with the crop turmeric. The agricultural instructors are also providing support to the turmeric farmers and cooperative. The agricultural instructors from the government transfer knowledge to the farmers, they visit the farmers' fields and advise them on crop management. Different from the other stakeholder, it is the farmers own responsibility to ask the agricultural instructors for support. The cooperation among the farmers does enable the work of the agricultural instructors, they mentioned in the interview that they can target the cooperative rather than one individual farmer.

Peanuts: The peanuts were part of the diversification process in Karadiyanaru, Batticaloa. Same as turmeric, the NGO is chosen as the best party for support by the farmers, shown in table 6. The diversification is supported by the stakeholders for the agricultural practices and by buying the crops, visible in table 5. ZOA mentioned in the interview that they have a regional district office in Karadiyanaru, which enables the support for the peanut cultivation. ZOA also stated in the interviews that they are supporting the two cooperatives active in the peanut cultivation. With this, ZOA is trying to let the cooperatives unite the farmers and make

them stronger together. The cooperative mentioned in the interview that they are working on market opportunities for the peanut farmers and according to the farmers there is a large competition from imported peanuts. The cooperative is lobbying for the Sri Lankan peanuts rather than peanuts from other Asian countries such as India. Another market related incentive the cooperative mentioned is a peanut deshelling machine, which its members can use. This machine is needed to deshell the peanuts and then sell them to the seed farm. During the interview, The Department of Agriculture Seed Director said that they are buying the peanuts from the farmers to use them for seeding purposes. In return for the sales of the seeds, the farmers receive good quality seed peanuts for themselves and a fair price for their peanuts. The buyer interviewed, Amal Gram, has a regional office and representative in this region. They normally operate from Colombo, but created a small office to provide more support to the farmers in this region. Cooperation between the farmers is limited during the cultivation process. The farmers interviewed said that they have the largest interest of working together for market opportunities. Uniting further with the cooperative and with that tackling other issues as well is not happening yet, according to ZOA. Creating a well-functioning network of farmers and stakeholders which is happening in Uhana is not taking place in Karadiyanaru. ZOA also mentioned that the cooperative is struggling with internal hierarchy problems. The farmers themselves also noticed the hierarchy issue, but when they were asked for a solution, there was limited response. The farmers responded by needing more support and not by focusing on how to divide this support equally among the farmers.

Papaya: The diversification of papaya took place in the third research location: Periyamadu, Mannar. The party chosen for best support by the farmers is again the NGO, shown in table 6. The diversification of papaya is supported by the stakeholders for the agricultural practices and by buying the crops, visible in table 5. During the interview, the regional NGO, OPenE, stated that a permanent staff member lives in Periyamadu and supports the farmers continuously with their practices. Advise is given on fertilizer use, pest management, seed materials and harvesting practices. The farmers mentioned not only OPEnE as a supporting NGO, but also the FAO that supported them with papaya plants. There was no further involvement in the region by this organization.
The cooperative influence on this crop is low in comparison to the other two crops, turmeric and peanuts. During the interview the cooperative stated to be a knowledge provider to the farmers. The cooperative agreed with the fact that they are not yet able to unite the farmers in Periyamadu. The reason for the problem with uniting the farmers is the competition they face from each other, according to the cooperative. The farmers said that most of the papaya is sold to individual buyers rather than in bulk to one buyer. Therefore, the farmers are hesitant in cooperating, they all struggle with finding a buyer for their produce. The buyer itself also observed the limited cooperation among the farmers, but he cannot buy the papaya's in bulk, so for him the farmers do not need to work together. The farmers stated in the interviews that they are interested in cultivating more papaya, chili, peanuts and Turkey Berry, but that they need more support.

For all three different crops, the best party for support in the diversification process is the NGO, this was identified by the questionnaires filled in by the farmers. In terms of other results about the support provided, the outcomes differ per crop. In Uhana a strong network of both farmers and stakeholders was observed, the cooperative was a good connection point for all the farmers growing turmeric. In Karadiyanaru, the network for support was weaker, individual incentives aiming at support for diversification of the peanut farmers were present, but there was no strong united front of farmers. The situation for the papaya farmers was also different from the other two crops. The competition among the farmers made them individually oriented, and there was limited influence from the cooperative. Thus once more, the incentives for the support in the diversification process were individually oriented and not towards a strong network of farmers.

GEOGRAPHICAL LOCATION AND THE SUPPORT PROVIDED

The last sub-question is about additional factors related to the geographical location of the three different research areas. The three different locations are Uhana in the district Ampara, Karadiyanaru in the Batticaloa district and Periyamadu in the Mannar district. The different locations are visible in Image 2, under the materials and methods section. As mentioned earlier, Sri Lanka has been involved in a civil war from 1983 until 2009. During this conflict a tsunami took place on the island in 2004. The results of these destructive events are visible throughout the island, so also in the visited research locations. Additional information about the conflict can be found in Appendix 5, *Conflict information Sri Lanka*.

In the first sub-question the aspect of satisfaction is already measured for all the farmers involved in the research. Since this sub-question has a focus on the different geographical locations, the satisfaction is now organized per region. Table 7 below illustrates how satisfied the farmers are with the support from the stakeholders. In Uhana, Ampara more than two thirds of the farmers are not satisfied with the support provided to them. Likewise in Karadiyanaru, Batticaloa none of the farmers are satisfied with the support provided to them. Lastly in Periyamadu, Mannar almost two thirds of the farmers are not satisfied with the support provided to them. This table does show that there is a difference in satisfaction rates among the different research locations.

Table 7: Farmers per region vs satisfied with the support provided

Satisfied		**Yes**	**No**	**Total**
Type of support	Uhana, Ampara	6	14	20
	Karadiyanaru, Batticaloa	0	20	20
	Periyamadu, Mannar	7	13	20
	Total	13	47	60

The three research locations all have their own influencing factors on the support for diversification. Table 7 showed the different satisfaction rates among the three locations, but there are more factors influencing the support for diversification. During the interviews with the farmers and stakeholders, the factors conflict background, religion and agricultural fields were most frequently mentioned.

Uhana, Ampara: This research location was populated by the Singhalese population in the south-east but was bordering with a Tamil village.

Conflict background

ZOA stated in the interview that the effects of the war where limited in this village, many complete households and no disruption of agricultural practices. The NGO ZOA was mainly active in this area to improve the agricultural practices and to facilitate the relationship between the Tamil and Singhalese population. The farmers themselves did state that they have poor financial resources and need the support if they want to diversify on a larger scale. All of the interviewed farmers linked their poor financial resources to the fact that Sri Lanka was in a conflict, even though their own area was not really affected.

Religion

The farmers in Uhana stated that they are living in a Buddhist village. Further conversations about religion were limited with the farmers, this was due to the conflict background. However, during the stakeholder interviews more aspects became clear about the religion and support for diversification. ZOA stated that they are striving to help any farmer, and not distinguish the farmers based on their religion. During the interview ZOA did mention that they saw a connection between the well-received support in this village and the Buddhist religion. According to ZOA, the Buddhist farmers Uhana are very respectful towards the stakeholders and the support they are receiving from them. Buddhism is also the only religion among these farmers, so the farmers are not divided in terms of religion. The buyer interviewed stated that religion is important for the buyer-farmer relationship, he noticed that the farmers and the cooperative respond better to a Buddhist representative.

Agricultural fields

In terms of agricultural fields, Uhana is located closely to the jungle. During the interviews, 14 out of 20 farmers stated that their fields are attacked by elephants. The farmers see this as a large threat to their agricultural practices and are sometimes hesitant to continue with the cultivation. The DOA representative mentioned during the interview that the wild animal attacks are a threat for the diversification. When paddy fields are attacked by elephants, the farmers lose part of their low-value crop. This is still bad for the farmers' financial situation. On the other hand, when the turmeric fields are attacked by wild animals, the farmers lose a high-value crop. Thus, for the farmers this is even worse, as they lose their investment and they do not generate additional profit. The DOA representative mentioned that this is a difficult issue for the farmers and for their supporting stakeholders.

Karadiyanaru, Batticaloa: This research location was populated by the Tamil population in the north-east of Sri Lanka.

Conflict background

During the interview with ZOA, they stated that Karadiyanaru was affected by displacement during the conflict. In 2007 the families of this village where able to return home. These families had often lived with relatives or in a refugee camp. About half of the farmers mentioned in the interviews that they did not have any financial resources to continue with farming by themselves. Support came from the government, ZOA and other large organizations such as the United Nations. During the interview with ZOA, they mentioned that it was not the main intention to let the farmers diversify, but mainly to improve their livelihoods by good agricultural practices. That is also the reason for starting the diversification into peanuts rather than to go back to paddy cultivation. The buyer interviewed stated that diversification is difficult due to the limited selling opportunities for different crops. Due to the conflict there are limits in marketing options in this region. Not many sales agents or processing facilities are located in the east and north part of Sri Lanka.

Religion

The religion of the farmers in Karadiyanaru is mixed. The population is either Roman-Catholic, Hindu or Muslim. Once again, the farmers provided limited information about the religion in relation to the support for diversification, due to the sensitivity of this subject. The stakeholders however, provided more input on this aspect. ZOA stated in the interview that the farmers in this area feel less united by their religion, because they all suffered from displacement. The farmers rather feel Tamil or Singhalese, see appendix 5 for more information, than Roman-Catholic, Hindu or Muslim. The buyer interviewed was very neutral in terms of religion, he stated that they want to support all the Karadiyanaru peanut farmers, no matter what type of religion they have.

Agricultural fields

In Karadiyanaru, there used to be paddy production, but after the conflict the farmers where stimulated to grow peanuts. During the interviews, the farmers explained how they started the cultivation. The farmers noticed that peanuts were an easy crop to cultivate, they wanted to increase the peanut cultivation rather than diversify in other crops. As a reason the farmers mentioned their lack of financial resources due to their recent resettlement in this area. Karadiyanaru has a sandy soil, the farmers state that this limits their cultivation options. The climate in Karadiyanaru is very dry, thus during the dry zone they would like to receive more support for irrigation equipment and more water in their creeks. Problems with wild elephants also occur in this region. The farmers are closely situated to a large tank in which elephants like to bathe or drink. The farmers in Karadiyanaru feel that they need support in order to overcome the problems with their cultivation. For them the goal is not to grow more different products, but to increase their acreage of the peanut cultivation.

Periyamadu, Mannar: The third research location was located in the North of Sri Lanka. This location was also populated by the Tamils.

Conflict background

Periyamadu was in comparison to the other two research locations the most affected by the conflict. The documents from ZOA about internal displacement showed that in 2009 the people were able to move back to Periyamadu. During the interviews with the farmers, about two thirds mentioned the displacement and resettlement back into this area. The agricultural instructor stated that the agricultural production was completely stopped during the displacement period. One of the farmers interviewed explained that they got support from many stakeholders in the beginning. The NGO ZOA was also active in this area together with the FAO and the UN to support the agricultural practices. Currently the area is stable and peaceful, many organizations have withdrawn their support and the only NGO active is a regional NGO, OPEnE.

Religion

Periyamadu is also mixed in terms of religion. During the interviews it became clear that most of the farmers are Muslim and there are also some Hindu farmers. From the 20 farmers interviewed, 4 were Hindu. The farmers in this area were more open about their religion and especially the Hindu farmers whom explained that there are sometimes some tensions between the two religions. OPEnE (regional NGO) mentioned in the interview that the Hindu and Muslim farmers do not have much contact. They practice farming separately, and do not work together. OPEnE did also explained that this is also because of the crops rather than the religion. All of the farmers target small buyers and they all sell the same products to those farmers. That is why the farmers see each other as competition and have difficulties with working together.

Agricultural fields

OPEnE explained in the interview that Periyamadu suffered largely from the conflict. The agricultural fields are still not fully cleared from landmines, so some of the lands are not able to be used by the farmers. During the visits for the interviews it was visible that the fields are located around the houses of the farmers. The problems with wild animals are limited in Periyamadu; only 3 out of 20 farmers interviewed mentioned difficulties with wild animals. Diversification of the agriculture was promoted after the farmers resettled in this area. The farmers received support in the form of seeds when they started the cultivation for the main four crops mentioned earlier, papaya, chili, peanuts and turkey berry. Periyamadu is also very dry in the dry season, therefore farmers state that they want more support for irrigation practices. The farmers identify the size of their farms as a weakness for their agricultural practices. All 20 farmers interviewed cultivate maximum 3 acres of land around their houses. The farmers mentioned in the interviews that they would like to cultivate more acres of land in order to gain more money. They expect support from stakeholders for that expansion. OPEnE and the agricultural instructor stated that they first want the farmers to be successful with their current cultivation before they would receive support for expanding their farm land.

This last sub-question addresses the factors related to the geographical locations of the research areas. The three different locations all had different amounts of satisfaction about the support provided. In Uhana one third of the farmers was satisfied with the support provided to them, in Karadiyanaru none of the farmers was satisfied and in Periyamadu more than one third were satisfied with the support provided to them. In Uhana the religion of the farmers was Buddhist and the farmers where limited effected by the conflict. The religion of the farmers was mainly a factor in the buyer-farmer relationship. The problems with the agricultural fields were animal attacks by elephants. In Karadiyanaru a large amount of displacement took place during the conflict. The religion of the farmers is mixed, but the ethnicity is more important than religion. Due to the displacement and destruction during the conflict, marketing and sales options are limited for the farmers. A sandy soil mainly suitable for peanuts and elephant attacks makes diversification more difficult. The last research location was Periyamadu. This location was the worst affected by the conflict, again in this location the religion is mixed. There is not much contact between the Hindu and Muslim farmers, this is not necessarily related to the religion, competitiveness in the market is also a reason for limited contact.

4. Discussion of results

For this research the main objective was the support offered to farmers for diversification in Sri Lanka. The positions of the farmers and the stakeholders were both researched. This in order to research the gap existent between the support offered by the stakeholders and support needed by the farmers. By filling this gap, the researcher hopes to identify the best support needed by the farmers to increase the diversification on their farms in Sri Lanka.

Farmers satisfaction from a stakeholders perspective and usage of the assistance by the farmers.

The stakeholders were asked for their opinion on the satisfaction by the farmers about the support provided. 70 percent of the stakeholders answered that the farmers were satisfied with the support provided to them. All three interviewed NGO's are satisfied with the support provided by them, however, none of the buyers are satisfied with the support provided by them.

The three different research locations were all described separately in this sub-question. In Uhana, Ampara the farmers grow turmeric. The farmers received support and assistance from the stakeholders in the form of seed materials, instructions and knowledge transfer and market opportunities. In the second research location, Karadiyanaru, Batticaloa, the farmers are cultivating peanuts. In this area the farmers were supported with irrigation materials, sales opportunities for seed peanuts and assistance in forming a cooperative/farmers organizations. In the third research location, Periyamadu, Mannar, the farmers are cultivating papaya. At this location the farmers where supported with their agricultural practices, provided with market incentives and supported with creating a sustainable livelihood situation.

In the introduction section of this report many suggestions were given about the assistance needed for the farmers to increase the diversification. Starting with vertical diversification in the marketing and distribution channels, in a report about agricultural diversification was identified that the current position of the Sri Lankan farmers in the marketing and distribution channels is low (Barghouti, Kane, Sorby & Ali, 2004). The results from the research showed that in all of the three research locations stakeholders were supported with market and sales opportunities. In Uhana, this was most effective due to the involvement of the cooperative. The farmers needed an additional unifying stakeholder to become more resilient towards the influence from the buyers, this was also suggested in the report about agricultural diversification mentioned earlier (Barghouti, Kane, Sorby & Ali, 2004). Another report about diversification of South Asian agriculture stated that the farmers did not have the knowledge to move higher in the marketing and distribution channels by themselves (Dorjee, Pingali & Broca, 2003). Again, this shows that the farmers need to be supported with a network of stakeholders. It is also interesting to see that support is provided for the markets of the diversified products, but none of the buyers is actually involved in this process. This process is mostly support by the NGO's, cooperatives and sometimes the Department of Agriculture.

Support provided from a farmers perspective

The second sub-question had a larger focus on the farmers perspective in the support. The results from the questionnaires showed that only 13 out of 60 farmers were satisfied with the support provided to them. However, this can be juxtaposed with the satisfaction from a stakeholders perspective in the first sub-question. Almost 75 percent of the stakeholders state that the farmers are satisfied with their support. Nevertheless in this sub-question only 25 percent of the farmers state to be satisfied with the support provided. Satisfaction is of course not only measured with a yes or no question. The farmers also answered if they were supported per individual stakeholder. The department of agriculture was most frequently chosen for the best supporting stakeholder, with 67 percent, followed by the national NGO with 62 percent. The regional NGO was chosen by 33 percent of the farmers. The national and regional NGO are interrelated because national NGO's are distributing their power to smaller (regional) NGO's. The buyers are chosen the least frequent with 13 percent followed by the banks with 15 percent.

As mentioned in the results section, The Department of Agriculture and the NGO's are seen as the largest providers of support. The NGO is valued because of their long-term vision and their neutral position. That long term vision is also identified as a negative aspect because it creates an overdependence on the support provided by them. For the Department of Agriculture their regional involvement and the agricultural instructors active are seen as positive aspects by the farmers. The negative aspects identified by the farmers are the bureaucratic structure and the unreliability of the DOA due to their involvement with the government. The cooperatives are valued as a uniting stakeholder and a good partner for exchanging knowledge. The limited financial resources and hierarchal problems are identified as negative aspects. The last stakeholders discussed were the buyers. The farmers identified the regional involvement of the buyers as a positive aspect. Many of the farmers did explain that they do not trust the buyers and are worried about misuse of power by the buyers

The literature available about the stakeholders for diversification showed similarities and differences with the information retrieved from the actual farmers and stakeholders interviews. Starting with the government in Sri Lanka, the main party active in the agricultural industry is the Department of Agriculture (DOA). As mentioned earlier in the results section, the DOA was largely regional involved. However, the different policies mentioned in the literature, such as The Sri Lanka Diversified Agricultural Research Project or the National Policy on Agriculture and Livestock, were not identified at farm level (Esham, Kobayashi, Usami & Matsumura, 2006). An aspect only identified briefly in the reports about the government and DOA was their unreliability. The unreliability turned out to be an important aspect identified by the farmers in the interviews. Thus, on the one hand the farmers mentioned the large involvement of the DOA, but on the other hand the farmers stated that they could never fully rely on the DOA for support.

Another stakeholder identified by the farmers for their continuous support is the NGO. The information available for this report mainly identified the limited control of the NGO's in the areas and their limited man power (ZOA, n.d.). This was not very clearly identified for the national NGO's interviewed. The regional NGO's did struggle with this issue due to difficulties with funding and budgets. Their long-term involvement was not clearly described earlier in this report, but the farmers did mention this as a positive aspect in the support for diversification. An interesting aspect identified during the research was the overdependence from the farmers on the national and regional NGO's. Due to the long-term involvement, the farmers keep expecting continuous support. They have difficulties with finding solutions themselves and easily go to the NGO's for support. In comparison to the DOA, the NGO's are identified as being reliable, so the unreliability from the DOA could be a reason for the overdependence on the NGO's.

The third stakeholder is the buyer, they are mainly responsible for buying the agricultural produce. The relationship between the buyer and farmers is difficult. The farmers do not trust the buyers and this makes it hard to create a sustainable, long term relationship. When the farmer and buyer would work together, they could vertically diversify, so moving higher or lower in the physical distribution channels (Barghouti, Kane, Sorby & Ali, 2004). A healthier buyer-farmer relationship was observed in Uhana. Indeed, The farmers collected all their turmeric harvest at the cooperative building and dried it at the same time. In this way they sell it in bulk as dried turmeric to the buyers. Another aspect of the distrust is that the farmers do not want to become dependent on the buyers, so do not see them as a supporting party. In another village in Uhana, Ampara, the farmers did work together with the buyers and started biodynamic farming. This resulted in high yields, but it also gave a lot of power to the buyers. When the buyer would decide to withdraw from buying the harvest, the farmers would not be able to sell their harvest. In terms of statistics, this is in line with the difficulties mentioned for the buyers, only 13 percent of the farmers chose the buyers for support. If the farmers want to improve the relationship with the buyers, they need to become involved in supporting the farmers as well. Having a well-functioning network of stakeholders would be a good opportunity for the buyers.

The last stakeholder is the cooperative or farmers' organization. In literature they are mainly identified as a source of social capital, so the network of relations among different people (Yegizbayeva et al., 2015). The farmers mentioned in the interviews that the cooperative is important for uniting them, as The farmers are stronger together. In the social capital is empowering the farmers more than financial resources (Uphoff & Wijayaratna, 2000). This is not entirely true in practice. The farmers did complain about the limited financial resources in the cooperative. Problems with hierarchy within the cooperative were already mentioned in the report from Yegizbayeva (2015) and also took place in Karadiyanaru. When a cooperative is struggling with hierarchy and inequality limited financial resources are not necessarily a negative aspect. In this case, the financial resources would not be distributed fairly among the farmers.

SUPPORT OFFERED TO FARMERS FOR THE DIFFERENT CROPS

The third sub-question is about the diversification for the different crops cultivated. Data was analyzed for the type of support offered by the stakeholder per crop. For turmeric most of the stakeholders support the farmers with their practices, this means offering a broader range of support to the farmers. For the peanuts the stakeholders equally support with practices and by buying the crops. Likewise for the papaya the farmers are supported by practices and by buying the crops. One of the stakeholders supports the farmers by providing knowledge. The national NGO is chosen most frequently for the best support of the crops of turmeric and peanuts, for papaya, the regional NGO is chosen most frequently for offering the best support. The department of Agriculture was only chosen most often for support by farmers that cultivate turmeric, lastly the bank was only chosen most frequently for best support by the peanut farmers.

An article related to Regularities and Development Trends of Agricultural Cooperation in Central Asia states that many problems for small scale farmers can be solved by the development of agricultural cooperation. Farmers can unite based on the different crops they grow, their location or a joint interest for a certain type of farming (Yegizbayeva et al., 2015). This theory can be applied to the support provided to the farmers. For this sub-question the different supporting measures were described per crop. Finding one structure in all of this support is difficult, there is not one particular base for the support provided to the farmers. When this base would be present it needs to be on a farm level rather than at a higher level. An interesting result from researching the support for different crops was the stakeholder situation for the crop turmeric. According to ZOA, the good situation was a result of the strong cooperative influence. As mentioned earlier, the cooperatives are an important source of social capital for the farmers (Yegizbayeva et al., 2015). It was interesting that this turned out to be true in practice as well. In Uhana, the turmeric farmers were united by a cooperative, this cooperative was for a large part responsible for the marketing process. Turmeric gets sold in bulk, therefore large volumes are needed. The turmeric farmers are not competing for better prices but uniting in order to have a stronger position towards the buyers. This is not the only good influence from the cooperative. Regular cooperative meetings are organized, all involved stakeholders are invited to attend these meetings as well. The farmers also used the cooperative meetings to share knowledge and problems with the turmeric. The other two crops, peanuts and papaya, did not have a strong cooperative influence among the farmers. Different reasons are present for the weaker cooperative influence. In Karadiyanaru the cooperative is internally divided and struggles with hierarchy problems. There is a large focus on improving the market opportunities for the farmers through the cooperative. However, none of the farmers mentioned the interest in creating a network with a central cooperative influence. For the papaya farmers, no cooperative influence was present, the cooperative interviewed saw themselves as a knowledge provider. The reason that the cooperative was not able to influence and unite the farmers is that the farmers see each other as competition. The crop papaya is sold to small buyers for local markets, thus not in bulk in comparison to the other two crops. This makes it difficult for the farmers to work together.

GEOGRAPHICAL LOCATION AND THE SUPPORT PROVIDED

The last sub-question has a larger focus on the geographical location of the research areas. In Uhana, Ampara more than two thirds of the farmers are not satisfied with the support provided to them. In Karadiyanaru, Batticaloa none of the farmers are satisfied with the support provided to them. Lastly in Periyamadu, Mannar almost two thirds of the farmers are not satisfied with the support provided to them.

The three different locations all had their differences in terms of conflict background, religion and agricultural fields. In Uhana the religion of the farmers was Buddhist and the farmers were not as affected by the conflict, the religion of the farmers was mainly a factor in the buyer-farmer relationship. Another problem on the fields were animal attacks by elephants. In Karadiyanaru a large amount of displacement took place during the conflict. The religion of the farmers is mixed, but the ethnicity is more important than religion. Due to the displacement and destruction during the conflict, marketing and sales options are limited for the farmers. A sandy soil mainly suitable for peanuts and elephant attacks makes diversification more difficult. The last research location was Periyamadu, this location was badly affected by the conflict, and the religion is mixed. There is not much contact between the Hindu and Muslim farmers. This is not necessarily related to the religion, competitiveness in the market is also a reason for limited contact.

The literature in the introduction of this report states that diversification will represent changes in the underlying characteristics of the farming system. These changes can be in social, environmental and economic contexts, as well as the constraints and opportunities that exist (Barghouti, Kane, Sorby & Ali, 2004). In this sub-question these factors are also researched, with a special focus on the geographical location.
The conflict is a factor which is visible in all the three research locations. It is most visible in Karadiyanaru and Periyamadu. It was also observed because of the conflict many farmers are living in poverty now. The population suffered from displacement and farmers lost their lands during the almost 30 years of civil war. In Karadiyanaru and Periyamadu the farmers only returned between 2007 and 2009; Limited to no cultivation took place during that period. Therefore, more support went to the more war affected areas. However, In terms of support for diversification, no difference was observed between the limited war affected areas and largely war affected areas.

Religion was another aspect related to the geographical location of the research areas. In the literature, religion is identified as a socio-cultural factor. For example, Buddhist farmers can be reluctant towards getting involved in livestock production (Esham, Kobayashi, Usami & Matsumura, 2006). The research performed for this report did not focus on livestock production, but on the support for diversification. The research locations were different in terms of different religions. Uhana had only Buddhist farmers, Karadiyanaru had Hindus, Roman-Catholics and a few Muslim farmers. Lastly, Periyamadu had mostly Muslim farmers and a few Hindu farmers. The literature described that each district was divided in terms of religion and that this had a large effect on the agricultural practices in that area (Sarvananthan, 2016). During the interviews with the farmers and stakeholders, it became clear that support did not differ substantially among different religions. However, it was observed that the research location with only one religion among the farmers, Uhana, succeeded in better cooperation between stakeholders and farmers.

The last geographical factor is related to the agricultural fields. Sri Lanka is divided in three different zones, the dry, intermediate and wet zone (Wijetunga, 2016). All of the three locations where located on different parts of the island. Uhana was in the dry zone, but more south-east so relatively close to the intermediate zone. Karadiyanaru and Periyamadu where both higher up north which resulted in an even drier zone than Uhana. The differences in climate and agricultural fields are visible for the most cultivated crop on the island: paddy. The farmers in Uhana kept cultivating paddy and started small scale diversification in turmeric. Karadiyanaru was cultivating paddy but diversified towards peanuts and shifted their cultivation completely towards peanuts. Peanuts require less water than paddy and are therefore more suitable to the fields in Karadiyanaru. Periyamadu shifted from paddy towards diversification into papaya, chili, peanuts and turkey berry, but papaya is the most important cultivation. In terms of support for the diversification, there were a few differences among the agricultural fields in the three different locations. Uhana and Karadiyanaru struggle with wild animal attacks. This issue is not resolved yet and has proven to be difficult to handle for both stakeholders and farmers. Karadiyanaru and Periyamadu struggle with irrigation for their crops, they feel like they need more support for proper irrigation equipment and enough water. The last factor in the agricultural fields was only present in Periyamadu, the farmers value the size of their farms as a weakness. The farmers in this village are only able to cultivate the crops around their houses. They would like to cultivate more crops but require more support from the stakeholders to increase their cultivation.

PROCESS AND METHODOLOGY

In order to obtain the results described in the previous chapter, research had to be conducted according to the materials and methods described in chapter 2. The research process was clearly described in theory but had some limitations when it was executed in practice. Visiting the farmers went according to plan. The researcher planned on visiting a minimum of 20 farmers per research location, transport and a translator were arranged for these visits. During the research period the farmers were visited individually, this proved to be a good method because the farmers gave unbiased answers to the questions. However, in Karadiyanaru, the farmers were very busy with their cultivation. This resulted in having a few joint meetings with multiple farmers. It was observed that the farmers listened to the farmer with the strongest voice. The farmers were hesitant to express their own opinion, this was frustrating for the researcher. The stakeholder interviews were more difficult to plan than the farmers' interviews. The farmers were all located in one research area, this was different for the stakeholders since they sometimes travelled to other areas as well. This resulted in a heavier workload at the end of the research as many stakeholders still needed to be contacted or interviewed.

Improvements for the research process are identified as well. The author of the research became aware of the many perspectives obtained during the research period. In the beginning, the researcher was very confident in tackling this research from many different perspectives, but later on this became a weakness for describing the results of the research. The author of the research sometimes felt lost in the many angles created by the different stakeholders and farmers. An improvement for this matter would be not to reduce the different stakeholders or farmers, but to identify one issue within the support for diversification to research. It also became clear why this was not recognized during the research proposal. The topic of the research, the support for the diversification process, was only fully understood during the execution of the research. That was the moment that the researcher realized that describing all these different opinions about the support made it difficult to come up with a clear solution.

The reliability of the retrieved data is causing some mixed feelings for the author of this research. The information retrieved from the questionnaire is fairly reliable, because all of these questions were asked to the farmers and the stakeholders. Moreover, the answers to the questionnaires were not very surprising and different among the interviewees. However, during the interviews, not only questions from the questionnaires were asked. Many additional questions were asked and additional observations were made. These observations and questions were written down, and most of the time asked to more than one farmer. The researcher was very interested in additional information, but this also caused a difference between interviews. Some interviews were more elaborate than others, which caused a less reliable amount of data. There is still the opinion that the data is fairly reliable, due to the fact that many different farmers and stakeholders are interviewed, which resulted in a diverse amount of information.

Unexpected results were also identified during this research. The dissatisfaction among the farmers was an unexpected result. Especially because the stakeholders had not identified such a large amount of dissatisfaction among the farmers. The researcher would have expected that the farmers were more satisfied with the support provided to them. On the other hand, more stakeholders would state that the farmers were not satisfied with the support provided by them. Another unexpected result was that not all the farmers wanted to work together. Good cooperation only took place in Uhana and was limited to nothing in Karadiyanaru and Periyamadu. The researcher would have expected that the farmers wanted to learn from each other and be interested in helping each other

5. Conclusions and Recommendations

Support for diversification of the farmers in Sri Lanka is the main topic of this research. During a three-month research period in Sri Lanka, both farmers and stakeholders were interviewed and observed. This research involved farmers in three locations Uhana, Karadiyanaru and Periyamadu. The farmers in Uhana are cultivating turmeric, the farmers in Karadiyanaru are cultivating peanuts and the farmers in Periyamadu are cultivating papaya. Five different types of stakeholders were interviewed at each research location. These different types were, non-governmental organizations (NGO's), buyers, cooperatives and The Department of Agriculture (DOA). It was important to identify both the farmers and stakeholders' perspective on what type of support is needed to increase agricultural diversification in Sri Lanka. Therefore the main question of this research is, "What type of support do the farmers in Sri Lanka need in order to increase diversification on their farms?"

Conclusion

The first sub-question was about the support for diversification from a stakeholder's perspective combined with how the farmers use the support provided by the stakeholders. Most of the stakeholders feel that the farmers are satisfied with their support. The most common incentive to the farmers is to offer market opportunities for the diversified crops. The NGO's and the cooperatives are the largest stakeholders in supporting with the market opportunities. It can be concluded that the buyers are not very present in these market incentives. This is interesting as they are the stakeholders actually involved with the buying and marketing process. The vertical diversification in the agricultural supply chains can only be reached by the farmers with the support from additional stakeholders. The cooperatives and NGO's are active in achieving vertical diversification however, they need the buyer's involvement as well.

Continuing with the second sub-question about how the current support is valued by the farmers, it is interesting to see that the farmers value the support quite negative. Most of the farmers are not satisfied with the support provided by the stakeholders. Hence, there is a large gap between the perceptive of satisfaction of the stakeholders, visible in sub-question one, and perceptive by the farmers, visible in sub-question two. The NGO's and the Department of Agriculture are seen as the largest supporting party for the farmers. In terms of support an overdependence was identified by the farmers on the NGO's. The farmers keep wanting more support rather than a focus on their own strength and resources. The Department of Agriculture is valued as an important factor in support, but at the same time seen as unreliable and bureaucratic. The relationship between the buyers and the farmers consists of a large amount of distrust, this makes incentives such as vertical diversification difficult. As mentioned in sub-question one, the buyers are needed in order to continue with market related incentives by the other stakeholders. Financial resources are valued important by the farmers, the cooperatives interviewed all had limited financial resources. For the farmers this results in losing faith in the support provided by cooperatives. The cooperatives are valued as an important source of social capital but valued weak in terms of actual support.

The cooperatives also became in important aspect for the third sub-question. The third sub-question concerned the support offered for the different crops. Even though the NGO's are identified as one of the most important stakeholders, the cooperative achieved good results with their social capital as well. For the turmeric farmers in Uhana, a well-functioning network was created with support from the cooperatives. The cooperatives became the center of contact between the buyers, NGO's, DOA and the farmers. This network supported by the cooperative was limited with the peanut farmers in Karadiyanaru and not present with the papaya farmers in Periyamadu. Distrust and competitiveness among the farmers are the largest reasons why a weaker cooperative network is observed by the other two crops. The reasons for the competitiveness are different in Karadiyanaru and Uhana. In Karadiyanaru, the cooperative is internally divided due to hierarchy problems. The poorer farmers are suffering from the influence of the richer farmers, they feel powerless and are unable to create a strong network. In Periyamadu, the papaya market is the reason of the distrust and competitiveness among the farmers. The farmers are unable to form a network, because they fear competition from each other. The buyers are targeting individual farmers for their sales and are therefore having all the power in terms of selecting the produce. In terms of creating a strong network for support, the crops are an influencing factor. This was most visible at the last research location, the papaya farmers in Periyamadu.

The last sub-question was about factors related to the geographical location influencing the support provided. The way the location was influenced by the conflict is not affecting the satisfaction with the support provided to the farmers. Mannar was the region that was worst hit by the conflict and more than one third of the farmers was satisfied with the support provided to them. In comparison with Karadiyanaru, this region was affected by the conflict and none of the farmers were satisfied with the support provided to them. Religion was another factor compared between the different geographical locations. In Uhana all the farmers were Buddhist, Karadiyanaru had Hindu, Roman-Catholic and Muslim farmers and lastly Periyamadu had Hindu and Muslim farmers. There was no significant difference observed between the support provided to the different religions. There was only one difference between Uhana and the other two research locations. In Uhana there was only one religion among the farmers, and this was the unique region with a successful network of farmers united by a cooperative. This meant that the farmers were all members of the cooperative and organized meetings with the other stakeholders. The farmers also used to cooperative meetings to share knowledge and problems with the crop. The last geographical factor was the agricultural fields. Uhana and Karadiyanaru suffered from wild animal attacks on their fields, but no significant support measure was taken for this problem. Mannar was most successful in terms of diversified crops on the agricultural fields. Even though the main crop produced was papaya, the farmers were also cultivating chili, peanuts and turkey berry. Support was not only provided to papaya but also to the other three crops. On the other hand, the other two locations only support was received for the successful cultivation of one diversified crop.

Concluding the sub-questions had the purpose to eventually answer the main question, “What type of support do the farmers in Sri Lanka need in order to increase diversification on their farms?” Based on the research performed in the three research locations a clear answer can be formulated. The network formed in Uhana, with the cooperative as the central stakeholder is a good supporting method to increase diversification. When the focus is on creating one network in which NGO’s, buyers, the government (DOA), cooperatives and farmers are connected, the right support can be provided. Every stakeholder has their own type of support to offer to the farmer, which is very positive. However, these incentives need coordination, this can happen in such a network. Achieving diversification on a larger scale will improve the livelihood situations of the farmers in Sri Lanka.

RECOMMENDATIONS

Based upon the findings of the research the following recommendations are suggested. Firstly, the formation of a strong network of different stakeholders. As mentioned in the last section of the conclusion, the support incentives of the different stakeholders need coordination. This is needed to ensure that the different incentives provided to the farmers are working with each other rather than against each other. Within this network additional recommendations can be explained as well. Working together can be difficult for the farmers due to a different religion, practices or financial situation. Only a cooperative with member farmers can become subject to internal hierarchy problems, which happened in Karadiyanaru. When more stakeholders become involved they can check and help each other. The NGO is valued for their neutrality, this would be a positive influence on the stakeholder network. The government has knowledge with their agricultural instructors, this can be shared with the farmers. The buyers have the influence in the market, this could be beneficial for selling the produce.

Starting with the market support all the three research locations were receiving. As mentioned in the research, the NGO, Cooperatives and the DOA are supporting the farmers with market incentives. These incentives have the purpose of finding markets for the products of the farmers. By finding the right markets, the farmers are able to receive a higher price for their produce. Through this higher price, the farmers are able to provide for their family and are able to invest in next year’s cultivation. It was interesting that none of the buyers were actually involved as a stakeholder in these market incentives. The buyers are the key stakeholder in the markets, because they are the ones that actually buy the produce. When a network is formed among the different stakeholders, the buyers are able to become involved in these market incentives. It is not the idea that the buyers will have more influence, but that they take an active role in the support for the farmers. This would make the incentives more successful for both the farmers and the involved stakeholders.

The third recommendation is about the overdependence from the farmers on one particular stakeholder. It was observed during the research that due to the long-term involvement of the NGO's, the farmers became too dependent on the support. The farmers kept expecting more support rather than focusing on their own abilities for improvement. When the stakeholders work together they could jointly provide the support to the farmers, which prevents the overdependence on one stakeholders. This would still mean the farmers are dependent on a network of stakeholders rather than one. However, these stakeholders could address issues with overdependence during a cooperative meeting. Jointly they can explain the farmers about their own abilities and what they can achieve when they work together just like the stakeholders did. It would be about striking an example, if they stakeholders can work together, so can the farmers. By working together, the right support can be provided to the farmers in order to increase the agricultural diversification in Sri Lanka. Ideally, working together would be in the form of a cooperative in which the farmers are the members. The different roles in the cooperatives would be a director, secretary and a treasurer. The cooperative could meet on a set time each month, stakeholders can also be invited for those meetings. The farmers and stakeholders can discuss issues such as harvesting times, harvesting requirements, pests and diseases and prices of the crops. Based on these topics the stakeholders can provide support to help the farmers with their crops.

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APPENDIX 1 QUESTIONNAIRE STAKEHOLDERS SRI LANKA

1. Choose the type of stakeholder applicable for your position.
    1. Buyer
    2. NGO
    3. Government Authority/organization
    4. Cooperative/farmers organization

2. How long are you already involved with the farmers in this area?
    1. Less than 1 year
    2. 1-3 years
    3. 3-5 years
    4. 5-10 years
    5. Longer than 10 years

3. What type of support do you/ your organization offers to the farmers?
    1. Supporting the farmers with their practices (irrigation, plant materials, fertilizer, harvest machinery, etc.)
    2. Supporting the farmers financially (Loans, e.d.)
    3. Buying the farmers harvested crops
    4. Providing knowledge to the farmers
    5. Other_____

4. How do you feel the farmers value the support provided by you or your organization?
_____
_____
_____

4. What type of support do you think the farmers need in order to grow more different crops (diversify)?
    1. Financial support
    2. Knowledge support
    3. Resources support (machinery, planting materials)
    4. Market support
    6. Other_____

5. Do you think the farmers are satisfied with the support you provide to them?
    1. Yes
    2. No

6. Why do you think the farmers are satisfied or not satisfied with the support provided to them? And to what extend do the farmers use your support?

7. Would you be interested in providing the farmers more support in the future, why yes or no?

8. Or do you think another party is a better option for supporting the farmers for growing more and more different crops? If yes, mention which party.

APPENDIX 2 QUESTIONNAIRE FARMERS SRI LANKA

1. Name of the farmer

2. Region of the farmer
    1. Uhana, Ampara District
    2. Karadiyanaru, Batticaloa District
    3. Periyamadu, Mannar District

3. Which of the following crops did you choose for diversification/ are you growing currently?
    1. Peanuts
    2. Turmeric
    3. Chili
    4. Papaya
    5. Turkey berry (local eggplant)
    6. Other _____

4. Do you have any problems with pests and diseases and how are you treating those problems?
    1. Yes, I am treating them organically
    2. Yes, I am treating them inorganically
    3. No, I don't have any problems

5. Are you using fertilizer or any other inputs for the improvement of your soil?
    1. Yes, Organic inputs
    2. Yes, Inorganic inputs
    3. No, I am not using any inputs

6. Who has supported you over the last 5 years?
    1. National NGO
    2. Regional NGO
    3. Department of agriculture (DOA)
    4. The Bank
    5. Buyers
    6. Cooperative
    7. Others

7. Which stakeholder would be the best option for offering support?
    1. National NGO
    2. Regional NGO
    3. Department of agriculture (DOA)
    4. The Bank
    5. Buyers
    6. Cooperative
    7. Others

8. Are you interested in further diversification, so growing more different crops?
    1. Yes
    2. No

9. Are you satisfied with the support currently provided to you?
    1. Yes
    2. No

APPENDIX 3 RELIGIONS PER DISTRICT IN SRI LANKA

		Buddhists			Christians Roman Catholics & Other Christians			Hindus			Islam			Other		
		Census 1981	Census 2012	Growth Rate	Census 1981	Census 2012	Growth Rate	Census 1981	Census 2012	Growth Rate	Census 1981	Census 2012	Growth Rate	Census 1981	Census 2012	Growth Rate
1	Central Province	1,303,686 64.88 %	1,672,625 65.04 %	28.30 %	69,904 3.48 %	94,402 3.67 %	35.05 %	477,866 23.78 %	540,339 21.01 %	13.07 %	157,108 7.82 %	263,874 10.26 %	67.96 %	684 0.03 %	317 0.01 %	(-) 53.65 %
	Kandy District	771,435 73.59 %	1,009,220 73.38%	30.82 %	27,565 2.63 %	35,177 2.56 %	27.61 %	132,943 12.68 %	133,744 9.72 %	0.60 %	115,941 11.06 %	197,076 14.33 %	69.98 %	433 0.04 %	165 0.01 %	(-) 61.89 %
	Matale District	281,004 78.63 %	385,151 79.49 %	37.06 %	8,645 2.42 %	10,241 2.11 %	18.46 %	41,352 11.57 %	43,432 8.96 %	5.03 %	26,265 7.35 %	45,682 9.43 %	73.93 %	88 0.02 %	25 0.01 %	(-) 71.59 %
	Nuwara Eliya District	251,247 41.63 %	278,254 39.10 %	10.75 %	33,694 5.58 %	48,984 6.88 %	45.38 %	303,571 50.30 %	363,163 51.03 %	19.63 %	14,902 2.47 %	21,116 2.97 %	41.70 %	163 0.03 %	127 0.02 %	(-) 22.09 %
2	Eastern Province	237,416 24.34 %	357,052 22.95 %	50.39 %	47,112 4.83	82,683 5.32 %	75.50 %	372,464 38.19 %	540,153 34.73 %	45.02 %	317,354 32.54 %	575,470 36.99 %	81.33 %	905 0.09 %	152 0.01 %	(-) 83.20 %
	Ampara District	145,687 37.45 %	251,427 38.72 %	72.58 %	8,030 2.06 %	13,129 2.02 %	63.50 %	72,809 18.72 %	102,829 15.83 %	41.23 %	162,140 41.68 %	281,987 43.42 %	73.92 %	304 0.08 %	30 0.00 %	(-) 90.13 %
	Batticaloa District	9,127 2.76 %	6,281 1.19 %	(-)31.18 %	23,499 7.11 %	47,287 8.98 %	101.23 %	218,812 66.24 %	338,882 64.36 %	54.87 %	78,810 23.86 %	134,065 25.46 %	70.11 %	85 0.03 %	52 0.01 %	(-) 38.82 %
	Trincomalee District	82,602 32.27 %	99,344 26.17 %	20.27 %	15,583 6.09 %	22,267 5.87 %	42.89 %	80,843 31.59 %	98,442 25.94 %	21.77 %	76,404 29.85 %	159,418 42.00 %	108.65 %	516 0.20 %	70 0.02 %	(-) 86.43
3	North Central Province	765,766 90.14 %	1,139,595 89.97 %	48.82 %	11,710 1.38 %	14,875 1.17 %	27.03 %	11,624 1.37 %	10,117 0.80 %	(-) 12.96 %	60,089 7.07 %	101,958 8.05 %	69.68 %	303 0.04 %	118 0.01 %	(-) 61.06 %
	Anuradhapura District	530,008 90.15 %	775,366 90.10 %	46.31 %	7,888 1.34 %	10,407 1.21 %	31.93 %	6,843 1.16 %	3,231 0.38 %	(-) 52.78 %	42,999 7.31 %	71,493 8.31 %	66.27 %	191 0. 03 %	78 0.01 %	(-) 59.16 %
	Polonnaruwa District	235,758 90.13 %	364,229 89.69 %	54.49 %	3,822 1.46 %	4,468 1.10 %	16.90 %	4,781 1.83 %	6,886 1.70 %	44.03 %	17,090 6.53 %	30,465 7.50 %	78.26 %	112 0.04 %	40 0.01 %	(-) 64.29 %
4	Northern Province	25,281 2.28 %	30,290 2.85 %	19.81 %	169,004 15.23 %	208,219 19.62 %	23.20 %	860,281 77.54 %	789,046 74.35 %	(-) 8.28 %	54,534 4.92 %	33,427 3.15 %	(-) 38.70 %	304 0.03 %	333 0.03 %	9.54 %
	Jaffna District	5,104 0.61 %	2,168 0.37 %	(-)32.54 %	104,766 12.61 %	95,985 16.44 %	9.28 %	705,705 84.97 %	483,255 82.77 %	(-) 18.35 %	14,844 1.79 %	2,363 0.40 %	(-) 79.37	133 0.02 %	111 0.02 %	21.05 %
	Kilinochchi District		1,275 1.12 %			18,499 16.30 %			92,986 81.92 %			700 0.62 %			50 0.04 %	
	Mannar District	3,363 3.17 %	1,809 1.82 %	(-)46.21 %	44,689 42.07 %	57,205 57.45 %	28.01 %	28,885 27.19 %	24,027 24.13 %	(-) 16.82 %	29,161 27.45 %	16,512 16.58 %	(-) 43.38 %	137 0.13 %	17 0.02 %	(-) 87.59 %
	Mullaithivu District	1,060 1.37 %	8,185 8.87 %	672.17 %	12,211 15.82 %	12,727 13.80 %	4.23 %	60,117 77.88 %	69,377 75.22 %	15.40 %	3,789 4.91 %	1,880 2.04 %	(-) 50.38 %	12 0.02 %	69 0.07 %	475.00 %
	Vavuniya District	15,754 16.51 %	16,853 9.79 %	6.98 %	7,338 7.69 %	23,803 13.83 %	224.38 %	65,574 68.72 %	119,401 69.37 %	82.09 %	6,740 7.06 %	11,972 6.96 %	77.63 %	22 0.2 %	86 0.05 %	290.91 %
5	North Western Province	1,328,369 77.94 %	1,761,337 73.98 %	32.59 %	226,618 13.30 %	305,951 12.85 %	35.01 %	34,130 2.00 %	43,532 1.83 %	27.55 %	114,463 6.72 %	268,709 11.29 %	134.76 %	754 0.04 %	1,332 0.05 %	76.66 %
	Kurunegala District	1,092,128 90.12 %	1,431,632 88.46 %	31.09 %	39,981 3.30 %	53,637 3.31 %	34.16 %	15,133 1.25 %	14,721 0.91 %	(-) 2.72	64,112 5.29 %	118,305 7.31 %	84.53 %	447 0.04 %	170 0.01 %	(-) 61.97 %
	Puttalam District	236,241 47.96 %	329,705 43.25 %	39.56 %	186,637 37.89 %	252,314 33.09 %	35.19 %	18,997 3.86 %	28,811 3.78 %	51.66 %	50,351 10.22 %	150,404 19.73 %	198.71 %	307 0.06 %	1,162 0.15 %	278.50 %
6	Sabaragamuwa Province	1,259,396 84.98 %	1,653,381 85.73 %	31.28 %	24,892 1.68 %	33,219 1.72 %	33.45 %	146,010 9.85 %	156,312 8.10 %	7.06 %	51,248 3.46 %	85,610 4.44 %	67.05 %	485 0.03 %	133 0.01 %	(-) 72.58 %
	Kegalle District	583,611 85.21 %	709,917 84.45 %	21.64 %	11,597 1.69 %	15,163 1.80 %	30.75 %	53,854 7.86 %	54,350 6.47 %	0.92 %	35,672 5.21 %	61,164 7.28 %	71.46 %	210 0.03 %	54 0.01 %	(-)74.29 %
	Ratnapura District	675,785 84.78 %	943,464 86.71 %	39.61 %	13,295 1.67 %	18,056 1.66 %	35.81 %	92,156 11.56 %	101,962 9.37 %	10.64 %	15,576 1.95 %	24,446 2.25 %	56.95 %	275 0.03 %	79 0.01 %	(-) 71.27 %
7	Southern Province	1,788,294 94.99 %	2,345,314 94.67 %	31.15 %	8,598 0.46 %	18,201 0.73 %	111.69%	32,616 1.73 %	33,227 1.34 %	1.87 %	52,379 2.78 %	80,085 3.23 %	52.90 %	774 0.04 %	458 0.02 %	(-) 40.83 %
	Galle District	767,661 94.25 %	998,647 93.92 %	30.09 %	5,038 0.62 %	9,730 0.92 %	93.13 %	15,086 1.85 %	15,584 1.47 %	3.30 %	26,301 3.23 %	39,267 3.69 %	49.30 %	445 0.05 %	106 0.01 %	(-) 76.18 %

	Hambantota District	411,919 97.07 %	580,344 96.74 %	40.89 %	716 0.17 %	2,831 0.47 %	295.39 %	2,174 0.51 %	1,222 0.20 %	(-) 43.79 %	9,408 2.22 %	15,204 2.53 %	61.61 %	127 0.03 %	302 0.05 %	137.80 %
	Matara District	608,714 94.55 %	766,323 94.14 %	25.89 %	2,844 0.44 %	5,640 0.69 %	98.31 %	15,356 2.39 %	16,421 2.02 %	6.94 %	16,670 2.59 %	25,614 3.15 %	53.65 %	202 0.03 %	50 0.01 %	(-) 75.25 %
8	Uva Province	694,331 75.92 %	1,018,561 80.43 %	46.70 %	16,148 1.77 %	21,095 1.67 %	30.64 %	168,815 18.46 %	169,605 13.39 %	0.47 %	34,901 3.82 %	57,001 4.50 %	63.32 %	327 0.03 %	201 0.01 %	(-) 38.53 %
	Badulla District	440,755 68.77 %	591,799 72.58 %	34.27 %	14,610 2.28 %	18,635 2.29 %	27.55 %	156,037 24.34 %	157,608 19.33 %	1.01 %	29,317 4.57 %	47,192 5.79 %	60.97 %	233 0.04 %	171 0.02 %	(-) 26.61 %
	Moneragala District	253,576 92.69 %	426,762 94.61 %	68.30 %	1,538 0.56 %	2,460 0.55 %	59.95 %	12,778 4.67 %	11,997 2.66 %	(-) 6.11 %	5,584 2.04 %	9,809 2.17 %	75.66 %	94 0.03 %	30 0.01 %	(-) 68.09 %
9	Western Province	2,885,789 73.62 %	4,293,901 73.38 %	48.79 %	556,581 14.20 %	773,516 13.22 %	38.98 %	194.000 4.95 %	278,968 4.77 %	43.80 %	279,639 7.13 %	501,389 8.57 %	79.30 %	3,798 0.10 %	3,356 0.06 %	(-) 11.64 %
	Colombo District	1,196,964 70.44 %	1,632,225 70.22 %	36.36 %	200,545 11.80 %	229,308 9.87 %	14.34 %	130,215 7.66 %	186,454 8.02 %	43.19 %	168,863 9.94 %	274,087 11.79 %	62.31 %	2,654 0.16 %	2,275 0.10 %	(-) 14.28 %
	Gampaha District	989,212 71.12 %	1,642,767 71.27 %	66.07 %	325,915 23.43 %	495,478 21.50 %	52.03 %	26,750 1.92 %	52,973 2.30 %	98.03 %	48,117 3.46 %	112,746 4.89 %	134.32 %	868 0.06 %	869 0.04 %	0.12 %
	Kalutara District	699,613 84.32 %	1,018,909 83.38 %	45.64 %	30,121 3.63 %	48,730 3.99 %	61.78 %	37,035 4.46 %	39,541 3.24 %	6.77 %	62,659 7.55 %	114,556 9.37 %	82.82 %	276 0.03 %	212 0.02 %	(-) 23.19 %
	SRI LANKA	10,288,328 69.30 %	14,272,056 70.10 %	38.72 %	1,130,567 7.61 %	1,552,161 7.62 %	37.29 %	2,297,806 15.48 %	2,561,299 12.58 %	11.47 %	1,121,715 7.56 %	1,967,523 9.66 %	75.41 %	8,334 0.06 %	6,400 0.03 %	(-) 23.21 %

TABLE 8 RELIGIONS PER DISTRICT SRI LANKA (SARVANANTHAN, 2016)

APPENDIX 4 FARMERS AND STAKEHOLDERS

The following information is based on observations made by the researcher during the research period in Sri Lanka. This information is displayed in the appendix, because it does not directly fit with the sub-questions in the results section. This information is however still needed to provide more information about the agricultural situation with the farmers and stakeholders in Sri Lanka.

Farmers

The farmers in Uhana used to grow paddy on a large scale and no or limited other crops. ZOA mentioned during their interviews that they stimulated the farmers to grow other high-value crops rather than paddy. There is no fixed number for the increase in the cultivation of other crops. Growing an additional crop such as turmeric was the result of these inputs. ZOA was already involved during the conflict in Sri Lanka, but became involved in agriculture in this area after 2009. The farmers all mentioned the size of their farmers and based on that the average the farmers grow 4-5 acres of crops. Usually 3-4 of those acres are occupied by paddy and at this moment a maximum of 1 acre is used for high-value crops. The high value crop in this research area is turmeric. Turmeric requires less water than paddy and is therefore good crop for diversification (Talukdar & Vatta 2015). It does require more labor in the harvesting process. The turmeric gets harvested manually and needs to be removed from the plant by hand as well. The amount of other crops cultivated is dependent on the age of the farmers and the interest in innovation.

In Karadiyanaru, Batticaloa the agricultural production was disrupted due to the civil war in Sri Lanka. According to resettlement reports of ZOA, in 2007 families where resettled in that area which resulted in agricultural production as well. In this area a different approach took place in terms of agricultural production. The farmers in this region switched from large scale paddy production before the conflict to large scale peanut production after the conflict. This is a different situation than Uhana, this project started as diversification but ended in only the cultivation of peanuts. Around 500 acres of peanuts are now cultivated in this region. In the interviews with ZOA and the government representative, the farmers where stimulated by them to grow peanuts rather than to go back to paddy production. All the interviewed farmers stated that peanuts are a low maintenance, low pests and limited water crop and is therefore suitable for the climatic conditions in Karadiyanaru. Also the soil in Karadiyanaru is very sandy which is also in line with the soil requirements for peanuts. The process is different from Uhana because the farmers in Karadiyanaru had to start from scratch and most of the farmers did not have own land. ZOA mentioned in the interview that cooperatives where formed in order to unite the farmers and rent plots of land together. Based on the calculations from ZOA on the total amount of peanut fields cultivated in Karadiyanaru, over 500 acres of fields are currently cultivated.

Periyamadu was also a region involved in the resettlement after the civil war in Sri Lanka. This region is located in the north of Sri Lanka and is therefore affected even more by displacement. Resettlement reports from ZOA stated that in 2009 people where resettled in this area. External relief organizations such as Australian Aid provided housing for the people coming back to this region, but other, additional resources where limited. Again agricultural production had to be built up from nothing, since the area needed to be cleared from landmines first. After the land was cleared the farmers where assisted in cultivation again, mainly by ZOA and the FAO. Also in this region paddy production took place before the conflict. After the conflict farmers resettled back to this area and where supported to grow different crops. The largest and most popular crop grown is papaya. Additional crops grown by the farmers are peanuts, turkey berry (local eggplant) and chili. ZOA stated in the interview that diversification was promoted from the beginning. Based on the interviews, the average farmer in Periyamadu has 3 acres of land and rotates between the four crops. The smaller crops are used for intercropping as well, peanuts can be grown under the papaya trees. Of course the farmers could also cultivate other crops, but these crops where promoted by involved organizations such as ZOA.

Stakeholders

The stakeholders were already described in the introduction of this research, but are now described more in relation to the topics described in the results section. During the research period the researcher was mainly involved with the NGO, ZOA. The four core values of ZOA are, Loyalty, Human Dignity, Stewardship and Justice (ZOA, n.d). During the interviews with the farmers, they mentioned the FAO as a supporting NGO as well. The line between a national NGO and a regional NGO is a bit vague. ZOA is withdrawing from Sri Lanka and therefore distributing its power to smaller NGO's only based regionally in Sri Lanka. A large group that mentioned not to receive support from ZOA did receive support from a regional NGO. These NGO's are still partly controlled by ZOA in order to smoothen the process of transferring power in the regions. The regional NGO's are however structured differently and involved in other projects which makes them different from ZOA. An example of a regional NGO active in Periyamadu is OPEnE. This regional NGO is founded with the support from ZOA. For the interview 2 national NGO's and 1 regional NGO were asked. The third stakeholder is the buyer. The buyers are merely supporting the farmers in terms of buying the agricultural produce. Further involvement is not always taking place and differs among the three different areas. The buyers can be large and active on the whole island, such as Ceylon Biscuits Limited. Or they can be small entrepreneurs selling fruits and vegetables at nearby markets. For the interviews 4 buyers were asked. The fourth stakeholder is the Department of Agriculture. This stakeholder is part of the government of Sri Lanka specialized in the agricultural sector. They are active in all the three research areas, but not always in the same way. The DOA can be active with agricultural instructors, seed farms or directors, governmental organizations and many other positions. In Sri Lanka the government is quite elaborate on staff members in the agricultural sector, this makes it difficult to identify all the different positions. 3 different DOA staff members were interviewed for this research. The last stakeholder is the cooperative. The cooperative is controlled by its members, so the farmers. All the three different locations had one or two cooperatives. Again, with different types of involvement in all the three areas. In Uhana, Ampara, the cooperative was very involved with the farmers and provided good incentives for diversification. In Karadiyanaru, Batticaloa, the cooperatives was active as well, but internally divided. There was a large amount of inequality which resulted in an internal hierarchy. The cooperative in Periyamadu, Mannar, was not much involved. They stated that they were supporting the farmers with knowledge, but none of the farmers mentioned them as a supporting party. So in total 3 cooperatives were interviewed.

APPENDIX 5 CONFLICT SITUATION IN SRI LANKA

Sri Lanka is populated by two main ethical groups, the Singhalese and the Tamils. The Tamils are mainly located in the North and East part of the Island. The Singhalese are located in the West and the South of the island. In the capital, Colombo, the population is mixed, but on the rest of the island the people live separated. The Singhalese and Tamil populations also have a different languages and are not able to understand each other. The government of Sri Lanka has a Singhalese majority and a Tamil person is not able to become president or to have any influential position in the government. In 1983 unrest started within the two different population groups. A liberation movement arose within the Tamil population, the Liberation Tigers of Tamil (LTT). They stood up against the government of Sri Lanka, because they felt repressed by them. The government decided to fight this group with large national armies and that is how the conflict started. The heaviest fighting took place in the north because that is where many Tamils where located. Many Tamils suffered from the displacement and ended up in refugee camps. The largest refugee camp located in the North, was housing over 200.000 refugees. During this period also a tsunami took place in 2004. Especially the small fishery communities in the east where affected by this natural disaster. In 2009 the war officially ended with a victory for the government of Sri Lanka, so the Singhalese majority. The three research locations visited where all affected by the conflict differently.