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**Inclusive Insurance Sector:
An Innovative Business Model for Micro-Insurance Delivery in Sri Lanka**

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ABSTRACT

The main objective of this study is to explore the feasibility of farmers' organizations (FOs) as a vehicle for micro-insurance delivery of the paddy crop, cultivated by small-scale (peasant) farmers in Sri Lanka. Factor Analysis was used to elicit the group dynamic and the capacity of FOs as a stakeholder in the insurance supply chain. The results show that the farmers' organizations are most widespread and are a very close institutional setup for paddy farmers because FOs are capable of handling financial activities with transparency, and have healthy financial habits and as a result farmers participate actively in farmers' organization activities. This study provided clear policy insights for the policy makers to implement an innovative business model for micro- insurance delivery to be incorporated with the FO model in Sri Lanka. Furthermore, it was revealed that the postal network can act as a financial intermediary in circumstances to assist the FOs in financial activities, where the commercial insurers do not have an outlet or branch networks in their target area. Therefore, in order to develop the links between the farmers and the insurers, it seems viable that the public-private partnership model be used for micro-insurance supply to paddy farmers in Sri Lanka.

Keywords: *Farmers' Organizations, Financial Intermediaries, Insurance Delivery, Microinsurance*

1. INTRODUCTION

Micro-insurance is receiving increased attention at present as an inclusive financial service for the poor and low-income people to mitigate agricultural risk (Heenkenda, 2011, Steinmann, 2014, Castellani, & Cincinelli, 2015). The delivery channel is a major component of the microinsurance supply chain and a key driver to enhance the insurance outreach for the inclusive insurance sector. A growing body of literature on agricultural financial markets in developing countries reveals the existence of opportunities for innovative delivery channels for micro insurance. (Prashad, Leach, Dalal, Saunders, 2015). Hence, the main objective of this study is to explore the feasibility of farmers' organizations as a vehicle for microinsurance delivery of the paddy crop cultivated by small-scale (peasant) ¹farmers in Sri Lanka.

¹In Sri Lanka, the composition of agricultural land under small holdings is 80 percent and average farm is less than 2.5 acres. Agricultural Census -2002

2. BUSINESS MODELS FOR MICROINSURANCE PROVISION

Emerging research in several developing countries have focused on innovative low-cost approaches to mitigate the conventional problems associated with crop insurance, and affordability and sustainability of such products for the inclusive insurance sector. The main concern from the supply-side perspective for micro insurance is that who should the provider be? The delivery channels can be a wide range of organisations that can begin experimenting with innovative delivery channels in order to provide community friendly insurance services. Several microinsurance delivery models have been piloted in developing-country contexts (Churchill, 2007) such as the four classical service delivery models which is used to provide microinsurance. This helps us to understand, how corporate insurers, government bodies as well as other institutions, such as microfinance institutions play a role in micro-insurance delivery. These business models are distinguished as the partner-agent model, community based model, the full-service model, and the provider model (McCord, 2001, Merry, Prashad & Hoffarth, 2014).

The first of these models is called the *partner-agent model*, where a mainstream insurer enters into a contract with an agent for insurance delivery. In this model, the insurer develops and prices its products as well as manages risks. In this type of partnership, the microfinance institutions serve as sales agents for commercial insurers. The MFI and the insurer work together to design a product for low-income clients, and both entities negotiate the rate offered to the customer. The MFI handles marketing, premium collection, and other customer services. It also participates in claim reviews and issues payments on claims. In return, the MFI receives commission and the insurer absorbs all the risks, sets the final rate, pays the claims, and confirms that all legal requirements are being met.

Another important model is described as *full-service model*, where the insurance provider, a single company, assumes all the responsibilities, from product design and development to marketing, sales, premium collection, and claims processing, handling payments and even providing reinsurance. The insurance company undertakes all the insurance-related risks and deals directly with the policyholders. Commercial insurers, health care service providers and certain MFIs are examples of organizations that use the full service model. In some cases, third-party service providers may also be involved, for instance, in the case of health insurance, a third party may provide medical services. In certain situations, where the insurer and service provider are the same entity, the model is known as a *provider model*. An example for the full-service model is the Self-Employed Women's Association Insurance (SEWA) in India. This model could be further extended to include health care providers. GRET Cambodia is an example of a health microinsurance following the provider model (McCord, 2001b).

In the case of the *community-based model/ mutual model*, the insurance is entirely owned and managed by the community members (the policyholders), who select a group from among themselves to manage the scheme. This mutual model, members' liability is limited to their premium contributions. Insurers in a community group-based model are typically mutual insurers, cooperatives, community-based organizations, and credit unions. Under this model the community members are responsible for all insurance related tasks, and may subcontract external service providers to supply specific services.

Leftley & Roth (2006) discuss alternative institutional approaches, including the use of a protected cell company, alternative administrative procedures such as amended agency agreements, or outsourcing to third party administrators, as well as alternative distribution channels, such as retailers, workers' unions, cell phone companies, or burial societies and Rotating Savings and Credit Association (ROSCAs). In conclusion, many of the above discussed models are under development and McCord (2008), claims that one can be 'agnostic about insurance models' and therefore there is a need to establish the most effective delivery channels for different risk categories.

The supply of microinsurance through conventional insurance companies or government institutions is often still limited or not matching local requirements. Community based organization or existing intuition network fill gaps and offer a potential to link up with the "formal" sector. The current literature already argues that microinsurance delivery through existing entity and the provision of insurance functions through a non-insurance route (Mosley, 2009). This has stimulated interest among policymakers and development practitioners at grassroots level or community-based organisations as an innovative business model for insurance delivery. Community-based organizations are widespread throughout the world and exist in different forms. A common denominator of these schemes is their proximity to their members, the clients of the schemes. These clients are often involved in the administration and management of the schemes, although the larger ones might contract professional management. It is the proximity to their members which makes these insurance schemes so valuable as they possess a deep understanding of the economic and social situation of their members and the risks they face. This intimate knowledge enables these schemes to offer processes and products which are localised and responsive to local needs.

Community linkage can also benefit from trust advantages. As we are currently aware, insurance can seem a strange concept: one pays a premium upfront in return for the promise that the recipient will compensate in case of a risk occurring. Such a transaction requires substantial trust, which community members might not have in external institutions. How should potential clients know that an insurer will indeed come back to settle a claim if needed. It is much easier to control a link up with client-based institutions, which is felt to be more accessible.

The client-based institutions and local accessibility might also create a higher feeling of ownership among the insured. According to the four institutional models referred to in providing microinsurance, this is called Partner-agent model and it is believed to be an ideal situation to reach the rural community. Any potential community organization can work as an agent ("micro-insurance agent") for insurance delivery. In this case, the insurers assume financial risks and the agent serves as a "matchmaker" to provide lower-cost links between the other clients. A further advantage of community-link schemes is that they can be established in remote places which are difficult to reach for conventional insurers. Such physical distance often creates substantial supply gaps, as the costs of reaching out to far-off places may be too high for conventional insurers alone. Moreover, it is easier for community-link insurers to service the insured: their local community organisations and their aligned services cover the benefit package easily.

2.2 Farmers' organizations and financial intermediation

Farmers' organizations can take various forms like community-based and resource-orientated entities. In an agricultural society, the particularly advantageous ones are the farmers' organizations because they find greater acceptability among the financially excluded, and with a better understanding of their needs, and are therefore well equipped to advise them on the choice of products. In addition, farmers' organizations are essential institutions for empowerment, poverty alleviation and advancement of farmers and the rural poor.

2.3 Legislative context in Sri Lankan farmers' organizations

In Sri Lanka, FO's are established to manage the irrigation system and agricultural functions (Wijerathna & Varma, 2006). The Agrarian service (revised) Act (No.04.1991) of Sri Lanka, is seen as providing a sound policy framework for the establishment and work of farmer organizations, especially as it provides for the participation of farmer organizations in the Agrarian Development Councils at the provincial and district level. A key element is the development of farmer organizations whose basic functions are to deal with irrigation matters. Most farmer organizations consist of informal Field Canal Groups (FCGs), each of which selects a Farmer Representative (FR) who sits on the committee that governs the Distributory Canal Organization (DCO). The DCO, is considered as the legal farmers' organization. In some schemes, farmers have created higher-level organizations, including System Level Farmer Organizations (SLFOs) by federating DCOs. The following activities are mandated to the farmer organizations by law. The general activities of the farmers' organizations set up in the country are as follows:

- Formulating and implementing the agricultural program for the area;
- Carrying out village level construction work and effective repairs and rehabilitation work on irrigation systems;
- Marketing of produce and distribution of seeds, fertilizer and agro-chemicals;
- Extending the necessary cooperation among the government institutions and local farmers in coordinating agricultural activities;
- Providing farm machinery and agricultural implements to the members of the farmers' organizations at affordable prices;
- Making arrangements with government or nongovernmental institutions to acquire technological knowledge required for efficient agricultural endeavors;
- Establishing of a "fund" that could be utilized to meet the requirements of the farmers organizations; fund raising activities ;
- Negotiating with banks, cooperative societies, and others for the credit needs of the members of the farmers organizations;
- Making appropriate linkages with other voluntary organizations actively operating in the area;
- Selecting the representatives to be nominated to the local agrarian services, committees, as directed by the Commissioner of the Department of Agrarian Services; and
- Providing the necessary services to improve mutual cooperation among members of the farmers' organizations.

The legal framework stated above, provide an enabling environment with appropriate attributes such as collective action, community management, decision making, leadership, empowerment,

resource mobilization and ownership in FOs as capacities for service delivery. As a result FOs can function as a stakeholder for insurance supply in Sri Lanka.

3. METHODS

3.1 Study Area, Data Collection and Analysis

The selection of the study area was carried out through a multi-stage screening process based on multi hazard risk and paddy production. The Ampara district in the Eastern Province of Sri Lanka has considerable exposure to natural disaster risks (Zubair, Ralapanawe, Tennakoon, Yahiya and Perera, 2005) and is the highest rice producing district among the paddy producing districts in Sri Lanka. Out of 29 agrarian service centers in the Ampara district, ten agrarian service center divisions were selected to collect the primary data. This selection was also made, particularly based on disaster occurrence within the last ten years. A semi-controlled method was used to select a sample of 60 households within each of the irrigation types (stratums) and the total sample size being 180 farmers. Primary and secondary data were used to evaluate the potential of Sri Lankan farmers' organizations, their organizational capacities for insurance delivery and their role as a stakeholder of the insurance supply chain. In order to understand the inherent capacities, factor analysis was used.

4. RESULTS AND DISCUSSION

4.1 Understand the inherent capacities of paddy farmers' organizations using factor analysis

This paper concentrates on the role that farmers' organization can play in facilitating service delivery; therefore, understanding inherent strengths and capacities of farmers' organization is essential for an external intervention. This section attempts to explore the possibility of the farmers' organizations working as an insurance delivery agent or a stakeholder of the supply channel. Information on this section was obtained by our main survey. The survey asked, their preferred most suitable work organization for insurance delivery. Of the total number of participants, 87 percent of farmers, who are in the group of showing interest in joining index-based microinsurance (Heenkenda, 2011), highlighted that, the farmer organization was the most suitable organization structure to work as a stakeholder in the insurance supply chain.

In order to understand the inherent capacities, principal components analysis, a form of factor analysis, was used. First, a factor rotation was performed. One common technique in this process, is normalized varimax rotation. Varimax rotation with Kaiser normalization is used to have an identical factor structure in which each variable loads highly on one on one factors. Second, the adequacy of the correlation matrix for factor analysis was assessed with Kaiser-Meyer-Olkin (KMO) and Bartlett's sphericity tests. The items loading heavily on components were selected to interpret the factor content. After the varimax rotation, four factors with eigenvalues greater than 1 emerged; accounting for 73.80 percent variance. After scree-plot and eigenvalue inspection, items with strongest loadings on the factor structure were used to label the new factors.² Accordingly, each respective dimension factors 1 to 4 are described and named.

² Here we avoid entering into too much technical detail.

Factor 1 can be termed as “structure and cooperation”. This is because different variables that facilitate creation of cohesion among people in a community have high positive loadings. This includes Density of membership (-0.627), Homogeneity (0.832), Decision making (0.769), Meeting attendance (0.713), Cash contribution (0.562), and Labour contribution (0.711), The extremely high positive loading on homogeneity, implies that the farmers’ organization fosters greater uniformity among the farmers in the farmers’ organization. On the other hand, an internally homogeneous association might make it easier for the members to trust each other and to arrive at decisions. The decision making factor also indicates high loading values, this implies that most of the paddy farmers in farmers’ organizations are very actively involved in decision making and that their behaviour is democratic. Farmers’ contributions take many forms such as meeting attendance, cash contribution and labour contributions and these factors are indicated by high positive loadings. The evidence implied that farmers participate more actively with farmers’ organizations activities. The farmers’ participation was clearly indicated in order to implement any participatory activity.

Table 1: Principal factor analysis

Items	Structure and cooperation	Trust, local norms, and values	financing activities	Other Functional activities
Density of membership	-0.727			
Homogeneity	0.832			
Decision making or democratic behavior	0.613			
Meeting attendance	0.769			
Cash contribution	0.562			
Labour contribution	0.881			
Vertical trust		0.834		
Horizontal trust		0.769		
Reciprocity		0.866		
FOs established an emergency or any fund			0.431	
FOs doing fund raising activates			0.675	
Keep financial records			0.542	
Credit and saving activates			0.638	
Marketing and distribution			0.725	
Negotiating with financial institutions for the credit needs			0.562	
Providing farm machinery to the members at affordable prices			0.514	
Water distribution activities				0.915
Coordinating agricultural activities				-0.518
Construction works				0.586
Community-based risk management				-0.736
Participation for lost assessment				0.412
Conduct training and educational programmes				0.321
Natural resource management				-0.327

The second factor of “trust, local norms and values” that has emerged with high positive loadings can be associated with intergroup behavior. Variables loading onto this factor include vertical trust (0.834), horizontal trust (0.769), and reciprocity (0.866). Trust is the most widely used indicator of social capital. To trust someone or something means to have belief or confidence in the honesty, goodness, skill, or security of a person or an organization. Trust is the basis of all social institutions. The more group members trust one another, the more likely they are to expose themselves to the risk of being exploited that reciprocity in such transactions entails. Since trust had already been established, the possibility of joining the collective activities in the future was expected.

A further evaluation of the farmers’ organizations financial activities such as the initiatives, transactions, loans, supplies, employed and undertaken by an organization in achieving its economic objectives, can be defined as “financial activities” factor. FO’s services include the establishment emergency or any other funds, fund raising activates, maintaining financial records, credit and saving activities, marketing and distribution, negotiating with financial institutions for credit needs, providing farm machinery to the members at affordable prices. It means that the farmers' organization have the experience to handle financial activities. Some group savings projects have also been initiated by many farmers’ organizations. Furthermore, all members of the farmers’ organizations have their common deposit in the bank in the name of their organization.

Farmers’ organizations have legally mandated to negotiating with other entities such as banks, and cooperative societies. In the study area some farmers’ organizations have been engaged in an innovative financial agreement with an Islamic microfinance which is based on the Shariah compliant mechanisms undertaken by the Muslim Aid in Sri Lanka (Obaidullah & Mohamed-Saleem, 2008).

Further evidence implies that some operational activities with finance at farmers’ organizations, maintain an accountability and transparency among the members. In farmers’ organizations, each chairperson and treasurer/bookkeeper are responsible to maintain groups financial records, for banking and petty cash, for managing revolving fund; for collecting fees from members and for managing credit facilities if applicable, even for providing co-financial signatory services behalf of members.

The role that farmers’ organizations play in helping farmers build strong negotiating skills is critical in ensuring that they are able to bargain well not only for affordable financing, but also as they work with value chain actors to establish mutually agreeable terms to support their production and marketing activities.

This survey evidence clearly indicates that farmers’ organizations are capable of handling financial activities in a transparent manner and while demonstrating healthy financial habits. However, this issue requires further consideration in establishing links with financial providers and the role of intermediaries in the insurance supply chain.

The fourth factor that is mainly explained by items related to water distribution activities, coordinating agricultural activities, construction work, community-based risk management, participation for lost assessment, conduct training and education program and natural resources

management activities is named as “other functional activities” in farmers' organization. All these variables have aspects of organizational capacity and link with outside organizations. The bridging and linking process is expected to and implies links across groups, across communities, and the capacity to work with other organizations. Moreover, training, risk management capacities are also demonstrated.

It was further, observed that the members tended to share responsibilities jointly in their activities, systematizing their work and in order to generate group consciousness.

Finally, the main functions of farmers' organizations have been identified as being to promote and secure distribution of water among its users, the adequate maintenance of the irrigation system, efficient and economical utilization of water to optimize agricultural production, and to ensure ecological balance by involving the farmers, inculcating a sense of ownership of the irrigation system in accordance with the water budget and the operational plan. Therefore, it is not surprising that water distribution activities have a higher percentage in the data analysed. This empirical evidence shows that one of the key roles of the farmers' organizations is the involvement in the irrigation service as mandated in the constitution.

4.2 Measuring and Interpretation of Organizational capacities of farmers' organizations

To date, there is no research or assessment on the evaluation of the farmers' organizations in Sri Lanka. Moreover, any research does not suggest any consistent evidence on organizational capacities of farmers' organizations. However, few scholars have developed measurements that reflect the capabilities of membership organizations. In one effort, for instance, Uphoff (1991) developed a set of indicators (Cornell method), which he grouped into nine categories: decision-making, resource mobilization and management, communication and coordination, effectiveness, conflict management, accountability, sustainability, linkages, and problem-solving. Other researchers have created similar measurement (Cornell) tools to assess the strength of membership organizations. Using the Cornell method, on the purposes of our study, we take and generate few indicators to find further insight and summarizing of organizational capacities. In addition to, compare variation between irrigation types on farmers' organization. These indicators were measured on a 100 point scale.

In this analysis, generated indicators were clustered in slightly different ways. Like previous analysis the similar picture emerges that there is some significant deference in irrigation types. Consistent with these more quantitative interpretations of capacity in the three irrigation type farmers' organizations, our results suggest that major irrigation area has much greater organizational capacity than the other two areas. In order test the feasibility of work as a stakeholder of insurance value chain, the indicators confirm farmers' organizations have quite high institutional capacity. However, financial management, linkages and negotiation capacities are relatively lower than other capacities. These skills are significantly important to enhance external cooperation and alliance with insurance providers. This result indicates that, further time and resources must be devoted to educate on capacity building of management, financial education for farmers before they put into practice a microinsurance scheme with farmers' organizations. In addition, these indicators of organizational capacity help identify several key deference of irrigation types. The difference in total score is 11 percentage points, with the

greatest differences appearing in resource mobilization and management (24 percentage points), linkage with external entities (19 percentage points), in financial management (18 percentage points), negotiation capacity (17 percentage points), and communication and coordination (13 percentage points). However, differences in leadership, participation, decision-making and the satisfaction of members were somewhat less extreme.

Table 2: Organizational capacity indicators of farmers' organization in the survey area by irrigation

Variable	Rain-fed	Minor Irrigatio n	Major Irrigatio n	Range of Difference	Total
Leadership	78	74	78	4	77
Participation	77	80	78	3	78
Decision-making	78	77	80	3	78
Satisfaction of members	78	80	79	2	79
Financial management	62	74	80	18	72
Communication and coordination	75	82	88	13	82
Resource mobilization and management	56	76	80	24	71
Negotiation	58	64	75	17	66
Linkages	61	67	80	19	69
Overall capacity	69	75	80	11	

4.3 Group size or Number of members in famers' organization

Group size has been seen as a crucial factor in understanding the likelihood of collective action. A substantial body of literature in economics, political science, and sociology has examined this hypothesis. Optimum group size or manageable group size is very complicated to answer in collection action phenomena. The group-based or agricultural micro insurance context does not require specific group sizes. However, group size depends on a monitoring system which is mutually monitored by individual agents or a third-party. According to the insurance supply chain and Sri Lankan farmers' organization legal setting, an insurance company or a provider should work or be involved as a third party entity. Third-Party monitoring setting, small groups, therefore, is likely to be at a relative disadvantage in providing such collective goods, groups beyond a certain size will not find it worthwhile to have any monitoring and conclude that medium-sized groups will be more successful than small and large groups in providing required levels of monitoring.

A pilot project conducted in Malawi provides an excellent example of working with farmer organizations as value chain stakeholder to deliver insurance (Hess, & Syroka, 2005). This experience has proven and provides useful insight to develop a better model to Sri Lankan Paddy farmers. According to Malawian farmers' organization, the total number of members is 75-150 range or group size.

According to the study area the statistics proved that the average member size was around 100 members per farmers' organization. However, the minimum size is a group of 50 members and the maximum is 157. The average farm size or land holding is 3 acres. It means that one farmers' organization has claimed control of around a 300 acre area land plot. These results may suggest that the surrounding land has to be insured paying attention to geographic characteristics, topography, soil types and climatic conditions that are similar to the insured acreage. For example, all of the member famers' acreage in famers' organization may be able to insure as a single whole farm unit. Because the likelihood of having a claim is reduced by the larger unit than single, a cost on the insurance premium may be reduced. At percent in Sri Lanka, whole farm units are not insurable under current Agrarian and Agricultural Insurance Board of Sri Lanka (AAIB) insurance scheme. Some land area could be combined into a single basic unit if they are in the same climatic and geographic condition. If they are in different climatic and geographic condition they would remain separate basic units. However, this result suggests and provides useful information for the determination of the insurable units of paddy farmers in Sri Lanka.

Towards a better understanding of the density of potential delivery channels, we obtain secondary level data from the most widespread institutions in the Ampara district and we also analyzed distance and time taken from household to location of most widespread institutions by sector in Sri Lanka at a general level. The following table summarizes the spatial distribution and accessibility of most widespread institutions in Sri Lanka.

Table 3: Distance and Time taken from household to location of most widespread institutions by Sector in Sri Lanka

Sector	<u>Post office/ sub post office</u>		<u>Bank (Govt./ private)</u>		<u>Agrarian service center</u>	
	Kilometers	Minutes	Kilometers	Minutes	Kilometers	Minutes
All island	1.64	18	3.65	24	6.68	37
Urban	0.56	12	1.04	14	5.25	33
Rural	1.69	18	3.95	25	6.39	36
Ampara district	1.61	20	4.62	30	4.5	35

Note: Excluding the Northern province and the Trincomalee district in the Eastern province

Source: Department of Census and Statistics of Sri Lanka (2007)

According to table 3 the postal network is easily accessed and nearest institutions network for rural households in Sri Lanka. Data suggest that the post office is the ideal location in the rural sector to play a vital role as the hub for financial services. However, this study revealed that registered famers' organizations network is uniquely large compared to other networks in particularly in the rural area. The following table describes the number of most widespread institutions in the Ampara District.

Table 4: Number of most widespread institutions in Ampara District and Sri Lanka

	Bank branches (Govt./private)	Commercial insurance companies	Co-operative Rural Banks	Post office/sub post office	Agrarian service center	Registered Famers organization
Ampara district	45	28	26	50	29	590
Sri Lanka	1933	968	402	4000		15000

Source: Central Bank of Sri Lanka (2013), Agrarian Service Department (2012/13), Department of Post of Sri Lanka. (2013)

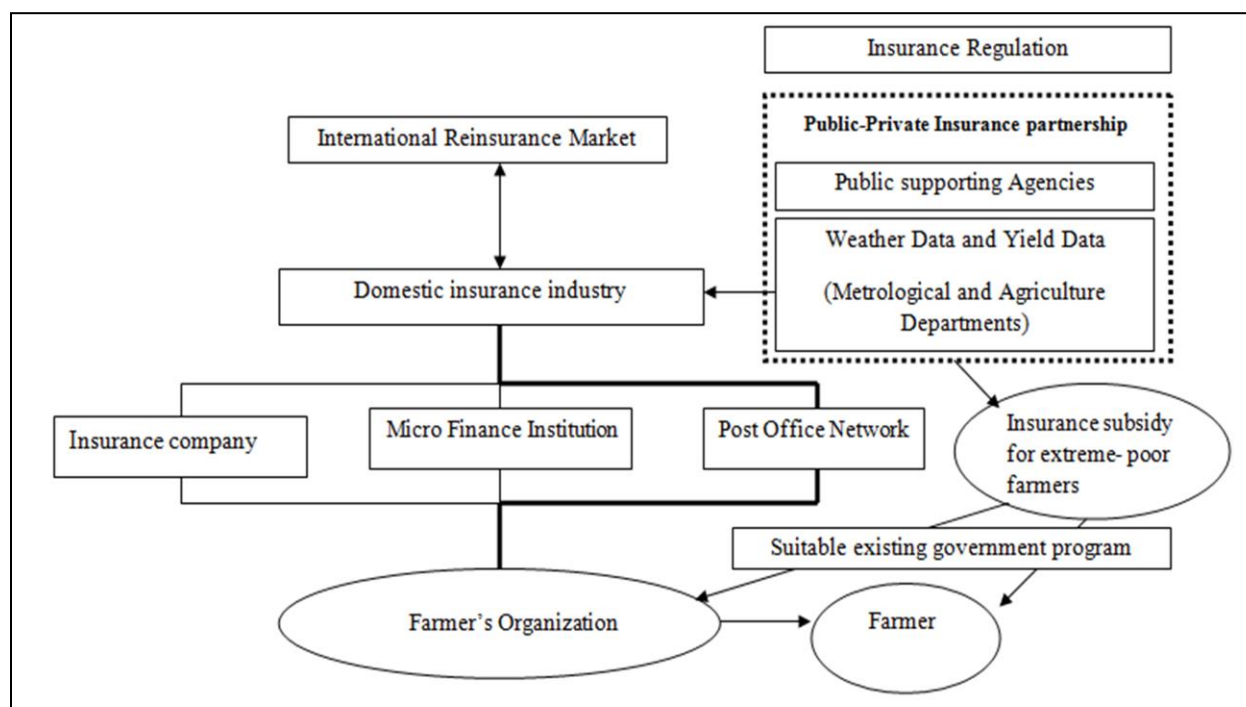
It is also noteworthy to note that if registered famers' organizations affiliate with the post office network it would be provide a sustainable and strong financial service to poor farmers in the rural area. Currently, the postal network with 4000³ offices and around 15000⁴ registered farmers' organizations around the country is a vital tool of microinsurance supply to the rural paddy farmers which can also be productively used.

It is important to stress that a review of the available evidence does not provide a clear delivery channel for developing countries. Although, according to the Malawi model, farmers purchasing the insurance agree to sell their yields to famers' organization. In this model, famers' organization act as a delivery channel for the loan and insurance payouts and deducts the price of the loan from its payments to farmers for their yields (Hartell & Skees, 2009). However, Malawi-type weather insurance scheme provides the necessary outline and potential policy direction to determine appropriate delivery channels for Sri Lanka. Based on the Malawian institutional design and above discussed evidence, we can suggest a supply chain framework for Sri Lanka which it considers to be consistent with the partner-agent model. The insurance supply chain key stakeholders and proposed institutional framework is outlined below in figure 1.

³ Sri Lanka Postal department Annual report 2013

⁴ Department of Agrarian Services Sri Lanka Annual Report 2013

Figure 1: Key stakeholders and Proposed Institutional Framework for insurance supply chain in Sri Lankan Paddy farmers



Note: Dotted lined boxes reflect the role of the Government

Source: Created by the author

This institutional framework would provide alternative cost minimization strategies for the provision of microinsurance and the role of the public sector to improve the efficiency of agricultural insurance market. According to our findings, we can highlight three potential delivery approaches for the distribution of microinsurance among Sri Lankan farmers. First approach is insurance company (Insurer) and their branch network that directly link with farmers' organization. Second option is an insurance company collaboration with a microfinance institution in the area and a farmers' organization. Microfinance institutions might also make good partners for microinsurance since they are already working within the target markets. Third and the most viable method is insurance company work is to directly link with farmers' organization through post office network. In this last model, the post office work functions as a formal financial intermediary. The post office provides transactional function between the insurer and the farmers' organization, for example work as the farmers organization's banker, accept deposits, facilitate to deposit for collected premium money, claims transfer to farmers' organizations or directly to the farmer. However, these approaches are not mutually exclusive, and a combination of methods can be tried. According to some experience from the area dominated by Islamic religious farmers, there is more preference to work with the framework of the Islamic financial system. In this religious and cultural context, Islamic microfinance initiations network might be very successful for microinsurance delivery, as long as the service providers are given products that they can sell with farmers' organizations.

4.4 Public private partnership and role of the government

Experience tends to suggest that implementation of agricultural insurance is most efficient and effectively managed by the private commercial insurer. However, current emerging research expounds that strengthening market-based agricultural insurance through public-private partnership, public policy towards government involvement and encouraging the private sector for agricultural insurance is essential. According to the above model, the Sri Lankan government can support and participate in the following important areas. Public reinsurance facilitates and/or promotes agricultural reinsurance through local entities and global international reinsurance markets and the creation of an enabling legal and regulatory framework. Designing and starting microinsurance schemes seem to be a very expensive process for private insurers, particularly for index-based insurance. Hence, the government can participate in research and development contact for the insurance design phase. In the public-private partnership context, for example, the meteorological department can easily combine with the insurance industry or particular companies who provide the index-based insurance. The meteorological department obtains a range of weather data, the insurance companies can purchase these data to develop and implement the index-based microinsurance. In Sri Lanka, the post office network is a *public entity* and in this study, we have recognized that it is more widely spread in rural areas, hence, insurance companies and the postal department should be able to deliver microinsurance to Sri Lankan paddy farmers in the public-private partnership initiative.

The micro-insurance provider faces the compromise between low levels of the poverty sector, whilst maintaining full cost recovery. In such a situation premium subsidy programs can be financed through the wide-ranging government poverty alleviation programme (Samurdhi) with the subsidy decreasing incrementally as farmers move up the income scale. Samurdhi programme, has a widespread network and covers extensive geographical locations in the country and therefore it seems that the Samurdhi programme is in a good position to reach the country's extreme poor farmers with any incentives package for farmers to purchase crop insurance. The Samurdhi program has three components. Each and every component can be used as a mechanism to implement the insurance subsidy. The first is a welfare grant to purchase essential commodities such as poor households that acts both as a consumption subsidy and a nutrition supplement. The second component is the savings, credit, insurance, and social security schemes that improve access to finance for households. The third component is a community infrastructure development program where irrigation, roads, and water supply projects, among others, are undertaken by the community. In addition, insurance subsidies would be provided in a straightforward link with the fertilizer subsidy program carried out by the Sri Lankan Government. Generally, direct subsidy for crop insurance premiums paid by farmers is widely adopted by policy-makers in many countries. Nevertheless, World Trade Organization (WTO) legislation exempts (permits) premium subsidies for crop insurance. However, international experience illustrates the high-cost and ineffectiveness of high government subsidization (Mahul & Stutley, 2010).

5. CONCLUSION

This study provided clear insights to the non-insurance or community-based delivery channels which can be used for paddy farmers. The farmers' organization is most widespread, familiar and trustworthy institutional setup for paddy farmers. In theory, an ideal combination

would be an insurer-agent partnership between the commercial insurance companies only or with microfinance institutions and farmers' organizations. Insurance companies can provide the insurance product and marketing. Farmers' organizations can provide the delivery mechanism, premium collection mechanism and service to the clients. The farmers' organizations demonstrated high trust, which, in turn, improves the efficiency of insurance delivery. The result suggests most of the farmers actively contribute to the farmers' organizations to initiate events. Moreover, empirical evidence confirmed that farmers' organizations have democratic decision making behavior and results indicate the possibility of participatory approach to insurance design, where farmers are involved in design based system for their own requirements. Therefore, we can conclude that farmers' organization is one of the most suitable platforms for the micro-insurer, which can be used for education and insurance design, and negotiation with farmers on their requirements. This platform provides information to help strengthen client relationships, and can meet better farmers' insurance demand. In theory, these group processes can mitigate or eliminate the asymmetric information problem and reduce transaction cost. Farmers' social capital and the inherent capacities of risk management behavior can acquire more benefit or support for the microinsurance scheme. In this context, multi-stakeholder partnerships could/should be made imperative for paddy farmers' insurance delivery aimed at widespread coverage or large-scale implementation.

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