

Strengthening Links among the Key Stakeholders of Public-Private Partnership Extension Approach: Lessons Learnt from Tea Smallholding Sector in Sri Lanka

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ABSTRACT

This study enlighten the presented collaborations among the key stakeholders (technology generation, dissemination and utilization systems) in the tea small holding sector in Matara and Ratnapura districts in the Low country and the potentials and boundaries for the establishment of linking mechanism of public-private partnership among the key stakeholders for effective dissemination of tea technologies to tea smallholders. This empirical study was conducted in the above districts where tea smallholdings are densely occupied and diverse public and private extension channels are in operation. Multistage stratified cum purposive sampling techniques were applied for the compilation of essential information from 140 selected stakeholders. The information on socio-economic data, information channels and their trustworthiness, their existing collaboration, degree of perception towards developing a linking mechanism with Public-Private Partnership Extension Approach were gathered.

Equally both private and public extension staff has a sound educational background and high level of contactability and hence, there is greater opportunity to technically empower them. The social positions of the majority of staff of public and private extension personnel are high while the social participation of smallholders is also high. Strengthening of the presently poor feedback information flow from private extension channels and small holdings towards the public information sources would help to identify the technical desires and areas for refining the technology. Stakeholders recognized the most trustworthy information sources are the public information sources and printed materials. Hence, making horizontal as well as vertical interrelation among key partners of both private and public extension channels would help to strengthen the information flow and build up more trustworthiness among the stakeholders. The level of perceived partnership was also positively correlated with productivity of smallholdings, respondent's experience and, social participation of smallholders.

A greater interaction among key stakeholders in planning, implementation and monitoring of the partnership programs, and effective communication, cooperation and mutual respect among the staff of partner organizations, and support from local community leadership, appreciation are of paramount importance in maintaining an effective private-public partnership extension approach for tea smallholding sector.

Keywords: Collaborations, degree of perception, Public-Private Partnership Extension Approach, tea smallholding sector, trustworthiness

INTRODUCTION

Public service functions of most developed countries have gradually moved away from the state sector to the private sector owing to their relative advantages under the changing economy. Even in Sri Lanka and many other developing countries the major services such as health, transport, communication and even education is gradually being privatized while the government playing the role of the moderator and the facilitator. In such services the technology involved is often well developed and integrated into the world economy. However, in agricultural extension, the technology generation is usually undertaken by the state sector research institutions and until recently the technology dissemination also was handled totally by the state sector. However, with the privatization of the state plantations and the rapid growth of the tea smallholdings sector, the technology dissemination system in the tea sector now has both public and private parties operating through a variety of channels for the transfer of technology. The public extension system in the tea sector, although playing a very significant role, is not expanding at the required rate to meet the rising demands mainly due to financial constraints and inadequate manpower availability. Findings of a survey conducted by the Tea Small Holdings Development Authority (TSHDA) in 2008 revealed that only about 34.5% total holdings had obtained advisory services from the government sources, while the majority (65.5%) were managing the properties in their own ways (Department of Census and Statistics, 2008). Therefore, formal communication channels presently available between the Tea Research Institute (TRI) and tea smallholders are inadequate for the timely dissemination of tea technologies to reach all tea smallholdings in the island. Inadequate linkages among key partners *viz.* researchers, extensionists in public and private sector and tea growers result in systematic “bottlenecks” in technology dissemination systems and can limit their effectiveness to contribute to development of tea industry. Hence, extension scientists have made some attempts to study and introduce different extension models and approaches for strengthening the existing extension system. With the realization that top-down models of extension were failing to meet the needs of farmers, bottom-up models of extension emerged from the view that farmers wanted to be involved in research, development

and the extension process (Clampett, 1993). New models of extension are characterized by participatory involvement of many stakeholders in program planning, development and implementation (Blackburn and Flaherty, 1994). The partnership concept arose from the recognition that relationships between researchers, extension, farmers and industry, should be more actively integrated to develop effective extension programs (Roling and Engel, 1991).

By application of partnership extension concept, Amarathunga *et al* (2006) studied the potential of using leaf supervisors attached to the tea bought leaf factories for enhancing extension services to the small holding sector. Based on the findings of above study and the need for improving the traceability of green leaf sources such as enhancing record keeping ability of small holding and integrating the extension and development activities have been realized and the TSHDA, Tea Commissioner's Division (TCD) and the TRI have jointly launched a more comprehensive pilot project of Factory-based Extension system in two locations in Ratnapura and Matara districts in 2007 (TSHDA, 2007). In this model trained extension agents attached to the respective tea factory are expected to serve as the key link in the technology dissemination process while the extension officers of the TRI, TSHDA and TCD providing the training and other support and maintain close supervision. Having considered the involvement of agro-input companies in assisting the tea factories to timely distribution of fertilizer and other inputs together with necessary technical advice to tea growers, Amarathunga *et al*. (2008) further developed the mechanisms of supplementary efforts with plurality of institutions such as public extension system (TRI, TSHDA, TCD), Farmer organizations (Tea Shakthi Society, Co-operative Tea Societies, People's company of Gemidiriya and Gamaneguma Foundation - PCGG), Para Extension workers (e.g. Estate Visiting Agents), Extension agents in agri-input companies, and local Input dealers, Self Help Groups for the dissemination of technology to tea smallholding sector and proposed an improved linking mechanism of the Public-Private Partnership Extension Approach.

The term 'Public-Private Partnership (PPP)' covers a wide variety of interactions among the key partners. Ojha and Morin (2000) defined the partnership as mutually beneficial dynamic relationship between or among two or more persons or organizations having similar vision, goal, objective and interest. Partners leverage their time and resources, experience and expertise, and knowledge and skills to work together complementarily by dividing responsibilities based on comparative advantage and make decision jointly (Van Den Ban and Hawkins, 1988). Partnership building is a dynamic process, not a static event. Ojha and Stephen (2001) have identified five main phases in the partnership building; i. Pre-partnership identification of common interests and objectives ii. Negotiation and design iii. Implementation iv. Monitoring and v. Evaluation and termination, revision

or extension. Having considered the each steps of the Partnership building process, a conceptual framework was developed to meet the objectives and requirements of the study as shown below (Figure 1).

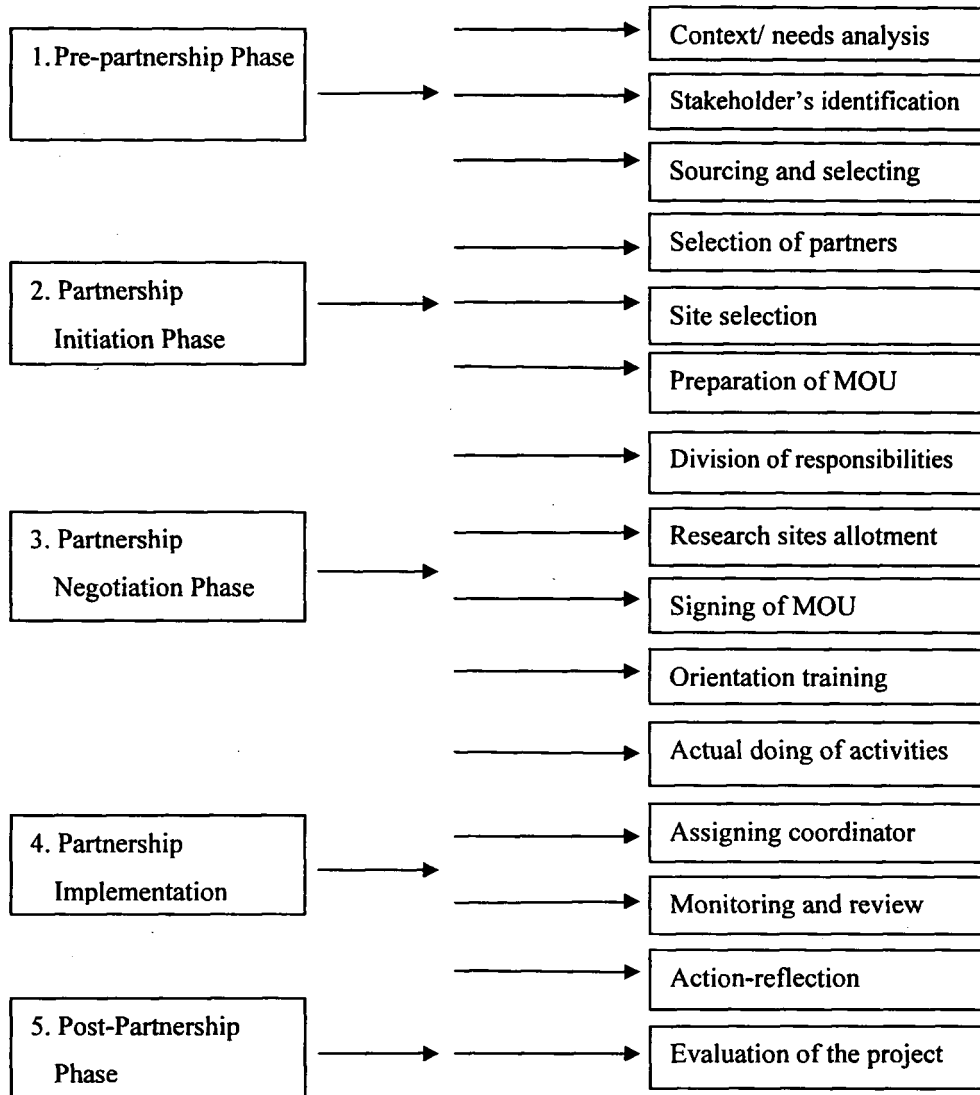


Figure 1. Framework for Public-Private Partnership study

Hence this empirical study aims to explore the existing collaborations among the key stakeholders of technology generation, dissemination and utilization systems, and the factors affecting the linking mechanism of extension and appraise the partners' readiness for a public and private partnership extension approach for effective transfer of tea technologies to the tea smallholders. The specific objectives are to a) investigate the factors affecting existing collaborations among the key stakeholders b) analyze the

perceptions of stakeholders towards the establishment of a collaborative and effective linking mechanism to strengthen the ongoing technology transfer system and c) make recommendations to establish public-private partnership among the key stakeholders.

MATERIALS AND METHODS

Selection of study areas

Two tea growing districts in the Low country viz Matara and Ratnapura where tea smallholdings are densely populated and a variety of public and private extension and input services channels are operating, were selected for this empirical study. All key stakeholders in the private and public extension channels who were invited for the focus group discussions and the awareness programs conducted prior to the launching the pilot PPP model were used to gather information on their existing collaboration, willingness and commitment towards the developing a linking mechanism for a PPP extension approach. Participatory rural appraisal techniques were also applied to gather information on the above specific parameters.

Sampling procedure

Multistage stratified cum purposive sampling techniques were designed for the collection of required information to match with the research objectives from each stratum representing different layers of key-stakeholders in the smallholding sector. Six types of extension models implemented in the two districts were selected to represent varying degrees of involvement of public and private extension services. The respondents for the survey were selected proportionate to the total number of stakeholders involved in each of the model.

Data collection

Required information was collected using a pre-tested questionnaire from randomly selected 140 key informants viz Tea Smallholders (31), Tea Small Holding Society Leaders (8), Factory Based Extension Staff (25), Private Extension Staff of Agro-Product sector (11), Tea Factory Management and Supervisory Staff (15), Tea Small Holdings Visiting Agents (3), Research and Extension Staff of TRI (6), Assistant Tea Commissioner and Tea Inspectors of TCD (5), and Tea Inspectors/ Extension Officers of TSHDA (6), Divisional coordinators and facilitators and rural leaders of PCGG (30) who have participated for the awareness programs and focus group discussions held in Ratnapura and Matara Districts (Table 1). The questionnaire survey was followed by focus group discussions conducted during March 2009 to February in 2010.

Table 1. Data sources and fora in Ratnapura and Matara districts

Type of extension channel	No. of participants		Type of public / private partners
	Total	Sample	
Tea factory based extension channel in Ratnapura District	50	15	Private sector :
Tea factory based extension channel in Matara District	80	29	Smallholders and their society leaders,
Private extension channels in Ratnapura district	60	30	Rural leaders of PCGG, Factory extension staff, Leaf Supervisors,
Regional Technical Forum of TRI with key stakeholders	80	16	Factory management staff,
Society leader oriented extension channel	25	8	Private extension agents of the agro-products company, Visiting agents
People's company of Gemidiriya and Gamanaguma foundation	75	30	Public sector:
Agro-Product dealers oriented extension channel	30	12	TRI research and extension staff, TSHDA extension staff,
Grand Total	400	140 (35%)	TCD regional staff, Divisional coordinators Facilitators of PCGG

Measurement of variables and data analysis

The independent variables studied were age, level of education, experience in tea sector, contactability, tea land extent, monthly tea yield, exposure to cosmopolite and localized information sources, social position and organizational participation. The dependent variables were composite variables such as degree of trustworthiness on information source, extent of collaboration by key stakeholders, perceived degree of existing partnership, degree of effectiveness of input sources. Scoring systems were adopted to measure the qualitative parameters and they were ranked them into relevant groups to facilitate interpretation. Descriptive analysis and statistical techniques such as Chi-Square and Rank Correlation tests were used to analyze the data using SPSS software package.

RESULTS AND DISCUSSION

Socio-economic characteristics of the stakeholders

Socio-economic characteristics of stakeholders in the tea smallholding sector play a significant role in implementing a partnership approach. The age of these stakeholders varied from 22 to 60 years. The majority of smallholders and society leaders (56.4%) have studied up to GCE (O/L) and the balance (43.6%) studied up to GCE (A/L), while the majority of the private sector extension agents (62.7%) had up to GCE (A/L) and the rest had diploma or degree. All Tea Inspectors of TSHDA and TCD were Agricultural Diploma holders, and the extension staff of the TRI and Divisional coordinators and facilitators of PCGG had bachelors' degree or postgraduate qualifications. Approximately, 41% of extension staff of the private sector and 69% of the public sector had more than ten years experience in their profession. The majority of smallholders (53.9%) had more than 15 years experience in tea cultivation. It was found that 96% of stakeholders had telephone facilities and therefore, a developing agricultural communication network among the key partners utilizing facility of high contactability through the phones, is feasible in the dissemination of timely important technical messages. Social participation of smallholders in the Tea Development Society activities was found to be high (84.6%) and one-third were holding leadership positions in their societies. Social position of the majority of staff of public and private extension channels varied from middle to executive posts which indicate their potentials for contribution to the decision making stages of the partnership building up process.

Tea cultivation and productivity of smallholders

The mean tea land size was 0.56 ha. About 65% had less than 0.50 ha and 15 % had 0.6 – 1.0 ha. Balance 20% had more than 1 ha up to a maximum of 4 ha. The mean annual yield of the respondents was 2106 kg made tea per ha. Comparatively a higher percentage of smallholders (48%) reported more than 2000 kg per ha (Table 2).

Table 2. Tea cultivation extent and yield

Characteristics	Category	Smallholders		Mean (Min – Max)
		No.	%	
Extent of tea (ha)	< 0.5	35	65	0.56
	0.6 – 1.0	8	15	(0.1 - 4.0)
	1.1 – 2.0	3	5	
	> 2	8	15	
Yield made tea (kg ha ⁻¹ yr ⁻¹)	< 1000	5	9	2106
	1000 - 2000	23	43	(446 – 7012)
	2001 - 3000	18	33	
	> 3000	8	15	

Availability of information sources

Access to the information source depended upon the availability and trustworthiness of the information source and hence, availability of information sources and their trustworthiness as perceived by the private and public extension channels as well as smallholders were examined in this study.

Availability of information sources for the private extension workers

Table 3 shows the availability of information sources for the private extension and service workers. Findings reveal that mean number of information sources for factory-based extension agents is 6.32 and availability varied from 1 to 13 sources. The number of information sources for the agro-products based private extension channels varied from 0 to 7 with a mean value of 3.18, which is significantly lower than that of the factory-based extension agents ($t = 3.7, p < 0.01$).

Table 3. Availability of information sources for private extension workers

Category	No. responded	Mean No. of information sources	Min.	Max.
Factory-based extension workers	25	6.32	1	13
Agro-products based extension workers	11	3.18	1	7

Therefore, vertical as well as horizontal expansion of availability of information sources for agro-products based extension workers should be taken into consideration in empowering private extension channels under the partnership extension approaches.

Availability of information sources for the public extension channel

Table 4 shows the mean number of information sources for public sector extension workers *i.e.* Tea Inspectors of TCD, Tea Inspectors of TSHDA and, Extension Officers of TRI.

Table 4. Information sources for public extension system

Extension category	No. of respondents	Mean No. of information sources	Min.	Max.
Tea Inspectors of TSHDA	6	7.0	6	8
Tea Inspectors of TCD	4	3.0	1	5
Facilitators/ Divisional of PCGG	9	1.8	1	4
Extension Officers of TRI	6	2.2	1	5

When the mean values of information sources used by the public channels were compared with each other, it shows that Tea Inspectors of TSHDA have significantly more opportunities to expose to different information sources than for Tea Inspectors of TCD and Extension Officers of TRI. Meanwhile, Regional Coordinators/ Facilitators have least opportunities to expose for the tea related information sources. Therefore, establishment of linking mechanism among the public and private tea related information sources would enhance the sharing opportunity of knowledge and experience.

Strengthening the feedback information flow from private extension channels and smallholders towards the public information sources, especially to the TRI and TCD would facilitate the identification of extension needs and matters related to technology refining and modification to match with key stakeholders' needs.

Information sources for the smallholders oriented on different extension systems

The mean number of information sources for the smallholders attached to society-based channel (Kuruwita, Ratnapura and Alapatha), and the PCGG were 5.8 (range varied from 2 to 13) and 5.2 (range varied from 1 to 9) respectively. The number of information sources for the factory-based smallholders (RTS, Lumbini and Berubewula) varied from 1 to 10 (mean value = 5), while the number of information sources available for the smallholders attached to agro-products based information channel (Ingiriya) varied from 1 – 6 (mean value = 3.27) respectively. These differences, however, were not statistically significant. Smallholders attached to society-based channel and the PCGG receive information from sources other than the official channel of TSHDA and society leaders as most of the rural based livelihood development activities are centralized on dynamic social organizations like Tea Smallholding Development Society and PCGG. Therefore, most active collaborations among partners at grass-root level could be identified when the Tea Development Society and PCGG operate in dynamic positions. Factory based and dealer based out-grower networks basically emerged as market oriented rather than service oriented and these systems are also active in the isolated locations where formal official channels are less effective. They have comparatively limited opportunities to exposure for different information sources. Therefore, these bottle necks should also be clearly identified and arranged to minimize at the time of building up of collaboration among partners.

Stakeholders' perception on trustworthiness of information sources

Trustworthiness can be explained as receiver's acceptance of and reliance on an information source. Scoring system was adopted to measure the trustworthiness based on the preference for each information source. The overall value for each source was estimated by a weighted average calculated by giving different weights for responses (3 for very reliable, 2 for reliable, 1 for somewhat reliable, -1 for not reliable).

Table 5 shows results of stakeholders' perception on trustworthiness on public extension channels. Accordingly, the highest score (+206) was obtained by TRI followed by the TSHDA (+154) and the TCD (+92) in the public extension channels.

Table 5. Stakeholders' perception on trustworthiness of information sources of the public extension channels

Trustworthiness Category	Information Source	Trustworthiness Category	Information Source
	TRI	TSHDA	TCD
Very Reliable	189	87	57
Reliable	16	52	30
Somewhat Reliable	1	15	5
Not Reliable	0	-5	-1
Total Score	206	154	92

Table 6 shows results of stakeholders' perception on trustworthiness on private extension channels. Accordingly, the highest score (+159) was obtained by the Agro based Private Extension channels followed by the Factory based Extension Channels (+134), tea smallholding society-based extension channels (+129) and PCGG (+115) in the private extension channels. Mass media and neighbours were the least trusted channels.

Table 6. Stakeholder perception on Trustworthiness of information sources of private extension channels

Trustworthiness Category	Information Source					
	Factory based channels	Agro-products based channels	Smallholding society based channels	PCGG	Mass Media	Neighbours and peers
Very Reliable	87	144	111	74	45	48
Reliable	44	14	20	42	48	30
Somewhat Reliable	6	3	1	3	6	10
Not reliable	-3	-2	-3	-4	-7	-14
Total Score	134	159	129	115	92	74

Among all sources the most trustworthy information source (+206) was the Extension Officers of TRI as they could freely access the TRI to obtain the latest tea related information generated by the Institute. Tea Inspectors of TSHDA and the agro-product based channels were the next most trustworthy sources. The results confirm the findings of previous studies on usefulness of information sources done by Mahaliyanaarachchi (1996) with tea smallholding sector, by Sivayoganathan (1982) with paddy farmers, and by Jayasena and Herath (1986) with rubber smallholders.

Collaboration among the key stakeholders in the tea smallholding sector

Among the 140 individuals of total sample, 75 responded on their perception on the degree of existing collaboration among the key stakeholders. The degree of collaboration was measured on four points Likert-scale ranging from 0 (no collaboration), 2 (poor collaboration), 4 (satisfactory collaboration), and 6 (strong collaboration) for the compared pairs of organizations or individuals.

Table 7 shows the responded stakeholders' perception on the degree of existing collaboration among the key stakeholders in the small holding sector. Degree of collaboration was ranked accordingly from the highest to the lowest. Results reveal that TRI and TSHDA maintain a strong collaboration which was ranked as the highest collaboration followed by TRI and TCD, Factory based extension agents, Agro-products based Private Extension Agents and PCGG. Meanwhile, TSHDA officers maintained a strong collaboration with Tea Development Societies and satisfactory collaboration with Agro-products based Private Extension channels and a least collaboration with PCGG. The TCD maintained a

Table 7. Perception on the degree of existing collaboration among the key stakeholders

Collaborated Partners	No. of Respondents	Mean (1 – 4 scale)	Rank (Degree of collaboration)
TRI - TSHDA	75	3.7	1
TRI –TCD	70	3.7	2
TRI – Fact. Ext	71	3.6	3
TRI – APB. Ext	68	3.2	6
TRI - PCGG	63	3.1	7
TSHDA –Tea Soc.	62	3.5	4
TSHDA – TCD	65	2.9	10
TSHDA - Fact. Ext.	70	2.8	11
TSHDA - APB. Ext	64	3.0	8
TSHDA - PCGG	63	2.1	15
TCD - Fact. Ext.	70	3.3	5
TCD – Tea Soc.	62	2.3	13
Tea Soc. - Fact. Ext	63	3.0	9
Tea Soc. - APB. Ext	63	2.4	12
Tea Soc. - PCGG	63	2.1	14

Fact. Ext – Factory based Extension Agents;

APB. Ext. Agro-Product based Private Extension Agents;

Tea Soc. Tea Development Society based Extension

strong collaboration with Factory based Extension Officers and poor collaboration with Tea Development Societies. Tea Development Societies have satisfactory collaboration with Factory based Extension Agents while it has poor collaboration with Agro-products based Private Extension Agents and PCGG.

Relationship between perceived partnership level and socio-demographic factors of stakeholders and productivity

The respondents assessed the degree of partnership between different stakeholders, which was measured by allocating marks out of 6 for each of the 15 cases compared as pairs of partnership relations. The respondents rated each pair according to their understanding about existing level of partnership, and the overall partnership level was estimated based on the proportion of marks obtained out of 90.

The interrelationships between the level of perception on partnership and major independent variables of stakeholders are shown in Table 8. The productivity of tea smallholdings (yield) is significantly and positively correlated with the partnership level ($P < 0.05$). This indicates that the smallholders are more benefited with the increase of partnership among key partners. Having strong partnerships among key partners, would open up new avenues for sharing scarce resources and expert knowledge of both public and private organizations to enhance timely dissemination of technology as well as effective distribution of required inputs. For example, making awareness of small holders on recently introduced new mature tea fertilizer mixture through conducting collaborative extension programs and making arrangements for the timely distribution of fertilizer by agro-product company through the factory-based inputs distribution channels with the recommendation of society leaders and the supervision of the Tea Inspector. A negative correlation was observed between age and partnership level ($p < 0.05$). This was due to adult farmers who have negative perception on building up partnership due to the fact that most of the stakeholders are relatively young and the older people may be reluctant to develop partnership with the young partners. However, the overall level of partnership was positively and significantly correlated with the stakeholders' experience ($p < 0.001$). This was due to the majority of the extension personnel who had high level of partnership were in the high experience category. The social participation of small holders in Tea Smallholding Development Society activities (e.g. technology dissemination, sharing services and experience, problem solving, *etc*) positively influenced the level of partnership ($P < 0.05$). As society members and leaders have more links with most of the stakeholders already, they seem to have more positive responses.

Level of perception on partnership significantly correlated with the stakeholder's exposure for extension activities and their commitment in organizing such extension programs. Therefore, developing perception towards building up partnership would make more

efficient use of resources to deliver extension programs that can more effectively serve the needs of all groups of tea stakeholders.

Table 8. Relationship between perceived partnership level and demographic factors of stakeholders and productivity

Variable	r- value	Sig.
Age	-0.262	p < 0.05
Experience	0.362	p < 0.001
Education	0.181	NS
Productivity	0.256	p < 0.05
Contactability	0.077	NS
Social participation	0.205	p < 0.05
Social position	0.003	NS
No of extension activités	0.313	P < 0.01

CONCLUSIONS AND RECOMMENDATIONS

This empirical study explored the existing collaborations, the potentials and boundaries for the establishment of a linking mechanism among the key stakeholders. The findings provide the basis for policy guidelines for the stakeholders to develop a linking mechanism based on comparative advantage and societal interest, among key partners in public and private sectors involving technology transfer system.

Both the public and private extension staff have a sound educational background, and therefore, it is possible to technically empower them by conducting capacity development tea related training program for updating their knowledge with the latest research findings.

The contactability through the phones is high, and therefore, developing agricultural telecommunication network among the key partners is feasible for the dissemination of timely important technical messages.

Considering the stakeholders perception on existing collaboration among key partners in the tea smallholding sector, it can be concluded that public extension channels maintain strong collaboration among themselves. Therefore, consideration of these existing collaborations among the key-partners is of paramount importance in developing partnership among public and private extension channels.

Vertical as well as horizontal expansion of availability of information sources for agro-products based extension channels are low and hence attempt should be made to empower the private extension channels under the partnership extension approaches.

Strengthening of feedback information flow from private extension channels and small holdings towards the public information sources is needed as it is relatively low.

Social position of the majority of staff of public and private extension channels varied from middle to executive posts which indicate their potentials for contribution to the decision making stages of the partnership building up process.

Stakeholders recognized the most trustworthy information sources as the public information sources, including their printed materials as the unbiased research oriented latest information are available in the public source. Hence, technically strengthening the private extension channels to enhance the availability of number of reliable information is needed.

The level of perception on partnership is positively correlated with the productivity of smallholdings, respondent's experience related to tea cultivation, and social participation of smallholders. Hence, improving the level of awareness on the advantages of maintaining partnerships with the private sources is necessary in developing the linking mechanism among key stakeholders for a PPP extension model.

A greater interaction among key stakeholders and their active participation in planning, implementation and monitoring of the partnership programs, and effective communication, cooperation and mutual respect among the staff of partner organizations, support from local community leadership, appreciation of the contribution of partners, are of paramount importance in developing an effective partnerships extension approach for tea smallholding sector.

IMPLICATIONS

This study has been conducted during the time when partnerships are much advocated in development discourse, but the generated knowledge in partnership is inadequate to make conclusions. The empirical evidence provided by this study therefore, has a significant importance. The implication of this study is that development works should be planned, implemented, and monitored and evaluated through the selective partnerships of institutions and key stakeholders in the tea smallholding sector. Partnerships are a useful way of increasing effectiveness, if they are carefully forged and managed. For the partnership to be successful the partnership program must be mutually beneficial to partners and clients. The formation of partnerships must be based on an understanding of the comparative advantages of each agency. Hence, continuous dialogue between key partners in the tea smallholding sector is necessary for the continuity of the partnership.

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