

PPP and Gender Mainstreaming in Agriculture: Lessons from Field Studies

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Abstract

This study undertaken by Directorate of Research on Women in Agriculture (DRWA), Bhubaneswar, during 2009 to 2013 has assessed the ongoing public-private partnership (PPP) models in agriculture for their role in women empowerment and has analysed the strengths and weaknesses of the selected models. Three such models discussed in the paper are: (i) DRWA implemented model for gender mainstreaming through cultivation of quality protein maize (QPM) in Khurda district of Odisha, (ii) Avinashilingam Institute for Women, Coimbatore undertaken action research model on empowering women vegetable growers, and (iii) Assam Agricultural University model on use of vermi-compost in Jorhat district of Assam. Experiences in these PPPs have shown that farmers, especially farm women, could reap the benefits of increased production and productivity of farm enterprises from even a small piece of land apart from their better social recognition and group dynamics. Field studies have shown the contribution of PPP models to gender mainstreaming, food security, poverty reduction and economic growth. However, over emphasis on quality, grading and timely supply is making some farmers to revert back to old system of marketing.

Key words: Public-private partnership, gender mainstreaming, network project, women empowerment

JEL Classification: Q18, Q16, Q10

Introduction

The public-private partnerships (PPPs) offer tremendous scope to small farmers for realising the potential market prices and thereby better livelihood. The resource-poor farmers often tend to face low returns due to interplay of both bio-physical and socio-economic factors. The existing market opportunities do not guarantee a reliable and steady income to the poor farmers. The PPP helps in addressing the constraints of farmers through offering a fair price for commodities, risk sharing, capacity building and timely

payment (Hisrich and Peters, 2002; Krishna and Qaim, 2007; Reddy and Rao, 2011; Ponnusamy, 2013). Experiences in PPP have shown that farmers, especially farm women, could reap the benefits of increased production and productivity of farm enterprises from even a small piece of land, apart from their better social recognition and group dynamics. The PPPs also bring in accountability of partners. The supplemental efforts of partners would result in effective delivery of input and extension services. The few successful public-private partnerships and their successful collaborations from different states of India have shown their contributions to gender mainstreaming, food security, poverty reduction and economic growth (Harris *et al.*, 2005).

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A review of various PPP models suggests that while incentives and perceptions vary between different models, sufficient common space can be facilitated through incentive restructuring, minimizing costs and risks of collaborations, removal of negative perceptions mutually, better use of creative organizational mechanisms that reduce competition over the key assets and resources; and facilitating better access to information on successful partnership models for strengthening of partnerships. However, over-emphasis on quality, grading and timely supply of farm products is tempting a considerable section of the farmers to revert back to the existing system of marketing. In this backdrop, a network project undertaken by the Directorate of Research on Women in Agriculture (DRWA), Bhubaneswar, reviewed the PPP projects with focus on women empowerment, analysed the strengths and weaknesses of the existing PPP models and undertook an action model of PPP project with the aim of gender mainstreaming and the details are presented in this paper.

Data and Methodology

A network project entitled “Public private partnership for gender mainstreaming in agriculture” was taken up during 2009-2013 to demonstrate the PPP as an approach to empower women in agriculture by building their capacities from production to marketing aspects. The network partners collected the existing PPP models from 22 states of India and categorized the impact of these models on gender mainstreaming in agriculture. The methodology followed in identifying the public-private-partnership across women in agriculture is detailed below.

A state-wise compilation of women empowerment programmes implemented in the agriculture sector (including crops, dairy, animal husbandry, fisheries, processing and value addition and handicrafts) with the partnerships of development departments, NGOs, Commodity Boards, banks, private companies and multi-national corporations was done. The collected information was subjected to detailed analysis for identifying the types and elements of public-private partnerships. The random sampling was followed for the selection of cases from the states.

Selection of Public-Private-Partnership (PPP) Models

To screen the available PPP models, a check list/score card was used. The importance of a PPP model was decided on the basis of weightage that a model got through scoring of the items in the check list and spread of the project. The weighted score for each model was obtained by multiplying the number of activities taken up by the model for gender mainstreaming with its coverage (the score for coverage of PPP was: Block Level-1, District Level-2, State Level-3, and National Level-4). For example, the weightage of a PPP performing 5 gender mainstreaming activities covering two or three districts would be = $5 \times 3 = 15$. Based on the score, five models that scored high were selected for the detailed study on partnership mode.

Determining Value Creation

The value creation goes beyond profit and stresses on the social impact and utility of the activities undertaken for the society after accounting for the resources used in the activity. The value appropriation allows the focal actors involved in the activity to capture and share a portion of the value created by the activity. Value in this context involves the fulfillment of basic long standing needs of the groups and includes empowerment and economic value as it contributed to the utility and welfare to its members in the long-run (Certo and Miller, 2008). Centrality indicates the closeness of fit between the program mission and the aspirations of group members as reflected in their activities. Indicators were continuation of known trade, trainings of subjects of choice and real passion for the vocation practised. Visibility is the extent to which the participation in groups enhanced the social position, social acceptability and access to resources of its members. Indicators were nomination to other groups/programmes, participation in political/social causes and participation in local elections. Proactivity is the extent to which a group served as an initiator for similar groups and adapted to emerging social expectations. Indicators such as number of other similar groups and number of previous studies were used to measure the proactivity. Appropriability is ability of the group to link financial benefits to the achievement of social objectives. Indicators were provision of socially

responsible products and services and thrift management of its members. Voluntarism is the extent to which group activities are decided based on the choice of group members rather than by mandatory project dictates.

The data were collected from the key stakeholders through personal interviews using a questionnaire. Thirty members were randomly selected from each PPP model and a sample of thirty non-members from the area involved in similar work was selected for a comparison.

Action Research

Each centre identified an enterprise for implementing an action mode of PPP approach with the aim of gender mainstreaming. A stakeholders meeting was convened wherein roles and responsibilities of each partner were fixed. Bantla village in Odisha, Ikkaipoluvampatti village in Tamil Nadu and cluster of villages in Assam were identified for implementing the project. A farm-women group was formed as private partner. Later, a Memorandum of Understanding (MoU) was signed by the concerned parties specifying terms and conditions and roles and responsibilities for each partner. The project was monitored by the lead partner institution and the process of implementing the project was periodically documented. A field day was organized at the project site and the concerned partners participated in the field day. The farm-women could dispose off the harvested produce at a price which was more than the minimum support price (MSP) and the prevailing market price.

Statistical Tools

Case study method, process documentation research (PDR) complemented with simple statistical tools like means, percentages and correlation were used for data analysis.

Results and Discussion

Status of PPP and Institutional Arrangements in Gender Mainstreaming

To find the status of public-private partnership in agriculture with gender component, 89 models with likely involvement of PPP were collected and details are given in Table 1.

The analysis of models indicated that 26 per cent of the models covered women as beneficiaries, whereas 17 per cent of the models focused on both males and females and the rest 57 per cent included only male members. In Odisha, field visits were made to assess the impact of the identified projects based on parameters including risk bearing, sharing responsibility and benefits and management of PPP chain.

Assessment of Strengths and Weaknesses of Partnerships in Gender Mainstreaming

The impact of five identified PPP models in Assam was studied for gender mainstreaming and the cumulative results with ranking are given in Table 2. The stakeholders in these five PPP models were:

Table 1. The PPP models selected for the study across 22 states of India

Name of the centre	Operational area	No. of PPP models collected
Directorate of Research on Women in Agriculture (DRWA), Bhubaneswar	Odisha, Bihar, Madhya Pradesh, Jharkhand and Chhattisgarh (5)	24
Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore	Tamil Nadu, Andhra Pradesh and Puducherry (3)	32
Kerala Agriculture University, Thrissur, Kerala	Kerala, Karnataka and Goa (3)	17
Maharana Pratap University of Agriculture and Technology, Udaipur	Rajasthan, Gujarat and Maharashtra (3)	4
CCS Haryana Agriculture University, Hissar	Haryana, Punjab, Himachal Pradesh, Uttar Pradesh and Jammu & Kashmir (5)	5
Assam Agriculture University, Jorhat	Assam, West Bengal and North- East regions (3)	7

Table 2. Gender-wise impact of PPP models in Assam with ranking of parameters

Ranking	PPP models									
	Model 1		Model 2		Model 3		Model 4		Model 5	
	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males
I	F	L	H	N	N	N	J	E	M	I
II	J	E	M	C	G	H	C	M	G	A
III	H	G	A	J	H	J	A	D	I	L
IV	M	H	L	I	L	M	I	B	H	M
V	E	I	K	D	J	E	N	N	A	J
VI	A	B	J	K	E	I	G	H	N	B
VII	G	M	B	E	A	L	E	K	D	G
VIII	C	D	E	B	I	B	L	J	L	N
IX	B	A	D	J	C	K	B	L	J	E
X	K	J	G	L	K	A	M	G	C	H
XI	L	K	F	G	D	C	F	F	B	F
XII	D	C	C	A	F	F	D	C	E	K
XIII	N	F	I	H	M	D	H	I	F	D
XIV	I	N	N	F	B	G	K	K	K	C

Notes: A: Decrease in drudgery among farm-women
 B: Increase in employment opportunity among farm-women
 C: Reducing health hazard among farm-women
 D: Increase in yield of crops
 E.: Gain in knowledge (new technology)
 F: Decrease in work load among farm-women
 G: Enhance food security among farm families
 H: Increase in skill capacity of farm-women
 I: Change in attitude and perception among farm-women
 J: Development of decision-making power of farm-women
 K: Increase in the access and control of resources among farm families
 L: Help to farm-women for social reorganization
 M: Development of communication skill among farm-women
 N: Development of leadership quality among farm-women

Model 1: Government of Assam (Assam Agricultural Competitive Project) + NGO (Northeast Affected Area Development Society)

Model 2: NABARD + NGO (SATRA)

Model 3: NABARD + Local bank + Government Department + Bhakatpara Mahila Unnayan Sangha

Model 4: NABARD + Local bank + Government Department + Kundarbil Farmers Club

Model 5: Animal Husbandry & Veterinary Department, Govt. of Assam + Assam

Livestock and Poultry Corporation- a public sector undertaking

Strengths and Weaknesses of PPP Models

The five PPP models selected in Kerala were:

- (1) PPP in Agricultural Research — Cadbury-KAU Cooperative Cocoa Research Project (CCRP)
- (2) PPP for technical support and buy back of agricultural products — Thirumadhuram Pineapple Project and Uravu RSVY Micro Enterprises Project
- (3) PPP for promotion of organic products — Sevashram

- (4) PPP for facilitating backward and forward linkages in entrepreneurship development and self-employment — Subicsha Coconut Producers' Company Ltd, and
- (5) PPP in capacity building and skill development — Nendran Banana (Samagra) Project. Based on the qualitative data on value creation and value appropriation strategies of these five selected models, two categories of women entrepreneurship development PPP models could be identified, viz. Public dominated welfare models (e.g., Samagra, Thirumadhuram) and Private dominated employment models (e.g., Subicsha, Uravu and Sevashram). The categorization was based on the identified trade-offs in terms of the emphasis they place on value creation and value appropriation strategies (Rajendran *et al.*, 2010).

Value Creation in PPP Models

The process of value creation, an embedded characteristic in all the selected models, was assumed to be the critical factor in facilitating women empowerment. Accordingly, centrality, visibility, proactivity, appropriability and voluntarism expressed by the women members of enterprise were evaluated as the determinants of value created by these models. The results of correlation analysis carried out to find the association between the selected variables with women empowerment are presented in Table 3.

Table 3. Correlation between women empowerment and dimensions of value creation

Sl. No.	Variable	r value (n=150)
1.	Centrality	0.23*
2.	Appropriability	0.21*
3.	Proactivity	0.14
4.	Visibility	0.31**
5.	Voluntarism	-0.78**

Note: ** and * denote significance at 1 per cent and 5 per cent levels, respectively

Public-dominated Welfare Models

Strengths — Value creation using local resources was accorded higher emphasis than value appropriation. High level of community partnership through

Panchayati Raj institutions, farmers organizations and women self-help groups helped in better resource mobilization and conflict resolutions. Even though there was no formal agreement or MoU between development departments and the private parties, the partners functioned on mutually agreed principles. The programmes were focused on the overall capacity development and empowerment through non-formal education strategies. Risk minimization through profit and resource optimization was stressed.

Weaknesses — Public dominated welfare models had less sustainability as compared to the private dominated social entrepreneurship models as the value appropriation strategies mostly depended on public funds. These were mostly 'push-driven' models evolved as part of development programmes initiated by the departments rather than felt needs of the beneficiaries. Once the project period was over, there were not many backup programmes for the continuation/ diversification of the activities under the project and it lost direction and relevance.

Private-dominated Commercial Models

Strengths — Functional economic partnership between public and private partners as the funding support for the programmes was by the government and implementation was of the private partner. These projects were mostly developed based on local need assessments and as such could be termed as 'pull-driven' models. A higher level sustainability was found in these projects as compared to the public-dominated models as they tried to stress on value appropriation objectives that focus profit maximization at the critical levels of value creation.

Weaknesses — Most of these projects were aimed at capacity development for production related to the market and prices of products were fixed at points that maximized returns. Panchayati Raj Institutions (PRI), the public domain community partners' participation in these private dominated models was limited to social mobilization and legitimization. Social mobilization followed the blanket method of selection of participants and no aptitude tests were conducted for the selection of participants even for skilled enterprises like bamboo crafts. The lack of skill among the members often created problems in meeting the breakeven point in a given time frame. Moreover, there was no provision for handholding support for tiding the initial phase of

skill development in the project funding leading to wage employment status of projects like Sevashram.

Action Research on PPP Models for Gender Mainstreaming

Maize Cultivation in Odisha

The DRWA designed and implemented a PPP model for gender mainstreaming in maize cultivation in 2011-12 by involving both public and private agencies. As per the decision, the project was implemented in Bantla village of Khurda district in Odisha targeting the poor tribal farm households in a fragile agro-eco system (Ponnusamy *et al.*, 2012).

Roles and Responsibilities of Public and Private Agencies in PPP

The DRWA undertook the planning, implementation and monitoring of the project as well as capacity building of farm-women. Agricultural Promotion & Investment Corporation of Odisha Limited (APICOL), Agricultural Technology Management Agency (ATMA) and Department of Agriculture, Government of Odisha, facilitated provision of funds under Integrated Scheme of Oilseeds, Pulses, Oil Palm & Maize (ISOPAM) and monitoring, while Kamboj Seeds, Karnal, provided QPM seeds. The maize producers' group in Bantla village cultivated the maize as per the technical guidance and earned a remunerative price for their produce.

Process of Building Partnership

The DRWA sensitised both men and women maize cultivators of Bantla village on the importance of group dynamics and economic benefits of quality protein maize (QPM) cultivation. A maize producers' group was formed through participatory process by electing a woman-member as president and male-member as secretary. During interaction, the villagers informed about the unsold maize of previous year. A private poultry entrepreneur was facilitated to purchase the entire quantity of 3000 kg and thereby could gain the confidence of villagers. A Memorandum of Understanding (MoU) was signed specifying terms and conditions and roles and responsibilities of each partner. The Department of Agriculture, Government of Odisha

provided funding support of ₹ 1.2 lakh for supplying quality input under ISOPAM scheme.

The QPM seeds (250 kg) were procured from Kamboj Seeds, Karnal, Haryana, @ ₹ 115/kg and distributed to 10 farm-women in Bantla village for sowing in 10 acres. Before sowing, soil tests were conducted and results were communicated to the farmers. A pre-season *kharif* training was organized for 50 farm-men and farm-women in the Bantla village. The project team helped the farm-women in carrying out maize cultivation scientifically. The farm implements such as seed-cum-fertilizer drill, improved sickle, maize sheller and chaff cutter were provided to reduce drudgery of farm-women in maize cultivation. A field day was organized on 2nd October, 2011 at the project site where the farm women could dispose off their maize @ ₹ 10.80/kg, which was more than the minimum support price (₹ 9.80/kg) offered by the government in 2011-12.

Vegetable Cultivation in Tamil Nadu

An action-oriented project on empowering women vegetable growers was implemented in the Ikkaipoluvampatti village of Thondamuthur Block in Coimbatore district. In this project, the public partners were Avinashilingam Institute for Home Science and Higher Education for Women and Coimbatore Marketing Committee and private partners were Ikkaipoluvampatti Farmwomen Marketing Society (40 vegetable growing farmwomen as members) and Sree Annapoorna Sree Gowrishankar Group of Hotels (P) Ltd. Several motivation trainings were conducted for the farm-women and they established a Farmwomen Marketing Society which was registered under Tamil Nadu Registration Act, 1986. Based on the operational modalities in the PPP project, a MoU was signed by all the partners (Thangamani *et al.*, 2012).

Capacity Building of Farmwomen

The capacity building programmes were undertaken for farm-women on various themes such as innovative agricultural practices, stress management, farm-based income generation, food processing, new farm technologies, horticultural crop management, marketing management, soil testing, drip irrigation, vermi-composting, azolla cultivation and effective micro-organisms application in farming.

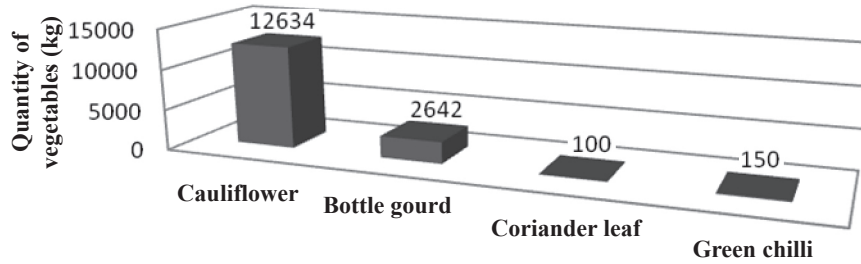


Figure 1. Supply of vegetables under model PPP project to Annapoorna (Duration: 3 months)

Supply of Vegetables

A trial supply of vegetables was started before signing of MoU by the project partners and it was only after three months of satisfactory supply that MoU was signed. Although after signing of MoU in June 2011, the marketing society had no vegetable produce to supply due to seasonal variations. It is hoped that they will continue the supply under PPP mode during vegetable cultivation. The details of supplied vegetables during the project period are given in Figure 1.

Benefits Realized by Farm-women

The study revealed that participation level of farm-women in social activities improved due to linkages with various developmental departments. The confidence level in managing the fund flow enhanced due to familiarity with management of accounts in the Farmwomen Marketing Society. Through this society, they could avoid intermediary charges and shared

transportation charges and obtained good profit. The rates of vegetable in wholesale market were collected from the non-society members of Ikkaaraipoluvampatti village. The rates given by Annapoorna Hotel were collected from the Farmwomen Marketing Society. A notable difference between the two rates was seen. For all vegetables, Annapoorna Hotel fixed a better price than the whole sale market (Figure 2).

Profit Analysis using Differential Data on Rates of vegetables in Local Wholesale market and Received from Annapoorna

The rates fixed by Annapoorna Hotel and prevalent in local wholesale market on the same day were recorded for profit analysis. A significant difference between the two rates was observed, which determined the profit for farmers in the vegetable supply chain (Figure 3).

The results have indicated that implementation of the project with the help of local governance will give

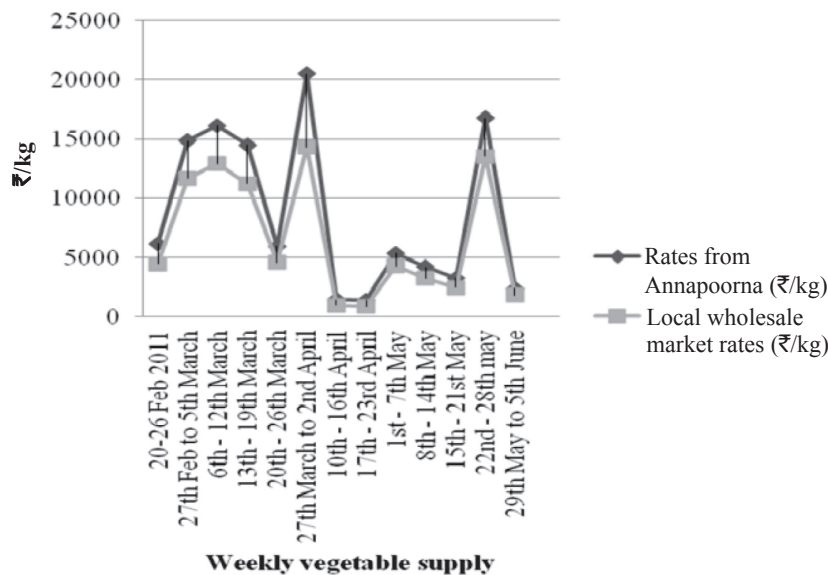


Figure 2. Week-wise supply of vegetables with comparison of rates of Annapoorna and local wholesale market

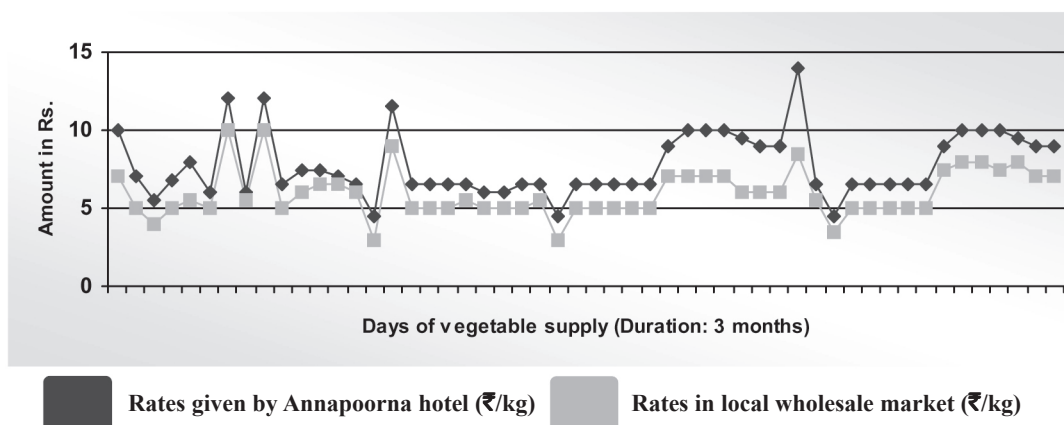


Figure 3. Profit analysis in PPP model project

effective outcome. Long-term projects will make a significant change in adaptation level of farm technologies. Continuous motivational meetings and follow-up activities are very important to increase the participation of farmwomen in the project. Need-based activities during convenient times will increase the number of participants in the program.

Vermi-compost Production in Assam

Vermi-composting has the potential to transform farm-women as environmental conservationists. The benefits of using vermin-compost in the fields were highlighted in Jorhat district of Assam through public-private-partnership (PPP) approach. The farmers, especially farm-women, were in forefront in practising and propagating the production and utilization of vermi-compost in their area.

The impact of gender mainstreaming of the project was evaluated by undertaking a field study in the Jorhat district. Even though there was no hurdle in approaching the development agencies for acquiring the required knowledge, more efforts were required to bring forth the unfelt needs of the farming community. The PPP project seized the opportunity first to motivate the farmers, both men and women, about the technology and then mobilized them based on their involvement in SHGs, through the NGO partner. Most of the respondents viewed that they could visualize the benefits of applying vermi-compost in tea gardens and ridge gourd plots in terms of higher yield, reduction in pest and diseases, substantial reduction in cost towards chemical fertilizers and pesticides and disease-free healthier life. Although the PPP project was not

directly responsible for the better access to credit from institutional sources, it had indirectly motivated the beneficiaries for thrift and savings. The project also facilitated the surplus produce selling through fairs and exhibitions. Each farm family learnt to pack vermi-compost in appropriate quantities and understood the enormous value of organic produce. There was no hurdle in accessing and utilizing the local resources like water and other common properties. The women felt enhanced access to services provided by the panchayat.

Lessons Learnt from PPPs with Focus on Gender Mainstreaming

Following lessons were learnt from the successful public-private partnerships:

- (i) Organizing farmers around commodities for focused attention provides good dividends
- (ii) Linkage with market-oriented private players ensures remunerative prices
- (iii) Proper implementation of PPP results in enhanced bargaining power of stakeholders
- (iv) Higher productivity through adoption of new technologies is possible through PPP
- (v) Promotion of crop diversification in line with market demand is vital
- (vi) Introduction of new crops (export oriented) yields better returns
- (vii) There is a possibility of quality production and value addition through PPP approach

- (viii) Trust building and proper communication among stakeholders are vital for the success of PPP
- (ix) Proactive participation of public sector organisation will spearheads the PPP movement
- (x) Statutory support from government would reduce the number of failure cases of PPP
- (xi) A well-defined plan of action and management paves the road map for ultimate success of PPP.

Conclusions

The study has assessed the role of selected public-private-partnership (PPP) models in agriculture in women empowerment and has analysed their strengths and weaknesses. Based on the experiences gained in three PPP models, viz (i) cultivation of quality protein maize in Khurda district of Odisha, (ii) cultivation of vegetables in Coimbatore district of Tamil Nadu, and (iii) vermi-composting in Jorhat district of Assam, the study has concluded that PPPs have contributed to gender mainstreaming, food security, additional income and employment generation, poverty reduction, economic growth and agricultural production which have direct implications at the local level. The partnerships between private sector and public institutions should be based on transparency ensured through written MoU. A favourable policy framework is important for creating coalitions that aim at local development, particularly women empowerment. The findings have suggested that while incentives and perceptions do differ between different models, sufficient common space can be facilitated through incentive structuring and mutual sharing of risks and benefits for strengthening partnerships. To sum-up, the study has observed that PPP can play a constructive role in building strong and vibrant Indian agriculture and better livelihood opportunities for farm families.

References

- Burke, L. and Logsdon, J.M. (1996) How corporate social responsibility pays off, *Long Range Planning*, **29** (4): 495-502.
- Certo, S.T. and Miller, T. (2008) Social entrepreneurship: key issues and concepts. *Business Horizons*, **51**(4): 267-271.
- Harris, D., Richards, J.I., Silverside, P., Ward, A.F. and Witcombe, J.R. (2005) Pathways out of poverty. *Aspects of Applied Biology*, **75**: 115-26.
- Hisrich, R.D. and Peters, M.P. (2002) *Entrepreneurship*. Tata McGraw Hill Publishing Co.Ltd., New Delhi. 663p.
- Krishna, V.V. and Qaim, M. (2007) Estimating the adoption of Bt eggplant in India: Who benefits from public-private partnership? *Food Policy*, **32**: 523-543.
- Ponnusamy, K., Mishra, Sabita, Prusty, M. and Jiban Dash, S.S. (2012) Market linkages for women farmers: public-private partnership shows way ahead. *Indian Farming*, **61**(12): 25-8.
- Ponnusamy, K. (2013) Impact of public private partnership in agriculture: A review. *Indian Journal of Agricultural Science*, **83** (8): 803-08.
- Rajendran, P., Prasad, R.M. and Binoo, P. Bonny (2011) *Proceedings of National Workshop on Public Private Partnership for Gender Mainstreaming in Agri-entrepreneurship Development*. Nov 2011. Kerala Agriculture University, Vellanikara, Kerala. 113p.
- Reddy, G.P. and Rao, K.H. (2011) *Public Private Partnership in Agriculture Challenges and Opportunities*. Summary proceedings and recommendations of National Workshop. National Academy of Agricultural Research Management, Hyderabad.
- Thangamani, K., Leelavathy, K. C. and Meenakshi, S. (2012) Mainstreaming of farmwomen: An experience of PPP approach in vegetable marketing. *Abstracts of Global Conference on Women in Agriculture*. 13-15 March. New Delhi. pp. 159-160.

