

## Consultation Based Inductive Study of Vegetables Growing Women Farmers of Punjab, Pakistan

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### Abstract

Pakistan is an agricultural country where 45% population is connected with agriculture. This population consists of males and females doing farming for their survival. Males are kept under consideration always while women potential is underestimated. Women work side by side with their males and remain involved in farming activities especially indoor cultivation of vegetables. In this regard, the present study was conducted in Gujranwala district of Punjab, to assess the situation of women regarding vegetables cultivation along with their need assessment regarding farming. In this regard through multistage random sampling, 500 women farmers doing vegetables farming were selected as respondents. Data were collected through structured interview schedule and were analyzed with the help of SPSS. Results revealed that literacy level of women in study area was lower. Regarding vegetables traditional framing was being adopted while adoption of improved techniques such as tunnel farming was not impressive at all. Inappropriate market existence appeared as the most vulnerable constraint along with the poor services provided by extension field staff, finance shortage and high inputs prices. On the basis of results it is suggested that literacy programme by government especially for women should be started. Female extension staff should also be appointed especially for home based farming activities training provision. Subsidy should be provided on inputs to reduce the cost of production. More important, government should pay attention on establishment of sustainable market separate for organically and chemically produced vegetables.

**Keywords:** Agricultural extension services, vegetables, rural women

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### Introduction

#### Importance of agriculture and horticulture outlook

Pakistan is an Agricultural Country as it provides productive employment opportunities to 45% labor force. Moreover, agriculture is shareholder of 21% in national Economy (Govt. of Pakistan, 2012). Agriculture is the blend of many diversified fields such as agronomy, crop protection, crop

physiology, water management and horticulture. Horticulture is one of the significant sub sectors as it deals with fruits, vegetables and flowers. This sector is also contributing significantly in the economy through export earnings. Regarding fruits, Pakistan is significant in citrus and mango worldwide especially Kinnow, the cultivar of citrus is famous worldwide as export item (Govt. of Pakistan, 2012). For the proper working of these sectors, the country needs a good agriculture setup for the ultimate benefit of farming communities. Worldwide setup known comprised of research, extension and farmer (Oladele, 2010). Research works to

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introduce new techniques while extension sector transfers them to the farmers who are the end users. Because of the role of research and extension, horticulture setup is in good shape but not as it should be. Pakistan almost produced 12 million tons of Horticultural products per year. Onion and Potato are the primary produce among vegetables (Haq, 2003; Hill and King, 1991; CIDA, 2004; ICRW 2005).

### **Importance of vegetables**

It is well known that Vegetables play an important role in food security. The production, processing and marketing of horticultural products contribute to income for the country and have nutritive diets for their habitants. Low income farmers in adverse climate condition face difficulty in being self-dependent on supply of primary food commodities such as horticultural products to the market. The prices for the horticultural products such as vegetables in dry period soars provided supply is low and demand is high (AVRDC, 2003; Stoop and Kassam, 2002; Sumberg *et al.*, 2004). Horticultural products like vegetables are a multi-use of food source. Vegetables include social, cultural and environmental importance, but the most important function is part of the diets in the community (CGIAR, 2005).

### **Women and agriculture**

The women are the backbone of agricultural workforce but worldwide her hard work has mostly been unpaid. She does the most tiresome and back-breaking tasks in agriculture, animal husbandry and homes. Women are involved in the production of major crops, like cotton, rice, pulses and vegetables (Sadaf, 2005). Moreover at present women farmers are surrounded by several issues such as improper skill and technology, training and access to credits etc. Pakistani women are much needy because of their poor livelihood and they perform different activities in agriculture. Women perform numerous labor intensive jobs such as weeding, hoeing, grass cutting, picking, cotton stick collections, separation of seeds from fiber. Along with these activities women

also do farming at their farms especially, they work to grow vegetables at homes and farms as well to earn better for their sound livelihoods. Mostly, the production system of Vegetables grown is based on traditional technology. Women growers are considered less organized in context of production and marketing because of inappropriate agricultural technologies, credit system, lack of varieties, lack of training programs, inadequate fertilizer and lack of farm management skills. In the Western part of the Gambia and the rural communities of the country, female fruits and vegetable growers are actively affianced in commercial vegetable production since the latter half of the 1970s.

### **Current situation in agri. extension for women**

Women's little position in the society is generally due to weak economic and or dependence on male members of the family by author. In many countries of the world, extension messages do not reach the majority of the farming women. The World Bank initiated in 1982 the training and visit system for the developing countries. Agricultural extension service is generally managed by male farmers. Extension programs in Turkey include the participation of men and women (World Bank, 1992). Turkey carried a pilot project to assist the ministry of Agriculture established, to monitor and evaluate the women training regarding improved agricultural practices. In the first phase, three provinces were selected and 23 villages were included (Ediz, 1992). In Pakistan Agriculture extension plays a significant responsibility in the development of agriculture but with minute focus on women farmers. The last objective of extension is to promote among the farmers and their families a spiritual, a psychological and a social growth. Awareness has been created through the efforts of extension Govt. department and NGOs in rural communities of Punjab-Pakistan concerning new technologies.

### **Materials and methods**

Province Punjab of Pakistan consists of 36 districts in total and Gujranwala is one of them lying in rice zone. Moreover, Gujranwala is the 7<sup>th</sup> largest district of Pakistan regarding population as on 24 June, 2011. It comprises seven towns namely Kamonke, Nandi Pur, Aroop, Qila Didar Singh, Khiali Shahpur, Wazirabad and Nowshera Virkan. Moreover, it also comprises of 9 Markaz, including 97 Union Councils and 800 Villages with the total area of 892067 acres, out of which 783339 acres are, cultivated (Govt. of Punjab, 2012). Out of total 800 villages, 50 villages were randomly selected to approach grass root level with maximum chances of involvement of respondents. Ten women growers from each

randomly selected village were selected thereby making a sample size of (500) women respondents. Regarding data collection, a well-structured interview schedule was prepared. 5 point likert scale was also used to determine the extent. Along with the collection of quantitative data, qualitative was also collected for better observation. Therefore, interview schedule was mixture of open ended and close ended questions. For the sake of primary data collection, face to face interviews were conducted. Collected data were analyzed by the computer software SPSS (Statistical Package for the Social Sciences). Furthermore, descriptive statistics (frequency, mean and percentages) was applied for the interpretation of collected data.

## Results and discussion

**Table 1: Distribution of respondents according to their age and education {n=500}**

	Particulars	No. of respondents
Age	Young (up to 23)	110 (22)
	Medium (24-45)	310 (62)
	Old (Above 45)	80 (16)
Education	No formal education	230 (46)
	Up to primary	140(28)
	Up to middle	80(16)
	Matriculation	35(7)
	Above matriculation	15(3)

**Source:** Field survey 2012

**Note:** Values in parenthesis are percentages

It appeared from the data depicted in Table 1 that women with medium age category (24-45) years were more connected with farming business. Moreover, young women were also profoundly connected with agriculture as young women percentage (22) was after the percentage of medium aged women farmers (62%). Old aged women percentage was found lesser (16%) than both of the earlier mentioned categories. During informal discussion with respondents it was found that these women were compelled by their family situations to do farming. They were holding poor livelihoods and there was no other option for them than to do farming. These women were working side by side with their males at farm and at home as well. Young age is considered full of energy and somewhat

medium too; therefore, more inclination of women was noted toward farming along with their males. Furthermore, it was observed that females were more attached to vegetables production at home and at farm with their males. The ultimate purpose of this vegetables production was to get maximum benefit for their better livelihood. Education refers to the bringing of desirable positive change in attitude. Education helps a lot in self-improvement as it creates sense. Educational level of respondents was not good as almost half (46%) of the respondents were without formal education simply known as illiterate. After that, slightly more than one fourth (28%) of the respondents were educated up to primary level. This situation clearly indicates the lower literacy rate of women in study

area. Maximum education of matriculation and more than matriculation level was found among 7% and 3% respondents respectively who also were working for their better livelihood through vegetables production and farming activities. Insight look reveal that age

and education play vital role in adoption of farming technologies as several researchers, Tarar (1983); Asfaw and Admassie (2004) reported that education has a significant effect on farmer's behavior towards adoption of improved farming practices.

**Table 2: Estimation of farming experience and mode of vegetables cultivation**

Sr. No.	Vegetables farming experience (Years)	No. of respondents
1	1-2	00
2	3-4	120(24)
3	5-6	175(35)
4	7-8	155(31)
5	Above 8	50(10)
<b>Mode of Vegetables cultivation</b>		
6	Indoor cultivation	175(35)
7	Outdoor cultivation	205(41)
8	Indoor-outdoor	120(24)
<b>Cultivation Status</b>		
9	Commercial level	393(78.6)
10	Local level (self-usage)	107(21.4)

**Source:** Field survey 2012

**Note:** Values in parenthesis are percentages

Data depicted in Table 2 show those women farmers were not much experienced as compared to male. The basic reason for that less experience discussed was the part time work of women. Only 10% women farmers were having maximum experience of more than 8years in vegetables production followed by the 31 and 35% respondents who were having experience of 7-8years and 5-6years respectively. Rest of the women were with experience of 3-4 years while none of the respondents was found with experience of 1-2 years which means vegetables farming trend has been set enough years ago in the study area. Next attempt was made to uncover the respondents' mode of vegetables cultivation. In this context outdoor cultivation was in better existence as 45% respondents were doing cultivation at farms either they are beside their home or far from their residence.

Small living area and no space in home for cultivation was also the reason behind outdoor cultivation. After that 35% respondents were doing vegetables cultivation at their homes as they were having enough space to grow vegetables in their house lawns. One fourth (24%) of the respondents were adopters of both indoor and outdoor vegetables cultivation.

Generally, two objectives of vegetables cultivation were recorded during discussion one, to earn capital for better livelihood and food security via using their own vegetables at home. The main purpose of overwhelming majority (78.6%) was to earn capital for their livelihood therefore these were doing on commercial basis. Remaining percentage (21.4) of women farmer was doing cultivation for their home based requirements.

**Table 3: Awareness and adoption of modern vegetables production techniques**

Particulars	Awareness	Adoption
Kitchen Gardening (organic farming)	297(59.4)	41(8.2)
Truck gardening	19(3.8)	7(1.4)
Tunnel farming	381(76.2)	96(19.2)

Source: Field survey 2012

Note: Values in parenthesis are percentages

It was observed that majority of the respondent was doing cultivation traditionally. In this regard awareness and adoption of some modern techniques was attempted to reveal. Tunnel farming has become a fashion now, that's why majority (76.2%) were aware of it. Moreover, kitchen gardening and truck gardening was known by 59.4% and 3.8% respondents respectively. Unfortunately, the adoption of these practices was much lower than the awareness label. Several reasons could be supportive to this low adoption such as lack of resources, less

cooperation of extension field staff and unstable market. One fifth (19.2%) of the respondents were adopting tunnel farming for vegetables production. It was observed that these growers were using small tunnels made up of sticks as they were unable to afford the iron made tunnels. Furthermore, 8.2% respondents were also doing kitchen gardening and they were more inclined toward organic farming but at lesser area. Truck gardening adoption was negligible as its awareness identified was already low.

**Table 4: Assessment of the respondents according to the perception about the appointment and training of female agricultural extension staff**

Sr. No.	Scale	Response
1	Strongly agree	180 (36)
2	Agree	162(32.4)
3	Somewhat agree	80(16)
4	Disagree	70(14)
5	Strongly disagree	8(1.6)
<b>Total</b>		<b>500</b>

Source: Field survey 2012

Note: Values in parenthesis are percentages

It is assumed that gender discrimination may affect the technology dissemination and adoption as well. Technology dissemination between same genders might happen as a better way to technology dissemination and adoption. Women face more problems than the male farmers in accessing agricultural technologies, knowledge or information. In Pakistan, more work has been conducted on male farmers and they can access information from progressive farmers, electronic media, extension field staff, etc. (Cheema, 2000; Barkat, 2002). Moreover, very short research has been conducted in developing countries on the information need of farmers. According to Huyer (1997), still the information highway is male oriented and often a forum for gender discrimination and intimation. In this regard keeping the women need on priority perception was reveled regarding the appointment of female staff especially for women. The response depicted that majority (36%) of the women strongly

agreed with the appointment and training of female extension staff. 32.4% women agreed regarding the appointment and training followed by the 16% respondents who somewhat agreed in this context. Lesser number of respondents (14%) disagreed with the appointment. During informal discussion it was revealed that these women were majorly depended on their males and their males were having enough relations with public sector and progressive farmers. Negligible number of respondents also showed strongly disagree response. General discussion with respondents' pointed out that women involvement in technology dissemination can boost our attitude toward farming especially the indoor vegetables production. Sailaja and Reddy (2003) indicated that for development of agricultural production, it is essential to engage rural women in increased adoption of enhanced farmhouse practices. Butt *et al.* (2010) also

suggested the maximum female Extensionists participation in agriculture sector.

**Table 5: Constraints faced by the respondents regarding vegetables production**

Constraints		Mean
Production constraints	High input prices	4.33
	Lack of technical knowledge	2.53
	Lack of interest	1.13
	Finance shortage	4.09
	Uncertainty and risks	2.25
Institutional constraints	Small land holding size	3.08
	Poor extension services	4.06
	Access to credit facilities	4.09
	Goods grading and taxation	3.88
Marketing Constraints	No-access to market	4.19
	Middleman monopoly	2.11
	Unstable rates	4.37
	Poor transport and communication facilities	3.18
	Produce losses	3.77
	Competition with imported goods	2.05
	Temperature fluctuations	2.10
Environmental constraints	Climatic variations	1.13
	Wind	0.98
	Rainfall	1.22

Source: Field Survey 2012

It is assumed that farmer always remain surrounded by constraints that hinder the adoption of technologies and ultimately the production as well. These constraints might be of different extent and type such as production, institutional, marketing and environmental constraints. In this regard women were inquired about their constraints and results revealed that regarding production constraints high input prices and finance shortage got the maximum mean value of 4.33 and 4.09 respectively. Finance is needed for sustainable livelihood (Krantz, 2001) and if farmer is financially sound he may be able to adopt the new techniques. The high prices of inputs have raised the cost of production high while return is in decline because of unstable market. Regarding institutional constraints, access to finance facility and poor extension services remained prominent constraints. This indicates that no credit scheme for farmer was carried out in the study area and role of extension field staff was also very poor.

Market is the major factor having significant role in farmers' development. If market is developed it will boost the interest of farmers and technology of adoption as well. As farmer remain confident at the time of cultivation that he would be able to get the desired return. One of the farmers stated "If I have assurance that I will get the stable rates of my vegetables in market, I will do more vegetables cultivation either I have to borrow the finance from someone else, but unfortunately we lack in market."

In case of market respondents, they were more unsatisfied therefore; unstable rate and no access to market got the highest mean value of 4.37 and 4.19 respectively. Majority of the farmers were small farmers so they were lagging in facilities especially of storage so, sufficient amount of produce was losses or quality was deteriorated. Under these circumstances produce loss also got the mean value of 3.77 followed by the poor transport and communication facilities (Mean value = 3.17). Competition of imported goods got the mean value of 2.05. Mostly, respondents who

were doing organic farming and tunnel farming objected on import of vegetables as this import is affecting their produce sale and return. Environmental constraints were not

much known to respondents except the temperature fluctuation which got the mean value of 2.10.

**Table 6: To Compile suggestions for the better policy formulation**

Suggestions	Response
Training of farmers	471(94.1)
developed market	500(100)
Sustained market rates	500(100)
Separate market for organic vegetables	63(12.6)
Awareness dissemination of new techniques	379(75.8)
Subsidy on inputs	434(86.8)

Source: Field survey 2012

Note: Values in parenthesis are percentages

Later on, respondents' discussion was carried out with respondents for the possible suggestions that can improve their net return. Overwhelming majority (94.1%) of respondents argued that female farmers training should be carried out by the trained female extension field staff. All the respondents demanded for developed market and sustained market rates till the end of season. Another issue that came in front during discussion was that there is no separate market for organically produced vegetables. Organic vegetables are produced under special attention but in market they are treated same as chemically produced vegetables. Therefore, 12.6% respondents demanded for separate market for the organically produced vegetables. All of these respondents were producing vegetables organically while some were having intentions towards adoption. Majority (75.8%) of respondents showed their desire to get more awareness followed by the overwhelming majority of respondents argued that they must be facilitated with subsidy on expensive inputs.

### Conclusion and recommendations

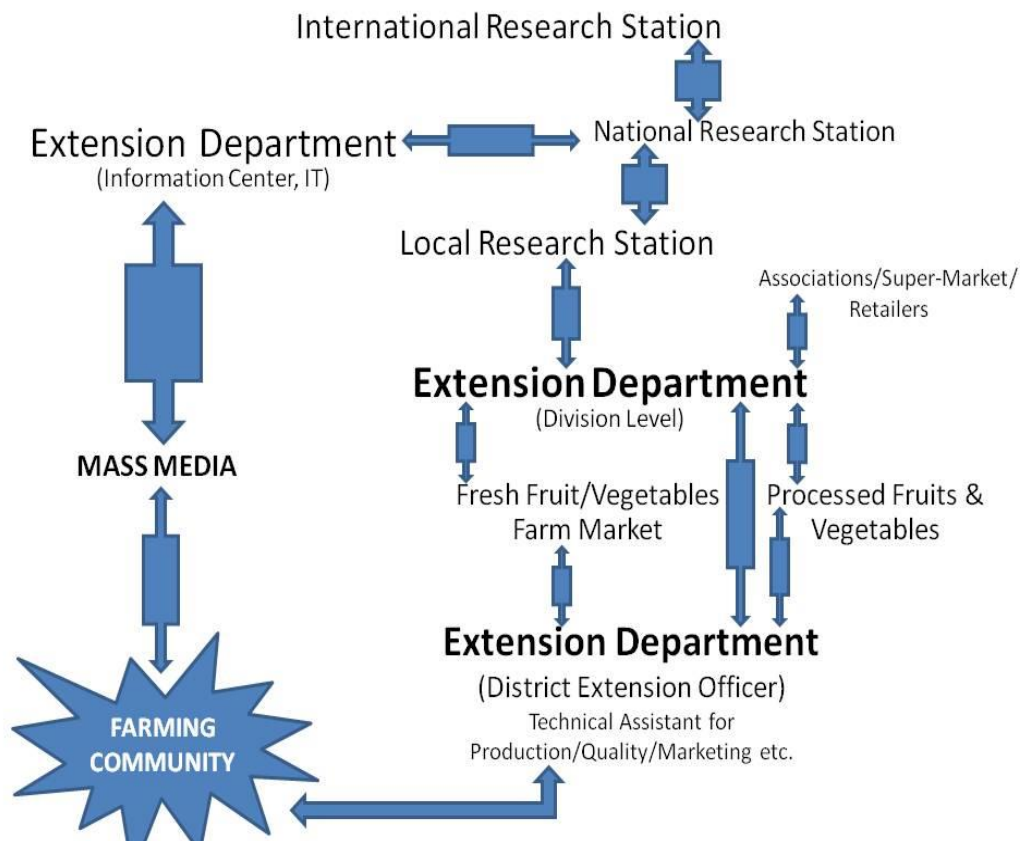
On the basis of results it can be confirmed that women hold a potential to work side by side with their males. Furthermore, these women are victims of gender discrimination.

To alleviate this discrimination they desperately need a public and private sector support. On this behalf it is suggested that:

- Literacy level of women was low as majority was illiterate, so government should show emphasis on education of women.
- Female extension staff should be appointed and strictly trained to facilitate the female growers especially regarding vegetables production.
- Awareness dissemination should be carried out regarding new techniques such as tunnel farming and organic farming etc. for food security promotion.
- To cover up the existing constraints subsidy should be provided on inputs and micro credit scheme should be started especially for women.
- Market is most important and in country developed market is invisible, so a developed market is needed with sustained rates and facilities along with social protection of female growers.
- Separate market setup should be constructed for the promotion of organically produced vegetables.
- For market establishment there is need to change the flow system as existing extension system is full of

flaws. In this way following

marketing system could be helpful.



**Figure 1: Recommendation for extension services channel to improve production/quality of fruits and vegetables to enhance the uplift of the farmer living standard and income status**

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