



Impact of nursery establishment on farmers' prosperity in peri-urban areas

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ABSTRACT

The present study was conducted in Hisar district of Haryana state. Data was collected from 86 farmers' selected randomly from seven villages namely, Kaimari, Mangali, Daya, Harita, Choudhariwas, Bhiwani Rohila and Rawalwas Kalan for the study. 98.83% of respondents were aware about what is seedling followed by nursery site should be near to water source (93.02%), nursery site should be located in the nutrient rich soil (90.69%), seedlings should be collected from authentic source (89.53%) and about the different age of seedling for transplanting (83.72%). 100% of respondents were aware about seedlings are needed of good quality stock followed by nursery location must be easily access nearby for easy transportation (95.34%), seedlings are needed as per consumer preference (91.86%) and seedlings are needed free from insect-pest/diseases/treated seedlings (89.53%). 93.02% respondents had greater perception that seedlings enhance yields of fruit/vegetables and other crops followed by availability of nutritive produce for family and consumers (90.69%), good quality produce and losses of expensive seed are minimized and seedlings stock have better root systems and grow quickly (88.37%), saving of cultivable area (87.20%).

Keywords : Awareness, farmers' prosperity, impact, need, nursery and peri-urban areas

The term urban and peri-urban agriculture comprises of activities within or on the fringe of a town or a city. As population increases rapidly, the supply was unable to meet the demand of urban areas. This has stimulated semi or fully commercial scale agriculture to cater for the high demand in urban areas. Most idle land in the out skirts of town centres were converted into commercial agriculture farms to grow vegetables and other horticultural crops. The expansion of cities has driven a major shift from rural to urban and peri-urban agriculture and the rise in cost of living and population growth coupled with changes in lifestyle in the main cities has influenced the urban population to move towards producing their own food. Urban orchards are tree-based food production systems that can be owned and run privately or by the community. Nurseries establishment in peri urban areas are contributing substantially to the development of a country's economy (Keith, 1990; Tonne, 1963) which creates viable employment for a number of families in a country. Even schools and hospitals are establishing fruit trees that provide crops, erosion control, shade and wild life habitat and producing food for the local community (Drescher *et al.* 2006). The huge expansion and intensification of urban and peri-urban agriculture production has improved the livelihoods of farmers. Most of the farmers are engaged in peri-urban agriculture within or on the fringe of cities and grow vegetables in small patches just to supply for a small urban population and for own consumption. Peri-

urban areas are productive features of cities, providing important environmental and social services that benefit and support urban communities. A diversity of food products are high value and high energy foods such as fresh fruits and vegetables are grown, raised, processed and distributed largely to the urban area. Many of these produced within a short-term rotation on small plots and with insecure land tenure (Mougeot, 1999). Urban and peri-urban agriculture play an important role in managing urban open spaces, provide employment and supply cheap food. These benefits also include the provision of high levels of biodiversity and ecosystem services that contribute to urban nature and environmental processes as well as a range of social benefits such as food and nutrition, cultural resources and recreational benefits. Hence, the present study is conducted to assess farmers' need for nursery seedling in peri-urban areas for establishment of orchard and to find out the impact of accessibility of nursery establishing on farmers' prosperity. Therefore, keeping these facts in view a study entitled, "Impact of Nursery Establishment on Farmers' Prosperity in Peri-Urban Areas" was planned and conducted in Hisar district of Haryana state.

The study was conducted in Hisar district of Haryana stateduring 2018-19. Data was collected from 86 farmers' which are selected randomly from seven villages namely, Kaimari, Mangali, Daya, Harita, Choudhariwas, Bhiwani Rohila and Rawalwas Kalan for the study. An inventory of the farmers was prepared from the selected villages.

Short communication

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Impact of nursery establishment

An interview schedule was prepared after discussion with experts for collection of required information. Data was analyzed, tabulated and interpreted for drawing the conclusion of the study. The statistical measures like frequency, percentage, weighted mean score and rank order were used to draw meaningful inferences.

The data in table-1 showed that majority of the respondents (73.26 %) belonged to the middle age group (31-50 years) followed by old age group (51 and above) to the extent of 18.60 %. The remaining 08.14 % belonged to young age group (up to 30).

The data further reported in table 1 reveals that the majority of respondents (29.07 %) were Metric passed, followed by 19.77 %, 13.95 %, 13.95 %, 12.79 %, and 5.81 % and 4.66 % was having education middle school, higher secondary, graduate, primary, illiterate and post-graduate.

It is also evident from the table-1 that the majority of respondents 30.23 % were having above 5 and up to 10 acres, followed by 23.27 % respondents had land between 10-15 acres, 17.44 % respondents were having land above 15 acres and 17.44 % had land between 1-5 acres, 11.62 % respondents had land less than 1 acre and 0.00 % respondents were landless.

Table 1: Personal profile of respondent (n=86)

Sr. No.	Variables	Category	Frequency	Percentage
1.	Age	Young (up to 30)	07	08.14
		Middle (31-50 years)	63	73.26
		Old (51 and above)	16	18.60
2.	Education	Illiterate	05	05.81
		Primary	11	12.79
		Middle	17	19.77
		Matriculation	25	29.07
		Higher secondary	12	13.95
		Graduate	12	13.95
3.	Land holding	Post graduate	04	04.66
		Landless	00	00.00
		Less than 1 acre	10	11.62
		Above 1 and up to 5 acres	15	17.44
		Above 5 and up to 10 acres	26	30.23
		Above 10 to 15 acres	20	23.27
		Above 15 acres	15	17.44

The data presented in fig. 1 revealed that the majority of 72.09 % of the respondents had tractor followed by cultivator and sprayer 70.93%, harrow 68.60%, hand hoe 56.97%, seed cum fertilizer drill 47.67%, rotavator 29.06%, puddler 13.95%, happy seeder 08.13%, laser land leveler 06.97% and combined machine 04.65% respondents using for their work.

The data in the table-2 revealed that reading of newspaper ranked first with mean score of 2.06, followed by TV and radio ranked second, third, fourth, fifth and sixth with weighted mean score of 1.29 and 1.18, 1.15, 0.34 and 0.25, respectively.

The data depicted in table-3 revealed that among the extension contact of farmers, the most popular were the progressive farmers with weighted mean score 1.90. ADO and SDAO/SMS ranked second and third among extension officials with weighted mean score 1.39 and 0.63, followed by scientists, NGO and others as fourth, fifth and sixth with weighted mean score 0.61, 0.51 and 0.27, respectively.

It was depicted from table-5 that 98.83% of respondents were aware about what is seedling followed by nursery site should be near to water source (93.02%), nursery site should be located in the nutrient rich soil (90.69%), seedlings should be collected from authentic source (89.53%), about the different age of seedling for transplanting (83.72%), optimal stage of growth for transplant seedlings (83.72%), nursery site should access to the main road (80.23%), nursery is usually arranged in a series of beds with pathway between them (72.09%), site should away from other tall crops (65.11%), about seedling treatment at nursery bed (65.11%), site should be on gently sloping area (59.30%), assessment of past and present climatic records are important (56.97%) and open area is needed at one end, where work such as sieving of soil and filling of containers can be done (46.51%).

It is depicted from table- 6 that 100% of respondents were aware about seedlings are needed of good quality stock followed by nursery location must be easily access nearby for easy transportation (95.34%), seedlings are needed as per consumer preference (91.86%), seedlings are needed free from insect-pest/diseases/treated seedlings (89.53%), seedlings are needed easily and timely (87.20%), seedlings are needed at cheap rate (83.72%), seedlings are needed of dwarf nature and short duration/early maturity (80.23%), seedlings are needed of authentic source (80.23%), seedlings are needed of different age/growth for transplanting (80.23%), seedlings are needed for outdoor plantation (79.06%), seedlings are needed of good quality for processing (65.11%), seedlings are needed round the year (63.95%),

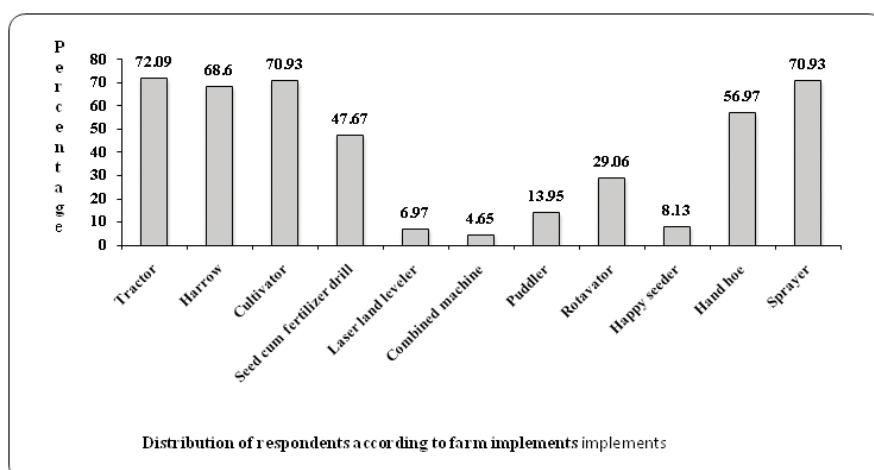


Fig. 1: Usage of farm implements by the farmers (n=86)

Table 2: Mass media exposure (n=86)

Sr. No.	Mass media Used	Extent of utilization			Total score	Weighted mean score	Rank	
		Daily(3)	Often(2)	Sometimes(1)				
1	Radio	59(68.60%)	07(21)	29(58)	23(23)	102	1.18	III
2	TV	56(65.11%)	17(51)	21(42)	18(18)	111	1.29	II
3	Newspaper	73(84.88%)	45(135)	15(30)	13(13)	178	2.06	I
4	Magazine	13(15.11%)	06(18)	05(10)	02(2)	30	0.34	V
5	Kisan Seva Kendra	45(52.32%)	20(60)	14(28)	11(11)	99	1.15	IV
6	Online solution	12(13.95%)	03(9)	04(8)	5(5)	22	0.25	VI

Table 3: Extension contact (n=86)

Sr. No.	Extension official	Frequency of contact				Total score	Weighted mean score	Rank
		Weekly (4)	Fortnightly (3)	Monthly (2)	Whenever needed(1)			
1.	ADO	06(24)	05(15)	15(30)	51(51)	120	1.39	II
2.	SDAO/SMS	02(8)	-	01(2)	45(45)	55	0.63	III
3.	Scientists	01(4)	-	01(02)	47(47)	53	0.61	IV
4.	Progressive farmer	25(100)	06(18)	09(18)	37(37)	173	1.90	I
5.	NGO	02(8)	-	03(6)	33(33)	47	0.51	V
6.	Others	-	02(6)	-	18(18)	24	0.27	VI

Table 4: Irrigation facilities available with farmers (n=86)

Sr. No.	Modes of irrigation	Frequency	Percentage
1.	Submersible pump	17	19.76
2.	Tube Well	77	89.53
3.	Canal	81	94.18
4.	Others	01	01.16

Multiple responses

Table 5: Farmers' awareness about nursery seedlings for establishment of orchard (n=86)

SrNo.	Statements	Awareness Level			
		Aware		Not aware	
		F	%	F	%
1.	Knowledge about seedling	85	98.83	01	01.17
2.	Seedlings should be collected from authentic source	77	89.53	09	10.47
3.	Different age of seedling for transplanting	72	83.72	14	16.28
4.	Optimal stage of growth for transplant seedlings	72	83.72	14	16.28
5.	Nursery site should be located in the nutrient rich soil	78	90.69	08	09.31
6.	Nursery site should be near to water source	80	93.02	06	06.98
7.	Nursery site should access to the main road	69	80.23	17	19.77
8.	Nursery site should be on gently sloping area	51	59.30	35	40.70
9.	Site should away from other tall crops	56	65.11	30	34.89
10.	An assessment of past and present climatic records	49	56.97	37	43.03
11.	Nursery arranged in a series of beds	62	72.09	24	27.91
12.	Open area is needed at one end such as sieving of soil and filling of containers	40	46.51	46	53.49
13.	Seedling treatment at nursery bed	56	65.11	30	34.89

Table 6: Farmers' need for nursery seedling in peri- urban areas for establishment of orchard (n=86)

Sr. No.	Statements	Awareness Level			
		Aware		Not aware	
		F	%	F	%
1.	Seedlings are needed of good quality stock	86	100.00	00	0.00
2.	Seedlings are needed as per consumer preference	79	91.86	07	08.14
3.	Seedlings are needed of fresh herb	54	62.79	32	37.21
4.	Seedlings are needed round the year	55	63.95	31	36.05
5.	Seedlings are needed for indoor decoration	28	32.55	58	67.45
6.	Seedlings are needed for outdoor plantation	68	79.06	18	20.94
7.	Seedlings are needed free from pesttreated seedlings	77	89.53	09	10.47
8.	Seedlings are needed of dwarf nature	69	80.23	17	19.77
9.	Seedlings are needed at cheap rate	72	83.72	14	16.28
10.	Seedlings are needed easily and timely	75	87.20	11	12.80
11.	Seedlings are needed of good quality for processing	56	65.11	30	34.89
12.	Seedlings are needed of authentic source	69	80.23	17	19.77
13.	Seedlings are needed of different age for transplanting	69	80.23	17	19.77
14.	Nursery location easily access for easy transportation	82	95.34	04	4.66
15.	Seedlings are needed from certified/registered nursery	42	48.83	44	51.17

seedlings are needed of fresh herb (62.79%), seedlings are needed from certified/registered nursery (48.83%) and seedlings are needed for indoor decoration (32.55%).

Table 7 reveals that the 93.02% respondents had greater perception that seedlings enhance yields of fruit/vegetables and other crops followed by availability of nutritive produce for family and consumers (90.69%), good quality produce and losses of expensive seed are minimized and seedlings stock have better root systems and grow quickly (88.37%), saving of cultivable area (87.20%), uniformity at maturity and harvesting due to homogeneous seedlings (83.72%), opportunities for

selection of good seedling at nursery as per choice (80.23%), opportunities of healthy planting material availability and crop grown by nursery is quite early and fetch higher price (76.74%), seed are expensive seedlings are economically viable (75.58%), seedlings available at cheaper rate/cost (74.41%), planting material available in beginning thus save extra time for field preparation, money and efforts to raise nursery (70.93%) and free from germination losses- extreme heat and cold overcome and input costs can be lowered- polythene sheet/seedcost/land/water (68.60%), mortality is nil in case of plantation through seedlings (66.27%),

Table 7: Impact of accessibility of nursery seedlings on farmers' prosperity (n= 86)

Sr. No.	Statements	Frequency	Percentage
1.	Seedlings enhance yields of fruit/vegetables and other crops	80	93.02
2.	Input costs can be lowered- polythene sheet/seed cost/land/water	59	68.60
3.	Uniformity at maturity and harvesting due to homogeneous seedlings	72	83.72
4.	Seedlings stock have better root systems and grow quickly	76	83.72
5.	Good quality produce	76	88.37
6.	Seedlings available at cheaper rate/cost	64	74.41
7.	Promote more hort/vegetable farming in peri urban areas	55	63.95
8.	Seedlings required minimum care, cost and maintenance	45	52.32
9.	Planting material available in beginning thus save extra time for field preparation, money and efforts to raise nursery	61	70.93
10.	Availability of pure nursery stock	56	65.11
11.	Opportunities for export for nursery stock	40	46.51
12.	More orchard promote ecological balance	53	61.62
13.	Availability of nutritive produce for family and consumers	78	90.69
14.	Online availability of seedlings help for establishing orchards	30	34.88
15.	Help in developing indoor/decoration	38	44.18
16.	Opportunities for selection of good seedling at nursery as per choice	69	80.23
17.	Saving of cultivable area	75	87.20
18.	Opportunities of healthy planting material availability	66	76.74
19.	Crop grown by nursery is quite early and fetch higher price	66	76.74
20.	Seed are expensive seedlings are economically viable	65	75.58
21.	Well sized plant can be planted to reduce juvenile period	50	58.13
22.	Mortality is nill in case of plantation through seedlings	57	66.27
23.	Losses of expensive seed are minimized	76	88.37
24.	Reduced risk as shorten exposure to pest diseases— rodents	54	62.79
25.	Free from germination losses- extreme heat and cold overcome	59	68.60

availability of pure nursery stock (65.11%), promote more vegetable farming in peri-urban areas (63.49%), reduced risk as shorten exposure to pest diseases-rodents (62.79%), more orchard promote ecological balance (61.62%), well sized plant can be planted to reduce juvenile period (58.13%), seedlings required minimum care, cost and maintenance (52.32%), opportunities for export for nursery (46.51%), help in developing indoor/decoration (44.18%) and online availability of seedlings help for establishing orchards (34.88%).

Most of the respondents were aware about what is seedling followed by nursery site should be near to water source, nursery site should be located in the nutrient rich soil and seedlings should be collected from authentic source. Majority of respondents were aware about seedlings are needed of good quality stock followed by nursery location must be easily access nearby for easy transportation, seedlings are needed as per consumer preference and seedlings are needed free from insect-pest/diseases/treated seedlings. Most of the respondents also had greater perception that seedlings enhance yields of fruit/vegetables and other crops followed

by availability of nutritive produce for family and consumers, good quality produce and losses of expensive seed are minimized, seedlings stock have better root systems and grow quickly and saving of cultivable area.

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