Change in agriculture due to urbanization at Savar upazila

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Abstract: A field survey was conducted during October 2013 to January 2014 to know the urbanization effect on agriculture at Savar upazila under Dhaka district. Primary data were collected from purposively selected 216 respondents who were permanent resident of the study area. Collected data revealed that urbanization reduces the amount of cultivable lands of the respondents. But the income status of the respondents from agriculture was increased than that of five years ago due to crop diversification through using high yielding variety (HYV) and high value crops (HVC). Non-agricultural income has become an important source of household income because of the development of urbanization. In order to attain the desired level of crop diversification in the context of urbanization, judicial law enforcement is essential on industrial waste management, establishing of brick field and multi-stored complex.
Key words: Urbanization, HYV, HVC, income.

Introduction

Urbanization is a modernization process that expanded at the adjacent area of a town. Due to centrifugal migration of industry and commerce more and more industries quit from the core city and get themselves placed in the suburban township like Savar because of well road communication (Fouzder, 2005). Savar has experienced a rapid growth of population and urban expansion and a change of traditional agrarian land use during the last twenty years due to the influence of the urbanization process of Dhaka Metropolitan Area. The geographic location of Savar upazila under Dhaka district push it forward for the same where benefits and beneficial effects are go forward simultaneously. Agricultural sector is the most affected one due to urbanization. As urbanization intensifies, agricultural and non-agricultural land use conflicts become more severe. Agricultural lands are fast depleting in areas close to major roads, as they purchased by people mainly for non-farm activities. All the infrastructural establishments are built up on agricultural land- the major prerequisites for crop production. Land therefore, has the singular characteristic of being the most important factor in the sustenance of mankind (Adarkwa and Post, 2001). The loss of prime agricultural lands has really affected the indigenous who are mostly farmers. On the other hand, it is evident from consecutive population census reports that population of Savar has been rising substantially over the years causing rapid urbanization. During 1991-2001 periods the population growth rate was 8.63% compared to 4.46% during the previous decade. With the increase in population, the density of population has also shot up from 1349.49 persons sq. km. in 1991 to 2152.00 persons per sq. km. in 2001 (NPCR, 2001). As a result, a change in total agriculture comes forward which in still now agriculture is the major occupation of the vast people of this locality. Though urbanization is a pressing need for the current time but not to the extent of denying the rural folks of their main source of livelihood. Therefore, the main objective of the study is to know the changes that occur in agriculture due to urbanization of the study area.

Materials and Methods

The field survey was conducted during October 2013 to January 2014 in different villages of Savar upazila under Dhaka district to know the urbanization effect on agriculture. The researcher collected Primary data were collected using a pre-tested questionnaire from purposively selected 216 respondents who were permanent resident of the study area. Secondary data were collected from books, journals, publications of different governmental and other institutions, news paper and research papers on similar issue. Collected data were converted into percentage. The selected variables were occupation, farm size, education, use of cropping land, cropping intensity, change in cropping pattern, income status, income from agriculture, and non-agriculture, family cost management, farm input purchase capacity etc. After completion of field survey, the information obtained from all the respondents were coded, compiled, tabulated and lastly transferred into a master sheet to facilitate tabulation.

Results and Discussion

Demographic characters of the respondents: Though urbanization is increasing rapidly with reducing agricultural land but still now agriculture is the major occupation of the respondents (Table 1). Additionally involvement with occupation rather than agriculture, business is in better position than that of service. One fourth of farmers (25%) are additionally involved themselves with other business which helps to up rising their livelihood status due to more income. As a mass gathering of outsiders, house renting is becoming popular as a new income source than business only. Though the pattern of farm size of study areas are quite different than other areas of the country but still now it is the prime natural capital that opens up access to input utilization and use of natural resources and provides food, shelter, income and security upon which farmers' livelihoods is built. The factual evidence of the reality (Table 1) was as conformity of the findings of Islam (2012) that number of small farmers is higher than other farmer's category. The combined education of primary, secondary and above secondary level (46.15 percent) of the study area are seems to very much higher than national average of Bangladesh (BBS, 2010). It is a promising positive achievement of urbanization. The level of literacy is the principal indicator of human resource development and a pre-requisite condition for development. It also helps to increase their power of observation and decision making ability. Educated people are more productive and more vibrant responding to change with a broader mind and thinking.

Table 1. Demographic characters of the respondents

Characters	Categories	Number of respondents (216)	Percent of respondents (%)
Occupational status	Only farmer	126	58.33
	Farmer + Business	54	25.00
	Only Business	10	4.63
	Farmer + House renting	14	6.48
	Farmer + Service	12	5.56
Farm size	Land less (5 decimal <)	0	0
	Marginal (5.1 -50 decimal)	16	7.41
	Small (50.1-247 decimal)	146	67.59
	Medium (247.1-741 decimal)	54	25
	Large (>741.1 decimal)	0	0
Education	Illiterate	10	4.63
	Primary	140	64.81
	SSC	46	21.3
	HSC	10	4.63
	Degree and above	10	4.63

Table 2. Annual income from different sources

Characters	Period of time & effect	Taka per year
Income from agriculture	5 years back	85286
	Present	153082
	Increase	67796
	% Increase	79.49 %
Income from non-agriculture	5 years back	41590
	Present	74160
	Increase	32570
	% Increase	78.31 %
Income from both agriculture and non-agriculture	5 years back	126876
	Present	227242
	Increase	100366
	% Increase	79.11 %

Table 3. Family and farming cost management

Characters	Status	Before (5 years back)		Present	
		No. of respondents	% of respondents	No. of respondents	% of respondents
Family cost management	Very low	28	13	0	0
	Low	166	77	0	0
	Medium	22	10	186	86
	High	0	0	30	14
Farming inputs purchase capacity	Very low	54	25	0	0
	Low	142	66	0	0
	Medium	20	9	160	74
	High	0	0	56	26

Annual income: Five years back, the main income of the local people were dependent on agriculture and it was Tk.85286/- per year. At present it is higher than the previous and percent of increasing is 79.49 (Table 2). The income is higher than any other ordinary upazila of the country. Mahzabin (2011) found in her study on household food security status of selected farmers of Fulpur upazila under Mymensingh district that most of the respondents had medium annual income group. In the study, both from agriculture and non-agricultural income of a family are higher than any other location of the country. It is true that cultivable land is reducing day by day due to urbanization but income from crop production is increasing due to higher crop intensification which indicated that there has a strong linkage among farmers, extension workers and other agricultural service providers. The same increasing trend was also observed in non-agricultural income and it was 78.31%. Non-agricultural income has become an important source of household income. For the development of urbanization occupational employment demands have been increasing and the farmers also run other business besides agriculture. Haque (2014) found that commercialized farmers got more income than subsistence farmer at the same locality due to commercialization.

Cost management: As cities develop as it improves opportunities for jobs, housing and transportation, effects can include a dramatic increase and change in costs management to run the family. Urbanization also increasing farming inputs purchasing capacity. Among 216 respondents most of the respondents (86%) said that their family costing status now raised medium from only 10% compared to five years back. Data shows that before five years which family costing was very low to low, later on it

increase to medium and then to high (Table 3). The similar scenario was observed in case of purchase capacity of agricultural inputs which are the symptoms of receiving modern technologies, cultivation of HYV and HVC.

Table 4. Total cropping land of the study area

Use of cropping land (decimal)				
Cropped area	10 years back	Present	Present (+/-)	% of (+/-)
Net cropped area	20819	18081	-2738	-13.15
Total cropped area	28136	34012	5876	20.88

Table 5. Cropping pattern of the study area

Change in cropping pattern	
Present	10 years back
Rice – Vegetable – Vegetable	Rice – Vegetable – Rice
Mustard – Rice – Vegetable	Jute – Rice – Vegetable
Vegetable – Jute – Vegetable	Fallow – Boro – Fallow
Vegetable – Vegetable – Vegetable	Boro – Fallow – Fallow
Vegetable – Vegetable – Vegetable	Sugarcane
Vegetable – Vegetable – Vegetable	Boro – Vegetable – T. Aman

Cropping intensity and change in cropping pattern: Urban development reduces the amount of cultivable lands of the respondents. From the Table 4, it was found that total net cropped area of Savar upazila is reducing but the total cropped area is increasing tremendously compared to10 years back. Cropping system has undergone some changes from last 10 years to present. From the Table 5, it was found that vegetables are now a promising crop for the study area and it included in all the cropping patterns that are now practiced in the study area. This is due to meet the dietary demand of an over crowded population that is the result of urbanization. Cropping pattern has undergone some changes due to the adoption of HYV and HVC along with the increased crop management facilities (seeds, irrigation, fertilizers, pesticides etc). But still now there is a scope to introduce diversified cropping systems in order to free upland areas in the winter season for non-rice crops, so as to facilitate introduction of third crop on the land under irrigated conditions-short duration mustard or a sandwich crop of grain legume could be introduced in between the *Aman* and *Boro* rice growing seasons. It could be achieved through introducing more efficient extension services, build up effective backward linkages through contract farming and captive farming, improve drainage and water management, ensure timely planting and soil fertility management, develop infrastructure and post-harvest processing and provide marketing facilities.

Urbanization can not be stopped but it should be maintained by proper planning, application laws, recycling industrial wastes, patient softness to environment. Policy should be geared towards the protection of prime agricultural lands that serves as main source of livelihood. It is necessary to ensure that land use is in conformity with prescribed standards so that its fertility will be maintained to provide the needs of mankind.

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