

Awareness of Urban and Rural People Regarding Polythene Ban in Rajshahi Division, Bangladesh

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Abstract: The awareness of the urban and rural people regarding the ban on polythene bags was studied in Rajshahi division. Information was collected from urban and rural people to know their views after a period of 4 years of ban on polythene bags. The surveys included interview schedule, observations and discussions with the users. The largest part of the respondents were congratulated the decision of the government on ban of polythene bags. About 97.3 % of urban and 76 % of rural people was in favour of ban of polythene and a few of the respondents (2.7 %) were in disfavor in case of urban whereas in rural it was 24 %. Majority of the users were ignorant about the hazardous impacts of polythene bags on the health (urban 24 and rural 1.3 %). [Nature and Science 2010;8(3):37-40]. (ISSN: 1545-0740).

Keyword: Awareness, polythene bags, ban and environment.

INTRODUCTION

Polythene is a form of plastic and it is non-biodegradable: won't rot. Polythene and/or plastic bags are widely used for transporting a range of small consumer goods, and in some regions, also serve secondary roles for conveying drinking water (Simpson, 2007), oil and disposing of human and other domestic wastes (Njeru, 2006). While annual production and use statistics are not available from industry sectors, environmental groups estimate that between 500 billion and 1 trillion plastic bags are used globally each year (CBC News, 2007). Since their inception, uncontrolled disposal of these bags has been causing environmental problems worldwide including Bangladesh, and many regional and national governments are beginning to take action.

Indiscriminate use of polythene bags is a very common feature in Bangladesh which creates a lot of problems on environment and also public health. Polythene bags even one piece of it can cause blockage in the drainage systems of the cities. As a result, it creates water-logging, germination of bacterial and water born diseases, spread of mosquitoes, etc. and also bad smells.

Polythene has harmful effect on soil, water and air. International Rice Research Institute (IRRI) found that polythene bags, by preventing sunlight exposure of the soil, destroy the beneficial bacteria causing loss of soil fertility (www.bapa.info/activities/ban_polythene.html, verified-October, 2008). Where the bags are burned either for energy or mass reduction purposes, heavy metals and the toxic organic compounds (e.g., polychlorinated dibenzo-p-dioxins and furans

[PCDD/Fs; commonly referred to as "dioxins"] and polyaromatic hydrocarbons [PAHs]) can be produced (Sierra, 2008) that helps pollute air as well as affect on health.

A number of regulatory instruments have been used worldwide to reduce the plastic bag problem, ranging from traditional command and control approaches such as bans, voluntary codes of practice and marketing of alternative bags to economic tools such as taxes or levies. The African countries of Eritrea, Zanzibar, and Somaliland have banned plastic bags (Germain Nicolas, 2005 and CBC News, 2007) as have China, Taiwan, Thailand, Papua New Guinea, Nepal, Philippines and several states of India (UNEP, 2005 and Clapp, 2008). One of the most successful regulatory case studies comes from Ireland where economic instruments were applied. A 15-euro cent levy or surcharge was imposed on plastic bags provided by grocery stores and other shops, which reduced bag use by 90 %. As early as 1989, Italy had also introduced a 6-euro cent tax (about 5 times higher than production cost) on plastic bags, making the bags more expensive than their 'eco-friendly' alternatives (UNEP, 2005). Voluntary initiatives have also been attempted in some regions. In Canada, most major grocery chain stores accept plastic bags for recycling (UNEP, 2005), and recycling initiatives are being used in Egypt and Senegal (Cawthorne, 2007).

The use of polythene and plastic does not have a long history in Bangladesh. But within a year it reached other places of the country. There were more than 1500 factories of plastic materials in Bangladesh, where 400 produced polythene bags. These factories produced

about 130 million polythene bags daily. About 10 million of them were thrown everyday as wastes on the streets, drains and on water bodies leading to serious environmental hazards (World Environment Day, 2005). So, government banned the uses of polythene bags in Dhaka city on 1 January 2002, and followed nationwide ban on 1st of March (www.wbbtrust.org/plastic/polybag, verified- April, 2009).

MATERIALS AND METHODS

The present survey was carried out in Rajshahi city and three villages Raninagar, Parchouka and Monakasha of Shibgonj upozilla of Chapai Nawabgonj district during 2006. Information was collected from 150 respondents comprising of 75 urban and 75 rural people. The data collection methods were applied for this research included interview schedule, observations and discussions with the respondents. The following

questions were asked: (1) Do you know about the polythene bag banning? (2) Did you used to use polythene bag before banning? (3) Do you use polythene bag after banning? (4) Do you know the hazardous effects of polythene on soil, air, water and health? and (5) Do you support the banning of polythene bags?

RESULTS AND DISCUSSION

The collected data of personal profile of respondents were presented in **Table 1**. This table shows that most of the urban and rural peoples were between young and middle groups. Educational points of view, 26.7 % rural respondents were college and university level whereas 73.3 % were in urban respondents (**Table 1**). In case of occupation, majority of the rural respondents were non-service (66.7 %). On the other hand, in urban areas 44 % respondents were non-service.

Table 1 Personal profile of the respondents (Total=150 persons)

Variables	Categories	Rural		Urban	
		75 persons		75 persons	
		No.	%	No.	%
Age	Young (20-34 years)	30	40.0	28	37.3
	Middle (35-50 years)	30	40.0	32	42.7
	Old (51-65 years)	15	20.0	15	20.0
Education	Illiterate level	10	13.3	1.0	1.3
	Primary level	20	26.7	9.0	12.0
	High school level	25	33.3	10	13.3
	College level	15	20.0	25	33.3
	University level	5.0	6.7	30	40.0
Occupation	Service	25	33.3	42	56.0
	Non-service	50	66.7	33	44.0

The awareness of the respondents towards the ban on polythene or plastic bags in their daily life usages were presented in the **Table 2**. It reveals that 97.3 % of urban and 76 % of rural people were in favour of ban of polythene by the government of Bangladesh (**Table 2**). A few of the respondents (2.7 %) were in disfavoured in case of urban whereas in rural it was 24 %, a little bit higher than that of urban. Those respondents were in disfavoured claimed that it is very difficult to carry bags to the market every time. They also reported that paper bag tears while carrying vegetables or something like that.

Table 3 presents the bad impacts of polythene use by the respondents. Regarding the impact of polythene on soil 36 % rural and 50.7 % urban people reported that it reduces soil fertility which ultimately decreases the productivity of agricultural land. International Rich

Research Institute (IRRI) also found the same results (www.bapa.info/activities/ban_polythene.html, verified- October, 2008). About the impact of polythene on air pollution, 28 % of rural and 61.3 % of urban respondents claimed that after burning it produces hydrogen cyanide and other poisonous gases that pollute air (**Table 3**). On the topic of water, 45.3 % rural and 78.7 % urban respondents stated that polythene blockage drainage that created some water born diseases like allergies. Pradhan (2000) and Jilani (2002) pointed that coloured polythene contain harmful toxic metals like chromium and copper which cause allergies. Besides these bad impacts, under the health aspect the respondents stated that polythene bags dumped near households can lead to breeding mosquitoes which cause dengue fever (1.3 % rural and 24 % urban). Next

Table 2 Awareness of the respondents towards ban on polythene use (Total=150 persons)

Awareness	Rural		Urban	
	75 persons		75 persons	
	No.	%	No.	%
Favourable	57	76.0	73	97.3
Unfavourable	18	24.0	2.0	2.7

Table 3 Hazardous impacts of polythene use perceived by respondents (Total=150 persons)

Hazardous Impacts	Rural		Urban	
	75 persons		75 persons	
	No.	%	No.	%
Soil Polythene bag reduces the soil fertility and soil productivity	27	36	38	50.7
Air Burning of the polythene produce poisonous gases that pollute air	21	28	46	61.3
Water It blockage the drains causing water logging that creates water born diseases	34	45.3	59	78.7
Health Throwing polythene bags near house hold that can lead to the breeding of mosquitoes which cause dengue fever etc.	1.0	1.3	18	24.0

Table 4 In general, summary of the questionnaire survey result (Total=150 persons)

Question Subject	Percentage of Respondents (%)
(1) Know about the polythene bag banning	60
(2) Used to use polythene bag before banning	80
(3) Use polythene bag after banning	45
(4) Awareness regarding ban on polythene bag	87
(5) Support the banning of polythene bag	90

to nothing rural respondents were aware of the fact that polythene may responsible for dengue fever. In general, the summary of the questionnaire of survey results were given in **Table 4**. The results indicate that about 45 % of the respondents were still use polythene bag, although 90 % of them supported the banning.

CONCLUSION

Most of the respondents were aware of the ban on polythene in both the rural and urban people. Majority of the urban respondents were also aware of the hazardous impact of polythene on soil air and water pollution. A few of them had unfavourable attitude regarding ban on polythene as they actually have faced such type of problems after the implementation of ban. Most of the rural respondents were unaware of the ill impacts of polythene on health.

In this respect, it can be suggested that various campaigns against the use of polythene bags should be organized nationwide. Support for the development of environmentally-friendly alternative bags like jute bags etc., which will be helpful for saving environment at the same time beneficial for jute industry. The countrywide local policies should include environmental awareness as an integral part.

Finally, the government and related bodies should ensure that cheap environment-friendly alternative of polythene bags are available to make sure that these bags do not make a return again.

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REFERENCES

- [1] CBC News. Blowing in the wind: Global moves against shopping bags. Canadian Broadcasting Corporation. (March 28, 2007).
- [2] Cawthorne, A. Africa wages war on scourge of plastic bags. Reuters. (August 20, 2007).
- [3] Clapp, J. The time has come to kill all the plastic bags. The globe and mail. (February 11, 2008)
- [4] Germain Nicolas. Eritrea bans plastic bags. South African Press Association/News 24. (April 3, 2005).
- [5] Jilani, G. Ban on Polythene Shopping Bags: A step toward clean environment. Bangladesh environmental news later vol. 13 no. 1 (2002).
- [6] Njeru, J. The urban political economy of plastic bag waste problem in Nairobi, Kenya. (2006) Geoforum 37, 1046-1058.
- [7] Pradhan, S. Plastic bag to be banned. Asia Times, 20th Jan., 2000.

- [8] Simpson, S. Clogged by plastic bags, Africa begins banning them. The Christian Science Monitor. (November 30, 2007).
- [9] Sierra R. The need for reducing plastic shopping bag use and disposal in Africa. The African Journal of Environmental Science and Technology, (2008), vol. 3 (3).
- [10] UNEP. Report on Employing Economic Instruments in Solid Waste Management in Kenya. United Nations Environment Programme: (2005), New York, NY, USA.
- [11] World Environment Day. Environmental Health; Polythene bag and plastic materials: An Environmental Concern in Bangladesh. (5th June, 2005).

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