Farewell to polybags

REZAUL KARIM

People in general have welcomed the decision of ban on polybags and the city dwellers have started their shopping with jute bags as they did decades back. It has been witnessed in markets, shopping centres and also at kitchen markets in the city that the sellers have given farewell to the environment hostile polybags.

IT has been generally observed that less attention was given to the increasing environmental pollution and proper disposal as well as utilisation of solid wastes across the country, particularly in the capital city of Dhaka, by the government, Ministry of Environment, Departments of Environment, Agriculture, Health, Municipalities and other allied agencies.

Bangladesh is apparently now in the grip of all sorts of pollution, like air pollution, soil pollution, water pollution and what not. Dwellers of capital Dhaka are the worst sufferers. The indiscriminate industralisation process in Bangladesh over the past decades has created significant environmental problems. Among the most significant is the enormous volume of solid waste, which is being produced everyday but not to be disposed of properly.

The mismanagement in the disposal of the solid wastes, particularly the polythene shopping bag has caused serious threat to the soil, public health, drainage and sewerage system in the capital city. The drainage system in the city is about to be collapsed. About five to six feet layers of polybag have developed at places at the bottom of the river Buriganga. Although other big cities in Bangladesh have also started facing the problem from polythene, but the situation in Dhaka has gone beyond control. As a non-biodegradable environment hazard, it has already wreaked havoc in public sanitation, not to speak of the irreparable damage its further use could inevitably bring to our life system.

According to experts, polythene is a thermoplastic material which when heated gets softened due to weakening of intermolecular forces and melts. On cooling it solidifies again. Polythene, particularly the black polythene contains carcinogenic substance. Polythene is polymers of ethylene compound existing in a covalent bond, which is not easily oxidized. Polythene is made with presence of benzyl peroxide an organic solution, for example benzene liquid, butane or propane. Usually polythene is manufactured by gas phase polymerization. The manufacturing process of polythene does not yield complete polymerization but create different kinds of monomeric vinyl chlorides. Heavy concentration of these substances is highly toxic and may even cause cancer. Toxic substances with food materials when come in direct contact with polythene (bread, biscuit, chips in polythene cover and most of the brightly coloured polythene contains such agents as lead and cadmium) they become contaminated. The contaminated food staff when ingested causes toxic effects on health.

It was only in mid 1982 when polythene bag came to Bangladesh it drove out all other shopping bags from the market on its own merit. Production of polybag started in 1983 and since then its use and production increased manifold. Polybags are used extensively because of their low cost and practical nature.

According to a study of the Ministry of Environment, there are around 800 polythene factories in the country and most of them are situated in the capital. In 1983, there were only two polythene bag factories, but this number just increased to 800. These factories produce about 129 million polybags per day. According to survey of an NGO, some 315 to 320 factories are engaged in manufacturing thin shopping bags and on an average eight to 12 workers are employed in each factory. Between 2,520 and 3,840 workers are engaged in these factories.

However, the manufacturers claim that the number of such plastic factories is about 1,500 and around 1,30,000 workers are employed in these factories. But the survey reports of government and NGOs termed the manufacturers' claim as completely untrue. Sources said production of polythene bags is highly profitable and the investment for setting up a factory is very low. Preliminary investment in a polybag factory is only about Tk two lakh. The production cost of each thin polybag is about Tk 0.05 to Tk 0.07 while the manufacturers sell these to wholesalers for Tk 0.30 to Tk 0.35 each.

The Ministry of Environment survey report shows that about 10 million polythene bags are used and nine million dumped everyday in Dhaka city. On average, a family in Dhaka throws out four polybags everyday. And out of that only 10 percent are put into designated spots, however, lack of adequate facility is also responsible for the menace.

The bags are typically thrown in the street or into drainage facilities. Since the bags do not degrade as paper bags do, these very frequently end up clogging drains and sewerage system, which in turn creates significant negative health effects, water logging etc. Even when the polythene bags are recycled, this creates harmful hydrogen cyanide gas which contributes to respiratory problems.

Land filling is still most prevalent way of treating waste in Bangladesh, notably in Dhaka. Irrespective of physical and chemical compositions of solid wastes all types of solid wastes are dumped together. The present crude way of land filling carried out by the Dhaka City Corporation is definitely unscientific. It has got direct effect on soil, air and water as physical environment and also on flora and fauna, agriculture, human settlement, public health as biological and human environment.

The Ministry of Environment, NGOs, environmental journalists, civil society and others have long been campaigning against the adverse effects of polybags. The Forum of Environmental Journalists of Bangladesh (FEJB) played a pioneer role in launching campaign against polybag and its members succeeded to create awareness among the policymakers, politicians and people in general about the threat to soil, public health, drainage and sewerage system.

To free the country from the curse of polythene shopping bags, previous BNP government in 1994 had taken a bold step and finalised decision to ban use, production and marketing of polybags. But the move finally failed because of pressure from both inside and outside the government. The erstwhile Awami League government had also taken a move to ban the polybags, but it also failed. At long last, the ban on polybags seemed firmly on course after the Cabinet in its December 23 meeting okayed the Environment Ministry proposal to prohibit use and marketing of thin polythene bags in Dhaka city from January 1, 2002.

Although there were some supporters of polybags in the cabinet, but finally all members supported the move overwhelmingly. This government decision is considered as the best New Year gift for the countrymen. It is the 20 micron wafer-thin variety that came under the ban orders. The Ministry of Environment has also declared to impose ban on use and marketing of polybags across the country from March 1 and soon make necessary law in the upcoming parliament session to stop its production. Credit goes to Environment Minister Shahjahan Siraj, Secretary Sabihuddin Ahmed and few other officials of the Ministry for their courageous role.

Official sources said Prime Minister Khaleda Zia is very much concerned about the state of environment in the country and ordered the Environment Ministry to go ahead with effective steps to eliminate the causes of environmental pollution. They said the next course of action of the government is to free the capital of air pollution and it would launch drive against emission of black smoke by motor vehicles.

As alternative of polybags, the government has already instructed the Ministry of Jute and Textile to go for massive production of shopping bags. Besides, the government has urged upon the private sector to produce other alternatives of polybags. People in general have welcomed the decision of ban on polybags and the city dwellers have started their shopping with jute bags as they did decades back. It has been witnessed in markets, shopping centres and also at kitchen markets in the city that the sellers have given farewell to the environment hostile polybags. A large number of jute mills, which were closed for years, may now start production of jute shopping bags in full swing. A large number of poor people in the city have also started making paper containers (thonga) and supplying that to the markets and shops. It is hoped that the environment friendly substitutes of polybags would soon remove the temporary suffering being felt during shopping at the kitchen markets.

Rezaul Karim is a senior reporter of The Daily Star and member of Forum of Environmental Journalists of Bangladesh (FEJB).

Indiscriminate disposal of poly bags in city

We must come out of the hazard

K. M. NURUL HUDA

Government is doing much to take the people in its campaign for eradication of polythene menace. It needs to do more to the extent that the people should share that the problem of polythene is not a problem of the government alone, it is a problem of every citizen of the country.

POLYTHENE is a product of the plastic family. Plastic substances came into human use more than hundred years ago. In fact polythene has acquired popular demand throughout the world. Its detrimental effects on environment are, however, beyond compensation. Advanced countries are working to produce alternatives to polythene. Governments in Bangladesh has been expressing concern on the adverse effect of polythene on environment and public health since long. Only recently the administration has entered into an action plan, to ban production and marketing of polythene bags to save environment from further deterioration. Although late, but it's a laudable step.

Polymers or long chains of homogeneous hydrocarbon molecules are the chemical components of plastic or polythene. Polymers provide polythene with improvements in rigidity and flexibility, toughness, scuff and heat resistance and clarity. The molecules of polymer are so small that bacteria or fungus cannot get through. More over they are very tightly bound. Polythene is a very durable thermoplastic product. It does not get decomposed in any natural process even in hundred years. It is not therefore biodegradable and thus not environment friendly.

Since 1970s production and use of polythene went to its peak through out the world. Entrepreneurs started manufacturing polythene bags in Hazaribagh, Dhaka in 1982. Very quickly these 'convenient' bags successfully entered every house of the country. According to reports there are more than 1500 factories of plastic materials in Bangladesh. Of them 400 produce polythene bags. These factories produce about 130 million polythene bags daily. About 10 million of them are thrown as waste on the streets, in the drains and on the water bodies leading to serious environmental hazards.

Use of polythene has become a culture of every day life for the people of all strata. Market mechanism drives people to usé polythene because it is available very cheap and easily. Again it is "tough, water proof and easy to carry and store". People thus feel comfortable by using polythene bags paying little attention to the macro level impact on environment. People do not like the idea of paying a price for an environment friendly bag than getting one which is offered free of cost.

But polythene has wrought its harmful effect on soil, water and air. International Rice Research Institute found that polythene destroys the bacteria of soil causing loss of soil fertility. When dumped in soil it does not allow emission of the toxic gases and pollutants from the earth. Sunlight, its ultra violet ray in particular, which acts, as 'vitamin' for natural fertilization of soil cannot pass through the polythene into the soil. Subsequently the capacity of soil to yield agricultural produces is diminished.

Adverse effect on environment and public health due to indiscriminate use of polythene is colossal. There are more than 80 diseases caused by water borne germs. These germs generate from contaminated and stagnant sources of water. Contamination of water occurs due to irresponsible disposal of polythene bags into the drains and sewerlines. Only one piece of polythene bag can block an entire system causing water logging, pollution in the drain and germination of bacterial and water borne diseases, spread of mosquitoes and bad smells.

Processing and reprocessing of polythene substances cause air pollution. Street urchins use to collect polythene bags from the disposal sites and burn them in the open space. By doing this they produce hydrogen cyanide and other poisonous gases that pollute air as well as affect health of the urchins. It may lead even to fatal disease like cancer.

Many countries have marketed alternatives to polythene. Some advanced countries have even succeeded to produce biodegradable polythene. SMEC Bangladesh Ltd. released an Inception Report in 2001 on *Study on Control and Management of Polythene Bags in Bangladesh*. It is a comprehensive report on the state of polythene in Bangladesh. The report finds that an additive comprising a very specified combination of 39 chemicals can help produce degradable polythene and plastic substances. Application of additive in appropriate doses in the manufacturing process can produce polythene bags with specified life span of bio-degradation. The technology is designed in such a way that the plastic can dissolve into water, carbon dioxide and existing minerals in safe and reliable manner. Again, production of photodegradable plastics involves incorporation of photosensitive carbonyl groups or the addition of other photosensitive additives. United Kingdom, Germany, Italy, Scandinavian countries and a few states of India have already started using biodegradable polythene bags.

Government of Bangladesh has taken pragmatic action plan to ban use and production of polythene with effect from 01 January. The concern of the government is praiseworthy. Cabinet approved the initiative to ban use and marketing of shopping polythene bags of thickness up to 20-micron in Dhaka Metropolitan area. The Ministry of Forest and Environment held meetings with cross section of people that include stakeholders, users, producers, executive agents, academicians, policy makers, media people and political leaders to gain political and social commitment and support.

Nation cannot expect ethical value from all citizens of a country. That is why government needs to have pragmatic and strategic policy and not emotion driven one. Appropriate legal frame work, production and marketing of environment friendly shopping bags, mass campaign for building public awareness against the bad effect of polythene may be some of the steps that government has considered to undertake. Given all popular actions and approaches that it has taken, government needs to do more for a cogent success. The existing laws are very inadequate to award punitive action against polythene users and producers. There should be law for specific purpose on ban of polythene substances that are responsible for degradation of environment. Private sectors can be encouraged to produce alternatives to polythene bags that are cheap, available, durable, comfortable and economic. Ministry of Jute may go for in depth research to make shopping jute bags that can compete with any synthetic bag in terms of price, utility and durability. Again there is an extensive Indian border around Bangladesh. It has been learnt that the bordering states of India are producing huge amount of plastics and polythene substances. Very cautious vigil should be kept there so that polythene product cannot enter into Bangladesh legally or illegally.

Government is doing much to take the people in its campaign for eradication of polythene menace. It needs to do more to the extent that the people should share that the problem of polythene is not a problem of the government alone, it is a problem of every citizen of the country. Every citizen should feel the concern, ownership and belongingness with the problem and act accordingly. Public-Private-Community Partnership (PPCP) concept that represents every segment of citizens of a state should have a roll to play to sustain the programme of eradication of polythene. Government can consider each Ward of Dhaka City Corporation as unit to cater this concept towards mobilization of people's support and participation.

Indiscriminate dumping of poly bags in outskirts

Polythene bag problem: An overview

SHAMSUL A. KHAN MAMUN

What government needs to do further is to take a policy to deal with the demand side of polythene bags. Government can undertake campaign programme so that people in general become conscious about their behaviour while they dispose of solid waste including polythene bags.

PRESENT government of Bangladesh has introduced ban on use of polythene bags in shopping from January 01, with a view to keeping the environment free of hazard. Two types of environmental hazards are created by polythene bag in Bangladesh. One is related to soil contamination and the other is clogging of drains and sewerage line in and around cities, particularly Dhaka city. A recent write up in a national daily depicted the suffering of people of a certain area caused by indiscriminately disposed of polythene bags that blocked water supply. Why the problem arised? One would like to attribute it to general behaviour of users, in the words of environmental planners 'problem of collective action'. The argument is that people who use polythene bags dispose them of hither and thither without considering the consequences. In disposing of polythene bags attitude of users is 'not in my back yard' (NIMBY). Polythene is a non-perishable item due to its chemical composition. Polythene neither mixes with soil (not bio-degradable) nor is washed away easily through drains or sewerage line causing different problems.

From my experience I find that in developed countries like Britain polythene bags have been used in the same way as it has been in Bangladesh. But problems arised in Bangladesh, not in Britain. Why? In this article I intend to give an answer to this question. The experience I have gained in London during the period of my stay there is used here.

Britain is one of the eight economic giants of the world where people are highly educated with high per capita income. Use of polythene bag is widespread there. Almost all sorts of food come to market in packet, either of polythene or paper. As people shop everyone carry that in polythene bag home. What people do with that polythene bag is a matter of information for the people of Bangladesh. It is people's 'behaviour' that keeps the problem away.

After carrying them home, polythene bags are not disposed of outside home on the street or nearby place indiscriminately. Everybody places the bag in waste-basket placed inside house. This basket is used as container for storing solid waste both organic and non-organic generated inside the house. When the basket is full, the opening is sealed and it's carried outside to nearby dustbin or disposal site and disposed of. Waste recycling trucks of borough council (local authority that is responsible to manage solid waste) collects these bags containing waste and transports them to specific recycling sites before final disposal. In the recycling site polythene bags are sorted out from waste, followed by systematic disposal in specific disposal site prepared for disposal of polythene bag. Few borough export bags to the Netherlands where polythene-recycling industries are located. As I asked one borough authority about the recycling of polythene bag, I was informed that it was not cost-effective in Britain.

From the experience, it is learnt that there are two parameters that contribute to successful management of polythene bags in Britain. One is people's attitude and the other one is waste collection activity of borough authority. There people do not suffer from NIMBY syndrome. People are conscious in their behaviour. People of Britain do not dispose of waste (either organic or non-organic) just around. Each citizen is very concerned about his/her responsibility to keep the environment clean. Every body puts waste generated in house in waste-basket, after the basket is full every one takes it to the dustbin outside home and empty it there. On the other hand authority responsible for collecting waste is very careful in ensuring that no polythene bag or waste spills over dustbin on the street or drain. Due to disposal of polythene bags in a certain place, soil contamination remains confined to the site rather than spreading over around.

So the problem of polythene bag in Bangladesh encompasses more the demand side than the supply side. But the government of Bangladesh is only addressing the supplyside of polythene bags not the demand side too. I like to opine that had the people of Bangladesh or users of polythene bags behaved like those of Britain, there would not have been so much problem with polythene bag here. But what we find here in Bangladesh is very shameful for us. We are not habituated in using wastebasket inside our house and outside of house there is dearth of dustbin where people could dispose of waste properly. And where there is a bin, all the garbage is not put within, rather littered all around it there. This scenario is very vivid if any one makes an observation traveling around Dhaka city. We dispose of all sorts of waste including polythene bags outside our houses indiscriminately. On the other side of the problem, waste collection rate of municipal authority concerned is very unsatisfactory that has resulted in further spillover of waste including polythene bags on the nearby drain/sewer line. Each day in Dhaka city sixty lac polythene bags are used and of them only 20 per cent is collected by tokais from the open space and rest of them remain uncollected, much of which finds way to drains and sewer lines.

Under such a circumstance present government action, though laudable, may not rid the country fully of the problem. It could generate another problem related to polythene economy. Presently there are around 800 polythene bag manufacturing units in Bangladesh where around forty thousand people are employed. In these industries polythene commodities reportedly worth of Tk. 225 core are manufactured each year. Of these, products equivalent to Tk. 75 core are claimed to be exported.

In my view what government needs to do further is to take a policy to deal with the demand side of polythene bags. Government can undertake campaign programme so that people in general become conscious about their behaviour while they dispose of solid waste including polythene bags. Government can resort to economic policy instrument like tax, fine, penalty to address the use of polythene bags and proper disposal of solid waste including polythene bags. Government can introduce social tax on manufacturing units so that they are motivated to diversify their products in favour of government policy. In addition government can introduce penalty or fine to tackle indiscriminate disposal of all sorts of solid waste. Environmental economists argue that economic instrument is helpful to overcome the problem like 'NIMBY'.

Shamsul A Khan Mamun is a member of Bangladesh Civil Service (Education) Cadre. OSD (Lecturer), Directorate of Higher Education, Ministry of Education.