

# PROTECT ENVIRONMENT BY RE-DUCE – RE-USE & RECYCLING (3R's)

By

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## **Introduction**

Since sustainable development is the corner stone of all efforts by the government, therefore, concern for environment its protection, renewal and enrichment has been reckoned as obligation towards the betterment of all the citizens at large. Pakistani cities are facing problems of urban congestion, deteriorating air and water quality and waste management while the rural areas are witnessing rapid deforestation, biodiversity and habitat loss, crop failure, desertification and land degradation. There is increasing realization that many of these issues are compounded by climate change. Environmental degradation is intrinsically linked to poverty because of the overwhelming dependence of the poor on natural resources for their livelihoods whether agriculture, forestry, fisheries, hunting etc. Poverty combined with a burgeoning population and rapid urbanization, is leading to intense pressures on the environment. Significant strides have been made in Pakistan for forwarding the environmental agenda identifying itself as an integral element of the national mainstream development with Mid-Term Development Framework 2005-2010, which also lends itself to address sustainable environmental development as a vehicle for economic-growth. Because of global warming, pollution, diminishing forests, and a limited supply of natural resources, people are becoming more aware of the importance of protecting the environment. Waste in the environment affects the air, water, land, animals, plants, and humans. One way people are doing their part to protect the environment by adopting Reduce, Reuse, and Recycle Waste Program. The 3R program reduces the amount of garbage going into landfills thereby protecting and conserving our environment.

## **Air Pollution**

The National Conservation Strategy (NCS) of Pakistan, considers air pollution in conjunction with water pollution, and places considerable emphasis on these issues. Air pollution by its very nature is highly visible and has noticeable impacts on human health and on the environment. As such, it has received considerable attention as one of the primary environmental issues in the country. Nevertheless, measuring air pollution and assessing the extent of air quality degradation is a complex process.

## **Reduce**

Waste minimization or waste reduction is the process and the policy of reducing the amount of waste produced by a person or a society. Reducing will help in conservation efforts and decrease landfill waste and energy use. Reducing results in less pollution and a cleaner environment. It also helps to conserve natural resources. Waste minimization is also strongly related to efforts to minimize resource and energy use. For commercial output, usually the fewer materials are used, the less waste is produced. Waste minimization usually requires knowledge of the production process.

## **Reduce Waste in Industries**

By using more efficient manufacturing processes and better materials will definitely reduce the production of waste. The applications of waste minimization have led to the development of innovative and commercially successful replacement products. Waste minimization often requires investment, which is usually compensated by the savings. However, waste reduction is part of the production process. The followings are some of methods of waste reduction processes:

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ISLAMABAD (Aug-2007 to Aug-2008)											
Months	NO2	CH4	CO	SO2	O3	MC	Wind Spd	Wind Dir	Temp	RH	Radiation
	ug/m3	ug/m3	mg/m3	ug/m3	ug/m3	ug/m3	m/s	degrees	degC	%	W/m2
August - 2007	34	1826.5	0.754	2.6	66.4	44.8	1.2	149	29.1	77.8	215
September-2007	40.21	2335.08	1.00	3.32	59.10	44.65	1.20	171.13	25.90	76.39	188.20
October-2007	69.19	4387.61	2.14	7.61	40.71	74.55	1.13	203.00	19.92	67.32	168.52
November-2007	76.70	6344.90	3.47	9.18	21.13	128.38	1.05	161.34	14.27	76.58	103.47
December-2007	29.14	5229.33	2.46	6.71	17.37	104.36	1.23	178.84	9.82	75.16	99.17
January - 2008	29.75	3777.34	1.64	9.38	13.44	78.35	1.49	191.86	7.02	70.82	115.27
February-2008	31.10	3416.94	1.36	6.37	36.38	79.63	1.55	195.11	11.52	64.65	135.36
March-2008	22.38	3274.75	1.23	4.70	41.37	68.90	1.52	189.34	20.17	54.47	193.87
April-2008	16.38	2592.74	0.91	2.87	51.90	100.60	1.51	183.96	22.05	62.80	237.01
May-2008	20.46	1958.98	0.73	4.07	88.63	88.56	1.48	161.53	28.27	46.88	274.54
June-2008	12.75	1750.01	0.35	2.08	92.44	102.60	1.43	116.04	29.92	66.99	259.96
July-2008	23.41	1690.05	0.51	3.10	66.90	11.28	1.20	129.06	29.00	76.88	231.75

Source Pak EPA

### **Resource Optimization**

Minimizing the amount of waste produced by organizations or individuals goes hand-in-hand with optimizing their use of raw materials.

### **Reuse of Scrap Material**

The introduction of waste management techniques in the processes which enable production scrap to be immediately re-incorporated at the start of the manufacturing process so that they do not become a waste product.

### **Waste Exchanges**

The waste product of one process becomes the raw material for a second process. Waste exchanges represent another way of reducing waste disposal volumes for waste that cannot be eliminated.

### **Improved quality control and process monitoring**

Taking steps to ensure that the number of reject batches is kept to a minimum. This is achieved by increasing the frequency of inspection and the number of points of inspection. For example, installing automated continuous monitoring equipment can help to identify production problems at an early stage.

### **Reduce Waste at Work:**

Following are few examples of daily use;

- ! Order supplies in bulk to minimize packaging waste and return damaged materials instead of throwing them away.
- ! Reduce energy costs by developing a policy to ensure that the most energy efficient equipment is purchased.
- ! Reuse old supplies and equipment, or consider donating to organizations etc.
- ! Reduce paper waste by photocopying double sided, printing double sided or using singled sided waste again as notepaper or for drafts.

### **Reuse**

Reuse is the term where an item can be used more than once. It also includes conventional reuse where the item is used again for the same function. In contrast, recycling is the breaking down of the used item into raw materials which are used to make new items. By taking useful products and exchanging them, without reprocessing, reuse help us save time, money, energy and resources. In broader economic terms, reuse offers quality products to people and organizations with limited means, while generating jobs and business activity that contribute to the economy.

### **Advantages**

- ! Reduced needs and Reduced disposal costs
- ! Cost savings for business and consumers as a reusable product is often cheaper than the many single use products it replaces
- ! Energy and raw materials savings as replacing many single use products with one reusable one reduces the number that need to be manufactured
- ! Refurbishment can bring sophisticated, sustainable, well paid jobs to underdeveloped economies

### **Dis-advantages**

- ! Reuse often requires cleaning or transport, which have environmental costs
- ! Some items could be hazardous or less energy efficient as they continue to be used
- ! Reusable products need to be more durable than single use products and require more material

- ! Sorting and preparing items for reuse takes time, which is inconvenient for consumers and costs money for businesses

### **Recycle**

Recycling involves processing of used materials into new products to prevent waste of useful materials, reduce the consumption of fresh raw materials, reduce energy usage, reduce air pollution, water pollution by reducing the need for "conventional" waste disposal, and lower greenhouse gas emissions as compared to virgin production. Recycling is a key component of modern waste management and is the third component of the "Reduce, Reuse, and Recycle" of waste hierarchy. Recyclable materials include many kinds of glass, paper, metal & textile etc, although similar in effect, the composting or other reuse of biodegradable waste such as food or green waste.

### **Recyclable Plastics**

The plastics recycling collection, sorting and reprocessing industry is well established in Pakistan, from pre-consumer industrial scrap right through to post-consumer domestic packaging material. This situation has led to the development of a viable plastics reprocessing industry in our country. The plastics reprocessing industry and policy makers are concerned about the potential impact of biodegradable plastics on the current mechanical recycling industry and its continued expansion.

Shopping plastic bags in Pakistan has emerged an environmental issue due to wide use (because of low economic cost), poor collection of municipal waste, littering and burning of garbage. The black polythene bags which were being made from recycled granules (Grade-III) have been eliminated due to the efforts of Federal and provincial governments. To discourage use of plastic bags, the Ministry of Environment launched a campaign "Say NO to plastic bags". This campaign got popularity but due to limited mass awareness budget, the campaign lost its momentum.

### **Benefits of 3 R's**

- Less waste generation
- Conservation of environment and natural resources
- Reduction in pollution
- Value added to economy
- Decreases the cost of waste disposal
- Decreases the land required for disposing