

Greening the Garments Accessories & Packaging Industry

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Executive Summary

Recognizing the changed circumstances and the potential degradation of the environment the GOB found it necessary to upgrade the environmental pollution control ordinance 1997. The environmental conservation Act 1995 was passed in the parliament and came into force in June 1995. A brief description of waste and waste management and aspects of Initial Environment Examination(IEE), Environment Impact Assessment(EIA), Environment Management Plan(EMP) and Environmental Management System have been included for appraising industries.

Pollution has become the first enemy of the mankind. Industrial revolution of 19th century led to environmental disaster. The whole world is now more afraid of pollution rather than nuclear blast. Technological advancement has brought revolutionary changes in life style and national economy with overwhelming power over nature. The protection of environment has become a major issue around the globe for the well being of the people and economic development in a balanced manner.

The trouble with environmental compliance is that it is still viewed with circumspection by a large part of the industry. While social compliance was a visible problem, inside the industry, environmental compliance is seen, in layperson's terms, as taking care of your garbage, and not many industries are prepared to do that. Also worrying, is that while the cost of social compliance has been internalized by most factories, environmental compliance is still generally perceived as a sunk cost by the industry. Yet it is absolutely vital for the long term sustainability of the sector and to ensure that Bangladesh gains a competitive edge in the apparel market, via greater market access.

The present environmental condition of Bangladesh is not at all equilibrium. Severe air, water and noise pollution are threatening human health, ecosystems and economic growth of Bangladesh. Air pollution caused due to increasing population, burning fossil fuels, industrialization and associated motorization. The water pollution is mainly caused due to industrialization. The inhabitants of major cities of Bangladesh are also exposed to high level of noise pollution. Environmental degradation of Bangladesh is also caused due to poverty, over-population and lack of awareness on the subject. Few steps have been taken by the government to improve the environmental degradation and pollution control. This paper analyzes the different types of environmental pollution and associated health hazard in Bangladesh. It also discusses the different governmental steps as well as some suggested steps to improve the pollution control. About 2500 industrial units were listed by DoE to penalize in the recent months for non-compliance of environmental standards. The paper has also discussed the issue of Equator Principles of IFC (World Bank) as well as Green banking initiatives of Bangladesh Bank. The paper has given due weightage of Pollution control and environmental management system for balancing between the ecology and economic development vis-à-vis for cleaner production and sustainable consumption.

Introduction:

In pursuance of the Stockholm mandate, the government of Bangladesh actively participated in the evolutionary process of protecting global environment. As a result, the Water Pollution Control Ordinance was promulgated in 1973 followed by the Environment Pollution Control Ordinance in 1977 and in 1985 Department of Environment (DOE). The idea of environmental protection was first recognized and adopted the Environmental Policy in 1992. Following the environment policy the Environment Conservation Act 1995 was adopted for the conservation, improvement of environmental standard and controlling the pollution of environment. In addition Environment Conservation Rule 1997 was passed to supplement the Act. Another milestone in this regard was the Environment Court Act, 2000. This Act was passed for the purpose of trying cases involving offences regarding violation of environmental laws. However still there are some limitations of these environmental related laws. An important step in this regard was the formulation of the national Environment Management Action Plan (NEMAP) by the Ministry of Environment and the objectives of Environment Policy are to:

- maintain ecological balance and overall development through protection and improvement of the environment;
- protect the country against natural disasters;
- identify and regulate activities which pollute and degrade the environment;
- ensure environmentally sound development in all sectors;
- ensure sustainable, long term and environmentally sound use of all national resources; and,
- actively remain associated with all international environmental initiatives to the maximum possible extent.

If untreated waste water is discharged in to a water stream then the oxygen level of water downstream may be lowered because of the oxygen demand exerted by the constituents of the waste water. The volume and concentration on waste depend primarily on the manufacturing process viz. process technology. Even for a given manufacturing process, the amount of waste generation depends upon several factors such as:

House keeping practices: refers to simple measures such as arresting of leaks in the pipe works, stopping unnecessary overflow from vessel, improving material handling to reduce losses. Poor house keeping can significantly contribute to generation of waste.

Extent of process control: process control includes setting of process parameters to optimum levels leading to the best possible product yields and minimum inputs of raw

materials and resources such as energy. If the process control is not optimal, then the product yields are lower leading to higher wastage.

Product quality requirements: It refers to the commercial specification depending on the market demand and the nature of the products which may lead to more waste generation

Management systems and initiatives: It includes operation, reporting and assessment of the entire sequence such as procurement, operation of manufacturing process and quality control. Management has to give importance of wastage control although the process.

CHAPTER I- Environmental Profile of Bangladesh

Salient features of Bangladesh Environment Conservation Act 1995 and Rules 1997

Power of entry etc. (1) Any person authorized by the Director General shall be entitled to enter, at all reasonable times any building or place for the following purposes:

- a) to perform duties conferred on him under this Act or rules;
- b) to inspect any activity in such building or place in accordance with this Act.
- c) to examine or test any equipment, industrial plant, record, register or any other important matter relating thereto;
- e) to seize any equipment, industrial plant, record, register, document or other matter punishable under this Act or the rules.

(2) The provisions of the Code of Criminal Procedure, 1988 (Act V of 1988) shall be applicable in respect of any search or seizure under this Act.

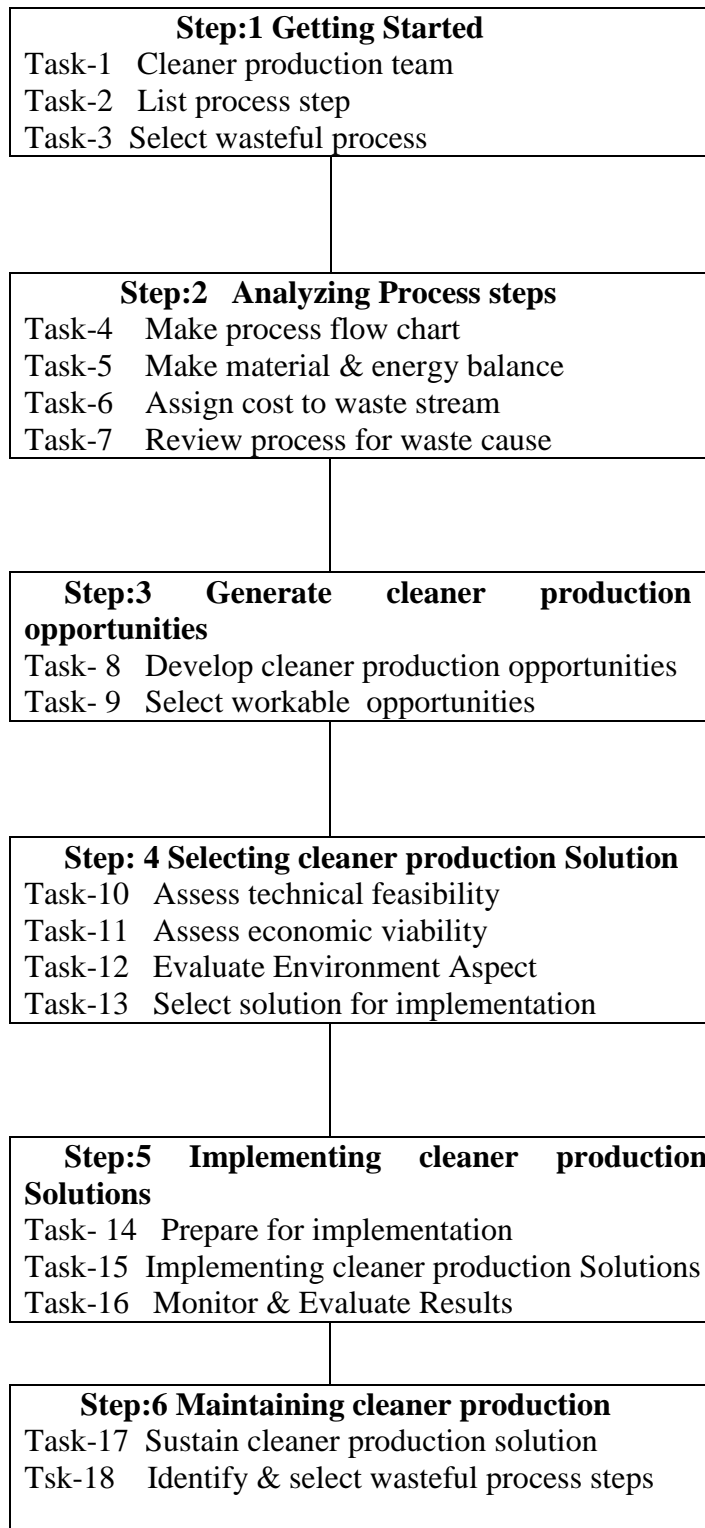
Power to collect samples etc.

Every person authorized by the Director General may, collect from any factory, premises or place samples of air, water, soil or of any other substance for the purpose of analysis.

Environmental clearance. - No industrial enterprise shall be established anywhere without obtaining a clearance from the DOE

Punishments-Offenses by companies. Where the person contravening any provision under the Act. are subject to punishment.

Systematic methodology for an effective cleaner production program



Limitations of the environment laws

1 Need for a Sectoral Policy Approach

2 Addressing Policy Gap:

3 Regional and Bilateral Approach:

4 Public awareness campaigns and community involvement:

5 Changes in institutional, administrative and organizational arrangements:

6 Strengthening the legal system: Since many environmental problems are partly due to non-enforcement of existing laws, the legal system would be strengthened.

7 Strengthening fiscal measures (establishment of fiscal incentives or subsidies)

8 Strengthening the DOE technical Department and putting Technically qualified DG instead of a generalist.

Sources of environmental pollution

1. Industrial Discharge.

2. Industrial Waste and Effluent.

3. Noise Pollution.

Effect of environmental pollution

Severe environmental pollution is threatening human health and economic growth of Bangladesh. Bangladesh could avoid 10,000 deaths and save between 200 and 500 million dollars a year if indoor air pollution in four major cities can be reduced to acceptable limits. Industrial emissions cause different waterborne disease and damage to health. Noise pollution causes mental and physical illness among the people. Sound pollution causes deafness to heart attack.

Waste and Waste Management

What is Industrial Waste?

Waste is defined by public advisory panel of Chemical Manufacturing association USA as:

“Any gas, liquid or solid residual material at a facility, whether hazardous or non hazardous, that is not used further in the production of commercial product or provisions of a service and which itself is not a commercial product”. Waste is:

- A wrong substance
- At a wrong place
- At a wrong time
- In a wrong quality

Sources of Industrial Waste;

- in manufacturing operations
- rejected raw materials or products released as effluent
- Utility Operations

Approach of waste management

The initial steps to be taken by an industry are to introduce as an integral part of overall industrial management an Environmental Management System (EMS). Principles of EMS are:

- compliance
- pollution prevention
- continuous improvement

Elements of EMS:

- preparatory review: industry to identify strengths, weaknesses, risks and opportunities as basis for establishing an EMS
- Environmental Policy: Policy is to be developed by top management & get commitment from all-top to down the levels
- Organization and Personnel: Management & worker are to be made responsible for EMS implementation
- Environmental aspects & associated impacts: Identifying evaluation process for products, services& maintain records
- Environmental Management & Manual& documentation: This is permanent record and may be revised as required
- Environmental Objectives & targets: There must be clear objectives and targets to achieve
- Operational Control: Appropriate control & verification process should cover all functions, activities and process
- Environmental Management records: Records must be maintained in distinguished formats for EMS

UNEP concepts of cleaner production:

- Cleaner production is the continuous application of an integrated prevention environmental strategy to processes and products to reduce risk to human and the environment
- For production processes, cleaner production includes conserving raw materials and energy elimination toxic raw materials, and reducing the quantity and toxicity of all emissions and wastes before they leave a process
- For products the strategy focuses on reducing impacts along the entire life cycle of the product, from raw material extraction to the ultimate disposal of the product.

Means of achieving cleaner production

- Product designs
- Good house keeping practices
- Equipment modification
- Process modification
- Raw materials substitution
- Innovative technology
- By products recovery from waste
- Recycling the waste
- Reuse of waste

Advantages of cleaner production

A cleaner production can typically result in the following economic benefits and significant competitive edge:

1. Raw materials consumption, hence cost reduction
 - Materials/Chemical consumption is reduced
 - Water consumption reduced
 - Energy consumption reduced
 - Raw material handling and storage cost reduced
2. Waste treatment cost reduced
 - Energy consumption in treating waste is reduced
 - Chemical required for waste treatment is reduced
 - Less manpower & equipment is required
 - Improves process efficiency
3. Process efficiency is Improved
 - Product yield is improved

- Equipment availability
 - Energy requirement is reduced
 - House keeping is improved
 - Pollution potentiality is reduced
 - Reduction of waste disposal
4. Waste disposal cost is reduced
- Quantity of waste generation is reduced
 - Less storage space is required, hence more production floor space
 - Wastes are segregated, hence less contamination
 - Less solid waste disposal area is required

Waste treatment classification

1. ETP which treats liquid wastes originating from industry
2. Treatment of gases emitted by an industry before released in the air
3. Treatment toxic or hazardous solids formed due to industrial activities before disposal

Modern technology from ttz Bremerhaven, Germany has invented low cost ETP in a much smaller area such as the space required by a 12 seater microbus in most of the cases.

CHAPTER II- Green Banking-Equator Principles-a global issue

Green banking is like normal banking, which considers all the social and environmental/ecological factors with an aim to protect the environment and conserve natural resources. It is also called as an ethical banking or a sustainable banking. They are controlled by the same authorities but with an additional agenda toward taking care of the Earth's environment / habitats / resources.

Ideal Benefits of Green Banking:

* Basically Ethical (Green) banking avoids as much paper work as possible and rely on online/electronic transactions for processing so that you get green credit cards and green mortgages. Less paperwork means less cutting of trees.

* Creating awareness to business people about environmental and social responsibility enabling them to do an environmental friendly business practice.

* Green (Ethical) banks adopt and implement environmental standards for lending, which is really a proactive idea that would enable eco-friendly business practices which would benefit our future generations.

* When you are awarded with a loan, the interest of that loan is comparatively less with normal banks because ethical banks give more importance to environmental friendly factors - ecological gains. Natural resources conservation is also one of the underlying principles in a green bank while assessing capital/operating loans to extracting/industrial business sector. Green Banking as a concept is a proactive and smart way of thinking with a vision for future sustainability of our only Spaceship Earth - as design science explorer Richard Buckminster Fuller called our Earth. In the New York Times, an article on the success/failure of green banking in US was analyzed and found to be that green banking was making progress though its profit margins were far below than the other commercial banking. SBI in India has also gone with an operational segment of green banking. Green banking requires a paradigmatic change in thinking about economics, business and finance. Its success would be greater if the world governments started to revise their economic paradigms from being 'monetary economics' to 'ecological economics' and begin to transform their accounting principles from purely being financial into ecological/operational energy accounting patterns.

In Bangladesh industries and projects have been classified into four categories based on environmental impacts. They are **GREEN** category having only 22 types of industries, **ORANGE-A** category having 26 types of industries, **ORANGE-B** category having 69 types of industries and **RED** category having another 69 types of industries. Bangladesh bank is making mandatory requirement for green banking from 2015. The author of this paper spoke very loudly and clearly about equator principles of IFC about 15 years before, but no one was listening to him. 70 prime banks of the world's 34 countries officially declared not to finance any project above USD 10 million if it was not environmental friendly. They made 3 categories of industries based on environmental impacts. This means no industry shall be financed by banks unless it is environment friendly. Every industry now has to obtain Environmental clearance certificate from the DoE and renew the same every year against certain fees based on the amount of investment in the industry/project. The DG of DoE gives public hearing on last Thursday of every calendar month to hear public problems regarding environmental issues. Environmental clearance certification needs varied nature of documents for different categories of industry/project based on its environmental classification.

DoE gives awards every year one in each category as under;

Category	Award classification	Award
1. Individual	1. Environmental conservation and pollution control 2. Environmental education & awareness 3. Environmental research & innovation	21 crt. Gold medal of 2 total weight, Tk. 50000 cheque, crest and certificate for each classification
2. Institutional	1. Environmental conservation and pollution control 2. Environmental education & awareness 3. Environmental research & innovation	21 crt. Gold medal of 2 total weight, Tk. 50000 cheque, crest and certificate for each classification

Equator Principles (EP)

Scope

The Principles apply to all new project financings globally with total project capital costs of US\$10 million or more, and across all industry sectors. The purpose of this study was to examine why companies “go green” and, in so doing, to refine a model that explains corporate ecological responsiveness by identifying motivations for adopting ecological initiatives and the underlying factors that lead to each motivation. For the purposes of this study, we define corporate ecological responsiveness as a set of corporate initiatives aimed at mitigating a firm's impact on the natural environment. These initiatives can include changes to the firm's products, processes, and policies, such as reducing energy consumption and waste generation, using ecologically sustainable resources, and implementing an environmental management system. Our concept of corporate ecological responsiveness refers not to what a firm should do, but to the initiatives that reduce the firm's “ecological footprint”.

The Equator Principles (EPs) is a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects and is primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making.

The EP applies globally, to all industry sectors and to four financial products 1) Project Finance Advisory Services 2) Project Finance 3) Project-Related Corporate Loans and 4) Bridge Loans.

Currently there are 80 Equator Principles Financial Institutions (EPFIs) in 34 countries have officially adopted the EPs, covering over 70 percent of international Project Finance debt in emerging markets.

EPFIs commit for implementing the EP in their internal environmental and social policies, procedures and standards for financing projects and will not provide Project Finance or Project-Related Corporate Loans to projects where the client will not, or is unable to, comply with the EP.

While the EP are not intended to be applied retroactively, EPFIs apply them to the expansion or upgrade of an existing project where changes in scale or scope may create significant environmental and social risks and impacts, or significantly change the nature or degree of an existing impact.

The EPs have greatly increased the attention and focus on social/community standards and responsibility, including robust standards for indigenous peoples, labor standards, and consultation with locally affected communities within the Project Finance market. They have also promoted convergence around common environmental and social standards. Multilateral development banks, including the European Bank for Reconstruction & Development , and export credit agencies through the OECD Common approaches are increasingly drawing on the same standards as the EPs.

The EPs have also helped spur the development of other responsible environmental and social management practices in the financial sector and banking industry (for example, Carbon Principles in the US, Climate Principles worldwide) and have provided a platform for engagement with a broad range of interested stakeholders, including non-governmental organizations (NGOs), clients and industry bodies.

Statement of Principles of EP

EPFIs will only provide loans to projects that conform to Principles 1-9 below:

Principle 1: Review and Categorization--When a project is proposed for financing, the EPFI will, as part of its internal social and environmental review and due diligence, categorize such project based on the magnitude of its potential impacts and risks in accordance with the environmental and social screening criteria of the International Finance Corporation (IFC).

Principle 2: Social and Environmental Assessment--For each project assessed as being either Category A or Category B, the borrower has conducted a Social and Environmental Assessment process to address, as appropriate and to the EPFI's satisfaction, the relevant social and environmental impacts and risks of the proposed project. The Assessment should also propose mitigation and management measures relevant and appropriate to the nature and scale of the proposed project.

Principle 3: Applicable Social and Environmental Standards-- For projects located in non-OECD countries, and those located in OECD countries not designated as high-income, as defined by the World Bank Development Indicators Database, the Assessment will refer to the then applicable IFC Performance Standards and the then applicable Industry Specific EHS Guidelines. Consequently, to avoid duplication and streamline EPFI's review of these projects, successful completion of an Assessment (or its equivalent) process and in compliance with local or national law in high-income OECD Countries is considered to be an acceptable substitute for the IFC Performance Standards, EHS Guidelines and further requirements as detailed in Principles 4, 5 and 6 below. For these projects, however, the EPFI still categorizes and reviews the project in accordance with Principles 1 and 2 above. The Assessment process in both cases should address compliance with relevant host country laws, regulations and permits that pertain to social and environmental matters.

Principle 4: Action Plan and Management System-- For all Category A and Category B projects located in non-OECD countries, and those located in OECD countries not designated as high-income, as defined by the World Bank Development Indicators Database, the borrower has prepared an Action Plan which addresses the relevant findings, and draws on the conclusions of the Assessment. Borrowers will build on, maintain or establish a Social and Environmental Management System that addresses the management of these impacts, risks, and corrective actions required to comply with applicable host country social and environmental laws and regulations, and requirements of the applicable Performance Standards and EHS guidelines.

Principle 5: Consultation and Disclosure-- For all Categories A and, as appropriate, Category B projects located in non-OECD countries, and those located in OECD countries not designated as high-income, as defined by the World Bank Development Indicators Database, the government, borrower or third party expert has consulted with project affected communities in a structured and culturally appropriate manner. For projects with significant adverse impacts on affected communities, the process will ensure their free, prior and informed consultation and facilitate their informed participation as a means to establish, to the satisfaction of the EPFI, whether a project has adequately incorporated affected communities' concerns. In order to accomplish this, the Assessment documentation, or non-technical summaries thereof, will be made available to the public by the borrower for a reasonable minimum period in the relevant local language and in a culturally appropriate manner. The borrower will take account of and document the process and results of the consultation, including any actions agreed resulting from the consultation. For projects with adverse social or environmental impacts, disclosure should occur early in the Assessment process and in any event before the project construction commences, and on an ongoing basis.

Principle 6: Grievance Mechanism-- For all Category A and, as appropriate, Category B projects located in non-OECD countries, and those located in OECD countries not designated as high-income, as defined by the World Bank Development Indicators Database, to ensure that consultation, disclosure and community engagement continues throughout construction and operation of the project, the borrower will, scaled to the risks

and adverse impacts of the project, establish a grievance mechanism as part of the management system. This will allow the borrower to receive and facilitate resolution of concerns and grievances about the project's social and environmental performance raised by individuals or groups from among project affected communities. The borrower will inform the affected communities about the mechanism in the course of its community engagement process and ensure that the mechanism addresses concerns promptly and transparently, in a culturally appropriate manner, and is readily accessible to all segments of the affected communities.

Principle 7: Independent Review--For all Category A projects and, as appropriate, for Category B projects, an independent social or environmental expert not directly associated with the borrower will review the Assessment and consultation process documentation in order to assist EPFI's due diligence, and assess Equator Principles compliance.

Principle 8: Covenants--An important strength of the Principles is the incorporation of covenants linked to compliance. For Category A and B projects, the borrower will covenant in financing documentation:

a) to comply with all relevant host country social and environmental laws, regulations and permits in all material respects;

b) to comply with the environmental requirements during the construction and operation of the project in all material respects;

c) to provide periodic reports in a format agreed with EPFIs (with the frequency of these reports proportionate to the severity of impacts, or as required by law, but not less than annually), prepared by in-house staff or third party experts, that: i) document compliance with the requirements and ii) provide representation of compliance with relevant local, state and host country social and environmental laws, regulations and permits; and

d) to decommission the facilities, where applicable and appropriate, in accordance with an agreed decommissioning plan. Where a borrower is not in compliance with its social and environmental covenants, EPFIs will work with the borrower to bring it back into compliance to the extent feasible, and if the borrower fails to re-establish compliance within an agreed grace period, EPFIs reserve the right to exercise remedies, as they consider appropriate.

Principle 9: Independent Monitoring and Reporting--To ensure ongoing monitoring and reporting over the life of the loan, EPFIs will, for all Category A projects, and as appropriate, for Category B projects, require appointment of an independent environmental and/or social expert, or require that the borrower retains qualified and experienced external experts to verify its monitoring information which would be shared with EPFIs.

Principle 10: EPFI Reporting--Each EPFI adopting the Equator Principles commits to report publicly at least annually about its Equator Principles implementation processes and experience, taking into account appropriate confidentiality considerations.

CHAPTER III-Cleaner Production and Sustainable Consumption-A Global Phenomena

What is Cleaner Production?

Cleaner Production is an integrated approach which focuses on making the most efficient use of inputs such as energy, water, gas and other raw materials thus minimizing waste and pollution at the source. There is a large scope of implementing Cleaner Production in a country like Bangladesh, because there is huge inefficiency in the use of raw materials at the input phase in the factories, i.e., due to improper pricing of products, gas, water and other inputs are not used as efficiently as they could be. And as with every such failure, therein lies an opportunity. If a factory can properly implement Cleaner Production measures, they can reduce their cost of inputs, increase profitability and most importantly, increase energy efficiency and decrease emissions, thereby reducing their individual carbon footprint and lessening some of the intense pressure on themselves from the community, media and government. From the standpoint of the factories, this means that they have also managed to reduce operating cost, improve productivity and will be able to gain an improved image which will help them facilitate better market access in the future. Currently in Bangladesh, a number of factories are piloting Cleaner Production programs at the behest of some of the large brands in the region and in association with some development organizations. The initial results from one specific such program has been extremely encouraging.

Social Compliance

Definition and Coverage of Social Compliance:

Compliance is defined as code of conduct, specification and or standard that must be followed by the organizations. Social compliance covers a wide range of social issues, such as, labor standards, fair labor practices, working conditions, health and safety issues, child labor, forced labor, free association and collective bargaining, management system etc. The buyers are becoming cautious about the social compliance of the GAP Sector also. On analysis a list of standards, which are commonly followed are stated below:

- i) Working conditions are safe and hygienic.
- ii) Prohibition of Forced Labor.
- iii) Prohibition of Harassment or Abuse.
- iv) Living Wages are paid.
- v) Child labor not used.
- vi) Working hours are not excessive.

- vii) No discrimination is practiced.
- viii) Regular employment is provided.
- x) No harsh or inhuman treatment is allowed.
- xi) Freedom of Association and Collective bargaining.

Environmental Compliance- Aspects of GAP Industry Sector

Environmental Compliance means conforming to environmental laws, regulations, standards and other requirements. In recent years, environmental concerns have led to a significant increase in the number and scope of compliance imperatives. Being closely related, environmental concerns and compliance activities are increasingly being integrated and aligned to some extent in order to avoid conflicts, wasteful overlaps and gaps. Like all other industrial enterprises every member units belonging to GAP Sector should maintain a moderate working condition for their employees. Although most of the well-established units try to comply with the environmental issues, but there are still cases of non-compliant units. Here is the list of principal policy issues relating to environmental compliance, which are maintained fully or partially by the industrial units which are especially relevant to garment accessories and packaging industry:

1. Environment and Health Policy
2. Security Policy
3. Buyers' Code of Conduct
4. Health & Safety Policy
5. Environmentally Safety Canteen

Environment and Health:

1. A safe and healthy workplace (ISO 14000)
2. Availability of drinking water at least 4.5 L/day/employee
3. Availability of clean glass/cup for drinking water
4. Pure drinking water supply
5. Availability of hot and cold water in the canteen
6. Drinking water signs in local language at working place.
7. Ensuring cleanliness of water vessel
8. Suggestion box register

Environmentally Sound Sanitation:

1. Separate toilet for women & men with exhaust fan
2. Toilet with proper privacy and lock facility
3. Urinal accommodation with exhaust fan
4. Effective water sewage system
5. Soap toilet together with water tap & exhaust fan
6. Dust bins
7. Daily cleaning log sheet
8. No smoking signs

9. Ladies/ gents toilet signs both in local language
10. Disposal of wastes and effluent

Environmentally Sound Safety Guard:

1. Metal glows in good condition
2. Rubber mats for ironers
3. First aid box
4. Ironers wearing sleepers
5. Trained employees
6. Motor / needle guard
7. Eye guard
8. Doctor and Nurse
9. Medicine and Medicine issuing register
10. Welfare officer

Sustainable Physical Environment:

1. Standard room temperature
2. Standard level of sound
3. Standard lighting facilities

So, compliance of the above requirements ensures the working environment of the industry. To protect the human rights every management should ensure the above compliance policy.

Different global supply chain operators have their own environmental Code of Conducts, which they impose on the manufacturers of garment as well as accessories & packaging materials. To clarify the issue, I have summarized below a number of critical environmental issues suggested by the selected certification agencies & global supply chain operators working in Bangladesh, namely, International Standardization Organization (ISO) 14000 series, EU Eco-Label, Oeko-tex standard 100/1000, C&A, Carre four, H&M, Levis etc. Knowledge about the environmental requirement of these organizations and compliance of these standards are critically important for survival and expansion of the products of GAP sector in the international market.

Chapter IV-The International Organization for Standardization (ISO):

ISO, a non-governmental organization is a federation of the national standards bodies of 157 countries from all regions of the world including developed, developing and transitional economies. The ISO has developed the ISO 14000 series. ISO 14000 is of ISO's most widely known standards and primarily concern with environmental management, which can be applied to any organization in any sector. It will minimize harmful effects on the environment caused by the organization's activities and achieve continual improvement of the company's environmental performance.

Provisions:

The ISO-14000 series is a typical management system and not really a code of conduct. Its generic management system refers to the organization's structure for managing its process or activities that transfer inputs of resources into a product or service which meet the organization's objectives, such as satisfying the customer's quality requirements, complying with regulations or meeting environmental objectives. The ISO-14000 series help companies to set up an effective environmental management system. It covers the following areas:

* **Environmental Management System:** specifies a set of guidelines for staged implementation of an environmental management system, including the use of environmental performance evaluation (14001 & 14004);

* **Life cycle assessment:** is a description of environmental performance of products and prioritizing environmental aspects (14040);

* **Environmental design:** integrates environmental aspects into product design and improvement of Environmental performance of products (14062);

***Environmental Communication:** refers to communicating environmental performance, information about environmental labels, declarations and the environmental aspects of products (14020);

* **Environmental Performance Evaluation:** means Monitoring of the environmental performance and evaluation (14030);

* **Monitoring System Performance:** information about the performance of the environmental management system (14010).

The European Eco-label

The European Eco-label was established in 1992 and is a certification scheme to help European consumers distinguish more environmentally friendly products and services. All products bearing the Eco-label, the "flower" has been checked by independent bodies for complying with strict ecological and performance criteria. There are currently 23 different product groups, among which textile products are important. More than 250 licenses have so far been awarded of which 63 for textile products.

Building Safety, Accidents and First Aid, Working Environments, Housing Conditions, Environment.

Environmental issues

Environmental concerns have led to governments throughout western Europe taking steps to deal with the issue of packaging waste and recycling. Recent packaging directives from the European Commission, for example, have led to the imposition of challenging targets for recycling, and national governments are also examining new ways to discourage packaging waste. Landfill is becoming a major political issue, with landfill taxes being introduced by governments in some cases before the necessary infrastructure is in place to provide alternatives to disposal. Recycling was though regarded as only the eighth most important driver to packaging growth out of the nine drivers. Views were distinctly mixed among industry respondents, with 36% of respondents regarding recycling as being of no importance to the market. In the case of consumers are less often concerned about the effect of their consumption habits on the environment rather, they are more concerned about the effect of the external environment upon themselves. Consumers have begun to desire all things natural, unaffected by 'unnatural' processes, hence the suspicion of GM foods, etc. Nevertheless, the packaging industry has taken steps to address the environmental question, but this has been more of a function of cooperation with government rather than strictly a marketing issue, although some consumers will seek out environmentally-friendly packaging and products as a matter of course.

Examples of companies leading the way in green initiatives.

Unilever: Washing Away Waste

Unilever looks at packaging in the context of the total product lifecycle. It reformulated reducing the package from 100 ounces to 32 ounces. This allowed them to cut the amount of plastic by %. They were also able to reduce the amount of corrugate by 45%, which allows more products to fit on pallets and store shelves. Its approach to responsible packaging takes into account environmental, social, and economic considerations. In 2007, the company formed a Responsible Packaging Steering Team to focus on five packaging principles:

- 1. Remove:** Eliminate, where possible, unnecessary packaging layers, such as outer cartons and shrink-wrap film. "By changing the shipping case of Wishbone salad dressing was able to save 2,100 metric tons of corrugate each year.
- 2. Reduce:** Shrink packages to the optimal size and weight for their contents. Unilever's redesigned Suave shampoo and conditioner bottle is 16% lighter with a 12% lighter cap, reducing the amount of resin each year by 670 tons in the United States alone.
- 3. Reuse:** Reuse packaging from the materials Unilever receives at its factories. Some cap suppliers ship product in reusable totes.

4. Renew: Maximize the proportion of packaging from renewable resources, and investigate the technical feasibility of biodegradable and compostable material.

5. Recycle: Increase the use of recycled, recyclable, and single-material components in packaging for easy sorting and recycling at the end of its use. Transitioned Mayonnaise from glass to a recyclable plastic jar.

It redesigned bottles of Vaseline hand lotion, reducing pack weights between 4% and 15% since 2003, depending on pack size. This is equivalent to 45 tons of plastic. It reduced the width of Lipton soup cartons, cutting material use by almost 16%, leading to 6,437 fewer pallets and 132 fewer trucks per year. It introduced Ragu and Bertolli pasta sauces in flexible pouches, which was first for the category. The pouch weighs 13.5 ounces—less than just the metal lid on the 26-ounce glass jar.

Estee Lauder: Pretty in Green

Estee Lauder's packaging program is based on sustainable packaging. It designs packaging that:

- Meets marketing criteria for performance and cost.
- Is sourced, manufactured, transported, and recycled using renewable energy.
- Maximizes the use of renewable and recycled source materials.
- Is manufactured using clean production technologies and best practices.
- Is physically designed to optimize materials and energy.
- Can be effectively recovered for re-use as a resource after the product has been consumed.

It recycles about 55% of everything that comes out of the factory that otherwise might go to waste and they don't landfill any materials. The company also created bundle packs and wraps to reduce materials and costs. The chipboard (paper) carriers it does use are made from 100% recycled material.

Keeping Score- the Wal-Mart Way

No discussion of eco-friendly packaging would be complete without the impact of Wal-Mart. In September 2006, the retailer announced that it was beginning to encourage 60,000 of its suppliers to reduce packaging. The goal was to cut packaging by 5% by 2013, as well as prevent 667,000 metric tons of carbon-dioxide from entering the atmosphere. According to Wal-Mart, the initiative was designed to save \$11 billion, of which the retailer would see savings of \$3.4 billion. In November 2006, Wal-Mart introduced its Sustainable Packaging Scorecard system to 2,000 private label suppliers. It then made it available to all suppliers in February 2007 for a one-year test phase. During that time, 6,371 suppliers entered 97,000 products into the Scorecard system. The Scorecard rates suppliers' efforts according to the following criteria:

- 15% greenhouse gases/CO2 per ton of production
- 15% material value
- 15% product-to-package ratio
- 15% cube utilization
- 10% transportation
- 10% recycled content
- 10% recovery value
- 5% renewable energy
- 5% innovation

Beginning in February 2008, Wal-Mart began measuring and recognizing suppliers for their efforts related to the Scorecard. Knowing they'll be evaluated using the Scorecard's sustainability metrics gives Wal-Mart's suppliers motivation to go green.

CHAPTER V-Weaknesses of the GAP sector of Bangladesh

Packaging associations seem to be a little reluctant in their role to bring packaging industry together in discussing their problems, sharing their achievements and working on creation of common facilities like a testing and training centre, CETP, cluster procurement etc.

Packaging associations should not work in water tight compartments to share common views and intent regarding the strategies and plans for the growth of the packaging sector as a whole. They also should collaborate in optimizing their costs

Packaging converters have a limited understanding of what it takes to compete in demanding markets such as the EU. As a result, they are not able to advise their export customers, leading to a fundamental gap in the ability for Bangladesh to succeed on exports

Inadequate efforts and resources to prepare packaging standards, provide testing facilities to the industry, conduct local R&D, train personnel etc

Lack of harmonized packaging standards with regional and international standards

Shortage of skilled manpower to run high end packaging manufacturing operations, develop designs, run test equipments etc

Lack of packaging policy and exclusive Packaging Industrial parks

Knowledge gap in packaging science and technology

Most of the industries work with sub optimal technologies, such as equipment, ETP etc.

Though weaknesses and threats exist but opportunities are there too for GAP locally and internationally. Packaging converters in general have been performing and responding to the relatively “simple” requirements of the RMG sector and are not geared up to address the complex issues of food preservation: mastering hygiene, preventing oxidation, aroma loss, UV degradation, transport worthiness etc

CHAPTER VI- Recommendations-Suggested Measures:

The units under GAP Sector are engaged in the production of items which are used in RMG industry as well as many other sectors of the economy. The RMG and other sectors, which use products and market their commodities to the world market through the global supply chain operators & must comply with their Code of Conducts otherwise, they will lose their market. And loss of market by RMG Sector means loss of market of GAP Sector. So, we must be cautious about the codes of conduct in respect of environmental standards. A number of suggested measures are listed below:

- i)** Awareness Building
- ii)** Green Building for Factory
- iii)** Installation of Effluent Treatment Plant (ETP)
- iv)** Industrial Estate for GAP Sector

v) Rethink> Reduce> Recycle> Reuse=FR4 Principle

Increasing socio-economic development coupled with rapid urbanization has resulted in significant growth in the manufacture and importation of packaged products. This has led to a massive increase in the generation of post consumer waste and environmental pollution. As per estimates household packaging waste generated in Bangladesh consists of 5% paper, 2.6%, metals, 2% glass and 4% plastic. The bulk of this is disposed off at refuse dumps where they are burnt, left to degrade or deposited in landfills. Unfortunately poor management of plastic waste has resulted in a lot of litter resulting in a bad image for plastics as packaging material. Uncontrolled littering has drawn the attention of government to introduce legislation to control the impact of waste on the environment.

vi) To encourage companies to invest in activities that will assist in Bangladesh’s efforts to introduce efficient waste management systems

vii) Companies which establish factories whose principal activity is waste processing including re-cycling will pay no corporate tax say for the first 5 years of their operations irrespective of location should be introduced.

viii) Establishing economy EPT plants under the ttz Bremerhaven, Germany technological assistance.

ix) The government has taken some steps to improve the pollution control of Bangladesh. But the steps are not adequate. As such, few more steps as under may also be taken to improve the environmental degradation:

1. Use of Environmental Technologies and Methods.

Environmental technologies and methods such as Geographic Information Systems (GIS), remote sensing and environmental impact assessment might be used for integrated policy formulation, decision-making, evaluation and monitoring of environment.

2. Development of Environmental Database.

A comprehensive environmental database may be made and the environmental planners might have the access for environmental up-gradation, planning and management. The database is to be updated regularly.

3. Environmental Education and Awareness.

Formal and informal methods of education might be adopted through local media, seminars, celebrations, workshops and student competitions to aware the people regarding the process of environmental degradation.

4. Industrial and Solid Waste Management.

The government might take appropriate measures to monitor emission limits and Market Based Incentives (MBI) for reducing pollution control. The industries might be given both technical and financial support for introducing mitigation measures, promoting green technologies, using less pollution technologies and recycling the waste.

5. Enforcement of Rules and Regulation.

Environmental Conservation Rules of 1997, traffic rules and other relevant environmental laws might be enforced further to punish the violation of the emission limits.

6. An Increased Focus on Minimizing Consumption

What I find most encouraging is the change of attitude that is more back to basics; packaging design that is green by default. Don't misunderstand, I am not at all critical of this approach, in fact I am convinced it is the only way we can drive positive, long term change. It will be successful because it is based in economics, not guilt and because in most cases the savings they produce are immediate with minimal upfront investment. Even though this economically driven change may not have the green banner on it, the results happen to be basic in regards to sustainability. Many of the products I now see being promoted can easily and accurately be categorized in the three basics R's of sustainability.

6.1 Reduce – the new focus is on thinner, stronger materials able to do the same job with less material. This is consistent not only in paper products but especially in plastics after another turbulent year of resin prices, negatively impacting all forms of transparent,

flexible packaging, and non-film products like plastic strapping, and carton sealing tapes. We are most definitely using less, not necessarily for the sake of the planet but for the sake of the bottom line.

6.2 Reuse – I see a lot more products that permit or encourage their reuse. Paper products such as boxes with specialty coatings designed to extend life and the increased popularity of returnable, reusable packaging such as totes, mailers, and other containers designed for multiple reuse. Companies love the economics of packaging that is not designed to be used and tossed, and they are taking full advantage of closed loop or internal return/reuse capabilities.

6.3 Recycle – if there is a long term positive impact to what appears to be for many companies a short term interest in sustainability, it is in this most important area. More products than ever before are being made with a large percentage of recycled content and even more are able to be easily recycled and are labeled as such. I would also say that most of the manufacturers I know use recycled materials because it saves them money and allows them to minimize the impact of multiple price increases on new or virgin materials.

x) Sustainable design brings it all together

Imagine being able to use less packaging, that is 50% recycled content and is 100% recyclable after many repeated uses? Those types of goals are being met every day and that is good for the bottom line and for the environment.

xi) The best eco friendly packaging solutions are those that are appealing to the company or consumer using them and also make economic sense. Yes, in some cases a compromise is made and perhaps it is not as green as some would like or the motives are not as pure as others would protest. However, positive change is positive change even if it is not perfect.

xii) Green Packaging: Waste Not, Want Not

By moving beyond conventional packaging methods and materials, companies can reduce their carbon footprints as well as their transportation cost and warehousing cost. Whether call it eco-friendly, sustainable, biodegradable, or natural, companies are looking for ways to "go green" with their packaging. While helping the environment is one benefit of eco-friendly packaging, packing products using fewer and more sustainable materials reaps additional rewards:

1. **Saving money.** Reducing excess packaging results in lighter and smaller shipments that cost less to transport. And greater quantities can fit on pallets, in shipping containers, in warehouses, and on retail shelves.
2. **Maintaining business.** Switching to green materials can help meet or anticipate customer demands for eco-friendly suppliers.

3. **Attracting consumers.** Many shoppers will choose an environmentally friendly product over a conventional package.

While eco-friendly packaging is a recent phenomenon, it is already a large and rapidly growing trend. Source reduction in packaging has been going on for decades as a way to reduce costs. Until recently, however, few companies were doing it to increase sustainability. Packaging specialists are also investigating new ways to recover materials. Packaging should be designed to optimize materials and energy consumption, while maximizing the use of renewable or recycled materials.

xiii) DOE must be technically strengthened rendering higher training abroad for rendering meaningful technical advisory and supervisory services to the industries of international standards.

xiv) Free Consultancy service by the DoE.

xv) Govt. to arrange foreign fund.

xvi) Govt. to provide long term loan at a lower rate of interest.

xvii) Govt. to provide land, energy and other infrastructural facilities.

xviii) Foreign donors to assist technically and financially.

xix) Assistance from the Ministry of Industry.

xx) Assistance from the Ministry of Environment.

xxi) Assistance from the Ministry of Finance.

xxii) Assistance by the buyers as a stake holder of the garments accessories and packaging industry sector

CHAPTER VII-CONCLUSION

However, the biggest change agent, or at least the most influential, have been the buyers and from the buyers, the message is loud and clear: “we want more environmentally compliant sourcing”. So, this is a critical time for the industry. With the tri-partite pressure points of the buyers, the government and the media, the time is ripe for some change and many entrepreneurs are starting to see that in order to make their business sustainable, these are the measures that need to come sooner rather than later. The first step to greater compliance from the perspective of a factory is possessing a functioning and economic effluent treatment plant (ETP). But unfortunately most of the industries in the country do not possess effluent treatment plants. Latest figures state that the 1,700 washing-dyeing finishing units alone discharge 98,000 cubic meters of waste water into surrounding water bodies and land. This is because a large percentage of those factories do not possess ETPs or do not properly use them.

Recently, the concept of cleaner production has rapidly emerged across other significant markets in the region and with excellent results. As it stands, if proper “cleaner production” methods are implemented across the industry then it leads to cost savings which can not only cover the cost of compliance but at the same time also create a better working environment and increase profitability. Going green in packaging offers multiple benefits reducing the costs associated with creating packaging, decreasing weight and volume to reduce transportation costs, making it easier for customers to unpack products and creating less packaging-related waste.

The implementation of the Environment Policy is handicapped by some institutional limitations and thus appears to be less effective in responding to the demand side of the service and interventions. If such institutional issues are not rightly addressed, the Policy and the Act therefore, as one observer noted that it served the “rhetoric purposes only for the politicians and bureaucratic leadership”. The National Environmental Policy does not clarify the measures needed for integrated efforts for environmental protection. It also fails to address the need for policy guideline concerning issues like, bio-safety, intellectual property right, watershed management and trans-boundary movement of hazards and environmental problems. However, with some modifications the National Environment Policy of Bangladesh can still be considered as a good foundation to bring about necessary changes to address and mitigate the major challenges of environment and for further improvement. Therefore, a broad based consensus among various stakeholders to implement the Environment Policy with necessary modifications will be crucial with highest political will, as a pre requisite.

Garment accessories and packaging industry is an emerging SME Sub-Sector which has grown in response to the increasing demands of the RMG Sector. Therefore the units are located in the nearby location of the garment factory. The problems and challenges of social and environmental compliance are almost similar to those of RMG Sector. RMG Sector is already facing serious criticism worldwide for various non-compliance of social and environmental standards. Time has come for the member units of GAP Sector to be vigilant about compliance issues; otherwise this sector will face even worse

consequences. The BGAPMEA with its limited resources has already started campaigning for compliance issue. The INSPIRED Project, funded by EU, is one of the most important steps to achieve the goal of social and environmental compliances by the GAP sector. Govt. and other donor agencies should continue their support to strengthen this process through compliance monitoring capacity building and related measures.

END PAPER