

## CHAPTER 15

# THE ROLE OF GOVERNMENT IN PROMOTING AND IMPLEMENTING ENVIRONMENTAL MANAGEMENT ACCOUNTING: THE CASE OF BANGLADESH

ABDUL HANNAN MIA

*Department of Management Studies, University of Dhaka,  
Bangladesh*

hannan@dhaka.agri.com

**Abstract.** This paper aims at describing the roles of government in promoting and implementing environmental management accounting (EMA) in the light of the benefits in developing countries in general and in Bangladesh in particular. The promotion and implementation of EMA can gear up its benefits such as increase in fund, improve environmental performance, contribution to sustainable development, effective decision-making, increase market share, develop environment-friendly industrial sector, etc. Nowadays, external reporting aspect of EMA has created the awareness of the government to play its due role in promoting and implementing EMA. The government can play a role in promoting and implementing EMA through a variety of measures: formulating a policy package regarding EMA promotion and implementation, developing guidelines for the companies regarding the process of EMA reporting and for the government agencies regarding implementation of EMA etc. for example. There are available policy options encouraging companies to practice EMA. These are information policy instruments; self-regulatory policy instruments, incentive base policy instruments, and direct regulatory policy instruments. The government can also formulate policy options at different levels as on a hierarchical basis for the implementation of EMA. The regulatory agencies of the government at various levels like the security exchange commission, financial institutions including banks, stock markets and insurance companies can also play a vital role in implementing EMA by being very strict in assessing the impacts before various financial and non-financial support is provided to the enterprises. Finally based on the available literature, the mentioned government practices of EMA; a suitable model for easy promotion and implementation of EMA in the developing countries is suggested. This paper will benefit a number of parties including the government of developing countries as to how EMA can be implemented. The researchers in this field can use the study as a reference material or as a source of further research ideas generation. The study will also benefit the academicians, practitioners and the professionals in the field of environmental accounting in general and EMA in particular.

## 1 THE PRELUDE

Environmental Management Accounting (EMA) is broadly defined as the identification, collection, estimation, analysis, internal reporting and use of physical flow information, environmental cost<sup>1</sup>, and other monetary information for both conventional and environmental decision making within an organization. The main focus of EMA is not to assess the total environmental cost but to assess the production cost on the basis of materials flow. Poor quality materials or chemicals used in manufacturing/the production process pollute the environment and cause harm to society. Previously this pollution of the external environment was never internalized. It is believed that once organizations are made accountable for these societal costs, they would be compelled to minimize the potentially harmful effects of such activities. So organizations require that the potential environmental impact of their activities can be forecasted and accordingly the contingent liabilities and creating provisions for environmental risk be estimated. The growing concern for global environmental management for sustainable development has given a rise in the development of ISO 14000 that focuses on the design and standardization of sustainable industrial culture in general, efficient operation by the use of best environmentally sound technology, continuous improvement in environmental performance, environmental system auditing etc., among others, in particular.

Environmental management accounting has emerged based on the following premises: Firstly, the growing concern for environmental issues has given a rise in the need for effective environmental management by business and other organizations. Secondly, accounting and financial management techniques can help to support mutual benefits of both the organization's environmental management functions and its accounting and finance functions. Environmental management accounting is understood here as environmental accounting specifically addressed to supporting the information needs of the organization's own management.

A UN conference on human environment, which took place in Stockholm back in 1972, addressed environmental deterioration around the globe. The conference was an impetus to the government of most of the developing countries including Bangladesh. The Government of Bangladesh promulgated the Water Pollution Control Ordinance in 1973 based on which an environmental pollution control project was undertaken. This project, which was carried out in 1985, facilitated setting up the Department of Environment Pollution Control that was restructured in 1989 with full setup as the Department of Environment. Since then lots of rules and regulations have been framed.<sup>2</sup> Bangladesh is primarily an agrarian economy. But nowadays its industrial sector is making a significant contribution toward the GDP of the country. The contribution of this sector to GDP is 19.54 per cent (GOB, 2002) including both the contribution of large and small industries. The country's recent industrial policy, government fiscal policy etc. are congenial towards foreign investment and thereby industrialization. But industrialization pollutes the environment. The Department of

Environment (DOE) of Bangladesh, among others, has got some mandate related to industrial activities as stated in the later sections. DOE identifies seven (7) industries<sup>3</sup> that pollute the environment (Reazuddin, 2002).

## 2 OBJECTIVES OF THE STUDY

The broad object of the study is to identify the role of the government in promoting and implementing environmental management accounting. The specific objectives are to

1. Identify various policy roles of the government in promoting and implementing EMA
2. Identify various roles of the various government bodies in promoting and implementing EMA
3. Develop a model for promotion and implementation of EMA.
4. Provide suggestions to the government for the promotion and implementation of EMA.

To achieve these objectives information was collected from various secondary sources including government agencies, bodies, published and unpublished books, magazines, reports, etc., from home and abroad. Besides electronic media, web sites etc. also have been used to collect supplementary information.

For the purpose of EMA promotion and implementation the role of the government lies in following phases:

- The government must recognize the benefits that can be derived from EMA
- The government should be convinced about these benefits
- It must communicate these benefits to various government and non-government organizations
- Should take several courses of action to implement EMA through various government machineries.

## 3 ARGUMENTS FOR GOVERNMENTS IN PROMOTING AND IMPLEMENTING EMA

This section accommodates the reviews of major literature in the field of environmental accounting and environmental management accounting with a view to presenting arguments delineating the need for and opportunities of EMA for its promotion and implementation in Bangladesh. Bangladesh is a developing country. Promotion and implementation of EMA can speed up economic growth through various benefits and opportunities.

Environmental management accounting is not a subject to be kept in the academic exercise, as it brings many financial and non-financial benefits to organizations and society as a whole. The government should promote EMA for a number of practical benefits as described below:

### *1. Increase in funds*

Business logic for environmental consciousness has given a rise in operational, technical and bottom up pollution prevention programs. These types of concerns on the managerial level could save billions of dollars (Hart, 1997). The dramatic expansion in socially-responsible investment in Australia – assets of SRI managed funds grew by 86 per cent between 2000 and 2001 to USD 1.3 billion – is just one example of how green business practice can reap economic rewards. The practice of EMA helps to increase the fund in several ways.

*Firstly*, pollution prevention programs increase safety, and security of the operational and technical-level employees makes their working environment more productive. The productive environment augments production volume which in turn increases the company's funds. The working capital of MSA spinning mills Ltd. increased by 24 per cent in 2002 over the previous year after introducing a pollution prevention program in the factory (Annual Report, 2002).

*Secondly*, discharge of social responsibility has direct, positive influence on augmenting funds by popularizing the organization among the citizens. That is to say, citizens will prefer the company's products or services when the company exhibits increased social responsibility. The case of Dutch-Bangla Bank can be given as an example. The total amount available for investment in this bank increased by 39 per cent, reserve funds increased by 50 per cent and total assets increased by 25 per cent in 2002 over 2001 (Annual Report, 2002). This was the result of the bank's investments in social responsibility like sponsoring cricket, providing medicare to the poor, giving scholarships to poor but meritorious students, etc.

*Thirdly*, investment in pollution control devices is subject to depreciation. Charging depreciation on the equipment increases the funds in two ways. Non-cash expenses like depreciation are a direct source of funds. Apart from this, depreciation minimizes the profit thereby minimizing the tax amount thus maximizing the funds or cash flow.

### *2. Improve environmental performance*

EMA helps large and small enterprises in any sector to improve both their environmental performance and profitability. EMA uses costing tools that generate a win-win situation for both the environment of the country and a company's profit performance (Mia, 2003). The reporting and disclosure of environmental information

seems positively associated with the environmental lobby group concern about firms' environmental performance within a particular industry (Deegan, 1996). The costs incurred either for operation, maintenance or capital in nature usually have been found to have favourable impact on the performance. This is also true for developed countries (Skipworth et al., 2001) although there are findings that voluntary reporting does not measure the firms' true environmental performance (Fekrat et al., 1996, Freedman and Wasley, 1990). Apart from these, EMA involves disciplines like accounting, environmental protection, industrial production and business management etc. Thus EMA can be used both for tracking environmental change and for assessing corporate environmental performance.

### *3. Encourage the financial sector to contribute to sustainable development*

EMA complements a range of initiatives that the government of developed and developing countries are trying to introduce to encourage the finance sector to contribute to sustainable development with due focus on the environment. Financial sectors all over the world channel their investment in various industries. If EMA is practiced the individual firm or sector will be at an advantageous position in getting funding from financial institutions. Some banks, especially foreign banks, joint venture banks and financial institutions, top-rank firms top if their environmental performance is better although other factors remain constant. In view of the sustainable developments, eco-preneurs always receive the highest attention of the financiers. The leading financial institutions in Bangladesh started practicing preferential treatment to enterprises that have Department of Environment clearance as well as a positive environmental inspection report (Financial Express, 27 October 2003).

### *4. Effective Decision Making*

EMA facilitates deciding the best courses of action. EMA makes financial sense as it leads to organizations adopting cleaner production processes or be more resource efficient. It identifies the opportunities in the accounting system to build the business case for change. Environmental management accounting assists companies to identify the full range of environmental costs and benefits within traditional accounting systems and may, in some cases, lead to improved decision making. Availability of environment-related information, tools and techniques for allocating environmental cost, etc. increases the decision-making competency of the enterprises. EMA helps in effective decision making not only at the company level but also at the national government and international organization levels. The goals and the information needed for the various levels or functions differ quite a lot. While EMA is primarily an internal management tool for companies, it may also serve to improve information flows from companies to other levels of decision-making. Although previously,

environmental accounting was generally taken to cover only material flows, new approaches are making closer linkages between production processes and financial accounting methods, integrating both monetary and ecological measures. Thus EMA information will not help make effective decisions at the company level only, but at the national and international level as well. Besides, the stakeholders (shareholders, credit rating agencies, customers etc.) of the enterprises can also use the EMA information for their effective decision-making, and the various levels within an enterprise, i.e. production level and top management, can use EMA information for effective decision making at various operational and hierarchical levels. The range of decisions affected by environmental costs of one type or another is generally on the rise. Thus, EMA is becoming increasingly important not only for environmental management decisions, but for all types of routine management decisions like product and process design, cost control and allocation, capital budgeting, purchasing, supply chain management, product pricing etc. (Wilmshurst et al., 1998). The question of effective decision making in developing countries, including Bangladesh, has received great attention from corporate managers. Lack of updated, relevant information has been the main cause of decrease in the recovery ratio of government banks (Aleem, 1999, Chowdhury et al., 2003).

#### *5. Increase market share*

Green management reporting ensures higher output while using lower input; it generates less wastage with more effective use of raw materials in production eventually resulting in cost minimization. EMA minimizes costs and maximizes revenues, which eventually can increase market share (Welford et al., 1996). There are various possibilities that the practice of EMA increases the number of customers of the company. Companies that did not practice and implement EMA experienced abnormal negative returns (Mughalu et al., 1990, Hamilton et al., 1995, Bosch et al., 1998) or low sales and margin just after the announcement of the court decision regarding non-compliance of environmental performance of the enterprises under consideration. This causes customers to withdraw their patronization ultimately decreasing the market share of the company; the reverse being true in case of voluntary environmental reporting (Belal, 1997).

#### *6. Increase market value of the stocks*

Environmental management accounting increases the market value of the share. Although there are several findings on the impact of EMA, environmental reporting etc. the increase in the value of the share was found to have been influenced by the practice of EMA and reporting of environmental facts. Cormier et al. (2001) confirmed that the level of voluntary environmental disclosures is related to the market value

of the share. He also found that the pollution level in excess of a standard is associated with a firm's share value. It was found that the return on equity share in successful firms with social disclosure was higher than those companies without (Richardson et al., 2001). Although there are no study findings in Bangladesh regarding the impact of environmental reporting on the market price of the share, there are some findings that the share price or returns of the firms are being positively influenced by corporate reporting and disclosure of environmental information (Lancaster, 1999, Richardson et al., 2001).

### *7. Assessing risk*

EMA tools have been developed to predict the risk associated with environmental hazard. Organizational, operational and informational risks together with the risk associated with physical structure are directly or indirectly linked with environmental risk. Individual organization can develop tools and techniques to assess and thereby minimize the environmental risk. Scholars identified that the risk is associated with the external environment (Schaltegger et al., 2003) as well as the internal environment (Bala, 2002) of the organization. The EMA model can help management understand this risk when making managerial decisions.

### *8. Developing an Environment-Friendly Industrial Sector*

EMA helps management understand potential hazards that result from non-performance of environmental management in organizations. Practicing EMA highlights the sources from which organizational risk emerges, how these risks can be minimized or eliminated. Exercise of EMA thus helps the organization be risk-free for the society, and the acceptability of the organization to the stakeholders increases. A comprehensive framework for environmental management accounting provides information relevant to the decision maker. Correct decisions help the organization to be environment friendly (Burritt et al. (2002).

### *9. Potential Benefits of EMA to Government*

The industry's promotion and implementation of EMA can also benefit government in various ways.

*First*, the more industry is able to justify environmental programs on the basis of financial self-interest, the lower the financial, political, and other burdens of environmental protection on government.

*Second*, industry's implementation of EMA should strengthen the effectiveness of existing government policies and regulations by revealing to companies the true environmental costs and benefits resulting from those policies and regulations.

*Third*, the government can use industry EMA data to estimate and report financial and environmental performance metrics for government stakeholders such as regulated industries or the industry partners in voluntary programs.

*Fourth*, industry EMA data can be used to update government programs and policy design. The government can use industry EMA data to develop metrics for reporting the financial and environmental benefits of voluntary partnership programs with industry, innovative approaches to environmental protection, and other government programs and policies. Industry EMA data can be used for regional or national accounting purposes.

*Finally*, government organizations can implement EMA to reap the following benefits:

- Government EMA data can be used for environmental and other decisions within government operations, e.g. purchasing, capital budgeting, and federal facility environmental management systems.
- Government EMA data can be used to estimate and report financial and environmental performance metrics for government operations.

#### *10. Potential Benefits of EMA to Society*

EMA enables the more efficient and cost-effective use of natural resources, including energy and water. It enables the cost-effective reduction of pollutant emissions and reduces the external societal costs related to industry pollution, such as the costs of environmental monitoring, control, and remediation as well as public health costs. EMA provides information for improved public policy decision-making. It provides industrial environmental performance information that can be used in the broader context of evaluations of environmental performance and conditions in economies and geographic regions.

Apart from the benefits described above, the government can also realize the value of the opportunity that EMA can further through its promotion and implementation. Opportunities are the situations that arise with new dimensions; usually they exist for a short period within which the situations are to be exploited to obtain monetary or non-monetary gains. The global concern for the environment and sustainable development has identified some concepts – areas in both the developed and developing countries that open up corridors and windows to a variety of parties, professional bodies etc. EMA provides opportunities to make the total environment very friendly, conducive to cost minimization, product quality development, research and innovation, elimination of wastage. etc. This would give rise to a favourable investment climate and consequently economic development of the country.

From the above discussion it can be concluded that the government should realize the need for promoting EMA. The financial and non-financial benefits discussed



above would help the government take steps in promoting EMA in a developing country like Bangladesh. Once the government understands and realizes the benefits of EMA it should play its due role in its promotion and implementation.

#### 4 THE ROLE OF GOVERNMENT IN PROMOTING AND IMPLEMENTING EMA

This section describes the roles of various organs of the government in promoting and implementing EMA in Bangladesh. The government can play diversified roles for the promotion and implementation of EMA in two phases: first, at the start-up phase of the firm and second, at the survival and development phase of the firm. Irrespective of development phases of the enterprises, the government can develop policies and implementation guidelines as described below.

##### *1. Government Policies*

The government can develop congenial and industry-friendly policies which will play an important role in encouraging and motivating enterprises to adopt an EMA system to ensure that materials and production cost, with specific identification of environmental cost becoming fully inventoried, are properly allocated and clearly articulated. The government should circulate by gazette notification to all potential and existing entrepreneurs and all financial institutions that the project feasibility report, among other things, must reveal that the project is environment-friendly. No environment-unfriendly project would be financed; rather the government will penalize the institution for sanctioning financial or non-financial supports. The government can help promote and implement EMA through formulating policy packages as stated below.

##### *2. Information Policy Instruments*

The government may develop information policy instruments for the promotion and implementation of EMA. An information policy instrument is the mechanism of identifying, collecting and disseminating information to the concerned parties regarding the benefits, opportunities etc. of practicing EMA. In order to promote and implement EMA, the government can – through its respective ministries – circulate newsletters highlighting the benefits of promoting and implementing EMA. Development of EMA-related software also would be advantageous for the industries that wish to promote and implement EMA. Provision for training and counselling regarding EMA is important for the promotion and implementation of EMA. In collaboration with the Ministry of Trade and Commerce the Ministry of Information and Technology exercise these responsibilities.

### *3. Self-Regulatory Policy Instruments*

The government must develop detailed guidelines and mechanisms to control the environment-related activities of enterprises. This policy instrument will identify and tie up the regulators at various levels so that the implementation of EMA will automatically be regulated and implemented. A variety of self-regulatory policies can be exercised for the implementation of EMA. For example, working with ISO, EMAS, GRI, accounting associations, banks and other financial and industrial organizations etc. are self-regulatory policy measures can be exercised for the promotion and implementation of EMA.

### *4. Incentive Base policy instruments*

An incentive base policy instrument deals with various types of monetary and non-monetary motivational instruments that help energize mental drive towards the promotion and implementation of EMA. Declaring cash prize, subsidize tax, import /export subsidies, differential duties, preferential tax structure, availability of low interest loans, and other preferential treatment to the best EMA performers may help develop motivation to promote and implement EMA. Issuing certificates, appointing environmentally important person (EIP), inviting them as special persons at various public and strategic meeting, seminars, for technical assistance etc., are the non-financial incentives to help promote and implement EMA.

### *5. Direct Regulatory Policy Instruments*

The mechanism that directly regulates promotion and implementation of EMA can be said to be a direct, regulatory policy instrument. Government machinery that directly detects and controls illegal utility connections, raw materials supply source, etc. will directly intervene the non-performance of EMA. The government can develop policies regarding the inspection of any site, plant, equipment, machinery and other processes, material or substances for the purposes of improving the environment, pollution control and mitigation and give necessary directives to appropriate authorities or persons to meet such purposes.

The government should formulate all policy options for the implementation of environmental management accounting at different levels on a hierarchical basis. For example, all policy instruments of the Department of Environment regarding EMA will be subordinate to the policy instruments set by the Ministry of Environment. Similarly, policy instruments of the security exchange commission should be subordinate to the policy instruments of the Department of Environment.

### *6. Developing Policy Guidelines*

Apart from policy formulation, the government can develop guidelines to promote the implementing EMA. The government can develop guidelines for a variety of aspects as follows:

#### *Establish EMA guidelines*

The Ministry of Environment will develop and establish EMA standards and guidelines. In the course of time the Ministry will revise the standard in accordance with the ISO 14000 guidelines based on which the government can develop guideline for individual industries based on which enterprises' environmental performance can be measured.

#### *7. EEEco Reporting*

The government can develop a guideline to submit an EEEco report at a certain frequency and in a prescribed format. EEEco stands for effectiveness, efficiency, and economy report. The effectiveness report will measure whether the enterprise is doing the right thing, the efficiency report will measure whether the enterprise is doing the things right, and the economy report will measure whether the enterprise is doing things at the right costs.

#### *Minimum Environmental Investment*

The government can develop a guideline as to the percentage of total investment to be invested for environmental protection. The government can develop a schedule that will contain the minimum percentage classifying the enterprises into various categories on a spectrum ranging from environment-friendly to environment-unfriendly. For example, in the case of textile industries investment for environmental protection should not be less than 10 per cent of the total balance sheet figure.

#### *8. Impact Assessment (EIA) Guideline*

In some countries the government defines an environmental impact assessment (EIA) guideline and issues environmental permits to any organisations as well as the general public that intends to set-up an industry or undertake any development projects. The impact of the environment should be assessed using the guideline developed by the government otherwise the assessment will give a different picture which will lead to state of mis-conclusion regarding the performance of the enterprises.

### *9. Inspection Guideline*

Guidelines regarding the preparation of report after the inspection of any site plant, equipment, machinery and other processes, material or substances should be developed so that appropriate action for the implementation of EMA can be taken.

### *10. Corporate Strategic Guideline*

The government can also develop guideline in which environmental concerns play a role in organizations in developing and implementing a corporate strategy for implementing EMA. In view of this, the government can develop the following guideline.

*Managing regulatory compliance:* is concerned with how organizations would develop environmental management programs in response to increases in both external pressure and internal awareness.

*Achieving competitive advantage:* deals with how organizations focus on cost management through realising that efficient use of resources can offer them a competitive advantage.

*Completing environmental integration:* outlines how organizations will accept and fully integrate environmental considerations into corporate life, and how organization will recognize environmental performance as crucial to survival in a competitive world economy, and that long-term economic growth must be environmentally sustainable.

From the above discussion and description, following concluding remarks can be made

1. Issuing an environmental clearance certificate by the Ministry of Environment without which no company can start their business.
2. Giving or issuing directives to provide for environmental aspects in the financial part of the business plan.
3. Issuing directives to provide information regarding risk assessment out of environmental factors and provision for measures thereof in the business plan
4. The government can work with industry, associations, and NGOs to support voluntary programs for the implementation of EMA.
5. Develop an environmental checklist.
6. Setting up environmental legislation and mandatory accounting standards.
7. Hold seminars to make accountants aware of their contribution in promoting environmental sensitivity within the organization and its implication both in society as well in the organization.
8. Use of economic instruments to internalize the externalities, norms, eco-taxes, environmental tradable permits, etc. may be introduced (Burritt et al., 2002) to promote and implement EMA.

9. The government can continuously pressure for cleaner production. Enterprises could be put under pressure by various regulatory bodies to submit various reports addressing societal and environmental concerns. For this purpose the government can develop a framework/guideline for the corporate environmental reporting to ensure cleaner production.

## 5 REVIEW OF ROLE CURRENTLY PLAYED BY THE GOVERNMENT FOR THE PROMOTION AND IMPLEMENTATION OF EMA

At present the Government of Bangladesh is using the following approaches for the promotion and implementation of EMA.

### *1. Issuing environmental certificates*

Back in 1995 The Government of Bangladesh formulated the policy of issuing environmental clearance certificate. This policy introduction was a time-demanding step of the Government of Bangladesh but could not be materialized effectively. The officers and other concern inspectors of the Ministry of Environment or Department of Environment sometimes issue certificate even without physical verification, without going through the environmental income statement and balance sheet that contains information about environmental investment.

### *2. Inspection policy*

Inspectors sometimes visit the industrial site controlling that the company actually has the environmental certificate which confirms that the industrial undertaking is environment friendly.

The government of developing countries including Bangladesh is developing the sense of being environment friendly. Closing down industries producing for instance synthetic shopping bags, is an example of such concerns. Though the approaches used at present are evidences of the government's concern; however, unfortunately no EMA practice is found in Bangladesh. There are some reporting mechanisms found in the Philippines, India, Sri Lanka and Korea. The government of Bangladesh are yet to understand and materialize the concept of EMA.

## 6 MODEL FOR THE PROMOTION AND IMPLEMENTATION OF EMA

The EMA promotion and implementation model is a logical and physical structure that facilitates promotion and implementation of EMA. It includes a number of tools and mechanisms used in operating business activities that help management in assessing the environmental effect on business decision making and thereby business performance.

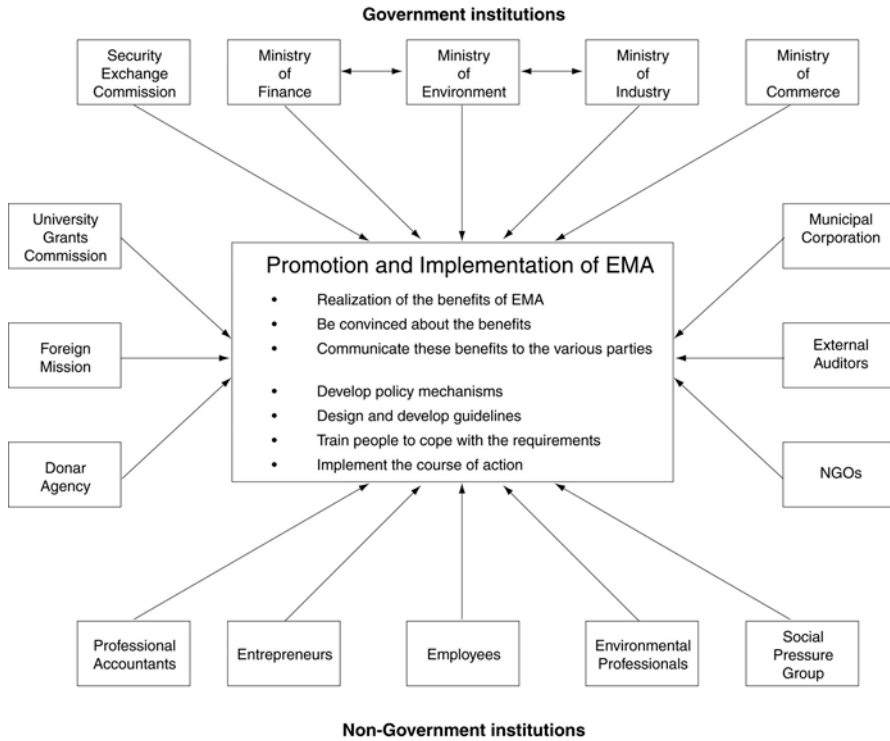
The government has various interrelated and interdependent wings by which it can better promote and implement EMA to build up a green industrial society.

The promotion and implementation of the philosophy of EMA can be geared up by a number of parties. In a developing country like Bangladesh, the government can promote and implement the philosophy through its various administrative machineries. The actors in various administrative hierarchies may initiate roles to promote thereby implementing this philosophy. The Parliamentarian Committee of Public Accounts, concerned ministries, related administrative authorities, can play an awareness-creation role as regards EMA. The related and concerned authorities, once the philosophy of EMA and its benefits are conceived, can play an administrative role on their subordinate organizations to follow the environmental code of conduct by showing them the benefits of the practice of EMA. Developing environment awareness programs, implementation policies, directives and framing related guidelines etc. constitute the process of playing roles for the promotion and implementation of EMA. The authorities not directly under the guidance of the government, but indirectly being influenced by the government machineries or influence the government authorities, can also play supportive roles for the same pursuit. A brief account of the various units of the government as well as other stakeholders that can promote EMA is given below:

### *1. Ministry of Environment*

The Ministry of Environment can take a range of measures in order to promote and implement EMA. The Ministry of Environment is one of the important actors in this regard by

- Issuing environmental clearance certificates without which enterprises cannot start their operations.
- Issuing yearly environmental clearance certificates to justify that the materials' physical flow through the existing plant and machinery will not produce undesirables.
- Issuing environmental clearance certificates that will justify that any addition, replacement of plant and machinery will not hinder smooth and efficient flow of raw materials.
- Formulating and enforcing policies regarding EMA implementation.
- Defining Environmental Impact Assessment (EIA) guidelines.
- Introducing incentives for the companies whose environmental performances are satisfactory.



**Figure 1.** Government and Non-government units in implementing EMA

*2. Ministry Commerce and Trade*

Being one of the main regulatory bodies, the Ministry of Commerce and Trade, can play a vital role by using a range of measures as follows.

*First*, the commercially important persons are required to renew their CIP certificate on a periodic basis. In Bangladesh, among others, the issuing of a CIP certificate is dependent on the performance of the enterprises that the CIP certificate applicants own and manage. The measurement of this performance can be based on the environmental income statement, balance sheet and environmental reports of the organization. If the green entrepreneurs, technically called eco-preneurs, are given the preference in issuing CIP certificates then it will promote EMA.

*Second*, the Ministry and its various machineries can take restrictive measures in issuing or renewing trade licenses. The Ministry can impose a minimum restriction that an environmental clearance certificate from the Ministry of Environment or from

the Department of Environment is one of the prerequisites for obtaining or renewing a trade license.

*Third*, the ministry can announce various incentives or preferential treatment to the eco-preneurs who are in the real sense working for sustainable development.

### *3. Ministry of Industry*

Through its various wings the Ministry of Industry performs various tasks in order to develop the industrial base of the country. Development of industrial estates, developing the list of encouraging industry, announcing and providing incentives to the industrial units, allowing tax holidays, preparing and publishing industrial policies etc. are in the hands of the Ministry of Industry. The Ministry may spread the flavour of EMA in its various activities by which the entrepreneurs are either directly or indirectly affected. The Ministry can develop some persuasive measures through which enterprises will develop their consciousness to be environmentally compliant.

*Firstly*, the Ministry and concerned authorities can impose the restrictions of maintaining an environmental code of conduct on the entrepreneurs who would like to establish their industrial units in a government industrial estate.

*Secondly*, the Ministry can include those industrial units in the government list of industries that are less harmful to the environment, more environment friendly, environmentally more sustainable.

*Thirdly*, it can frame a rule that the industrial units cannot enjoy any incentives including tax holidays if the enterprises are not environment friendly, does not maintain environment codes, etc.

*Finally*, the Ministry can pursue the entrepreneurs, citizen, and concerned authorities through advertisements that influence them to be more environment friendly.

### *4. Registrar of Joint Stock Companies*

The Registrar of Joint Stock Companies is one of the most important actors who can definitely help the promotion and implementation of the EMA being able to impose the restriction on registration of industrial units.

*First*, submission of an environmental clearance certificate can be made mandatory. No application for registration will be entertained if an environmental clearance certificate is not submitted.

*Second*, the renewal of the registration can be made conditional on the basis of an environmental report made by the company and the environmental audit report prepared by inspectors from the Department of Environment.

*Third*, the registrar can an issue circulars and monitor that registration will be cancelled if the enterprise cannot meet environmental requirements.



### *5. Municipal Corporation*

The municipal corporation being one of the legitimate actors in the field of industrial development can play a variety of roles in the promotion and implementation of EMA.

*First*, the corporation should impose prerequisites to be satisfied to get a trade license. For example, a trade license will not be issued without an environmental certificate. Since Municipal Corporation holds the authority of issuing trade licenses; it must strictly follow the rules and regulations while issuing trade license.

*Second*, the corporation should provide a vigilant inspection team. It can occasionally arrange to send an inspection team for comprehensive or token inspection.

*Third*, the Corporation should hold seminars, symposia, workshops and rallies to mobilize opinion in favour of green environmental management and environment-friendly industries.

### *6. Ministry of Finance*

Like other countries, the Ministry of Finance in Bangladesh is one of the most important actors that can help promote and implement the concept of EMA as a lot of administrative bodies are working under its control.

- Should not give clearance for e.g. initial public offerings on the stock market unless environmental clearance is obtained.
- Should regulate the financial and capital market through the issuing of various circulars to the concerned financial institutions that form the financial and money markets.

Since the Finance Ministry is a very powerful government authority, it must come forward in understanding and realizing the benefits of EMA for a developing country like Bangladesh in a competitive age.

### *7. Security Exchange Commission*

- The Security Exchange Commission (SEC) can develop a policy guideline that no companies will get the permission for initial public offering if the certified financial statement does not contain an environmental audit report. The projected financial statements should reveal provisions for environmental costs both in the income statement and in the balance sheet. Calculation of breakeven point, ecological Internal Rate of Return and Net Product Value should be included in the projected financial statements.

- The Security Exchange Commission can issue directives to the enterprises that securities cannot be publicly traded if the environmental auditing report does not satisfy minimum standards.

#### *8. University Grants Commission*

- The University Grant Commission can ask the universities, especially the business schools, to incorporate environmental courses so that the graduates will promote and implement EMA.
- Development of guidelines for business education courses including environmental accounting, environmental management accounting, environmental management etc.
- Accountants and environmental experts could pool their skills to form a multi-disciplinary team to address environmental issues of significance to the organization and to recommend appropriate remedial actions.

#### *9. External Environmental Auditors*

- The government can make external environmental audit compulsory. The government must realize the bottlenecks of not conducting external environmental audits. This might decrease the flow fund coming through foreign direct investment.
- Impartial certification is expected from the external auditors. SEC can ensure legal certification. Recently SEC seized the auditing authority of some listed financial auditing firms due to not maintaining the code of ethics.
- Supply audit (Aziz, 2000) can be made mandatory for companies for the sake of their operational efficiency. The sources of materials and the supply path of the output must be ensured to facilitate smooth production and sales. Supply audit can help ensure the performance of materials and output flow (Whaley et al., 2001).
- Energy and waste audit should get priority before financial audit is completed. Use of electricity, gas and other energy in the industrial sector should have a unique defined standard. For example, because of non-availability of this type of standard MSA spinning Mills Ltd. had to bear a loss of 25 per cent on capital investment resulting from around 18 per cent wastage (MSA, 2002).
- Conducting a quality audit would result in promotion and implementation of EMA in the sense that the term quality includes environmental dimension. Any output of any organizations damaging the environment should not be thought of as a quality product.

Although the non-government organizations are not actually part of the government, the government has some influence on their programs and can to a degree promote EMA through non-government organization.

#### *10. Management of the Enterprises*

The corporate managers are responsible for setting and designing organizations' vision and mission. They can develop policy action in line with government mission of creating an environment-friendly society. For this pursuit, management can play the following roles for the promotion and implementation of EMA:

- Management may charge its divisions a fee based on the amount of wastage delivered to a waste landfill called internal waste tax. They also can provide incentives to the good performer who generates minimum wastage.
- Balance scorecard measures can be applied to ensure balanced improvement of the environmental performance.
- Apart from group rewards or penalties, individual incentives may be declared and given for environmental performance.
- Management may develop sustainable green management policies by dint of which operational level managers would take appropriate measures in promoting and implementing EMA.

#### *11. Management Accountants*

The cost and management accountants are the sole authority in the field of management accounting in Bangladesh. A significant proportion of these qualified accountants assume responsible chair and serve the government. Another significant proportion of these accountants practice management accounting as independent practitioners and others work in the industrial sector. The management accountants, qualified actors, play an important role in:

- Determining the need for a better and modified management information and financial system
- Isolating and computing individual environmental cost
- Resolving conflicts between environmental management and traditional environmental management
- Determining environmental cost and potential risk of investment that is environmentally hazardous
- Training line personnel in environmental accounting reports
- Assessing the potential cost of failing to undertake environmental activities

- Offering expertise in financial evaluation of environmental litigation and settlement options
- Disclosing environmental information (Gray et al., 2001, Tilt, 2001) including monetary information such as environmental costs, liabilities, provisions and contingencies, coupled with quantitative and descriptive information such as ecological data (for example, physical measurement of environmental impacts), environmental policies, targets and achievements
- Providing environmental reports and information as a means of ensuring accountability to the wider society of the organization's commitment to environmental consciousness (Wilmshurt et al., 2001).

### *12. Donor Agencies*

The donor agencies can play an important role in promoting and implementing EMA. Developing countries like Bangladesh are dependent on foreign aids. About 70 per cent of the annual development budget was dependent on foreign aid (GOB, 2003). The foreign mission and the donor agencies usually give both projected and non-projected aids/loans. In this process, the donor agencies or the other development agencies can play the following roles in promoting and implementing EMA.

*First*, the donor agencies can impose some restrictions that environment-friendly developments would receive projected grants. So the government will never take any environmentally unhealthy projects.

*Second*, the donor agency can provide a guideline as to how environmental reporting, especially the accounting aspect, should be included in the report.

*Finally*, the donor agencies can make it compulsory to appoint a consultant with an EMA background in the development projects.

### *13. NGOs*

Non-Governmental Organizations or NGOs can play a vital role in implementing MEA. NGO Affairs Bureau of Bangladesh controls the NGOs by issuing operational and commencement certificates. NGOs with an ill-designed program will not receive approval from the bureau. NGOs usually receive funds from various foreign missions and donor agencies. The donor agency usually provides projected fund. NGOs can thus channel the investment into environment-friendly activities. Almost 2000 NGOs are working in Bangladesh (GOB, 2002). A significant portion of these NGOs has environment-related programs. NGOs can mobilize and capitalize valuable opinion in promoting and implementing EMA in developing countries either by imposing restrictions or by mobilizing opinions for the friendly environment. Since the government to some extent depends on the NGOs, they possess some political importance and can play a vital role in promoting and implementing EMA.

## 7 IMPLICATIONS AND RECOMMENDATIONS

This paper on the role of government for the promotion and implementation of EMA will benefit a variety of parties including the government, citizens, industries, enterprises, professionals, and academicians etc. as stated below.

*First*, the government including its variety of organs can identify some new ideas in order to promote and implement EMA. As a pioneering work, this paper will help the various machineries of the government to think and promote EMA concepts, its socio-economic as well as globalised and international benefits. Accordingly the government can take all initiatives to be an environment-compliant developing country in the national and global arena. The Ministry and the Department of Environment might develop the notion of making the country green. Accordingly they can chalk out an environmental plan and programs to be carried out by the respective industry to be environmental compliant.

*Second*, the industries and individual enterprises can understand the need for EMA and can develop to implement EMA. They will be very careful in setting new firms and perhaps will never start enterprises without an environmental clearance certificate. They will realize the ongoing incremental effect of the net return on additional investment for environmental protection. They can realize the benefits of increase in funds, sustainable development, market acceptability, incremental shareholder value, increase in the market value of shares etc. emanating from the practice of EMA. They will be able to know about green accounts, environmental required rate of return, environmental efficiencies like eco-efficiencies, environmental IRR, environmental NPV etc. for their project evaluation.

*Third*, the academicians can use the paper as reference material. Besides they will be able to incorporate this EMA as a special topic or course in the universities. Calculation of ecological payback, IRR, NPV, eco-efficiency etc. can be included in the course curriculum of project management or management accounting. The researchers and professionals in this field can find new avenues to conduct further research facilitating the implementation of EMA in developing country in general and in Bangladesh in particular.

*Fourth*, the citizen of a developing country can also develop some notion as to how environment pollution is related to the management decision-making procedure. This will help develop public awareness in the field of environment management in a developing country like Bangladesh.

*Fifth*, the professionals, including the accountants, can develop a notion of promoting and implementing EMA. In the real sense, chartered accountants and the cost and management accountants working in private and public organization can start thinking of EMA. The professional accounting bodies can organize seminars, workshops and conferences on various EMA issues.

In view of the above, the government of developing countries like Bangladesh should develop well thought-out policies for the promotion and implementation of

EMA and should view EMA as the strategy for survival in 21st century. The government can develop a policy that will continuously identify, monitor and implement the EMA process, especially in the organizations connected with environmental aspects. The government should focus and highlight the potential financial and non-financial benefits that would result from the practice of EMA to the manufacturer. Since EMA is in its primitive stage in Bangladesh, the government should hold more seminars, workshops and conferences to promote EMA working environment. In a nutshell, in developing countries like Bangladesh it is the government that can influence organizations to think about the required environmental protection, the investment required, the apparent and foreseeable benefits, financial and non-financial benefits from green accounting practice.

EMA is industry and country specific. That is why the government should develop separate EMA guidelines for small and medium-sized industries. Full accountability of government officers is to be ensured for this purpose. This will help identify the dishonest government officers who sometimes issue false environmental clearance certificates. Incentive policy development will motivate organizations to implement EMA. The good governance of concerned authorities including the Ministry of Environment, the Security Exchange Commission, the Ministry of Commerce and Trade and The Ministry of Industry will best expedite the implementation of EMA. Governmental policies might not help promote and implement EMA as such but enforcement of these policies will ensure the promotion and implementation of EMA. Developing countries are always dependent on international agencies and organizations. Various donor and international agencies can come forward to put the government under pressure for the promotion and implementation of EMA.

For the purpose of promotion and implementation of EMA, the government can initiate some research as chalked out below:

- Research can be conducted to find out the potential benefits on the part of the enterprises if EMA is practiced, so that EMA promotion and implementation will be possible
- Research can be carried out to develop environmental performance assessment guidelines based on industry
- Research can be initiated to assess industry-wise investment for environmental protection in terms of percentage of total investment
- Since EMA is a relatively new concept, implementation of EMA is difficult in developing countries like Bangladesh. Research may be carried out to identify the problems that limit the implementation of EMA.

In a concluding remark it can be said that the government of developing countries including Bangladesh should take a variety of courses of action for the achievement of a single goal – promotion and implementation of EMA.

## NOTES

- 1 The definition of environmental costs typically depends on approaches, information etc. The U.S. Environmental Protection Agency (EPA) is compiled an Environmental Cost Primer which has provided a framework for identifying environmental costs and has assembled them in broad categories. Conventional company costs include costs typically recognized in investment analysis and appraisal, such as capital equipment and raw materials. Potentially hidden costs: result from activities undertaken to comply with environmental law or go beyond compliance. Contingent costs are costs that may or may not be incurred in the future, such as the cost of remedying and compensating future accidental pollution. Image and relationship costs are costs incurred to affect the subjective perception of stakeholders, such as the costs of annual environmental reports. Involuntary failure costs, such as environmental fines, are paid for directly by corporations and are internalized. External environmental costs are cost associated with environmental damage; they include such potential liabilities as the risk of cleanup and damage to natural resources or damage to people and property.
- 2 Environment policy of 1992; Environmental Conservation Act 1995 (1st amendment 2000, 2nd amendment 2002); National Environmental Management Action Plan 1995; Environmental Conservation Rule 1997 (1st Amendment 2002); EIA Guideline For Industry 1997; Environment Court Act 2000 (1st amendment 2002).
- 3 The major polluting industrial sectors in Bangladesh includes textile mills, tanneries and leather processing industries, pharmaceutical industries, steel and iron industries, chemical industries, pulp and paper industries, sugar mills, distillery factories, fertilizer factories, cement factories, pesticide industries, rubber and plastic industries.

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