

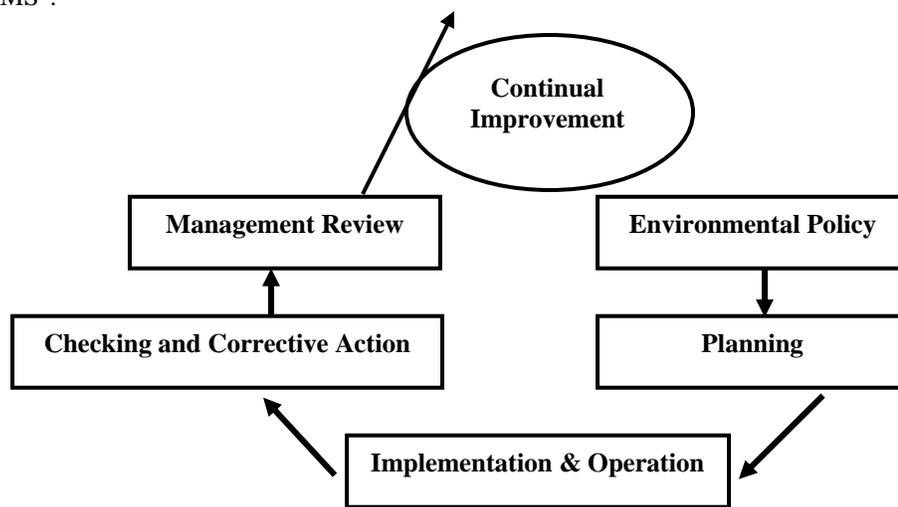
analyzing the existing environmental management practices while theoretical basis of ISO 14001 specifications on environmental management together with SDP are duly taken into consideration. It also provides with mechanism for integrating ISO 14001 EMS into decision-making practices performed KCC for its everyday management works in general, and for SWM in particular.

2. Literature Review

Literature review, in short, gives an overview on the central terminologies used in the article. Following is an attempt in that connection to make the role of ISO 14001 EMS and SDP clear towards better city management.

2.1 ISO 14001 EMS

Crognale (1999) concludes that normative¹ environmental regulations have tended to push environmental protection towards end-of-pipe solutions rather than at the beginning. This attempt could not, most of the time, solve rather aggravate the problem. In addition, such regulations shift the responsibility for environmental protection on to the regulator rather the regulated. Martin and Edgley (1998) state that, as because the increasing environmental problems are considered as threats; various groups have tried to codify systems for managing these problems to drive achievement of their environmental goals. All these are either national level, such as BS7750² or regional level, such as EAMS³.



Source: Martin and Edgley (1998)

Figure 1: ISO 14001 Model

To overcome this situation, the International Organization for Standardization (ISO), based in Geneva, has developed ISO 14000 series of common approaches to the management work of the different national organizations putting ISO 14001 in the center, which assures common environmental management standards. It is a set of environmental management specifications developed on the basis of the inherent idea of “It is easier to resist at the beginning than at the end”- Leonardo da Vinci (Crognale, 1999) and among others, it is the only international environmental management standard that requires management system to take more responsibility for achieving better environmental management performance. It also borrows heavily, in architecture and structure, from its close cousin the ISO 9000 Quality Standards. Hess et. al.(1999) comment that it is nothing but through ISO 14001 an organization’s environmental management system is certified. As stated by Woodside and Aurricchio (1998), this standard specifies the requirements for an EMS that is flexible, not mandatory and an organization can accept and implement it irrespective of its type and size and can accommodate diverse geographical, cultural and social condition. This environmental management standard can be applied to the whole or any single part of the organization and/or its activities, products, and services. There are five basic components or elements of ISO 14001 EMS: a) commitment and policy; b) planning; c) implementation and operation; d) checking and corrective action; and e) management review. Figure-1 shows the five basic elements of ISO 14001 EMS standard. The elements are built upon each other with commitment and policy being the base, which supports the entire framework for the EMS. Under these five key elements there are some sub-elements supporting the function of each element systematically.

¹ Formal standards or rules of behavior

² British Standards for Environmental Management

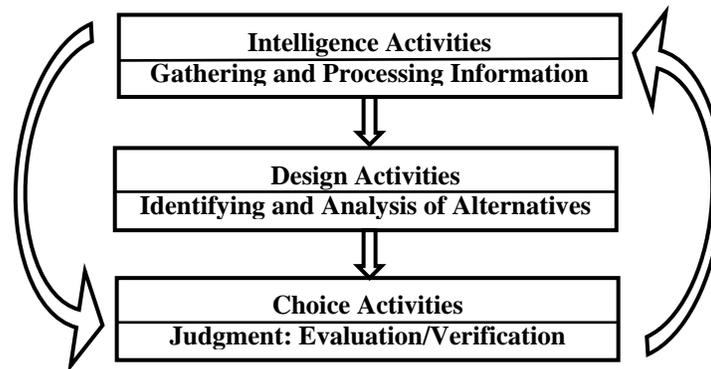
³ Eco-Management and Audit Scheme (For European Union)

These elements interact with each other to form the framework of an integrated, systematized approach to the environment. A systematic approach to EMS results in continual improvement of the overall management system and thereby, ultimately, improves environmental performance (Woodside and Aurricchio 2000).

Hess et al. (1999) conclude, to ensure continuing suitability, adequacy and effectiveness, ISO 14001 standards specify the requirements to be followed by an entire organization or part thereof tries to implement and to be certified⁴ by a third party. ISO 14001 requires: 1) developing environmental policy; 2) identification of environmental aspects; 3) establishing legal and other requirements; 4) establishing environmental objectives and targets; 5) establishing management programs to achieve objectives and targets; 6) implementing EMS that includes structure, training, communication, document & operational control, and emergency preparedness & response; 7) monitoring & measuring of operations including record keeping and EMS audit procedures; and 8) management review.

2.2 Strategic Decision Making Process (SDP)

Fredrickson (1985) describes that strategic decision-making is a topic that has fluid boundaries. Strategic decisions occupy the highest levels in the hierarchies presented in a decision making process. Such decisions are generally non-routine, but their most distinctive characteristics is that they commit significant resources or set important precedents. If decisions are commitments to act, strategic decisions are those that commit organization to actions that will have significant effects on their long-term performance. Making strategic decisions requires that one takes a structured approach following a formal decision making process.



Source: Based on Wally and Baum (1994)

Figure 2: Actions based Strategic Decision Making Process

Strategic decisions are the non-programmable decisions that are purposeful actions and involve the commitment of substantial resources at the level of the total enterprises. The process of choice, or making decision, can be conceptualized involving three intertwined activities: i) intelligence activity ii) design activity and iii) choice activity. Intelligence activity is environmental scanning that involves gathering and processing of information. This information gathering provides the cues for recognizing potential decision situations and formulates alternatives. When performing the design activity the decision makers analyze the formulated alternatives to determine the likely outcomes and identify alternative outcomes that will satisfy the needs or goals associated with decisions. When performing choice activity, decision makers make judgments by choosing among the identified alternatives (Wally and Baum, 1994). Eisenhard (1989) concludes that rapid strategic decisions are made in different perspectives. High level of comprehensiveness slows SDP. Considering few alternatives, obtaining input from few resources and limited analysis lead to quick decisions. The entire idea is explained in Figure-2.

3. Research Methodology

The research study was conducted based on mixed method of research. Data were collected concurrently by using both qualitative and quantitative techniques when and wherever necessary though qualitative approach was the principal approach followed by quantitative approach. Data collection methods and techniques include mainly stakeholder questionnaire survey, interviewing key informants including direct field observations. The strategies for data collection combine descriptive, exploratory and empirical analysis based on the research objectives. Being a

⁴ Certification is a process by which an organization demonstrates its successful implementation of an EMS.

descriptive and empirical study, it is depended on reviewing, identifying and analyzing the existing environmental management practices together with existing management tools, laws/rules/regulations and experiences.

This is mainly a social research and the different categories of stakeholders were selected by using the principle of purposive and simple random sampling techniques. In order to gather relative and comprehensive information, data were collected from both primary and secondary sources. KCC as the location of the study, the City Mayor, Ward Commissioners, City Staffs and the key informants such as the local leaders, policy makers, environmental experts, university professionals, environmental lawyers, environmentalists, and consultants working in line with were purposively interviewed while the city dwellers being the beneficiaries were selected on random basis and they were the primary sources of data. A total of 125 people, comprise of 100 (hundreds) city people, some 15 persons from the Corporation's staffs and officers including the Mayor and Commissioners and a third group of 10(ten) persons consist of university professors, decision makers and managers were interviewed for primary sources of data. The respondents were interviewed based on a semi-structured survey questionnaire. The existing EMS/tools, presently followed by KCC together with related local, national and international laws/rules/regulations/protocols/treaties are considered as the sources of secondary information. The field works were conducted during the month of September to November of 2006 and a checklist, developed and determined based on the reconnaissance survey, was also used to guide the discussion with different stakeholders while collecting information. Local customs and tradition including norms and values were also taken into consideration during the field works

4.1 KCC Decision Making Body and Method of Making Decisions

The decision making body of KCC comprises the Mayor and the Ward Commissioners elected as the public representatives and government representative officially known as Official Commissioners. Under the general body there are several standing committees. The committees' works and their decisions/proceedings/suggestions are subject to confirmation by the Corporation's decision-making body (GOB, 1984). KCC's decision making practice is based on continuous cycle and usually follows the following steps when making decisions on a particular issue or problem: a) identifying and reporting the problem; b) handle the problem by the departmental chief and solve if possible; c) if not, place before the standing committee; d) or recommend for placing in the general meeting;

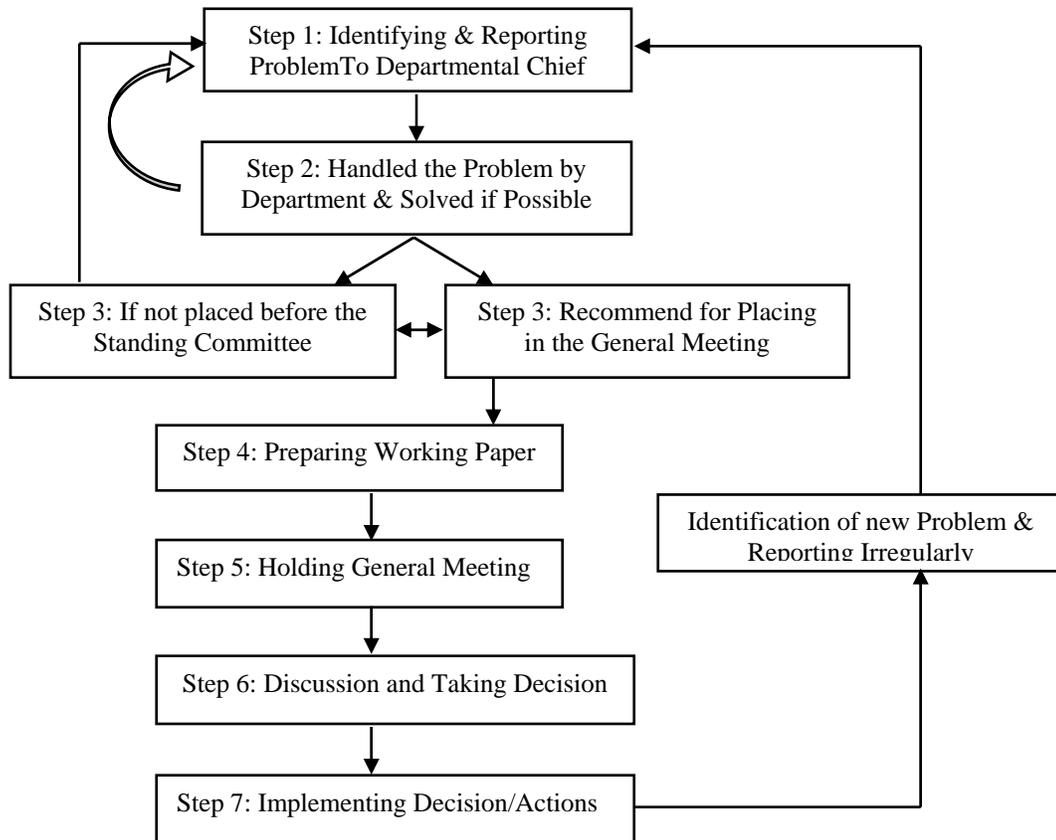


Figure 3: Steps in KCC's Decision Making Practice

e) preparation of working paper; f) holding meeting; g) discussion and taking decision; and h) implementing decision/actions. Identification of new problem and starting the cycle again, as a new, exists but in an irregular fashion. The Figure 3 gives an overview of the whole process. What we noticed here is that decision-making practices followed by KCC are not based on modern ideas and theories rather based upon tradition and usual practices followed by the former decision making bodies. The steps of developing alternatives and evaluating them and then making decisions by selecting the best alternative that are the requirements of a good decision making practices where the limited resources and their optimum use is vital are almost absent.

Decision making practice of an organization is influenced, no doubt, by the long prevailing tradition, culture and local customs. But the modern concepts of decision-making process or practices are also be considered and this should be open to all stakeholders where community or peoples' participations in the public decision making process are emphasized. In Bangladesh context, the people or the beneficiaries from making a decision are always kept behind the screen. Though the political leaders are elected through direct election but usually they do not feel accountable to the voters regarding their performances as they are, in general, not aware and motivated about their rights. Thus, accountability and transparency is very seldomly found in performing the duties in both the public sectors and local level organizations (Field Survey, 2006). During emergency, such as disaster/natural calamities, the Mayor takes decisions subject to the condition that the matter is placed before the immediate general meeting for post factor approval by the above body.

4.2 ISO 14001 EMS and Strategic Decision-Making Process (SDP)

EMS is developed for better environmental management avoiding regulatory-based management aspects of environmental management. Environmental decision-making is characterized by uncertainties that are associated with the problem definition, possible outcomes and with the probabilities of the occurrence of the outcomes. Strategic decision emphasizes, among others, best uses of scarce resources and optimum results. Such decisions are generally non-routine and purposeful actions occupies the highest levels in the hierarchies presented in a decision making process. So, when IEMS framework is developed based on the basic principle of ISO 14001 EMS together with strategic decision-making practice where decisions are made strategically considering limited resources, environmental and cultural context and existing tradition with mode of decision-making.

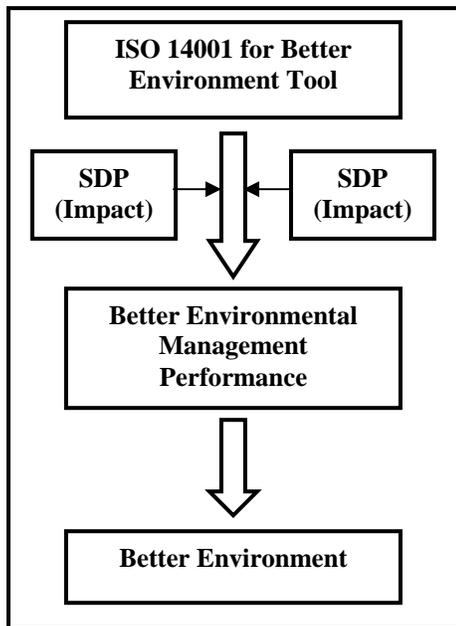


Figure 4(A): Relationship among ISO 14001 EMS, EM, and SDM

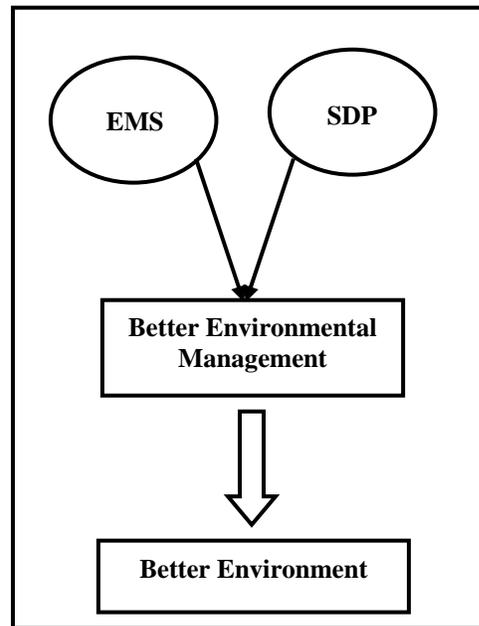


Figure 4(B): Relationship Between EMS & SDM

Thus, ISO 14001EMS, environmental management and SDP, the three distinct issues, are interrelated and to be considered together when the ultimate target is sustainable or better environment through better environmental management. The said interrelationship can be illustrated as shown in Figure 4(A) and 4(B).

4.3 Integrating ISO 14001 into KCC Decision Making Practice

Any decision-making process is based on the idea of continuous cycle and continual improvement. ISO 14001 EMS and SDP both follow the same inherent ideology. Ideally, the same theory should be the basis of KCC decision-making practices but the practical scenario is different from the above theory. Follow up of any decision and reporting or identifying new problems and start the cycle again as a new are rarely taken care. Uses of ISO 14001 EMS and taking decisions strategically, in the existing decision-making practices within KCC, need to be held continuously while environmental concerns duly emphasized. Thus, for KCC, implementing the decision/actions and follow up thereof are the most crucial. Strategic decision-making emphasizes on optimization of resources used for achieving maximum benefit. Three stages of ISO 14001 EMS (planning, implementing and checking) and one step (mainly implementing the decision or actions) of KCC decision-making practice are directly associated with resource uses, which can be achieved best through application of SDP. Better decision making towards better environmental management needs integrating EMS into all of its steps where strategic decision-making practice may be one approach. The entire integration mechanism can be compared with all the three stages of a production process where inputs, process and outputs are replaced by i) Management Tool; ii) Activities; and iii) Results respectively. These three stages are described here:

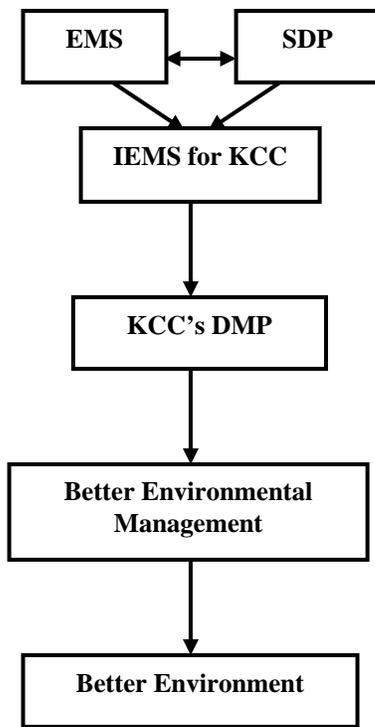


Figure 5(A) Integrating EMS into KCC Decision-Making Practice for Better Environmental Management

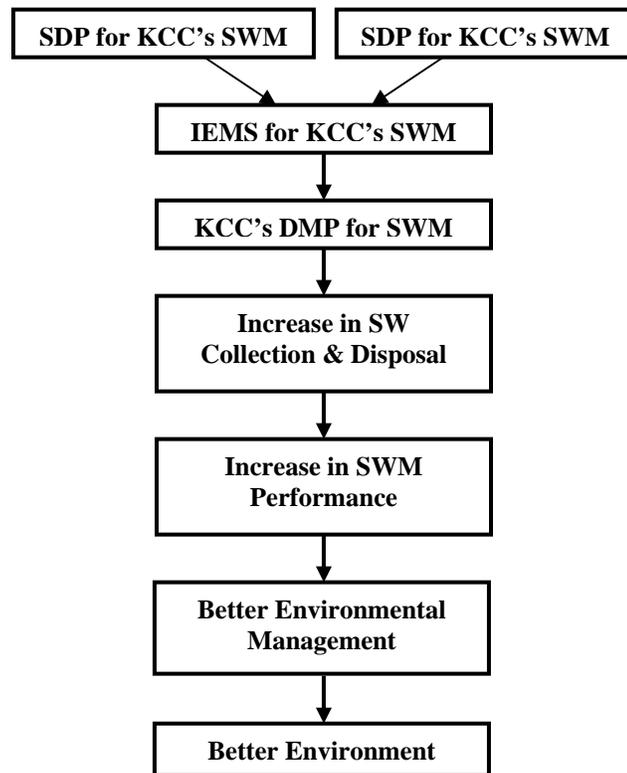


Figure 5(B) Integration of ISO 14001 into KCC Decision-Making Practice for Better SWM

i) Management tool

Identifying the most significant environmental aspect and then developing an IEMS framework for managing the environment towards better management performance is expected to achieve the goal of sustainable environmental management. For this study, the case of solid waste management has become the most significant aspect based on the opinions of the stakeholders concern. While formulating the different management programs or action plans, all the three steps of SDP are to be ensured to follow. In particular, improvement in solid waste management mainly depends on increase in the primary collection and this may be achieved by increasing public awareness and motivation or providing door-to-door collection services Combining the first two steps of Figure 5, equally and separately applicable for figure 5(A) & 5(B), represents the "management tool"



ii) Activities

Integrating EMS and strategic decision-making process, called as environmental management tool, in the present decision making practices of KCC and performing accordingly is named as the activities. This integration makes KCC decision making practice an updated one following continual improvement through top management involvement and continuous review of the environmental management programs and action plans. Step-3 for both the figure of 5(A) & 5(B) describes "activities" of the whole process.

iii) Results

The IEMS framework for KCC's SWM is developed based on the idea described in the figure 5 and is expected to improve in the overall present environmental management performance of KCC. For SWM, the final result is better environment through improvement in solid waste management performance by increasing the capacity of collection of solid waste. Combination of rest of the steps for both the figure of 5(A) & 5(B) indicates "results" of the process. Figure 5, as a whole, is an attempt to present the complete idea for integrating ISO 14001 into KCC decision-making practice in general 5(A), and for it's SWM in particular 5(B).

4.4 IEMS Framework for Managing KCC Solid Waste Management Better

KCC's day-to-day management works is limited to only in providing urban services delivery only without looking into the betterment of living environment and future environmental protection and conservation. It needs continuous improvement through regular review by top management. One attempt may be developing IEMS framework based on the standards of ISO 14001 EMS that can ensure continual improvement of the city environment and , of course, an alternative to the present reactive approach management system based on the existing rules and regulations.

EMS framework is actually a management tool based on a set of principles that ensure policy decision for optimum allocation of limited resources and assigning responsibilities to integrate environmental concerns into its everyday management practices towards better environmental management performance. IEMS takes into consideration the environmental management specifications of ISO 14001 while the decisions are made strategically taking existing management practices, socio-economic, environmental cultural context, limited resources, people's taste, beliefs and other related issues are taken into consideration duly. It is based on 09 separate modules (USEPA, 2006) and each of them contains one or more steps of the framework that are developed on the basis of environmental management standards of ISO 14001 Figure 6 is the IEMS framework for SWM in KCC.

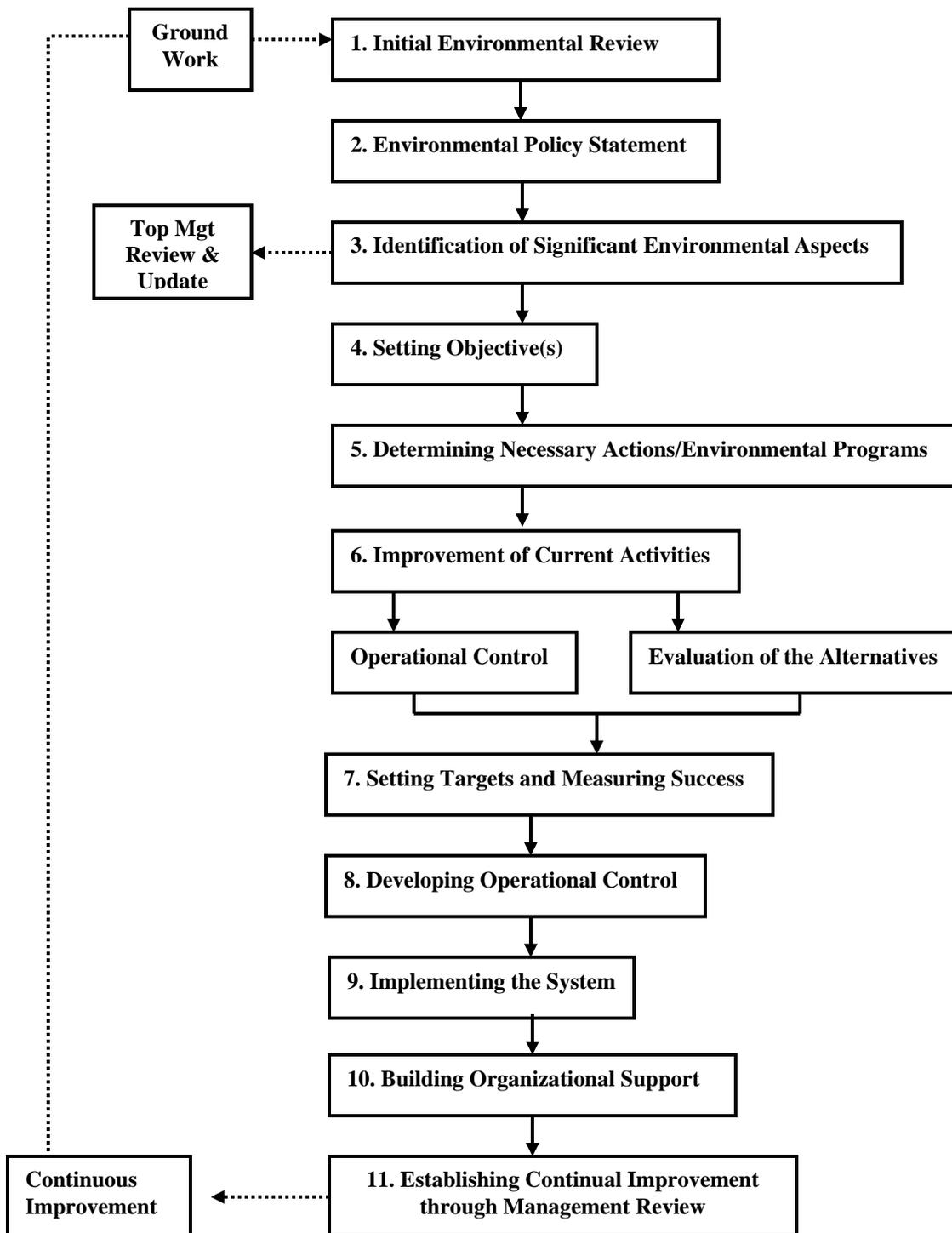


Figure 6: IEMS Framework for SWM in KCC



4.6 IEMS Communication

People, though by nature always show eagerness and interests to anything new, but usually express negative attitude while the issue of accepting it comes forwards. They are customized as a social being with the existing tradition, rules and regulations. They do not want to easily accept any new idea rather try to avoid by arguing and raising questions on the issue (Observation during Field Survey, 2006). Introducing IEMS, as a new and voluntary management tool, needs series of consultation with different stakeholders to make them understood. KCC traditionally follows top-down approach of decision-making practices. It does not consult the field workers, supervisors those who implement the decisions. Even, sometimes they are ordered to follow and perform some duties and responsibilities but they (workers) really do not know why it is to be done for. The communications between the decision makers and the persons/staffs who implement the decisions at the field level are not established and maintained (Field Survey, 2006). For incorporating IEMS into existing decision making process and implementing thereafter effectively, the communication systems should be developed and maintained through participation of both the internal and external stakeholders.

4.7 Advantages and Disadvantages of Integration

The ultimate goal of KCC is to protect human health and safety through ensuring better environmental management. Towards sustainable and livable environment, one approach, among others, may be ensuring better environmental management by increasing the efficiency/capacity in solid waste management in general and by increasing solid collection in particular. Like other cities, KCC management activities are limited in performing day-to-day or routing works of services delivery. And integrating ISO 14001 into KCC decision-making practice for SWM is expected to improve the living environment of the city. City people demand management of the environmental issues better and they will provide every kind of supports for implement the new management technique/tool. But implementation is apprehended to face some human and non-human resources constraints. Among others organizational capacity including political and managerial commitment, lack of skilled and trained staffs with knowledge and information, lack of finance to implement, are the most significant barriers. In this context, decisions taken strategically are most important to ensure efficient resource use. This is particularly true for making balance between the uses of limited resources, maximizing benefits and minimizing negative environmental impacts. Being the implementer and user of this framework KCC also needs managerial commitment from the top management of the authority.

5. Conclusions:

The problem of the environmental deficit or deterioration is considered as one of the basic dimensions of sustainable and equitable development. Environmental sustainability programs include actions to protect the environment from threats and damage, and restoration works to reverse damage already done. KCC has its own management practice on different urban environmental issues that are traditionally administered. Voluntary adoption of ISO 14001 focuses on the pollution prevention at the beginning. So, an IEMS framework developed in the local socio-political context could ensure managing the environment more efficiently and effectively.

Bangladesh, in general, and KCC in particular, is melancholically lagging behind many issues including capacity building with respect to policy frameworks. The study was carried out as a case study on KCC, a local government organization. Its environmental issues are managed based on the regulatory approach, but it can rarely enforce its rule and regulations. The IEMS framework has been developed for solid waste management of KCC based on the specifications provided in the ISO 14001 environmental management standards and does not need rules and regulations to apply. According to the opinion of the city staffs and experts, if the Corporation through strategic decision-making process together with establishing continual top management commitment and review assures improved decision-making practice, the framework will, no doubt, improve the urban environment by increasing the capacity of solid waste collection at the primary collection stage.

For different cities, environmental issues and their aspects together with their degree of significance are different. However, EMS together with strategic decision-making practice is expected to provide better result in the environmental management programs/actions, which in turn gives better environment by ensuring better environmental management performance. For KCC, the ultimate goal is to protect human health and safety through ensuring better management of the urban issues. Developing IEMS for SWM together with proper application might be one approach to ensure better environmental management by increasing the efficiency in solid waste management. Like other cities, it has both the human and non-human resources constraints. Among others organizational capacity including political and managerial commitment, lack of skilled and trained staffs with knowledge and information, lack of finance to implement, are the most significant barriers. In this context, strategic decision making practices



followed by the strategic resource management, is more important. This is particularly true for making balance between the uses of limited resources, maximizing benefits and minimizing negative environmental impacts. KCC being the implementer and user of this framework needs managerial commitment to do so from the top management authority.

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