GE 302 - Industry and the Environment

Chapter VI

Environmental Ethics

and

Fundamentals of Environmental Impact Assessment (EIA)

(Note: Review Chapter 1 of the textbook for more information)

Resources: the information presented in this chapter were extracted primarily from the textbook, online dictionary (www.dictionary.com) and the webpage of the Global Development Research Center http://www.gdrc.org/

Ethics

Ethics (also known as **moral philosophy**) is that branch of philosophy dealing with values relating to human conduct, with respect to the rightness and wrongness of certain actions and to the goodness and badness of the motives and ends of such actions.

Codes of Ethics

A code of ethics is a set of conduct principles that guide decision making and behaviour in an organization. The purpose of the code is to provide members and other interested persons with guidelines for making ethical choices in the conduct of their work.

Examples of Some Codes of Ethics:

Codes of ethics can be established in many organizations that have different practices. The following codes are examples.

- Codes of Ethics of Professional Engineers

- Medical Codes of Ethics

- Business Codes of Ethics

Environmental Ethics

The birth of environmental ethics as a force is partly a result of concern for our own long-term survival, as well as our realization that humans are but one form of life, and that we share our earth with other forms of life (Vesilind, 1975).

The *hadeeth* (saying) of Prophet Muhammad (peace be upon him) "لا ضرر و لا ضرار" the meaning of which may be translated to " no harm and no damage" expresses the same concept since more than 1400 years.

Table 6-1 (extracted from the text book; there numbered 1-5) summarizes few points that represent a simple environmental code of ethics.

Table 6-1: An Environmental Code of Ethics

1- Use knowledge and skill for the enhancement and protection of the environment.

2- Hold paramount the health, safety and welfare of the environment.

3- Perform services only in areas of personal expertise.

4- Be honest and impartial in serving the public, your employers, your clients and the environment.

5- Issue public statement only in an objective and truthful manner.

Although these few principles seem straightforward, real-world problems offer distinct challenges. The following case explains the difficulty some may face in taking their decisions.

Case 1: To Add or Not to Add

A friend of yours has discovered that his firm is adding nitrites and nitrates to bacon to help preserve it. He also has read that these compounds are precursors to cancer-forming chemicals that are produced in the body. On the other hand, he realizes that certain disease organisms such as those that manufacture botulism toxin have been known to grow in bacon that has not been treated. He asks you whether he should:

(a) protest to his supervisors knowing he might get fired,

(b) leak the news to the press,

(c) remain silent because the risk of dying from cancer is less than the absolute certainty of dying from botulism.

Note: The addition of nitrite to bacon is approved by the Food and Drug Administration (FDA) of the USA. Nitrites and nitrates are, in and of themselves, not very toxic to adults. However, heating these compounds results in a reaction with the amines in proteins to form nitrosamine, which is a carcinogenic compound.

What is Environmental Impact Assessment (EIA)?

The International Association for Impact Assessment (IAIA) defines an environmental impact assessment as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made." The purpose of the assessment is to ensure that decision makers consider the ensuing environmental impacts to decide whether to proceed with the project.

After an EIA, the precautionary and polluter pays principles may be applied to prevent, limit, or require strict liability or insurance coverage to a project, based on its likely harms. Environmental impact assessments are sometimes controversial.

This means that it is easy to identify;

1. The most environmental suitable option at an early stage.
2. The Best Practicable Environmental Option.
3. Alternative processes.

The project managers can then address these problems in order to avoid or minimize environmental impacts in conjunction with their project planning. This results in the likelihood of the project planning stages running smoother.

Examples of projects that may require EIA include: incinerators, airports, dams, subway, harbour, etc.

The Environmental Assessment is carried out by the Developer although the task is often carried out by Environmental Consultants. Environmental Assessment is carried out in order to produce an Environmental Statement. The Environmental Statement must include:

- A description of the project: location, design, scale, size etc.
- Description of significant effects.
- Mitigating measures
- A non-technical summary.

Why EIAs?

EIAs have two roles - legal and educational.

The legal one is to ensure that development projects have a minimal impact on the environment in their entire 'lifecycle'.

The educational one is to educate everyone involved - professionals and users included, of the potential environmental impacts of anything we do.

The EIA Process

Source: Adopted from "What is EIA?" by Richard Hamilton

The main steps in an EIA process are as follows:

- <u>Preliminary activities</u> include the selection of a coordinator for the EIA and the collection of background information. This should be undertaken as soon as a project has been identified.
- <u>Impact identification</u> involves a broad analysis of the impacts of project activities with a view to identifying those which are worthy of a detailed study.
- <u>Baseline study</u> entails the collection of detailed information and data on the condition of the project area prior to the project's implementation.
- <u>Impact evaluation</u> should be done whenever possible in quantitative terms and should include the working-out of potential mitigation measures. Impact evaluation cannot proceed until project alternative has been defined, but should be completed early enough to permit decisions to be made in a timely fashion.
- <u>Assessment</u> involves combining environmental losses and gains with economic costs and benefits to procedure a complete account to each project alternative. Cost-benefit analysis should include environmental impacts where these can be evaluated in monetary terms.
- <u>Documentation</u> is prepared to describe the work done in the EIA. A working document is prepared to provide clearly stated and argued recommendations for immediate action. The working document should contain a list of project alternative with comments on the environmental and economic impacts of each.
- <u>Decision-making</u> begins when the working document reaches the decision maker, who will either accept one of the project alternatives, request further study or reject the proposed action altogether.
- <u>Post audits</u> are made to determine how close to reality the EIA predictions were.