# CHAPTER 2

# LITERATURE REVIEW

## INTRODUCTION

Following the introductory chapter, which provides some background information on the study, its objectives and limitations, this chapter, is devoted to describing the understanding of environmental ethics starting with the business responsibilities that comprise health risks, ecological risks and economic risks, the Malaysian environment, the manufacturing implications, the interactions, the evolution of ethics and environmental ethics itself. In this chapter, the concept and development of environmental ethics are discussed. The discussion falls under the related subtopics of environmental ethics development, the green movement, environmental ethics philosophy, environmental sustainability and ethical decision making. The other section of this chapter focuses on the cultural aspect, the manufacturing industry, the environmental ethics managers, the core themes of the corporations, the environmental ethics approaches, the environmental ethics motives, the benefits of environmental ethical commitment and selected empirical studies in environmental ethics.

### 2.1 THE BUSINESS RESPONSIBILITY

Traditionally, environmental considerations have been abandoned by businesses that regard the natural world as "free" and "unlimited" and act as the source of raw materials and energy to meet human needs or as the repository for human-generated waste (Egri and Herman, 2000). Because of this, business functions and their intrusion into ecosystems have frequently had unfavourable effects, such as contaminating the ecology and scarring the globe (Fistere, 1998). Business produces

dangerous products, exhausts oil reserves and produces an inertia that may result in many kinds of dangers, such as smog, cancer, global warming, ocean pollution from the production of fuel and through tankers spills, also other genetic effects from easily producible propellants (Curran and Haw, 2001).

Today, business corporations have broader responsibilities to society besides providing profits to their shareholders. The broader responsibilities are due to the demand of a bigger population that the corporations have to serve. Saha and Darnton (2005) developed a long list of these broader responsibilities. According to them, the broader responsibilities of business corporations may include producing not only products but safe products, providing high-quality reliable services, applying ethical business practices, paying contribution to society, involvement in social investment, exercising welfare and rights, considering health and safety, offering employment, offering working conditions and practices, conducting fair trade, responsibility in marketing and communication, involvement in stakeholder affairs and also disclosing information, codes and conducts.

Above all, the social responsibilities of a corporation are to produce goods and services, make profit for its shareholders, respond to the market and operate along with the competitors. It is unfair for businesses if they are asked to do more than those responsibilities stated above (Hoffman, 1991). Nonetheless, the broader responsibilities stated by Saha and Darnton (2005) do not include the responsibility towards the natural environment. The business corporations, according to them, do not have the responsibility to protect the natural environment.

Bansal and Roth (2000) argue that by having motivations towards the ecology, corporations will be associated with initiatives and benefits. Corporations would benefit from higher profits, gain process intensification, gain a larger market share, enjoy lower cost and differentiation, gain higher share price, rent-earning resources and capabilities. They also emphasize that with legitimation, corporations would gain long-term sustainability, survival, licence to operate, avoid fines and penalties, lessen risk and achieve employee satisfaction while corporations would benefit from feel-good factors, employee morale and individual satisfaction by engaging in social responsibility. As stated in Table 2.10, all these benefits would be enjoyed by corporations if they are motivated to respond to the ecology. Although the benefits seem to be abstract and immeasurable, the anticipated benefits can act as a trigger for the corporations to commit ethically.

Table 2.01

Initiatives and Benefits Associated with Motivations for Ecological Responsiveness

| Motivation | Ecological Responsive Initiatives | Anticipated Benefits |
|---|---|---|
| **Competitiveness** | Housekeeping measures such as energy and waste management, source reductions resulting in the same output for the same level of output, ecolabeling and green marketing, the development of ecoproducts, and the adoption of environmental management systems (EMS), such as BS 7750 and the Eco-Management & Audit Scheme (EMAS). | Higher profits, process intensification, larger market share, lower costs, differentiation, higher share price, rent-earning resources and capabilities. |
| **Legitimation** | Complying with legislation, appointing an environmental committee or environmental manager to oversee a firm's ecological impacts and advise senior management, developing networks or committees with local community representation, conducting environmental audits, establishing an emergency response system and aligning the firm's image with environmental advocates. | Long term sustainability, survival, licence to operate, avoiding fines and penalties, lessening risks, employee satisfaction. |
| **Social responsibility** | Redevelopment of local community areas to greenfield sites, the provision of a less profitable green product line, donations to environmental interest groups and other local community groups, use recycled paper, replacement of retail items or office products with more ecologically benign items and recycling the office wastes. | Feel-good factors, employee morale, individual satisfaction. |

Source: Bansal and Roth (2000), p. 727.

Besides the broader responsibilities of the corporations, Hoffman (1991) includes ethical responsibilities. Corporations have the ethical responsibility to become a more active partner in dealing with social concerns. Both Hoffman (1991) and Prince and Denison (1992) agree that business corporations are urged to think creatively to find solutions and not to create problems in order to achieve environmental success, as it has become an aspect of the search for total quality (Cairncross, 1992).

However, Caroll (1979) emphasizes that between discretionary responsibilities, ethical responsibilities, legal responsibilities and economic responsibilities that transformed total social responsibilities (as shown in Figure 2.01); ethical responsibilities, as included by Hoffman, ranked the most difficult responsibilities to comprehend. It would be difficult and ethically hard for the corporations to carry the broader responsibilities as well as to be motivated towards ecology.

Figure 2.01

The Social Responsibility Categories

| | Discretionary Responsibilities |
|---|---|
| | Ethical Responsibilities |
| **TOTAL SOCIAL RESPONSIBILITIES** | Legal Responsibilities |
| | Economic Responsibilities |
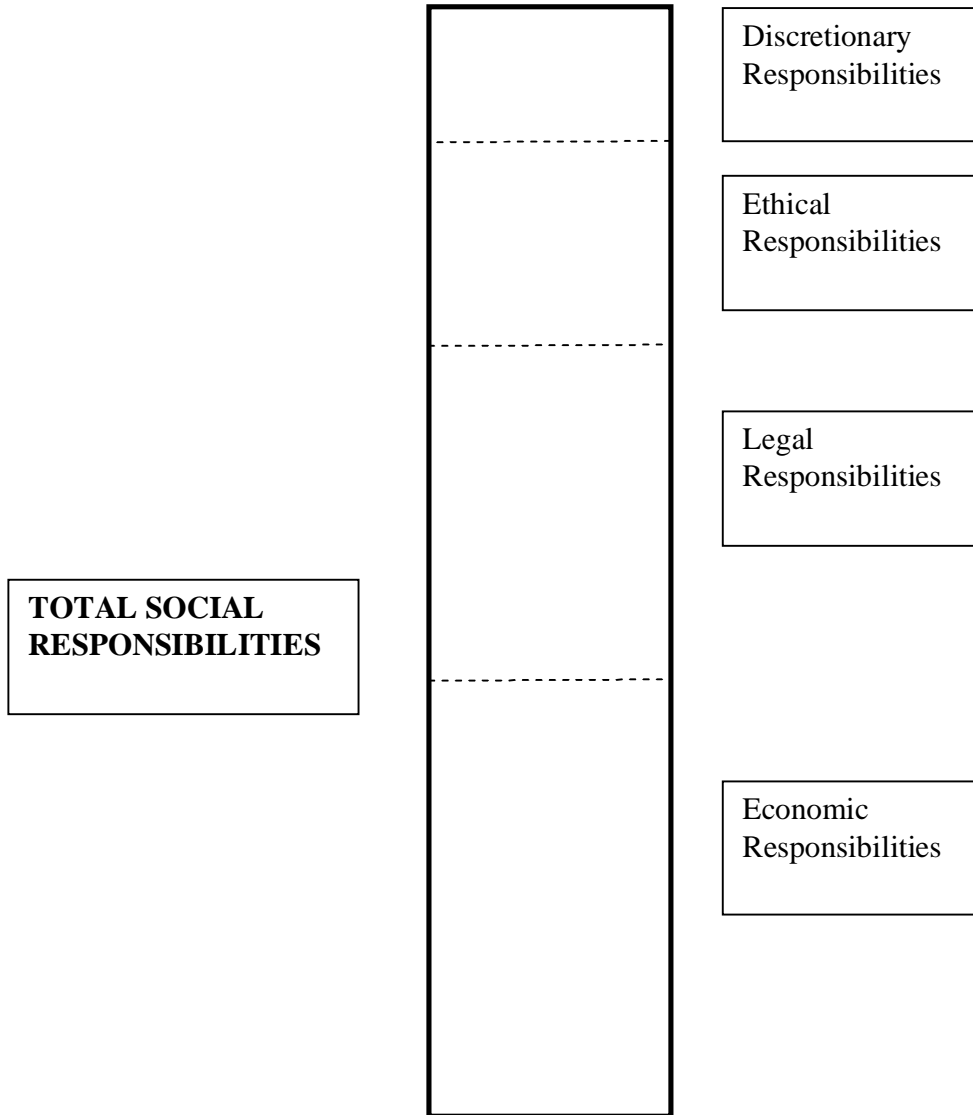
Source: Caroll (1979), p. 499.

## 2.1.1 HEALTH RISK

The interactions of business activities and the natural environment bring tremendous risk to the environment, to people's health as well as to the economy. Health related considerations would vary from releasing chlorofluorocarbons (CFCs) for food preservation and temperature control into the atmosphere that is not really going to harm us but constitutes a risk for future generations (Madia, 1992) by depleting the ozone layer. Synthetic insecticides have been used to kill insects and this causes the destruction of crops and illness due to "pesticides" that will generally affect birds and mammals (Graedel and Allenby, 1995). Health risks include many health problems such as impairment, contraction of diseases, health implications not only to the present population but also to future generations.

The main air pollutants, such as vehicles, power plants, industrial vehicles, domestic waste, industrial processes and municipal waste that are shown in Figure 2.02, can cause lung and heart malfunctions, bronchitis and asthmatic reactions, while the haze leads to accidents, death (Foon and Kong, 1998) and the difficulty in breathing through coughing and wheezing could also result in aggravation of existing cardiac respiratory conditions (TPM, 1997). In the worst case, human chance of death will be increased by one in a million, if we breathe New York's polluted air for two days (Wilson, 1990). In terms of food consumption, it is very hard to avoid consuming food that contains potentially dangerous additives or pesticide residues as we often have limited means of discovering their presence (Thiele, 2000).

Table 2.02 represents the main effects of the components of haze on human beings. It comprises carbon monoxide and hydrocarbons that are caused by vehicles; sulphur dioxide, which is caused by power plants and industrial fuel; nitrogen dioxide, which is caused by vehicles and power plants, and the main pollutant in the current trans boundary haze is the particulates that are caused by the industrial processes. Among other health problems, carbon monoxide could weaken heart contractions; sulphur dioxide could cause bronchitis; nitrogen dioxide could aggravate asthma; ozone could cause chest pain, sore throat and coughing; particulates could damage lung tissue while lead could destroy the brain and nervous system.

Figure 2.02

Air Pollutants in Malaysia
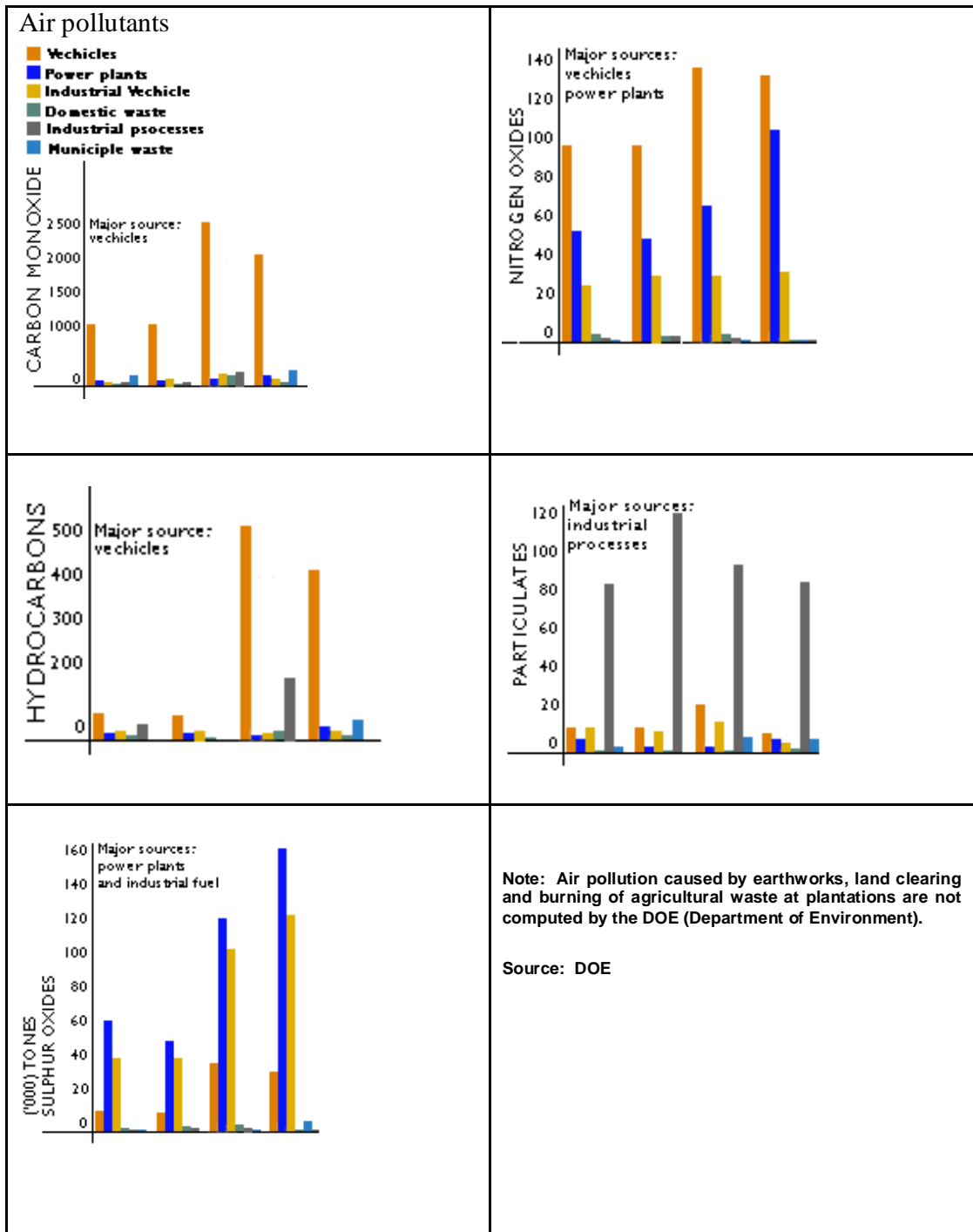


Source: Foon and Kong (1998).

Table 2.02

Main Haze Components

| Component | Effects | Source |
|-----------|---------|--------|
| **Carbon Monoxide** | Weakens heart contractions and lowers the amount of oxygen carried by the blood. Reduces the ability to exercise and is dangerous for people with chronic heart disease. | Primarily from motor vehicles but also from incomplete burning of any fossil fuel. |
| **Sulphur Dioxide** | Aggravates existing diseases, especially bronchitis. Constricts breathing passages in asthmatic persons and those doing moderate to heavy exercise. Causes wheezing, shortness of breath and coughing. | Power plants, large industrial facilities, diesel engines and oil-burning home heaters. |
| **Nitrogen Dioxide** | Irritates the nose and throat, especially in people with asthma. Increases susceptibility to respiratory infections. | Power plants, large industrial facilities and motor vehicles. |
| **Ozone** | Irritates lungs and breathing passages, causing chest pain, sore throat and coughing. Increases susceptibility to respiratory infections and reduces the ability to exercise. Effects are more severe in people with asthma and other respiratory ailments. | Ozone forms when sunlight interacts with exhaust hydrocarbons with nitrogen oxides. |
| **Particulates** | Aggravates heart and lung disease, changes the body's defences against inhaled materials, and damages lung tissue. The elderly, children and those with chronic lung or heart diseases are most sensitive. | Diesel powered cars, trucks and buses, power plants and factories. |
| **Lead** | Destroys the brain and nervous system. | Some industrial facilities and lead based paint. |

Source: Foon and Kong (1998).

## 2.1.2 THE ECOLOGICAL RISK

Ecological risk is another risk in consideration to environmental issues. According to Ives (2000), more than 50 per cent of the world's land surface has been transformed and used in supplying freshwater for human use and we have actually used non-renewable energy by engaging in land deforestation activities. This produces enormous waste that results in water supply contamination, which will worsen human activity.

Graedel and Allenby (1995) argued that in order to increase food supply, the human use of crop growth agents such as nitrogen and phosphorus fertilizer that will eventually result in lake eutrophication and human use of wood and coal for cheap and readily available sources to create energy for consumer and industrial use will cause deforestation and climate change. Table 2.03 represents some examples of past problems, technological "solutions" and the long-term consequences from continued practice of the technology. The problems cause ozone depletion, adverse effects on birds and mammals, deforestation, global climate change and lake eutrophication.

Table 2.03

Past Problems, Technological "Solutions" and the Long Term Consequences from Continued Practice of the Technology

| Problem / Need | Technology as Solution | Consequences |
|---|---|---|
| Food preservation, temperature control: nontoxic, non-flammable refrigerant | Chlorofluorocarbons(CFCs) | Stratospheric Ozone Depletion |
| Destruction of crops, illness due to "pests": agent to kill insects | Synthetic insecticides | Adverse effects on birds and mammals |
| Energy for consumer and industry use: cheap and readily available source | Wood, coal | Deforestation, global climate change |
| Increased food supply: agent to aid crop growth | Nitrogen and phosphorus fertilizers | Lake eutrophication |

Source: Derived from Graedel and Allenby (1995).

From the above table, it is clearly shown that CFCs were used to fulfil the need to preserve food, control the temperature and the need of nontoxic refrigerants, which has caused major environmental degradation such as stratospheric ozone depletion. The use of synthetic insecticides to curb crop destruction will affect animals severely, especially birds and mammals, which will result in their extinction. Wood and coal are needed for human

use for cheap energy, notwithstanding that we are actually reducing our forest area, thus, resulting in global climate change that can cause global warming and dangerous acid rain. Many lakes were killed from the use of nitrogen and phosphorous fertilizers that were used to increase our food supply.

In Ives's article (2000), a Commonwealth Scientific and Industrial Research Organization (CSIRO) scientist estimated that all these activities decreased oxygen and increased carbon dioxide in the atmosphere to an estimated 70 per cent more than 200 years ago. In addition, Ives (2000) emphasized that carbon dioxide will create a greenhouse effect that leads to global warming and climate change when it is combined with other gases in the air. Table 2.04 represents carbon dioxide emissions from fossil-fuel burning, cement production and gas flaring (thousands of metric tons of carbon) in Malaysia, Indonesia and Thailand. The three countries showed an increasing figure from year to year and in the 25 years from 1970 to 1995, Malaysia experienced a very high increase in carbon dioxide emissions. Table 2.05 represents world carbon dioxide emissions by region from 1990 to 2025, and which are projected to continue increasing for the next 20 years.

Table 2.04

Carbon dioxide emissions from fossil fuel burning, cement production and gas flaring

(thousands of metric tons of carbon).

| Year | Indonesia | Malaysia | Thailand |
|------|-----------|----------|----------|
| 1970 | 9,047 | 3,934a | 4,190 |
| 1980 | 25,825 | 7,636 | 10,921 |
| 1990 | 58,206 | 14,999 | 25,971 |
| 1995 | 80,821 | 29,095 | 47,773 |

a Figure for 1966 for the Federation of Malaysia and Singapore.

Source: Oak Ridge National Laboratory (1998) as in Global Environmental Change

and Sustainable Development in Southeast Asia: Science Plan for a SARCS

Integrated Study.

We are also surrounded by the issues of burning rivers, dying lakes, oil fouled oceans, radioactivity in our food, lead and mercury in our water (Hoffman, 1991), ozone depletion, acid rain, declining biodiversity, toxic waste (Shrivastava, 1995a), air and water pollution, toxic emissions, chemical spills and industrial accidents (Hart, 1995). The environmental issues also include global warming, mass destruction of the rain forest, species extinction, clean water (Ohara, 1998), serious adverse effects on agriculture, plant life and marine life (Foon and Kong, 1998), water rights, waste export, power generation and exchange (Pasquero, 2001), scarce clean air and water and pesticide use          (Logsdon, 2004).

Table 2.05

World CO2 emissions by region from year 1990-2025

| Region | 1990 | 2002 | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|---|---|
| **Mature market economies** | 10,465 | 11,877 | 13,080 | 13,745 | 14,392 | 15,183 |
| North America | 5,769 | 6,710 | 7,674 | 8,204 | 8,759 | 9,379 |
| Western Europe | 3,413 | 3,549 | 3,674 | 3,761 | 3,812 | 3,952 |
| Mature Market Asia | 1,284 | 1,627 | 1,731 | 1,780 | 1,822 | 1,852 |
| **Transitional economies** | 4,894 | 3,124 | 3,643 | 3,937 | 4,151 | 4,386 |
| **Emerging economies** | 6,101 | 9,408 | 13,478 | 15,602 | 17,480 | 19,222 |
| Asia | 3,890 | 6,205 | 9,306 | 10,863 | 12,263 | 13,540 |
| Middle East | 845 | 1,361 | 1,761 | 1,975 | 2,163 | 2,352 |
| Africa | 655 | 854 | 1,122 | 1,283 | 1,415 | 1,524 |
| Central and South America | 711 | 988 | 1,289 | 1,480 | 1,639 | 1,806 |
| **Total world** | 21,460 | 24,409 | 30,201 | 33,284 | 30,023 | 38,790 |

Source: Impak (2009b).

Flavin (1997) argued that species extinction is estimated to affect a quarter of the world's mammalian species, three quarters of the world's birds, and at least 50 thousand species go extinct each year. Flavin further argued that the rapid climate change will accelerate this extinction rate more severely. There has also been widespread damage to the world fisheries of about 50 per cent depletion during the last 50 years (Brown et al., 1991) which has resulted in

18 of the world's major fisheries already reaching or exceeding their maximum sustainable yield levels (Hart, 1997).

### 2.1.3 THE ECONOMIC RISK

Besides health and ecological risks, the interaction of business and the environment incurs economic risk. The environmental disasters have caused many risks to businesses economically. Shut downs in economic activities, massive financial losses, flight cancellations (Foon and Kong, 1998), high medical costs, productivity of workers lost due to illness, damage to building structures and materials, monetary settlement, pressure group activities, negative press, industry reputation downturn, stringent legislation and the impact of major industrial disasters on public opinion are some of the economic risks that companies might face.

In order to seek lower cost for hazardous waste disposal, Exxon resulted in injuries to people and industry and they had to pay monetary settlement and endured negative press for two years (Hamilton and Berken, 2005). Union Carbide in Bhopal, India, faced the reputation downturn of the entire chemical industry (Rees, 1997) and was estimated to lose one million dollars in market capitalization or 28 per cent due to this disaster, and experienced cumulative abnormal returns for 50 days following the Bhopal chemical leak (Blacconiere and Patten, 1994), as shown in Figure 2.03. Other risks include the emergence of a more educated and outspoken public and an increasing legislative business environment (Teo and Loosemore, 2001) that could influence the corporate bottom line.

Figure 2.03

Cumulative Abnormal Returns of Union Carbide for 50 Days Following the Bhopal
Chemical Leak
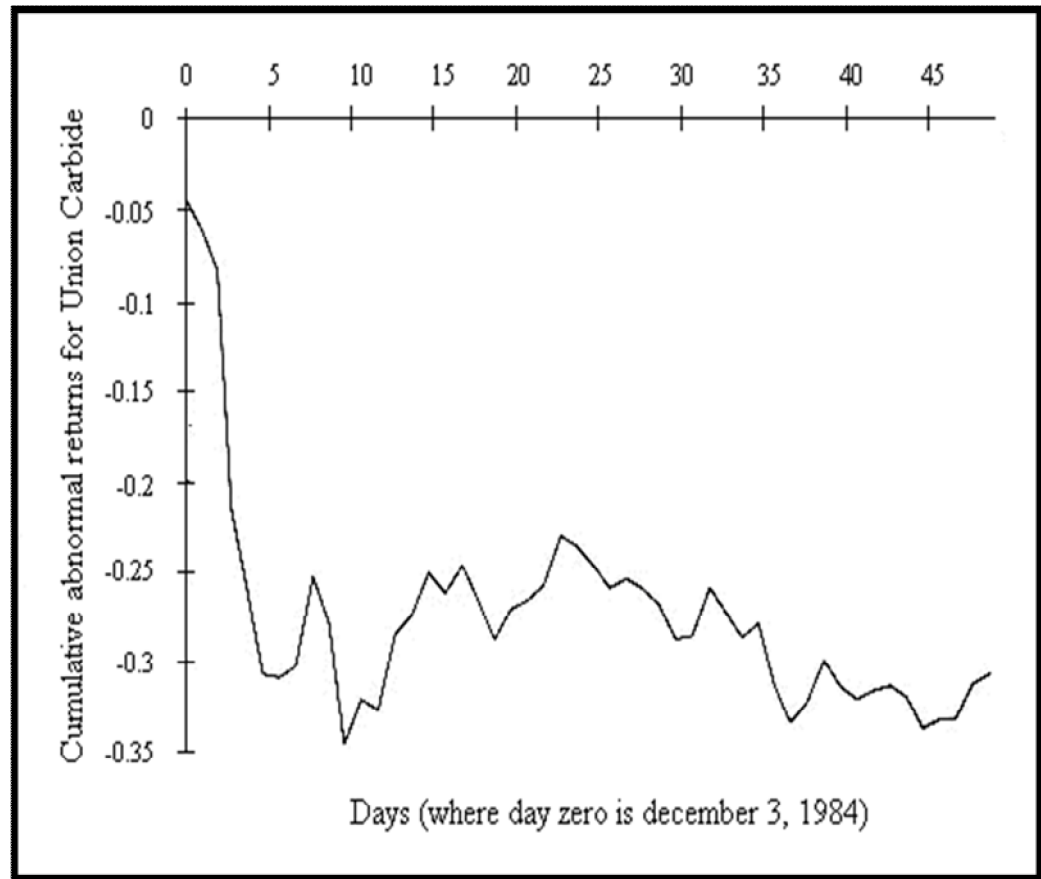


Source: Blacconiere and Patten (1994), p. 366.

## 2.2 THE MALAYSIAN ENVIRONMENT

Although Malaysia has never reported an equivalent major environmental disaster,
the environmental issue is equally appalling. The new industrial revolution has
burdened Malaysia with high environmental pollution (Habtemicheal, 1996).
According to Wah (1982), environmental problems are experienced everywhere in
Malaysia, which includes city dwellers, villagers and the communities deep in the
forest due to industrialization and modernization. Wah (1982) further explains that

industrialization affects shop floor workers in the cities most severely. Annually there are three to four hundred reported deaths out of the 200,000 Malaysian industrial workers at the workplace, and another 13,000 are disabled. This is due to the fact that industrialization has caused "sinister killers" that consist of poisonous chemicals, gases, dust, excessive heat, noise and vibrations that are slow and sometimes unrecognizable.

The number of occupational health problems will increase through the rapid industrialization and urbanization as Malaysia experiences more common environmental problems, such as in 1997 and 1998, when Malaysia experienced the worst haze episode and a major water crisis, respectively (Lubis, 1998). [Please refer Appendix Exhibit 1 for Declaration of Emergency in Sarawak].

In another recent statistic, the occupational fatalities shown in Table 2.06 below reveal seven deaths per 100,000 Malaysian workers. Yearly, Malaysian workers are estimated to suffer 250 million accidents, which represent 330,000 fatalities and 160 million other related cases that affect the workers' physical and mental health that could victimize the employee, employer, self-employed person, farmer or even their helping family members (Cruez, 2006). It was claimed that in the worst case today, at least one death is reported in the workplace every day (Visvanathan, 2001). This has led to a terrifying number of industrial mishaps, especially deaths in the work place since 1990. It was reported that there were 541 deaths in 1991 (Lubis, 1998) and 1,307 deaths in 1997 (Visvanathan, 2001).

Table 2.06

Occupational Fatalities

| Country | Deaths per 100,000 workers |
|---------|----------------------------|
| Japan | 4.1 |
| United States | 4.6 |
| **Malaysia** | **7**<br>**Target – Down to 3.5** |
| Philippines | 14 |
| Thailand | 14 |

Source: Cruez (2006).

As far as environmental disasters are concerned, Malaysia has experienced tsunamis, land erosion, haze problems, waste dumping, flood and industrial accidents to name a few. Table 2.07 represents major environmental disasters in Malaysia and most of these disasters were proven and empirically linked to manufacturing activities (Please refer Appendix Exhibits 4 to 9 for related pictures).

Table 2.07

Major Environmental Disasters in Malaysia

| Date | Tragic | Place | Death/Injured |
|---|---|---|---|
| 31.07.1988 (Sunday) | Collapse of Penang Ferry Terminal bridge – Jeti Pengkalan Sultan Abdul Halim | Butterworth, Pulau Pinang | 32 / < 1674 |
| 07.05.1991 (Tuesday) | Sungai Buloh fireworks factory explosion | Sungai Buluh, Selangor | 22 / < 103 |
| 20.06.1992 (Saturday) | Choon Hong III Explosion | Port Kelang, Selangor | 10 / -- |
| 11.12.1993 (Tuesday) | Collapse of Highland Towers | Hulu Kelang, Selangor | 48 / -- |
| 30.06.1995 (Friday) | Karak Highway landslide | KM 34 Jalan Susur Genting Highland | 22 / < 22 |
| 29.08.1996 (Thursday) | Pos Dipang Mudslide | Kampar, Perak | 44 / -- |
| 26.12.2004 | Tsunami | Kota Kuala Muda, Kedah, Penang, Langkawi, Tg.Piandang, Perak, Sabak Bernam, Selangor | 68 / -- |
| 13.08.2005 (Saturday) | Haze | Port Klang, Kuala Selangor and other places. | NA |
| 22.12.2006 | Flood Hit Malaysia's Southern State of Johor | Southern State of Johor | NA |
| 2008 | Massive landslide at Bukit Antarabangsa, Kuala Lumpur | Bukit Antarabangsa, KL | 4 / -- |

Source: Simplified from Malaysian Volunteer Fire and Rescue Association (MVFRA)

(2004)

Therefore, the purpose of this study is to review the environmental ethics literature, and analyse its findings, empirically prove the data collected and offer reference to all interested people. Specifically, the objective of the research is to study the Malaysian manufacturing companies' environmental commitment to the natural environment, to reveal the factors contributing to the commitment and to identify the main contributing factors that could be employed by managers to encourage positive attitudes towards the management of environmental ethics.

Table 2.08, indicates that among other related industries, manufacturing is top of the list of being among the highest reported deaths every year. In relation to accidents and deaths, Cruez (2004) has also reported a statistic that indicated that in the first half of 2004, 1,072 companies were compounded. The figure shows that the figure accelerated tremendously from 1999 to the 2004, however, less than 150 companies have been charged in court through the years as shown in table 2.09.

Table 2.08
Industrial Accidents

| Industry | 1995 | | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Reported | Deaths | Reported | Death | Report | Death | Reported | Death | Report | Death | Reported | Death |
| Agriculture, Forestry and Fisheries | 20,465 | 111 | 13,372 | 129 | 23,296 | 265 | 12,678 | 34 | 12,753 | 132 | 5,159 | 72 |
| Mining and Quarry | 1,016 | 13 | 919 | 30 | 760 | 18 | 739 | 8 | 756 | 14 | 331 | 4 |
| Manufacturing | 62,483 | 380 | 55,549 | 486 | 36,668 | 245 | 37,261 | 228 | 40,730 | 232 | 14,744 | 112 |
| Electrical services, Gas, Water and Cleaning | 542 | 6 | 716 | 9 | 364 | 14 | 3,573 | 12 | 592 | 11 | 229 | 2 |
| Construction | 4,406 | 60 | 5,302 | 116 | 3,510 | 81 | 979 | 104 | 4,747 | 146 | 1,854 | 85 |
| Commerce | 10,187 | 114 | 13,027 | 111 | 9,235 | 126 | 12,986 | 139 | 14,685 | 127 | 5,147 | 52 |
| Transport | 4,826 | 96 | 5,052 | 121 | 3,295 | 88 | 4,050 | 78 | 4,462 | 91 | 2,145 | 46 |
| Finance and Insurance | 672 | 12 | 506 | 11 | 363 | 7 | 700 | 15 | 627 | 8 | 234 | 3 |
| Services | 3,412 | 34 | 5,338 | 38 | 3,723 | 56 | 5,294 | 94 | 5,987 | 65 | 2,488 | 36 |
| Public service | 6,125 | 126 | 6,153 | 134 | 5,225 | 265 | 7,078 | 334 | 6,735 | 83 | 4,523 | 40 |
| Total | 111,134 | 952 | 106,508 | 1,207 | 86,589 | 1,307 | 85,338 | 1,046 | 92,074 | 909 | 36,854 | 454 |

Source: Social Security Organization (SOCSO) as in Viswanathan (2001)

Table 2.09

Court Charges in Malaysia

| | 1999 | 2000 | 2001 | 2002 | 20033 | 2004 (Jan-Sept) |
|---|---|---|---|---|---|---|
| **Stop order and notice of improvement** | 822 | 1,023 | 4,797 | 5,746 | 5,344 | 5,058 |
| **Compound** | 11 | 5 | 121 | 927 | 1,117 | 1,072 |
| **Charged in court** | 22 | 24 | 58 | 76 | 121 | 45 |
| **Industrial accidents investigated** | 1,331 | 1,171 | 1,123 | 1,231 | 1,214 | 1,112 |
| **Complaints investigated** | 268 | 289 | 347 | 395 | 418 | 406 |

Source: Cruze (2004).

Lung cancer and asthmatic problems in Malaysia have been greatly increased by the nation's air pollution. According to Lubis (1998), about 72,000 Malaysians are diagnosed with lung cancer every year, which is a result of the business activities that cause pollutants such as petrol fumes, lead and dust particles in the atmosphere. These pollutants increase the cancer causing agents. Table 2.09 and Figure 2.04 below show the statistics of the asthmatic cases reported in Malaysia by state, from September 1997 to the year 2000.

Table 2.10

Asthmatic cases reported from September 1997 to 2000 by State in Malaysia

| State | 1997 (Sept-Dec) | 1998 | 1999 | 2000 |
|---|---|---|---|---|
| Perlis | 3,248 | 5,255 | 5,601 | 5,491 |
| Kedah | 6,049 | 20,493 | 27,009 | 29,046 |
| Penang | 9,627 | 22,326 | 28,913 | 28,439 |
| Perak | 24,695 | 62,355 | 46,207 | 54,461 |
| Selangor | 14,714 | 13,220 | 13,220 | 26,630 |
| Kuala Lumpur | 10,183 | 15,965 | 17,036 | 20,161 |
| N. Sembilan | 11,048 | 6,866 | 14,265 | 19,236 |
| Melaka | 6,714 | 15,934 | 21,182 | 17,661 |
| Johor | 16,612 | 91,079 | 57,218 | 63,716 |
| Pahang | 8,836 | 23,088 | 23,091 | 29,803 |
| Terengganu | 10,093 | 29,135 | 30,517 | 33,984 |
| Kelantan | 10,404 | 26,855 | 30,755 | 30,346 |
| Sabah | 17,913 | 14,114 | 15,279 | 17,035 |
| Sarawak | 13,467 | 56,215 | 15,950 | 8,472 |
| Malaysia | 163,603 | 402,900 | 346,243 | 380,481 |

Source: Rahim et al. (2002), p. 8.

Based on Lubis (1998), besides pollution, Malaysia has also shown severe statistics in land deforestation. In Peninsular Malaysia, by the end of 1994 only 47 per cent of the natural forest remained, in Sarawak it was 67 per cent and in Sabah 59 per cent. It is acknowledged that the Javan rhinoceros and green peafowl represent at least

two species that face extinction. Malaysia also experiences the natural hazards of flooding, as well as water supply contamination, which have been largely ignored for 30 years. The Sungai Juru river in the state of Penang was condemned as being polluted and too acidic by a study done by the Consumers' Association of Penang (CAP) from the pH level of some water samples taken from the river. The samples indicated that industrial pollution wastes were dumped into the river, which caused the river to be deprived of oxygen (Lubis, 1998).

Figure 2.04

Asthmatic cases reported from September 1997 to 2000 by State in Malaysia
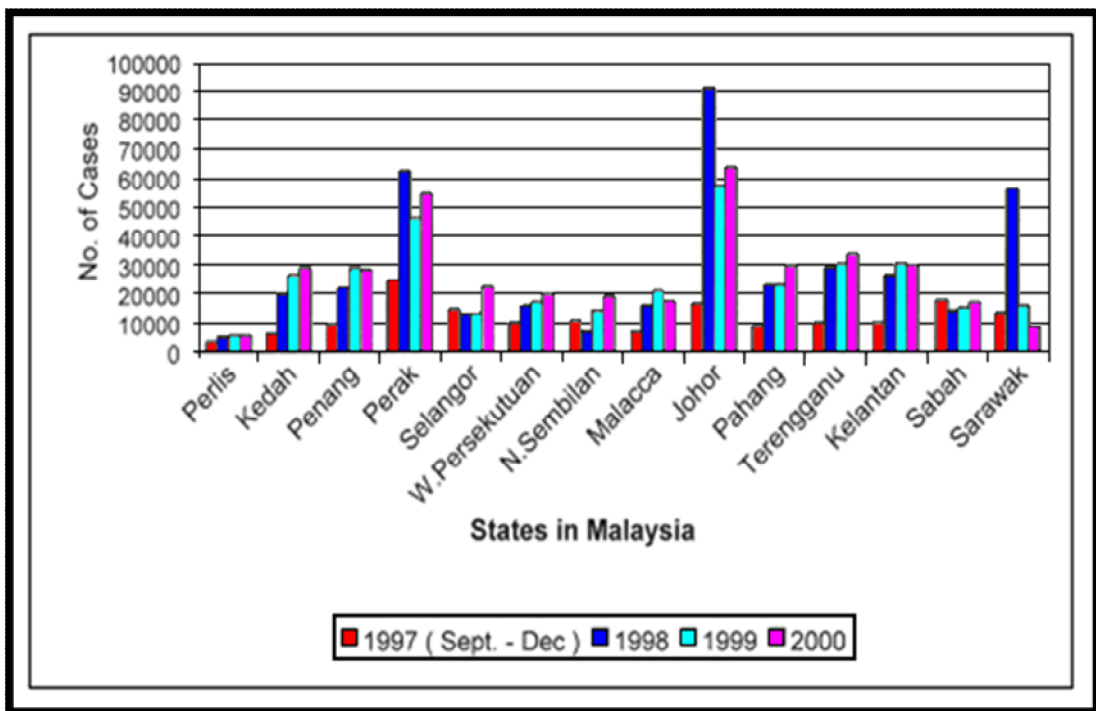


Source: Rahim et al. (2002), p. 8.

In Malaysia, the major role of the Department of the Environment (DOE) is to monitor and enforce activities to protect the environment from pollution (Rahim et al., 2002). Back in 1991, the DOE reported that Sungai Juru was the most polluted

river in Malaysia (Mohd Ariff, 2004) in terms of the levels of ammonia, suspended solids, biochemical oxygen demand (BOD), chromium, mercury and lead pollution, which exceeded the proposed standards. These toxic heavy metals are generally harmful to the biosphere except in trace amounts. The DOE also reported a higher concentration of heavy metals on the west coast of Malaysia than other parts of the country due to extensive land use.

The levels of lead, copper and cadmium for almost all samples collected from this region of the country exceed the proposed standard. High levels of cadmium, copper, mercury and nickel were recorded in the coastal waters of Perak and Penang, and in 1991, Penang exceeded Perak, being 50 per cent higher for the samples analysed for nickel from the 41 water samples collected (Lubis, 1998). Malacca experienced an even worse case when the Straits of Malacca, the most important passage for ships that connect the east and the west, became one of the most polluted routes in the world by attending oil supertankers and large cargo ships [Economic and Social Commission for Asia and the Pacific (ESCAP), 1946].

In terms of air pollution and based on the Air Pollutant Index (API), in 2009 Malaysia experienced a mixed air quality of good and moderate levels. However, there was a slight decrease of the number of good air quality days from 2008 to 2009 with 1.4 per cent recording an unhealthy level, which was partly due to peat land fires and trans boundary air pollution (Malaysia Environmental Quality Report, 2009). There were 3,883 reports of open burning in Malaysia. These happened in agricultural areas, plantations, forests and bushes. From this figure, 404 cases were compounded amounting to RM349,000.00 and another 11 cases were prosecuted in

court. In 2009, the National Airborne Surveillance Programme monitored and detected environmental pollution due to open burning activities, emission from industries, coastal and marine pollution, and land clearing activities on highland and island development (Annual Report, 2009).

There are several sources of air pollution in Malaysia. Based on the Ministry of Health, Malaysia, ozone is caused by two-stroke motorcycles, motor vehicles and industrial sources. Lead and carbon monoxide is caused by the transport sector, sulphur dioxide is caused by the oil and gas industry, energy production, coal burning, industrial combustion and industrial process. Nitrogen dioxide is caused by transport, power generation and industrial combustion while particulate manner (10 micron diameter) is caused by open burning (Compendium of Environment Statistics Malaysia, 2009).

In Malaysia, industrial sources are a stationary source of pollution besides power plant source. Based on DOE, 2008, industrial sources contributed a total of 143,743 tonnes emission of pollutants to the atmosphere in Malaysia in 2008 with 14,957 tonnes of carbon monoxide, 84,184 tonnes emissions of nitrogen dioxide, 36,938 tonnes emissions of sulphur dioxide and 12,664 tonnes of particulate matter (10 micron diameter) to the atmosphere (Compendium of Environment Statistics Malaysia, 2009).

The pollutants are very dangerous as they affect humans and the ecosystem. Based on the Ministry of Health, carbon monoxide affects smokers and people with circulatory and anaemic problems, nitrogen dioxide affects the respiratory function and suppresses vegetation growth, and sulphur dioxide aggravates asthmatic and bronchitis patients while particulate matter (10 micron diameter) impairs respiratory function. Both sulphur dioxide and particulate matter (10 micron diameter) damage vegetation. In addition, cement production contributed to air pollution due to carbon dioxide emissions, mining activities lead to ambient air, water and soil quality and affect human health through noise, dust and visual impact. Energy production also has an environmental impact, which includes greenhouse gases emissions and other pollutants (Compendium of Environment Statistics Malaysia, 2009). Figure 2.05 represents the emission of pollutants to the atmosphere from stationary sources through industries in Malaysia 2009. Figure 2.06 represents industrial air pollution sources by state for 2009.
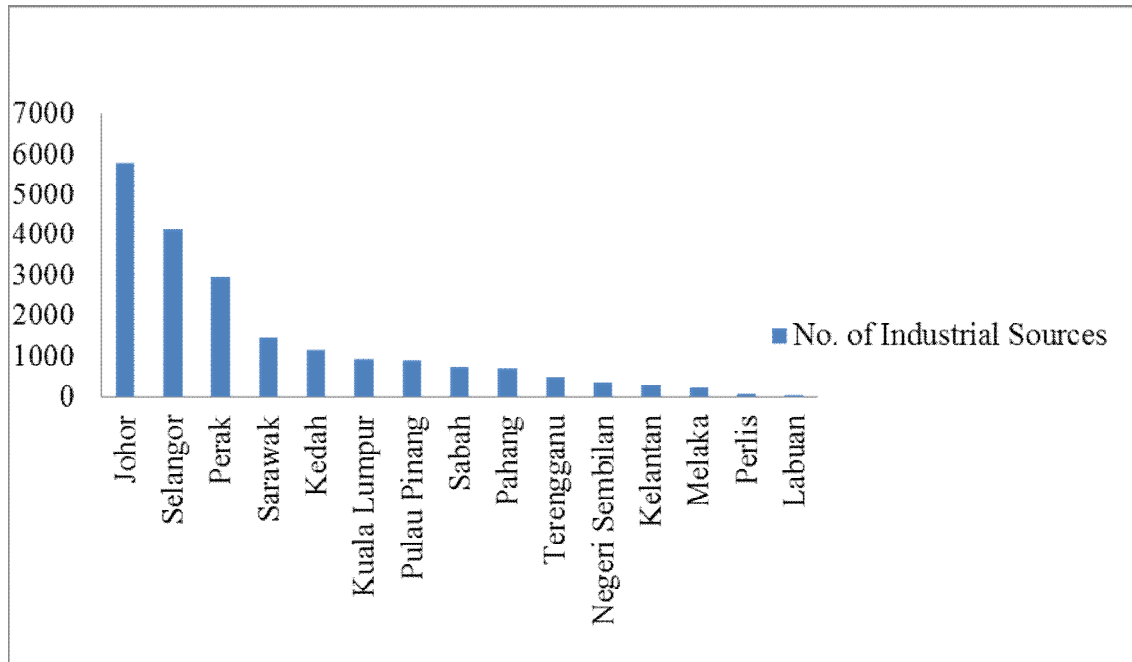
Figure 2.05

Emission of pollutants to the atmosphere from stationary sources through industries in
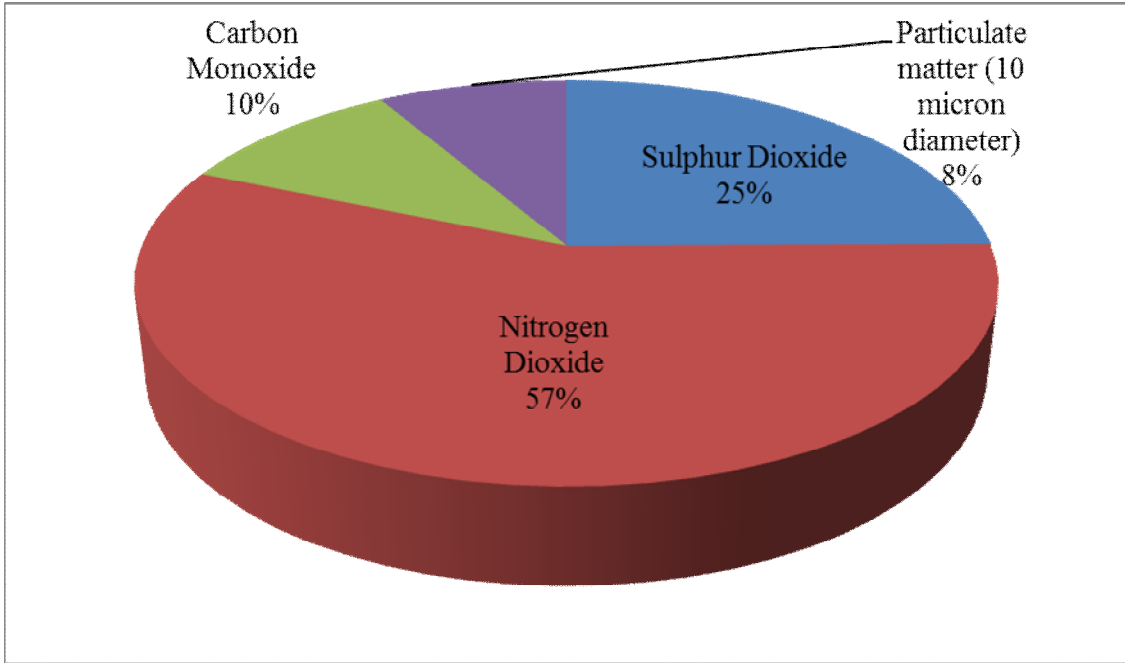
Malaysia 2009.



Source: Compendium of Environment Statistics Malaysia (2009), p. 57.

Figure 2.06

Industrial Air Pollution Sources by State 2009



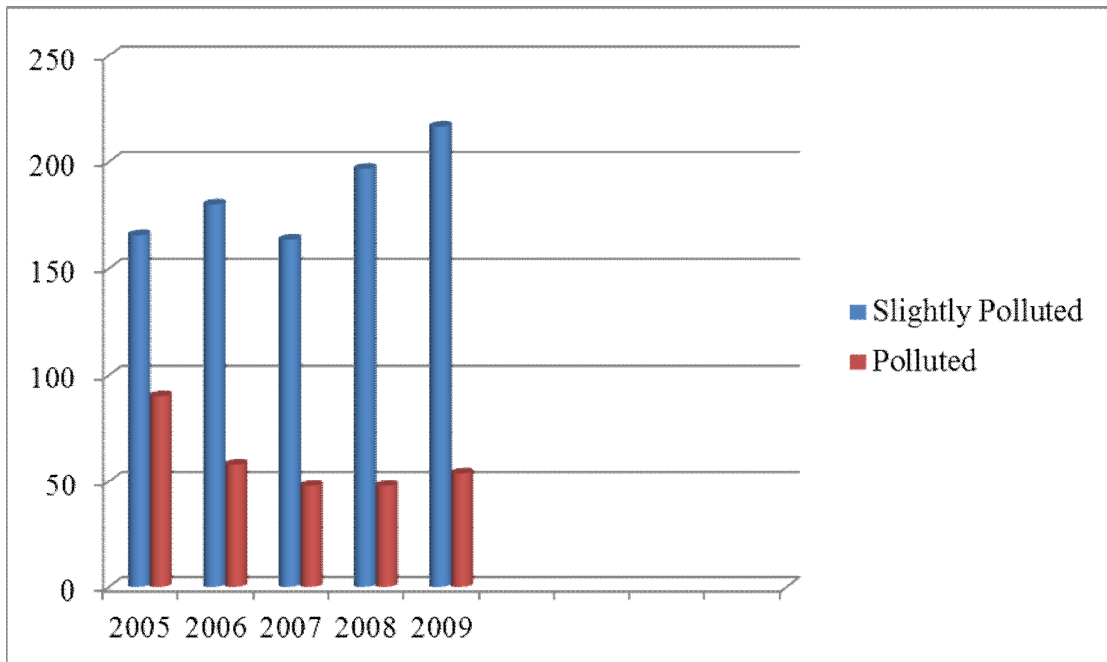Source: Malaysia Environmental Quality Report (2009) p. 69.

The DOE of Malaysia monitored the ambient noise level in 2009 in noise sensitive areas, namely, schools, suburban residential areas, urban residential areas, commercial business zones and designated industrial zones, industrial areas, traffic and development projects. It was found that the results exceeded the level specified for most of the data collected. This noise pollution affects human health productivity and psychology (Malaysia Environmental Quality Report, 2009, 2009; Annual Report, 2009).

The DOE also monitored a total of 1,063 water quality stations located at 577 rivers. The results showed that 578 monitoring stations were found to be clean (54%), 378 monitoring stations were found to be slightly polluted (36%) and 107 monitoring stations were found to be polluted (10%). From Figure 2.07, it can be concluded that the number of clean rivers has decreased and the number of slightly polluted and polluted rivers has increased. The high pollution loading was contributed by sewage treatment plant, manufacturing industries and palm oil mills (Malaysia Environmental Quality Report, 2009).

Based on the 2009 water quality status of polluted rivers, in Kedah, the polluted river basin was Merbok. In Pulau Pinang the polluted river basins were Pinang, Juru, Perai and Jawi. In Perak the polluted river basins were Perak and Sepetang. Langat, Sepang, Selangor, Buluh were found to be polluted in Selangor, and the Klang river basin was polluted in Klang and Kuala Lumpur. Tuang, Seri Melaka, Kesang and Merlimau were found to be polluted in Melaka. The Muar river basin was found to be polluted in Negeri Sembilan. In Johor polluted river basins were found at Batu Pahat, Pontian Besar, Endau, Johor, Air Baloi, Segget, Tebrau, Danga, Pasir Gudang area and Kempas. The Rompin river basin was found to be polluted in Pahang. The Kemaman river basin was found to be polluted in Terengganu. Pengkalan Chepa was found to be polluted in Kelantan, Miri in Sarawak and Kalumpang in Sabah (Malaysia Environmental Quality Report, 2009).

Figure 2.07

Malaysia: Slightly Polluted and Polluted River Water Quality Trend (2005-2009)



Source: Extracted from Malaysia Environmental Quality Report (2009), p.48.

The groundwater quality was monitored by The DOE in Malaysia at 81 wells in Peninsular Malaysia, 16 wells in Sarawak and 15 wells in Sabah. It was found that all the parameters monitored exceeded the guideline values established by the Ministry of Health (Revised December 2000) (Malaysia Environmental Quality Report, 2009). Figure 2.08 represents the percentage of non-compliance of industrial activities by land use in 2009.

Figure 2.08

Malaysia: Percentage of Non-Compliance of Industrial Contaminants by Land Use 2009
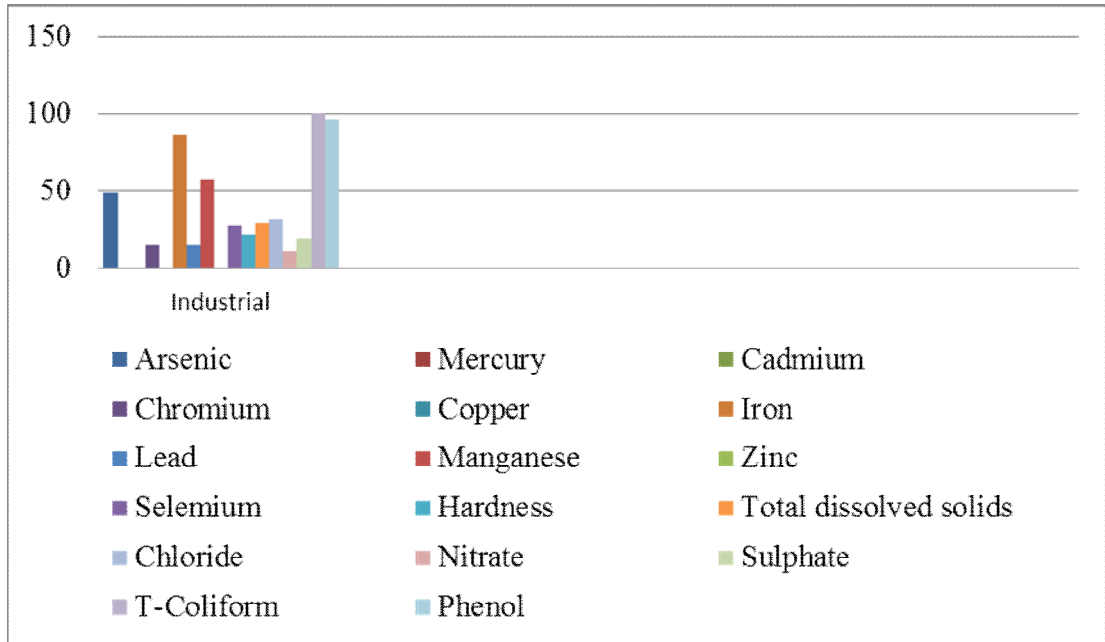


Source: Extracted from Malaysia Environmental Quality Report (2009), p.56.

The DOE of Malaysia monitors marine water quality, as it plays an important role in preserving stability and diversity of the marine ecosystem (Malaysia Environmental Quality Report, 2009). A total of 21 cases of marine pollution through oil spills were reported in 2009. Six cases were reported in the South China Sea, two cases were reported in the Straits of Melaka, one case was reported in the Sulu Sea and twelve cases were reported in the Johor Straits. Table 2.11 represents the oil pollution incidents in 2009.

Table 2.11

DOE: Oil Pollution Incidents 2009

| Location | Area | | No. of cases |
|---|---|---|---|
| South China Sea | Malaysia Territory | Peninsular | 1 |
| | | East Malaysia | 5 |
| | Exclusive Economic Zone (EEZ) | | 0 |
| Sulu Sea | Malaysia territory | Sabah | 1 |
| Straits of Melaka | Malaysia territory | | 2 |
| | Exclusive Economic Zone (EEZ) | | 0 |
| Straits of Johor | Malaysia Territory | West Part | 0 |
| | | East Part | 12 |
| **Total** | | | **21** |

Source: Annual Report, (2009), p. 104.

In terms of water pollution, sewage treatment plants, manufacturing and agro-based industries were categorised as point sources of water pollution. Based on research done by the DOE through field studies and questionnaires water pollution point sources were recorded. Figure 2.09 represents the composition of water pollution sources by sector in Malaysia. Figure 2.10 represents the distribution of industrial water pollution sources (agro-based and manufacturing industries) by state in Malaysia 2009.
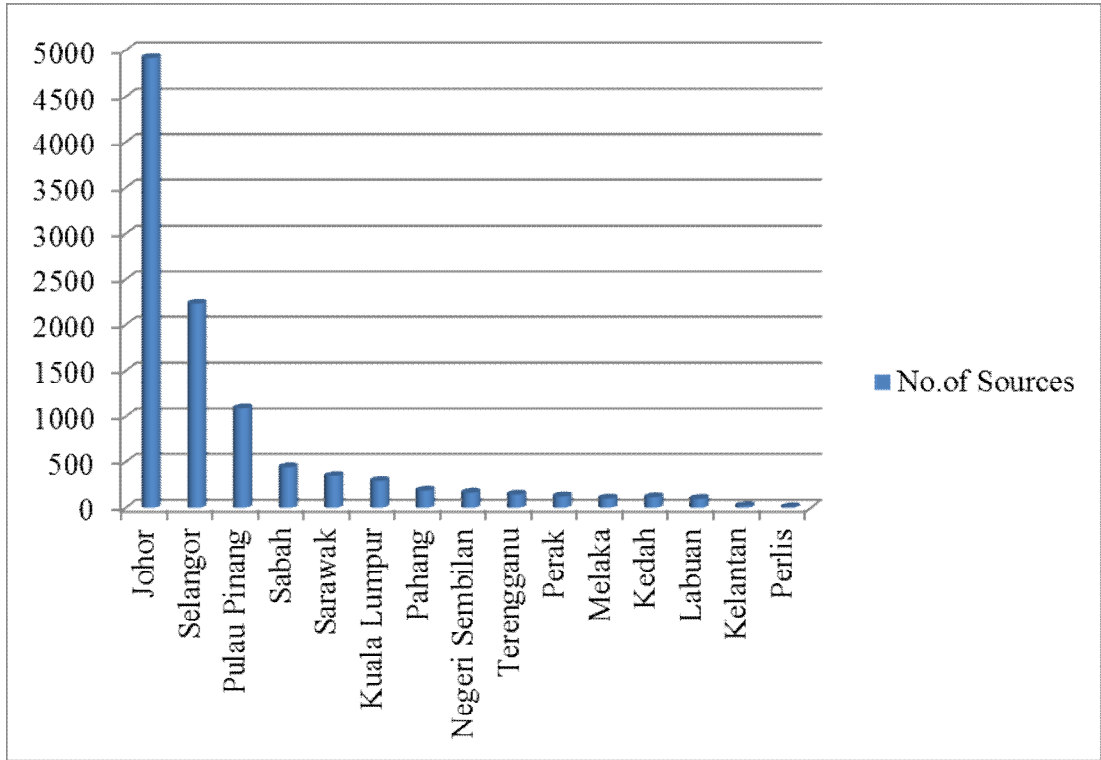
Figure 2.09

Malaysia: Composition of Water Pollution Sources by Sector 2009
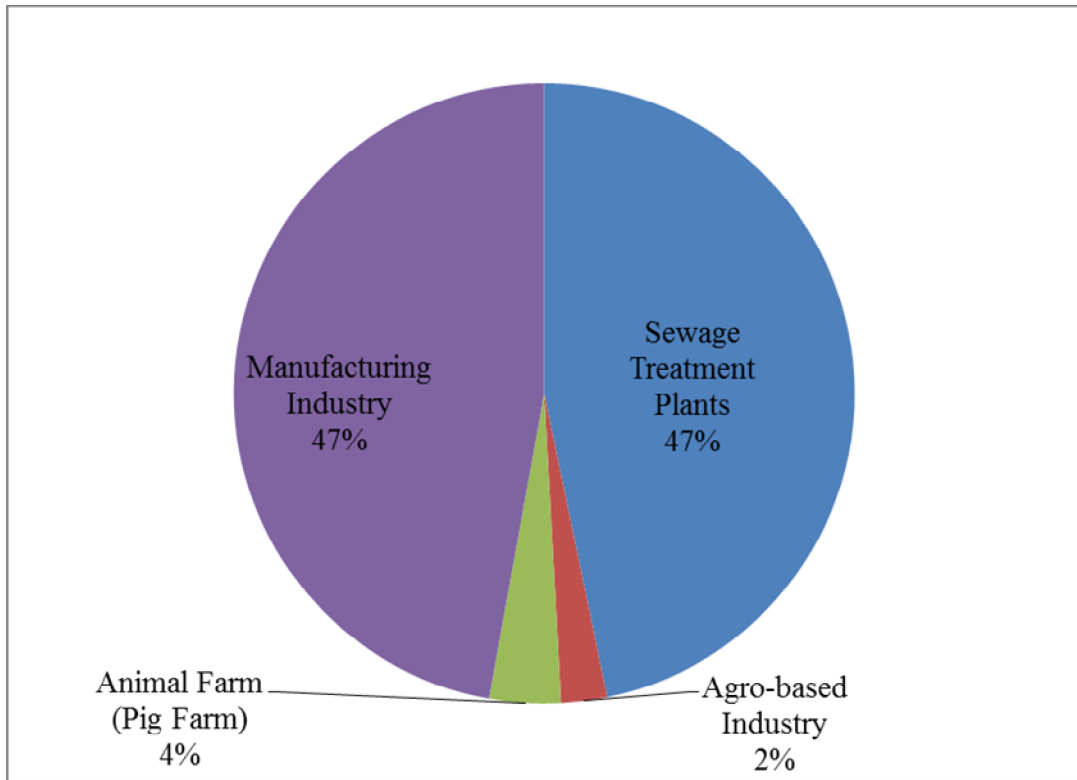


Source: Malaysia Environmental Quality Report (2009), p.67.

Figure 2.10

Distribution of Industrial Water Pollution Sources (Agro-based and Manufacturing industries) by State in Malaysia 2009.



Source: Malaysia Environmental Quality Report (2009), p.67.

In terms of waste, hazardous waste leads to environmental degradation and damages the ecosystem (Compendium of Environment Statistics Malaysia, 2009). Figure 2.11 represents the percentage of scheduled wastes generated by industry in 2008. The industries include electrical and electronics, chemical, rubber based, industrial gas, petroleum/oleo chemical, shipping, printing and packaging, paper based, licensed facilities, water treatment plant/power station, automotive/ workshop, metal/engineering and others.

Figure: 2.11

Percentage of Scheduled Wastes Generated by Industry in 2008
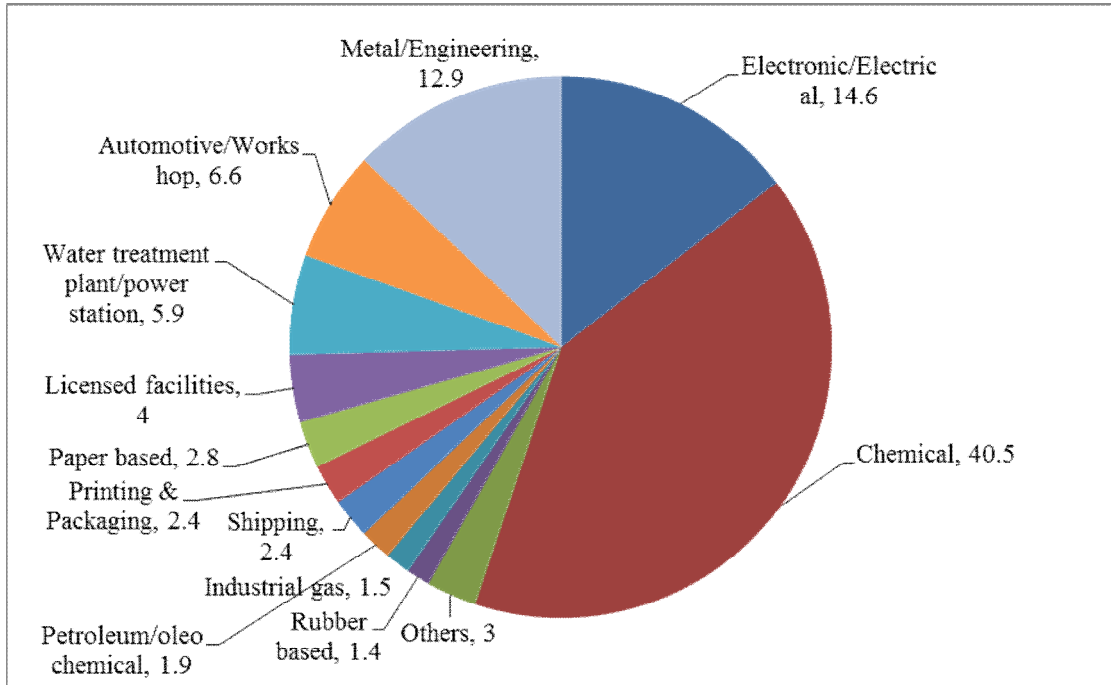


Source: Compendium of Environment Statistics Malaysia (2009), p. 167.

## 2.3 THE MANUFACTURING IMPLICATIONS

As we explore the concept of environmental ethics, it is evidenced that industrial activity, particularly manufacturing operations, has huge implications on the natural environment (Shrivastava, 1995a). Under Malaysia's Industrial Coordination Act (1975), "industrial activity" means the making, catering, blending, orgamenting, finishing or otherwise treating or adapting any article or substance with view to use, sale, transport, delivery or disposal and includes the assembly or ports and ship
repairing but not include any activity normally associated with retail or whole sale trade" (Laws of Malaysia, 2006). As the main agenda of the study, many

facets of manufacturing operations have important implications for the state of the natural environment.

Although industrial development has brought incalculable wealth and prosperity to the    human population over the past 200 years (Shrivastava, 1995a:936), Klassen (2000) argues that all manufacturing activities have ramifications on the rate and level of environmental degradation. The manufacturing activities comprise activities such as the design of the products, selection and extraction of raw materials, operation of the manufacturing process, delivery of the product and service and the availability of reuse or recycling of spent products. For the Organization for Economic Cooperation and Development (OECD) economies, manufacturing accounts for 40 per cent of sulphur dioxide emissions (precursor of acid rain), 60 per cent of water pollution biochemical oxygen (BOD), 75 per cent of non-hazardous waste and 90 per cent of hazardous waste (OECD, 1995).

According to Shrivastava (1995a), the interaction of the manufacturing activities and the natural environment creates numerous unfavourable issues. All these activities have widespread consequences for corporations and communities, as they are normally technical and complex (Shrivastava, 1995a). In addition to manufacturing activities, basic activities such as continuous consumption, marketing, manufacturing, processing, discarding and polluting have the same potential harm (Saha and Darnton, 2005).

According to Lubis (1998), in Malaysia, the industry's main pollutants are discharged into water. The main three pollutant categories of manufacturing

facilities are: 1) food and beverage processing, 2) industrial chemicals and chemical products, and 3) textile plants and dye mills, which contribute about 95 per cent of the total volume of industrial wastewater discharged. He further explains that in wastewater effluent by type of industry breakdown, food and beverages have a high waste in chemical oxygen demand (COD), BOD, suspended solids and oil and grease. Small and medium (SMI) electronics and electroplating plant discharge was found to contain heavy metal contaminants that were disposed of in the sewage drain without treatment (Lubis, 1998). However, in Malaysia, the waste is generally recycled, disposed, incinerated, treated, stored and exported (Economic Planning Unit, 2006), as shown in Figure 2.12 below.

There are many reasons for waste to be generated, besides the manufacturing processes, the causes of waste could vary from resource quality problems, information quality problems to human errors such as lack of planning, unclear information, late information, lack of control and the misuse of resources (Serpell and Alarcon, 1998), as shown in Figure 2.13.

Figure 2.12

Scheduled Waste Management, 2001-2004
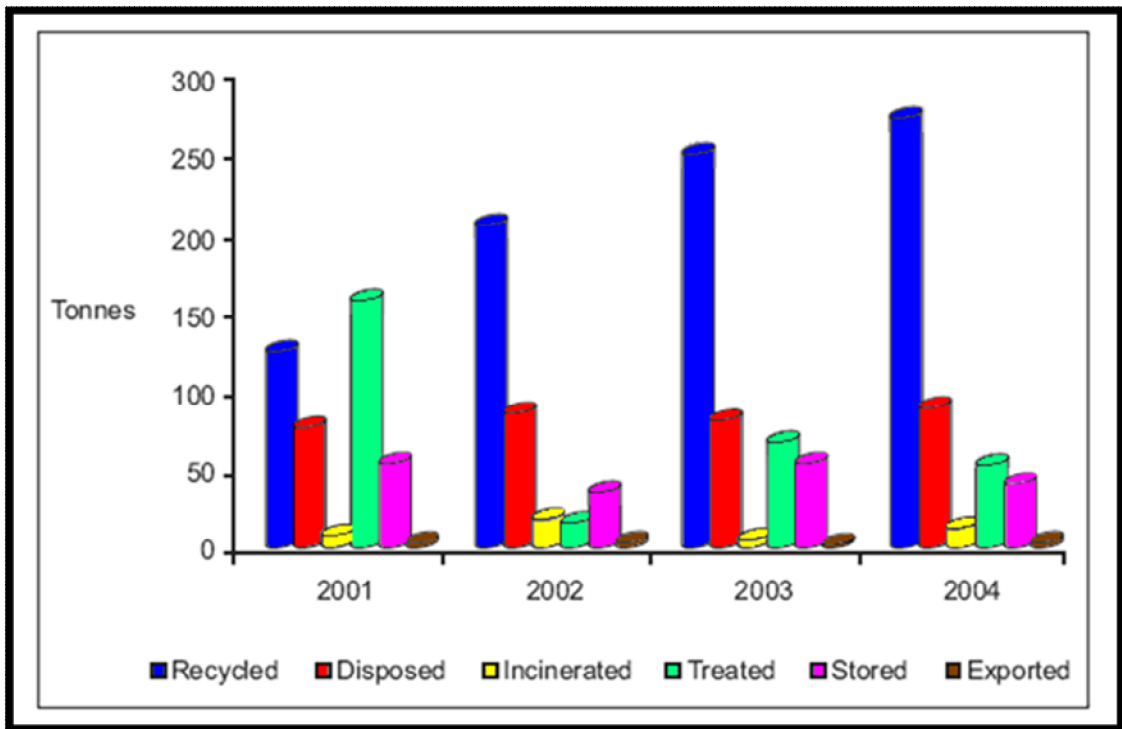


Source: Economic Planning Unit (2006), p. 456.

Ayres (1992) explains that the mobilization and dispersion rate of toxic heavy metals such as arsenic, cadmium, chromium, copper, lead, mercury, silver, uranium or plutonium by industrial activity into the environment is higher than by the natural processes. The processing of phosphate, the manufacturing of cement and smelting of iron ore for example contribute significant quantities of heavy metals released into the air. These toxic heavy metals build up in the topsoil, river bottom sediments, estuarine and groundwater, thus, placing them in our industrial metabolism (Ayres, 1992).

Figure 2.13

Example of Results Obtained From Waste Surveys
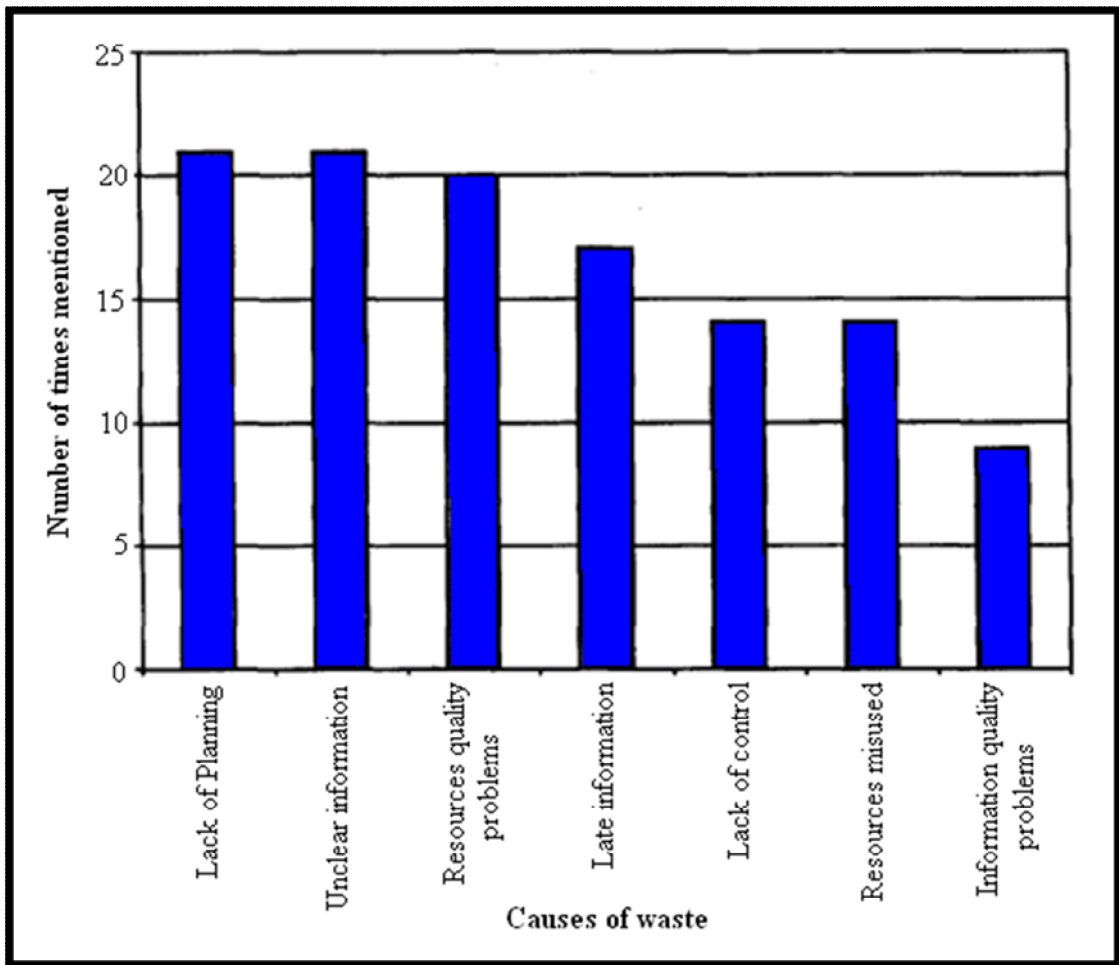


Source: Serpell and Alarcon (1998), p. 217


This interrelated ecosystem contaminates soil, ground or surfaces used by humans, wildlife and livestock, it contaminates the air by toxic or irritating combustion products, it disturbs ocean ecosystems due to oil spills, ocean dumping and ocean mining, it disturbs climate due to a rising concentration of chemical pollutants in the atmosphere (Ayres, 1996). All stages of materials processing such as extraction, physical separation and refining, recombination, macro-forming, fabrication and construction, use and disposal (Ayres, 1992) produce waste and lead to pollution

problems, and, according to Ayres, as in the Encyclopedia of Materials Science and Engineering (Bever, 1986) all these materials normally return to the environment in a different form from their extraction.

Moreover, these heavy metals and materials, so called hazardous waste (a by-product of industrialization), are reactive, toxic, inflammable, radioactive, infectious and corrosive. In Malaysia, these heavy metals such as arsenic, copper, lead, mercury, zinc and cadmium are monitored. The DOE reported the most serious offenders in terms of hazardous waste generation in the total load. Based on this criterion, the major offenders are the metal finishing sub-sectors in the machinery, engineering and electronics sub-sectors. Improper handling of hazardous waste can result in air, water as well as soil pollution. Existing databases suggest that nine major industrial polluters are mostly concentrated in Selangor, Penang, Johor, Perak and Kuala Lumpur. They are: 1) metal finishing, 2) electrical and electronics, 3) textiles, 4) food processing, 5) chemicals, 6) palm oil, 7) rubber, 8) wood-based, and 9) iron and steel manufacturing units (Lubis, 1998).

Lubis (1998) emphasizes that sophisticated industries generate larger amounts of toxic and hazardous waste per unit output compared to small and medium industries (SMIs), which account for 60 per cent of the total firms and often use dirty technology in Malaysia. Hazardous chemicals have been used intensively by the Japanese and U.S. multinationals, which dominate the electronics industry. The DOE reported that 420,000 metric tons of scheduled wastes were generated by industries in 1994 with over 70 per cent consisting of acids, heavy metals, dross,

slag and clinker and mineral sludge and another 30 per cent comprising asbestos, heavy metal sludge, oil and hydrocarbons (Lubis, 1998).

These heavy metal concentrations exceeded the set standard, mostly on the west coast of peninsular Malaysia, where industries are concentrated, particularly in the states of Penang, Perak and Johor. The public health of Malaysia is threatened by the current management of hazardous waste practices in Malaysia and this could lead to major health problems such as leukaemia and infant death cases such as those that once occurred in Bukit Merah, Perak, due to exposure to this hazardous waste (Lubis, 1998).

## 2.4 THE INTERACTIONS: BUSINESS ACTIVITIES AND THE NATURAL ENVIRONMENT

The interaction of the environment, ethics and business, particularly manufacturing activities, have had bad implications for the natural environment as we are actually destroying the planet on which we live. Humans are said to "commit biocide" (Ives, 2000) where the planet is being "beaten and poisoned to death" (Rowe, 1990b). This is because compared to people, the planet is considered to be relatively unimportant. In addition, it has been estimated that within the next few generations the planet will become a "superheated pressure cooker" (Skillman, 1998; Fox, 1996) due to the risks faced, which will bring major chaos to the human race. Therefore, it is critical that environmental ethical considerations and commitment towards the natural environment be integrated into everyday business operations and given equal weight as other business considerations.

## 2.5 THE EVOLUTION OF ETHICS

The study of ethics started 2,500 years ago (Hoffman, 1991; Fox, 1996; McNamara, 1999) and has been evolving ever since. Traditionally, the primary focus of ethics concerned the limit of human beings' actions or aggression, primarily towards other societies or human beings at large and concentrated on the relationship parameters between individuals. Later, the relation between individuals and society was described by ethics. The definition was expanded with the inclusion of women, children and other minority groups. The inclusion of animals, species, plants/trees and the earth in general was recently included by scholars (Fox and McAvoy, 1991).

Despite the evolvement of philosophy, the words "biocide" (Ives, 2000), "superheated pressure cooker" (Skillman, 1998; Fox, 1996), "beaten" and "poisoned to death" (Rowe, 1990b) have been used to describe the interaction between business, ethics and the environment of the world today. It is claimed that the history of scholarship that focuses on the management of organization in the natural world compared to other academic fields is "relatively brief" (Starik and Marcus, 2000) and empirical tools are only starting to be developed as it is "relatively young" as a discipline (Harrison and Freeman, 1999; Fox, 1996).

Tilley (2000:31) claims that environmental ethics is like business ethics, a fresh arena of inquiry within the broader discipline of ethics. Although concern over the environment is not a new issue (Hoffman, 1991), it has been silent for the past 49 years (Carson, 1962). In terms of academic fields, ethics is considered "relatively recent" and environmental ethics and environmental philosophy are the newcomers

(Carnegie Mellon, 2003), whereas from a human preoccupation aspect, ethics itself is very ancient (older perhaps than philosophy itself) and yet, environmental ethics is claimed to be "very new" (Partridge, 1980).

Therefore, there is a call for environmental ethics. Werhane and Freeman (1999) emphasize that in obscure academic ideas, environmental sustainability is not a weird idea anymore. Environmental management is no longer a side issue but is essential to business operations (Dechant and Altman, 1994). Prince and Denison (1992) argued that environmental performance needs to be achieved by respecting and conserving the environment, which requires businesses to think of creative ways to develop accountability and incentives for respect and conservation. This portrays an urgent need for sound environmental ethics (Ohara, 1998) because manufacturers are struggling to compete in the global arena by adjusting manufacturing activities towards market competition and "green production principles awareness" (Chiang and Tseng 2005).

The need for sound environmental ethics has encouraged corporations to engage in voluntary initiatives to improve environmental quality. The reasons for such engagement vary from concern for management values, firm reputation and cost reduction, as outlined by Logsdon (2004). Werhane and Freeman (1999) indicate that environmental sustainability is no longer impossible, it gives companies a competitive advantage, it saves money, reduces the need for new resources and offers companies opportunities in a global market that does not degrade or exploit less developed countries. In an extreme corner, Kassiola (2003) argued that

environmental ethics can and must play an essential role (with another normative disclosure) in saving the world.

Therefore, various approaches, strategies, and actions to spur changes have been proposed by many researchers in engineering, natural sciences, public policy, economics and business literature, which has motivated improvement to management operations on environmental performance (Klassen 2000) as well as in accounting literature (Andrew, 2000). There is an urge for the developing country governments and corporations to intensify their effort to curb the environment problems. This is because correcting past mistakes will never be cheap (Austin, 1991). Most production processes lead to severe pollution of rivers, the air and land but to set up a cleaner production process would be extremely expensive (Harvey, 1994) and be a drag on the gross national product [GNP] (Quinn, 1971).

This is where environmental considerations feature, when pollution and cost would be the major issues. It is evidenced that abuse, misuse and unethical decision making have caused substantial losses to corporations and society. The consideration of ethics in business operations has been proven to be useful to business and professionals. However, frequently, manufacturing companies in Malaysia are said to neglect the environmental issues in their business agenda due to these "cost concepts" as well as other obstacles. This action may lead to substantial problems not only to the environment but also to the business itself.

## 2.6 ENVIRONMENTAL ETHICS

The development of environmental ethics began with the publication of Leopold's Sound County Almanac in 1949 (Thompson, 1998). Aldo Leopold was the pioneer of American Wildlife Ecology and was the first ecologist to extend the ideas into environmental ethics (Ohara, 1998). Later, Rachel Carson was said to be the catalyst for the environmental movement when her book "Silent Spring" was released in 1963 (Brennan and Yeuk-Sze-Lo, 2000). Since then, environmental ethics has become a major issue. Modern Western perspectives on the management of organization in the natural environment have many influences, some of the best known of which are based on Starik and Marcus (2000), as shown in Table 2.12. They come from various fields, which include environmental conservation, natural science, environmental economics and environmental philosophies. Table 2.13 shows the illustration of the articles appearance from several philosophers extracted from "a very brief history of the origins of environmental ethics for the novice" in Totem Graphics (2002).

Table 2.12

The Environmental Ethics Influencers

| Field | Authors |
|---|---|
| Environmental Conservation | John Muir, John James Audubon and Aldo Leopold |
| Natural Science | Charles Darwin, Rachel Carson and Fritjof Capra |
| Environmental Economics | Thomas Malthus, Ronald Coase and Herman Daly |
| Environmental Philosophies | Henry David Thoreau, Arne Naess and E. F. Schumacher |

Source: Starik and Marcus (2000).

Table 2.13

The Philosophers and Their Work

| Year | Philosopher | Their work |
|------|-------------|------------|
| 1949 | Aldo Leopold | Published "A Sand County Almanac" |
| 1963 | Rachel Carson | Published "The Silent Spring" |
| 1967 | Lynn White | Published "The Historical Roots of our Ecological Crisis" |
| 1968 | Garret Hardin | Published "The Tragedy of the Commons" |
| 1972 | John B. Cobb | Published "Is It Too Late? A Theology of Ecology" |
| 1973 | Richard Routley (now Sylvan) <br><br> Arne Naess | Presented "Is There a Need for a New, an Environmental Ethic?" <br><br> Published "The Shallow and the Deep, Long-Range Ecology Movement" in Inquiry. |
| 1974 | William Blackstone <br><br><br> John Passmore | Published proceeding in "Philosophy and Environmental Crisis" <br><br> Published "Man's Responsibility for Nature" |
| 1975 | Holmes Rolston III | Published "Is there an Ecological Ethics?" in Ethics |
| 1979 | Eugene C. Hargrove | Published the journal Environmental Ethics |
| 1988 | Paul Taylor <br><br> Holmes Rolston III <br><br> Mark Sagoff <br><br> J. Baird Callicot <br><br> Bryan Norton | Published "Respect for Nature" <br><br> Published "Environmental Ethics" <br><br> Published "The Economy of the earth" <br><br> Created a collection of his paper in "Defense of the Land Ethic". <br><br> Wrote "Why Preserve Natural Diversity" |

Source: Totem Graphics (2002)

**2.7 THE ENVIRONMENTAL ETHICS DEVELOPMENT**

The publication of Aldo Leopold's "Sand County Almanac" in 1949 was the starting point of environmental ethics development. Nevertheless, ecological ideas were only planted and started to grow approximately forty years ago with the publication of Rachel Carson's "Silent Spring" in 1963 (Carson, 1962). This publication actually witnessed the rise and movement of environmental ethics that opened the eyes and minds of the public to the threat of the pesticides on humans and the ecology (Thompson, 1998). Since then, it has grown to become an important new area of business ethics, with the public critique of current societal practices (Werhane and Freeman, 1999) as well as the growing public critique of the nature in the nineteenth- and twentieth-century. Only in the 1970s, did contemporary environmental ethics emerge as an academic discipline (Brennan and Yeuk-Sze-Lo, 2002) that studied environmental ethics: the moral relationship of human life and the environment in which we live (Wikipedia, 2004).

The goal of environmental ethics is to focus on the moral foundation of environmental responsibility and not only to convince us to be concerned about the environment (Ohara, 1998). It means that with an attitude of concern, responsibility has to be translated into actions that focus on the issue of "responsible personal conduct" by respecting the natural landscape, resources, species and non-human organisms (Partridge, 1980). This brings us to the definition of environmental ethics. The goal of environmental ethics coincides with its meaning. In the larger context, environmental ethics means treating, building, operating and accepting responsibility for natural resources, homes and business as well as the production

process with the least environmental impact (Prince and Denison, 1992). It also means treating natural resources as an ecological whole rather than just as commodities and that capitalizing environmentalism as a commodity would somehow benefit the market (Egri and Herman, 2000).

It is impossible to define ethics and environmental ethics, as it will lead to contradictions and conflict if the term is considered universal and generally applicable across the context (Andrew, 2000). In relation to environmental ethics, Holbrook (1997) manages to emphasize that environmental ethics are constructed under two sets of principles. The principles are the self-realization and environment preservation. Both principles are essential to the realization of environmental ethics. In this study, environmental ethics, green ethics (Thomas, 2002) and ecoethics (Oius, 2003) are interchangeable terms. Thomas (2002) argues that environmental ethics relate to "ethics", "standards of conduct" and "best practices" towards the physical environment, which again respects the natural landscapes, resources, species and non-human organisms (Partridge, 1980).

Environmental ethics, green ethics and ecoethics are founded on core ethical values of moral status (Brennan and Yuek-Sze-Lo, 2002) like integrity, honesty and the exercise of self-restraint, self-interest, individual greed and apathy. All these human behaviours rely on the basic human values that could balance the positive and negative values. The values and their functions are represented in Table 2.14. This table explains the typology of basic values in environmental ethics. The basic values comprise utilitarian, naturalistic, ecologistic-scientific, aesthetic, symbolic,

humanistic, moralistic, dominionistic and negativistic that work within their specified functions.

Table 2.14

Typology of Basic Values in Environmental Ethics

| VALUE | DEFINITION | FUNCTION |
|---|---|---|
| Utilitarian | Practical and material exploitation of nature | Physical sustenance/security |
| Naturalistic | Direct experience and exploration of nature | Curiosity, discovery, recreation |
| Ecologistic-Scientific | Systematic study of structure, function | Knowledge, understanding, observational skills |
| Aesthetic | Physical appeal and beauty of nature | Inspiration, harmony, security |
| Symbolic | Use of nature for language and thought | Communication, mental development |
| Humanistic | Strong emotional attachment and "love" | Bonding, sharing, cooperation, companionship |
| Moralistic | Spiritual reverence and ethical concern for nature | Order, meaning, kinship, altruism |
| Dominionistic | Mastery, physical control, dominance of nature | Mechanical skills, physical prowess, ability to subdue |
| Negativistic | Fear, aversion, alienation from nature | Security, protection, safety |

Source: Carnegie Mellon (2003).

"Self-interest" is marketed by "business ethics" while "environmental ethics" is marketed in terms of "human interest" (Hoffman, 1991). Partridge (1980) designates that there are three levels of environmental ethics as

proposed by moral philosophers. They are the descriptive, normative and critical/metaethics levels. The descriptive ethics level emphasizes the value aspect that people and their culture have. Normative ethics or "prescriptive ethics" lies under moral issues that come in the question forms of right and wrong, justice and injustice and other related questions. The last level of environmental ethics is "critical ethics" or "metaethics", which look into ethical concepts with the justification of normative claims that are open to policy and legislative debate. Partridge also indicates that environmental ethics do not exist when the ecosystem and wilderness of the earth are not understood, recognized and appreciated as a system and when it can be damaged by humans as a matter of choice.

Environmental ethics is represented by environmental values such as "sustainability", "conservation" and "social values" (Thomas, 2002) that aim to give nature some "intrinsic value" (Oius, 2003), which include an environmental ethics component such as ethics of resource use, benefits, cost and distribution, risks, pollution levels, rights and torts or needs of the future generations (Rolston, 1988). An early task of environmental ethics is to define an environment that is worthy of human sympathy and the next task is to provide guidelines towards "right" and "wrong" actions that govern attitudes, behaviour and actions towards nature (Rowe, 1990b). Eventually, environmental ethics has evolved into a platform concerned with the rise of the earth and its creature (Kauffman, 2001) and environmental ethics is what is really needed to solve the ecological crisis, as is often argued in the ongoing debate (Ouis, 2003).

Environmental ethics has been visualized in terms of a tree from evolutionary perspectives. The environmental ethics tree has two major branches or themes, namely, the dominant, majority, western tradition and the minority tradition. Based on Figure 2.14, the majority tradition consists of rights theory, utilitarian or eco-utilitarian and land ethics. According to Fox and McAvoy (1991), this branch revealed that they seek to use existing philosophical frameworks to include animals, plants, species, inanimate objects and the environment in general. These theories are based on the concept of objectives, rational investigations where emotions and subjectivity have no place.

According to Fox and McAvoy (1991), the minority tradition was placed in another branch that consists of Ecofeminism, Taoist and Native American Worldwide. They encompass such ideas and challenge the very assumptions of western ethical philosophy. The theorists of minority tradition struggle to define a new framework in order to define ethics in general and environmental ethics in particular, which includes recognizing the value of interconnection and caring. However, from evolutionary perspectives, the position of deep ecology is controversial and is placed at the junction between the two traditions (Fox and McAvoy, 1991).

Figure 2.14

Environmental Ethics Tree
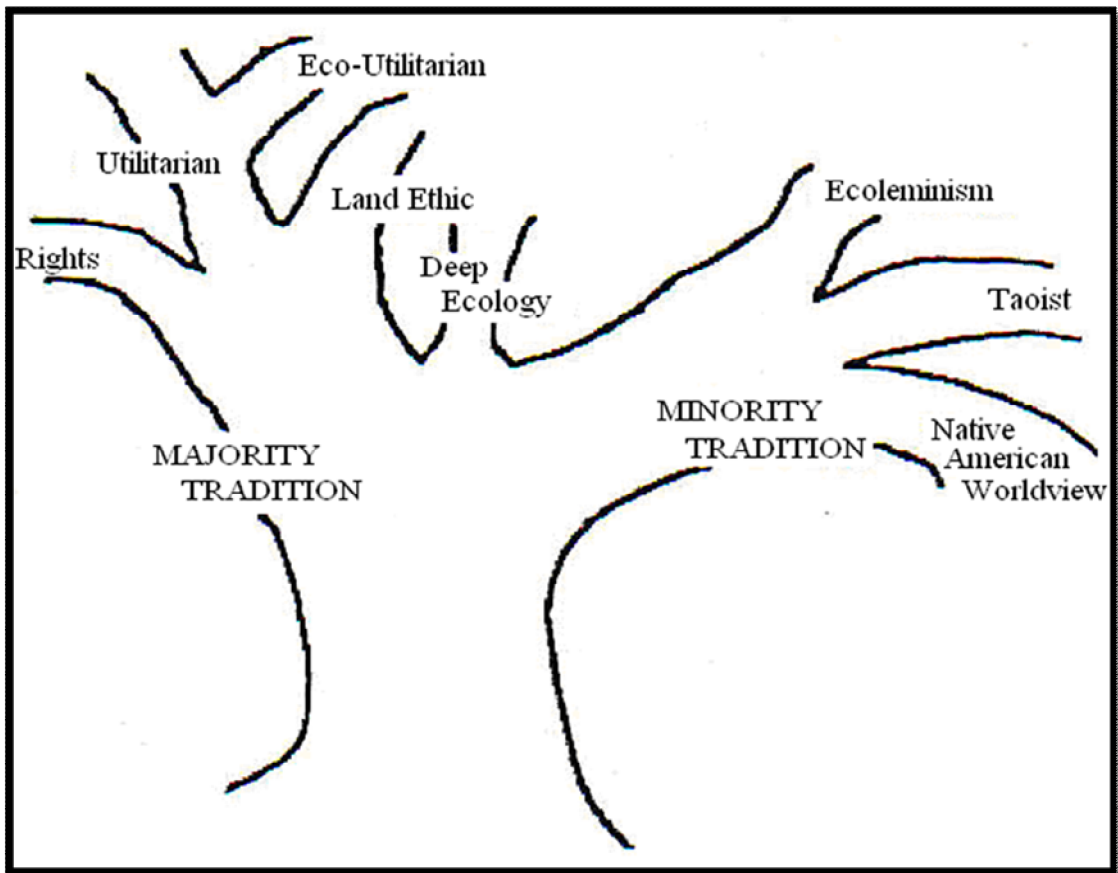


Source: Fox and McAvoy (1991).

Western environmental ethics related literature reveals six primary philosophical lines of thought and includes all the areas except Taoist and Native American Worldwide and it is represented in Table 2.15. This table represents the environmental ethics matrix in order to differentiate between and among theories (Partridge, 1980). Partridge (1980) discusses that the environmental ethics matrix represents six philosophical schools of thought including – Rights, Eco-Utilitarian, Land Ethic, Deep Ecology, Ecofeminism and Synthesis/Integrative.

Table 2.16 represents a reference guide to environmental ethics as a summary of alternative ethical positions. It offers a general approach to environmental ethics, as in Mainstream Accounting, Deep Ecology, Social Ecology, Eco-feminism and Post-modern Environmentalism. Each general approach is represented in terms of its ethical position that has been summarized.

Table 2.15

Environmental Ethics Matrix

| Philosophical School of Thought | Major Authors | Keywords | Primary Issues | Criticisms |
|---|---|---|---|---|
| **Rights** | Kant<br>Regan<br>Stone<br>Taylor | Moral Agent<br>Rights<br>Obligations<br>Sentiment<br>Interests<br>Rational | Definition of Moral<br>  Agent<br>Interspecies Justice<br>Rights of Inanimate<br>  Objects<br>Rights of Nonhumans<br>Resolution of Conflict<br>  Between Rights<br>Holders | Dualism<br>Hierarchical<br>Patriarchal<br>Implies Conflict<br>Atomistic<br>Anthropocentric |
| **Eco-Utilitarian** | Singer<br>Bentham<br>Mill | Pleasure<br>Community<br>Instrumental<br>Value<br>Cost/Benefit<br>Preference | Determining the<br>"Good"<br>Integrity of Individual<br>Minority of Position<br>Assessing Preference | Anthropocentric<br>Quantitative<br>Hierarchical<br>Patriarchal |
| **Land Ethic** | Leopold<br>Callicott<br>Katz | Biotic<br>Community<br>Land Organism<br>Complexity | Human/Nature<br>Separation<br>Maintenance of<br>Diversity<br>Extension of Moral<br>  Consideration to<br>Nature | Patriarchal<br>Dualistic<br>Simplistic<br>Lack of Social<br>  Concern |
| **Deep Ecology** | Naess<br>Duvall<br>Sessions | Biocentric<br>Diversity<br>Egalitarianism | No Interference with<br>  Nature<br>Economic &<br>Ideological<br>  Change Necessary<br>Appreciate Life | Hierarchical<br>Deprives<br>Individual<br>  of Value<br>No Criteria for<br>  Assessment |
| **Ecofeminism** | Salleh<br>Kheel<br>Warren<br>Cheney | Emotions<br>Gift Economy<br>Web of Life<br>Relations | Male Domination of<br>  Nature & Women<br>Subject/Object<br>Alienation<br>Relationship Oriented<br>Validity of Emotions<br>Connections Between<br>All<br>  Forms of Oppression<br>Context of Issue | Dualities<br>Denial of<br>  Responsibility<br>"Scapegoating"<br>Men |
| **Synthesis/Integrative** | McDaniel<br>Scherer<br>Rolston<br>Zimmerman<br>Dustin<br>McAvoy | Consensus<br>Transformative<br>Attachment<br>Compassion<br>Participatory | Transcending Dualities<br>Illusion of Objective<br>  Observer<br>Articulation of<br>Processes<br>  and Relatedness as<br>  Central Value<br>Avoidance of<br>Relativism<br>Cultural Understanding | |

Source: Fox and McAvoy (1991).

Table 2.16

Reference Guide to Environmental Ethics

| General Approach | Summary of ethical position |
|---|---|
| **Mainstream Accounting** | Generally assumes the environment to be an "externally" and not a direct responsibility of the organization. Ethical responsibilities are extended to a limited group, which includes shareholders as primary stakeholders.<br><br>This perspective allows for an ethical position founded on the maximization of personal utility, often in the form of profits and often at the expense of the long-term viability of the natural environment.<br><br>If the environment is considered, it is often done so from the perspective of the organization's interests.<br><br>Anthropocentric: centred around humanity and decisions are made in the interests of humans over the interests of other living organisms. If environmentally sustainable behaviour is encouraged, it is done so on the basis of human interest. |
| **Deep Ecology** | Ethics based on non-anthropocentric belief systems.<br><br>Cultural practices are placed in the context of a greater living cosmos and decisions are assessed in light of the effect on the broader living organism of which the self is part.<br><br>Often encourages a spiritual dimension within the ethical framework and draws on the teachings of indigenous and Eastern philosophy to help inform relationships with nature. |
| **Social Ecology** | Ethics based on non-hierarchical relationships among people and nature.<br><br>Cultural practices are challenged to become egalitarian and promote equity and move away from oppressive relationships of domination.<br><br>Recognizes social and environmental relations are affected by power structures and encourages these relationships to allow for self-determinism and encourage the maximization of nature, community and self-potential. |
| **Eco-Feminism** | Encourages an ethical perspective that challenges patriarchal structures that have often equated with nature.<br><br>Challenges social and environmental relations to become more inclusive of the 'Other', which includes women, nature, and the poor and people form non-European backgrounds.<br><br>Offers a sophisticated analysis of gender and the role of these relations in the oppression of nature, suggesting an inclusive environmental ethic informed by 'Other' perspectives that resist the domination of patriarchal relationships with nature. |
| **Post-modern Environmentalism** | An emerging area that resists absolutes as a way out of the environmental crisis.<br><br>Encourages a dialogue with cultural, gender and class 'difference' and offers an analysis of language, text and discourse in the construction of the environmental crisis.<br><br>It is an ethical perspective that encourages a re-imagination of nature as a site of multiplicity and multi-vocality and offers visibility and validity to environmental perspectives that have been excluded or erased form the main texts that dominate both mainstream environmentalism debate. |

Source: Andrew (2000), p. 198.

In another corner, Minteer et al. (2004) have come out with a range of general environmental ethical principles that employ ethical statements represented by five distinct normative groupings. They proceed by indicating that in the environmental philosophy and history literature, the ethical principles move from strongly anthropocentric environmental ethics to strongly non-anthropocentric. This ethical principal is represented in terms of environmental ethics typology, as shown in Table 2.17.

The table is represented in terms of normative grouping, environmental ethics and representative statements. For normative grouping of Anti-environment, their environmental ethics would be a threat to survival and spiritual evil and the representative statement for anti-environment would be: nature can be dangerous to human survival and nature can be spiritually evil. This is followed by Benign Indifference, Stewardship and Radical Environmentalism normative group with its own environmental ethics and representative statement.

Table 2.17

Environmental Ethics Typology

| Normative Grouping | Environmental ethics | Representative statement |
|---|---|---|
| **Anti-environment** | Threat to survival<br><br>Spiritual evil | Nature can be dangerous to human survival.<br>Nature can be spiritually evil. |
| **Benign indifference** | Storehouse of raw materials<br><br>Religious dualism<br><br>Intellectual dualism | Nature is storehouse of raw materials that should be used by humans as needed.<br>Humans were created as more important than the rest of nature.<br>Because humans can think, they are more important than the rest of nature. |
| **Utilitarian conservation** | Old humanitarianism<br><br>Efficiency<br><br>Quality of life | Cruelty toward animals makes people less human.<br>The supply of goods and services provided by nature is limited.<br>Nature adds to the quality of our lives (for example, outdoor creation, and natural beauty). |
| **Stewardship** | Ecological survival<br><br>Religious/spiritual duty<br><br>Future generations<br><br>God's creation<br>Mysticism | Human survival depends on nature and natural processes.<br>It is our religious responsibility to take care of nature.<br>Nature will be important for future generations.<br>Nature is God's creation.<br>All living things are sacred. |
| **Radical environmentalism** | Humanitarianism<br><br>Organicism<br>Pantheism<br>Natural Rights | Animals should be free from needless pain and suffering.<br>All living things are interconnected.<br>All living things have a spirit.<br>All living things have a moral right to exist. |

Source: Minteer et al. (2004), p. 145.

## 2.8 THE GREEN MOVEMENT

The development of environmental ethics coincides with the rise of green consumerism (Ives, 2000). This can be seen in the rise of many publications regarding the natural environment. All these publications impose the various authors' views, expertise, and knowledge; some of them are listed in Table 2.18 below (for additional references). Included as references are: The Corporate Response to the Environmental Challenge, Environmental Strategies for Industry: International Perspectives on Research Needs and Policy Implications, Earth in the Balance: Ecology and the Human Spirit, "America's Green Strategy" and Changing Course: A Global Business Perspective on Development and the Environment.

Saha and Darnton (2005) argued that the scope of green meaning is considerable. They relate to many issues and some of the issues are ecological concerns, conservation of planet and animal, corporate social responsibility (CSR), humanitarian concerns, fair trade, clean water, animal welfare as well as equality and sustainability. From this scope the term "green" could actually be related to anything that concerns the natural environment and which covers ecology as a whole.

Table 2.18

Business and the Environment

| Title | Authors | Publisher | Year | Place |
|---|---|---|---|---|
| **The Corporate Response to the Environmental Challenge** | | McKinsey & Company | 1999 | Amsterdam |
| **Environmental Strategies for Industry: International Perspectives on Research Needs and Policy Implications** | Edited by Kurt Fischer and Johan Schot | Island Press | 1993 | Washington, D.C. |
| **Earth in the Balance: Ecology and the Human Spirit** | By Al Gore | Penguin | 1993 | New York |
| **"America's Green Strategy"** | By Michael E. Porter | *Scientific American* | April, 1991' | |
| Second Annual National Environment Survey by Times Mirror Magazines and the Roper Organization. Interviews of 1,005 adults nationwide | | | Conducted between April 2 and 8, 1993. | |
| **Changing Course: A Global Business Perspective on Development and the Environment** | By Stephen Schmidheiny with the Business Council for Sustainable Development | MA: MIT Press | 1992 | Cambridge |
| **Costing the Earth: The Challenge for Governments, the Opportunities for Business** | By Frances Cairncross | Harvard Business School | Boston Press | 1992 |

Source: Walley and Whitehead (1994), p. 47.

According to Chiang and Tseng (2005), all manufacturers are struggling to compete in the global arena and on the green production principles awareness. The green approaches are revealed to be a desirable target not only to ethical corporations but also to purely unethical investors (Gallarotti, 1995). Hart (1997) argued that greening reflects the corporation's operational or technical aspect as they could save a lot of money. Hart also emphasized that greening could be explained in terms of a corporation's risk reduction, reengineering and cost cutting while strategically environmental needs to be guided through pollution prevention, product stewardship and clean technology.

Many corporations are moving towards this "green era" for various reasons. The reasons for greening vary from aspects that relate to regulatory, stakeholder activism and competitive advantage (Dechant and Altman, 1994; Bansal and Roth, 2000), to ethical concerns and top management initiatives (Bansal and Roth, 2000). In addition, the production of consumers' products will have environmental considerations as the effect of those products is clearly seen. Figure 2.15 represents the rank and types of product categories that fall under this consideration. Stisser (1994) ranks the product category, and the highest consideration was given to lawn and garden products, followed by household cleaning products, paper products, gasoline, personal care products, cars and fast-food restaurants being the lowest.

Figure 2.15

Where Green Counts

| Environmental considerations are most important in products where the effect on the environment is easy to see. |
| :--- |
| (Importance of environment in brand selection of selected products, ranked by category index, 1993) |

| Rank | Product category | Index |
| :--- | :--- | :---: |
| 1 | Lawn-and-garden products | 210 |
| 2 | Household cleaning products | 174 |
| 3 | Paper products | 138 |
| 4 | Gasoline | 110 |
| 5 | Personal-care products | 80 |
| 6 | Cars | 78 |
| 7 | Fast-food restaurants | 50 |
| Note: Average index – 100 | | |

Source: Adaptation from Stisser (1994), p.27.

Starik and Marcus (2000) explained that the emergence of greening organizations is due to: 1) the environmental and social movement in the 1970s and 1990s and 2) the perception that organizations could have a significant impact on the ecosystems that lead to the rise of various motivations for organizational change.

In the era of globalization, business and the environment can achieve a win-win situation through this movement. Schot and Fischer (1994) agree with the above statement by indicating that it is no longer a cost to corporations to be green as the green issue has been recognized as the "catalyst" for many

advantages in the area of innovation, new market opportunity and wealth creation (Walley and Whitehead, 1994).

These advantages could benefit the corporations in terms of lowering environmental impact (Hart and Ajuha, 1996), strengthening industry growth (Russo and Fouts, 1997), reducing cost through ecological efficiency, capturing emerging "green" markets, gaining first mover advantage in the industries, establishing better community relations, improving their image (Shrivastava, 1995a), ensuring long-term profitability to green bottom line (Hoffman, 1991) and achieving constant innovation, new market opportunity and wealth creation (Walley and Whitehead, 1994).

The motivation for greening is represented by Table 2.19, as proposed by Saha and Darnton (2005), based on the companies interviewed. Among others, the corporations are motivated to go green because of the pressure they get from nongovernmental organizations (NGO) and governmental regulations, as well as the opportunity to increase interest from investing institutions and to gain more business and save money, demand from customers, influence from the government, direct pressure from NGOs, shareholders, financial analysts, neighbours and their environmental concerns.

Table 2.19

Motivations for Greening

- Pressure from a nongovernmental organization (NGO) in 1990.

- Pressures from governmental regulations.

- Opportunity to increase interest from investing institutions.

- Demand from a customer for ISO 14001-certified management systems in 1990.

- Influence from the government.

- Opportunity to gain more business and save money.

- Environmental concerns emerged in 1994, as a result of the CEO reading about the

  subject. It was considered "the right thing to do" because the business heavily impacts

  the environment.

- Opportunities were created from end users and retail customers.

- Environmental concerns emerged in 1975, when environmentalism was aroused.

- Internally, the CEO motivated the issue of the environment because it was anticipated

  to be increasingly important in the future.

- Environmental concerns emerged in the 1960s, due to legal obligations.

- Direct pressures from NGOs, shareholders, financial analysts, neighbours.

Source: Adapted from Saha and Darnton (2005), p. 131.

However, because being green is not simple, corporations should undergo three phases of corporate greening model: 1) adjustment, 2) adaptation, and 3) innovation (Post and Altman, 1992). According to Saha and Darnton (2005), these activities lead to various responses to green issues that comprise: putting their head in the sand, taking a defensive approach, paying lip service to concerns, reactive approach, following competitors, piecemeal

ideas, green product promotions, green marketing, environmental management, greening the company and aiming for sustainability.

In terms of its primary activities Table 2.20 represents the green value chain. The primary activities include inbound logistics, operations, outbound logistics, marketing and sales and service. In combination, the activities include transport impacts, storage modes, "green consumables", clean technologies, recyclable packaging, storage modes, transportation modes, raw materials, sourcing and supply, receipt and environmental disposal of used products and product components.

Table 2.20

The Green Value Chain

| Support activities | Primary activities | | | | |
|---|---|---|---|---|---|
| | **Inbound Logistics** | **Operations** | **Outbound Logistics** | **Marketing and Sales** | **Service** |
| | Transport impacts<br><br>Storage modes | "Green consumables"<br><br>Clean technologies<br>Recyclable packaging | Storage modes<br><br>Transportation modes | Raw materials<br><br>Sourcing and Supply | Receipt and environmental disposal of used product or product components |
| **Technology development** | Waste management<br><br>Alternative raw material and energy sources | Clean technologies<br><br>Pollution minimization and control<br><br>Energy efficient | Finished product recyclability | Packaging reduction and disposal Innovatory "Green" products | Disassembly Restoration |
| **Human resource management** | Staff selection<br>Supplier selection | Corporate culture training programs<br><br>Corporate environmental awareness | Sub contractual arrangements | Internal and external communication and community liaison | Incentives<br><br>Rewards for green ideas and practices |
| **Management systems** | Inventory reduction<br><br>Recyclability | "Just-in-time" processes | Product life cycle analysis<br><br>Recycling and recovery<br><br>Infrastructure | Green new-product development<br><br>R&D | Quality circles and environmental standards assurance |

Source: Saha and Darnton (2005), p.125.

## 2.9 ENVIRONMENTAL ETHICS PHILOSOPHY

Environmental ethics emerged as a new sub-discipline of philosophy in the early 1970s by posing a challenge to traditional anthropocentrism, a human centred way of thinking (Brennan and Yeuk-Sze-Lo, 2002; Partridge, 1980), in conjunction with the opposite theory of non-anthropocentrism. These theories are represented by Table 2.21, a typology of theories within environmental ethics. Theoretically, anthropocentric places the human species at the centre of the human moral universe. However, human beings are not the only moral agents in the world; they are only creatures with oral interests of "intrinsic" worth. In anthropocentrism the rest of nature has no such interest and only has worth to the extent that it is instrumental in meeting the needs of the people. Anthropocentrism can be divided into: 1) Egocentric and 2) Homocentric varieties. Non-anthropocentrism is represented by 1) Biocentrism and 2) Non-Anthropocentrism or Ecocentric (Thompson, 1998).

In an extreme corner, egocentric perspectives regard man as the master or the justification of the natural community (Partridge, 1980) and the theories are normally related with laissez faire liberalism, capitalism, and the free market. In addition, generally, the theories pay scant attention to environmental concerns as nature is seen as a resource to be exploited for human benefit (Thompson, 1998). The prominent contributors in egocentric theories are Thomas Hobbes, John Locke, Adam Smith, Thomas Malthus and Garret Hardin while J. S. Mill, Jeremy Bentham, Barry Commoner and Murray Bookchin represent anthropocentric theories (Thompson, 1998).

Table 2.21

A Typology of Theories within Environmental Ethics

| Egocentric | Anthropocentric/Homocentric |
|---|---|
| Self-interest | Greatest good for the greatest number |
| Laissez faire' | |
| | Stewardship of nature |
| Mutual coercion | (for human use and enjoyment). |
| (mutually agreed) | |
| Classical economic | Utilitarianism. |
| Capitalism | Marxism. |
| New Right | Eco-socialism |
| | 'Shallow' ecology |
| Thomas Hobbes | J.S. Mill |
| John Locke | Jeremy Bentham |
| Adam Smith | Barry Commoner |
| Thomas Malthus | Murray Bookchin |
| Garret Hardin | |

Source: Thompson (1998).

Thompson (1998) argues that the Anthropocentric/Homocentric view perceives all moral claims in terms of humans and their interest (Hoffman, 1991). More commonly, anthropomorphic theories can be described as homocentric as they are grounded in notions of welfare and social justice. Both utilitarianism and Marxism are categorized as homocentric theories. If utilitarians come to regard the stewardship of the natural world as an important priority, it would only be because this, in turn, contributes to the greatest happiness to the greatest number of people (Thompson, 1998). This theory also put the "dignity of personhood" in front of nature (Partridge, 1980).

Biocentric environmental ethics comprise all things which are alive or which are a vital part of an ecosystem (Hoffman, 1991). Plant and animals were included when

Biocentric environmental ethics extend beyond the boundaries of moral significance. Some philosophers advocate the principle of biocentric egalitarianism (Bio-egalitarianism) according to which human lives are not just a part of nature, they are an equal part of nature (Thompson, 1998).

Non-anthropocentrism/Ecocentrics start from a radically different position. They base their ethics on the view that all living things, and in some theories, even non-living things like rocks or mountains, have intrinsic moral value and humans, therefore, owe a duty to them (Thompson, 1998). From the researcher's point of view, Figure 2.16 is developed to visualize the "centricisms" that gives a clear picture of these categories. From evolutionary perspectives, environmental ethics has been visualized in terms of a tree and the researcher visualized environmental attitudes in terms of a cake.

Anthropocentrics reflect the concern of human beings as a subset of biocentrics that comprises the concerns of the animals while both antropocentrics and biocentrics are the subsets of ecocentrics, which concerns all parts of nature: trees, land and water, animals and people. Rowe (1990b) has portrayed the attitudes that should govern people's relationship with the environment. The attitude that is slowly killing the world and, which, if continued, will finish the human race is Anthropocentrism, which is the religion of humanism that puts people first in all matters. The highest goal of anthropocentrism is service only to the human community. It is our legacy of many thousands of years; the natural mood of a conscious species inclines to be self-congratulary and short on ecological sense.

Figure 2.16

Ecocentric, Biocentric and Anthropocentric
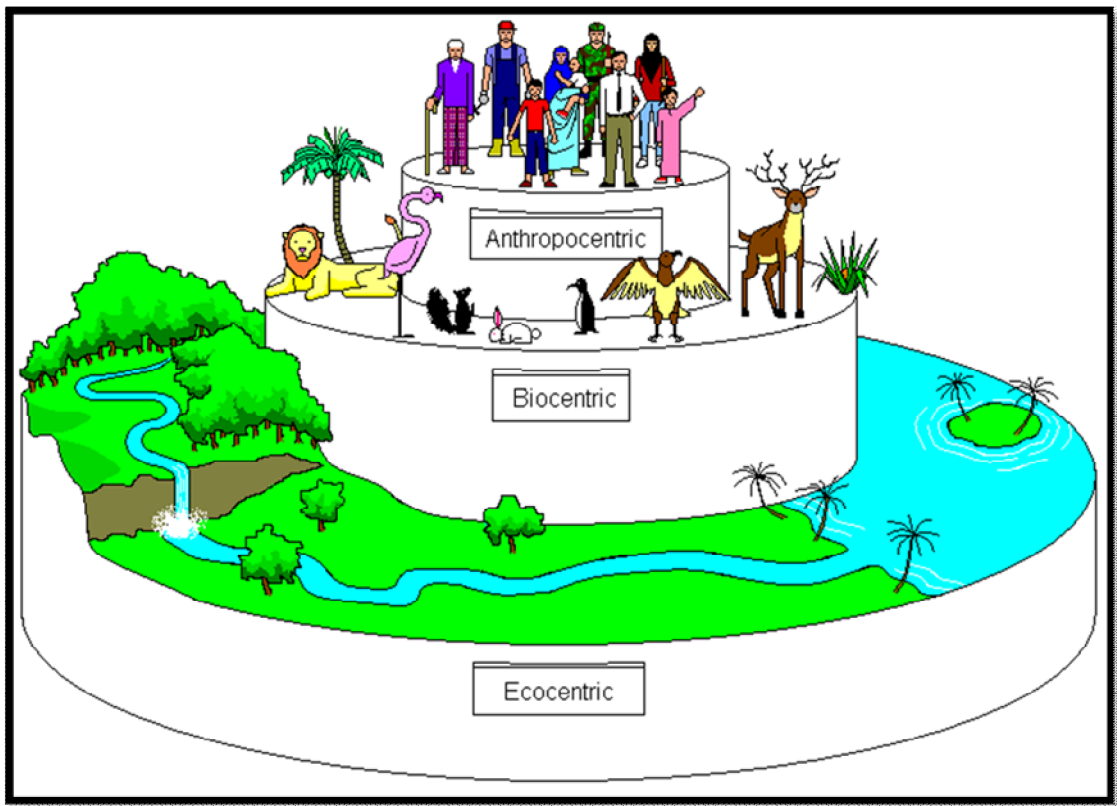


Source: The researcher.

The saving attitude, the attitude in short supply is ecocentrism, which identifies the ecosphere as a centre, a main point not only for ethics but also for arts and religion. However, ecocentrism is challenged by the cultural obstacles. The goals of traditional management are to achieve growth and shareholders wealth while ecocentric management aims for sustainability and quality of life as well as stakeholder welfare. Table 2.22 views the traditional versus ecocentric management in terms of goals, values, products, production systems, organizations, environment and business functions.

Table 2.23 represents the Alternative Environment Paradigms in terms of ontological and ethical, scientific and technological, economics and psychological. It would be interesting to compare traditional and ecocentric management. The goals of traditional management would be to achieve economic growth and profit and shareholder wealth while the goals of ecocentric management are sustainability and quality of life, and stakeholder welfare. In traditional management, the products are designed for function, style and price, which leads to wasteful packaging, while in ecocentric management the products are designed for the environment to achieve environmentally friendly products.

Table 2.22

Traditional Versus Ecocentric Management

| Traditional Management | Ecocentric Management |
|---|---|
| **Goals:**<br>Economic growth & profits<br>Shareholder wealth | <br>Sustainability and quality of life<br>Stakeholder welfare |
| **Values:**<br>Anthropocentric<br>Rationality and packaged knowledge<br>Patriarchal values | <br>Biocentric or Ecocentric<br>Intuition and understanding<br>Post patriarchal friendly |
| **Products:**<br>Designed for function, style & price<br>Wasteful packaging | <br>Designed for the environment<br>Environment friendly |
| **Production system:**<br>Energy & resource intensive<br>Technical efficiency | Low energy & resource use<br>Environmental efficiency |
| **Organization:**<br>Hierarchical structure<br>Top-down decision making<br>Centralized authority<br>High-income differentials | <br>Non-hierarchical structure<br>Participative decision making<br>Decentralized authority<br>Low-income differentials |
| **Environment:**<br>Domination over nature<br>Environment managed as a resource<br>Pollution and waste are externalities | <br>Harmony with nature<br>Resources regarded as strictly finite<br>Pollution/waste elimination and management |
| **Business Functions:**<br>*Marketing* aims at increasing consumption<br><br>*Finance* aims at short-term profit maximization<br><br>*Accounting* focuses on conventional costs<br><br>*Human resource management* aims at increasing labour productivity | <br>*Marketing* for consumer education<br><br>*Finance* aims at long-term sustainable growth<br><br>*Accounting* focuses on environmental costs<br><br>*Human resource management* to make work meaningful & the workplace safe/healthy |

Source: Shrivastava (1995b), p. 131.

Table 2.23

Alternative Environment Paradigms

| Key Assumptions | Technocentrism | Sustaincentrism | Ecocentrism |
|---|---|---|---|
| **A. Ontological & Ethical** | | | |
| 1. Metaphor of earth<br>2. Perception of earth<br>3. System composition<br>4. System structure<br>5. Human and nature<br>6. Human role<br>7. Value of nature<br>8. Ethical grounding<br>9. Time/space scales<br>10. Logic/reason | Vast machine<br>Dead/passive<br>Atomistic/parts<br>Hierarchical<br>Disassociation<br>Domination<br>Anthropocentrism<br>Narrow homocentric<br>Short/near<br>Egoist-rational | Life support system<br>Home/managed<br>Parts and wholes<br>Halochical<br>Interdependence<br>Stewardship<br>Inherentism<br>Broad homocentric<br>Multiscale<br>Vision/network | Mother/web of life<br>Alive/sensitive<br>Organic/wholes<br>Hierarchical<br>Indisassociation<br>Plain member<br>Intrinsicalism<br>Whole earth<br>Indefinite<br>Holism/spiritualism |
| **B. Scientific & Technological** | | | |
| 1. Resilience of nature<br>2. Carrying capacity limits<br>3. Population size<br>4. Growth pattern<br>5. Severity of problems<br>6. Urgency of solutions<br>7. Risk orientation<br>8. Faith in technology<br>9. Technological pathways<br>10. Human vs. natural capital | Tough/robust<br>No limit<br>No problem<br>Exponential<br>Trivial<br>Little/wait<br>Risk taking<br>Optimism<br>Big/centralized<br>Full substitutes | Varied/fragile<br>Approaching<br>Stabilize soon<br>Logistic<br>Consequential<br>Great/decades<br>Precaution<br>Scepticism<br>Benign/decoupled<br>Partial substitute | Highly vulnerable<br>Already exceed<br>Freeze/reduce<br>Hyperbolic<br>Catastrophic<br>Extraordinary/now<br>Risk aversion<br>Pessimism<br>Small/decentralized<br>Complements |
| **C. Economic & Psychological** | | | |
| 1. Primary objective<br>2. The good life<br>3. Human nature<br>4. Economic structure<br>5. Role of growth<br>6. Poverty alleviation<br>7. Natural capital<br>8. Discount rate<br>9. Trade orientation<br>10. Political structure | Efficient allocation<br>Materialism<br>Home economics'<br>Free market<br>Good/necessary<br>Growth trickle<br>Exploit/convert<br>High/normal<br>Global<br>Centralized | Ecological integrity<br>Postmaterialism<br>Homo sapient<br>Green economy<br>Mixed/modify<br>Equal opportunity<br>Conserve/maintain<br>Low/complement<br>National<br>Devolved | Ecological integrity<br>Antimaterialism<br>Homo animalist<br>Steady state<br>Bad/eliminate<br>Redistribution<br>Enhance/expand<br>Zero/inappropriate<br>Bioregional<br>Decentralized |

Source: Gladwin et al. (1995), p. 883.

According to Shrivastava (1995b), in action of Ecocentric, management proliferates all aspects of organization mission, inputs through and outputs. Shrivastava argues that Ecocentric management seeks ecofriendly product designs, packaging and material use and they seek to systematically renew natural resources in order to minimize waste and pollution. Ecocentric management encourages the use of low energy and small amounts of resources as they have scaled appropriately, provide meaningful work, decentralized participatory decision making, have low earning differentials among employees and non-hierarchical structures. Ecocentric management also establishes a harmonious relationship between the natural and social environment.

Shrivastava (1995b) also emphasizes that marketing in ecocentric management seeks to educate customers about responsible consumption, instead of promoting unrestricted consumption. The finance aims for long-term sustainable growth, instead of short-term profits, accounting seeks to incorporate the social and environmental costs of production instead of externalizing them while management in ecocentric management seeks to provide meaningful work and safe working conditions, instead of single-mindedly pursuing labour productivity. According to Shrivastava, in ecocentric companies, their mission and vision include a corporate commitment to:

1) minimize the use of virgin materials and non-renewable forms of energy.

2) eliminate emissions, effluents and accidents, and

3) minimize the life cycle cost of products and services.

## 2.10 ENVIRONMENTAL SUSTAINABILITY

It was predicted that the most important issues in the next century would be the issues related to the environment (Schmidheiny, 1992). Schmidheiny (1992) and his colleagues provided a vision of "sustainable development" at the 1992 Earth Summit in Rio de Janeiro. They saw that there is a linkage between environmental protection and economic growth. Table 2.24 represents the hyper norms and selected environmental principles that contribute to these linkages. Principle 1 concluded that human beings are at the centre of the concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature. Principle 2 concluded that the right to development must be fulfilled so as to equitably meet the developmental and environmental needs of the present and future generations and principle 16 concluded that national authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

In 1997, the Kyoto Protocol – a codicil to the United Nations Framework Convention on Climate Change (UNFCCC) – was signed in Japan. The Kyoto Protocol commits most industrialized countries to reducing their emissions by six to eight per cent below 1990 levels by 2012. Ten years later (in 2007) in the conference of the Parties (COP13) the Bali Roadmap was formulated as a step towards reaching final agreement on the success to Kyoto (van der zee, 2008)

Table 2.24

Hypernorms and Selected Environmental Principles

| Rio Declaration and Selected Environmental Principles | |
|---|---|
| Principle 1 | Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature. |
| Principle 3 | The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations. |
| Principle 4 | In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it. |
| Principle 10 | Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities and the opportunity to participate in the decision making processes. |
| Principle 14 | States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health. |
| Principle 15 | In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. |
| Principle 16 | National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment. |
| Principle 22 | Indigenous people and their communities and the other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development. |

Source: Logsdon (2004), p. 76.

By capturing the environment as a commodity (Egri and Herman, 2000), corporations could identify environmental strategies (Starik and Rands, 1995), understand the decision process (Cordano and Frieze, 2000), understand organizational participants (Flannery and May, 2000) and reintegrate humanity and ecology (Gladwin et al., 1995), which could advance long-term ecological or organizational sustainable development.

Parallel to the understanding of organizational participants, Hart (1997) argues that corporations must change the way the participants think, especially the customers, in order to create products and services preferred by them that are consistent with sustainability and enable the corporations not only to be known as marketers but also to be known as educators. In doing so, corporations must lower material and energy consumption, develop clean products and technology, reduce pollution burdens, build the skills of the poor, ensure sustainable use of nature's economy, replenish depleted resources and foster village-based business relationships (Logsdon, 2004), as shown in Figure 2.17.

Figure 2.17

Building Sustainable Business Strategies
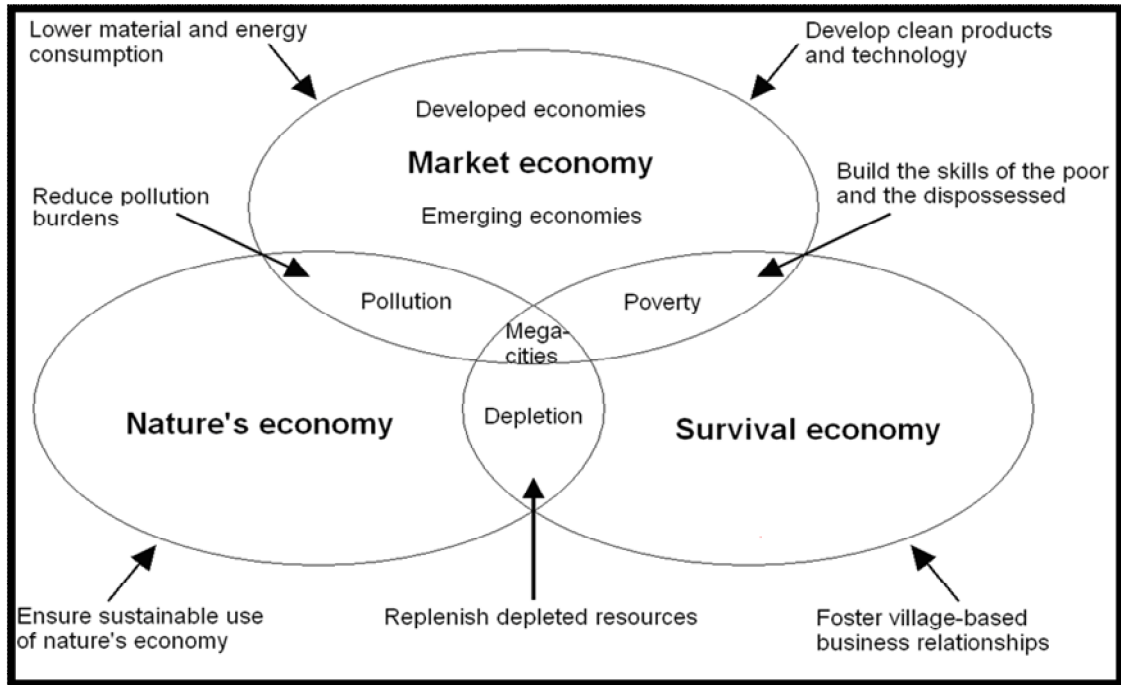


Source: Hart (1997), p. 75.

Sustainable development has been defined in many ways. The World Commission on Environment and Development (1987:7) defines sustainable development as a "process of change in which the misuse of resources, the direction of investment, the orientation of technological development and institutional change are made constant with future as well as current needs".

Gladwin et al. (1995) outline various terms by several authors in order to define sustainable development. The term includes vision expressions, value change, moral development, social reorganization and transformational process. They have also

come out with the components of sustainable development, operational principles and techniques of biophysical sustainable behaviour.

The components include inclusiveness, connectivity, equity, prudence and security while the operations and techniques are shown in Table 2.25. The sustainable principles include assimilation, regeneration, diversification, restoration, conservation, dissipation, perpetuation and circulation. Sample techniques include pollution prevention, natural products, detoxification, biodegradability, low input agriculture and synthetic reduction for assimilation. Regeneration includes sustained yield management, safe minimum standards, harvest certification, exclusive harvest zones and resource right systems. Diversification includes biosphere reverses, extractive reserves, buffer zones, polyculture farming, ecotourism and debt for nature swaps. While perpetuation includes solar energy, wind power, hydrogen fuel, bio energy, hydropower and geothermal energy.

Table 2.25

Operational Principles and Techniques of Biophysical Sustainable Behaviour

| Sustainable Principles | Operational Principles | Sample Techniques |
|---|---|---|
| **Assimilation** | Waste emissions<br><br>$\leq$<br><br>Natural assimilative capacity | Pollution prevention<br>Natural products<br>Detoxification<br>Biodegradability<br>Low input agriculture<br>Synthetic reduction |
| **Regeneration** | Renewable harvest rate<br><br>$\leq$<br><br>Natural regeneration rate | Sustained       yield management<br>Safe minimum standards<br>Harvest certification<br>Exclusive harvest zones<br>Resource right systems |
| **Diversification** | Biodiversity loss<br><br>$\leq$<br><br>Biodiversity preservation | Biosphere reverses<br>Extractive reserves<br>Buffer zones<br>Polyculture farming<br>Ecotourism<br>Debt for nature swaps |
| **Restoration** | Ecosystem damage<br><br>$\leq$<br><br>Ecosystem rehabilitation | Reforestation<br>Mine reclamation<br>Site decontamination<br>Bioremediation<br>Species reintroduction<br>Habitat restoration |
| **Conservation** | Energy-matter throughput per unit of output (time 2)<br><br>$\leq$<br><br>Energy-matter throughput per unit of output (time 1) | Fuel efficiency<br>Mass transit<br>Cogeneration<br>Computer controls<br>Demand side management<br>Smart buildings |
| **Dissipation** | Energy-matter throughput (time 2)<br><br>$\leq$<br><br>Energy-matter throughput (time 1) | Depackaging<br>Durable design<br>Repair/reconditioning<br>Telecommuting<br>Bioregional sourcing<br>Dematerialization |
| **Perpetuation** | Non-renewable resource depletion<br><br>$\leq$<br><br>Renewable resource substitution | Solar energy<br>Wind power<br>Hydrogen fuel<br>Bioenergy<br>Hydropower<br>Geothermal energy |
| **Circulation** | Virgin / recycled material use (time 2)<br><br>$\leq$<br><br>Virgin / recycled material use (time 2) | Closed-loop manufacturing<br>Industrial ecosystems<br>Internal recycling<br>Waste recovery<br>Design for disassembly<br>Water recirculation |

Source: Gladwin et al. (1995), p. 892.

Environmental or ecological sustainability could enjoy the benefit of the ongoing challenge to ensure the prosperity of humankind (Logsdon, 2004), which deals with the ability of more individuals, sufficient duration and related systems (Starik and Marcus, 2000) by adapting to the sustainable competitive strategies, as shown in Table 2.26. The sustainability variables include Product/services, Operational improvements, employee/customer education, prior precautions, contractor/supplier relationships and technology transfer. The sustainable variables are differentiated in terms of least cost, differentiation and niche. Corporations will sustain a competitive advantage if they offer variables of design and ecological packaging, employees and customers specialized in safety, health and environmental programme training.

In order to represent the sustainable versus unsustainable sectors, Henderson (1991) developed a table that outlined the unsustainable sector to be compared to the sustainable sector or the emerging sectors. The table differentiated both sectors in terms of their industry. Examples are recycling ability, bureaucracy and military contracting, as shown in Table 2.27. This table represents restructuring industrial economies. Henderson emphasizes that marketing opportunities are created from better consumer information and product labelling. This is true as corporations can recycle the waste and find its new uses in order to venture into new emerging economies such as in food industry, cosmetics industry, paper products industry, household products industry as well as other upstream industries that could be adjusted to meet the environmental requirements.

Table 2.26

Sustainable Competitive Advantage

| Sustainability Variables | Least Cost | Differentiation | Niche |
|---|---|---|---|
| **Product/services** | Standardized ecological designs | Variable design, Ecological packaging | Choose ecologically safe products |
| **Operational improvements** | Use clean technologies, Resource conservation | Regulation compliance, Very expensive | Limited scope, Protect SHE from cost pressure |
| **Employee/customer education** | Basic SHE training, Product labelling | Specialized SHE training | Learn from customers |
| **Prior precautions** | Impact assessment, Emergency plans critical | Differentiated emergency plans | Embedded in product choice |
| **Contractor/supplier relationships** | Critical for cost, Build partnerships | Streamline management of multiple vendors | Selective focus on key vendors |
| **Technology transfer** | Inexpensive, low risk | Expensive, risky | Very expensive, highly risky |
| SHE = Safety, health and environmental programmes | | | |

Source: Shrivastava (1995a), p. 950.

Table 2.27

Restructuring Industrial Economies

| Obsolescent sectors (Unsustainable, entropic) | Emerging sectors (Sustainable, low entropy) |
|---|---|
| Industries, companies based on heavy use of non-renewable energy and materials | Industries, companies based on efficient use of energy and materials and human skills |
| Bureaucratic, large, less flexible | Entrepreneurial, small, flexible |
| Non-recyclable products, packaging | Recycle products, remanufacturing |
| Military contracting | Conservation, innovation |
| Products involving toxic, non-biodegradables, polluting materials, throwaway items | Fuel-efficient motors, cars, mass transit |
|  | Solar, renewable energy systems |
| Planned obsolescence | Communication, information, services |
| Chemical pesticides, inorganic fertilizers | Infrastructure, education training |
| Heavy farm equipment | Space communications satellites |
| Polluting, inefficient capital equipment, process machinery, processing systems | Peace keeping, surveillance of treaties |
|  | Efficient capital equipment, processes |
| Extractive industries with low value added | Restorative industries, reforestation, desert greening, water quality management |
| Fossil fuels, nuclear power generation | |
| High tech hospital-based medical care | Health promotion and disease prevention |
| Highly processed foods | Organic agriculture, low till systems |
| Advertising encouraging waste and polluting practices | Integrated pest management |
|  | Pollution control, clean-up and reuse |
| Shopping centre developers | Natural foods |
|  | Waste recycling and reuse |
|  | Community design and planning |
|  | "Caring" sector |

Source: Henderson (1991), p. 75.

Starik and Rands (1995) have identified five levels of analysis that bear upon the presence and or absence of ecological sustainability. They include the individual, organizational, political-economic, social cultural and ecological levels. This level of analysis is shown in Figure 2.18. However, by having depicted them, they did not explain the interactions, which they left for future research.

Figure 2.18

The Ecological Sustainability (five level analyses) Web
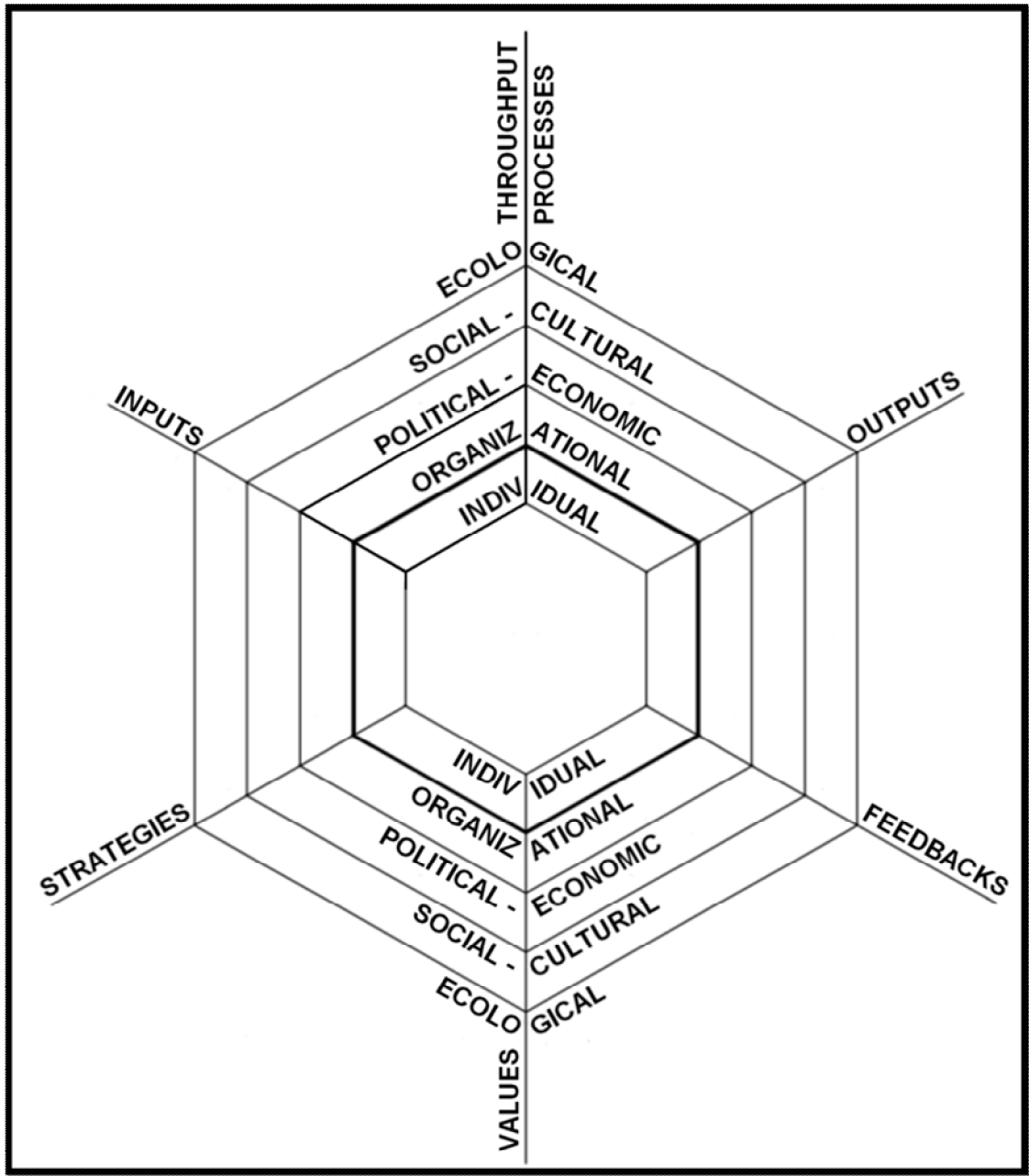


Source: Starik and Rands (1995), p. 913

In order to achieve sustainability of the biosphere, some alterations must be done by the corporations. According to Ayres (1992), practically they must reduce the extraction of virgin ores of toxic heavy metals, change many industrial processes, and curb the use of toxic, mutagenic and carcinogenic metals. "Spiritually" the corporations are also urged to pledge and support the environmental guideline, namely, the "Business Charter for Sustainable Development".

Figure 2.19 represents the outline of 16 principles of the "Business Charter for Sustainable Development", which was introduced at the World Industry Conference on Environmental Management held in April 1991 (Easterling et al., 1996). [Please refer Appendix Table 5 for the explanation of the Business Charter for Sustainable Development, which comprises 16 themes that corporations should look into].

Figure 2.19

The Business Charter for Sustainable Development

| **The Business Charter For Sustainable Development**<br><br>**Principles for Environmental Management**<br><br><br><br>**IOC International Chamber of Commerce** | 1. Corporate priority<br>2. Integrated management<br>3. Process of improvement<br>4. Employee education<br>5. Prior assessment<br>6. Products and services<br>7. Customer advice<br>8. Facilities and operations<br>9. Research<br>10. Precautionary approach<br>11. Contractors and suppliers<br>12. Emergency preparedness<br>13. Transfer of technology<br>14. Contributing to the common effort<br>15. Openness to concerns<br>16. Compliance and reporting |

Source: Easterling et al. (1996), p. 22.

The aim of sustainable development is to achieve zero emission, zero pollution and zero waste (McDonough, 1998), however, to achieve zero discharge or no pollution at all is impossible. If corporations understand the concept of ecological sustainability (Please refer Appendix Table 6), they could achieve several benefits to ecological sustainability such as driving down the operating cost, competitive advantage, to become environmental leaders, maintain and enhance corporate image, reduce long-term risk, benefits ecosystems and communities and achieve a firmer legal footing (Shrivastava, 1995a).

However, there are several major challenges to sustainability. The process of achieving sustainability involves a tremendous amount of money (Hart, 1997) and leads to severe pollution, depletion and poverty, as shown in Table 2.28. Developed economies face greenhouse gases, use of toxic materials, contaminated sites, scarcity of materials, insufficient reuse and recycling, urban and minority and unemployment. Emerging economies experience industrial emissions, contaminated water, lack of sewage treatment, over exploitation, overuse of water for irrigation, migration to cities, lack of skilled workers and income inequality. Survival economies experience the worst scenarios including dung and wood burning, lack of sanitation, ecosystem destruction due to development, deforestation, overgrazing, soil loss, population growth, low status of women and dislocation.

However, in order to counter this scenario, corporations could reduce their corporate footprint, avoid collision and meet basic needs in order to achieve success. This idea was suggested by Hart and Mielstein (1999). Table 2.29 represents the sustainability tied to three economies that relate to key business and financial payoffs. A consumer economy can reduce corporate footprints, an emerging economy can avoid collision and a survival economy can meet their basic needs.

Table 2.28

Major Challenges to Sustainability

|  | **Pollution** | **Depletion** | **Poverty** |
|---|---|---|---|
| **Developed economies** | Greenhouse gases<br>Use of toxic<br>  materials<br>Contaminated sites | Scarcity of<br>  materials<br>Insufficient reuse<br>  and recycling | Urban and<br>  minority<br>Unemployment |
| **Emerging economies** | Industrial emissions<br>Contaminated water<br>Lack of sewage<br>  Treatment | Over exploitation<br>or<br>  renewable<br>  resources<br>Overuse of water<br>for irrigation | Migration to cities<br>Lack of skilled<br>  workers<br>Income inequality |
| **Survival economies** | Dung and wood<br>  burning<br>Lack of sanitation<br>Ecosystem<br>  destruction due<br>  to development | Deforestation<br>Overgrazing<br>Soil loss | Population growth<br>Low status of<br>  women<br>Dislocation |

Source: Hart (1997), p. 70.

Table 2.29

New Metrics, Improved Payoffs

| Drivers | Matrices | Payoffs |
|---|---|---|
| **Consumer Economy**<br><br>Reducing Corporate Footprints | Pounds of materials per sale.<br>Pounds to toxics per sale.<br>Greenhouse gas emissions per sale.<br>Public acceptance reputation. | Earning Growth.<br>Increased EVA/SVA. |
| **Emerging Economy**<br><br>Avoiding Collision | Emissions per sale.<br>Water use per sale.<br>Land conserved compared to land use.<br>Number of jobs created. | Sales growth.<br>Stock Preference. |
| **Survival Economy**<br><br>Meeting Basic Needs | Percentage of sales to survival economy.<br>Breadth of products availability.<br>Social investment compared to wages.<br>Small-scale vs. large-scale applications.<br>Community-enhancing vs. community-degrading. | P/E Ratio.<br>Share of New Wealth. |

Source: Source: Hart and Mielstein (1999), p. 30.

## 2.11 ETHICAL DECISION MAKING

Kauffman (2001), stresses that ethical decision making can balance the economy and the environment. In decision making behaviour, managers do realize that their decisions might affect humankind and its nature leads them to be ethically involved.

Decisions made can result in tremendous social consequences, especially to the state of wellbeing of consumers, employees and the community (Trevino, 1986). According to Berry (2002), besides the concerned citizens, there are various groups of people that are interested in any decisions about the environment. The interested groups would be the community, the future generation and nature itself. A study of Polonsky's work (1994a) revealed that there could be several reasons for this interested group to damage the environment. The reasons comprise: no alternatives, too cheap, they do not understand the issue, they have no time, it is not convenient and it is due to their laziness, as shown in Figure 2.20. This figure represents reasons why people damage the environment.

Figure 2.20

Reasons for damaging the environment
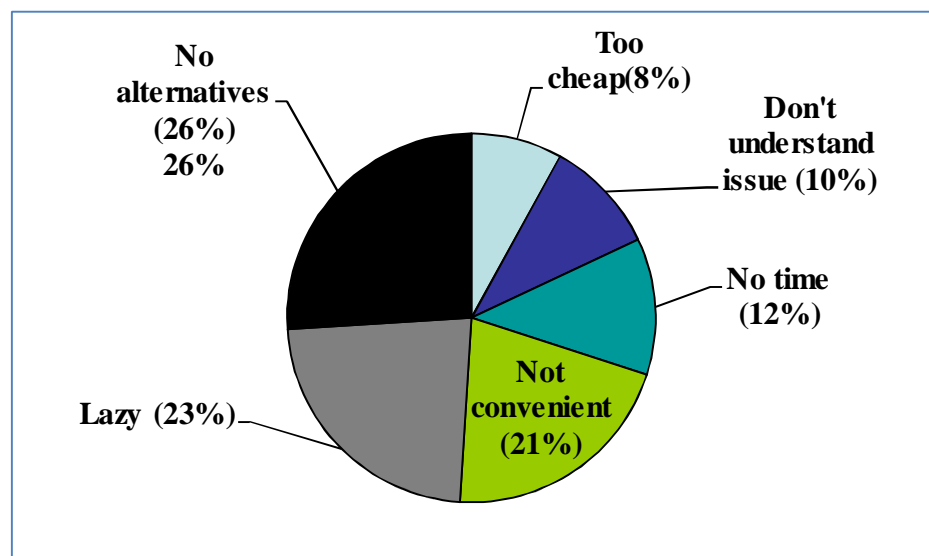


Source: Polonsky (1994a), p. 8.

An ethical decision is a decision that is made, which is legal, and morally acceptable to a large number of people (Jones, 1991). It has its own foundation. Table 2.30

represents the foundation for ethical decision making. The values profiles of power-oriented, recognition-oriented, affiliation-oriented and accomplishment-oriented reflect the moral philosophies of respect for persons, beneficence, non-maleficence and justice, respectively. The process of making decisions ethically is "exciting" as it offers opportunities, especially in the "ambiguous" research arena (Ford and Richardson, 1994). Many ethical decisions making researches have been done in previous years.

Table 2.30

Foundations for Ethical Decision Making

| Values Profiles | Philosophical Basis | Moral Philosophies |
|---|---|---|
| Power-oriented | Utilitarian/teleological | Respect for persons |
| Recognition-oriented | Deontological | Beneficence |
| Affiliation-oriented | Integrity-based | Non-maleficence |
| Accomplishment-oriented | | Justice |

Source: Peer and Rakich (1999), p. 9.

Table 2.31 represents empirical evidence relating factors not specific to the individuals and ethical decision making. This table includes the variable study, name of the author(s), year of publication, sample, method and finding of the empirical evidence. Cottone and Claus (2000) utilize a table that summarizes the steps or stages of practice in ethical decision making models from the American Counseling Association. The summary steps are shown in Appendix Table 7.

Table 2.31

Empirical Evidence Relating Factors Not Specific to the Individuals and Ethical D-Making

| Variable Study (Year) | Sample | Method | Finding |
|---|---|---|---|
| **Referent Groups** | | | |
| **Peer Group Influence** | | | |
| Dubinsky and Loken (1989) | Salespeople | Questionnaire (Ajzen and Fishbein Model) | Intenders more likely to feel pressure from referents, especially top mgmt. & supervisors |
| Izraeli (1988) | Israeli Managers | Ques. (Newstrom and Ruch, 1975) | What peers do was the best predictors of ethical behaviour |
| Pratt and McLaughlin (1989) | Students | Questionnaire | Students more sensitive to their professors' beliefs as ethical benchmark than peer beliefs |
| Zey-Ferrell and Ferrell (1982) | Advertising Managers | Ques. (Newstrom and Ruch, 1975) | Interorganizational referent groups less likely to influence behaviour |
| Zey-Ferrell et al. (1979) | Marketing Managers | Questionnaire | Perceptions of peers' behaviour influenced unethical beh. More than respondents own beliefs |
| **Top Management Influence** | | | |
| Akkah and Riordan (1989) | Marketers | Scenarios - (Crowford, 1970) | Absence of top mgmt. actions against unethical behaviour in stronger approval of questionable practices |
| Murphy et al. (1992) | Managers | Questionnaire | Actions of Top Mgrs. had minimal influence on organizational ethical behaviour |
| Zey-Ferrell and Ferrell (1982) | Managers | Ques. (Newstrom and Ruch, 1975) | Mixed Results |
| Zey-Ferrell et al. (1979) | Managers | Questionnaire | Not significant |

| Variable Study (Year) | Sample | Method | Finding |
|---|---|---|---|
| **Rewards & Sanctions** | | | |
| Fritzsche and Becker (1983) | Marketers | Vignettes | Severe consequences leads to actions that are perceived to be supported by top management |
| Hegarty and Sims (1978) | Grad. Stud. | Lab experiment | Rewarding unethical behaviour increase unethical behaviour |
| Hunt et al. (1984) | Market Researchers | Questionnaire | Top mgmt. actions reduce ethical problems |
| Laczniak and Inderrienden (1987) | MBA Stud. | In-Basket | Mixed discipline to ethical behaviour |
| **Codes of Conducts** | | | |
| Akaah and Riordan (1989) | Marketers | Scenarios - (Crowford, 1970) | Not significant |
| Chonko and Hunt (1985) | Managers | Questionnaire | Codes affect mgrs. perception of the extent of ethical problems |
| Ferrell and Skinner (1988) | Marketing Researchers | Questionnaire | Enforced Codes assoc. w/higher levels of ethical behaviour for data subcontracts & research firms, but not corp. researchers. |
| Hegarty and Sims (1979) | Grad. Stud. | Lab experiment | Codes of conduct were positively related to ethical behaviour |
| Hunt et al. (1984) | Marketing Researchers | Questionnaire | Not significant |
| Laczniak and Inderrieden (1987) | Students | In-Basket | Codes+sanctions leads to more ethical behav. |
| Murphy et al. (1992) | Managers | Questionnaire | weak support |
| Singhapakdi and Vitell (1990) | Marketing Managers | Questionnaire | Ethical policy determines extent to Which sales executives see ethical problems |

| Variable Study (Year) | Sample | Method | Finding |
|---|---|---|---|
| **Codes of Conducts (continued)** | | | |
| Weeks and Nantel (1992) | Salespeople | Questionnaire | Well communicated code of ethics related to ethical sales force behaviour |
| **Types of Ethical Conflict** | | | |
| Fritzshe and Becker (1983) | Marketing | Scenarios | Rejected hypothesis that managerial behaviour was invariant across types of ethical problems |
| Weber (1990) | Managers | Interview | Dilemma type affected moral reasoning of managers |
| **Organizational Level** | | | |
| Akaah and Riordan (1989) | Marketers | Scenarios - (Crawford, 1970) | Not significant |
| Chonko and Hunt (1985) | Managers | Questionnaire | Higher level mgrs. less likely to see ethical problems |
| Delaney and Sockell (1992) | Columbia U. Alumni | Questionnaire | Lower level mgrs. perceived greater need to be unethical to get ahead than upper level mgrs. |
| Izraeli et al. (1992) | Bank Employees | Interview | Knowledge of ethical problems & perceived seriousness of ethical problems was influenced by level in the hierarchy |
| Posner and Schmidt (1987) | Managers | Questionnaire | Lower level mgrs. were more pessimistic concerning the ethical character of their org. |

Source: Adapted from Ford and Richardson (1994), p. 213-215.

However, making decisions and taking actions that are free from environmental implications are impossible as the world is shrinking and more interdependent

economically (Fox and McAvoy, 1991). According to Trevino (1986), the theory is not designed for the purpose of predicting and explaining and lacks face-validity. However, businesses can consider the priorities outlined by Thomas (2002: 84) in the public sector decision making in order to overcome this problem. The priorities lie in developing an ethos of caring for the environment, for staff, for the community, emphasizing leadership, example from the top and upholding of true standards of conduct, training in the processes of decision-making to develop judgment in respect of qualitative values, and in balancing these with "value for money" criteria to reach fair decisions (rather than an over-reliance on "value for money"), education and awareness programmes using case-studies, as referred to earlier and taking an active role within departments in identifying cases and sufficient resources to implement the chosen priorities.

Also outlined by Thomas (2002) are taking lateral (and/or coordinated) approach across a policy area to incorporate the legal, social and environmental views and not a narrow economic approach, accommodating short and long-term goals without undue reliance on short-termism and setting up some emergency apparatus to deal with unforeseen and unexpected events, which may require immediate consideration and a restructuring of priorities.

### 2.12 THE CULTURAL ASPECTS

Organizational culture is typically defined as 'the way we do things around here' (Bedingham, 2004). Organizational culture influences structure, systems, policies environmental management (Berry, 2004), may influence patterns of attention through a more temporary and situational route (Miyamoto et al., 2006), govern the

understanding of social events, institutions and processes (Reino et al., 2007) and, ultimately, influences and governs the understanding of behaviour of organizational members (Alvesson, 2002; Berry, 2004), as culture does not exist independent of people (Meyers, 2004). According to Schein (1990), culture is a learning process in a given point of time in order for the organizational members to survive in both the internal and external environment of the corporations. The cultural aspect is learnable; it can be shared, transmitted (Duncan, 1989) and facilitate innovation, which, in turn results in an acutely competitive, turbulent and dynamic environment (Agraval et al., 2005). According to Berry (2004), organizational culture drives employees' actions and behaviours in order to achieve quality health, safety and environmental outcomes.

The critical elements of organizational culture are stability, depth and breadth (Reino et al., 2007). Meyers (2004) emphasizes that culture is created and maintained by two processes – the top down establishment of institutional values and the carrying out of those values by the employees. Nevertheless, the transformation of organizational culture is a slow process (Reino et al., 2007). Meyers (2004) argues that culture plays a powerful and sometimes determinant role in establishing the nature of the ethical debate and creating and maintaining virtues through role modelling and through implicit and explicit reinforcement of desirable ethics, however, it is still not the fundamental of organizational ethics. Instead, culture is grounded by industry ideology (Trice and Beyer, 1993).

The nature of organizational culture is complex (Meyers, 2004). Agraval et al. (2005) used Hofstede's (1984) four basic dimensions for accounting for variations

in organizational culture to measure culture. The four components are individualism versus collectivism, power distance, risk (uncertainty) avoidance and masculinity versus femininity. However, Meyers (2004) argues that organizational culture is the major focus in order to achieve an ethical organization and has to be reset by the managers to make it consistent with the broader moral norms as well as to make effective ethical recommendations.

According to Meyers (2004), despite the importance of culture, it is unreasonable and unrealistic for organizations with powerful cultures to expect individuals to engage in the necessary degree of moral imagination, that is, to see alternatives and then to act accordingly without help. Wrong, weak and bad ethical culture and environmental practices are apparent when staff pull in different directions, hierarchies get in the way of performance targets, poor communication that leads to demoralized staff and above all influence the organization negatively (Bedingham, 2004), employees tend to observe misconduct and are less likely to report observed misconduct to management compared to those in strong culture organizations (Aspen Publisher, 2006) and could put a organization's very survival at stake (Berry, 2004).
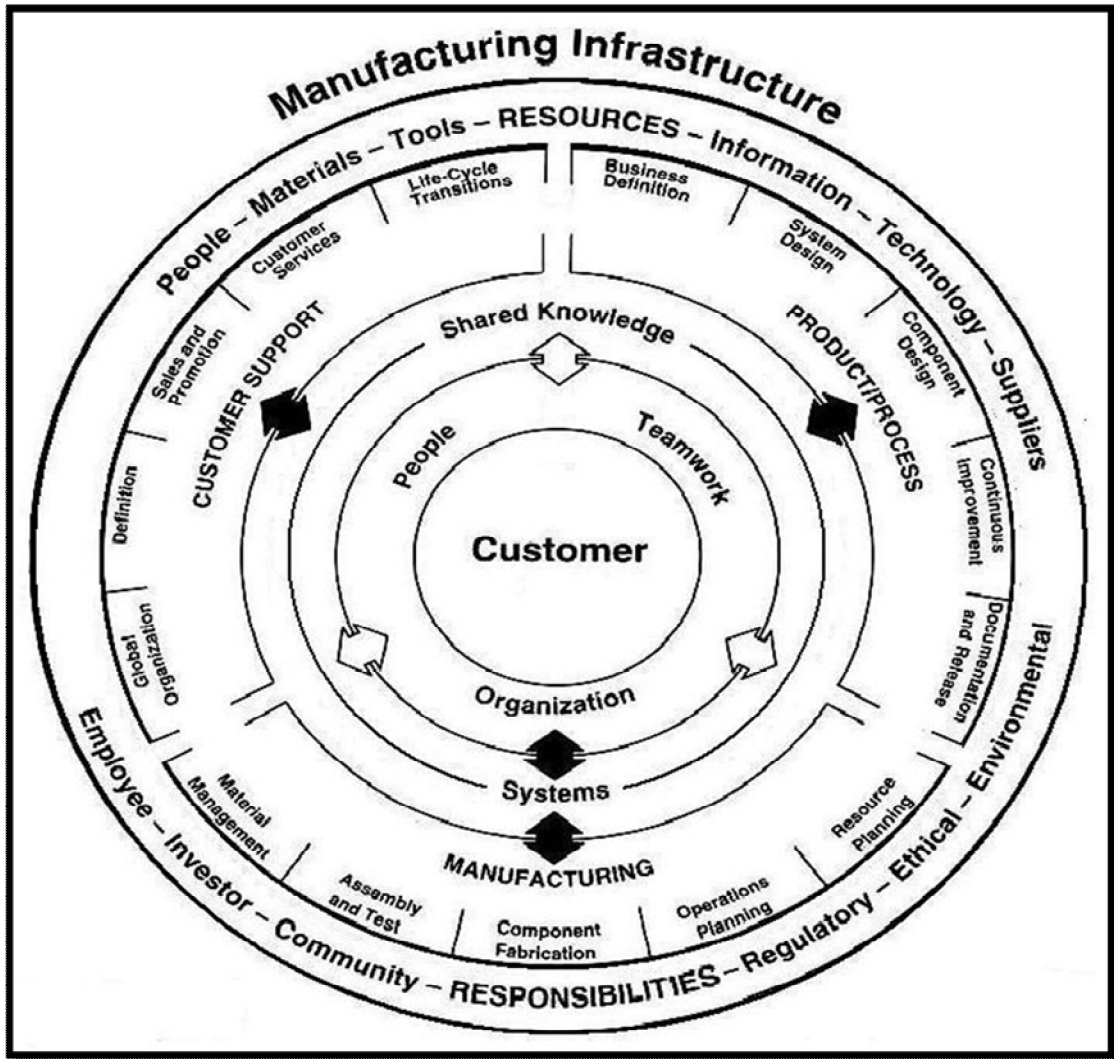
Cultural aspect is not considered as one of the research factors to determine environmental ethical commitment. This is because many researchers in environmentalism suggest that culture is an important determinant of environmental attitudes (Mukherji, 2005) and merely represents the ecological concern variable as a subset of and not the environmental ethical commitment as a whole. According to Bedingham (2004) the changing of corporate culture is merely to enhance business

performance and or when an acquisition or merger has taken place. Although the debate of business performance is questionable, Barney (1986) believes that high-performing organizations share many common traits of organizational culture but benefit from it differently. Although, culture is a powerful force it is not a determining one and individual decision making and individual accountability is still fundamental to organizational ethics (Meyers, 2004).

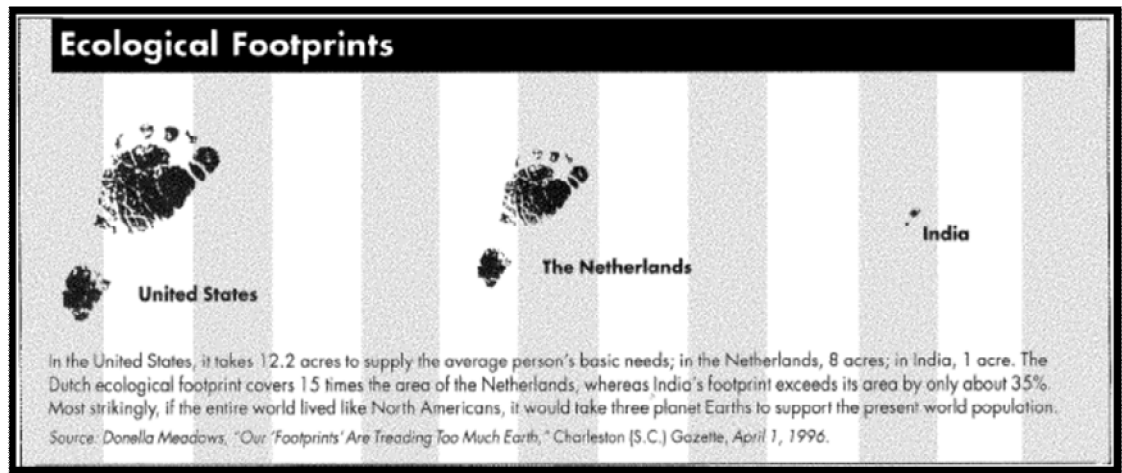## 2.13 THE SCENARIO OF THE MANUFACTURING INDUSTRY

The twenty-first century witnessed advancement in technology, especially in the communication, manufacturing and service industries (Ahmad and Sadeq, 2001). Figure 2.21 represents the manufacturing enterprise wheel of this advancement. According to the perspective of environmentalists (Benton Jr., 2002), the industrial countries represent 20 per cent of the world's population use, 70 per cent of the world's energy, 60 per cent of earth energy resources and 80 per cent of the rest of the earth's resources. This proportion leaves the developed countries with a larger ecological footprint that represents the amount of land to meet the typical consumers' needs (Hart, 1997), as shown in Figure 2.22. Based on this figure the United States has the largest ecological footprint followed by the Netherlands and the smallest is India.

Figure 2.21

Manufacturing Enterprise Wheel



Source: Ahmad and Sadeq (2001), p. 74.

Figure 2.22

Ecological Footprint



**Ecological Footprints**

United States

The Netherlands

India

In the United States, it takes 12.2 acres to supply the average person's basic needs; in the Netherlands, 8 acres; in India, 1 acre. The Dutch ecological footprint covers 15 times the area of the Netherlands, whereas India's footprint exceeds its area by only about 35%. Most strikingly, if the entire world lived like North Americans, it would take three planet Earths to support the present world population.

Source: Donella Meadows, "Our 'Footprints' Are Treading Too Much Earth," Charleston (S.C.) Gazette, April 1, 1996.

Source: Hart (1997), p. 68.

Chiang and Tseng (2005) argue that the manufacturing industries and its strategy have been triggered by intensified competition in the global arena. The strategy should be sufficient and in accordance with its coordinated objectives and strategic plan that lead to the long-term survival of the corporations (Tseng and Chiu, 2004), together with the environmental protection that suggests guidance for future operations (Azzone and Giuliano, 1998; Ward et al., 1996).

In Malaysia, the manufacturing industry plays a major role in contributing towards national development. Parallel with that, the manufacturing industry has created and hopes to create further employment for the nation (Please refer to Appendix Table 8 for the employment in the manufacturing sector by industry and Appendix Table 9 for the employment in Malaysia by gender and sector). In terms of merchandise trade, manufacturing contributes the largest percentage of gross exports with 85.2 per cent in year 2000 and 80.5 per cent in 2005, as compared to agriculture, mining

and other related industries (Please refer to Appendix Table 10) with total gross exports of manufactured goods contributing RM 317.9 billion in 2000 and RM 429.9 billion in 2005, an increase of 35 per cent over the six year period (Please refer Appendix Exhibit 2). These manufactured products are exported to various countries throughout the world including ASEAN countries, the USA, Japan, Hong Kong, and China (as shown in Appendix Exhibit 3).

The "manufacturing processes" can cause risks to corporations as well as to the environment. The risks that have been outlined by Shrivastava (1995a) include the risk to health and environment, urban air pollution, smog, global warming, ozone depletion, acid rain, toxic waste sites, nuclear hazards, arsenals of obsolete weapons, industrial accidents, and hazardous waste and toxic wastes. In order to deal with these risks and concerns, manufacturing corporations have come to a legitimate theme of environmental management (Maxwell et al., 1997). Maxwell et al. (1997) argue that among the drivers of environmental management are political, legal, publicity, cultural and cost pressure, as well as litigant, avoidance, vision, market driven and Total Quality Environmental Management [TQEM] (Handfiled et al., 1997).

The manufacturing industry has been recognized as a critical driver of environmental performance (Cairncross, 1992; Hart, 1995; Schmidheiny, 1992). This is because in running its activities, the manufacturing processes are actually scarring the globe, contaminating and threatening the environment, warming the planet, thinning the ozone layer, decimating the forests, decreasing the health of our water and air (Shaw and Barry, 1992) and also polluting the rivers quite severely

(Harvey, 1994). The stated pollution issues were deemed to be the factor that precedes corporations' poor financial performance (Hart and Ajuha, 1996). Manufacturing firms have played an active role in environmental sustainable development. Shrivastava (1995a) stresses that corporations are the primary engines of economic development. Schmidheiny (1992) emphasizes that manufacturing companies have financial resourses, technology knowledge and institutional capacity to implement ecological solutions. While Stead and Stead (1992) add that the examination of ecological sustainability at this organizational level of analysis is both appropriate for this audience and weak in the management literature.

However, in an effort to achieve sustainable development, manufacturing industries are exposed to several obstacles. The obstacles are technological, financial, labour-force related, regulatory, customer-related, supplier-related and managerial (Ashford, 1993), conceptual, organizational, knowledge availability, technical and economic obstacles (Dieleman and de Hoo, 1993). In order to make        tough decisions, Skinner (1969) identified certain important trade-off decisions in the manufacturing sector, as shown in Table 2.32. Here, top managers need to continuously review the corporate strategy and recognize the alternatives in order to identify the decision area.

The decision areas include plant and equipment, production planning and control, labour and staffing, product design/engineering as well as organization and management. In the plant and equipment decision area the alternatives include make or buy, one big or several smaller ones, locate near markets or locate near materials, invest mainly in buildings or equipment or inventories or research, general-purpose

or special-purpose equipment and temporary, minimum tooling or "production tooling".

In production planning and control, companies can choose few or many breaks in production for buffer stocks, high inventory or a lower inventory, control in great detail or in lesser detail, controls designed to minimize machine downtime or labour cost or time in process or to maximize output of particular products or material usage, high reliability and quality or low costs and formal or informal or none at all. While for labour and staffing, companies can choose highly specialized or not highly specialized, technically trained first-line supervisors or non-technically trained supervisors, many job grades or few job grades, close supervision or loose supervision and many or few such men.

Table 2.32

Some Important Trade-off Decisions in Manufacturing - or "you can't have it both ways"

| Decision Area | Decision | Alternatives |
|---|---|---|
| **Plant and Equipment** | Span of processes<br>Plant size<br>Plant location<br>Investment decisions<br><br>Choice of equipment<br><br>Kind of tooling | Make or buy.<br>One big or several smaller ones.<br>Locate near markets or locate near materials.<br>Invest mainly in buildings or equipment or inventories or research.<br>General-purpose or special-purpose equipment.<br>Temporary, minimum tooling or "production tooling". |
| **Production Planning and Control** | Frequency of inventory taking<br><br>Inventory size<br>Degree of inventory control<br>What to control<br><br><br><br><br>Quality control<br>Use of standards | Few or many breaks in production for buffer stocks.<br>High inventory or a lower inventory.<br>Control in great detail or in lesser detail.<br>Controls designed to minimize machine downtime or labour cost or time in process or to maximize output of particular products or material usage.<br>High reliability and quality or low costs<br>Formal or informal or none at all |
| **Labour and Staffing** | Job specialization<br>Supervision<br><br>Wage system<br>Supervision<br>Industrial engineers | Highly specialized or not highly specialized<br>Technically trained first-line supervisors or non-technically trained supervisors.<br>Many job grades or few job grades.<br>Close supervision or loose supervision.<br>Many or few such men. |
| **Product design/engineering** | Size of product line<br><br>Design stability<br><br>Technological risk<br><br>Engineering<br>Use of manufacturing engineering | Many customer specials or few specials or none at all.<br>Frozen design or many engineering change orders.<br>Use of new processes improved by competitors or follow-the-leader policy.<br>Complete packaged design or design-as-you-go approach.<br>Few or many manufacturing engineers. |
| **Organization and management** | Kind of organization<br><br>Executive use of time<br><br><br>Degree of risk assumed<br><br>Use of staff<br>Executive style | Functional or product focus or geographical or other.<br>High involvement in investment or production planning or cost control or quality control of other activities.<br>Decisions based on much or little information.<br>Large or small staff group.<br>Much or little involvement in detail, authoritarian or nondirective style, much or little contact with organization. |

Source: Skinner (1969), p.141

Above all, there are many reasons for industrial activities to contain an ethical dimension. Trevino (1986) highlights that ethical problems do exist and emphasizes that managers do think about ethical dilemmas. This is because the manufacturing activities could jeopardize the health and welfare of the ecosystems and have significant ramifications on the environment (Flannery and May, 2000). It is the nature of corporations to have an environmental impact and the corporations will also do their best to reduce these impacts (Saha and Darnton, 2005), as it is claimed to be the right thing to do (Bansal and Roth, 2000).

The manufacturing industry can gain benefit by producing safe products to result in loyal customers, disease remission or eradication, employee pride and motivation, good reputation and better recruiting status while doing the wrong thing or producing an unsafe product can result in public scrutiny, negative press, legislation, regulation, litigation and could increase the cost of production (Harrison and Lewellyn, 2004).

## 2.14 THE ENVIRONMENTAL ETHICS MANAGERS

Thirteen years ago, manufacturing managers were claimed to neglect the corporate strategy and top executives tended to avoid the policymaking process (Skinner, 1969). During those years, the observation, measurement and manipulation of managers' ethics were not allowed (Trevino, 1986). However, executives' personalities and experience are important as they can affect the organizational outcomes (Bantel and Jackson, 1989; Miller and Droge, 1986). In addition, Primeaux and Stieber (1994) and Skinner (1988) claimed that managers do make mistakes like other occupations do as they barter their ethics for a money
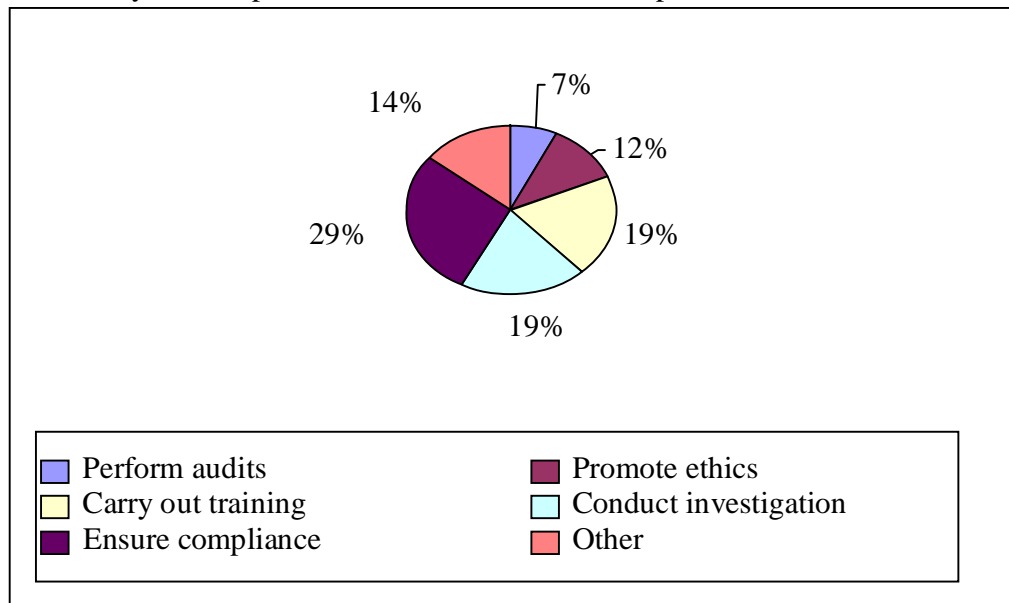
price in relation to their ethical business evaluation. This is because managers often lack the experience and skill to understand the full cost of pollution (Jaffe et al., 1995).

Weaver et al. (1999) claimed that most top managers would likely agree that they are committed to ethics but the commitment can easily be lost as they face ethical dilemmas and tend to visualize environmental issues in legal rather than moral terms (Flannery and May, 2000). However, corporations are now starting to change their perspectives with highly committed top management exercising well-integrated ethical practices (Weaver et al., 1999). This kind of committed and ambitious manager (Logsdon, 2004) is highly needed in modern society (Egri and Herman, 2000).

The managers so called ethics or compliance and environmental managers can be defined as leaders in the arena of business conduct with responsibilities for identifying, implementing, integrating and dealing with ethical compliance activities in the decision making processes at all levels of the organizations (Weber and Fortun, 2005; Cordano and Frieze, 2000). Figure 2.23 represents the primary job responsibilities for ethics and compliance officers.

Figure 2.23

Primary Job Responsibilities for Ethics and Compliance Officers

14%      7%

12%

29%      19%

19%

Perform audits    Promote ethics

Carry out training    Conduct investigation

Ensure compliance    Other

Source: Weber and Fortun (2005), p. 107.

Some of the ethics and compliance officers' job responsibilities include performing audits, carrying out training, ensuring compliance, promoting ethics and conducting investigations. Hayes (1982) emphasizes that managers have the "X-factor" to influence the society and they do deserve, earn and retain good judgment for their ethical behaviour. Managers are abiding by rules, regulations, and obligations. The ultimate obligation is to provide and secure high returns to the stakeholder as their top priority (Alam, 1995; Freeman, 1984). Besides these obligations, corporations have also non-financial obligations.

According to Weaver et al. (1999), the tasks of managers are to do the right thing, be fair to the community and to be a good member of the society. This could be achieved by considering an investment to prescribe policies, strategies and structures to symbolize commitment to preserve the environment (Weaver et al., 1999). While

dealing with difficult environmental issues, it is important for managers to remember and concentrate on the concept of environmental ethics (Kauffman, 2001) in order to find the "focal point" of business and the environment (Walley and Whitehead, 1994).

Many researches have helped managers in many ways. A research carried out by Sharma (2000) provides employees with a wider selection of environmental strategies for reducing ecological impact and the research made by Hanna et al. (2000) provides managers with the basic understanding of employee involvement for environmental improvement. This effort would definitely benefit leaders and managers, practically and morally, as traditionally it only concerned the philosophers, academics and social critics (McNamara, 1999).

Nevertheless, today's managers face many challenges. In order to achieve an optimal level of environmental performance, Logsdon (2004) suggests a few considerations that comprise environmental realities, the fundamental ethical principles and also the stakeholder needs. Managers also find it difficult to manage change and human resources (Dechant and Altman, 1994). According to Porter and van der Linde (1995), there are numerous barriers to "change" as managers often deal with insufficient information and have limited time and attention. This is because managers consider environmental issues as complex, scientific, undetectable, incalculable (Shrivastava, 1995a) and highly expensive (Cordano and Frieze, 2000), thus, enabling them to pin point faults and recognize what to alter in the business system in order to respond to environmental issues (Schmidheiny, 1992; Shrivastava, 1995a).

## 2.15 THE CORE THEMES OF THE CORPORATIONS

Previous research in the area of the natural environment adopted a variety of approaches. These approaches or so called core themes are best suited to achieve environmental considerations and are set at the best researchers knowledge and expertise. Many core themes emerged as the main topic of articles and as popular topics of research. The area of environmental ethics has been researched in many core themes, among the frequent topics being researched are ethical decision making, stakeholder theory, ecological sustainability and environmental performance. Among others, ethical decision making has been researched by Trevino (1986), Jones (1991a), Ford and Richardson (1994), and Flannery and May (2000).

Most environmental sustainability research was carried out after the term "sustainable development" was first introduced in the Earth Summit in 1992. Sustainable development was studied by Gladwin et al. (1995), ecological sustainable organization was studied by Starik and Rands (1995), and ecological sustainability by Shrivastava (1995a). As early as 1979, Caroll (1979) studied the corporate social responses that differentiate corporations' responsibility and responsiveness. Later, ecological responsiveness was carried out by Bansal and Roth (2000). Both corporate social performance and corporate environmental performance were carried out in 1985 and 1997. Corporate social performance was carried out by Wartick and Cochran (1985), and corporate environmental performance was carried out by Russo and Fouts (1997).

Research on stakeholders has been carried out in many forms, some researched the stakeholder as a whole and others researched a small number of stakeholders, perhaps

even one stakeholder, for example, the consumer. Stakeholder theory was used by Donaldson and Preston (1995), and Freeman (1999). Environmental commitment and stakeholder was carried out by Henriques and Sadorsky (1999) while stakeholder, social response and performance by Harrison and Freeman (1999). Customer contact on environmental initiative was done by Foster Jr. et al. (2000), supplier and environmental innovation by Geffen and Rottenberg (2000), and employee involvement by Hanna et al. (2000).

Other core themes include: environmental issues championing (Andersson and Bateman, 2000), supervisory support (Ramus and Steger, 2000), pollution reduction preferences (Cordano and Frieze, 2000), environmental ethical decision making (Flannery and May, 2000), best practices (Christmann, 2000), environmental strategy (Sharma, 2000), industry self-regulation (King and Lenox, 2000), ethics and compliance officer (Weber and Fortun, 2005), and also ISO 14001 and continuous source reduction programme (Kitazawa and Sarkis, 2000).

## 2.16 THE ENVIRONMENTAL ETHICS APPROACHES

Hart (1995) demonstrates three specific approaches to the natural environment. According to Hart, in the 1970s, corporations focused on pollution prevention, in the 1980s corporations concentrated on the product stewardship approach and in the 1990s corporations were introduced to sustainable development. Tilley (2000) also identified two main approaches to environmental ethics that come from two perspectives – the human perspective and the deep ecology perspective.

The first perspective seeks to define a code of conduct for environmental ethics. It comprises a dominant worldwide, shallow ecology, and moves towards anthropocentric that visualizes the greed of humanity while the other perspectives offer the idea of a new worldview and deep ecology and move towards ecocentric, which values nature above all other things. However, Tilley further agrees with Fox and McAvoy (1991) by emphasizing that it is difficult to interpret the school of thought in which deep ecology falls. These perspectives are shown in Table 2.33 below.

Table 2.33

Environmental Ethics: Summary Characteristics of the Two Main Approaches

| Code of Conduct | State of Being |
|---|---|
| Dominant Worldview | New Worldview |
| Shallow ecology | Deep Ecology |
| Conventional ethical discourse | New ethical discourse |
| Hierarchical | Systematic |
| Individualistic/Atomistic | Holistic |
| Anthropocentric | Ecocentric |

Source: Tilley (2000), p. 32.

In 1998, Aragon-Correa (1998) came out with various types of approach. Basically the approaches came from the two dominant streams of literature. Environmental management literature represents approaches recommended by Roome (1992), and Hunt and Auster (1990) while the corporate social responsibility literature represents approaches recommended by Wartick and Cochran (1985), and Caroll (1979). Table 2.34 represents practically four types of approach together with their specific characteristics. The basic types of approach include reactive, defensive, accommodative and proactive. The best known type and widely used is the approach

recommended by Roome (1992), which comprises non-compliance, compliance, compliance plus, commercial and environmental excellent and leading edge (Henriques and Sadorsky, 1999). The characteristics of noncompliance include no support or involvement of top management, environmental management is not necessary, no environmental reporting, no employee environmental training and involvement.

However, the characteristics of proactive include top management supports and is involved in environmental issues, environmental management is an important business function, internal and external reporting, employee environmental training and involvement encouraged. Another set of approaches is proposed by Hunt and Auster (1990) with five distinct stages that starts from the "beginner", which provide minimal protection to the "proactivist", which visualizes aggressive efforts to reduce environment risk. These five distinct stages of programme development are shown in Table 2.35.

Table 2.34

Conceptual Classification of Firm's Approaches to the Natural Environment

| Environmental Management Literature | | Corporate Social Responsibility Literature | |
|---|---|---|---|
| Roome (1992) | Hunt and Auster (1990) | Wartick and Cochran (1985); Caroll (1979) | Characteristics |
| Noncompliance | Beginner | Reactive | - No support or involvement of top management.<br>- Environmental management is not necessary.<br>- No environmental reporting.<br>- No employee environmental training and involvement. |
| Compliance | Firefighter | Defensive | - Piecemeal involvement by top management.<br>- Environmental issues only dealt with when necessary.<br>- Satisfy environmental regulations.<br>- Little employee environmental training and involvement. |
| Compliance plus | Concerned citizen | Accommodative | - Some involvement by top management.<br>- Environmental management is a worthwhile function.<br>- Internal reporting but little external reporting.<br>- Some employee environmental training and involvement. |
| Commercial and environmental excellence | Pragmatist | Proactive | - Top management supports and is involved in environmental issues.<br>- Environmental management is an important business function.<br>- Internal and external reporting.<br>- Employee environmental training and involvement |
| Leading edge | Proactivist | | |

Source: Henriques and Sadorsky (1999), p. 88.

Table 2.35

Developmental Stages of Corporate Environmental Management Programmes

| Criteria | Stage One "Beginner" | Stage Two "Fire Fighter" | Stage Three "Concerned Citizen" | Stage Four "Pragmatist" | Stage Five "Proactivist" |
|---|---|---|---|---|---|
| **Degree to which Program Reduces Environmental Risk** | No protection | Minimal protection | Moderate protection | Comprehensive protection | Maximum protection |
| **Commitment of Organization**<br><br>**-General Mindset of Corporate Managers**<br><br>**-Resource Commitment**<br><br>**-Support and Involvement of Top Management** | Environmental management is unnecessary<br><br>Minimal resource commitment<br><br>No involvement | Environmental issues should be addressed only as necessary<br><br>Budgets for problems as they occur<br><br>Piecemeal involvement | Environmental management is worthwhile function<br><br>Consistent, yet minimum budget<br><br>Commitment in theory | Environmental management is an important business function<br><br>Generally sufficient funding<br><br>Aware and moderately involved | Environmental management is priority item<br><br>Open-ended funding<br><br>Actively involved |
| **Programme Design**<br><br>**- Performance Objectives**<br><br>**- Integration with company**<br><br>**- Reporting structures**<br><br>**- Involvement with:**<br>• **Legal Council**<br>• **Public Relations**<br>• **Manufacturing/Production**<br>• **Product Design** | None<br><br>Not integrated<br><br>No reporting<br><br>None<br><br><br>None<br>None<br>None<br>None | Resolve problems as they occur<br><br>Involved with other departments on piecemeal basis<br><br>Exceptions reporting only<br><br>Exceptions reporting only<br><br>Moderate<br>None<br>None<br>None | Satisfy corporate responsibility<br><br>Minimal interaction with other departments<br><br>Generates voluminous reports that are rarely read<br><br>Internal reporting only<br><br>Moderate<br>Moderate<br>None<br>None | Minimize negative environmental impacts<br><br>Moderate integration with other departments<br><br>Generates voluminous reports that are rarely read<br><br>Mostly internal with some external reporting<br><br>High<br>High<br>Moderate<br>Minimal | Actively manage environmental matters<br><br>Actively involved with other departments<br><br>Personal meetings with managers and board of directors<br><br>Formalized internal and external reporting mechanisms<br><br>Daily<br>Daily<br>Daily<br>Daily |

Source: Hunt and Auster (1990), p.9.

However, a "proactive" approach is likely to be the best approach to comply. Nevertheless, this approach is hard to apply as corporations have to sacrifice a lot of things in terms of cost to change the overall systems and have difficulty in managing change among employees. Once achieved, the corporations would have a first hand advantage as they could lead the industry to achieve competitive advantage, retain customers and gain more interested people in the activities of the company that could be translated into profitability. Strachan (1997) summarizes some of the managerial and organizational features of proactive environmental organizations, as illustrated in Table 2.36.

The features include vision and mission, strategic and operational planning, management structure, systems and decision making, the management of people and internal and external communication. One of the descriptions would be the vision and mission that is to provide the focus and energy for environmental action and learning these organizations have developed a shared vision as opposed to the all too familiar "mission statement". In doing this they have learned to unearth and develop shared pictures of the firm's future based on common values and norms that foster a genuine commitment to the improvement in environmental standards.

Table 2.36

Some of the Managerial and Organizational Features of **Proactive** Environmental

Organizations

| Managerial and organizational features | Description |
|---|---|
| **Vision and mission** | To provide the focus and energy for environmental action and learning these organizations have developed a shared vision as opposed to the all too familiar "mission statement". In doing this they have learned to unearth and develop shared pictures of the firm's future based on common values and norms that foster a genuine commitment to the rising of environmental standards. |
| **Strategic and operational planning** | These firms have also formulated and implemented environmental policies, plans and programmes in a way, which consciously integrates business and environmental goals and targets. A key feature in both the formulation and implementation of these has been the use of participative styles of leadership and management, involving employee involvement schemes including teamwork. |
| **Management structure, systems and decision making** | These firms have also developed flat management structures based on team working. These firms also disperse decision making across their organization's management structures. This is based more on expertise than formal authority. These firms have also designed systems of accounting, budgeting and reporting to assist decision making on environmental issues. To support these, firms have also recognized the use of information technology to empower and energize staff. |
| **The management of people** | These firms have also recognized the importance of developing their human resources and the need for environmental training at all levels and functions of their organizations. They have also developed both formal and informal rewards and have integrated environmental considerations into performance appraisal. |
| **Internal and external communication** | To exchange environmental information and promote collaboration on environmental issues across their organizations these firms have also recognized the importance of open communication networks and have developed strategies accordingly, including the use of campaigns on environmental issues. Externally, these firms also interact and exchange expertise with a wide range of organizations responsible for the formulation and implementation of environmental policy locally, nationally and internationally. |

Source: Strachan (1997), p15.

Another description is internal and external communication, that is, to exchange environmental information and promote collaboration on environmental issues across their organizations. These firms have also recognized the importance of open communication networks and have developed strategies accordingly, including the use of campaigns on environmental issues. Externally, these firms also interact and exchange expertise with a wide range of organizations responsible for the formulation and implementation of environmental policy locally, nationally and internationally.

Once corporations decide to go "proactive" in their environmental agenda, they must take a few steps, as proposed by Hunt and Auster (1990) in Table 2.37. Some of the steps are secure top level commitment and long-term funding, develop a corporate environmental policy statement, assign a senior executive to champion the programme, assess areas of environmental exposure (i.e. conduct environmental audits and legal reviews) and appoint a manager with supervisor managerial skills and influence within the organization.

Table 2.37

Checklist for Implementing a **Proactive** Environmental Management Programme

| |
|---|
| _____ Secure top level commitment and long term funding. |
| _____ Develop a corporate environmental policy statement. |
| _____ Assign a senior executive to champion the programme. |
| _____ Assess areas of environmental exposure (i.e. conduct environmental audits and legal reviews). |
| _____ Appoint a manager with supervisor managerial skills and influence within the organization. |
| _____ Prioritize programme goals and objectives. |
| _____ Revise corporate organizational structure to maximize programme's visibility, accessibility and effectiveness. |
| _____ Develop format reporting relationships within the department and across divisions. |
| _____ Identify key individuals in other divisions to serve as liaisons with the environmental department. |
| _____ Develop streamlined yet comprehensive management information and record-keeping systems. |
| _____ Develop formalized inspection programmes. |
| _____ Develop training and education programmes for environmental staff and key individuals in other divisions. |
| _____ Establish a career track for environmental professionals. |
| _____ Continually re-evaluate programme needs and design. |

Source: Hunt and Auster (1990), p. 16.

Mellema (1994) stresses three categories of human actions that have been recognized as the traditional approach to ethics. The actions comprise acts that have a duty or obligation to perform, to omit and also the acts that are morally neutral. These acts are rationalized in terms of corporations' approaches due to several evolving factors. Some of the factors are the increasing costs of traditional modes or compliance and advances in materials and process technology (Richardson and Pearson, 1998). Other

factors include learning component (Post and Altman, 1992), strategic competitive advantage (Hart, 1995), learning and legitimation (Rindora and Kinnely, 1975) and many other possible theoretical explanations (Ransom and Lober, 1999). All these factors bring business and public policy to focus on improving the environment and minimizing the cost of environmental improvement (Quinn, 1971).

As early as in the 1960s, Skinner (1969) suggested a "top down" approach to manufacturing firms that concern the manufacturing policy. Satisfaction was of the highest concern, where it will increase employees' morale when they find the job to be "exciting" as the executives will be familiar with their workflow. Similar approaches were also proposed by other researchers. Some of the initiatives include recycling, pollution prevention, solving environmental problems, improving ecological efficiency (Ramus and Steger, 2000), changing the corporations' operations, using ecological sustainable resources and implementing environmental management systems (Bansal and Roth, 2000).

Christmann (2000) suggested the use of pollution technologies, its innovation and early timing. From another angle, some management practices according to Shrivastava (1996) include, total quality management (TQM), environmental audits, pollution prevention plan, environmental training, total cost accounting, life cycle analysis, hiring designated environmental managers, research and development (R&D), environmental standards and employee incentive programmes.

Henriques and Sadorsky (1999) also suggested a set of environmental approaches that include having an environmental plan, having it written, communicate the plan to

stakeholders and employees, having an environmental health and safety (EHS) unit and having dedicated committee members. Aragon-Correa (1998) suggested several approaches to the natural environment, as shown in Table 2.38 below. Some of the approaches are natural environmental seminars for executives, natural environmental training for corporation's employees, total quality programme with natural environment aspects, pollution damage insurance, natural environmental management manual for internal use, filters and controls on emissions and discharges, natural environmental analysis of product life cycle and participation in government-subsidized natural environmental programmes.

Table 2.38

Factors of Natural Environmental Management Item

| Variable | Label |
|---|---|
| V1 | Sponsorship of natural environmental events. |
| V2 | Use of natural environmental arguments in marketing. |
| V3 | Natural environmental aspects in administrative work. |
| V4 | Periodic natural environmental audits. |
| V5 | Residue recycling. |
| V6 | Purchasing manual with ecological guidelines. |
| V7 | Natural environmental seminars for executives. |
| V8 | Natural environmental training for corporation's employees. |
| V9 | Total quality programme with natural environment aspects. |
| V10 | Pollution damage insurance. |
| V11 | Natural environmental management manual for internal use. |
| V12 | Filters and controls on emissions and discharges. |
| V13 | Natural environmental analysis of product life cycle. |
| V14 | Participation in government-subsidized natural environmental programmes. |

Source: Modified from Aragon-Correa (1998), p.560.

Ramus and Steger (2000) also identified a corporate environmental policy that comprises several approaches. The approaches include publishing an environmental policy, have a specific target for environmental performance, publishing an annual environmental report, using an environmental management system, applying consideration to purchasing decisions, providing employee environmental training, making employee responsible for environmental performance and using life cycle analysis.

## 2.17 THE ENVIRONMENTAL ETHICS MOTIVES

There are various factors for corporations to clearly deal with the issue of the natural environment. Many factors, motives or drivers have been demonstrated by many researchers in order to achieve environmental success that could maintain the "health" of the corporations. Among the frequent factors are stakeholders, regulations, cost aspect and ethical motives. Regulations were listed among other factors by Klassen (2000) and Sharma (2000). Regulations and stakeholders have been stressed by Weaver et al. (1999), Saha and Darnton (2005), Klassen (2000), Porter and van der Linde (1995), Ramus and Steger (2000), and Henriques and Sadorsky (1999).

Some of the motives are environmental infrastructure, management values and firms reputation (Logsdon, 2004), environmental performance, management strategies, ownership, scale, sector, business relationship, management education and experience (Dasgupta et al., 1997), individual organizational, political/economic, social/cultural, ecological levels (Starik and Rands, 1995), management ethics,

protection and conversation of physical facilities, aesthetics (Handfield et al., 1997), concern over liabilities and firm competitiveness (Porter and van der Linde, 1995).

Other motives include top management (Weaver et al., 1999), senior management values and availability of resources (Klassen, 2000), policymakers (Sharma, 2000), investors and investment fund managers, competition (Harrison and Freeman, 1999), ecological values (Vrendenberg and Westley, 1993) and fiscal policies (Quinn, 1971). Besides, the listed motives, Newman and Breeden (1992) outline some important elements for a successful adoption of the nature into the corporate setting, as shown in Table 2.39. Some of the elements include having a vision, design for excellence and achieve continuous improvement aspects such as having a clear vision, having a strategic programme and change management.

In order to develop a vision, companies have to provide the guiding principles and policies for all environmental actions and delineate the means by which the environmental vision will be achieved. Continuous improvement can be achieved by focusing management and employee efforts to achieve the environmental goals, focusing efforts on high priority programmes such as risk management, legislative and regulatory proactive and contractor and supplier involvement and by looking at certain other elements. In order to achieve excellence in design, companies have to integrate environment issues into all planning processes and support effective communication and match environmental goals with corporate culture.

Table 2.39

High Performance Model

| | Key Elements | Explanation |
|---|---|---|
| **Set Vision** | Clear Vision | Provides the guiding principles and policy for all environmental actions. |
| | Corporate Strategy and Programmes | Delineates the means by which the environmental vision will be achieved. |
| **Design Excellence** | Planning Processes | Integrates environment issues into all planning processes (i.e. investments, marketing, R&D). |
| | Organizational Structure and Responsibilities | Supports effective communication and matches environmental goals with corporate culture. |
| **Achieve Continuous Improvement** | Performance Measure | Focuses management and employee efforts to achieve the environmental goals. |
| | Reward and Recognition | Individual and team rewards explicitly linked to accomplishing performance measures. |
| | Strategic Programme | Focuses efforts on high priority programmes such as risk management, legislative and regulatory proactive and contractor and supplier involvement. |
| | Training and Management Development | Instils the skills required to fulfil assignment responsibilities and increase environmental awareness. |
| | Communication and Information Management | Ensures accessibility to relevant data and enhances decision-making capabilities. |
| | Change Management | Addresses the internal obstacles to implementation. |

Source: Newman and Breeden (1992), p. 218.

Bansal and Roth (2000) argued that understanding these motives is critical because it could lead to behaviour prediction and expose ecological sustainable mechanisms to

researchers, managers and policymakers. These motivations are important to committed community as it has been proven beneficial. Motivated by stringent regulations, the greening effort and reallocation of the most polluting activities to the emerging market economies has resulted in the pollution in developed economies being relatively low (Hart, 1997).

In addition, Winter (1995) focused on three reasons for corporations to introduce a sound environmental management. The reasons are to accept the responsibility, knowing the vast opportunities and avoid or reduce the risk that eventually could conserve the natural resources, increase income and also to increase a corporation's environment reputation. Furthermore, Tilt (1994) emphasized that corporations motivation to protect the natural environment is based on the pressure to disclose their activities by the environmental movement.

## 2.18 THE BENEFITS OF ENVIRONMENTAL ETHICAL COMMITMENT

Moving towards environmental sustainability could benefit corporations in many ways. Many broad as well as short-term benefits were discussed in many research findings. They came in various approaches, detailed benefits and broadly explained opportunities (Sroufe et al., 2000; Saha and Darnton, 2005; Starik and Marcus, 2000) from the business process that considers the social, moral and ethical factors. These benefits are interpreted into quality of life such as customer satisfaction, quality of work life and environmental impact, as shown in Table 2.40.

Table 2.40

The Business Process Framework

| Inputs | Processes | Outputs | Quality of life outcomes |
|--------|-----------|---------|--------------------------|
| Resources | | Product/services | Customer satisfaction |
| | | Employee satisfaction | Quality of work life |
| | | Pollution | Environmental impact |

Source: Stainer and Stainer (1997), p.228.

Some of the benefits are to achieve cost leadership and competitive advantage (Shrivastava, 1995; Saha and Darnton, 2005; Starik and Marcus, 2000; Hart, 1995; Porter and van der Linde, 1995), boost profitability (Shrivastava, 1995a; Fistere, 1998; Theyel, 2000; Sroufe et al., 2000), improve public relations (Shrivastava, 1995a; Dechant and Altman, 1994) and improve ecological and business performance (Porter and van der Linde, 1995; Shrivastava, 1995; Schmidheiny, 1992; Henriques and Sadorsky, 1999; Sroufe et al., 2000; King and Lenox, 2000 and Theyel, 2000).

Other benefits include to capture the green market, achieve environmental leaders, improve image of the company, reduce long term risk, reduce health expenses and gain a firmer legal footing (Shrivastava, 1995a), gain stakeholder importance (Henriques and Sadorsky, 1999), avoid environmental fines, better utilize raw materials, rejuvenate employee morale (Sroufe et al., 2000), improve public perception of the industry (King and Lenox, 2000), increase sales (Dechant and Altman, 1994), gain interest from investing institutions, gain more business (Saha and Darnton, 2005) and also create economic growth (Quinn, 1971).

A survey conducted in Newman and Breeden's article (1992) revealed that companies were offered a wide range of opportunities while dealing with core and primary environmental products and services. These opportunities include improve or lower cost of waste disposal, gain reputation for environmental responsibility, reduce operating cost, more effective operations, venture in new environmental packaging, gain new marketing for existing products and new green products, gain revenue from pollution control products and finally corporations could somehow sell their pollution compliance capacity, as shown in Figure 2.24. Stisser (1994) argued that in order to retain a competitive position, some products and services must be widely known as environmentally friendly or green products.

Figure 2.24

Diverse Opportunities in Environmental Products and Services in Companies'

Core Business
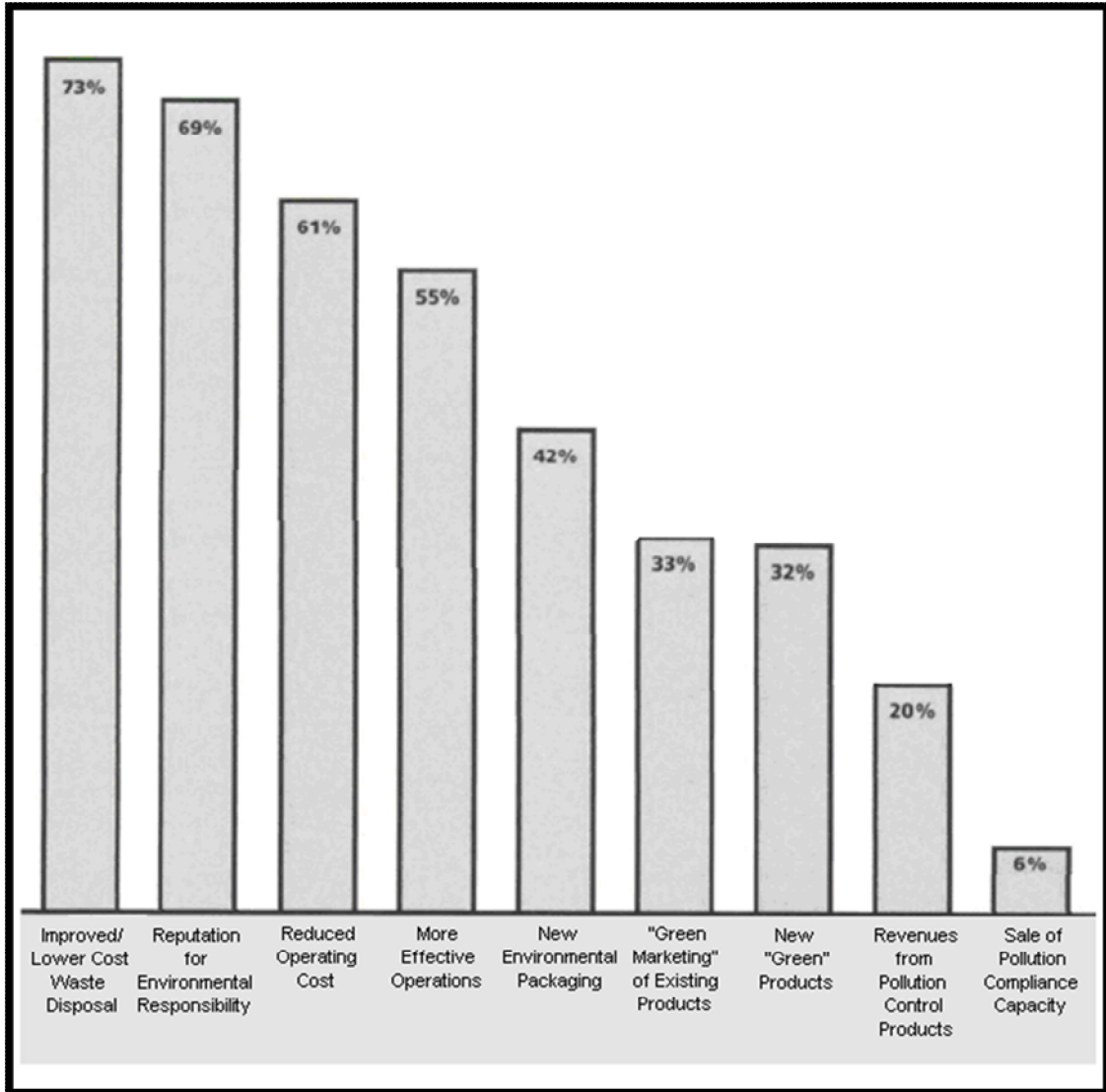


Source: Newman and Breeden (1992), p. 216.


## 2.19 SELECTED EMPIRICAL STUDIES IN ENVIRONMENTAL ETHICS

There are many studies of ethical issues in individual professions including law (Kipnis, 1991), medicine (Randall and Gibson, 1991), accountancy (Brooks, 1989; Andrew, 2000), as well as in the business field (Flannery and May, 2000).

Considerable research has been done in the area of corporations and the environment and they have one ultimate goal, that is, to save the earth. The business ethics goal is to retain stakeholders but the environmental ethics goal is to save the earth. These efforts are phrased in many environmental terms, such as to achieve ecological sustainability (Shrivastava, 1995a; Starik and Rands, 1995; Cordano and Frieze, 2000 and Egri and Herman, 2000), to mitigate a corporation's negative impact on the natural environment (Bansal and Roth, 2000; Klassen and Whybark, 1999), to help determine the health and sustainability of the natural environment (Flannery and May, 2000), and to improve a company's environmental performance in order to reduce the impact on the natural environment (Ramus and Steger, 2000) just to name a few.

In the first ever research on the process of championing environmental issues, Andersson and Bateman (2000) argued that it is hard for managers to deal with environmental issues. They outline the environmental issues faced in the 1990s as air pollution, solid waste disposal, top soil erosion, ozone layer depletion, population growth, marine and fresh water pollution, toxic waste accumulation and disposal, reduction in biodiversity, wetland destruction and deforestation. Also included is climate modification, as proposed by Schmidheiny (1992). These environmental scenarios can be "complex", "exciting" (Starik and Rands, 1995), and "technical" and normally are linked to industrial activities (Schmidheiny 1992; Shivastava, 1995a).

However, Andersson and Bateman (2000) in their research try to visualize how to turn environmental issues into successful environmental championing through individuals that act or serve as environmental champions. These "champions" or the

employees are said to be the best contributor of ideas in order to improve the environment (Dechant and Altman, 1994). The results indicate that individuals who successfully championed the environment engaged in more multiple-source environmental scanning activities, employed particular dimensions, presentation styles and used several influential tactics such as coalition building. These champions were more successful when they treated the environment as important as any other business function, framing environmental concerns as (financial) opportunities (Sharma, 2000) and packaging and selling these concerns as they would for any other business proposal.

From the data obtained from 73 corporations to develop a primary model of environmental leadership, Egri and Herman (2000) stress that due to biophysical environmental health threats; environmental leaders are forced to change economic and social systems. As Sharma (2000), and Andersson and Bateman (2000) see the "environment as an opportunity", Egri and Herman (2000) see "environmentalism as a commodity". They find that environmental leaders in the United States of America and Canada, especially those in non-profit organizations, were more ecologically oriented, more open to change and more self-transcendent than leaders of other types of organizations, as compared to managers in profit-making business, who exhibited personal values, skills and leadership styles that were less oriented to environmental change.

In another research of management and the natural environment, Ramus and Steger (2000) indicated that a company's performance can be improved by employee self-identified actions. These actions were initiated by two prominent pressures –

"regulatory" and "stakeholder" – that will, ultimately, lead to employee environmental initiatives. These initiatives were intended to achieve environmental improvement and reduce the impact on the natural environment. These ecoinitiatives could be any action taken by an employee that he or she thought would improve the environmental performance of the company. They found that employees who perceived strong signals of organizational and supervisory encouragement, along with communication, rewards, recognition and published environmental policies were more likely to develop and implement creative ideas that positively affected the natural environment than employees who did not perceive such signals.

In another equivalent research, Cordano and Frieze (2000) used Ajzen's Theory of Planned Behaviour [TPB] (1985, 1991) to better understand the attitude of individuals in order to analyse the behavioural preferences of environmental managers. They used structural equation analysis to link the source reduction preferences of 295 environmental managers from the Air and Waste Management Association (AWMA) (the largest organization of environmental professionals in the United States with 16,000 members at the time of study) to their pollution prevention attitudes, their perception of norms for environmental regulation, their perceived behavioural control and the past source reduction activity of their facilities.

Adding an organizational behaviour was the purpose of the study. The researchers (Cordano and Frieze, 2000) examined the preferences of the managers on the activity of pollution prevention. The managers were responsible to the state of the natural environment. Focus was given to managers' attitude as they have the responsibility towards the activity of pollution prevention. Pollution prevention analyses together

with Ajzen's TPB were used to support and develop the research model. The analysis included regulatory, environment, technological development, stakeholder relationship and organizational process.

It was concluded that communication barriers were against environmental performance. In terms of the regulatory aspect, many environmental managers portrayed positive attitudes towards pollution prevention but felt little pressure to achieve environmental performance. By having a positive attitude towards pollution prevention differentiates environmental managers and business managers and the pressure felt by environmental managers hinders them in disseminating the importance of pollution prevention, which could bring the companies economic gains (Cordano and Frieze, 2000).

The results suggested that in order for the companies to achieve economic gains as well as to sustain the ecology, they must understand the complex actions and decisions pertaining to the natural world. They also agree with Andersson and Bateman (2000), stating that managers face difficulties in dealing with environmental issues. They highlight obstacles, outlined by other prominent researchers, Dieleman and de Hoo (1993), and Ashford (1993), that manufacturing firms faced in order to prevent waste as well as to prevent pollution.

The obstacles are regulatory, [labour, consumer, supplier-related also known as stakeholders] (Ramus and Steger, 2000), conceptual obstacles, organizational or managerial obstacles, availability of knowledge, technical or technological, and also financial aspects. In line with these obstacles, the research found environmental

attitudes about pollution prevention, their assessment of norms about environmental regulations and their past source reduction efforts were "positively" related to their preferences to implement source reduction activities. Managers, however, still selected easy-to-implement source reduction practices as a means of smoothing the transition to more difficult ones.

In line with Cordano and Frieze (2000), Flannery and May (2000) researched the managers environmental ethical decision making of United States metal finishing companies' environmental attitudes, norms, ethical climates, personal moral obligation (PMO), self-efficacy and financial cost using the Theory of Planned Behaviour (TPB). The investigation was about environmental ethical decision intention based on individual and contextual influences. The respondents were ranked managers in the United States metal finishing industries and the theoretical framework was designed based on Ajzen's (1991) TPB and the moral intensity of Jones (1991).

Flannery and May (2000) argued that the decision making process is crucial when it deals with the natural environment. The decisions made can jeopardize and have significant ramifications, not only on the health of human beings but also on the other living species if environmental ethical considerations are not considered. The results show that environmental attitudes, norms (Cordano and Frieze, 2000) and ethical climate were all "positively" associated with their managers' environmental intentions. This research was claimed to be the first ethical decision making study grounded on the TPB to include financial cost as an external perceived behavioural control factor, however, financial costs, personal moral obligation, and self-efficacy

were "negatively" associated with those intentions. In these companies, personal moral obligation had little effect in moving managers towards making positive environmental changes.

The results also indicated that the reconceptualization suggested that it is very important for the managers to study the decision process in order to understand the relationship between organizations and the state of the natural environmental health. This is because reconceptualization benefits the companies by having a sustainable environment. Although the organizational climate and the intensity of consequences matters, managers are framing environmental issues as legal rather than moral. Flannery and May's (2000) research also emphasized that direct experience with the natural environment has had a positive impact on environmental attitudes (Eagly and Kulesa, 1997), which helps determine the sustainability and health of the biophysical environment.

Christmann (2000) has researched the effects on firms' performance of best practices of environmental management. Her research focuses on "best practices" that were claimed to be one of the key attributes by Newman and Breeden (1992) on pollution prevention technologies. The research analyses whether complementary assets are required to gain cost advantages from implementing practices. The results based on survey data from 88 chemical companies indicated that capabilities for process innovation and implementation are complementary assets that moderate the relationship between best practices in environmental management and cost advantage, a significant factor in determining firm performance. The best practices

may include the use of pollution prevention technologies, innovation of proprietary pollution prevention technologies and also early timing.

Christmann (2000) suggested that existing resources and capabilities of the companies need to be examined before environmental strategies are chosen, and that the selection of environmental practices should be based on these two components. In environmental strategy, the formulation point would start with a business strategy and the creation of both resources and the capabilities. Christmann also suggested that complementary assets should be created in a firm's business strategy in order to achieve firm's performance.

Cost advantage could not be achieved through best practices for all firms. Consideration of complementary assets are needed by corporations in order to achieve a cost advantage and to become green. This means that the integration of environment considerations into general business strategies is needed to benefit the corporations in order for the corporations to achieve competitive advantage as well as to be green (Christmann, 2000). It is also interesting to note that taking new product design, for example, its complementary assets are assets that are required in terms of resources as well as capabilities that are difficult for other firms to imitate, thus, enabling the firm to capture the profits associated with a strategy, technology or innovation (Teece, 1986).

Together with Christmann (2000), Dechant and Altman (1994) concentrate on the best practices of companies in relation to environmental issues that translate the corporations' bottom line. Their approaches concentrated on Band-Aid solutions and quick fixes in order to achieve corporations' competitive advantage, either by

increasing sales or by improving public relations. In the 1970s the attitude of environmental efforts were driven by government regulations and a desire to avoid significant legal and financial liabilities. However, later, the motivation was to treat the environment as an essential part of business and not as just a side issue. The forces of greening are, staying ahead of regulations, stakeholder (consumers and employees) activism (Ramus and Steger, 2000) and competitive pressures. Nevertheless, they also list the obstacles in achieving environmental leadership, such as difficulty to manage change and also to manage human resources. Once these obstacles are overcome, higher business performance could be achieved with the consideration of environmental management.

Sharma (2000) examined the links between managerial interpretations of environmental issues and corporate choice of environmental strategy among 99 firms in the oil and gas industry in Canada. He, together with Andersson and Bateman (2000), conceptualized environmental issues as opportunities instead of threats and chose proactive strategies rather than reactive, which influence a corporation's organizational strategy. Strachan (1997) argued that proactive environmental organizations have their own features that merely transform the corporations into learning organizations in their attempt to raise their environmental standards.

These proactive environmental organizational features are shown in Table 2.41 (This table is re-exhibited for easy reference) while the deciding process of individuals to either choose proactive or reactive is shown in Figure 2.25. The study of Sharma (2000) also implies that a context should be created for managers as interested employees to generate solutions for reducing the ecological impact. Again, regulators

(Ramus and Steger, 2000) and policymakers are urged to come out with a methodology of how to address the environmental issues to guide research on environmental performance.
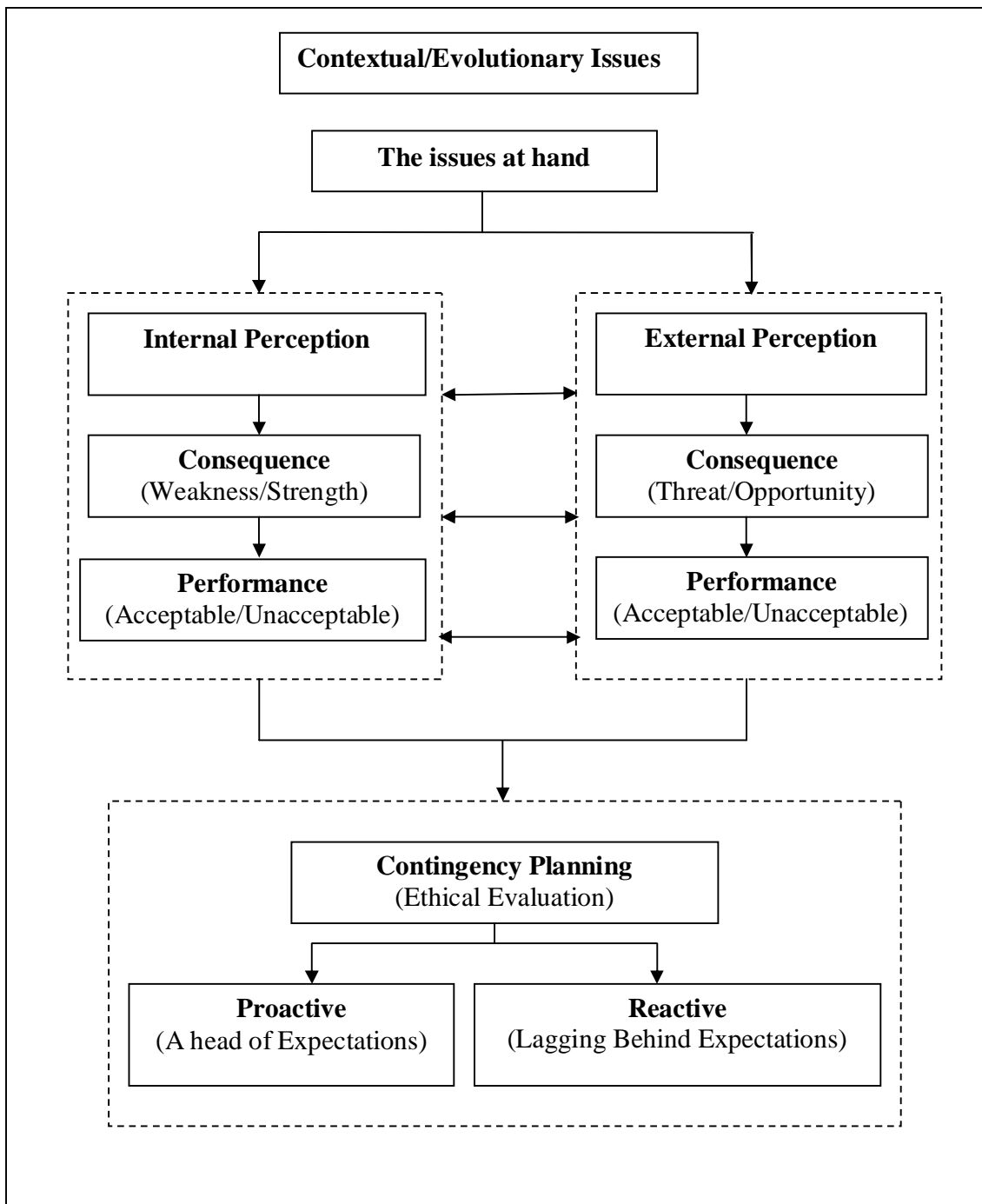
Table 2.41

Some of the Managerial Organizational Features of Proactive Environmental Organisations

Source: Strachan (1997), p.15.

| Managerial and organizational features | Description |
|---|---|
| **Vision and mission** | To provide the focus and energy for environmental action and learning these organizations have developed a shared vision as opposed to the all too familiar "mission statement". In doing this they have learned to unearth and develop shared pictures of the firm's future based on common values and norms that foster a genuine commitment to the rising of environmental standards. |
| **Strategic and operational planning** | These firms have also formulated and implemented environmental policies, plans and programmes in a way which consciously integrates business and environmental goals and targets. A key feature in both the formulation and implementation of these has been the use of participative styles of leadership and management, involving employee involvement schemes including teamwork. |
| **Management structure, systems and decision making** | These firms have also developed flat management structures based on team working. These firms also disperse decision making across their organization's management structures. This is based more on expertise than formal authority. These firms have also designed systems of accounting, budgeting and reporting to assist decision making on environmental issues. To support these, firms have also recognized the use of information technology to empower and energize staff. |
| **The management of people** | These firms have also recognized the importance of developing their human resources and the need for environmental training at all levels and functions of their organizations. They have also developed both formal and informal rewards and have integrated environmental considerations into performance appraisal. |
| **Internal and external communication** | To exchange environmental information and promote collaboration on environmental issues across their organizations these firms have also recognized the importance of open communication networks and have developed strategies accordingly, including the use of campaigns on environmental issues. Externally, these firms also interact and exchange expertise with a wide range of organizations responsible for the formulation and implementation of environmental policy locally, nationally and internationally. |

Figure 2.25

A Profile Analysis Process of Business Ethics Performance – Proactive Versus Reactive

**Contextual/Evolutionary Issues**

**The issues at hand**

**Internal Perception**

**Consequence**
(Weakness/Strength)

**Performance**
(Acceptable/Unacceptable)

**External Perception**

**Consequence**
(Threat/Opportunity)

**Performance**
(Acceptable/Unacceptable)

**Contingency Planning**
(Ethical Evaluation)

**Proactive**
(A head of Expectations)

**Reactive**
(Lagging Behind Expectations)

Source: Svensson and Wood (2004), p. 25.

The research by Sharma (2000) found that in the Canadian oil and gas industry, environmental strategies were associated with managerial interpretations of

environmental issues as either threats or opportunities and that the extent to which some of these firms went further in incorporating environmental concerns into decision making (Flannery and May, 2000) was heavily dependent on the degree to which their managers perceived these issues as opportunities and not threats. However, most of these organizations are still in the beginning stage of incorporating sustainability into decision making.

In their research of industry self-regulation, King and Lenox (2000) researched responsible care programmes on the chemical industry based on public opinion. They argued that corporations are motivated to adopt self-regulation standards due to government regulations and external pressures from various stakeholders (Ramus and Steger, 2000). Their findings highlight the potential for opportunism (Andersson and Bateman, 2000; Sharma, 2000) to overcome the powerful self-regulatory pressures.

Bansal and Roth (2000) in their article "Why companies go green" emphasized that it pays to be green (Russo and Fouts, 1997) from the data collected from 53 firms in the United Kingdom and Japan. They first identified four drivers of corporate ecological response – legislation, stakeholders (Ramus and Steger, 2000; Cordano, 1993 and Lampe et al., 1991), economic opportunities (Cordano, 1993; Porter and van der Linde, 1995) and ethical motives (Harrison and Freeman, 1999; Lampe et al., 1991). Due to the inadequate data that grounded the model and insufficient model specification, they revealed three motivations on why companies go green and induce ecological responsiveness. The three motivations are the competitiveness, legitimation and ecological responsibility. They found that organizational self-interest including elements of both competitiveness and legitimacy were needed to fuel the

movement towards eco responsibility. They also found that the corporation's responsiveness is directly related to competitiveness, legitimation and ecological responsibility and could never go right with lack of one paradigm.

Many approaches to the natural environment have been characterized by many researchers (Aragon-Correa, 1998; Henriques and Sadorsky, 1999). Aragon-Correa (1998) focuses on corporate approaches to the natural environment and their relationships to business strategy. He outlines 14 approaches to the natural environment and later they were classified into different classifications derived from Roome (1992). According to Roome (1992), a firm's approach to the natural environment would be characterized by noncompliance, compliance, compliance-plus, commercial and natural environmental excellence and the leading edge. Aragon-Correa (1998) also hypothesized that corporations with more proactive business strategies will have more advanced approaches to the natural environment than their competitors with less proactive business strategies.

Henriques and Sadorsky (1999) outlined six approaches to the natural environment. According to them, natural environmental commitment is described as what a company is actually doing or has done with reference to environmental issues. By having the approaches to the natural environment, their research is to differentiate between environmentally committed firms from less environmentally committed firms. They highlight that government regulations and consumers are the most important forms of stakeholder pressure (Ramus and Steger, 2000) and are of increasing importance in environmental management. They also categorize four types of stakeholder – regulatory stakeholders, organizational stakeholders, community

stakeholders and the media attention (Wartick, 1992). Interestingly, the study found that as far as regulations are concerned, active action will be taken by corporations in order to avoid unnecessary cost.

Harrison and Freeman (1999) also highlighted some factors that contribute to environmental management. They are government regulations, consumers and heightened ethical sensitivity. They also emphasize that effective stakeholder management can help managers resolve ethical dilemmas (Freeman, 1984). Table 2.42 shows the most important studies considered by Fernandez et al. (2003). The studies were done based on several analyses that include case analysis, regression analysis, theoretical analysis, focus group, case study, structural equation model, descriptive analysis and empirical analysis.

Table 2.42

Summary of the contributions

| Article | Contributions |
|---|---|
| Alberti et al. (2000) | Implementation costs vary from business to business and are mainly influenced by the following parameters: organizational structure, lack of specific skills and availability of internal human resources. Case analysis. |
| Anderson and Bateman (2000) | The success of 'environmental champions', measured in relation to several dimensions and among them the top management attention to forming a team for the analysis of environmental issues depends on the internal and external context (corporate environmental paradigm, regulatory requirements and competitive pressures) and other factors, such as scanning behaviours, issue framing and presentation and the influence of behaviours and timing of selling. Regression analysis. |
| Andersson and Wolff (1996) | Once the learning of new procedures has been successfully implemented, routines are established and maintained in the shape of programmed control. Theoretical analysis. |
| Angell (2001) | Successful initiatives are different depending on work style. Case study. |
| Angell and Klassen (1999) | Organizational culture, training and education and the importance of the measurement systems influence the workforce involvement in environmental management, similar to quality management. Focus group. |
| Azzone et al. (1997) | The company's environmental culture and the employees 'green' competencies as dimensions of the environmental strategies. Case analysis. |
| Azzone and Noci (1998a) | Each environmental pattern affects human resource management in a different way. Theoretical analysis. |
| Azzone and Noci (1998b) | Changes in the management processes are necessary for the development of innovative environmental programmes. Case analysis. |

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|---|---|
| Bamber et al. (2000) | Team working and commitment to quality can be delivered through implementing total productive maintenance and influence the environmental performance. Case study. |
| Banerjee (1998) (continued) | Commitment of senior managers is one possible input to the environmental learning process. A double-loop approach to environmental learning may also result in a change in the organizational culture. Theoretical analysis. |
| Chinander (2001) | Internal drivers such as communication of values and alignment will influence a firm's environmental performance. Firms need to pay special attention to promotion feedback, education and quality improvement in this area. Case study. |
| Cook and Seith (1991) | Role of employees, benefits and development of an effective programme. Theoretical analysis. |
| Cook and Seith (1992) | Purpose of a training programme, defining goals, curriculum development and selection of effective media. Theoretical analysis. |
| Corbett and Cutler (2000) | Influence of employee involvement, measurement, management attitudes to training, people and technology, communication, environmental channels, commitment and culture. Case analysis. |
| Cramer and Roes (1993) | Motives, forms and measures. Case analysis. |
| Curkovic et al. (2000) | All aspects of human resource management (e.g. manpower planning, recruitment and staffing, training and development, performance appraisal and reward systems) assume strategic roles. The best results can be obtained only when there is a high level of involvement and commitment from trained people. Structural equation model. |
| Daily and Huang (2001) | A conceptual model of the environmental management systems. Human resources factors are proposed to assist in proper facilitation of environmental management programme. Theoretical analysis. |
| Dechant and Altman (1994) | Examples in companies. Case analysis. |

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| Egri and Herman (2000) | Organizational structures in environmental sector. Regression analysis. |
| Enandler and Pannullo (1990) | Employee involvement and pollution prevention. Theoretical analysis. (continued) |
| Epstein and Roy (2001) | Organizational culture and processes to improve both social and financial performance. Theoretical analysis. |
| Florida (1996) | Worker involvement in pollution prevention. Descriptive analysis. |
| Forman and Jorgensen (2001) | Participation of employees in a Danish context. Case analysis. |
| Griffiths and Petrics (2001) | Corporate architectures for sustainability. Theoretical analysis. |
| Groenewegen and Vergragt (1991) | Environment, safety and health unit in environmental issues as opportunities for technological innovation. Case study. |
| Gupta and Sharma (1996) | Role of workforce management in environmental operations management. Theoretical analysis. |
| Hallier (2001) | Greenfield recruitment is a critical feature of Greenfield workplace politics and practices. Theoretical analysis. |
| Handfield et al. (2001) | People practices. Case study. |
| Hanna et al. (2000) | Influence of employee practices on pollution prevention, environmental and operational performance. Empirical analysis. |
| Kitazawa and Sarkis (2000) | People practices and continuous sources of reduction programmes. Case analysis. |
| Klassen (2000) | Environmental department, procedures for encouraging cross-functional integration of environmental issues, among others. Empirical analysis. |
| Klassen (2001) | Influence of manager' organizational responsibility on plant-level environmental management orientation. Empirical analysis. |
| Klassen and McLaughlin (1993) | Human resources for environmental excellence. Theoretical analysis. |

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|---|---|
| May and Flannery (1995) | Cutting waste with employee involvement teams. Theoretical analysis. |
| Millimanb and Clair (1995) | Review of the literature in the U.S. Theoretical analysis. |
| O'hEchoa (2000) | Company culture, communications and employee attitudes on the use of 5Ss for environmental management. Case analysis. (continued) |
| Polonsky et al. (1998) | Role of organizational cultures in development of green products. Case analysis. |
| Ramus (1997) | Example of GE Plastic Europe. Case analysis. |
| Ramus (2001) | Encouraging creative ideas for environmental sustainability and organizational support for employees. Empirical analysis. |
| Ramus and Steger (2000) | Competence building, communication, information dissemination, rewards and recognition. Empirical analysis. |
| Rondinelli and Berry (1997) | Human resources and systematic problem solving. Case analysis. |
| Russo and Fouts (1997) | Influence on corporate environmental performance and profitability. Empirical analysis. |
| Sarkis (2001) | Human resources, manufacturing and environment. Theoretical analysis. |
| Sharma (2000) | Organizational context as predictor of corporate choice of environmental strategy. Empirical analysis. |
| Sharma et al. (1999) | Organizational context and corporate environmental responsiveness. Case analysis. |
| Shrivastava (1995) | Employee in ecological sustainability. Theoretical analysis. |
| Starik and Rands (1995) | Multi-level and multi-system perspectives. Theoretical analysis. |
| Taylor and Welford (1993) | Communication and education in integrated systems in IBM. Case study. |
| Thompsom and | Teams for TQEM in AT&T. Case study. |

| Rauck (1993) | |
|---|---|
| Van Berkel et al. (1997) | Employee involvement and occupational health and safety programmes in industrial ecology. Theoretical analysis. |
| Welford (1992) | Teams link quality and the environment. Theoretical analysis. |
| Wilkinson et al. (2001) | Sustainability and management of human resources management. Theoretical analysis. |

Source: Fernandez et al. (2003)