

5. ENVIRONMENTAL HEALTH

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1. Introduction

Malaysia is undergoing industrialization at a very rapid rate accompanied by rural to urban migration. Industrialization is associated with the introduction of new technology and chemicals into the country. At the same time, the agricultural sector is still important but now being managed by conglomerates. As this sector becomes more competitive, the use of chemicals in the form of fertilizers, pesticides and herbicides become a norm. So is the use of chemicals to enhance growth in animal husbandry. To compound this transformation rural areas are also being urbanized. To sustain these changes, Malaysia is dependent on big population of foreign workers. At the same time the population growth rate for the country is averaging about 2.5% per annum. All these changes put a severe load on the environment and if these are not effectively managed, they will have an impact on the health of the population.

2. Objective

The objective of this paper is to identify key issues that affect the environment that could have a major impact on the health of the general Malaysian public.

3. Environmental Health Issues

There are many environmental issues in Malaysia from deforestation, open burning and the haze to waste disposal and indiscriminate use of chemicals. Most of these issues relate to the quality of air and water. Together with the quality of food, they will ultimately affect the health of the general public. However, the most important environmental health issue is one arising from the use of chemicals as a result of the following;

- i. Industrialization and the adoption of modern methods for agriculture and animal husbandry result in the introduction of new man-made chemicals into the food chain.
- ii. Industrialization and big population growth result in generation of greater volume of gaseous, liquid and solid wastes, which affect the quality air, water and food. Industrial wastes are generally chemical in nature.

4. Health Impacts of Man Made Chemicals

It is estimated that there are more than 100,000 man-made chemicals in circulation and new ones being introduced every day. Our fears about toxic chemicals are usually centered around cancer and other physical illness. More recent research, however, have shown that physical disease and visible birth defects may not be the only danger as many chemicals have now been found to have hormone disrupting and mimicking properties. These properties have the following effects on human development:

- Reduction of sperm count and abnormal sperm formation
- Hyperactivity
- Learning disability
- Development of abnormal sex organs

The most notorious of these chemicals are :

- Chlorinated hydrocarbons represented by DDT (dichloro-diphenyl-trichloro-ethane). Other members of the group are chlordane, heptachlor, dieldrin, aldrin, endrin
- Organic phosphates such as parathion (very widely used) malathion,
- Dioxin

Chlorinated hydrocarbons and dioxin are fat-soluble and tend to be accumulated in body fats and liver. Organic phosphates are very persistent and remain in the environment for a very long time. They are referred to as Persistent Organic Pollutants (POPs). A conference on to "Control of Health and Environment Risks Posed by 12 POPs" was recently held in Johannesburg, South Africa on 10 Dec. 2000. One hundred and twenty-two nations reached an accord to eventual elimination of POPs chemicals. The convention will be signed in May 2001 in Stockholm and become legally binding once 50 countries have signed it.

Dioxin is the general name given to a family of organic chemicals containing chlorine such as polychlorinated biphenyl (PCBs) of which 2,3,7,8 - tetrachlorodibenzo-dioxin being the most toxic.

Dioxins are unwanted by-products of a wide range of manufacturing processes including smelting, bleaching of paper pulp and the manufacture of pesticides and chemicals. These compounds are also unwanted by-products formed when incomplete combustion of thermal processes produces chlorine-containing organic substances, such as the burning and incineration of domestic wastes.

5. Legislative Framework

A specific legislation that applies to environmental health issues does not exist. However, the following Acts address different aspects of environmental health.

1. The Use and Standards of Exposure of Chemicals Hazardous to Health Regulations 2000 of the Occupational Safety & Health Act 1997.
2. The Food Act 1983
3. The Environmental Quality Act 1974
4. The Pesticide Act 1974
5. The Water Act 1920

None of these Acts the permissible health limits of chemicals present in food and drinking water.

6. Discussion and Recommendations

- 6.1 The importation, manufacture, storage, use and disposal of chemicals need to be effectively managed to minimize release of these chemicals into the environment and therefore, into the food chain. The Environmental Quality Act 1974 does not specifically address health concerns associated with environmental pollution. Discussions on the environment tend to focus more on impact of the flora and fauna. There is a need to highlight the impact on public health as well. The Environmental Impact Assessment is an example where the impact on health by the development is hardly addressed except for noise pollution.

Recommendation: The Environment Impact Assessment to be renamed Environmental & Health Impact Assessment where impact on health becomes a central part of the whole assessment.

- 6.2 As many chemicals have undesirable effects on health, every effort should be made to eliminate these and if not possible to identify suitable substitutions as what is being

attempted for POPs bearing in mind of the many benefits of chemicals. At present different bodies address different chemicals such as the Pesticide Board, the Environmental Council and the Occupational Safety and Health Council. Unfortunately, the activities and strategies of these bodies are not linked to one another and under such a set up many chemicals are not regulated as well as it should.

Recommendation: It is proposed that a special body be formed to monitor the importation, manufacture, storage, use and disposal of all chemicals and that a law on Public Health be passed to address issues related to environmental health.

6.3 Pesticides and herbicides are used freely in the country. Although there are laws regulating their use, enforcement of these laws could be further enhanced and measures to test for the residual content of these chemicals are not carried out in a consistent aggressive manner, as it should be.

Recommendation: To lobby the Government to expedite POPs residue testing in food.

6.4 In monitoring river water and drinking water, chemical levels are not measured. There is an urgent need for this to be done.

Recommendation: To measure POPs residues in river and drinking water initially and later this be expanded to include other chemicals.

References:

1. Rachel L. Carson. The Silent Spring. Houghton Mifflin Company Boston. The Riverside Press Cambridge 1962.
2. Theo Colborn, Dianne Dumanowski, and John Myers. Our Stolen Future. Plume Penguin Books Science Current Affairs. 1997.
3. Mohd. Nordin Hj. Hasan, Lizuryaty Azrina Abdullah, Ibrahim Komoo. National Review on Environmental Quality Management in Malaysia. Institute for Environmental and Development (LESTARI). University Kebangsaan Malaysia. 1998.
4. Malaysia Environmental Quality Report 1997. Department of Environment Ministry of Science, Technology and the Environment Malaysia.
5. Environmental Quality Act 1974.
6. A Handbook of Environmental Impact Assessment Guidelines. Dept. of Environment, Ministry of Science & Technology and the Environment, Malaysia. Second Edition 1995.
7. The Pesticide Act 1974.
8. The Food Act 1983.
9. The Water Act 1920.