Environmental Nuisance Control in Thailand

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Introduction

Thailand has been developing rapidly for more than 10 years, putting it in the forefront of the middle income developing nations. With this economic and industrial growth, consumption, and the demand for production has expanded. The industrial sector has shown the biggest growth, and between 1960 and 1994 rose by 27 percent. In 1994 there were 103,550 factories throughout Thailand with 30 percent located in Bangkok and the remainder located in the regions. This rapid growth has caused many problems including natural resource depletion and environmental degradation, resulting in health hazards to the community.

To minimise the risks and to safeguard the health of the population, the Public Health Act (PHA) BE 2535 was revised and amended. These amendments placed the major sources of public annoyance into the following five categories:

1. Water resources, including gutters, shower rooms, latrines, dung or ash pits or any other place which is unsuitably located, dirty or accumulates waste and may:
   - cause foul odour
   - release toxic substances
   - likely to become breeding places for carriers of disease
   - cause impairment or be harmful to health.

2. The raising of animals which by place, method, or quantity causes impairment or harm to health.

3. Buildings such as factories, business establishments or dwellings for human or animals which lack:
   - air ventilation
   - water drainage
   - sewage disposal
   - toxic substance disposal and the control of such, to prevent foul odour or discharge and thereby cause impairment or harm to health

4. Any action that causes odour, light ray, noise, heat, vibration, dust, powder, soot, ash or toxic matter to the extent that it causes impairment or harm to health.

5. Any other sources prescribed by the Minister and promulgated in the Royal Government
According to the Public Health Act, two sectors are responsible for nuisance monitoring and control; Local Government and Health. The role of local government is to prevent and eliminate sources of nuisance and to set up regulations and conditions to be applied within their jurisdiction. Health officers operating under the Act are empowered to advise local government in setting regulations and to conduct inspections of premises for nuisance. They are also required to conduct training programs for both local government and business proprietors in environmental management.

Figure 1 shows the steps involved in investigation and control of a nuisance problem.

The current situation in Thailand.

During the period 1993-1996, the Bureau of Environmental Health, Department of Health, Ministry of Public Health, together with 12 regional centres, 38 District offices in Bangkok Metropolitan Administration (BMA) and 135 municipality offices, conducted nuisance surveys across the country.

Complaints of environmental nuisance received were:

1993...........5,977
1994...........5,860
1995...........4,013 (BMA and 52 local offices)
1996...........3,737 (BMA and <50 local offices)

The major causes of nuisance were air pollution (gas, vapour, dust, and odour), noise, wastewater, toxic substances, solid waste and nightsoil. The countrywide distribution is shown in Figure 1.

Figure 2 shows the distribution of cases of pollution nuisance in the BMA and four regions of Thailand.
Figure 2: Case of Nuisance in 1995

Distribution of Cases of Nuisance Due to Toxic Substance, 1995

Distribution of Cases of Nuisance Due to Air Pollution, 1995

Distribution of Cases of Nuisance Due to Wastewater, 1995

Distribution of Cases of Nuisance Due to Noise Pollution, 1995

Distribution of Cases of Nuisance Due to Solid Waste and Nightsoil, 1995
The Central region (not including BMA) found that the major cause of nuisance was air pollution, followed by wastewater and solid waste. Nonthaburi province ranked first in the number of complaints.

The Northern region showed similar results, with Phitsanulok ranking first.

The Northeastern region ranked air pollution first, followed by solid waste and wastewater, with Ubon Rachathani having the greatest number of complaints.

The Southern region was similar to the Central region with the highest number of complaints in Nakhon Si Thammarat.

In BMA the major cause of complaint was air pollution followed by noise and wastewater.

Table 1 shows the percentage of pollution problems causing nuisance. Odour, the major problem, accounted for between 28.5 and 32.9 percent of the total complaints between 1993 and 1996 followed by noise, wastewater, dust, solid waste, and toxic substances respectively.

The 1995 causes of pollution nuisance are shown in Figure 3.

The survey found that industry, offensive trades, and business activities controlled by the PHA, were considered to have detrimental impacts on health. Those responsible for the largest proportion of pollution problems were:
Farming  
Processing and sale of food  
Slaughterhouses  
Automobile repair shops  
Gold ornament manufacturing  
Residential and commercial buildings  
Appliance manufacturing  
Metal electroplating, melting and moulding factories  
Metal welding, soldering, pressing, and machining  
Textile factories  

The results of the survey also showed the variety of compliance and enforcement processes used by local government to prevent and reduce problems. Table 2 shows the percentage of single measures used to mitigate problems during the survey period 1993-1996. The most successful and preferred method, to convince offenders to comply is that of technical suggestion and training, rather than immediate legal enforcement.

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Conclusions
Over the last decade, rapid urbanisation has taken place in Thailand, and both urban and rural environments have been adversely degraded. Environmental nuisance is frequently reported and has become a major problem requiring special attention from responsible agencies. Department of Health surveys showed that there were several thousand environmental nuisance complaints over the country each year. The survey indicated that odour, dust, noise, wastewater, toxic substances and solid waste are responsible for most of the complaints. Offensive trades, as defined under the Public Health Act are the major contributors to environmental nuisance problems.
A wide variety of measures have been employed to prevent and control environmental law violations, and that technical supervision and training are the preferred methods of resolution rather than legal enforcement.

**Recommendations**

There is a need for international collaborative studies on environmental guidelines and standards for offensive trades and their health effects to improve control of such nuisance. Examination of current practice in both developed and developing countries is necessary to develop appropriate strategies to deal with these nuisances. Integrated committees consisting of representatives of responsible authorities and key stakeholders should be formed to resolve complicated nuisance and public health problems. Community participation is to be encouraged for better control of environmental nuisance. A "best practical model" for nuisance prevention and resolution should be studied in the four regions of Thailand.

**Reference**