Establishing environmental monitoring in Sri Lanka

This item was submitted to Loughborough University's Institutional Repository by the/an author.


Additional Information:

- This is a conference paper.

Metadata Record: [https://dspace.lboro.ac.uk/2134/30267](https://dspace.lboro.ac.uk/2134/30267)

Version: Published

Publisher: © WEDC, Loughborough University

Rights: This work is made available according to the conditions of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) licence. Full details of this licence are available at: [https://creativecommons.org/licenses/by-nc-nd/4.0/](https://creativecommons.org/licenses/by-nc-nd/4.0/)

Please cite the published version.
Environmental Monitoring in Sri Lanka

There were 13 organisations in Sri Lanka in 1987 registered by the Central Environmental Authority (CEA) to carry out tests on water, soil, air and noise for environmental purposes. All of these laboratories have some facilities for testing water, five can test soils and only two can measure air and noise pollution. The organisations are listed in Table 1 (CEA, 1987).

Standards for various types of environmentally sensitive parameters discharged are prepared by interagency drafting committees, with representatives from organisations whose interests are involved, are published by the Sri Lanka Standards Institution. Other national and international standards for discharges are often used when drafting local limits. The standard methods of analysis for these parameters are also defined by the Sri Lanka Standards Institution. All these standards are subject to review as new problems and developments arise.

Some interlaboratory comparisons were carried out by CEA and the Centre for Analytical Research and Development, Dept. of Chemistry Colombo on 11 laboratories using chloride, sulphate, calcium, magnesium, sodium, zinc and copper on a synthetic potable water. The exercise proved very informative and has tightened up procedures in the participating laboratories. It is hoped to carry out some further comparisons in future (Gunawardhana, 1986).

It is interesting to note that despite the promising potential for environmental monitoring there is currently:

1) Lack of awareness by the public on environmental and public health matters.
2) Lack of funds for purchase and maintenance of supply of chemicals and simple and complicated laboratory equipment.
3) High rate of staff turnover at professional and technical levels.
4) Pressure on provision of quantity of water rather than maintenance of quality of supply and distribution networks.
5) Concentration of industrial development in Colombo and its surrounding districts.

National Building Research Organisation (NBRO) and its Environmental Division

The National Building Research Organisation had its origins from the Building Research Institute and was founded at its present site in March 1984. Its work is directed towards the research and development needs of the total shelter sector. Its activities focus on five broad areas:

Geotechnical Engineering,
Building Material and Construction Techniques,
Human Settlements Development,
Environmental Management,
Structural Engineering and Project Management.

The Environmental Division was established in January 1986 with a view to provide research and technical assistance to the Urban Development Authority (UDA) to combat urban environmental pollution. The aims and objectives of the Urban Development Authority are very briefly described in Appendix 1.

Development activities stress the environment, causing pollution in urban areas. Urban Development does not merely imply building construction. It includes all activities that are accomplished to improve urban areas such as promoting commercial development housing, providing
infrastructure, services and amenities such as public parks as well as industrialization. So in some cases while the standard of living may improve, the urban environmental quality may deteriorate both during construction and afterwards with increased activity.

References


Appendix 1

AIMS AND OBJECTIVES OF THE URBAN DEVELOPMENT AUTHORITY

The Urban Development Authority since its inception in October, 1978 has declared 79 Urban Local Authorities under the U.D.A. Act No 41 of 1978.

The Aims and Objectives of the U.D.A. regarding the above are the following

a) To carry out integrated planning and physical development.

b) To implement programmes in order to provide services in such areas that are consistent with integrated planning.

c) To undertake and execute development projects.

d) To formulate capital improvement programmes for the declared areas.

e) To formulate and implement an urban land use policy for the whole of Sri Lanka.

f) To develop environmental standards and prepare schemes for environmental improvement.

Appendix 1

In order to implement the above programme the Urban Development Authority is empowered to

a) Enter into any contract with any person on organisation for the execution of development projects and schemes approved by the Government.

b) To acquire and hold any movable or immovable property acquired or held by it.
### Table 1

List of laboratories registered in 1987 by the Central Environmental Authority to carry out environmental monitoring (CEA, 1987).

<table>
<thead>
<tr>
<th>Institution Name</th>
<th>Water</th>
<th>Soil</th>
<th>Air</th>
<th>Noise</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ceylon Institute Scientific and Industrial Research (CISIR)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>2. Colombo Municipal Council Microbiology lab</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Division of Occupational Hygiene</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>4. Geological Survey Dept.</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Government Analyst's Dept.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Land Use Division, Irrigation Dept.</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. National Water Supply and Drainage Board</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Sri Lanka Standards Institution</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. University of Colombo, CARD</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. University of Kelaniya, Botany.</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. University of Kelaniya, Chemistry.</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. University of Peradeniya Zoology.</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Water Resources Board.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Equipment for Environmental Laboratory, NBRO Sri Lanka</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Phase 1**
- Analytical Balance
- Autoclave
- Centrifuge, hand
- C.O.D Apparatus
- Comparator and discs
- Conductivity Meter
- Deioniser
- Distillation Unit
- Dust sampler, Hi-volume
- Earth Leakage Residual Current Device
- Flame photometer
- Fume cupboard
- Furnace, Muffle
- Gas meter, pumps and bubblers
- Hot plate
- Incubators
- Multimeter
- Oven, Hot air
- pH/specific ion meter
- Refrigerator
- Spectro-photometer and cells
- Stirrers
- Sound level meter
- Toolkit
- Vacuum pump
- Water bath
- Water sampler
- General laboratory equipment
- Glass ware and plastic ware
- Chemicals

**Phase 2**
- Air Meter
- Autoclave
- Balance, electronic
- Barometer
- Bath, water for bacteriology
- Centrifuge
- Colony counter
- Conductivity/Temperature water meter
- Dissolved oxygen meter
- Distilled water apparatus & reservoir
- Hotplate
- Incubator
- Kjeldahl apparatus *titrator
- Potable pH/specific ion meter
- Potable ambient air monitor
- Recorder, chart
- Sound level meter
- Turbidity meter
- Portable laboratory for water and wastewater