

Environmental Report 2010



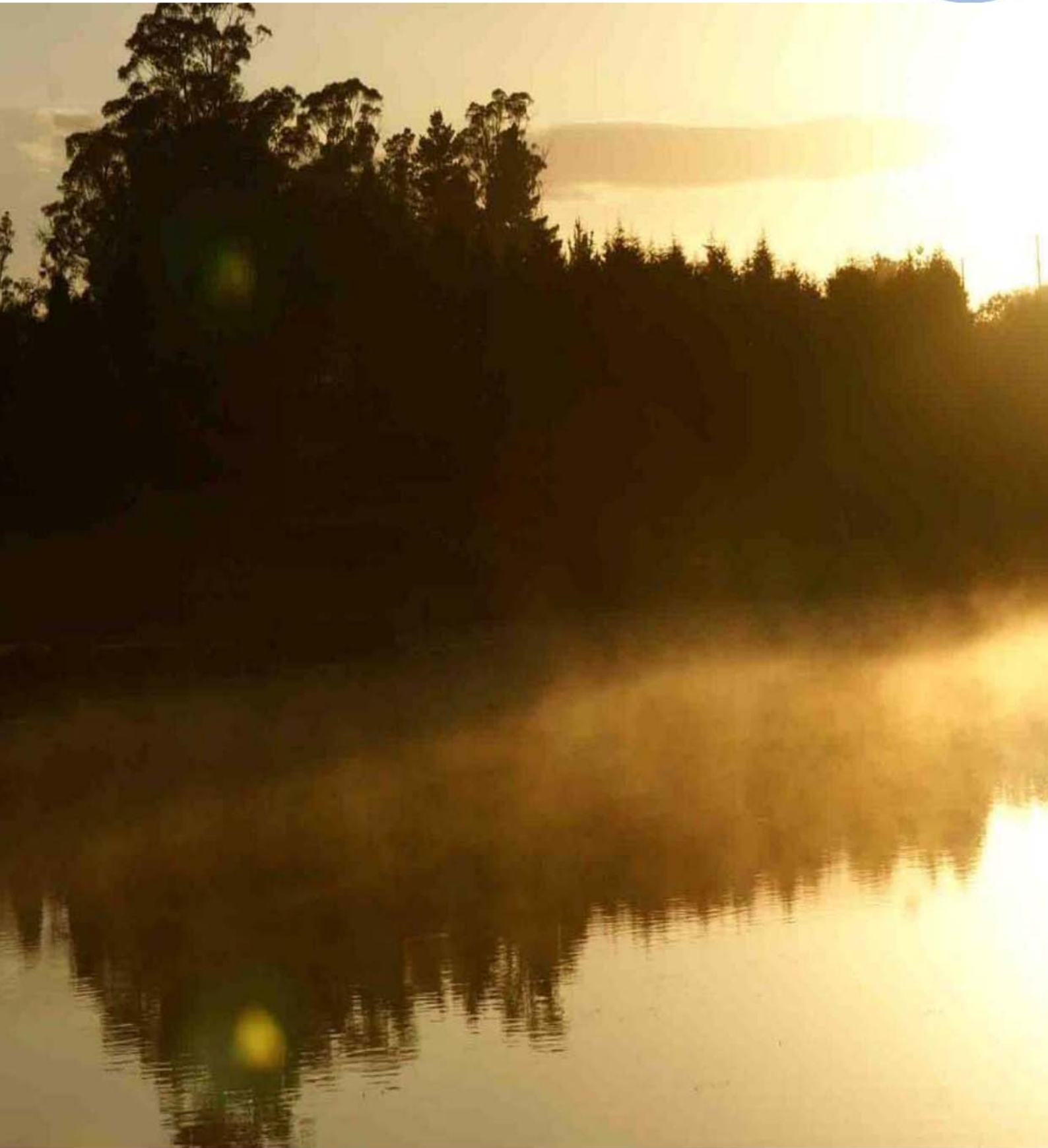
Government Laboratory





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Foreword

This is my pleasure to present the 2010 environmental report of the Government Laboratory. This report summarized the Laboratory's environmental performance in the year 2010 and reviewed issues pertaining to our environmental management system, in particular, how the Laboratory implemented its environmental policy in the year.

Environmental protection has long been a major policy area of the Hong Kong Special Administrative Region Government. On one hand, as part of the Government, the Laboratory is obligated to help implement the environmental policy agenda laid out by the Chief Executive. On the other hand, however, the Laboratory appreciated that it could make contribution in enhancing the living environment for the Hong Kong people.

As emphasized in the report, the Laboratory will spare no efforts in pursuing a high standard of environmental performance and minimizing the impact of its operation on the environment. Also, the laboratory is committed to continual saving of resources and enhancing the awareness on environmental protection of the staff.

With the concerted effort made by the public and the government, I am confident that we could achieve a better living environment not just for Hong Kong people but for the whole world at large.

Dr. Chau-ming Lau, JP
Government Chemist
May 2011



Organisational Profile

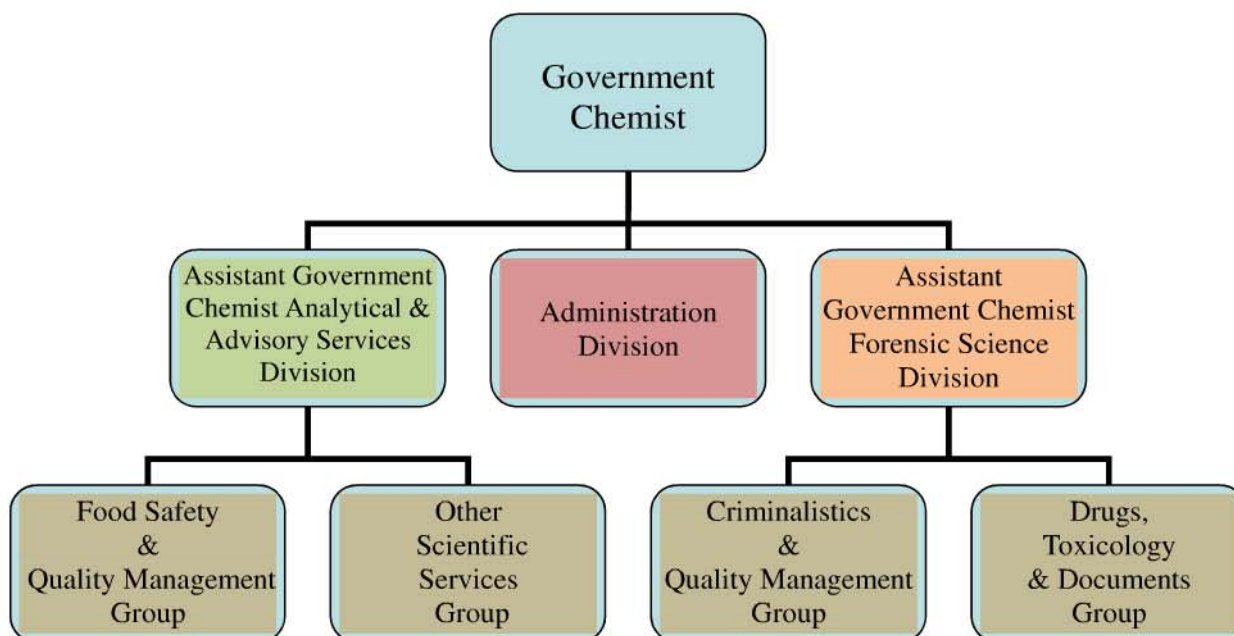
The Government Laboratory provides a full range of analytical, investigatory and advisory services to support departments and bureaux of the HKSAR Government to meet their responsibilities for law and order, public health and safety, environmental protection, government revenue, consumers' interests and implementation of government policies. Similar services are provided for other statutory bodies. The scientific administration of the Government Laboratory is the responsibility of the Government Chemist who heads the agency. There are two operational divisions:

The Analytical and Advisory Services Division (A&ASD)

The Forensic Science Division (FSD)

each of which is headed by an Assistant Government Chemist. Administrative support is provided by the Administration Division.

The remarkable advances in technology in recent years coupled with the frequent introduction of government new policies and regulations involving scientific considerations, the launching of new materials and products in the local market as well as the sophistication of criminal activities have contributed to significant changes in the work patterns of, and methodology employed at, the Laboratory. This has led not only to a broader coverage in scope of service provision, a higher degree of specialization among the professional staff, but also to the installation of an array of powerful modern scientific instruments.



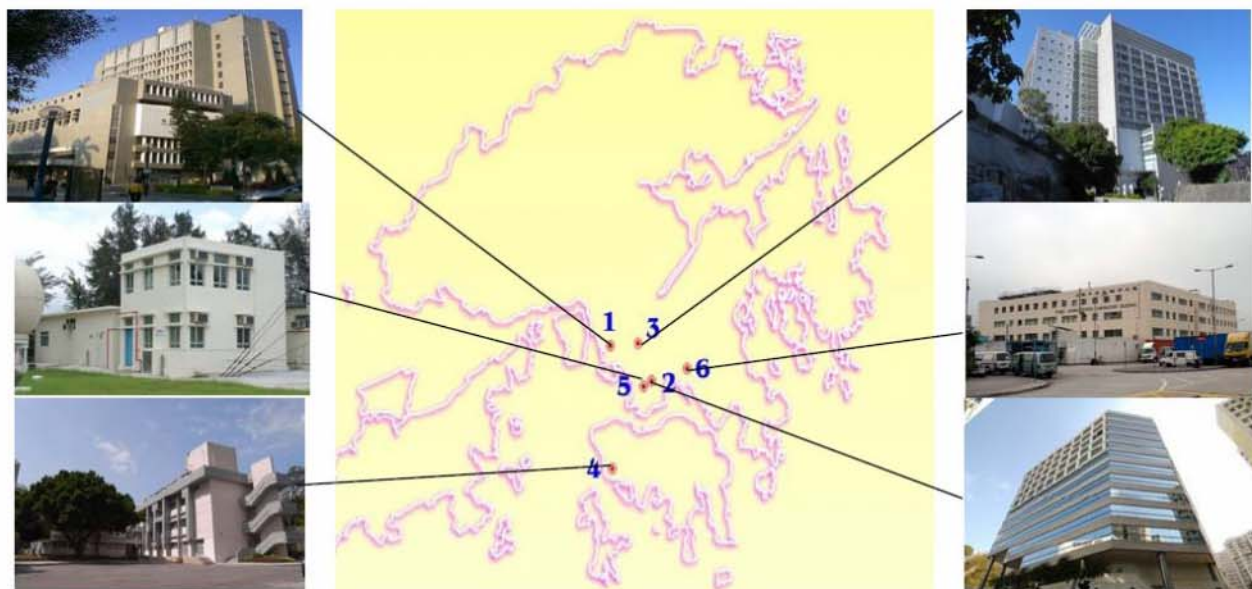


Staff Establishment and Financial Provision

The Government Laboratory had an establishment of 443 as at March 2011, in which there were 6 directorate-grade, 407 non-directorate-grade and 30 non-civil service contract staff members. The actual expenditure for 2010-2011 was \$355 million.

Office Location

Apart from the headquarters located at Ho Man Tin Government Offices, the Laboratory has testing facilities located at other government buildings:



- 1) Lai Chi Kok Government Offices, Lai Wan Road, Lai Chi Kok;
- 2) Homantin Government Offices, Chung Hau Street, Kowloon;
- 3) The Public Health Laboratory Centre, Nam Cheong Street, Shek Kip Mei;
- 4) Food Safety Laboratory, Victoria Road, Pokfulam.
- 5) King's Park Meteorological Station, King's Park Road, Kowloon;
- 6) Public Works Central Laboratory Building, Cheung Yip Street, Kowloon Bay.





Environmental Policy

The activities of the Government Laboratory may have undesirable impacts on the environment if they are not properly controlled, for example, release of harmful substances to the atmosphere through its gaseous exhaust; discharge of chemical wastes through drainage systems; and improper disposal of solid wastes. To ensure that the waste generated during its operation is in compliance with regulatory requirements, the Laboratory has implemented a programme to monitor the level of pollutants in the air emitted and effluent discharged from the Laboratory. The Laboratory also monitors the consumption of resources and the generation of various types of waste. To ensure the safe treatment and disposal of waste, and to prevent the accidental release of pollutants to the environment, there are established procedures for managing chemical waste disposal and handling of environmental emergencies. Environmental guidelines are in place to promote energy conservation, save resources and recover waste for recycling / reuse.

All the Sections in the Laboratory have been encouraged to set up environmental objectives and targets relevant to their operations. Sustained efforts have been made to reduce the consumption of chemicals and / or the release of harmful substances to the environment.

The Laboratory has set up objectives, targets and programmes for environmental protection. The environmental programmes that were implemented and in progress in the year 2010-2011 are shown on the next page.



Reduce the use of dry ice

The existing rotary evaporator unit of the setup for trapping residual organic solvent vapour has recently been upgraded with a diaphragm vacuum pump and a vacuum controller. As a result, it saved about 500 kg dry-ice each year which were required with the old setup where the trapping efficiency were not optimized.

Reduce the use of chemicals

The procedure for the testing of organophosphorus and N-methyl carbamate pesticides in fruit and vegetable samples was modified to achieve the target of reducing the use of dichloromethane by 30% compared with the original method. Dichloromethane is a kind of chlorinated organic solvent which may have impact on the environment.

Minimize generation of plastic waste

A new environmental programme has been launched to reduce the generation of plastic waste in the procedure for the determination of Nitroimidazoles and Fluoro(quinolones) in muscle and offal samples. Currently, the method involves the use of disposable plastic solid phase extraction cartridges which might be replaced by an online SPE procedure. The programme is in progress.

Reduce acid consumption

The use of microwave - assisted acid digestion procedure has recently extended to cover the determination of trace elements in biota samples. This resulted in further reduce of the consumption of nitric acid and hydrochloric acid. Besides, the amount of acid waste needed to be handled was also reduced accordingly.



Environmental Management

Responsibility and Accountability

There are designated staff members to look after various environmental aspects of the Laboratory's work.

The Laboratory's Environment, Safety and Security Committee (LESSC) is entrusted with the responsibility of deciding the environmental policy, overseeing its implementation and monitoring environmental performance. The Committee is under the direction of a directorate-grade officer and meets quarterly. It comprises officers appointed by the Government Chemist and staff representatives.

Section Heads and the Departmental Secretary are assigned to be the Laboratory's Environment, Safety and Security Inspectors, and are responsible for ensuring the compliance with the established environmental policy, guidelines and measures on environmental matters by all levels of staff.

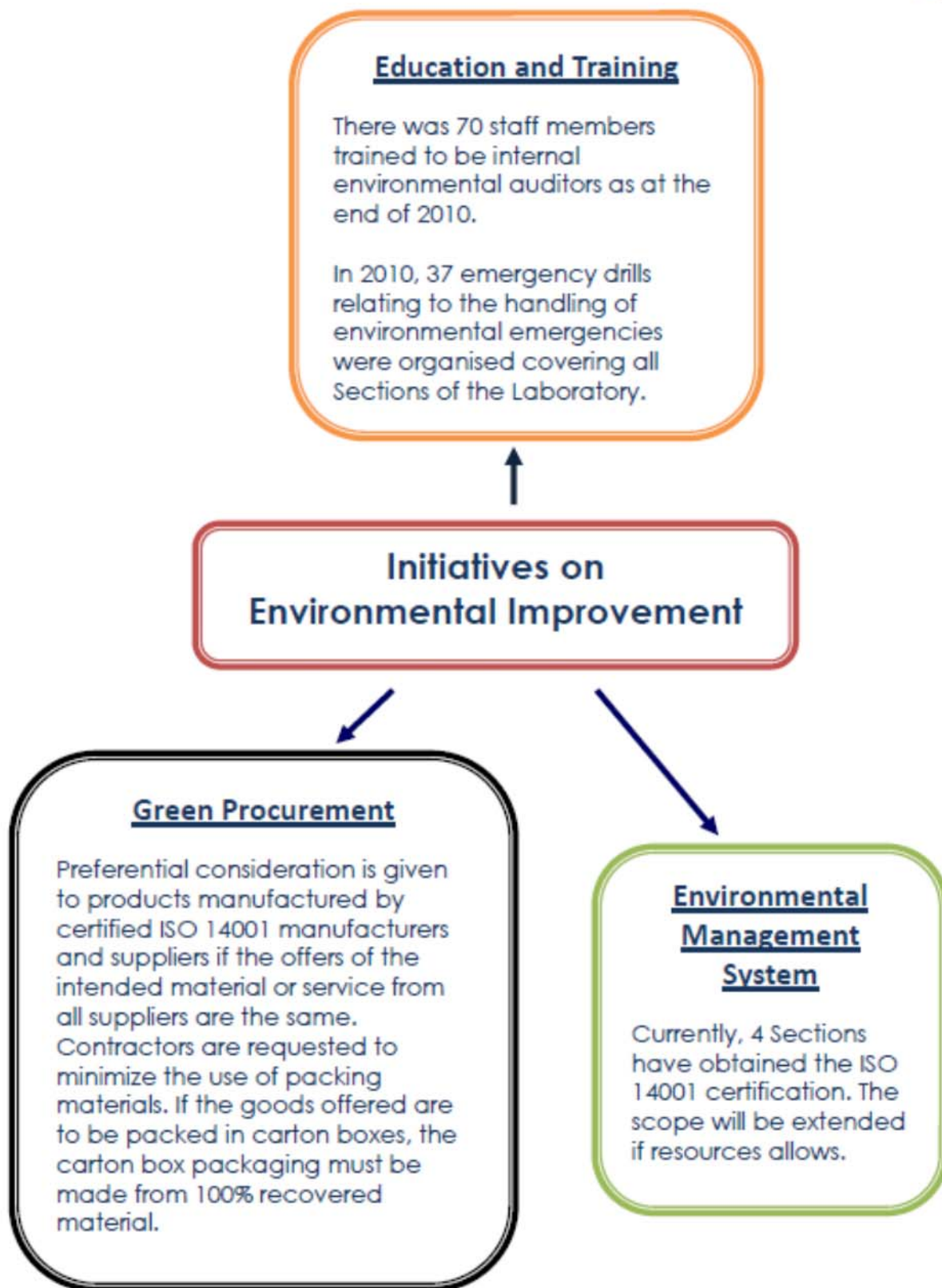
An Environmental Management System Working Group (EMSWG) was established to look after environmental matters and oversee the implementation of international environmental management standard ISO 14001 in the Environmental Chemistry A & B, Residues and Trace Elements Sections. The EMSWG is under the leadership of the Environmental Manager and comprises representatives from the four Sections and the Quality Management Section.

Education and Training

Training in safety and environmental operation were given to new recruits, which included the general laboratory safety practices, handling of chemicals and equipment, and procedures for handling chemical spills. In addition, continuous training on handling environmental emergencies like handling of chemical spills to minimize contamination to the environment was provided regularly.

Regular Environmental Audits

The annual internal audit was conducted in January 2011 for the Environmental Chemistry A & B Sections, the Trace Elements Section and the Residues Section. In addition, the Hong Kong Quality Assurance Agency (HKQAA) conducted external audits for these four Sections in March 2011. These audits served to verify that the environmental policy and relevant operating procedures are implemented effectively.





Resources consumption

The Laboratory Environment, Safety and Security Committee (LESSC) of the Laboratory prepared environmental guidelines and frequently reminded staff members to observe the green housekeeping measures stipulated in the guidelines. In this connection, the consumption of electricity, paper and envelope were monitored annually as environmental performance indicators. Figures for year 2009 and 2010 are given below for reference. As noticed, the electricity consumption continued to drop which reflected the effectiveness of the measures taken. The slight increase in the paper consumption was mainly due to increase in laboratory activities. Besides, there were 2 recruitment exercises conducted in 2010 resulted in the increase in the envelope consumption.

Resource	2009	2010
Electricity (kWh)	12989	12447
Paper (ream)	3804	3959
Envelope (unit)	5839	6225

Chemical waste

The Laboratory keeps monitoring the levels of pollutants in the effluent discharge and air emission to ensure the compliance with relevant regulatory limits. Chemical wastes generated in the Laboratory were collected for treatment by an authorized agent. The amount of chemical waste generated in 2009 and 2010 are summarized below for reference.

Chemical Waste Generation	2009	2010
Spent acids (L)	3765	3298
Spent Alkali (L)	85	52
Spent non-halogenated organic solvent (L)	1548	3168
Spent halogenated organic solvent (L)	656	1408

The increase in the generation of organic solvent in 2010 was mainly due to the high demand in food analysis from client departments. The decrease of 12% and 39% in acid and alkali respectively was attributed to the modifications made in procedures for trace elements analysis.



The Way Forward

The Laboratory constantly reviews its operation with a view to further improving its environmental performance and to ensuring that the established environmental guidelines and procedures are observed. Sections concerned will continue to propose environment objectives and programmes for activities under their purview.

The policy to conserve energy and save consumables will continue. In order to formulate effective energy management programmes, the Laboratory will keep liaison with the Electrical & Mechanical Services Department (EMSD) and the Architectural Services Department (ASD) to seek new initiatives for energy saving. For instance, automatic sensors controlling the lighting system at the area with low activities had been installed in some laboratory areas and the results were promising. This scheme will be extended to cover more areas in the headquarters and the satellite laboratories as well in the coming year.

The Laboratory is still exploring the feasibility of issuing electronic analytical reports to client departments instead of printed copy. While for daily operation, hard copies of quality document involved in the laboratory operation and instrument maintenance has been replaced electronically whenever applicable.

Over the year, the Laboratory has achieved a number of environmental targets to minimize the consumption of chemicals and emission of harmful substance through continual modification of operation procedures or upgrading the equipment. This process will continue to minimize the impact on the environment due to the Laboratory's daily operation.



Feedback and Enquiries

Please direct any feedback and comments on this Report to the Departmental Secretary of Government Laboratory.

Telephone: 2762 3708

Fax: 2714 4083

Address: Government Laboratory
7/F, Ho Man Tin Government Offices
88 Chung Hau Street, Homantin
Kowloon, Hong Kong

E-mail: glabinfo@govtlab.gov.hk

Home page: <http://www.info.gov.hk/govlab>

Dr Chau-ming Lau, JP
Government Chemist
May 2011