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For discussion
on 8 November 2011

Legislative Council Panel
on Food Safety and Environmental Hygiene

Tackling Food Incidents

PURPOSE

This paper summarises the experience gained by the Government in tackling the food incidents this year arising from the Fukushima Nuclear Plant Incident in Japan in March and the plasticiser contamination in Taiwan in May. It also proposes to create a Chief Chemist post in the Government Laboratory to cope with the increasing complexity and rising workload arising from food safety work.

BACKGROUND

2. The earthquake and the subsequent tsunami in Japan on 11 March 2011 damaged the nuclear power plant in Fukushima prefecture, leading to nuclear contamination in the environment. It was then reported by the Japanese authorities that certain foods in a number of prefectures were contaminated up to levels hazardous to human health.

3. On 23 May 2011, the Food and Drug Administration (FDA) in Taiwan announced that a plasticiser di(2-ethylhexyl)phthalate (DEHP)

had been detected in 16 samples of drinks at levels up to 34.1 parts per million (ppm) as DEHP had been mixed in the clouding agent used in the production of the drinks. Subsequently, further results announced by FDA indicated that a wide range of food products were found to be adulterated by DEHP, Di-isononyl phthalate (DINP) and Di-butyl phthalate (DBP), due to the use of clouding agents produced by two companies in Taiwan.

4. The Government had responded promptly and successfully tackled the two food incidents. The key to success can broadly be summarised as below –

(a) swift response to both incidents by stepping up surveillance immediately after the outbreak of incidents;

(b) timely issue of prohibition orders when unsatisfactory samples were found;

(c) accurate and reliable analytical services providing strong support to surveillance work;

(d) proactive communication and transparency in releasing testing results and other related information;

(e) timely engagement of members of the Expert Committee on Food Safety (Expert Committee) in seeking their independent advice on the risk assessment as well as the risk management plan;

(f) open dialogue with the trade to enlist their cooperation in checking their imports at source; and

(g) flexible re-deployment of resources and manpower in meeting urgent demands.

5. As the above incidents unfolded themselves, the Administration kept our legislature abreast of developments. A subcommittee of Legislative Council was formed to study the section 78B Order of the Public Health and Municipal Services Ordinance (Cap. 132) (the section 78B Order) issued in relation to Fukushima nuclear incident, and deputations from the trade were invited by the Subcommittee to express their views on the handling of that food incident by the Government.

6. Throughout the incidents we had maintained a constant dialogue with the relevant authorities of Japan and Taiwan so that we could have first-hand information on the prevailing situation. This enabled us to update our risk assessment and adapt our action plans. As the Fukushima nuclear incident did not just impact on Hong Kong's food imports, we needed to keep abreast of the responses of other jurisdictions so as to benchmark our action plans. To this end we had collated and maintained a database capturing the evolving responses of other jurisdictions which were also affected by the incidents. They include the Mainland, the European Union, the United States, Singapore, Korea and India etc.

EXPERIENCE GAINED

Prompt Response

7. The prompt response by the Government to both incidents had restored public confidence in food safety regarding Japanese and Taiwanese food imports. Where unsatisfactory samples were found, the Government took swift and resolute action in making a section 78B Order to protect public health. For the Fukushima nuclear incident, the Director of Food and Environmental Hygiene (DFEH) made a section 78B Order to prohibit import and supply of milk, milk beverages, dried milk, vegetables and fruits harvested, manufactured, processed, or packed on or after 11 March 2011 from the five concerned Japanese prefectures (Fukushima, Ibaraki, Tochigi, Gunma and Chiba) on 23 March 2011 when three samples of vegetables imported from Japan were found to contain iodine-131 with a level exceeding the standards laid down by Codex Alimentarius Commission (Codex) in the Guideline Levels for Radionuclides in Foods Contaminated following a Nuclear or Radiological Emergency (Codex Guideline Levels). Similarly, in the case of the plasticiser incident, DFEH made a total of six section 78B Orders to prohibit the import and supply of plasticiser-tainted products from eight different manufacturers and direct that any such food products supplied be recalled when samples of these products were found to contain plasticisers at a level that might pose a health risk.

Adoption of Internationally Accepted Food Safety Standards

8. It is important that the Government's response to such food incidents be science-based. Our experience in handling the two

incidents is that standards for conducting risk assessment of food safety should make reference to internationally accepted standards when such are available. Moreover, we should consult experts as and when necessary.

9. In handling the Fukushima nuclear incident, the Centre for Food Safety (CFS) adopted the standards laid down in the Codex Guideline Levels in testing the radiation levels of food. Relevant radionuclides include iodine-131 (level: 100 Bq/kg), caesium-134 and caesium-137 (level: 1 000 Bq/kg). The standards used were supported by the Expert Committee, which comprised overseas food experts from Singapore, Australia and Mainland as well as local experts. Apart from making reference to Codex, CFS had also kept in view the recommendation of other relevant international organisations such as the International Atomic Energy Agency (IAEA) and World Health Organization (WHO) in formulating the surveillance programme.

10. In handling the plasticiser incident, the main problem that confronted CFS was that there were no international standards on DEHP, DINP or DBP in food. DEHP, DINP and DBP are widely used as a plasticiser for Polyvinyl chloride (PVC) products. PVC is used in various consumer products such as imitation leather, rainwear, footwear, upholstery, flooring, wire and cable, tablecloths, shower curtains, food packaging materials, medical equipment and children's toys. Their presence in food might be due to migration from food contact materials, or due to their widespread presence as environmental contaminants in air, water, soil and food.

11. The issue was thoroughly discussed at the meeting of the Expert

Committee on 2 June 2011 when it endorsed the adoption of an action level of 1.5 milligrammes per kilogramme (mg/kg) in food for DEHP in Hong Kong. Using the same methodology, an action level of 9 mg/kg for DINP and 0.3 mg/kg for DBP was adopted. The above action levels took into account the possible presence of these plasticisers in food due to the use of packaging. The actions levels were derived based on safety reference value (i.e. tolerable daily intake) established by the WHO or European Food Safety Authority (EFSA) and took into account the food consumption pattern of the local population. Food with plasticiser level exceeding the action level may indicate a food adulteration or a misuse of food packaging materials which could endanger public health.

12. Risk assessment was conducted once a sample was found to have plasticisers exceeding the respective action level. The risk assessment determined the health risk to a consumer by comparing the exposure of consumers from daily consumption of the products with the safety reference value, including, for DEHP, the tolerable daily intake (TDI) of 0.025 mg/kg of body weight under the WHO Guidelines for drinking-water quality and the TDI of 0.05mg/kg of body weight established by EFSA; and for DINP and DBP, the TDI of 0.15 mg/kg of body weight and 0.01 mg/kg of body weight established by EFSA respectively.

Comprehensive Surveillance Coverage – Import, Wholesale and Retail

13. Given our heavy reliance on imported food, it is important for us to identify all the control points through which food from affected regions/areas are imported for surveillance purposes. 98% of Japanese foods are imported via sea route, with the rest via air. Currently, all

foods imported by air will go through CFS' food inspection facilities at the airport. However, there are no similar food inspection facilities at the container terminals for food imported via sea route.

14. With the assistance of the Customs and Excise Department, CFS was able to conduct screening of all food imports from Japan, be it by sea or air. Priority has been accorded to those consignments with fresh produce. CFS conducted screening by hand-held survey meter for surface contamination of every food consignment from Japan and samples were taken from every consignment for radiation examination by the Contamination Monitoring System (CMS). Food consignment that failed screening by hand-held survey meter or examination by CMS was held and sample was sent to the Government Laboratory (GL) for further analysis.

15. To ensure that our surveillance coverage was comprehensive, CFS not only took samples of Japanese food at the import level but also wholesale and retail levels for radiation testing. Pre-packaged items were also included in the surveillance programme. Such comprehensive surveillance serves to reassure the public and restore public confidence in food available in the market.

Proactive Communication with Transparency in Releasing Information

16. In line with our well-established practice, the Government had adopted a proactive approach in communicating with the public and the trade in a highly transparent manner when handling the two food incidents.

Communication with the Public

17. CFS had provided the public with up-to-date food safety information related to the Fukushima incident in a transparent and timely manner so as to relieve public concern. Joint press briefings with other relevant departments were conducted in the first two weeks after the nuclear incident. CFS had also contributed to the joint press releases issued by the Administration on a daily basis. The surveillance results had also been uploaded onto the websites of CFS and the Agriculture, Fisheries and Conservation Department (AFCD).

18. In the case of the plasticiser incident, CFS had set up a designated web page capturing all the essential and latest information on plasticisers for public information. Surveillance results had also been uploaded onto the website since 30 May 2011.

Communication with the Trade

19. CFS had maintained close communication with the trade throughout the incidents to explain the basis of the surveillance programme as well as risk management measures taken to appeal for their cooperation. For example, CFS met with the importers and distributors supplying Japanese food on 14 March 2011 and briefed the trade again on the section 78B order made by DFEH on 23 March 2011. The Permanent Secretary for Food and Health (Food) also met major food and infant formula suppliers, importers and retailers on 22 March 2011 to discuss the impact on the supply of food and infant formula arising from the nuclear incident in Japan. The meeting also discussed how the Government and the trade would work together to maintain an adequate

and stable supply of food. Major infant formula suppliers also agreed to adjust their stock level to meet the possible demand arising from any interruption in the supply of Japanese brands.

20. Where appropriate, CFS had provided facilitation to the trade during the incidents. For example, since 25 March 2011, CFS had started to issue a letter to the relevant importer stating that the radiation testing results were satisfactory for the concerned food consignments if they had passed the test.

21. In the case of the plasticiser incident, CFS had issued rapid alerts to the trade to keep them abreast of the latest information released by FDA of Taiwan throughout the incident. CFS had also met with the trade to learn more about their operation. The trade was urged to take the initiative to stop selling drinks or foods suspected to be tainted with plasticisers.

Manpower and Equipment

22. Manpower of various departments had been adjusted in order to cope with the heavy workload arising from the two major food incidents through re-deployment of manpower. Apart from re-deploying one senior health inspector and 12 health inspectors to deal with the radiation level examination for imported Japanese food, CFS had employed 20 part-time workers who are retired inspectors with experience in sample taking and food testing. AFCD had also employed one contract fisheries inspector and two contract field assistants for the surveillance, including operating CMS, collecting and processing samples from fish culture zones and fish wholesales markets and analysing

relevant data. In GL, an emergency response team had been formed through re-deployment of manpower to cope with the demand for urgent radiation testing. It was only with such flexible staff deployment and utilisation of resources that we could meet the sudden upsurge in workload caused by these two incidents.

23. The technological readiness of the radiation testing equipment in GL, CFS and AFCD had enabled the Government to carry out prompt and accurate testing of a large number of samples within a short time. Not all jurisdictions were at the same level of readiness as Hong Kong. AFCD is presently equipped with two CMSs for radiological testing of fishery products and regular calibration of the equipment is carried out. CFS is equipped with 45 hand-held surface contamination monitors, 15 hand-held gamma dose-rate meters and ten CMSs. That includes three CMSs and three hand-held surface contamination monitors which were procured following the outbreak of the Fukushima nuclear incident. Recently, GL procured one more set of high purity Germanium Gamma-ray spectrometry system for supporting the urgent analysis in view of the long term need for the radiation contamination testing. The instrument was successfully installed and commissioned in August 2011. The Government will continue to make necessary investment in our food testing equipment to ensure that we possess the technology required for carrying out various food tests.

24. The use of CMS had played an important role in the surveillance work. The accuracy of CMS would very much depend on its calibration and performance of the instrument. In view of the importance of the CMS results, CFS and AFCD invited GL to conduct a study on the performance of CMSs installed in both departments in April 2011 with

the aim of providing assistance to align both the physical setting of the instrumentation and quality assurance measures to meet the latest international safety and analytical requirements.

25. GL took the lead to develop a set of unified operation procedures for the CMS in use, provide training to personnel for CMS operation, and assist in quality assurance by provision of proficiency-testing programmes. Upon calibration of the testing equipment and alignment of the testing procedures across the Government, the readings were consistent and accurate and there had been no disputes from the trade. The procedures for sampling and announcement of test results were also streamlined and aligned between AFCD and CFS.

REVIEW OF MANPOWER RESOURCES

26. The emergence of a number of food incidents over the past few years has increased the quantity and complexity of the work for both CFS, AFCD and GL. Accordingly, CFS, AFCD and GL have reviewed the long term requirement for additional manpower resources. Relevant departments would pursue the required additional manpower through established channels.

Proposed Creation of a Chief Chemist Post in GL

27. In the case of GL, the demand for work input at the directorate level has been particularly acute. By way of background, GL comprises two Divisions: the Analytical and Advisory Services (A&AS) Division

and the Forensic Science Division, each headed by an Assistant Government Chemist (AGC) at the D2 level. Before the restructuring in 2006, there were two Chief Chemist (D1) posts in A&AS Division of GL, namely, the Chief Chemist (Environmental Chemistry and Other Scientific Services Group) (CC/ECOSS) and the Chief Chemist (Health Science Services Group). The CC/ECOSS post was, however, deleted in 2006 for efficiency and economy.

28. Upon redistribution of duties, the A&AS Division comprised two groups, namely the Food Safety and Quality (FSQ) Group and the Other Scientific Services (OSS) Group. While the OSS Group is headed by a CC post, the FSQ Group is headed directly by the AGC of the A&AS Division and assisted by a Senior Chemist-in-charge (SC i/c), who is also one of the seven SCs in the Group. Each of the seven SCs will take turn to take up the post of SC i/c. The organisation chart of the A&AS Division and the job description of the SC i/c are at Annexes 1 and 2 respectively.

29. The absence of a dedicated Group Head at CC level has inevitably affected GL's efficient and effective provision of food safety testing service. Obviously, the rotating arrangement for the post of SCi/c is not desirable.

30. Such shortage of support at the directorate level has been further exposed in dealing with the two urgent food incidents. With the growing public expectation on protection of food safety, timely scientific support from GL is indispensable. Since 2005-06, there has been an increase of 83 non-directorate posts in the A&AS Division. Moreover, over the years, serious food incidents have emerged at increasingly short

intervals, evidenced by the estrogen in baby formula in August 2010, dioxin in German eggs in January 2011, radiation leakage in Japan in March 2011 and the plasticiser in Taiwanese food and drinks in the summer of 2011. These incidents have exerted high pressure on the testing capacity and capability of GL. We therefore need to strengthen support at the directorate level in GL to enhance its leadership and professional input to cope with the increasing complexity and quantity of the work.

31. To this end, GL proposes, with the support of the Food and Health Bureau, to create one permanent post of CC, to be offset by the deletion of one permanent post of SC (MPS 45-49) in the Chemical Weapons Convention (CWC) Section. The CWC Section currently consists of one SC and one Chemist and is responsible for providing technical support for the implementation of the Chemical Weapons Convention. Since the commencement of the Chemical Weapons (Convention) Ordinance (Cap. 578) in June 2004, the demand for GL's professional input on legislative tasks has diminished. Such demand is not expected to re-emerge in any substantive way in future. It would therefore be sensible to combine the CWC Section with the Radiochemistry Hazardous Substances & Emergency Response Section to form a new Chemical Safety (CS) Section under a SC. This will pool expertise together in providing more comprehensive analytical and advisory service relating to the implementation of the Chemical Weapons Convention, radiochemical measurements, hazardous substances identification and emergency responses.

32. With the new CC post, GL will be able to provide prompt response to urgent service needs such as those arising from the aforementioned food incidents, to render high level advisory services in addressing the public concerns in food safety testing work and to further develop the testing capabilities of GL.

Duty List of the Proposed CC Post

33. The proposed CC post will take charge of the FSQ Group and will supervise 7 non-directorate SCs. He will be responsible for all matters pertaining to the provision of statutory and testing service provided by GL in relation to food safety. In addition, the post will provide professional advice and input on the development of new food regulations. The proposed duty list is at Annex 3. Upon the creation of a CC post for the FSQ Group, the new organisation structure of the A&ASD is at Annex 4.

Alternatives Considered

34. There is no better alternative other than creating a CC post to lead the food testing and quality operations of GL.

Financial Implications

35. The proposed creation of the CC post, to be off-set by the deletion of a SC post in the CWC Section, will bring about a net additional notional annual salary cost at mid-point (NAMS) of $288,300 as follows -

	NAMS $	No. of post
Permanent post		
Chief Chemist	1,357,200	1
Less : Senior Chemist	(1,068,900)	(1)
Total:	288,300	0

The net additional full annual average staff cost, including salaries and staff on-cost, is $272,000. We have included sufficient provision to meet the cost of this proposal.

WAY FORWARD

36. Looking ahead, we will remain vigilant and continue with our rigorous surveillance of food items imported from Japan. We will closely monitor information from Japan and other international authorities, such as WHO and the IAEA, and adjust our surveillance strategy as appropriate.

37. As regards the plasticiser incident, the Expert Committee endorsed at its meeting in September 2011 that CFS could consider switching the surveillance on plasticisers to routine food surveillance programme in light of recent satisfactory results. The last unsatisfactory sample found to contain DINP was reported on 24 August 2011. Since then, no more unsatisfactory sample has been found. Accordingly, the

testing of plasticisers in food has been subsumed into the routine surveillance programme of the CFS with effect from 1 October 2011.

ADVICE SOUGHT

38. Members are invited to note the food safety measures taken by the Administration in response to the nuclear incident in Fukushima of Japan and the plasticiser incident in Taiwan.

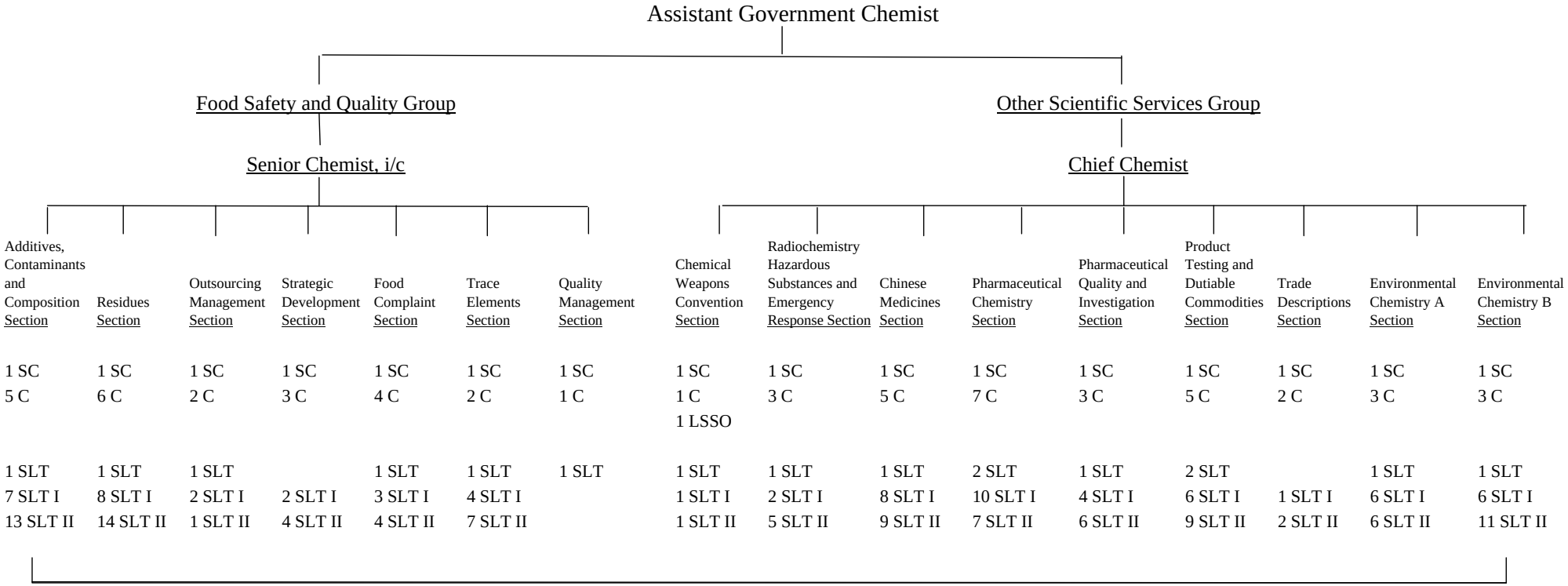
39. Members are also invited to support the Administration's proposal to create a new Chief Chemist post in GL. Subject to Members' comments, we plan to submit the proposal to the Establishment Subcommittee on 18 January 2012 for recommendation to the Finance Committee on 13 April 2012.

Food and Health Bureau
Agriculture, Fisheries and Conservation Department
Food and Environmental Hygiene Department
Government Laboratory
November 2011

Annex 1

Analytical and Advisory Services Division of the Government Laboratory

(as at 1 November 2011)



General Support

11 L Attd.

1 Wkm II

Legend :

SC	-	Senior Chemist
C	-	Chemist
LSSO	-	Laboratory Specialist Services Officer
SLT	-	Science Laboratory Technologist
SLT I	-	Science Laboratory Technician I
SLT II	-	Science Laboratory Technician II
L Attd.	-	Laboratory Attendant
Wkm II	-	Workman II

Annex 2

Job Description for the post of Senior Chemist-in-charge (Food Safety and Quality Group)

Rank **:** Senior Chemist (MPS 45 – 49))
Responsible to **:** Assistant Government Chemist (Analytical and Advisory Services) (AGC/A&AS)

Main Duties and Responsibilities –

In addition to his duties as Section Head of one of the seven specialist Sections of the Food Safety and Quality Group (FSQ) Group of the Analytical and Advisory Services Division (A&ASD), the Senior Chemist-in-charge of the FSQ Group is responsible to AGC/A&AS for the following duties:

1. To assist AGC/A&AS in the formulation of work objectives and strategic development plan for the Group and assisting in the evaluation of progress towards approved objectives.

2. To assist AGC/A&AS in the administration of the Group such as planning, training and development of staff, financial control and monitoring of supplies activities.

3. To advise, in collaboration with the section head(s) involved, AGC/A&AS on complex questions and complaints arising in connection with their cases in the Group, and on the best tactics to employ.

4. To assist AGC/A&AS in the liaison with the respective client departments on the efficient use of the laboratory services provided by the Group.

5. To assist AGC/A&AS in overseeing the implementation of the Division's quality assurance and other related programmes.

Annex 3

Proposed Job Description for the post of Chief Chemist (Food Safety and Quality Group)

Rank **:** Chief Chemist (D1)
Responsible to **:** Assistant Government Chemist (Analytical and Advisory Services) (AGC/A&AS)

Main Duties and Responsibilities –

1. To be responsible for the direct supervision of the specialist work of seven Senior Chemists in the Group and to ensure the provision and maintenance of efficient and effective laboratory services to the clients by training, periodic inspections, introduction of improvement measures where necessary and continuous review of performance and adequacy in all activities of the Group;

2. To make recommendations to the Division Head on, and to advise and assist in, the development and formulation of objectives and policies in relation to those scientific disciplines that come within the ambit of the Group;

3. To be responsible for administrative planning, financial control and monitoring and control of supplies activities within the Group;

4. To advise professional staff of the Group on complex questions and complaints arising in connection with their cases, and on the best tactics to employ;

5. To organize and lead the scientific research and development work of the Group and to plan and develop projects to meet the clients' special needs;

6. To carry out staffing audits, material control and evaluate progress towards approved objectives that come within the ambit of the Group;

7. To approve the implementation of new test methods in Analytical Methods Manuals (AMMs), amendments of AMMs and Sectional Work Manuals as proposed by the Section Heads under his Group as he deems fit;

8. To oversee the implementation of committed quality assurance programmes within the Group as required by the concerned accreditation bodies;

9. To liaise with client departments on the efficient use of laboratory services;

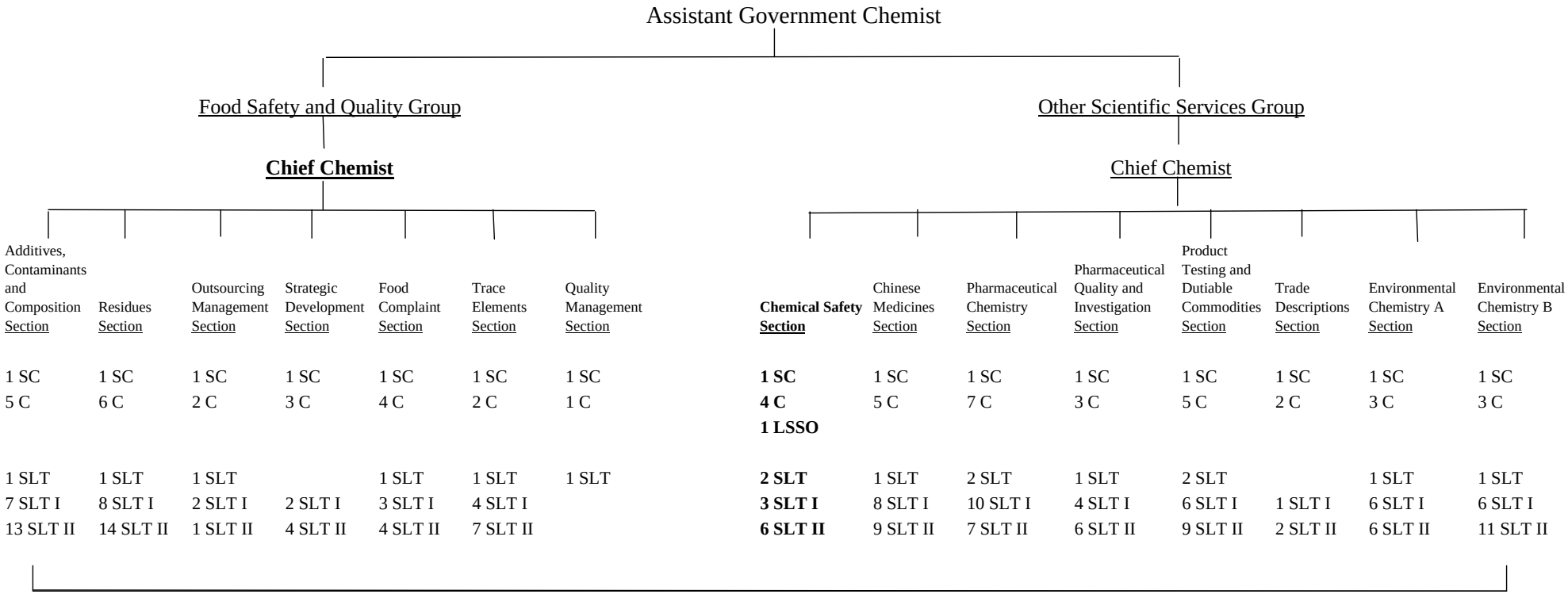
10. To be responsible for the management of staff seconded to other government departments that come within the ambit of the Group, including posting and transfer, career development, and provision of technical guidance;

11. To represent the Assistant Government Chemist (Analytical and Advisory Services) as spokesman for activities undertaken by the Group, and at meetings, etc.; and

12. To assume the role of Technical Manager of the A&ASD.

Analytical and Advisory Services Division of the Government Laboratory

(proposed as at May 2012)



General Support
11 L Attd.
1 Wkm II

Legend :

SC	-	Senior Chemist
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