

Head 168 — HONG KONG OBSERVATORY

Controlling officer: the Director of the Hong Kong Observatory will account for expenditure under this Head.

Estimate 2010–11 **\$215.9m**

Establishment ceiling 2010–11 (notional annual mid-point salary value) representing an estimated 285 non-directorate posts as at 31 March 2010 and as at 31 March 2011 **\$114.5m**

In addition, there will be an estimated five directorate posts as at 31 March 2010 and as at 31 March 2011.

Controlling Officer's Report

Programmes

Programme (1) Weather Services	This programme contributes to Policy Area 7: Public Safety (Secretary for Commerce and Economic Development)
Programme (2) Radiation Monitoring and Assessment	This programme contributes to Policy Area 9: Internal Security (Secretary for Security).
Programme (3) Time Standard and Geophysical Services	This programme contributes to Policy Area 7: Public Safety (Secretary for Commerce and Economic Development)

Detail

Programme (1): Weather Services

	2008–09 (Actual)	2009–10 (Original)	2009–10 (Revised)	2010–11 (Estimate)
Financial provision (\$m)	172.6	186.7	186.4 (–0.2%)	182.0 (–2.4%)
				(or –2.5% on 2009–10 Original)

Aim

2 The aim is to provide weather forecasts and issue warnings to the public, special users, the shipping community, aircraft and aviation groups in order to reduce loss of life and damage to property, and minimise disruption to economic and social activities during hazardous weather.

Brief Description

3 The Hong Kong Observatory's Central Forecasting Office and Airport Meteorological Office are responsible for the preparation and issue of weather information, forecasts and various warnings on hazardous weather to the public, shipping community and aviation groups. The Hong Kong Observatory also promotes public awareness of, and community preparedness for, natural disasters. This work involves:

- operating a network of mostly automated weather stations;
- carrying out real-time exchange of data with meteorological centres in the world;
- receiving meteorological satellite imageries and operating weather radar systems;
- analysing meteorological data and computing the future weather by numerical modelling;
- disseminating weather information by a diversity of means;
- issuing warnings on hazardous weather such as tropical cyclones, storm surges, rainstorms, landslips, flooding, thunderstorms, windshear, fire danger and extreme hot and cold conditions; and
- conducting public talks, interviews and training courses as well as producing publicity material on hazardous weather phenomena.

4 In 2009, the Hong Kong Observatory fulfilled its performance pledge of issuing at least one bulletin every hour of the day, disseminating the bulletins within ten minutes after each hour, and maintaining an average forecast accuracy score of more than 85 per cent. Special weather services, including real-time sea current information, were provided to support the 2009 East Asian Games in Hong Kong. A local storm surge alert service was introduced. A high-performance computer was installed for running numerical weather prediction models.

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5 The Observatory maintains a close surveillance of the weather at and around the Hong Kong International Airport (HKIA) and provides the aviation community with the weather information needed for operations. In 2009, a multi-year project to replace and upgrade the Observatory's meteorological facilities for the airport commenced with the objective of enhancing aviation weather services.

6 Enhanced weather information was provided in 2009 to meet the needs of the public. This includes:

- enabling the public to customise lightning alerts by choosing to receive through the Internet alerts of different levels, depending on the distance of lightning from a point of their choice;
- providing location-specific weather information at more than 400 premises with free public Wi-Fi service operated by the Government;
- launching new weather stations in Wong Tai Sin and Kwun Tong Districts under the "One District One Station" initiative;
- launching a new weather station at Stanley, and another one at Cheung Chau Beach to complement the existing Cheung Chau weather station;
- providing real-time visibility data covering the Victoria Harbour and weather images overlooking northern Lantau and Hong Kong South;
- enriching the Observatory website by adding satellite images from the new Fengyun-2D geostationary meteorological satellite;
- providing more information on ultraviolet (UV) radiation to raise public awareness towards sun protection; and
- putting on trial an in-house produced weekly weather programme on the popular YouTube website.

7 Other items of note for 2009 include:

- the "Hong Kong Community Weather Information Network" started in 2007 in collaboration with the Hong Kong Polytechnic University and the Hong Kong Joint-school Meteorological Association saw further expansion in the number of community weather stations, as well as further development of the UV network, with relevant weather and UV data made available to the public via the Internet. Weather data obtained through the Network was applied by school children in various educational projects and studies;
- the Observatory successfully obtained a certificate of patent for its original and innovative design of the heat stress monitoring system which was developed in-house to support the 2008 Olympic Equestrian Events in Hong Kong. Assistance was rendered to the Guangdong meteorological authority to set up similar systems for the equestrian events of the 2010 Asian Games;
- seminars to promote public understanding of severe weather warnings and proper response actions were conducted for government bureaux/departments as well as for the education, transport and other sectors; and
- public weather lectures and courses were held, attracting over 1 300 members of the public.

8 The key performance measures in respect of weather services are:

Targets

	Target	2008 (Actual)	2009 (Actual)	2010 (Plan)
forecasts perceived as accurate by the public (%).....	78	76	79	78
accurate public forecasts as verified by objective means (%).....	88	90	90	90
accurate forecasts as assessed by ship captains (%).....	95	96	95	95
accurate forecasts as assessed by airline operators (%).....	95	98	99	98

Indicators

	2008 (Actual)	2009 (Actual)	2010 (Estimate)
calls answered by Dial-a-Weather system (million).....	23.2	22.0	22.0
telephone enquiries answered manually.....	48 600	43 600	45 000
visits to Observatory's website (million).....	1 397	1 589	1 800
companies and organisations subscribing to special weather and warning services.....	89	100	100
total revenue from above subscribers (\$m).....	1.3	1.2	1.2
media interviews and public lectures/talks on weather.....	1 600	1 574	1 600
meteorological documents for flights departing Hong Kong...	152 000	143 000	146 000
visits to aviation weather information system (million).....	18.0	20.0	21.0

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Matters Requiring Special Attention in 2010–11

9 During 2010–11, the Department will:

- continue to enrich the contents of the Observatory's website in response to the evolving needs of the public and further develop the delivery of weather services through the Internet;
- continue to enhance its weather service to the public and develop new products making use of up-to-date meteorological techniques;
- continue to promote public awareness of, and preparedness for, natural disasters through various outreach activities and continuous development of educational resources; and
- take forward the replacement and upgrading of the Observatory's meteorological facilities for the airport to enhance its aviation weather services.

Programme (2): Radiation Monitoring and Assessment

	2008–09 (Actual)	2009–10 (Original)	2009–10 (Revised)	2010–11 (Estimate)
Financial provision (\$m)	23.4	23.9	23.8 (–0.4%)	24.1 (+1.3%)
				(or +0.8% on 2009–10 Original)

Aim

10 The aim is to provide information on environmental radiation levels in Hong Kong and advise government departments on the protective action that may be necessary during nuclear emergencies.

Brief Description

11 The Hong Kong Observatory monitors ambient radiation levels in Hong Kong and conducts radiological measurements on air, soil, water and food samples. In the event of a nuclear emergency, the Observatory will notify and advise government departments on the possible consequences in Hong Kong and recommend protective action. The Observatory organises training and exercises on radiation monitoring for other government departments involved in the Hong Kong contingency plan for nuclear emergencies. The work involves:

- operating a network of radiation monitoring stations, an aerial monitoring system, a radiological survey vehicle, a radiation laboratory and an emergency radiation data management system;
- keeping abreast of the latest development on the methodology for nuclear accident consequence assessment; and
- planning and participating in exercises and drills in response to nuclear emergencies.

12 In 2009, all radiation monitoring and assessment work in this programme was carried out satisfactorily. All equipment was maintained in a state of readiness. The Observatory's Radiation Laboratory received ISO 9001:2008 accreditation for its quality radiation measurement services. Inter-comparison between Hong Kong and Guangdong on radiological measurements continued. In addition to exercises and drills on radiation monitoring and assessment, a Radiological Protection Officer Course was conducted for about 60 officers from government departments involved in the contingency plan for nuclear emergencies.

13 The key performance measures in respect of radiation monitoring and assessment are:

Target

	Target	2008 (Actual)	2009 (Actual)	2010 (Plan)
data availability of radiation monitoring network (%).....	99.0	99.8	99.7	99.8

Indicators

	2008 (Actual)	2009 (Actual)	2010 (Estimate)
exercises and drills	21	14	22
visits to the Observatory's webpage on radiation.....	943 000	1 180 000	1 200 000

Matters Requiring Special Attention in 2010–11

14 During 2010–11, the Department will:

- continue to implement the agreed arrangements between Hong Kong and Guangdong on radiation monitoring and assessment;
- continue to conduct drills and exercises on emergency response in conjunction with other government departments as well as the relevant Guangdong counterparts;
- continue to organise training on radiation monitoring and assessment; and
- put the replaced Aerial Radiation Monitoring System into operation.

Programme (3): Time Standard and Geophysical Services

	2008–09 (Actual)	2009–10 (Original)	2009–10 (Revised)	2010–11 (Estimate)
Financial provision (\$m)	10.3	9.9	9.9 (—)	9.8 (–1.0%)
				(or –1.0% on 2009–10 Original)

Aim

15 The aim is to maintain the Hong Kong time standard and to provide geophysical, oceanographic, astronomical and climatological information to the public.

Brief Description

16 The Hong Kong Observatory maintains the Hong Kong time standard and provides time signals for the public. It prepares, collates and provides geophysical, oceanographic and climatological information required for planning, engineering design and environmental impact assessments. It monitors earthquakes and sea-level and releases related information to the public, including tsunami alerts. It also keeps abreast of research and development on international issues such as global climate change and advises the public and government departments on likely implications. This work involves:

- maintaining a caesium beam clock as the Hong Kong time standard and providing time signals for radio broadcasts, automatic telephone answering service and synchronisation of clocks via the Internet;
- operating seismological, tide and water level monitoring networks and conducting data analyses;
- compiling climatological and other related data;
- conducting studies related to climate change in Hong Kong and promoting public understanding; and
- providing updates on the effects of El Nino and other longer term atmospheric phenomena on Hong Kong.

17 In 2009, the objectives and targets of this programme were generally met. Achievements and activities include:

- installing a broadband seismograph to improve the capability of earthquake monitoring and tsunami forecasting;
- setting up a web clock to facilitate time checking via the Internet;
- conducting a joint study with a local university on the seasonal pattern of influenzas;
- undertaking further research on the projections of future climate change in Hong Kong based on the latest data in respect of the Intergovernmental Panel on Climate Change;
- assessing the long term trend of extreme weather events in Hong Kong;
- producing a climate-change kit on Hong Kong for the occasion of World Climate Conference-3 in Geneva, Switzerland; and
- giving about 70 talks on climate change to schools, organisations and the public.

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18 The key performance measures in respect of time standard and geophysical services are:

Targets

	Target	2008 (Actual)	2009 (Actual)	2010 (Plan)
time standard accuracy (microseconds per day)	0.1	0.1	0.1	0.1
geophysical, meteorological and oceanographic data capture rate (%)	98	100	100	99

Indicators

	2008 (Actual)	2009 (Actual)	2010 (Estimate)
visits to the Observatory's internet time service (million)	603	714	800
requests for geophysical, climatological and oceanographic information and advice	1 368§	1 143	1 200

§ A higher number of requests was registered in 2008 as a result of the Sichuan earthquake in May 2008.

Matters Requiring Special Attention in 2010–11

19 During 2010–11, the Department will:

- continue to provide information and data to users efficiently and through user-friendly means;
- continue to study as well as to promote public understanding of climate change in Hong Kong; and
- continue to keep abreast of earthquake risk assessment in the region.

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ANALYSIS OF FINANCIAL PROVISION

Programme	2008–09 (Actual) (\$m)	2009–10 (Original) (\$m)	2009–10 (Revised) (\$m)	2010–11 (Estimate) (\$m)
(1) Weather Services	172.6	186.7	186.4	182.0
(2) Radiation Monitoring and Assessment.....	23.4	23.9	23.8	24.1
(3) Time Standard and Geophysical Services.....	10.3	9.9	9.9	9.8
	206.3	220.5	220.1 (–0.2%)	215.9 (–1.9%)
				(or –2.1% on 2009–10 Original)

Analysis of Financial and Staffing Provision

Programme (1)

Provision for 2010–11 is \$4.4 million (2.4%) lower than the revised estimate for 2009–10. This is mainly due to the full-year impact of the 2009 pay adjustment and decreased requirement for capital expenditure, partly offset by increased expenditure for enhancing aviation weather services for the Hong Kong International Airport and increased maintenance expenditure for High Performance Computer System.

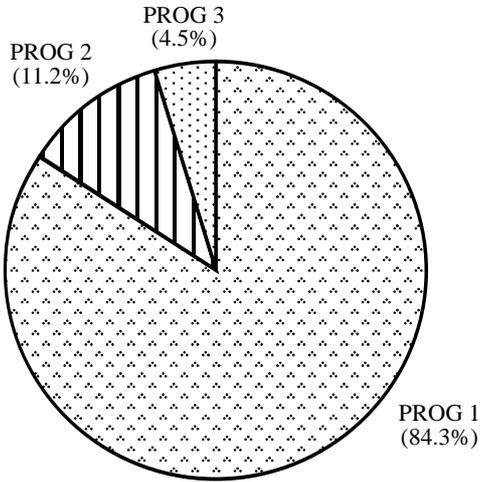
Programme (2)

Provision for 2010–11 is \$0.3 million (1.3%) higher than the revised estimate for 2009–10. This is mainly due to increased requirement for capital expenditure, partly offset by the full-year impact of 2009 pay adjustment.

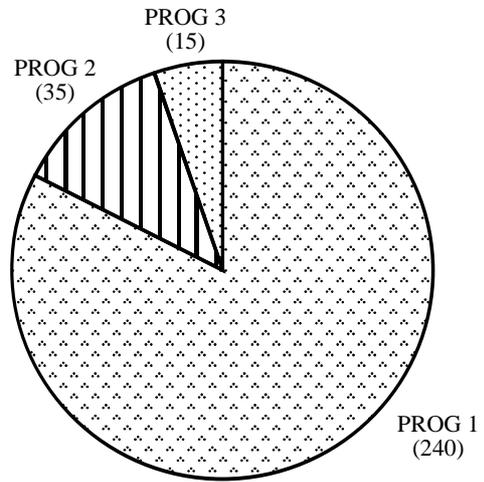
Programme (3)

Provision for 2010–11 is \$0.1 million (1.0%) lower than the revised estimate for 2009–10. This is mainly due to the full-year impact of 2009 pay adjustment.

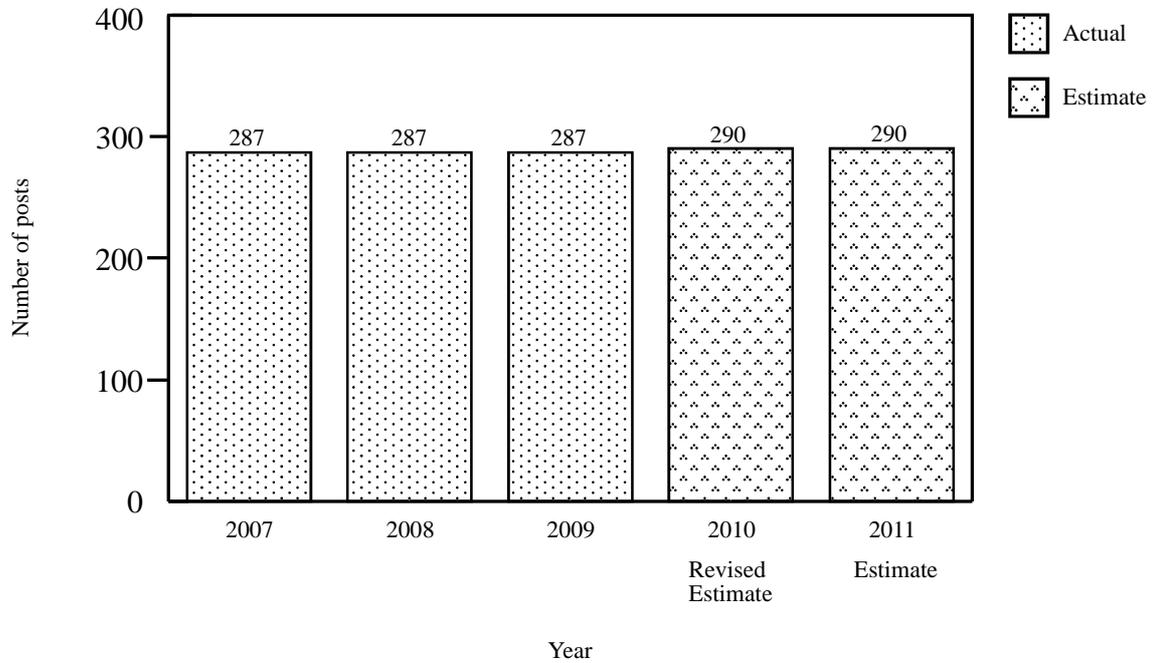
Allocation of provision to programmes (2010-11)



Staff by programme (as at 31 March 2011)



Changes in the size of the establishment (as at 31 March)



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Sub-head (Code)	Actual expenditure 2008–09	Approved estimate 2009–10	Revised estimate 2009–10	Estimate 2010–11	
	\$'000	\$'000	\$'000	\$'000	
Operating Account					
Recurrent					
000	Operational expenses.....	205,125	215,631	215,239	215,351
	Total, Recurrent.....	205,125	215,631	215,239	215,351
	Total, Operating Account.....	205,125	215,631	215,239	215,351
Capital Account					
Plant, Equipment and Works					
661	Minor plant, vehicles and equipment (block vote).....	1,190	1,148	1,148	589
	Plant, vehicles and equipment.....	—	3,712	3,712	—
	Total, Plant, Equipment and Works.....	1,190	4,860	4,860	589
	Total, Capital Account.....	1,190	4,860	4,860	589
	 Total Expenditure.....	 206,315	 220,491	 220,099	 215,940

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Details of Expenditure by Subhead

The estimate of the amount required in 2010–11 for the salaries and expenses of the Hong Kong Observatory is \$215,940,000. This represents a decrease of \$4,159,000 against the revised estimate for 2009–10 and an increase of \$9,625,000 over actual expenditure in 2008–09.

Operating Account

Recurrent

2 Provision of \$215,351,000 under *Subhead 000 Operational expenses* is for the salaries, allowances and other operating expenses of the Hong Kong Observatory.

3 The establishment as at 31 March 2010 will be 290 permanent posts. No change in establishment is expected in 2010–11. Subject to certain conditions, the controlling officer may under delegated power create or delete non-directorate posts during 2010–11, but the notional annual mid-point salary value of all such posts must not exceed \$114,519,000.

4 An analysis of the financial provision under *Subhead 000 Operational expenses* is as follows:

	2008–09 (Actual) (\$'000)	2009–10 (Original) (\$'000)	2009–10 (Revised) (\$'000)	2010–11 (Estimate) (\$'000)
Personal Emoluments				
- Salaries	137,133	142,367	141,298	140,484
- Allowances	1,465	1,515	1,758	1,515
- Job-related allowances	569	146	580	146
Personnel Related Expenses				
- Mandatory Provident Fund contribution	124	257	260	313
- Civil Service Provident Fund contribution	349	344	344	359
Departmental Expenses				
- General departmental expenses	65,396	70,912	70,908	72,444
Other Charges				
- World Meteorological Organization	89	90	91	90
	205,125	215,631	215,239	215,351

Capital Account

Plant, Equipment and Works

5 Provision of \$589,000 under *Subhead 661 Minor plant, vehicles and equipment (block vote)* represents a decrease of \$559,000 (48.7%) against the revised estimate for 2009–10. This is mainly due to reduced requirement for new and replacement equipment.