

**For discussion on  
29 June 2004**

**LegCo Panel on Food Safety and Environmental Hygiene**

**Anti-mosquito efforts and dengue fever surveillance**

**Purpose**

This paper briefs Members on measures taken by relevant departments to guard against mosquito-borne diseases in the light of the recent rise in ovitrap indices in the territory and reports on the progress made thus far.

**Dengue Fever in Hong Kong**

2. Hong Kong is geographically surrounded by dengue-endemic countries in Southeast Asia, and the dengue vector mosquito *Aedes albopictus* is widely found in Hong Kong.

3. Dengue fever (DF) has been made statutorily notifiable in Hong Kong since 1994. The annual number of notifications ranged from 3 – 49 cases (median: 10). There were no fatal cases.

4. All notified cases were investigated for the source of infection, the risk of local spread was assessed, and control actions were taken to prevent secondary spread. Most of the cases were imported, mostly from Southeast Asia.

**Situation in 2004**

5. As of 21 June 2004, a total of 14 imported DF cases were reported to the Department of Health (DH). Twelve cases were imported from Southeast Asian countries {Thailand (3), Philippines (2), Indonesia (4), Malaysia (1), Singapore (1) and Cambodia (1)}, one case imported from South Asian countries {Sri Lanka (1)} and one case imported from South Pacific countries {Tahiti (1)}. The patients of all 14 cases had recovered.

The situation is similar to 2003, when most of the 49 cases reported were imported cases mainly from Southeast Asia.

6. The local DF outbreak in 2002, together with the record high number of imported cases in 2003 and the number of cases reported to DH in 2004 so far indicate that, given the intense population movement among Hong Kong and other countries, particularly the dengue-endemic countries in Southeast Asia and the widespread prevalence of DF vector mosquito in the local territory, the risk of DF transmission giving rise to local case is still present.

### **Dengue Vector Surveillance**

7. Since 2000, the Food and Environmental Hygiene Department (FEHD) has put in place a dengue vector surveillance programme to monitor the distribution of *Aedes albopictus* at selected locations, evaluate the effectiveness of mosquito prevention and control work carried out by various parties, and provide surveillance information for making timely adjustments to our mosquito control strategies and measures. Two different indices, namely, Area Ovitrap Index (AOI) and Monthly Ovitrap Index (MOI), are recorded in our community surveillance programme which covered 38 strategic locations throughout the territory. AOI indicates the extensiveness of the distribution of Aedine mosquitoes in a surveyed area while the MOI is the average of all AOIs of the same month, which reflects the distribution and activities of *Aedes albopictus* in the whole territory.

### **Ovitrap Indices in 2004**

8. The MOIs and AOIs recorded in 2004 are shown in Appendix 1. It can be seen that the MOIs from January to April were lower than that of 2000-2003 (Appendix 2). MOI increased sharply from 11.9% in April to 31.6% in May. Although the rise followed the seasonal pattern observed in the last four years, the MOI in May had already exceeded the average of the past four years (26.8%). The higher rainfall recorded in March and April might be part of the reason for the sharp rise observed in May. The index may climb further in the coming warmer months if effective and sustainable interventions are not undertaken. In April, there were eight areas with AOI over 20% whereas Aberdeen, Kwun Tong Central and Tseung Kwan O had exceeded 40%. However, in May, only 8 areas had AOI below 20%. The number of areas with AOI greater than 40% increased from three in April to ten in May. Five survey areas were found to have AOI over 50% which included Lam Tin (50.0%), Fanling (55.1%), Ma On Shan (51.9%), Tai Wai (61.8%) and Yuen Kong (50.0%).

## **Anti-Mosquito Steering Committee**

9. The Anti-Mosquito Steering Committee (AMSC), chaired by the Permanent Secretary for Health, Welfare and Food and comprises of 11 bureaux and departments, was established in 2002 to formulate mosquito control strategy in Hong Kong. In anticipation of the forthcoming wet season, the AMSC met on 6 May 2004 and endorsed a three-pronged strategy which encompassed intensified preventive and enforcement actions, strengthened surveillance scheme and enhanced publicity programmes, in a bid to contain the risk of dengue fever to the community.

10. On preventive measures, FEHD would activate the district inter-departmental anti-mosquito response mechanism once the Area Ovitrap Index (AOI) reached 20% instead of 30% as in the past. All relevant departments would conduct intensive on-the-spot inspections to the concerned districts followed by elimination of breeding sources and application of larvicides to potential breeding grounds that are non-removable. The AOIs of Aberdeen, Kwun Tong Central and Tseung Kwan O, with AOIs exceeding 40% in April, decreased significantly in the month of May as a result of the concerted efforts made by various departments.

11. On surveillance mechanism, a Port Ovitrap Index (POI) was launched this year to better monitor the mosquito infestation situations in port areas. A total of 30 port areas, shown in **Appendix 3**, have been selected for the surveillance and the neighboring areas of every port would also be covered in the program. POI of seven groups of port areas recorded from January to May is tabulated in **Appendix 4**. The Port Monthly Ovitrap Index of May was 6.1, with the highest POI of 32.5% detected in cross boundary check points, including Lo Wu, Lok Ma Chau, Man Kam To and Sha Tau Kok. For areas with high indices, district pest control offices, concerned government departments and other relevant organizations like Airport Authority, Kowloon-Canton Railway Corporation and freight forwarding companies would be asked to conduct special control operations to lower the ovitrap indices.

12. On the publicity front, the Committee has intensified its promotion effort by producing a new announcement in the public interest (API) on mosquito preventive measures immediately following torrential or prolonged rains, in addition to the existing four TV and radio APIs.

13. In the face of the sharp upsurge of ovitrap index in May, the AMSC has requested various departments to further intensify their anti-mosquito efforts with special anti-mosquito operations mounted in key areas (including vacant government lands, railway construction sites as well as potential mosquito breeding places at Tai Wai and Ma On Shan area) immediately after the release of the May ovitrap index on 15 June. At the AMSC meeting on 21 June, all government departments concerned have also undertaken to enhance their anti-mosquito efforts at areas under their respective purviews in the coming months which include –

- (a) To employ 500 additional contract staff to enhance mosquito control work including conducting thematic operations targetted at village houses, old tenement buildings and passenger and cargo/container terminals/problematic spots;
- (b) To complete the first round of grass cutting and site clearance at about 600 hygiene hot zones in July and to clear 68 hillside illegal cultivation not zones in the coming months;
- (c) To accord priority to anti-mosquito operation at areas with high ovitrap index and to step up inspection frequency to work sites by contractors to twice a week;
- (d) To conduct daily anti-mosquito inspections at all estates, commercial properties and construction sites, and to mobilise 800 staff and cleansing staff to clear mosquito breeding grounds; and
- (e) To mobilise district organisations such as district hygiene squads, area committees, mutual aid committees and owners' corporations and other non-governmental organisations to take part in anti-mosquito operations at hygiene hot zones in 18 districts in the peak months of July and August.

14. Detailed strengthened anti-mosquito efforts to be taken by various departments are at **Appendix 5**.

### **New initiatives**

15. Apart from the enhanced anti-mosquito operations mentioned in paragraph 13 above, the AMSC has decided to launch two major initiatives to step up the anti-mosquito effort –

(a) Establishment of the District Anti-Mosquito Task Force

To strengthen the coordination of anti-mosquito operations of different departments and to encourage community participation in combating mosquito problem, all 18 districts in Hong Kong will set up their own District Anti-Mosquito Task Force under the Home Affairs Department with operation mode modelling after the Team Clean. Particular emphasis will be placed on problematic areas which may cut across different departments. Through closer liaison among government departments and more active involvement of members of the public, we hope that anti-mosquito operation could be carried out more effectively and the anti-mosquito message could be disseminated more widely to various sectors of the community.

(b) Establishment of the Anti-Mosquito Support Scheme

To ensure that sufficient funding is available to carry out anti-mosquito operations, an “Anti-mosquito Support Scheme” with an initial fund of \$10 million will be established for the year 2004-05 to support the 18 District Task Forces in launching their anti-mosquito programmes. When member departments of the Task Force have exhausted all other sources of funding for anti-mosquito operations, they may seek funding support from the Scheme. The Scheme will also support anti-mosquito operations on those grey areas which take time to ascertain the management authority or the jurisdiction.

## **Community Support**

16. Apart from the efforts made by the Government to tackle the mosquito problem, community involvement is indispensable. It is important for the public to participate actively in anti-mosquito activities by eliminating potential mosquito breeding grounds in their premises and the neighbourhood. Members of the public could also use the telephone hotline 2868 0000 or the Housing Department hotline 2712 2712 in reporting mosquito problems.

**Health, Welfare and Food Bureau**

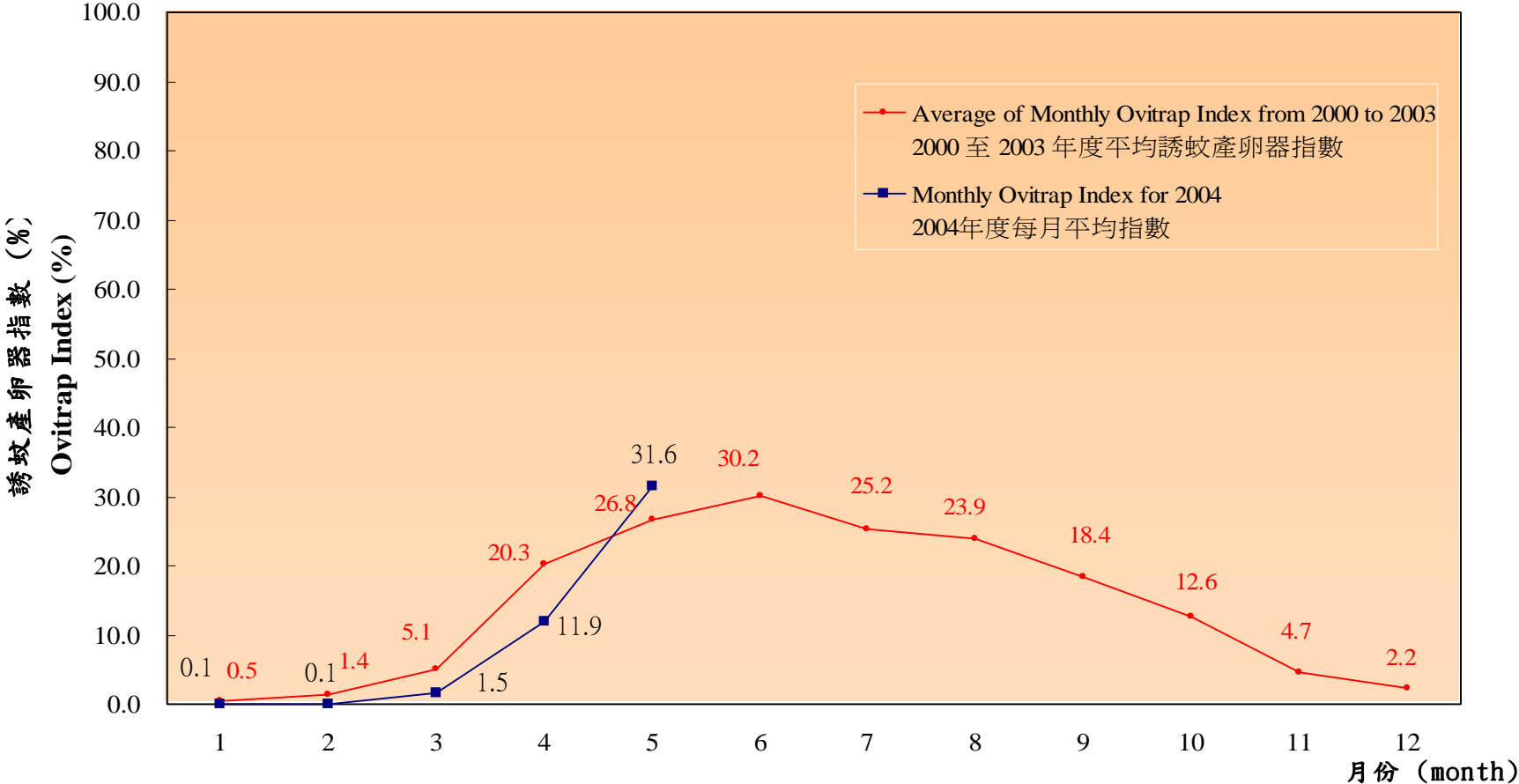
**June 2004**

## Ovitrap Indexes in 2004

### Appendix 1

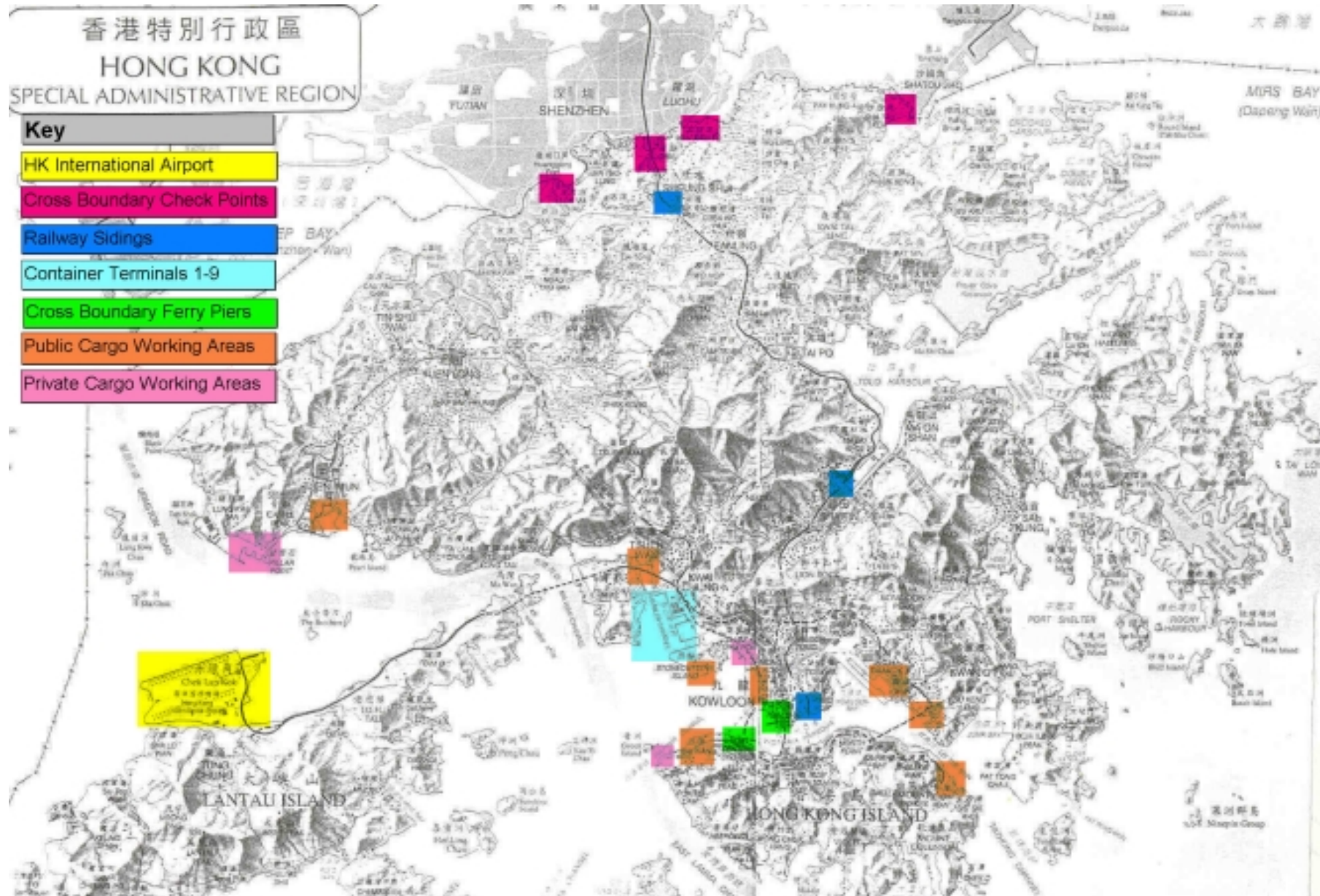
Area	Locations	JAN	FEB	MAR	APR	MAY
Hong Kong Island & Outside Islands	Chai Wan West	2.0%	0.0%	0.0%	1.9%	22.9%
	Wan Chai North	0.0%	0.0%	0.0%	0.0%	4.3%
	Happy Valley	0.0%	0.0%	1.9%	1.9%	39.6%
	Sheung Wan	0.0%	0.0%	0.0%	0.0%	32.1%
	Kennedy Town	0.0%	0.0%	0.0%	18.8%	43.1%
	North Point	0.0%	0.0%	0.0%	6.0%	19.6%
	Aberdeen	0.0%	2.2%	0.0%	44.7%	11.8%
	Pokfulam	0.0%	0.0%	3.6%	34.0%	39.6%
	Cheung Chau	0.0%	0.0%	0.0%	0.0%	22.2%
	Tung Chung	0.0%	0.0%	0.0%	9.4%	28.6%
Kowloon	Tsim Sha Tsui	0.0%	0.0%	0.0%	0.0%	6.3%
	Yau Ma Tei	0.0%	0.0%	1.9%	0.0%	12.5%
	Lai Chi Kok	0.0%	0.0%	0.0%	3.8%	32.1%
	Sham Shui Po (East)	0.0%	0.0%	0.0%	0.0%	13.5%
	Cheung Sha Wan	2.0%	0.0%	6.7%	13.5%	31.5%
	Kn City North	0.0%	0.0%	0.0%	0.0%	27.8%
	Ho Man Tin	0.0%	0.0%	0.0%	0.0%	16.0%
	Wong Tai Sin Central	0.0%	0.0%	1.7%	16.7%	49.2%
	Diamond Hill	0.0%	0.0%	0.0%	6.0%	30.8%
	Kwun Tong Central	0.0%	0.0%	3.6%	44.8%	32.1%
	Lam Tin	0.0%	0.0%	0.0%	34.7%	50.0%
New Territory East	Tseung Kwan O	0.0%	0.0%	0.0%	44.8%	16.7%
	Ma On Shan	0.0%	0.0%	2.0%	17.0%	51.9%
	Lek Yuen	0.0%	0.0%	3.8%	7.4%	32.0%
	Tai Wai	0.0%	0.0%	0.0%	12.0%	61.8%
	Tai Po North	0.0%	0.0%	0.0%	0.0%	46.3%
	Fanling	0.0%	0.0%	0.0%	1.9%	55.1%
	Sheung Shui	0.0%	0.0%	0.0%	0.0%	43.1%
New Territory West	Tin Shui Wai	0.0%	0.0%	0.0%	0.0%	50.0%
	Yuen Kong	0.0%	0.0%	0.0%	18.8%	17.3%
	Yuen Long Town	0.0%	0.0%	3.8%	31.4%	31.4%
	Tuen Mun (S)	0.0%	0.0%	22.0%	26.9%	29.4%
	Tuen Mun (N)	0.0%	0.0%	0.0%	3.6%	33.3%
	Tsuen Wan Town	0.0%	0.0%	0.0%	35.2%	29.1%
	Ma Wan	0.0%	0.0%	0.0%	0.0%	44.0%
	Kwai Chung	0.0%	0.0%	0.0%	0.0%	23.1%
	Lai King	0.0%	0.0%	5.9%	5.5%	33.3%
	Tsing Yi	0.0%	0.0%	0.0%	1.8%	38.5%
	<b>Monthly Ovitrap index</b>	<b>0.1%</b>	<b>0.1%</b>	<b>1.5%</b>	<b>11.9%</b>	<b>31.6%</b>

2000-03年與2004年白紋伊蚊誘蚊產卵器指數比較  
Comparison of Monthly Average Ovitrap Index (2000-03 and 2004)



Port Locations under the Port Ovitrap Surveillance programme

Appendix 3



**Results of Ovitrap Surveillance in Port Areas**

<b>Location</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>
HK International Airport	0.0	0.0	0.0	0.6	1.2
Railway Cargoes handling areas	0.0	0.0	0.0	3.3	16.7
Cross Boundary Check Points on Land	0.0	2.5	0.0	5.0	32.5
Cross Boundary Ferry Piers	1.6	0.0	0.0	0.0	2.0
Container Terminals	0.0	0.0	0.6	2.3	5.0
Public Cargoes Working Areas	0.0	1.3	0.0	1.9	13.2
Private Cargoes Working Areas	0.0	0.0	0.0	1.8	1.7
PMOI	0.1	0.3	0.1	1.5	6.1

**Anti-mosquito efforts to be taken by Government Departments**

<b>Bureau/ Department</b>	<b>Intensified Efforts to be Taken from mid June 2004 onwards</b>
AFCD	<ul style="list-style-type: none"> <li>● To step up inspection and increase cleansing frequency of recreation sites, trails, toilets and works sites at country parks to eliminate potential mosquito breeding grounds on a daily basis;</li> <li>● To pay additional efforts to remove containers particularly at morning walkers' gardens hotspots and giving advice to visitors and morning walkers not to store water and keep containers in country parks;</li> <li>● 30,000 booklets on Safety Hints on Hiking including message on preventing mosquito bites has been re-printed and will be distributed to public;</li> <li>● Anti-mosquito information under "Country Parks Anti-mosquito Actions" will be highlighted at the departmental website;</li> <li>● A short video on "Knowing Dengue Fever" will be broadcasted at visitor centres regularly.</li> <li>● To deliver leaflets on anti-mosquito measures to World Wide Fund Hong Kong (WWFHK) for distribution to visitors at the Mai Po Nature Reserve;</li> <li>● To advise WWFHK to step up cleansing and removal of open containers to eliminate potential breeding grounds;</li> <li>● To closely monitor the ovitraps at Wetland Park Phase I and closely liaise with FEHD on survey results.</li> <li>● To co-organize with FEHD and DH an education seminar for pig and poultry farmers at the end of June with regard to Japanese encephalitis and Dengue Fever and necessary mosquito preventive measures.</li> <li>● To reissue notices at Government wholesale food markets putting stronger emphasis on the need to implement anti-mosquito measures, and reinforce the message in the Department's Market Management Advisory Committee</li> </ul>

	<p>meetings with market traders;</p> <ul style="list-style-type: none"> <li>● To increase the frequency of spraying anti-mosquito oils at Government wholesale food markets from once a week to twice a week;</li> <li>● To organize “Market Clean-up Days” for the Cheung Sha Wan Wholesale Vegetable Market and Wholesale Fish Markets twice per month;</li> <li>● To distribute leaflets and give talks on anti-mosquito measures to market users, fish traders and fishermen associations;</li> </ul>
DH	<ul style="list-style-type: none"> <li>● To launch in June bi-weekly Communicable Disease Bulletin which contains updates on dengue fever in regional countries;</li> <li>● To distribute educational pamphlets to schools and estates via EMB and HAD;</li> <li>● To organize seminar for tourism industry in collaboration with Commissioner for Tourism this June;</li> <li>● To organize more roving exhibitions on dengue fever;</li> <li>● To increase the broadcasting frequency of message on dengue fever prevention at airports from 1 to 3 times every 4 hours starting this June;</li> <li>● To publish an article on prevention of dengue fever in Civil Service Newsletter (June Issue).</li> </ul>
EMB	<ul style="list-style-type: none"> <li>● To issue a circular to encourage more schools to organize anti-mosquito patrol teams to inspect the school environment weekly;</li> <li>● To continue to alert schools located within 100m of positive traps identified in the monthly ovitrap Survey of the FEHD and advise them to strengthen control measures against mosquitoes.</li> </ul>
ETWB(TW)	<ul style="list-style-type: none"> <li>● To adopt the following measures for sites falling within areas having high AOIs: <ol style="list-style-type: none"> <li>1. To be carried out by contractors:- <ol style="list-style-type: none"> <li>a) increase the frequency of site inspections to twice per</li> </ol> </li> </ol> </li> </ul>

	<p>week with particular emphasis on prevention of mosquito breeding;</p> <ul style="list-style-type: none"> <li>b) extend the coverage of site inspections to surrounding areas of sites;</li> <li>c) increase the spraying of larvicides to stagnant water areas that cannot be removed to at least twice per week; and</li> <li>d) report mosquito breeding areas that are outside the site boundary to FEHD or relevant departments for follow-up actions;</li> </ul> <p>2. To be carried out by works departments:-</p> <ul style="list-style-type: none"> <li>a) establish a special task force to conduct special auditing on public works sites falling within areas with AOIs over 40% at a frequency of at least once per month until the AOIs drop to 20% or below and to measure individual site performance on prevention of mosquito breeding;</li> <li>b) encourage the contractors to have their site staff and workers report mosquito breeding, and to establish quantitative measurement to monitor the intensity of mosquito activities including consideration of installing ovitraps on the sites;</li> <li>c) warn the contractors if they receive summonses for mosquito offences; escalating regulatory action against the contractors including the issuance of an adverse report which would affect their future tendering opportunities if their performance is not improved; and</li> <li>d) provide a message at each works department's website to facilitate the public to lodge complaints on potential mosquito breeding at public works construction sites.</li> </ul>
FEHD	<ul style="list-style-type: none"> <li>☛ To conduct in mid-June a special round of inspection to the common parts of village houses and their vicinity and other public areas including government land. Intensified mosquito control work and stringent enforcement action will be taken;</li> <li>● To employ some 500 additional contract staff to conduct anti-mosquito operations;</li> </ul>

	<ul style="list-style-type: none"> <li>● To conduct a study on the prevalence of Aedes albopictus in residential living quarters in areas with persistently high AOI from January to May 2004;</li> <li>● To amend s.27 of the Public Health and Municipal Services Ordinance, Cap. 132 to deal with the mosquito breeding problem more effectively;</li> <li>● To launch thematic operations targeting at old tenement buildings/problematic spots from 12 July to 21 August;</li> <li>● To launch Phase III of the anti-mosquito Campaign 2004 from 30 August to 23 October 2004;</li> <li>● To conduct large-scale thematic anti-mosquito operations in Peng Chau on 29 June, as well as joint operations with departments and rural committees concerned on Lamma Island, Cheung Chau, Peng Chau and Mui Wo of Lantau Island in September 2004;</li> <li>● To conduct thematic operations targeting at passenger and cargo/container terminals/problematic spots and village houses/old tenement buildings in the fourth quarter of 2004;</li> <li>● To hold a total of 148 outreaching school talks and outreaching talks to general public on anti-mosquito measures by July 2004;</li> <li>● To hold a total of 7 roving exhibitions on anti-mosquito measures in various shopping arcades by July 2004.</li> </ul>
HAD	<ul style="list-style-type: none"> <li>● To intensify publicity through distribution of anti-mosquito leaflets, posters and souvenirs by District Offices to local residents and building Management companies;</li> <li>● To hold seminars and workshops;</li> <li>● To organize, through District Offices, anti-mosquito inspections with community volunteers to identify possible mosquito breeding grounds;</li> <li>● To intensify anti-mosquito related minor works including grass-cutting, distilling and ground leveling.</li> </ul>
HD	<ul style="list-style-type: none"> <li>● To continue the daily inspections at all estates, commercial properties, construction and maintenance sites by estate</li> </ul>

	<p>management and site supervision staff;</p> <ul style="list-style-type: none"> <li>● For estates and construction sites located in districts where AOI exceed 20%, the following intensified actions will be taken every other day <ul style="list-style-type: none"> <li>(a) To carry out inspections by the Special Task Forces respectively in estates and construction sites;</li> <li>(b) To clear floor drains, roof gutters and surface channels;</li> <li>(c) To spray larvicidal oil at potential blackspots.</li> </ul> </li> <li>● Senior management, chief managers and contract managers to conduct surprise visits to estates and commercial properties, construction and maintenance sites to demonstrate commitment and to ensure adequate alertness and preventive measures in place;</li> <li>● To arrange educational programmes in collaboration with estate primary schools, in particular in high AOI districts, with a view to enhancing the awareness of environmental cleanliness and dengue fever. The students as a result will help to inspect potential mosquito breeding black spots in estates and bring home the anti-mosquito messages to the neighbourhood;</li> <li>● For estates, to take the following measures - <ul style="list-style-type: none"> <li>– encouraging tenants to report on mosquito breeding black spots through HD’s express hotline;</li> <li>– arousing tenants’ awareness and participation in combating against dengue fever through regular EMAC meetings and EMAC newsletters;</li> <li>– arranging articles in newspaper supplements appealing concerted effort in eliminating mosquito breeding places;</li> <li>– broadcasting educational video inside lobbies of estate offices.</li> </ul> </li> </ul>
LandsD	<ul style="list-style-type: none"> <li>● To continue to undertake the following measures to help control the spread of mosquito-borne diseases –</li> </ul>

	<ul style="list-style-type: none"> <li>– to complete first round of grass cutting and site clearance at about 600 blackspots in June 2004;</li> <li>– to carry out regular grass cutting and site clearance at about 600 black spots in the coming months;</li> <li>– to complete clearance of 68 identified hillside illegal cultivation hot zones in the coming months;</li> <li>– to take prompt inspection and appropriate follow up action at the sites concerned upon receipt of public enquiries/referrals;</li> <li>– to issue advisory letters to tenants to government sites managed by LandsD urging them to take anti-mosquito measures; and</li> <li>● to assist distribution of educational materials to the public through District Lands Offices.</li> </ul>
LCSD	<ul style="list-style-type: none"> <li>● To continue to step up special anti-mosquito operations at LCSD’s venues, notably parks, playgrounds, sports grounds, sports centres, sitting-out areas, swimming pools and beaches etc;</li> <li>● To conduct another phase of roving exhibition on dengue fever with effect from July at LCSD’s venues;</li> <li>● To install more mosquito trapping devices at outdoor venues.</li> <li>● To display and distribute additional anti-mosquito publicity materials.</li> <li>● To beautify nine pieces of vacant government land.</li> <li>● To step up enforcement action against littering.</li> </ul>

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