



Veterinary Epidemiological Bulletin Sri Lanka



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Salmonella Control Programme in Sri Lanka

Salmonella is a member of enterobacteriaceae family of gram negative, rod shaped bacteria, a potential pathogen lives in the intestine of animals and man.

Pullorum disease and Fowl Typhoid are two important diseases in poultry caused by *Salmonella pullorum* and *Salmonella gallinarum* respectively. Pullorum disease is passed from hen to chick by vertical transmission and then there is rapid lateral spread from chick to chick in hatcheries or rearing units. Egg transmission is not a regular feature of fowl typhoid but can occur with the opportunity for lateral spread of infection to contact birds in the hatchery or rearing units.

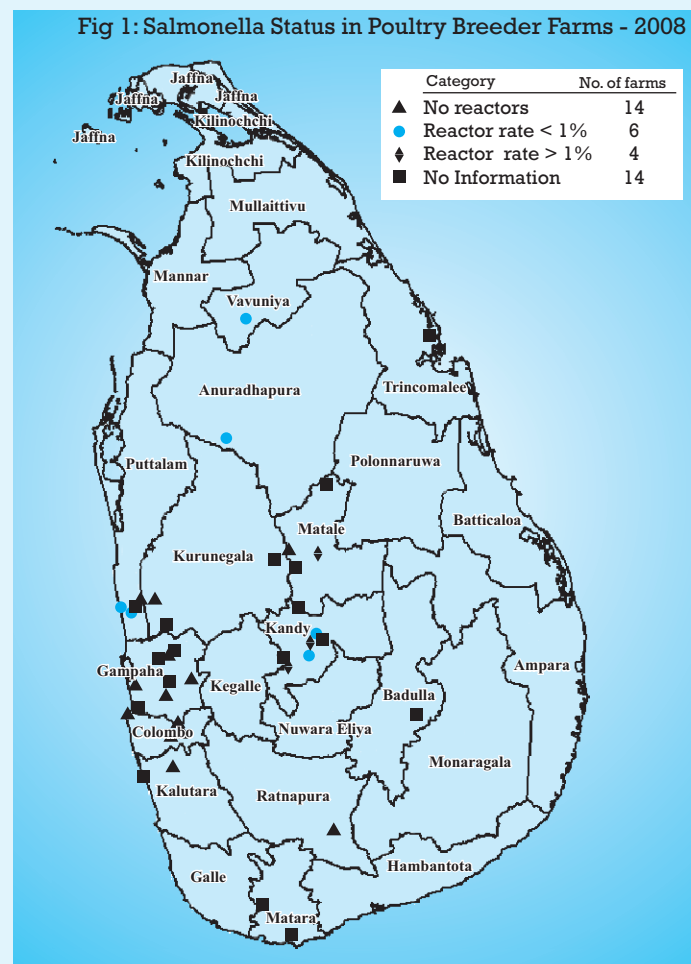
A proportion of the infected birds become carriers and thus the elimination of carriers from an infected flock is essential to effectively control the disease. Testing of breeding flock and removal of reactors play a key role in controlling salmonella infection at national level.

Poultry breeder farms in Sri Lanka carry out regular testing with removal of reactors until the reactor rates in the farm is brought down to a level of one percent or less than that. At this juncture,

preliminary verifications are performed by the Veterinary Investigation Officers who are authorized to carry out the health control programmes at regional level. Once the farm reaches the reactor rate of zero level, the confirmatory verification by the national team will declare the assurance on salmonella status in the breeder farm.

Establishment and operation of poultry breeder farms in Sri Lanka is regularized by the Animal Diseases Act No.59 to 1992 which demands the registration of these farms with the Department of Animal Production and Health. There are 36 parent farms registered under this legislation. The two Grand Parent farms namely Pioneer GP farm at Kosgama and Fortune GP Farm at Galewela are monitored by the Veterinary Research Institute while the parent farms are monitored by the respective Veterinary Investigation officer in the area where the farm is located.

Fig 1: Salmonella Status in Poultry Breeder Farms - 2008



2.1.1:- Reported cases of Newcastle Disease :July– December 2008

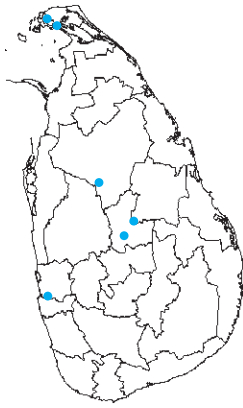


Fig : 2.a July

Cases	57
Deaths	40

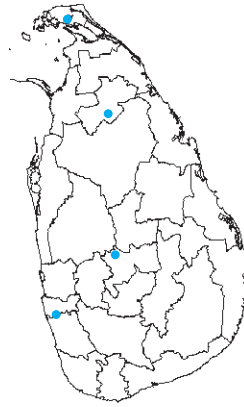


Fig : 2.b August

Cases	10
Deaths	6

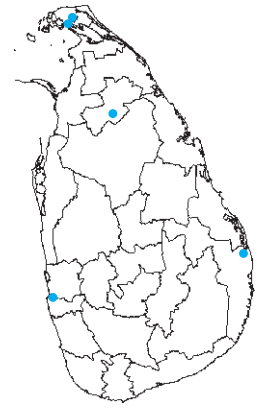


Fig : 2.c September

Cases	20
Deaths	12



Fig : 2.d October

Cases	34
Deaths	6



Fig : 2.e November

Cases	10
Deaths	6



Fig : 2.f December

Cases	3
Deaths	0

Newcastle diseases has been identified to be the most important disease in differential diagnosis of HPAI. Therefore, the enhanced passive surveillance emphasizing on reporting of clinical cases has been encouraged by intensive awareness programmes especially where the back-yard poultry rearing is highly practised.

Thirteen Veterinary ranges in seven districts have reported the occurrence of Newcastle disease during the period under review. Most of these occurrences are based on clinical diagnosis with little laboratory back-up for confirmation.

Table : 01

District	VS Range	Cases	Deaths
Matale	1	1	—
Kandy	1	1	-
Ampara	1	7	5
Anuradhapura	1	26	25
Polonnaruwa	1	4	3
Jaffna	5	42	3
Mullaitivu	1	4	-
Vavuniya	1	3	1
Gampaha	1	46	33
Total	13	134	70

2.1.2 : Reported cases of Infectious Bursal Disease : July– December 2008

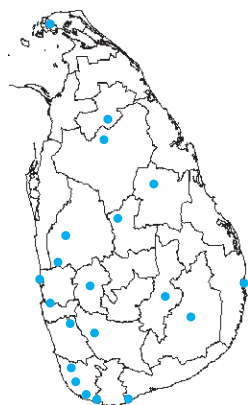


Fig : 3.a July

Cases	943
Deaths	215

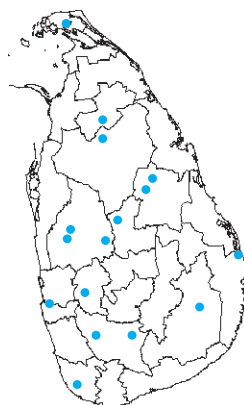


Fig : 3.b August

Cases	8,415
Deaths	1,535

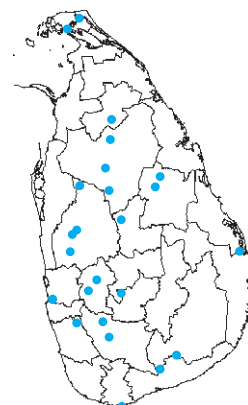


Fig : 3.c September

Cases	3,957
Deaths	451

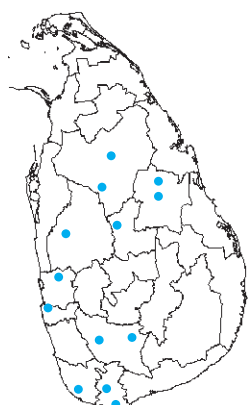


Fig : 3.d October

Cases	1,927
Deaths	542

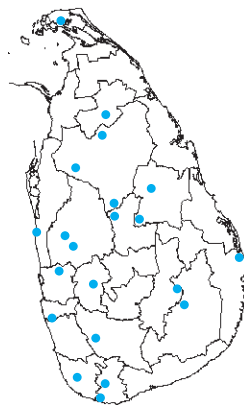


Fig : 3.e November

Cases	596
Deaths	433

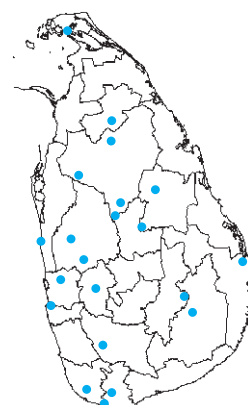


Fig : 3.f December

Cases	682
Deaths	511

Table : 02

District	VS Range	Cases	Deaths
Kandy	1	77	72
Matale	2	1681	1663
Anuradhapura	7	177	54
Polonnaruwa	3	8871	477
Kurunegala	7	849	720
Puttalam	1	11	10
Jaffna	4	43	25
Ampara	2	36	29
Vavuniya	1	16	3

District	VS Range	Cases	Deaths
Kegalle	2	400	183
Rathnapura	4	1027	65
Galle	3	427	46
Hambantota	1	30	–
Matara	4	2674	98
Badulla	3	48	35
Monaragala	3	59	45
Gampaha	4	92	62
Kalutara	1	2	–

Of the reported poultry diseases IBD remains as the major disease of concern. It has spread all over the country since its emergence in 1989 from Vavuniya. Preventive vaccination is practised by most of the farmers with freely usage of mild

vaccines and restricted use of intermediate/hot vaccines. However biosecurity level has to be improved in order to control the disease effectively.

2.1.3 : Reported cases of Fowl Pox: July - December 2008

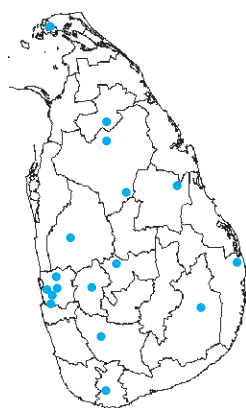


Fig : 4.a July

Cases	179
Deaths	4

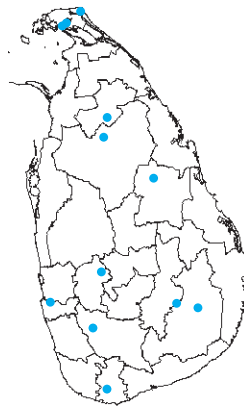


Fig : 4.b August

Cases	66
Deaths	10

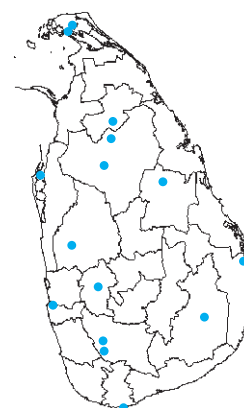


Fig : 4.c September

Cases	693
Deaths	24

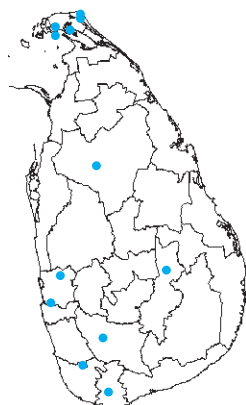


Fig : 4.d October

Cases	84
Deaths	28

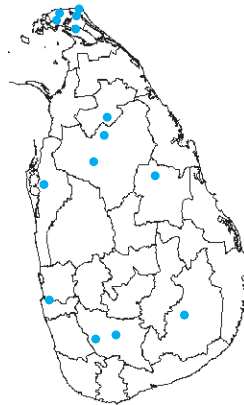


Fig : 4.e November

Cases	221
Deaths	74

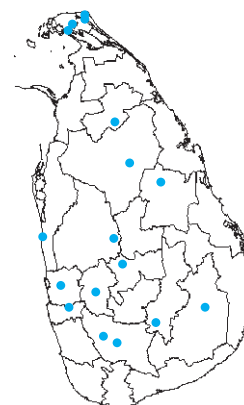
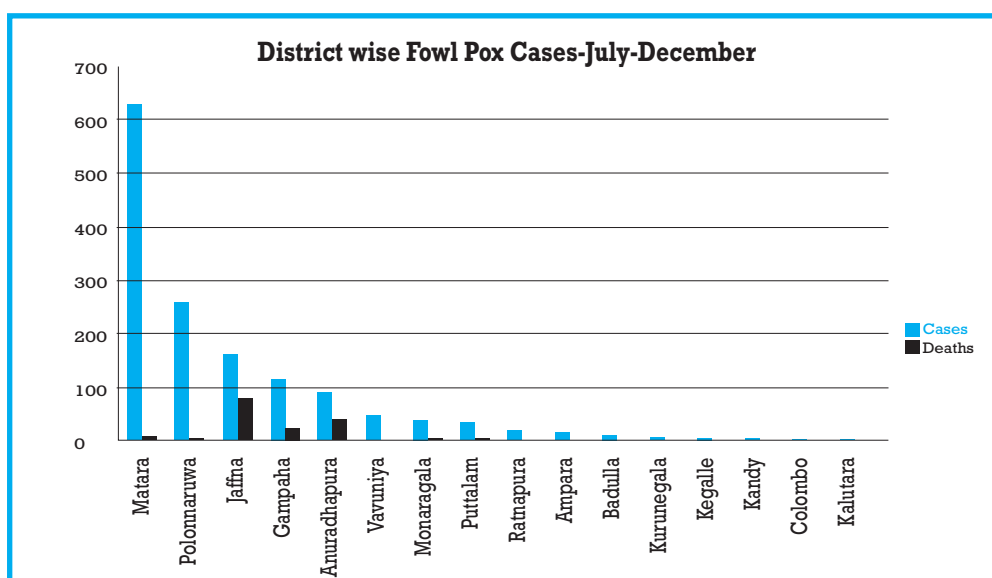


Fig : 4.f December

Cases	171
Deaths	26

Fowl pox cases have been reported from 16 districts involving all nine provinces in the country during the second half of year 2008. Forty one veterinary ranges reported the incidence leading to 1435 cases with 11.56% overall case-fatality rate. The highest number of cases of 626 was reported from Matara district while Anuradhapura and Jaffna districts encountered high case-fatality rate of 43.95 % and 49.68 % respectively.



3.1.1 : Reported cases of Foot and Mouth Disease July - December 2008

Ampara

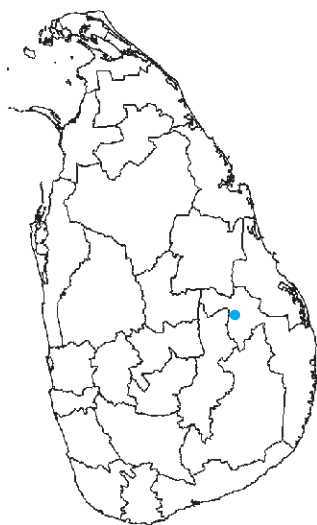


Fig : 5.a July

Mullative, Batticloe



Fig : 5.b October

Thirappone



Fig : 5.c December

Reported cases of FMD - 2008

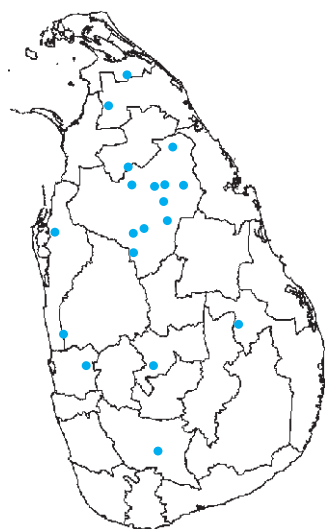


Fig : 5.d

Majority of the outbreaks during the first half of the year 2008 were reported from Anuradhapura district. Though the origin of these outbreaks could not be located exactly, it is suggested to be in Northern and Eastern Provinces. It has been further strengthened by the cases reported from these Provinces during the second half of the year. Chronological order in reporting would have been altered due to restricted facilities and limited accessibility to these areas.

Table : 03

District	VS Range	Species	Cases	Deaths	Month
Ampara	Padiyatalawa	Bovine	4		July
Batticaloa	Batticaloa	Bovine	6		October
Mullaitivu	Thunukkai	Bovine	2		October
Anuradhapura	Thirappane	Bovine	25	1	December
	Total		37	1	

3.1.2 : Reported cases of Black Quarter: July-December 2008

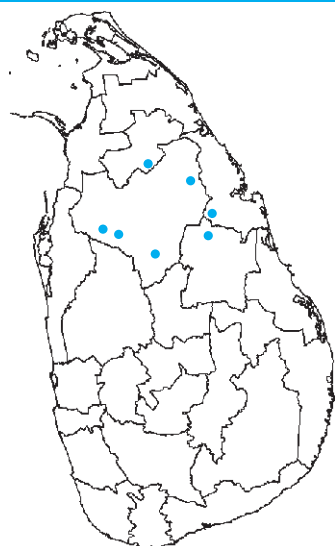


Fig : 6

Table : 04

District	VS Range	Species	Cases	Deaths	Month
Trincomalee	Kantale	Bovine	5	5	July
Vavuniya	Vavuniya	Bovine	7	5	July
		Bovine	3	2	August
Anuradhapura	Talawa	Bovine	4	2	August
	Nochchiyagama	Bovine	10	10	September
	Horowupothana	Bovine	6	1	September
		Bovine	39	1	October
		Bovine	5	1	November
	Kekirawa	Bovine	1	1	September
Polonnaruwa	Medirigiriya	Bovine	7	7	September
		Total	87	35	

Black Quarter caused by *Clostridium chauvoei* is mainly limited to the dry zone of the country. A vaccination programme is underway to control the infection in risk areas of the country. Locally produced vaccine is used to immunize the lives stock in field vaccination programmes. During the second half of the year 10 outbreaks (87 cases with 32 deaths) were reported in 4 districts namely Trincomalee Anuradapura, Polonnaruwa and Vavuniya. The first three districts experienced sporadic cases during the first half of this year too.

3.1.3 : Reported cases of Leptospirosis : July –December 2008

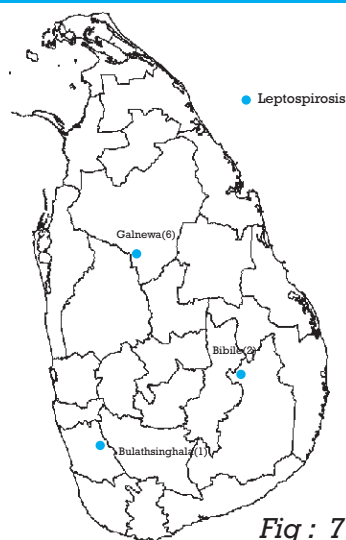


Fig : 7

Only one case of Bovine leptospirosis was reported in the second half of year 2008.

This was recorded at Bulathsinghala Veterinary range in Kaluthara District during the month of July.

An increase incidences in human leptospirosis has been noticed in the country during the year 2008. However there has been no such indication reported among bovine population. Only three outbreaks of Bovine Leptospirosis were recodred during the year 2008. These outbreaks were detected at Galnewa (Anuradhapura district), Bibile (Badulla district) and Bulathasingala (Kalutara disctrict), as shown in Fig. 7.

3.1.4 : Reported cases of Bovine Brucellosis: July– December 2008



Fig : 8

Table : 05

District	VS Range	Cases	Month
Anuradhapura	Thirappane	1	December

Bovine brucellosis caused by *Brucella bovis* is prevalent in Sri Lanka mainly among the free grazing herds in dry zone of the country. The infected animals are identified and confirmed by laboratory tests. Inadequate support in culling these animals remain

as the main set back in controlling the disease. A locally produced vaccine (S-19) plays a major role in controlling the spread and containment of infection. However many cases of brucellosis go unreported too.

3.1.5 : Reported cases of Bovine Babesiosis: July– December 2008

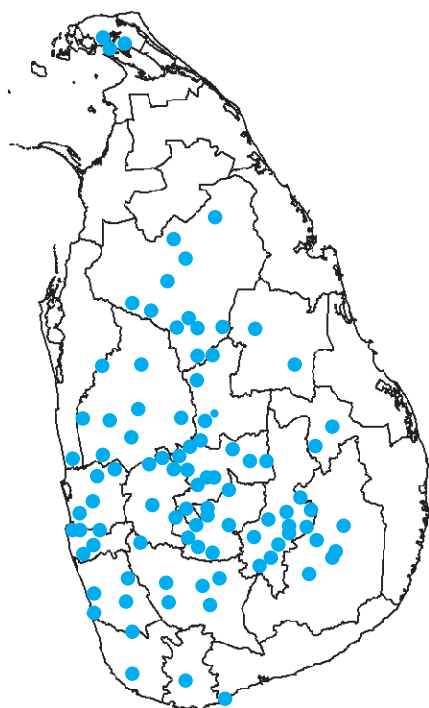


Fig : 9

Table : 06

District	VS Ranges	Cases	Deaths
Kandy	11	182	3
Matale	5	33	1
NuwaraEliya	4	81	6
Ampara	2	17	-
Anuradhapura	11	53	1
Polonnaruwa	2	9	-
Kurunegala	9	24	1
Puttalam	1	3	-
Jaffna	3	4	-
Kegalle	3	32	2
Ratnapura	6	60	-
Matara	2	4	-
Galle	1	1	-
Badulla	10	173	12
Monaragala	5	24	3
Colombo	4	85	3
Gampaha	5	119	1
Kalutara	4	17	-
Total	88	921	33

Babesiosis is a major disease present in the central part of the country where high producing genetically upgraded animals are reared. Though preimmunization has been carried out in major livestock farms for more than two decades it has not been introduced into the field yet. Thirty-two deaths of cows have been recorded in the six month period, of which 40% are confined to Badulla district.

Table : 07 Monthly Occurrence of Bovine Babesiosis

Month	Cases	Deaths
July	156	3
August	154	7
September	136	3
October	145	6
November	164	10
December	166	4
Total	921	33

4.1 : Reported cases of Contagious Pustular Dermatitis: July -December - 2008

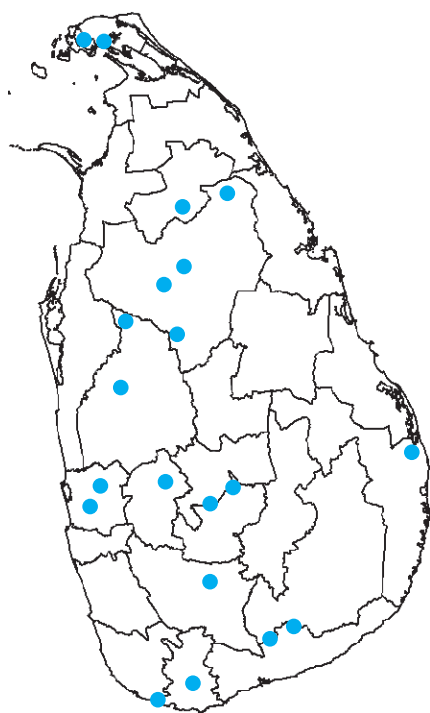


Fig: 10

Higher incidence of CPD has been recorded at Polonnaruwa and Gampaha districts followed by

Table : 08

District	Cases	Deaths
Anuradhapura	25	1
Polonnaruwa	42	-
Galle	4	-
Matara	3	-
Hambantota	7	-
Nuwara-Eliya	9	-
Kandy	27	-
Kegalle	2	-
Ratnapura	1	-
Kurunegala	16	1
Gampaha	37	-
Monaragala	14	-
Jaffna	7	2
Ampara	12	2
Vavuniya	18	-
Total	224	6

Kandy and Anuradhapura districts during the period under review.

5 : Reported cases of Rabies - 2008

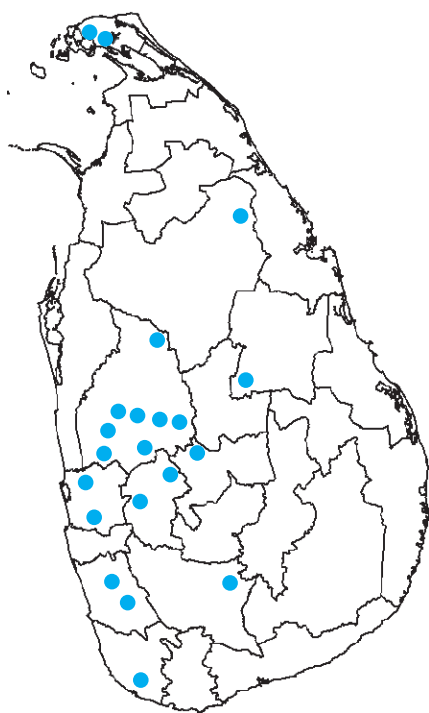


Fig: 11

Occurrence of rabies has been recorded not only in canine population but also in bovine and caprine population during the year 2008

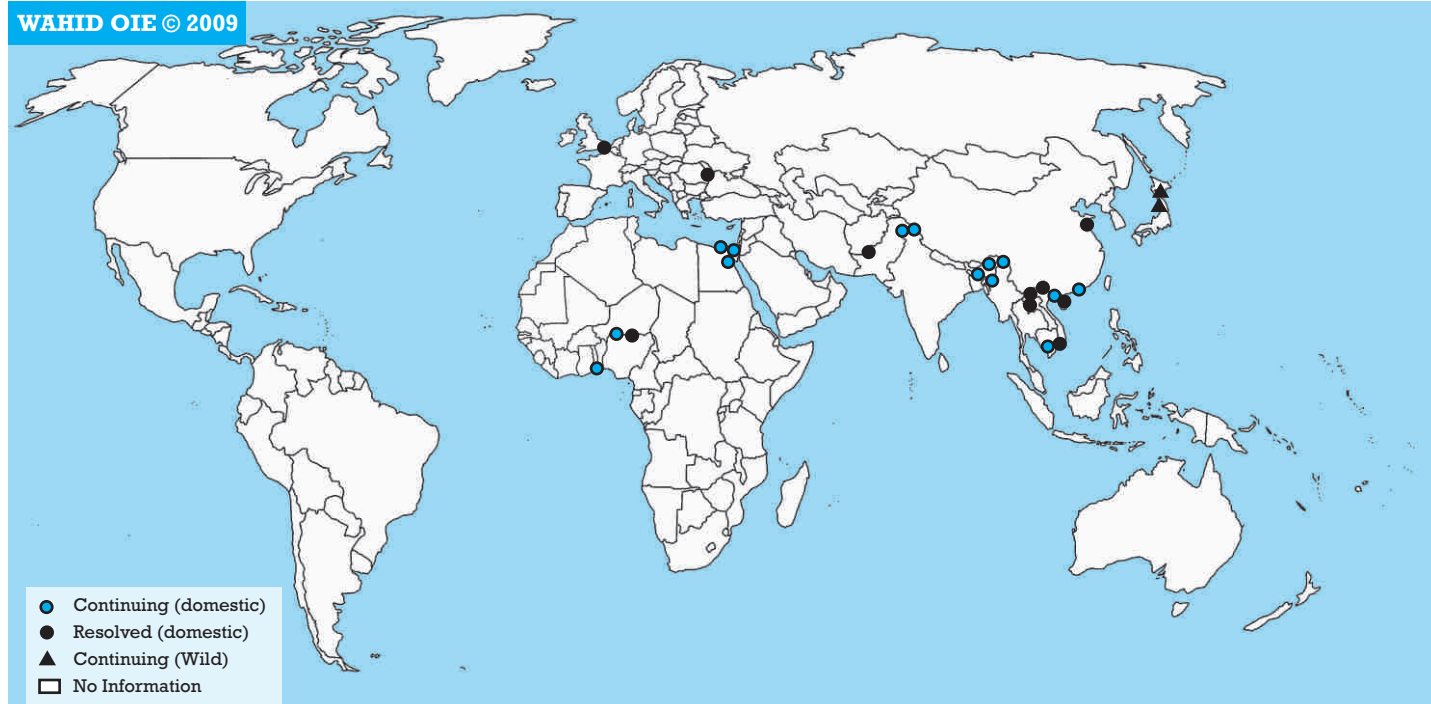
Table : 9

District	Canine	Bovine	Caprine	Cases
Kandy	1	2	2	5
Ampara	1	-	-	1
Anuradhapura	6	1	-	7
Polonnaruwa	-	1	-	1
Kurunegala	6	23	-	29
Puttalam	1	-	1	2
Jaffna	7	4	1	12
Mulative	1	-	-	1
Kegalle	-	2	-	2
Ratnapura	10	8	-	18
Matara	23	-	-	23
Galle	4	2	2	8
Monaragala	-	-	2	2
Colombo	4	-	-	4
Gampaha	6	2	-	8
Kalutara	3	2	-	5
Total	73	47	8	128

6 : AVIAN INFLUENZA

Global Situation : June - December 2008

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Since December 2003, more than 60 countries in Africa, Asia and Europe have reported outbreaks of H5N1 avian influenza in poultry and/or wild birds.

All countries in the SAARC region have been infected at least once with HPAI since 2003 except for Bhutan and the two island countries namely Sri Lanka and Maldives. Sri Lanka has been considered as a high risk country since the extensive outbreak in West Bengal and Azaam in late 2008 in India.

A World Bank project is under way to strengthen the capacity of the Animal health sector. It includes,

- enhancing HPAI prevention and preparedness, strengthening disease surveillance
- diagnostic capacity and virus research
- strengthening HPAI control programs and outbreak containment plans
- improving bio-security in poultry production and trade
- compensation funding and
- support to surveillance of migratory birds.

HPAI Outbreaks in Asia : July -December 2008

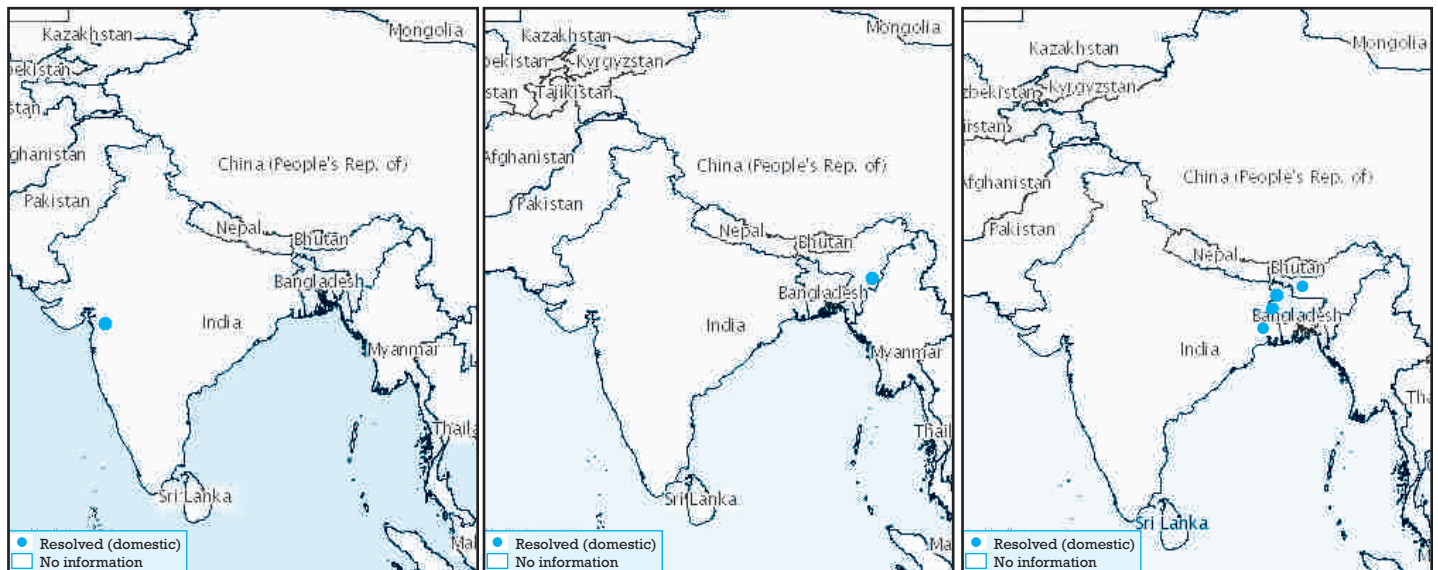
Table : 10

Country	Jul 2008	Aug 2008	Sep 2008	Oct 2008	Nov 2008	Dec 2008	Total
Bangladesh	...	...	1	...	1	5	7
Cambodia	...	...	...	...	...	1	1
China (People's Rep. of)	...	...	...	...	...	2	2
Hong Kong (P.R. China)	...	...	...	...	...	1	1
India	...	...	...	...	5	13	18
Laos	...	1	1	1	...	...	3
Thailand	...	...	...	1	1	...	2
Vietnam	5	2	3	1	...	2	13
Total	5	3	5	3	7	24	47

Eight Countries in Asia have reported occurrence of active infection during the second half of year 2008. The highest number of outbreaks have been

recorded at India Originating at West Bengal near the border of Bangladesh, spreading towards the southern parts subsequently.

HPAI Outbreaks in India



2006

2007

2008

The first outbreak due to H5N1, infection in India was detected in Manipur in 2006 and controlled successfully by the Indian Veterinary Authorities. Thereafter, India experienced the second outbreak near the Myanmar border in 2007.

The third outbreak near Bangladesh border at West Bengal in 2008 spread gradually southwards in the country. Further repeated outbreaks near

Bangladesh border allowed the disease to linger on in the country.

Two countries namely Indonesia and Egypt has indicated HPAI as an endemic disease in their countries.

Human Infection by Avian Influenza Virus

Before the outbreaks in Hong Kong (1997) and in the Netherlands (2003), human infection with avian influenza viruses were rarely reported and usually resulted in mild disease.

Since 2003 fifteen countries have reported human H5N1 influenza cases and 12 of them have reported human deaths. As at December 2008, 393 laboratory confirmed human cases and 248 deaths have been reported.

Unlike normal seasonal influenza, where infection causes self-limited respiratory symptoms in most people, the disease caused by H5N1 follows an

unusually aggressive clinical course, with rapid deterioration and high fatality.

An influenza pandemic is rare. Only influenza A viruses have so far caused three pandemics in the previous century: "Spanish influenza" in 1918, "Asian influenza" in 1957, and "Hong Kong influenza" in 1968. The 1918 pandemic killed an estimated 40–50 million people worldwide. Subsequent pandemics were much milder, with an estimated 2 million deaths in 1957 and 1 million deaths in 1968. The current H5N1 type 'A' influenza virus has shown the potential to cause a pandemic which has to be prevented by all means.

Human deaths due to HPAI since 2003

Table : 11

Country	2003		2004		2005		2006		2007		2008		TOTAL	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	1	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	8	7
China	1	1	0	0	8	5	13	8	5	3	4	4	31	21
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	51	23
Indonesia	0	0	0	0	20	13	55	45	42	37	22	18	139	113
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	3	2
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	2	2	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	107	52
Total	4	4	46	32	98	43	115	79	88	59	42	31	393	248

C—Cases D—Deaths Source WHO

HPAI Surveillance in Sri Lanka

Table : 12

District	Number of serum samples		No. cloacal swabs/ fresh droppings	
	Collected	Tested for AI	Collected and Tested	Results for AI
Colombo	120	120	150	(--) ve
Gampaha	540	180	240	(--) ve
Kandy	240	60	125	(--) ve
Matale	60	60	45	(--) ve
Nuwaraeliya	75	30	--	--
Galle	180	180	26	(--) ve
Matara	120	120	50	(--) ve
Hambantota	90	90	215	(--) ve
Batticaloa	180	180	78	(--) ve
Ampara	90	90	78	(--) ve
Trincomalee	-	-	38	(--) ve
Kurunegala	1080	390	107	(--) ve
Puttalam	849	96	245	(--) ve
Anuradhapura	294	93	125	(--) ve
Polonnaruwa	135	120	90	(--) ve
Badulla	59	45	22	(--) ve
Monaragala	60	-	24	(--) ve
Ratnapura	300	105	50	(--) ve
Kegalle	195	105	21	(--) ve
Sri Lanka	4667	2064	1529	(--) ve

In total 4667 serum samples and 1529 swabs /droppings have been tested under Avian Influenza surveillance program during year 2008.

None of these samples showed positive reaction to laboratory test(s)

Reported Occurrence of Animal Diseases-2008

Diseases reported by the field Veterinary Surgeons ranked upon the reported prevalence rate is listed below.

Poultry Diseases

- Coccidiosis
- Infectious bursal disease
- Fowl Pox
- Salmonellosis
- Infectious coryza
- Fowl cholera
- New castle disease

Bovine Diseases

- Helminthiasis
- Mastitis
- Ephemeral fever
- Foot and mouth disease
- Paramphistomiosis
- Babesiosis

Caprine Diseases

- Helminthiasis
- Cerebral spinal nematodiasis
- Contagious pustular dermatitis
- Mastitis

Swine Diseases

- Coccidiosis
- Helminthiasis

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