

Final Report

INVENTORY STUDY

of The Poultry Sector
in Sukabumi District



Center for Indonesian Veterinary Analytical Studies
Wageningen International
2006

Executive Summary

Indonesia and the Netherlands have agreed to cooperate on the development and implementation of a Highly Pathogenic Avian Influenza (HPAI) control project. The project is a direct cooperation between the Ministry of Agriculture, Nature and Food safety in the Netherlands and the Ministry of Agriculture in Indonesia. The cooperation project consists of six different modules. Module 3 includes a number of field studies which will be carried out in preparation of the activities in Module 2 (Regional organization and implementation). In combination with the tests of integrated intervention strategies in poultry, the Indonesian Ministry of Health in collaboration with the Dutch Institute for Public Health and Environment (RIVM) will undertake a monitoring assignment of the health status among poultry farmers and their relatives.

Module 3 of the cooperation project is a set of field studies to test HPAI vaccination strategies. Three endemically infected nucleus regions have to be identified, where the activities are focused at. These nuclei should be comparable in all relevant aspects, and a comprehensive and detailed inventory of all items has to be made of poultry population, farms, including animal and human health aspects. Throughout the running period of the experiment, intense monitoring of the situation is continued.

Based on the recent AI cases that happened in Sukabumi District, 4 sub-districts were chosen for the experiment during a mission by veterinarians of the Ministry of Agriculture and the Dutch team in November 2005. The sub-districts are Cicurug, Cikembar, Jampang Tengah, and Kebon Pedes.

The objectives of the poultry survey are (1) to describe the poultry production system in Sukabumi district; (2) to identify sector 1, 2, 3 farms; (3) to identify the move route of the poultry; (4) to collect data on backyard poultry population (sector 4) and human demographical data per village; (5) to estimate the average poultry ownership per household; and (6) to describe the existing capacity of district/sub-district livestock offices in controlling avian influenza. The final selection of the area and the farms to be included in the experiment will be based on the results of the survey.

The inventory study of poultry sector in Sukabumi District was carried out through field visit to each poultry farm (sector 1, 2, 3) in the four sub-districts. As for sector 4, the poultry information was collected from village heads or the other village officials. In each sub-district, the study was implemented by 2 CIVAS's members accompanied by a respective sub-district official animal health worker. Each team (1 CIVAS's member and 1 official animal health worker) made use of the motorcycle to visit each farm in the location of the survey. Each CIVAS's member brought Global Positioning System (GPS) unit to take the coordinate point of each surveyed farm.

The inventory study carried out in 4 sub-districts in Sukabumi District found 153 poultry farms with the following distribution: Cicurug Sub-District (56), Cikembar Sub-District (56), Kebon Pedes (21) and Jampang Tengah (21).

The inventory study depicts that poultry farms in Sukabumi are of sector 1, 2 and 3. Most are broiler commercial farms (64.7%) and commercial layer farms (13.7%).

The study gives the poultry population of a total of 137,928 heads of chicken with the density of 4 heads/hectare and 2 heads/household. The human population is 228,000 persons and 72,500 households, the human population density is 6 people/hectare with 2 people/household.

The study shows that the capacity of the district/sub-district livestock offices to control AI is very low. Animal health services in Sukabumi are mostly attended by only one paraveteriner, who has to attend 2-3 sub-districts. To date, no transportation facilities have been available for the paraveteriners. They use public transportation in their work.

Based on the results of the inventory study and discussions with the Netherlands Team, it is recommended that field trial vaccination be carried out in sector 3 layer farms and native chicken farms in 3 sub-districts of Sukabumi, namely Cicurug, Cikembar and Kebon Pedes. The field trial vaccination will be carried out in 20 sector 3 layer and native chicken farms in Sukabumi District, 10 of which are control farms, where no intervention will be made and the farmers will follow their own management procedures. The chicken on the other farms will be vaccinated according to a recommended schedule. The biosecurity level will be enhanced and an intense vaccination strategy will follow, aimed at the highest possible vaccination ratio.

To implement the field trial vaccination, negotiations with the farmers are necessary to identify their willingness to take part in the trial vaccination.

Acknowledgment

CIVAS would like to thank the financial sponsors of this study: Wageningen International and the staff from Wageningen International, Frank Joosten and Arend Jan Nell; Ivo Claassen from the Central Institute for Animal Disease Control and Annemarie Bouma from the Faculty of veterinary Medicine of Utrecht University.

The design, implementation and completion of this study would have been impossible without the help and contribution of the talented members of CIVAS.

We very much like to extend our thanks also to all farmers and district authorities officers who participated in the study. Thanks to Ir. H. Ichwanuddin, M.Si, Head of Livestock Services in Sukabumi District and Dr. Winda Sri R., Head of Animal Health Services in Sukabumi Livestock Services. Thank you for all good cooperation, support and warm reception we got and the pleasant time we had in each subdistrict area as locations of the study.

Abbreviation and Foreign Language

CIVAS	Center for Indonesian Veterinary Analytical Studies.
native chicken	village chicken/ kampong chicken, normally scavenging around the house
BPPHK	Provincial Veterinary Laboratory for West Java in Lembang
Balitvet	Central Veterinary Laboratory in Bogor
DOC	one day old chicken
KCD	head of official animal health worker in Subdistrict level
PTCD	official animal health worker in Subdistrict level.
PPL	staff of Agriculture Services in Subdistrict level
Kelurahan	Administrative area in cities, similar to a village by definition, headed by a Lurah
AI	Avian Influenza
OIE	World Organization for Animal Health
GPS	Grand Parent Stock
GPS	Global Positioning System
PS	Parent Stock
CFR	Case Fatality Rate. As for AI cases in human, the rate is calculated by dividing the number of AI fatalities by the total AI cases in human in a given area.
PPE	Personal Protective Equipment

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1. INTRODUCTION

1.1. Background

Indonesia and the Netherlands have agreed to cooperate on the development and implementation of a Highly Pathogenic Avian Influenza (HPAI) control project. The project is a direct cooperation between the Ministry of Agriculture, Nature and Food safety in the Netherlands and the Ministry of Agriculture in Indonesia. The cooperation project consists of six different modules. Module 3 includes a number of field studies which will be carried out in preparation of the activities in Module 2 (Regional organization and implementation). In combination with the tests of integrated intervention strategies in poultry, the Indonesian Ministry of Health in collaboration with the Dutch Institute for Public Health and Environment (RIVM) will undertake a monitoring assignment of the health status among poultry farmers and their relatives (Anonymous³, 2006).

Avian Influenza (AI) in the context of this project is defined as AI, notifiable to the OIE. This includes that low pathogenic, not notifiable disease is not within the scope. The same as AI, other than in kept poultry.

Module 3 of the cooperation project is a set of field studies to test HPAI vaccination strategies. Three endemically infected nucleus regions have to be identified, where the activities are focused at. These nuclei should be comparable in all relevant aspects, and a comprehensive and detailed inventory of all items has to be made of poultry population, farms, including animal and human health aspects. Throughout the running period of the experiment, intense monitoring of the situation is continued.

Nucleus one is control area. No intervention will be made, thing developing in an independent way. In the other nuclei, the biosecurity level will be enhanced and an intense vaccination strategy will follow, aimed at the highest possible vaccination ratio. These two nuclei might differ from each other in the chosen vaccination strategy or in the choice of the vaccine. Vaccines which are produced in Indonesia and commercially available will be used. This will probably initially be homologous vaccines and in later stage (when they become available) heterologous vaccines. The vaccination strategy aims at reducing the circulation of AI virus as much as possible. Together with the monitoring of items related to AI field virus circulation in animals, the occurrence of possible cases of AI infections in human is investigated inside the three nucleus areas. For this purpose, a survey using questionnaires will be undertaken and blood samples will be collected and tested among persons at risk. Initially a cross-sectional seroprevalence study will be carried out, possibly followed by a cohort study, where risk factor for virus transmission from poultry to human may be identified. As the project goes on, virus circulation is expected to diminish. After gaining experience the vaccination strategy will be implemented in larger areas, which will

eventually cover the whole province of West Java. This will still be considered as an element of Module 3. After virus circulation has come to an end, the vaccine choice will be re-considered, the approach will change into an exit strategy. These decisions will be supported by the outcomes of the transmission experiments in Module 4. Eradication of AI is the final goal of this activity, though it is uncertain if this could be reached within the project period (Anonymous³, 2006).

To support the implementation of module III, the collection of information like poultry population, type of the breeder, prevalence of the illness, etc., must be done. The existence of complete and comprehensive information was expected to be able to help in the identification of two or three endemic locations that had all the relevant aspects needed for an area of the trial.

1.2. The Inventory Study

Based on the recent AI cases that happened in Sukabumi District, 4 sub-districts were chosen where the trial of the vaccination AI would be carried out. They are Cicurug, Cikembar, Jampang Tengah, and Kebon Pedes (Figure 1).

1.2.1. Objectives of The Study

1. To describe the poultry production system in Sukabumi district.
2. To identify sector 1,2,3 farms.
3. To identify the move route of the poultry.
4. To collect data on backyard poultry population (sector 4) and human demographical data per village
5. To estimate the average poultry ownership per household.
6. To describe the existing capacity of district/sub-district livestock offices in controlling avian influenza.

1.2.2. Methodology

The inventory study of poultry sector in Sukabumi District was carried out through field visits to each poultry farm (sector 1, 2, 3) in the four sub-districts. As for sector 4, the poultry information was collected from village heads or the other village officials.

In each sub-district, the study was implemented by 2 CIVAS's members accompanied by a respective sub-district official animal health worker. Each team (1 CIVAS's member and 1 official animal health worker) made use of the motorcycle to visit each farms in the location of the survey. Each CIVAS's member brought Global Positioning System (GPS) unit to take the coordinate point of each surveyed farm. The information to be collected corresponded to information found in the questionnaire form attached in the annex.

Data collected from 3 sources - animal health worker, the village office, and the closest farm – were crosschecked to ensure that all the farms in sector 1, 2 and 3 had been surveyed.

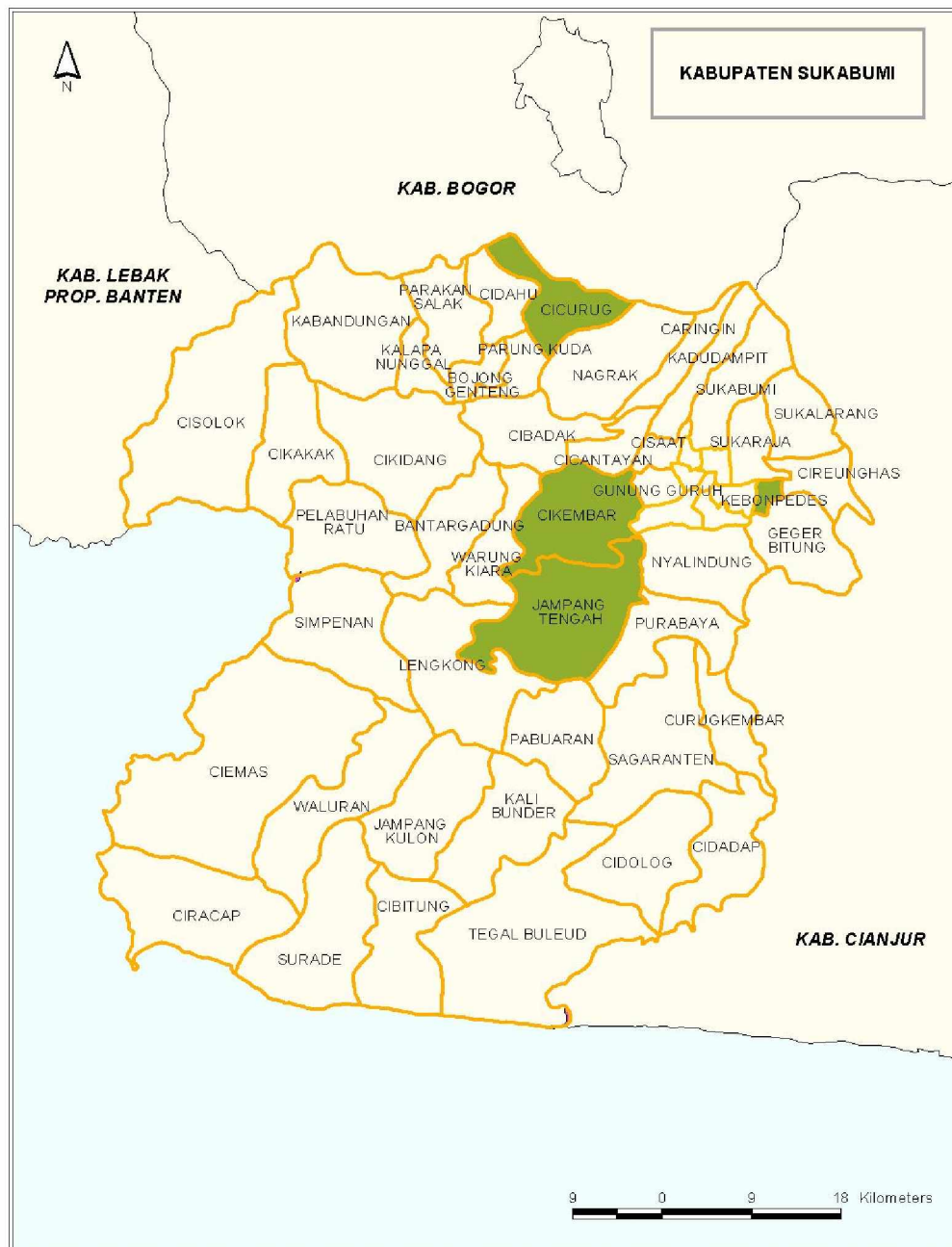


Figure 1. Location of Inventory Study of The Poultry Sector in Sukabumi District

1.2.3. Definition

Poultry farm sector, biosecurity level, etc. had to be determined with clear definition and criteria to make the data and information relevant to the objectives of the inventory study.

The definition of the poultry farm sector was used in this inventory study is :

- Sector 1 : The integrated, large scale poultry farms that generally has the breeder unit (GPS, PS), hatcheries, the commercial unit (broiler, layer), slaughter house, etc. In this inventory study, the sector-1 farms are those with GPS breeder, PS breeder and hatcheries.
- Sector 2 : Large scale poultry farms (above 20,000 heads of poultry), as well as plasm farms under nuclei-plasm partnership scheme. The plasm farms usually receive the DOC supply, food, and the medicine from the nuclei. The nuclei will buy all the products produced by the plasm. While the ownership is the partnership between the nuclei and the plasm, all decisions concerning the farm are made by the nuclei.
- Sector 3 : Small scale poultry farms with total population ranging between 1,000-20,000 heads, owned by individuals.

The criteria for the biosecurity level used in this inventory study are shown in Table 1 below :

Table 1. Biosecurity Criteria

	High	Moderate	Low
Disinfection Facility for incoming People/Vehicles			
Footbath	Yes	Yes	Yes
People's Shower	Yes		
Wheel Dipping	Yes	Yes	Yes
Vehicle Shower	Yes		
Routine Equipment Disinfection (e.g. egg trays, feed and watering equipment)	Yes	Yes	Yes
Movement Control/ Movement Inspection			
Poultry	Yes	Yes	
Worker	Yes	Yes	
Equipment	Yes		
Protection from wild animals			
Birds (net)	Yes		
Dog/cat (wall)	Yes		
Rodents (mesh)	Yes		
Facilities to handle dead poultry, e.g. the crematorium, etc.	Yes	Yes	Yes
Was the waste cleaned routinely? Was it processed into fertilizer?	Yes	Yes	
Personal Protection Equipment			
Boot	Yes		
Mask	Yes		
Gloves	Yes		
Glasses/goggles	Yes		
Hats	Yes		
Clothes/overall	Yes		

2. THE SUKABUMI DISTRICT

2.1. Sukabumi District Administration and Territory

Sukabumi District is located between 106°49' to 107° East and 60°57' to 70°25' South. Based on the administrative territory, it shared a border with Bogor District on the North side, with the Indonesian ocean on the South side, Lebak District on the West side, and Cianjur District on the East Side. The district has 40% aquatic border and 60% terrestrial border (Figure 1).

The Sukabumi District is made up of 45 sub-districts encompassing 349 villages and 3 *kelurahan* with the total population of 2,132,102.

The size of Sukabumi District is 408,560 hectares (Anonymous⁴, 2005). According to the 1993 District Landuse, it was divided into 18814 hectares of garden (4.48%), 62,083 hectares of paddy field (14.78 %), 103,443 hectares of dry paddy field (24.63%), 95,378 hectares of plantation (22. 71%), 1,486 hectares of lake (0.35%) , 135,004 hectares of forest (32.15%), and 3,762 hectares of other use (0.90%).

Sukabumi District has a wide dryland and at this time most of the areas are plantation areas, field and forest. The climate is tropic. It has 2.805 mm rainfall/year and 144 raindays/year. The temperature range from 20°-30°C with 85–89% humidity. The North territory has 3.000-4,000 mm rainfall/year, whereas The Center and South territory has 2,000-3,000 mm rainfall/year (Anonymous⁴, 2005).

The topography ranges from lowland to highland (mountain). Plainland (the slope 0-2%) around 9.4%; undulating-land (the slope 2-15%) around 22%; hilly-land (the slope 15-40%) around 42.7%; and mounnty-land (the slope > 40%) around 25.9%. The height level varies between 0-2,958 m. above the sea level. The flat area is generally located in coastal area, and the foot of the mountain, most of which are paddy-fields. The southern area of the district is hilly with the height ranging between 300-1,000 m. above the sea level (Anonymous⁴, 2005).

The 4 sub-districts of the study are located in the central and northern part of the district, this means it is predominantly undulating and hilly country at an altitude between 1250 and 1750 meters and rainfall ranging from 2500 – 3500 mm per annum.



Figure 2. Sukabumi District

2.2. Poultry Production In Sukabumi District

The Statistical On Livestock 2005 recorded that West Java Province is one of the centers of poultry livestock breeding in Indonesia. The number of broiler chickens, native chickens and ducks is very high compared to the poultry population in the other province (Anonymous¹, 2005). Moreover, the broiler chickens totaled 385.6 million the highest in Indonesia (Table 2).

Table 2. Actual Number of Indonesia Poultry Livestock Population, 2005

No	Province	Native Chicken (000 heads)	Layer Chicken (000 heads)	Broiler Chicken (000 heads)	Duck (000 heads)	Total Number (000 heads)
1	NAD	20,811	85	917	2,976	24,789
2	North Sumatra	24,053	15,072	51,219	2,291	92,635
3	West Sumatra	7,571	6,010	12,932	733	27,246
4	Riau	7,086	337	28,297	391	36,111
5	Jambi	4,168	635	7,219	1,241	13,263
6	South Sumatra	14,264	6,270	17,283	2,196	40,013
7	Bengkulu	2,926	42	2,210	190	5,368
8	Lampung	13,175	1,818	24,271	648	39,912
9	Jakarta	80	n.a	150	65	295
10	West Java	31,908	10,674	385,680	5,201	433,463
11	Center Java	36,548	12,236	50,575	5,633	104,992
12	Yogyakarta	4,668	1,535	18,192	272	24,667
13	East Java	39,179	24,603	166,036	2,412	232,230
14	Bali	3,975	3,255	4,942	640	12,812
15	NTB	4,279	103	8,639	489	13,510
16	NTT	9,713	85	2,732	239	12,769
17	West Kalimantan	4,781	2,660	14,992	341	22,774
18	Center Kalimantan	5,813	30	2,269	199	8,311
19	South Kalimantan	8,213	1,179	19,870	2,998	32,260
20	East Kalimantan	3,181	711	22,539	357	26,788
21	North Sulawesi	1,839	713	1,420	64	4,036
22	Center Sulawesi	1,845	387	2,850	214	5,296
23	South Sulawesi	14,725	5,922	9,658	2,904	33,209
24	South East Sulawesi	7,431	51	810	289	8,581
25	Maluku	1,520	73	97	137	1,827
26	Papua	2,162	125	897	267	3,451
27	Babel	1,108	266	381	41	1,796
28	Banten	7,767	3,467	6,579	748	18,561
29	Gorontalo	940	133	491	60	1,624
30	North Maluku	945	n.a	83	25	1,053

Source: Statistical On Livestock 2005

The biggest district in West Java, Sukabumi has very good potential for poultry production with the total number of poultry and ducks of 9.5 million, this is 0.02 % of the poultry population in West Java. More details of the poultry population in Sukabumi and the growth rate are in table 3.

The total number of native chickens, layer chickens and ducks reaching 17 %, 20%, and 1 % respectively. Broiler chickens ranked first with 62 % (Table 3).

Table 3. Poultry population in Sukabumi District. (2001 – 2005)

No	Types of Poultry	Population (heads)					% of Growth (2001-2005)	% of Population (2005)
		2001	2002	2003	2004	2005		
1	Native Chicken	1,517	1,599	1,601	1,544	1,660	9.4	17
2	Broiler chicken	3,335	3,585	4,454	5,440	5,848	75.3	62
3	Layer chicken	883	897	800	1,759	1,891	114.1	20
4	Duck	91	92	98	95	99	8.3	1
TOTAL		5,827	6,173	6,953	8,838	9,498	207.1	100

Source: Livestock Services of Sukabumi District⁴

The number of poultry livestock companies in sector 1 and 2 recorded in Livestock Services of Sukabumi District (Ichwanudin, 2006) totals 40, covering all types of poultry production like Grand Parent Stock (GPS) and Parent Stock Breeder for Broiler and Layer, hatcheries, commercial broiler and layer (Table 4).

Tabel 4. Sector 1 and 2 Poultry Livestock Companies in Sukabumi District

No	Production Type	No of companies	No of farms location
1	Grand Parent Stock Broiler	1	1
2	Grand Parent Stock Layer	1	1
3	Parent Stock Broiler	11	18
4	Parent Stock Layer	7	10
5	Hatcheries	3	3
6	Slaughter House	1	1
7	Commercial Broiler	8	17
8	Commercial Layer	7	8
Total		40	59

Source: Livestock Services of Sukabumi District

2.3. Avian Influenza History

The Avian Influenza (AI) disease was first known to attack poultry livestock breeding in Indonesia during July-August 2003, almost at the same time when the plague hit several Asian countries, such as Thailand, Vietnam, South Korea, Japan, Laos, Cambodia and Pakistan. Initially, AI attacked several commercial poultry farms in West Java and Central Java. The disease then spread to other areas in Central Java, and West Java, and to East Java, DIY (Yogyakarta), Lampung, Bali and several areas in Sumatra and Kalimantan. Various types of poultry such as commercial broilers and layers including Grand Parent Stock (GPS) and Parent Stock (PS) Poultry Breeder, the duck, muscovy, quail, and dove were attacked by the disease (Anonymous⁵, 2005).

AI spread very fast throughout Indonesia. While throughout 2003 AI cases were only found in 9 provinces, attacking 51 districts with the number of deaths reaching 4.13 million heads (Anonymous², 2005), by the end of 2005 AI had spread to 24 provinces covering 155 districts, causing the death of approximately 10.45 million poultry. Apart from this direct loss, the AI plague also generated extraordinary economic loss to the Indonesian poultry livestock sector. The economic loss during 2003-2004 included 58 % decline of broiler DOC's demand and 40.% decline of DOC's layer demand (Anonymous⁵, 2006). Poultry food's demand decreased by 45% and egg supplies decreased by 53 %. Broiler supplies decreased by 40.75% and job opportunity in the poultry sector (?) decreased by 39 % (Anonymous⁵, 2006).

The results of clinical, pathological and laboratory field studies proved that the cause of the death of the poultry since 2003 was the sub-type H5N1 of A-type Influenza Virus, classified as the Highly Pathogenic Avian Influenza (HPAI) virus, one of the important zoonoses. AI originally only affected poultry; only later it began to attack humans.

The uniqueness of the AI attack on human cases in Indonesia was that it occurred only after the outbreak in poultry had been brought under control. From the first human case in July 2005 in the Banten province, AI continued to claim casualties, totaling the death of 22 people by the end of March 2006. The human Case Fatality Rate (CFR) in Indonesia was the highest in the world (73.3% VS the average world's rate of 53.3%) (Anonymous⁶, 2006)

2.3.1 Avian Influenza History in Sukabumi District

By 2004, there was no report on AI cases on poultry in Sukabumi District. The first AI cases on poultry in Sukabumi District were reported in January 2005, attacking native chickens in Cipeuteuy Village in Kabandungan Sub-district and Cimanggu village in the Cikembar Sub-district, with the number of death reaching 400 and 1,000 respectively (Ichwanudin, 2005). In the following months AI cases were found in Parungkuda Sub-district, Nagrak, Cibadak, Warungkiara, Cicurug, Bantargadung, Jampang Tengah, Kebon Pedes, and Cidahu. The AI attacked native chickens except in Sasagaran village in Kebon Pedes Sub-district, and Cikembar village in Cikembar Sub-district in July where it attacked quails (Table 5). The last outbreak was reported in November 2005 in Cidahu district. All of AI cases in Sukabumi Subdistrict just attacked native chicken and until May 2006 that no outbreaks have been reported from commercial farms in sector 1, 2 or 3.

Tabel 5. AI Cases in Sukabumi District, 2005

No	Village/Sub-district	Month	No of Death (heads)	Population under Threat (heads)	Note
1	Cipeteuy/Kabandungan	Jan-05	400	800	
2	Cimanggu/Cikembar	Jan-05	1,000	1,200	
3	Palasari Hilir/Parungkuda	Feb-05	580	1,400	
4	Cisarua+Babakan Panjang/Nagrak	Feb-05	270	950	
5	Karangtengah/Cibadak	Feb-05	200	700	
6	Bojongkerta/Warungkiara	Mar-05	50	650	
7	Tenjolaya/Cicurug	May-05	1,600	10,000	
8	Sasagaran/KebonPedes	Jul-05	30,000	75,000	quail
9	Cikembar/Cikembar	Jul-05	30,000	90,000	quail
10	Bojonggaling/Bantargadung	Sep-05	60	700	
11	Sindangresmi/JampangTengah	Oct-05	40	350	
12	Babakanpari/Cidahu	Nov-05	40	7,000	

Source: Livestock Services of Sukabumi District

2.3.2 Avian Influenza Control in Sukabumi District

Animal health services in Sukabumi District are under the responsibility of Animal Health and Veterinary Public Health Department, the Livestock Services of Sukabumi District. The department has only 6 veterinarians and 1 paraveteriner. Sukabumi District has one animal health post, which is located in Salabintana, Sukabumi, attended by 3 technical staffs.

At present, the department is equipped with 1 car, 1 motorcycle, 5 refrigerators, and 6 ice boxes to support the work. In addition there are some boxes of syringe, rapid test kits, disinfectant, and sprayers. No personal protective equipment (PPE) such as boots, masks, gloves, and glasses are available.

With all the limited human resources, facilities and equipment, the Livestock Services of Sukabumi District has tried to do its best to control and handle AI diseases, referring to the adjusted 9 National Strategies to match the condition in Sukabumi. The 9 National Strategies comprises the following:

1. Improvement of bio-security
2. Vaccination in infected and suspected areas
3. Depopulation (selective culling) and compensation
4. Control movement of live poultry, poultry products and farm waste
5. Surveillance and tracing back
6. Restocking
7. Stamping out in newly infected areas
8. Public awareness
9. Monitoring and evaluation

Activities having been done by the Livestock Services of Sukabumi District included monitoring of biosecurity in sector 1 and 2 poultry farms, provision of guidance and sanitation management, as well as spraying and disinfection. The Livestock Services once depopulated the native chickens belonging to H. Ade Zulkarnaen in the Tenjolaya Village, Cicurug Sub-district, in July 2005. The depopulation destroyed 809 native chickens and 5 muscovy ducks in the farm (Ichwanudin, 2006).

The Livestock Services had also carried out vaccination program in sector 3 and 4 poultry livestock as shown in Table 6. The program had not yet included all areas in the District and still continued. In livestock breeding of the poultry in sector 1, 2, 3 that had had a better vaccination program, the Livestock Services only supervised the program.

Officially, the Livestock Services has two check points at the border to supervise the poultry movement and the products, one in Benda and the other in Titisan. At the check points each poultry vehicle, either carrying poultry or not, undergoes document and health checks and sanitization.

Table 6. Implementation of Vaccination Program in Sukabumi District, 2005

No	Sub-district	Vaccination Schedule	Type of Poultry	No of vaccinated poultry (heads)
1	Kabandungan/Cipeteuy	13-Jan-05	Native chicken	400
2	Cibadak/ KarangTengah Pamuruyan	18-Feb-05 27-Sep	Native chicken Native chicken	500 711
3	Parungkuda Palasarihilir Bojongkokosan Sundawenang	20-Feb-05 21March, 19 Nov 2005 2 April, 28 Sept 2005	Native chicken Native chicken, broiler Native chicken, broiler	800 5,500 11,734
4	Nagrak Cisarua Balekambang Babakanpanjang Nagrak Selatan Nagrak Utara	22 Feb, 29 Sep 2005 29-Sep-05 28-Mar-05 26-Jul-05 18-Okt-05	Native chicken Native chicken Native chicken Native chicken Native chicken	878 143 400 247 465
5	Cikembar Cikembar Cimanggu	6 Jan, 31 May 2005 22-Feb-05	quail Native chicken, broiler	75,000 75,200
6	Caringin/Talaga	07-Feb-05	Native chicken	300
7	Warungkiara/ Bojongkerta Ubrug	14-Mar-05 30 Sep, Okt 2005	Native chicken Native chicken	600 347

8	Cicurug/ Tenjolaya Bangbayang Kutajaya Pasawahan Tenjoayu Cicurug	15 March, 28 July 2005 23-May-05 23-May-05 27 Juli, 13 Sep 2005 26-Jul-05 26,28 Des 2005	Native chicken Native chicken Native chicken, broiler Native chicken Native chicken Native chicken	6933 12,000 15,000 2,080 265 1,200
9	Sukabumi Karawang Sudajayagirang	28-Mar-05 04-Apr-05	Native chicken Native chicken	2,764 1,820
10	Bojonggenteng/Bojonggenteng	5 April 2005	Native chicken	2,517
11	Parakansalak/Lebaksari	07-Apr-05	broiler	6,000
12	Cireunghas bencoy tegalpanjang cireunghas	19-Apr-05 10-Okt-05 08-Des-05	layer Native chicken Native chicken	18,000 366 246
13	Kebonpedes/Sasagaran	16 May, 31 August 2005	Quail,layer, Native chicken	105,984
14	Gunungguruh Kebon manggu Sirnaresmi	26 May, 19 July 2005 29-Sep-05	quail Native chicken	28,500 7,105
15	Cidolog/tegallega	04-Apr-05	Native chicken	1,775
16	Cidahu/ Girijaya Babakan pari	13-Sep-05 13-Sep-05	Native chicken Native chicken	500 500
17	Bantargadung/ Mangunjaya Bojonggaling	19-Sep-05 30-Sep-05	Native chicken Native chicken	200 662
18	Jampangtengah/Sindangresmi	11 Okt 2005, 24 Okt 2005	Native chicken	908
19	Kelapanunggal/Gunungendut	27-Des-05	Native chicken	250
TOTAL				398,905

Source: Livestock Services of Sukabumi District

For surveillance, the Livestock Services carried out routine inspection on farms, birds markets, as well as the poultry slaughterhouses. Surveillance is done together with BPPHK Bandung and Balitvet Bogor by taking samples. The results of the sample inspection can be seen in Table 7.

Table 7. Results of Poultry Sample Inspection

No	Farm's Name	Dates of Sampling	Types of Sample	Results
1	Scorpio Farm-Kebon Pedes	July 2005	Tracheal swab, cloacal swab, chicken's organ	Negative
2	Super Unggas Jaya-Nagrak	February 2005	Tracheal swab, cloacal swab	Negative
3	Edem Cs-Kabandungan	January 2005	chicken's organ	Positive
4	Jajang Farm-Kebonpedes	July 2005	Quail cloacal swab	Positive
5	Sugeng-Cikembar	January 2005	Quail cloacal swab	Positive
6	Ade Zulkarnaen-Cicurug	May 2005	Chicken cloacal swab	Positive
7	Mahpudin-Nagrak	February 2005	chicken's organ	Positive
8	Ibu Rum-Nagrak	February 2005	Duck cloacal swab	Positive
9	Bp Ijum-Cibadak	February 2005	chicken's organ	Positive
10	Ibu Hayati-Nagrak	February 2005	Chicken tracheal swab	Positive
11	Junaedi Cs-Gegerbitung	n.a	Chicken and muscovy cloacal swab	Negative
12	PPSC-Nyalindung	n.a	Bird cloacal swab	12 neg. 3 pos.
13	Lies CS-Jampangtengah	October 2005	Chicken cloacal swab	Positive
14	Syuri-Cidahu	November 2005	Chicken cloacal swab	Negative
15	Hasim-Gegerbitung	n.a	Chicken cloacal swab	Negative
16	Nuriyah-Cikembar	January 2005	Chicken cloacal swab	Negative
17	Kp Jayanti-Pl.ratu	n.a	Chicken cloacal swab	Negative
18	Supadi Cs-Gegerbitung	n.a	Chicken cloacal swab	Negative
19	Edi Mulyadi-Gegerbitung	n.a	Chicken cloacal swab	Negative

Source: Livestock Services of Sukabumi District

Following the inspection, the Livestock Services provided guidance, particularly in disinfection and decontamination procedures, to farms previously infected AI and wanting to restock.

Another activity carried out by the Livestock Services in relation to AI control was to raise public awareness. The activity was done through the dissemination of leaflets, stickers, posters, banners and CDs on AI among the animal health workers, the farmers, sub-district and village heads and the wide-range of community.

3. RESULT

3.1. The Poultry Production System in Sukabumi District.

The poultry farm in Sukabumi covered all the sectors (1, 2, 3). Sector 1 covers large scale and integrated farms. Sector 1 farms generally own the breeder unit (GPS and PS). The products from this GPS and PS are sent to their hatcheries unit. Then DOCs from hatcheries supply their own commercial layer and broiler unit. They also sell the DOC to other farms outside their own company.

Broiler Farms:

Generally, commercial broiler starts its rearing period with DOCs that are bought from PS Broiler Breeder. They keep the chickens on free range flock with the flock capacity ranging from 1,000-20,000 heads/ flock. The poultry in commercial broiler is kept for 30-35 days.

Afterwards, most of the live broiler chickens from sector 1 and 2 commercial broiler farms are sent to their own slaughter houses. The meat is marketed to restaurants, supermarkets, etc. Most of live chickens from sector 3 are sent to the small scale slaughter houses in the wet market. A small part of sector 3 commercial broiler farms also have their own slaughter house. From the slaughter house, live chickens afterwards are sold to chicken traders in the wet market. The traders in turn sell the product in the form of carcass.

There are also broiler chicken agencies buying live chickens from sector 2 and 3 commercial broiler farms and re-sell them to small scale slaughter houses. The meat is mostly sold to chicken traders in the wet market. There are also several small scale slaughter houses that sell the meat to restaurants and supermarkets.

Layer farms:

As for commercial layer farms, most commercial layer starts a new flock with DOCs. After arrival, the DOCs are kept in free range flocks until the age of around 20 weeks. Then, they enter the production period and are kept in battery cages. Usually, there is 1-3 layer chickens in each battery. There are also commercial layer farms that start a new flock with pullet. Pullets usually arrive at the age of 16-18 weeks and are kept in free range cages for 4 weeks then moved to battery cages. Generally, layer chickens have a the production period of 52 weeks before being culled. After the production period is over, old chickens are sold to chicken traders, who in turn sell them to end-consumers.

Sector 1 commercial layer farms generally sell their products to restaurants, supermarkets, etc. Sector 2 and 3 commercial layer farms generally sell their products to big egg traders. The egg traders sell the eggs to smaller egg traders or to egg traders in the wet market and the small shop.

3.2. Distribution of Poultry Farms in Sukabumi District

The inventory study carried out in 4 sub-districts within Sukabumi District showed that most poultry farms (64.7%) were broiler commercial farms, followed by commercial layers (13.7%) (Table 8).

Table 8. Number of Poultry Farms in 4 Sub-district in Sukabumi District

	No of farms	Percent
PS Broiler Breeder	12	7.8
GPS Layer Breeder	1	0.7
PS Layer Breeder	1	0.7
Commercial Broiler	99	64.7
Commercial Layer	21	13.7
Hatcheries	5	3.3
Others	14	9.2
Total	153	100.0

In Cicurug Sub-district there were 2 sector 1 commercial broiler farms, 24 sector 2 commercial broiler farms, and 16 sector 3 commercial broiler farms. All commercial layer farms in Cicurug Sub-district were of sector 3. In addition, there were also 5 native chicken broiler farms, 1 native chicken layer farm, 2 PS Broiler Breeders and 1 PS Layer Breeder (Table 9).

In Cikembar Sub-district there were 28 sector 3 commercial broiler farms, 9 sector 3 commercial layer farms, 6 PS Broiler Breeders and 1 GPS Layer Breeder, plus 1 of sector 3 quail farm (Table 9).

In Jampang Tengah Sub-district there were 3 sector 1 PS Broiler Breeders, 6 sectors 2 commercial broiler farms, 7 sectors 3 commercial broiler farms, and 3 commercial layer farms (Table 9).

The Kebon Pedes Sub-district did not have the sector 1 farms. Most farms in Kebon Pedes Sub-district were of sector 3, consisting of 4 commercial broiler farms, 4 commercial layer farms, 2 hatcheries and 7 duck farms (Table 9).

Table 9. Distribution of Poultry Farms in Sukabumi District by Farm Type and Poultry Sector

Types of Production		Sector of Poultry Farm		
		Sector 1	Sector 2	Sector 3
Cicurug	PS Broiler Breeder	2		
	PS Layer Breeder	1		
	Commercial Broiler	2	24	16
	Commercial Layer			5
	Native chicken (broiler)			5
	Native chicken (layer)			1
Total		5	24	27
Cikembar	PS Broiler Breeder	6		
	GPS Layer Breeder			1
	Commercial Broiler		8	28
	Commercial Layer			9
	Hatcheries	3		
	Quail			1
Total		9	8	39
Jampang	PS Broiler Breeder	3		1
	Commercial Broiler		6	7
	Commercial Layer		3	
Total		3	9	8
Kebon Pedes	Commercial Broiler		4	4
	Commercial Layer			4
	Hatcheries			2
	Duck Farms			7
Total			4	17

3.3. Poultry Population and Human Demography In Sukabumi District

Jampang Tengah Sub-district is the biggest territory in this inventory study encompassing 21,658 hectares and 19,564 households. The population density was only 2 people/hectare, with 2.6 people/household. The inventory study recorded the total poultry population of all the three sectors of 989,000 heads, while the native chickens totaled 44,208 heads. Estimatedly, the chicken density in Jampang Tengah Sub-district was 48 heads/hectare with 2.3 heads/household (Table 10).

Cikembar Sub-district is the biggest sub-district after Jampang Tengah Sub-district , encompassing 7,438.83 hectares with the total number of households amounting to 20,698. The population density was 9 people/hectare, with 3.2 people/household. The inventory study recorded the total poultry population of all the sectors of 1,551,130 heads, while the native chickens totaled 52,542 heads. Estimatedly, the chicken density in Cikembar was 216 heads/hectare with 2.5 heads/household (Table 10).

Cicurug Sub-district encompasses 5,746.84 hectares with the total number of household amounting to 24,775. The population density was 14 peoples/hectare with 3.3 people/household. The inventory study recorded the total poultry population of all the sectors of 901,800 heads, while the native chickens totaled 33,582 heads. Estimatedly, the chicken density in Cicurug Sub-district was 163 heads/hectare and only had 1.4 head/household (Table 10).

Kebon Pedes Sub-district is the smallest sub-district surveyed, encompassing only 994.91 hectares with the total number of households amounting to 7,483. The population density was 29 peoples/hectare with 3.9 people/household. The inventory study recorded the total poultry population of all the sectors of 781,747 heads, while the native chickens totaled 7,596 heads. Estimatedly, the chicken density in Kebon Pedes was 793 heads/hectare with 1 heads/household (Table 10).

Table 10. Poultry and human population in the 4 sub-districts of the field vaccination trial

Sub-disctict	Size (ha)	Poultry population Sector 1,2,3 (000)	Native Chicken Population (000)	Chicken density/ ha	Number of native chicken/ household	Human population (000)	Households (000)	Human Population Density per ha	Number of people /household
Cicurug	5,746	902	33.6	163	1.4	82	24.8	14	3.3
Cikembar	7,438	1,551	52.5	216	2.5	67	20.7	9	3.2
Kebon Pedes	994	781	7.6	793	1	29	7,5	29	3.9
Jampang Tengah	21,658	989	44.3	48	2,3	50	19.6	2	2.6
TOTAL	35,839	4,224	138.0	305	1.5	228	72.5	6	3.3

Table 11 below details the population of commercial broilers, layers and native chicken along with the number of the Livestock Services staffs, vaccinators and chicken traders in each of the surveyed sub-districts.

Table 12 details the number of population, doctors, paramedics and nurses in each of the surveyed sub-districts.

Table 11. Poultry Population and Dinas peternakan staff in the 4 sub-districts of the field vaccination trial

subdistrict	Broilers Commercial (000 heads)	Layers Commercial (000 heads)	Native (000 heads)	Total (000 heads)	% sold outside district	Dinas staff	vaccinators	Chicken traders
Cicurug	590	180	33.6	804	24	2	3	6
Cikembar	1,046	278	52.5	1,377	19	1	0	2
Kebon Pedes	142	223	7.5	373	25	1	0	10
Jampang Tengah	421	70	44	535	15	1	0	1

Table 12. Human Population and Human Health Staff in the 4 sub-districts of the field vaccination trial

subdistrict	Man >18	Women > 18	Youth 5-17	Under 5	total	No of hh	doctors	Paramedics	nurses
Cicurug	27,247	27,362	20,307	7,555	82,471	24,775	4	13	7
Cikembar	20,507	19,711	19,274	7,068	66,560	20,698	11	16	12
Kebon Pedes	10,170	9,982	5,508	3,128	28,788	7,483	1	5	6
Jampang Tengah	16,106	15,778	12,203	5,726	49,813	19,564	2	6	0

3.4. Cicurug Sub-district

3.4.1. Administrative Territory and Human Demography

Cicurug Sub-district encompasses 5,746.84 hectares consisting of 13 villages. The human demography is given in Table 13. The largest village is Cicurug encompassing 2,175 hectares with the density of 4 people/hectare and 3 people/household. The highest population density was in Nyangkowek village with 75 people/hectare, followed by Kutajaya with 74 people/hectare.

3.4.2. Distribution and Population of Poultry Livestock in Cicurug Sub-district

The secondary data received from the Cicurug Sub-district Office revealed that Cicurug Sub-district had 7 intensive native chicken farms, 3 commercial layers, 25 commercial broilers, and 2 Parent Stock Breeders. The study recorded 56 poultry farms in Cicurug Sub-district. Generally, the poultry farms were of sector 1, 2, 3 (picture 3) and most that was surveyed were broiler commercial farms (42 farms) (Table 13).

The poultry farms in this sub-district were concentrated in Nanggerang village with 19 poultry farms, in Kutajaya village with 7 poultry farms and Pesawahan village with 6 poultry farms (picture 3). Most of the poultry farms in Cicurug Sub-district had the total population of 5,000-25,000 heads (22 farms) and 1,000-5,000 heads (17 farms). However, there was one in Kutajaya village with the total population exceeding 100,000 heads (table 14).

As for sector 4 poultry farms, the highest density of native chicken population was found in Benda village with the total native chicken population of 14,625 heads (Table 14). Calculated from the total native chicken population in Cicurug Sub-district and the total number of households, each household only had 1 heads of native chickens.

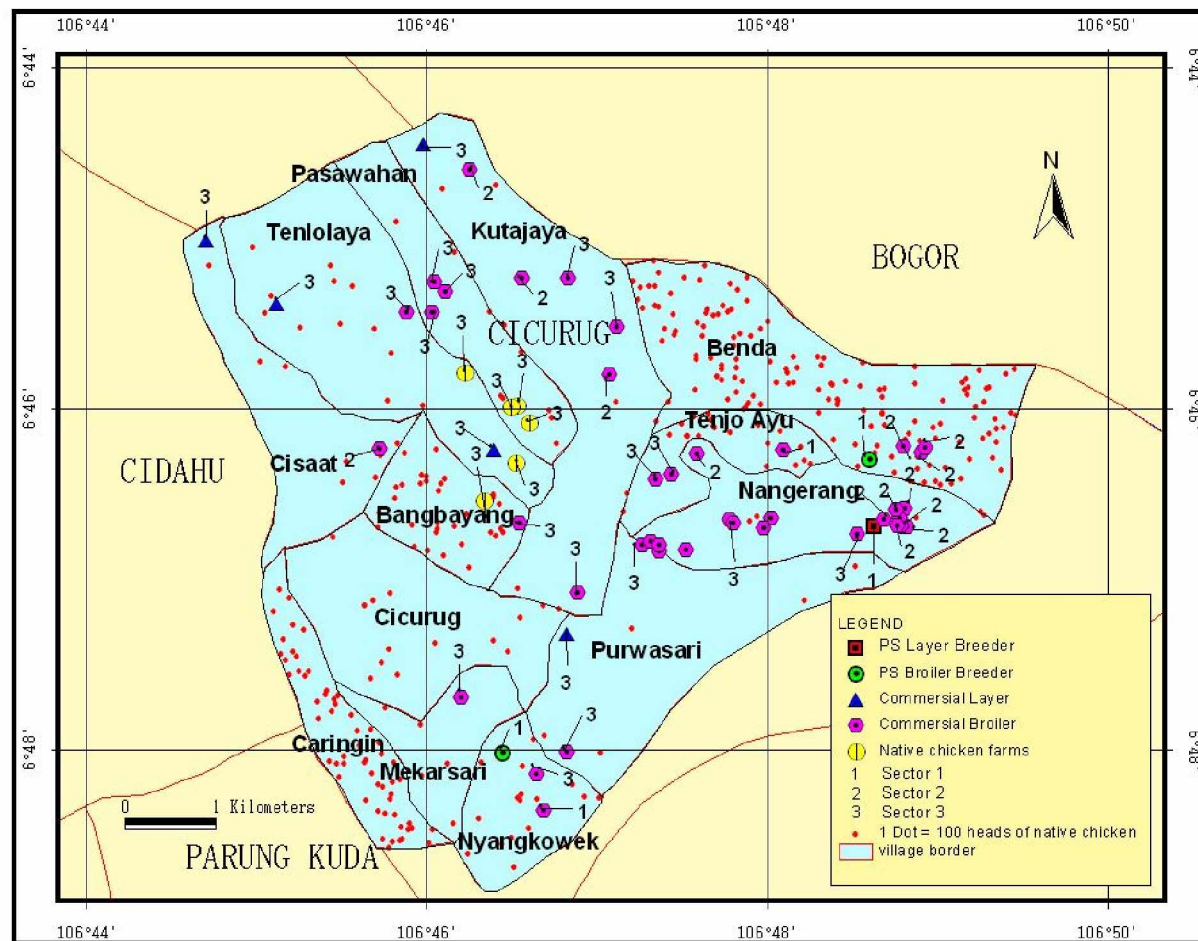


Figure 3. Distribution of Poultry Farms in Cicurug Sub-district by Farm Type and Poultry Sector

Table 13. Human Demography and Poultry Population In Cicurug Sub-district

	Size (ha)	Adult Man (>18 years old)	Adult Women (> 18 years old)	Youth (5-17 years old)	Children (< 5 years old)	No of Household	Population Density	Number of people /household	No of Native Chicken	Native Chicken Density/ha	No of Native Chicken/Household
MEKARSARI	214.09	2,428	2,689	1,160	1,102	1,670	34	4	500	2	less than 1
NYANGKOWEK	90.18	2,234	2,231	1,778	527	1,780	75	4	1,585	18	1
NANGGERANG	254.39	1,648	0	1,619	408	1,129	14	3	303	1	less than 1
PURWASARI	317	2,437	2,316	1,534	1,103	1,834	23	4	505	2	less than
TENJOAYU	183.4	2,368	2,392	1,067	628	1,697	35	4	2,080	11	1
BENDA	313.65	455	898	1,568	329	2,265	10	1	14,625	47	6
KUTAJAYA	147.55	3,085	4,727	2,476	635	3,630	74	3	462	3	less than 1
PESAWAHAN	217.65	3,048	2,492	1,875	467	1,941	36	4	1,048	5	1
CISAAT	666.46	2,745	3,129	2,189	n.a	2,483	12	3	820	1	less than 1
BANGBANYANG	121.22	192	213	881	411	1,265	14	1	3,171	26	3
TENJOLAYA	794.11	1,097	1,086	1,671	1,214	1,314	6	4	1,155	1	1
CARINGIN	252.14	1,528	1,385	1,039	554	1,164	18	4	5820	23	5
CICURUG	2,175.00	3,982	3,804	1,450	177	2,603	4	4	1,508	1	1
TOTAL	5,746.84	27,247	27,362	20,307	7,555	24,775	14	3	33,582	6	1

Source: Village offices in Cicurug Sub-district.

Table 14. Distribution of Poultry Farms per villages in Cicurug Sub-district

	No of Farms	Population Group (Heads)						Types of Production					Sector of Poultry Farm							
		100-1,000	1,000-5,000	5,000-25,000	25,000-50,000	50,000-100,000	> 100,000	PS Broiler Breeder	PS Layer Breeder	Commercial Broiler	Commercial Layer	others	1	2	3	4				
																Native Chicken	Duck	Swan	Muscovy	Pigeon
Bangbayang	2	1	1							1		1			2	3,171	327	25	20	60
Benda	4		1	2		1		1		3			1	3		14,625	29	908		
Caringin	0															5,820	405			
Cicurug	0															1,508	15			
Cisaat	2		2							1	1			1	1	820		20	250	
Kuta Jaya	7			2	4		1			6	1			3	4	462				
Mekarsari	1			1						1					1	500			20	108
Nanggerang	19	3	6	10					1	18			1	16	2	303				50
Nyangkówek	3		1		1	1		1		2			2		1	1,585		10	20	10
Pesawahan	6	2	1	2	1					3		3			6	1,048				
Purwasari	4		2	2						3	1			1	3	505			20	100
Tenjo Ayu	3		1	1		1				3			1		2	2,080				
Tenjolaya	5		2	2	1					1	2	2			5	1,155		6	10	27
Total	56	6	17	22	7	3	1	2	1	42	5	6	5	24	27	33,582	15	36	320	295

3.4.3. Live Chicken Movement in Cicurug Sub-district

Of all the commercial broiler farms in Cicurug Sub-district, 55% sold live chicken products to the local sub-district, and 5% sold live chicken products to the other sub-district within the Sukabumi District. Around 24% sold live chicken products to the other districts in West Java Province and 45% sold live chicken products outside West Java province (Table 15).

Table 15. Poultry Movement in Cicurug Sub-district

	local Sub District	Another Sub District	Another District	Another Province
No of farms	23	2	10	19
Percent	55	5	24	45

Most of the farms selling their products outside the sub-district generally sold them to Sukabumi city, and also to Jampang, Cigombong and Cimande. Most of the farms selling their products outside Sukabumi District sold to Bogor District, the others to Cisarua, Cianjur and Bandung. Most of the farms selling their products outside West Java province sold to Jakarta; some sold to Banten, Central Java and South Sumatra.

The study found 6 middlemen/salesmen in Cicurug Subdistrict. 2 of them were egg salesmen and the others were broiler chicken (live chicken) salesmen (Table 16). All the salesmen sold the products locally.

Table 16. Salesman/Middleman of Poultry Product in Cicurug Sub-district.

Salesman	Villages	Product	Egg Capacity (egg/day)	Capacity (head/day)
Ujang,Bapak	Cicurug	Broiler chicken		700
Arif Gunawan	Cicurug	Egg	9,000	
Nanang Sofyan	Cicurug	Broiler chicken		1,000
Maria Goretti	Cicurug	Egg	3,600	
Aep Syaifuddin	Purwasari	Broiler chicken		335
Maswardi Sutrisno	Nyangkowek	Broiler chicken		50

3.4.4. AI Cases in Cicurug Sub-district

AI cases in Cicurug Sub-district were found in 3 farms. The first case was found in February 2005 in a native chicken farm belonging to H. Ade Zulkarnaen in Tenlojaya village, with the number of deaths totaling 2,000 heads. The laboratory test showed a positive AI result.

The second case was also found in Tenlojaya village, in February 2005. The number of deaths in a commercial layer farm belonging to Dani Ong reached 200, with positive results of the laboratory test for AI virus.

The last case was found Benteng Farm in Kutajaya Village belonging to Joni Caniago. It was a sector 2 commercial broiler farm. The case happened in November 2005 with the number of deaths totaling 3,000. No laboratory test was conducted here.

3.4.5. Animal Health Services in Cicurug Sub-district

Animal health service in Cicurug Sub-district was rendered by 1 KCD, 1 PTCD, and 3 part timer vaccinators, with the assistance of 1 person from PPL. Generally, the sub-district service also had to attend 2-3 other sub-districts and until now it has not yet equipped with operational vehicles. The officials used public transport in their work.

3.4.6. Human Health Services in Cicurug Sub-district

Data from Cicurug Sub-district office recorded 4 doctors assisted by 13 paramedics and 7 nurses. The closest health clinic was at Siliwangi Street No 113, Cicurug, and in Cipari village, Cisaat.

3.5. Cikembar Sub-district

3.5.1. Administrative Territory and Human Demography

Cikembar Sub-district encompasses 7,438.83 hectares consisting of 9 villages. The human demography is given in Table 17. The largest village is Bojong village encompassing 953.41 hectares with the density of 13 peoples/hectare and 3 people/household. Ranked two is Cimanggu village with 17 people/hectare, followed by Cikembar village with 13 peoples/hectare.

3.5.2. Distribution and Population of The Poultry Livestock in Cikembar Sub-district

The secondary data received from Cikembar Sub-district recorded 9 commercial layers, 38 commercial broilers, and 6 Parent stock Breeders. The study observed that there were 56 poultry farms altogether in Cikembar Sub-district. Generally, poultry farms in this sub-district were of sector 1, 2, 3 (picture 4). The total 36 broiler commercial farms were surveyed (table 18).

The poultry farms were concentrated in Kertaraharja village (16 farms), Parakan Lima village (13 farms) and Cikembar village (8 farms) (picture 4). Most of the farms had the total population ranging from 5,000 to 25,000 heads (29 farms) and 25,000-50,000 heads (20 farms). There was a farm in Cimanggu village with the number of population exceeding 100,000 heads (table 18).

As for sector 4 poultry farms, the highest density of native chicken population was found in Sukamulya village with the total native chicken population of 9,733 heads (Table 18). Calculated from the total native chicken population in Cikembar Sub-district and the total number of households, each household had 3 heads of native chickens.

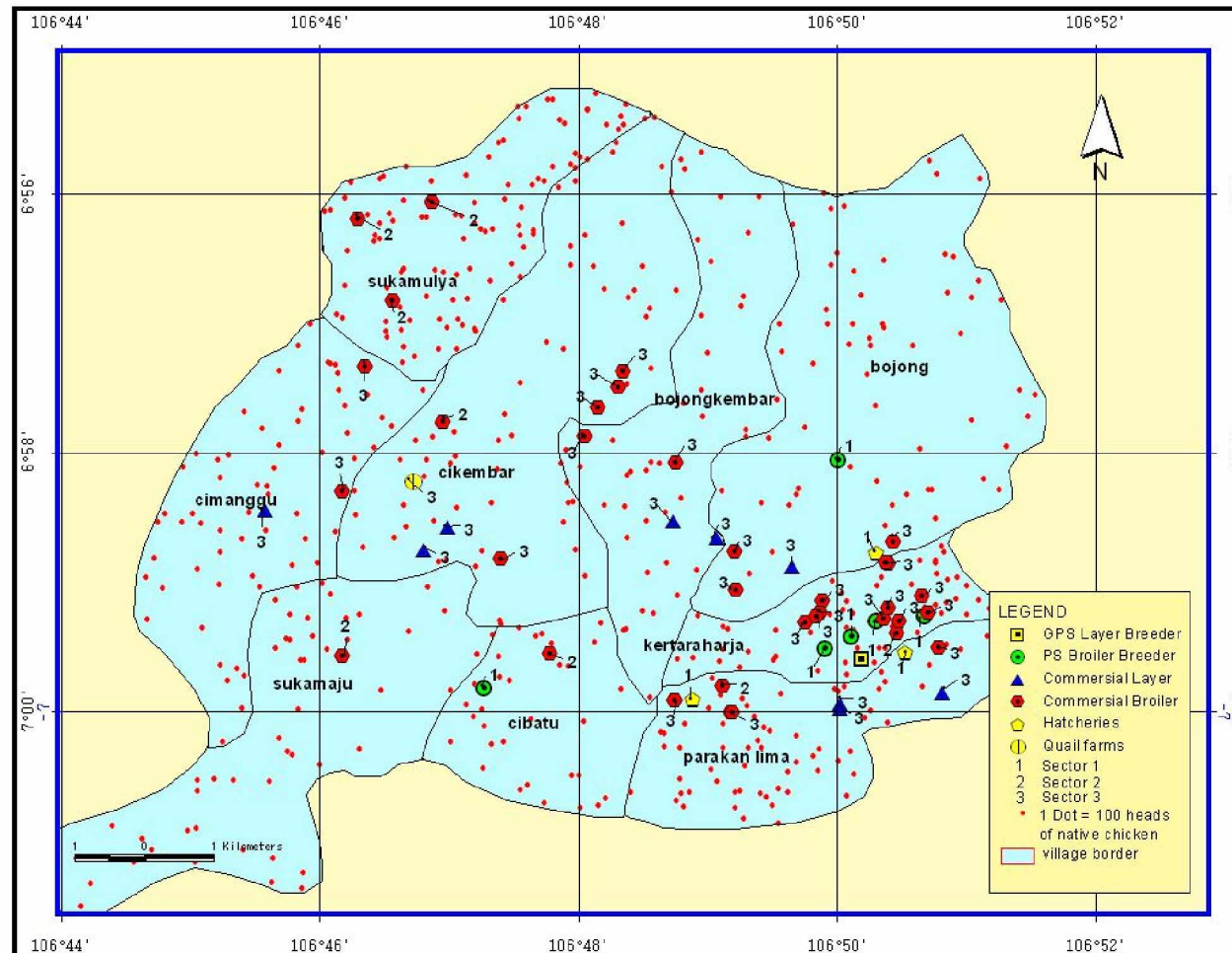


Figure 4. Distribution of Poultry Farms in Cikembar Sub-district by Farm Type and Poultry Sector

Table 17. Human Demography and Poultry Population In Cikembar Sub-district

	Size (ha)	Adult Man (>18 years old)	Adult Women (> 18 years old)	Youth (5- 17 years old)	Children (< 5 years old)	No of Household	No of Human Population Density	Number of people /household	No Of Native Chicken	Native Chicken Density/ha	No of Native Chicken /Household
CIKEMBAR	1,054.40	4,483	4,148	1,858	901	3,005	11	4	5,816	6	2
SUKAMULYA	831.36	3,661	3,154	1,480	736	2,503	11	4	9,733	12	4
CIMANGGU	787.14	2,528	2,586	7,605	944	2,251	17	6	6,092	8	3
BOJONG KEMBAR	900.53	3,478	3,516	609	859	2,699	9	3	4,418	5	2
CIBATU	539.13	0	0	876	340	1,052	2	1	3,171	6	3
SUKAMAJU	1,206.70	1,846	1,850	2,030	597	1,757	5	4	4,981	4	3
KERTARAHARJA	497.13	275	275	451	619	1,551	3	1	5,674	11	4
PARAKAN LIMA	669.03	443	422	900	555	2,027	3	1	6,841	10	3
BOJONG	953.41	3,793	3,760	3,465	1,517	3,853	13	3	5,816	6	2
Total	7,438.83	20,507	19,711	19,274	7,068	20,698	9	3	52,542	7	3

Source: Village offices in Cikembar Sub-district.

Table 18. Distribution of Poultry Farms per villages in Cikembar Sub-district

	No of Farms	Types of Production				Sector of Poultry Farm													
		5,000-25,000	25,000-50,000	50,000-100,000	> 100,000	PS Broiler Breeder	GPS Layer Breeder	Commercial Broiler	Commercial Layer	Hatcheries	etc	1	2	3	4				
															Native Chicken	Duck	Swan	Muscovy	Quail
Bojong	6	2	3			1		3	1	1		2		4	5,816	16			144
Bojong Kembar	4	2	2					2	2					4	4,418	92		221	
Cibatu	2	2				1		1				1	1		3,171	158		255	
Cikembar	8	3	5					5	2		1		1	7	5,816	16		144	
Cimanggu	3	1		1	1			2	1					3	6,092	56			110
Kertataharja	16	9	5	2		2	1	13				2	1	13	5,674	25		71	
Parakan Lima	13	8	3			2		6	3	2		4	1	8	6,841	928	11		
Sukamaju	1	1						1					1		4,981	117		536	
Sukamulya	3	1	2					3					3		9,733	24		111	
Total	56	29	20	3	1	6	1	36	9	3	1	9	8	39	52,542	1,432	11	1,338	254

3.5.3. Live Chicken Movement in Cikembar Sub-district

Of all the commercial broiler farms, 6% sold live chickens locally, 53% sold live the other sub-districts within Sukabumi District. Around 19% sold to other districts in West Java province and 89% sold outside the province (Table 19).

Table 19. Poultry Movement in Cikembar Sub-district

	local Sub District	Another Sub District	Another District	Another Province
No of farms	2	19	7	32
Percent	6	53	19	89

Most of the farmers selling their products outside the sub-district generally sold them to Sukabumi city, and Cisaat, Cicurug and Cibadak. Most selling outside the district sold the products to Bogor District, Cisarua, Bandung, Depok, and Karawang. Most selling the products outside the province sold to Jakarta, and Banten, Central Java and East Java.

The inventory study found 2 middlemen/salesmen of poultry products in Cikembar Subdistrict. All of them were broiler chicken (live chicken) salesmen (Table 20). All sold the products to other districts and provinces.

Table 20. Salesman/Middleman of Poultry Product in Cikembar Sub-district.

Salesman	Villages	Product	Capacity (head/day)
Agus	Sukamulya	Broiler chicken	2,000
Jajang	Sukamulya	Broiler chicken	48

3.5.4. AI Cases in Cikembar Sub-district

AI cases in Cikembar Sub-district were found in July 2005 in a quail farm belonging to Haji Rahmat Pambudi, with the number of deaths reaching 3,000. According to the information from the Livestock Services of Sukabumi District Services the laboratory test showed positive infection with AI. Another case was found in Cimanggu village, resulting in the death of 1,000 native chickens.

3.5.5. Animal Health Services in Cikembar Sub-district

The animal health service in Cikembar sub-district was rendered only by a paraveteriner. This person also had to attend 2-3 other sub-districts and until recently it has not yet equipped any operational vehicle. The closest animal health post from Cikembar Sub-district was in Salabintana, Sukabumi.

3.5.6. Human Health Services in Cikembar Sub-district

The data received from Cikembar Sub-district office revealed that there were 11 doctors in Cikembar Sub-district assisted by 16 paramedics and 12 nurses. The closest health clinic was in Pelabuhan Ratu Street Km18.

3.6. Kebon Pedes Sub-district

3.6.1. Administrative Territory and Human Demography

Kebon Pedes Sub-district encompasses 994.91 hectares consisting of 5 villages. The human demography is given in Table 21. The largest village is Bojongsawah village encompassing 300.76 hectares with the population density of 22 people/hectare and 4 people/household. The highest population density was in Sasagaran village with 38 people/hectare, followed by Jambenenggang village with 36 peoples/hectare.

3.6.2. Distribution and Population of The Poultry Livestock in Kebon Pedes Sub-district

The secondary data received from the Kebon Pedes Sub-district recorded 4 commercial layers, 7 commercial broilers, and 6 semi intensive duck farms. The inventory study observed 21 poultry farms in Kebon Pedes Sub-district. There were no sector 1 poultry farms in the sub-district. Generally, the poultry farms were of sector 2 and 3 (Figure 5) and most of the surveyed farms were commercial farms (8 farms) (Table 22).

The poultry farms were concentrated in Sasagaran village (10 farms) and Jambenenggang village (6 farms) (Figure 5). Most of the farms had the total population ranging between 5,000-25,000 heads (7 farms) and 1,000-5,000 heads (17 farms). There was a farm in Kutajaya village with the total population exceeding 100,000 (Table 22).

As for sector 4 poultry farms, the highest density of native chicken population was found in Sasagaran village with the total native chicken population of 3,004 heads (Table 22). Calculated from the total native chicken population in Kebon Pedes Sub-district and the total number of households, each household had only 1 head of native chickens.

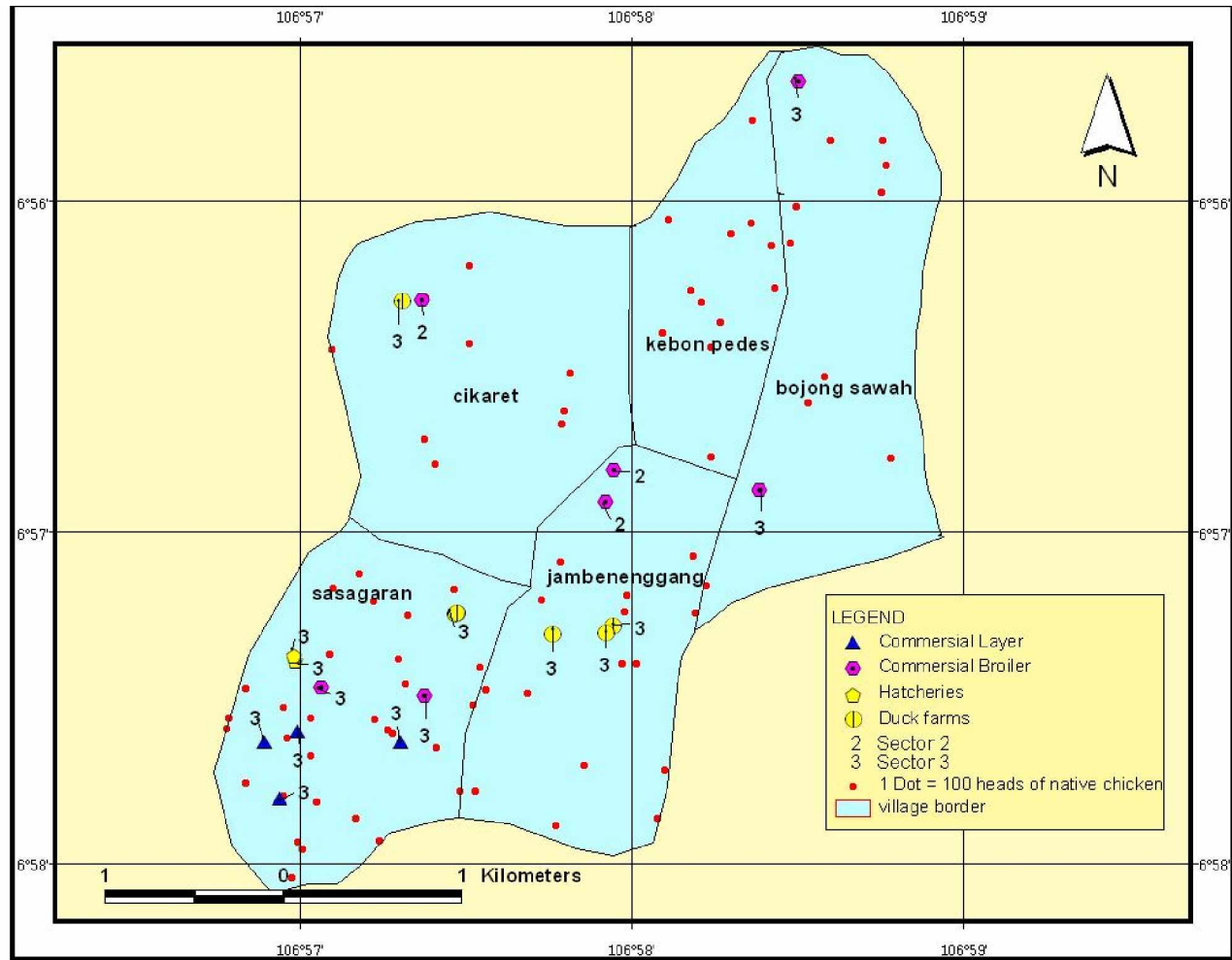


Figure 5. Distribution of Poultry Farms in Kebon Pedes Sub-district by Farm Type and Poultry Sector

Table 21. Human Demography and Poultry Population In Kebon Pedes Sub-district

	Size (ha)	Adult Man (>18 years old)	Adult Women (> 18 years old)	Youth (5-17 years old)	Children (< 5 years old)	No of Household	No of Human Population Density	Number of people /household	No Of Native Chicken	Native Chicken Density/ha	No of Native Chicken /Household
SASAGARAN	153.21	2,340	2,187	703	591	1,251	38	5	3,004	20	2
CIKARET	186.77	1,603	1,496	614	501	1,409	23	3	954	5	1
BOJONGSAWAH	300.76	1,958	2,023	1,669	918	1,641	22	4	1,000	3	1
KEBON PEDES	181.95	1,702	1,743	1,730	756	1,714	33	3	1,159	6	1
JAMBENENGGANG	172.22	2,567	2,533	792	362	1,468	36	4	1,479	9	1
Total	994.91	10,170	9,982	5,508	3,128	7,483	29	4	7,596	8	1

Source: Village offices in Kebon Pedes Sub-district.

Table 22. Distribution of Poultry Farms per villages in Kebon Pedes Sub-district

	No of Farms	Population Group (Heads)						Types of Production				Sector of Poultry Farm							
		< 100	100-1,000	1,000-5,000	5,000-25,000	25,000-50,000	50,000-100,000	Commercial Broiler	Commercial Layer	Hatcheries	others	2	3	4					
														Native Chicken	Duck	Swan	Muscovy	Quail	Pigeon
Bojongsawah	2				2			2					2	1,000	150	15	300		60
Cikaret	3	2			1			1			2	1	2	954	500	50	200		200
Jambenenggang	6	2	1	1	2			3			3	3	3	1,479	123	5	14		10
Kebon Pedes	0													1,159	200	6	400		150
Sasagaran	10	1	1		2	4	2	2	4	2	2		10	3,004	200		885	30,000	30
Total	21	5	2	1	7	4	2	8	4	2	7	4	17	7,596	1,173	76	1,799	30,000	450

3.6.3. Live Chicken Movement in Kebon Pedes Sub-district

Of all the commercial broiler farms, no farms sold live chickens locally. 38% of the farms sold live chickens the other sub-districts within Sukabumi District. Around 25% sold live chickens other districts in West Java province, and 75% sold live chickens outside the province (Table 23).

Tabel 23. Poultry Movement in Kebon Pedes Sub-district

	local Sub District	Another Sub District	Another District	Another Province
No of farms	0	3	2	6
Percent	0	38	25	75

Most of the farms selling the products outside the sub-district sold them to Sukabumi city. Most selling outside the district sold it to Bogor District, Cianjur and Bandung. Those selling outside the province mostly sold Jakarta, and Banten Province.

The inventory study found 10 middlemen/salesmen of poultry products. Four were carcass salesmen, and the others were broiler chicken (live chicken) salesmen (Table 24). All of the salesmen sold the products to the other sub-districts. None sold outside the district or outside the province.

Table 24. Salesmen/Middlemen of Poultry Product in Kebon Pedes Sub-district.

Salesman	Villages	Product	Capacity (head/day)
Haji Dedi Jalaludin	Cikaret	carcass	75
Rusin	Cikaret	carcass	60
Atma	Cikaret	carcass	120
Sukri	Cikaret	Broiler chicken	75
Herman	Cikaret	Broiler chicken	150
Ian Suryana	Cikaret	Broiler chicken	200
Chosim	Cikaret	Broiler chicken	75
Enang Suganda	Cikaret	Broiler chicken	50
Komar	Cikaret	carcass	100
Andi Rian	Kebon Pedes	Broiler chicken	200

3.6.4. AI Cases in Kebon Pedes Sub-district

AI cases in Kebon Pedes Sub-district were found in Sasagaran village in July 2005 in a quail farm belonging to Jajang with the number deaths reaching 30,000. According to the information from the Livestock Services of Sukabumi District Services the laboratory test showed positive infection with AI.

3.6.5. Animal Health Services in Kebon Pedes Sub-district

The animal health service in Kebon Pedes sub-district was rendered by only 1 paraveteriner, who also had to attend 2-3 other sub-districts. Until recently it has not yet equipped with any operational vehicles. The closest animal health post from Kebon Pedes Sub-district was in Salabintana, Sukabumi.

3.6.6. Human Health Services in Kebon Pedes Sub-district

The data received from Kebon Pedes Sub-district office revealed that there was only 1 doctor in Kebon Pedes Sub-district assisted by 5 paramedics and 6 nurses. The closest health clinic was in Jambenenggang village.

3.7. Jampang Tengah Sub-district

3.7.1. Administrative Territory and Human Demography

Jampang Tengah Sub-district encompasses 21,658.68 hectares consisting of 11 villages. The human demography is given in Table 25. The largest village is Bojong Jengkol village encompassing 3,270.89 hectares, with the population density of 2 peoples/hectare and 2 people/household. The highest population density was in Jampang Tengah village with 8 people/hectare, followed by Bojong Tipar village with 5 people/hectare.

3.7.2. Distribution and Population of Poultry Livestock in Jampang Tengah Sub-district

This inventory study recorded that there were 20 poultry farms in the Jampang Tengah Sub-district. Generally, the farms were of sector 1, 2, 3 (Figure 6) and most surveyed were broiler commercial farms (13 farms) (Table 26).

The farms were concentrated in Cijulang village (6 farms), and Pesawahan village (6 farms) (Figure 6). Based on the population groups, most of the farms had the total population of 5,000-25,000 heads (11 farms). 3 farms had the total population over 100,000; 2 of them are located in Cijulang village and the other in Padabeunghar village (Table 26).

As for sector 4 poultry farms, the highest density of native chicken population was found in Nangerang village with the total population reaching 8,270 heads (Table 26). Calculated from the total native chicken population in Jampang Tengah Sub-district and the total number of households, each household had only 1 head of native chickens.

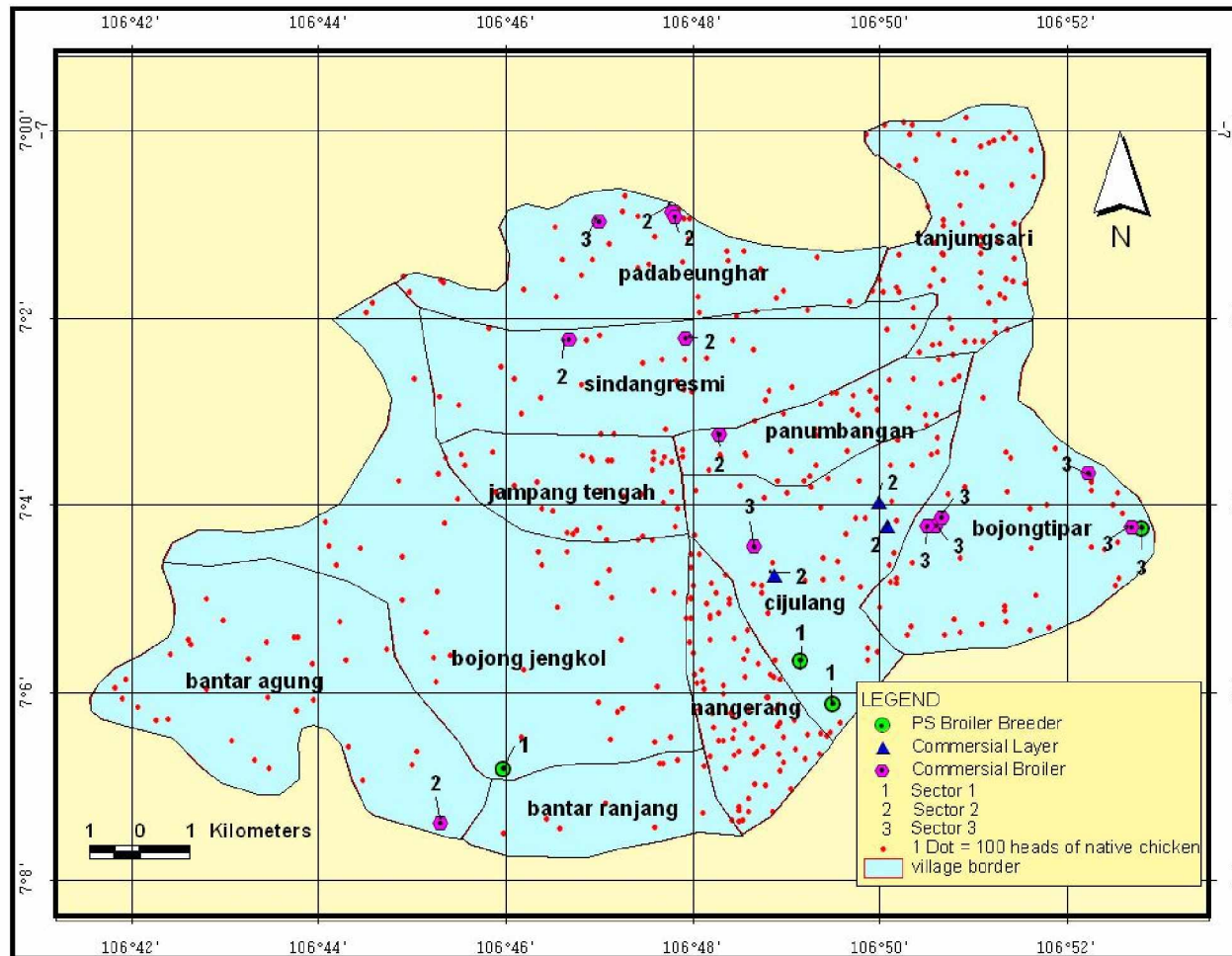


Figure 6. Distribution of Poultry Farms in Jampang Tengah Sub-district by Farm Type and Poultry Sector

Table 25. Human Demography and Poultry Population In Jampang Tengah Sub-district

	Size (ha)	Adult Man (>18 years old)	Adult Women (> 18 years old)	Youth (5- 17 years old)	Children (< 5 years old)	No of Household	No of Human Population Density	Number of people /household	No Of Native Chicken	Native Chicken Density/ha	No of Native Chicken /Household
JAMPANG TENGAH	736.59	2,624	2,546	0	490	1,364	8	4	3,427	5	3
BANTAR PANJANG	1,902.20	1,697	1,537	953	114	941	2	5	951	0	1
TANJUNGSARI	3,141.50	237	362	1,022	583	2,318	1	1	6,405	2	3
PADANGBEUNGHAR	1,185.55	288	327	546	0	1,950	1	1	3,179	3	2
PANUMBANGAN	1,967.50	1,806	1,472	266	850	1,316	2	3	3,938	2	3
SINDANG RESMI	1,464.04	1,092	1,115	2,064	568	1,804	3	3	3,132	2	2
NANGERANG	1,849.00	1,941	2,016	731	369	1,654	3	3	8,270	4	5
BOJONG TIPAR	1,200.00	1,843	1,956	1,420	622	1,758	5	3	3,950	3	2
BOJONG JENGKOL	3,270.89	1,932	2,200	1,896	635	1,941	2	3	3,882	1	2
BANTAR AGUNG	2,156.12	1,320	921	1,888	867	1,531	2	3	3,062	1	2
CIJULANG	2,785.29	1,326	1,326	1,417	628	2,987	2	2	4,012	1	1
Total	21,658.68	16,106	15,778	12,203	5,726	19,564	2	3	44,208	2	2

Source: Village offices in Jampang Tengah Sub-district.

Table 26. Distribution of Poultry Farms per villages in Jampang Tengah Sub-district

	No of farms	Population Group (Heads)			Types of Production			Sector of Poultry Farms								
		5,000-25,000	25,000-50,000	> 100,000	PS Broiler Breeder	Commercial Broiler	Commercial Layer	1	2	3	4					
											Native Chicken	Duck	Swan	Muscovy	Quail	Pigeon
Bantar Agung	1		1			1			1		3,062	300				45
Bojong Jengkol	1		1		1			1			3,882		15	75	40	50
Bojong Tipar	6	2	4		1	5				6	3,950			200	100	50
Cijulang Kedung	6	4		2	2	1	3	2	3	1	4,012					250
Padabeunghar	3	2		1		3			2	1	3,179	120		402	57	
Panumbangan	1	1				1			1		3,938	80	10	100	50	
Jampang Tengah	0										3,427	92		313		
Bantar Panjang	0										951	65			15	10
Tanjungsari	0										6,405	65		345		20
Nangerang	0										8,270	500		75	75	100
Sindangresmi	2	2				2			2		3,132	30		675	50	
Total	20	11	6	3	4	13	3	3	9	8	44,208	1,252	25	2,185	387	525

3.7.3. Live Chicken Movement in Jampang Tengah Sub-district

All the commercial broiler farms sold live chickens locally. 85% also sold to the other sub-districts within Sukabumi District. Around 15% sold to other districts in West Java province and 77% sold outside the province (Table 27).

Table 27. Poultry Movement in Jampang Tengah Sub-district

	local Sub District	Another Sub District	Another District	Another Province
No of farms	13	11	2	10
Percent	100	85	15	77

Most of the farms selling outside the sub-district generally sold to Sukabumi city, and Cikembar. Farms selling outside the district mostly sold to Bogor District, the others sold to Garut and Cianjur. Farms selling outside the province mostly sold to Jakarta, and to Banten, Central Java, East Java and Lampung Province

The inventory study found 1 middleman/salesman in Jampang Tengah Sub-district, trading broiler chickens for the local consumption. (Table 28).

Table 28. Salesman/Middleman of Poultry Product in Jampang Tengah Sub-district.

Salesman	Villages	Product	Capacity (head/day)
Muhidin	Sindang Resmi	Broiler chicken	500

3.7.4. AI Cases in Jampang Tengah Sub-district

AI cases in the Jampang Tengah Sub-district were found in Cimerang II farm, a Parent Stock Broiler Breeder, in the Bojong Tipar village in January 2006, with the total number of deaths reaching 1,800 heads. Unfortunately, AI case in this farm was not confirmed by a laboratory test.

Other AI cases were also found in a broiler commercial farm belonging to Haji Danta, with 50% of mortality rate. No laboratory test confirmed the finding.

3.7.5. Animal Health Services in Jampang Tengah Sub-district

The animal health service in Jampang Tengah sub-district was rendered by only a paraveteriner, who also had to attend 2-3 other sub-districts. Until recently, it has not yet been equipped with any operational vehicles. The closest animal health post from Jampang Tengah Sub-district was in Salabintana, Sukabumi.

3.7.6. Human Health Services in Jampang Tengah Sub-district

The data received from Jampang Tengah Sub-district office mentioned 2 doctors in service assisted with 6 paramedics. The closest health clinic was in Bojong Lopang Street.

4. RECOMMENDATION

4.1 Areas for Field Trial Vaccination

The field vaccination experiment will be conducted with small and medium scale layer farms (sector 3) and small sector 3 farms with native chicken for meat or for eggs. When native chicken are kept for meat they are normally kept for 70 days before they are sold. The survey identified 23 farms which are potentially suitable to be included in the field vaccination experiment. Details of these farms are in table 29.

Table 29. Potential Farms to be included in the field vaccination trial

No	Farm	Subdistrict	Village	Type of Farm	No of Shed	Number of chicken / shed	Total Number of Chicken	AI Vacc.	AI Vaccine Brand	Frequency of Vaccination	Total Worker	Worker Vaccinated
1	PURWASARI FARM	Cicurug	Purwasari	Commerial Layer	10	1500	15000	Yes	VaksiFlu	twice	13	No
2	HEJO FARM	Cicurug	Kuta Jaya	Commerial Layer	25	5000	125000	Yes	Vaksiflu	3 times	60	No
3	TENJOLAYA FARM	Cicurug	Tenjolaya	Commerial Layer	10	3500	35000	Yes	Vaksin Cina	3 times	20	No
4	GABUS FARM	Cicurug	Tenjolaya	Commerial Layer	4	500	2000	Yes	Medivac AI	3 times	2	No
5	LUKMAN FARM	Cicurug	Cisaat	Commerial Layer	3	1000	3000	Yes			3	No
6	SALUYU FARM	Cicurug	Pesawahan	Native Chicken Broiler	2	500	1000	Yes	Medivac AI	once	3	No
7	KAMPUNG BARU FARM	Cicurug	Pesawahan	Native Chicken Broiler	2	750	1500	No			1	No
8	ARI FARM	Cicurug	Pesawahan	Native Chicken Broiler	1	1000	1000	Yes	Medivac AI	once	2	No
9	FAMILY FARM	Cicurug	Tenjolaya	Native Chicken Broiler	4	425	1700	Yes	Medivac AI	once	4	No
10	NANDA FARM	Cicurug	Tenjolaya	Native Chicken Broiler	4	2000	8000	Yes	Medivac AI	once	1	No
11	PITIR FARM	Cicurug	Bang Bayang	Native Chicken Broiler	4	250	1000	Yes	Medivac AI	twice	3	No
12	BUKIT BAROS FARM	Kebon Pedes	Sasagaran	Commerial Layer	7	5000	35000	Yes	Medivac AI	3 times	30	No
13	SEMBILAN JAYA FARM	Kebon Pedes	Sasagaran	Commerial Layer	18	4000	72000	Yes	Biomun	3 times	58	No
14	MALE FARM	Kebon Pedes	Sasagaran	Commerial Layer	18	4000	72000	Yes	Medivac AI	once	50	No
15	SCORPIO BAROS FARM	Kebon Pedes	Sasagaran	Commerial Layer	12	3700	44400	Yes	Medivac AI	3 times	15	No
16	BATU KUTIL FARM,CV	Cikembar	Cimanggu	Commerial Layer	12	10000	120000	Yes	Romindo	more than 3 times	63	No
17	MEGA FARM	Cikembar	Bojong Kembar	Commerial Layer	12	2500	30000	Yes	Avimex H5N2	3 times	15	No
18	YUJIN CILAKSANA FARM	Cikembar	Bojong Kembar	Commerial Layer	8	3000	24000	Yes	Medivac AI	3 times	8	No
19	BERKAH FARM	Cikembar	Cikembar	Commerial Layer	8	3000	24000	Yes	Intervet	twice	13	No
20	ANUGERAH FARM	Cikembar	Cikembar	Commerial Layer	6	3000	18000	Yes	Avimex H5N2	twice	7	No
21	ANTHONI FARM	Cikembar	Parakan Lima	Commerial Layer	4	2500	10000	Yes	Medivac AI	twice	3	No
22	CIGARUNG FARM	Cikembar	Parakan Lima	Commerial Layer	10	2000	20000	Yes	Medivac AI	twice	7	No
23	CIGARUNG 2	Cikembar	Parakan Lima	Commerial Layer	5	3000	15000	Yes	Vaksin Cina	twice	7	No

Based on the results of the inventory study and discussions with the Netherlands Team, it is recommended that field trial vaccination be carried out on sector 3 layer farm and native chicken farms in 3 sub-districts of Sukabumi, namely Cicurug, Cikembar and Kebon Pedes. The field trial vaccination will be carried out in 20 sector 3 layer and native chicken farms in Sukabumi District, 10 of which are control farms, where no intervention will be made and the farmers will implement their own management system. The other farms are vaccinated farms. The biosecurity level will be enhanced and an intense vaccination strategy will follow, aimed at the highest possible vaccination ratio.

Around the vaccinated farm sector 4 poultry will be vaccinated every 4 months in a ring of 1 km radius. The sector 4 poultry around the control farms will be included in the regular Dinas pertanian vaccination programme.

In the vaccination farms, the vaccine will be applied according to the manufacturer's instructions. In layer farms starting a new flock with DOC, the vaccination will be applied at the age of 1 week, 4 weeks, and 16/18 weeks. In those starting a new flock with pullets, the first vaccination will be applied one week after the arrival; the second 3 weeks later.

Unvaccinated sentinel birds (10-60 heads) are present in each flock of both vaccinated and control farms to detect virus circulation. Serum samples from the chicken and the sentinel are taken randomly from 3 flocks per farm. In sector 3 layer farms starting a new flock with DOC, serum samples will be taken at the third vaccination, 4 weeks after last vaccination, and at the end of production/selling. In sector 3 layer farms starting a new flock with pullets, serum samples will be taken at first vaccination, 4 weeks after the last vaccination, and at the end of production/selling.

4.2. Negotiations With The Farmers

Cicurug Sub-district has 11 potential farms suitable for the trial, consisting of 5 sector 3 layers and 6 native chicken farms (Figure 7), whereas Cikembar Sub-district has 8 potential sector 3 layers farms (Figure 8) and Kebon Pedes Sub-district has 4 potential the layer farms suitable for the trial (Figure 9).

In order to follow up the field trial vaccination, negotiations with the farmers are necessary to identify their willingness to take part in the trial vaccination. The objectives of the negotiation are to discuss and negotiate with the farmers over their participation in the trial, to collect information on the production system – DOC or pullets starter, and use of battery cages or free range flocks, and to have approximate dates of starting with new flock (DOC or pullets).

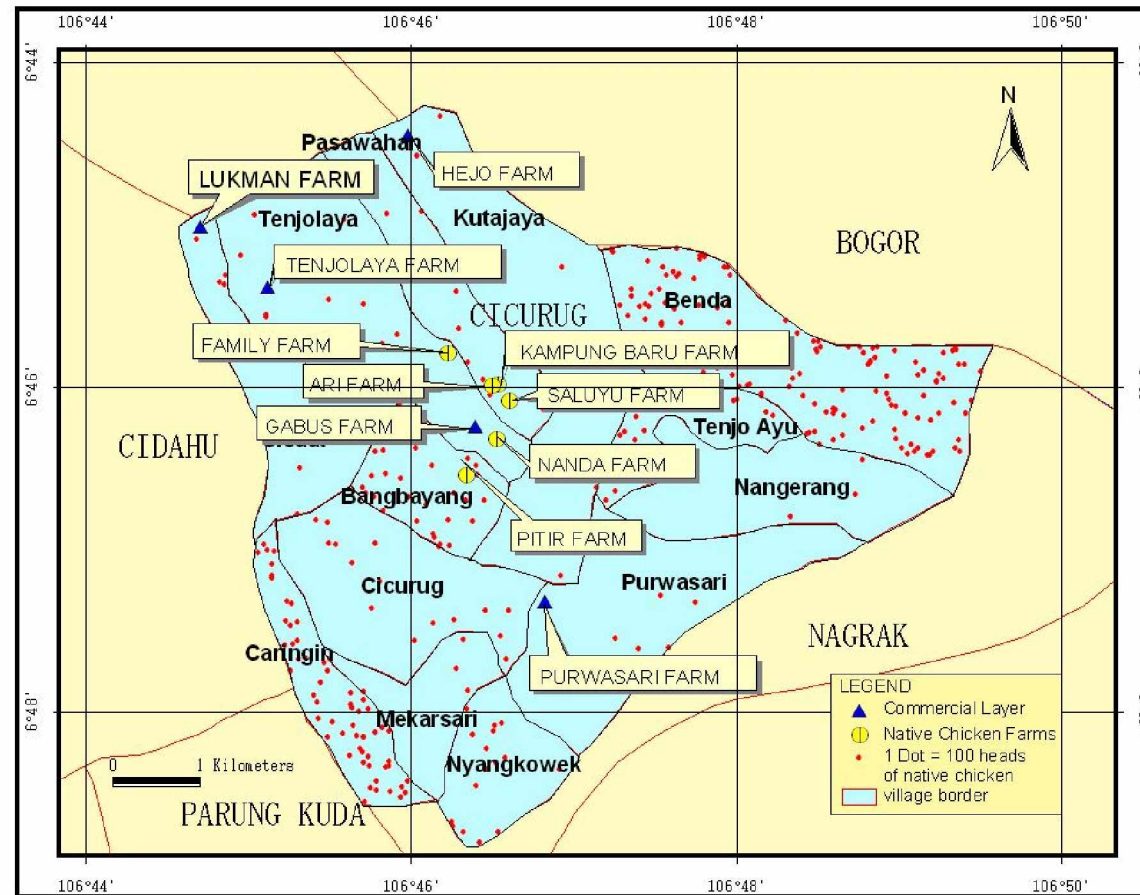


Figure 7. Potential Farms in Cicurug Sub-district to be included in the field vaccination trial

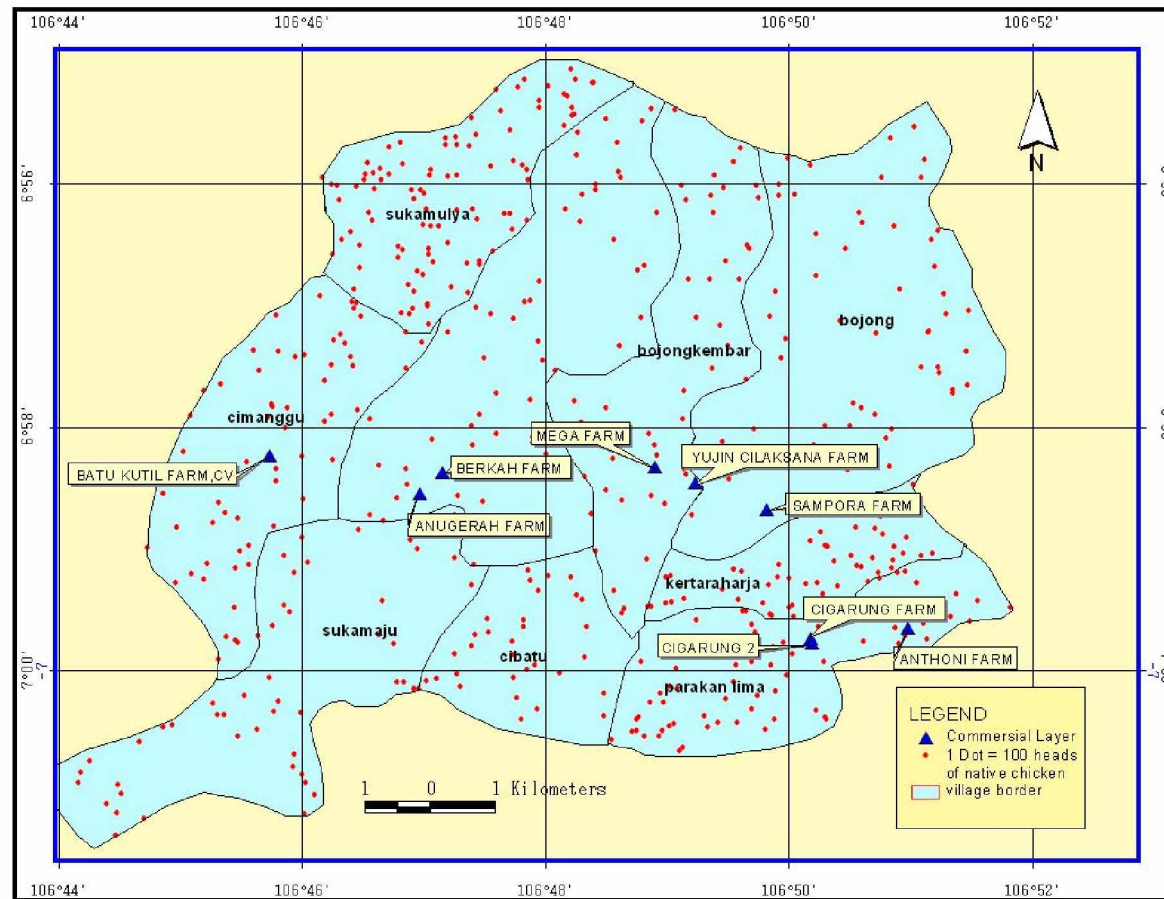


Figure 8. Potential Farms in Cikembar Sub-district to be included in the field vaccination trial

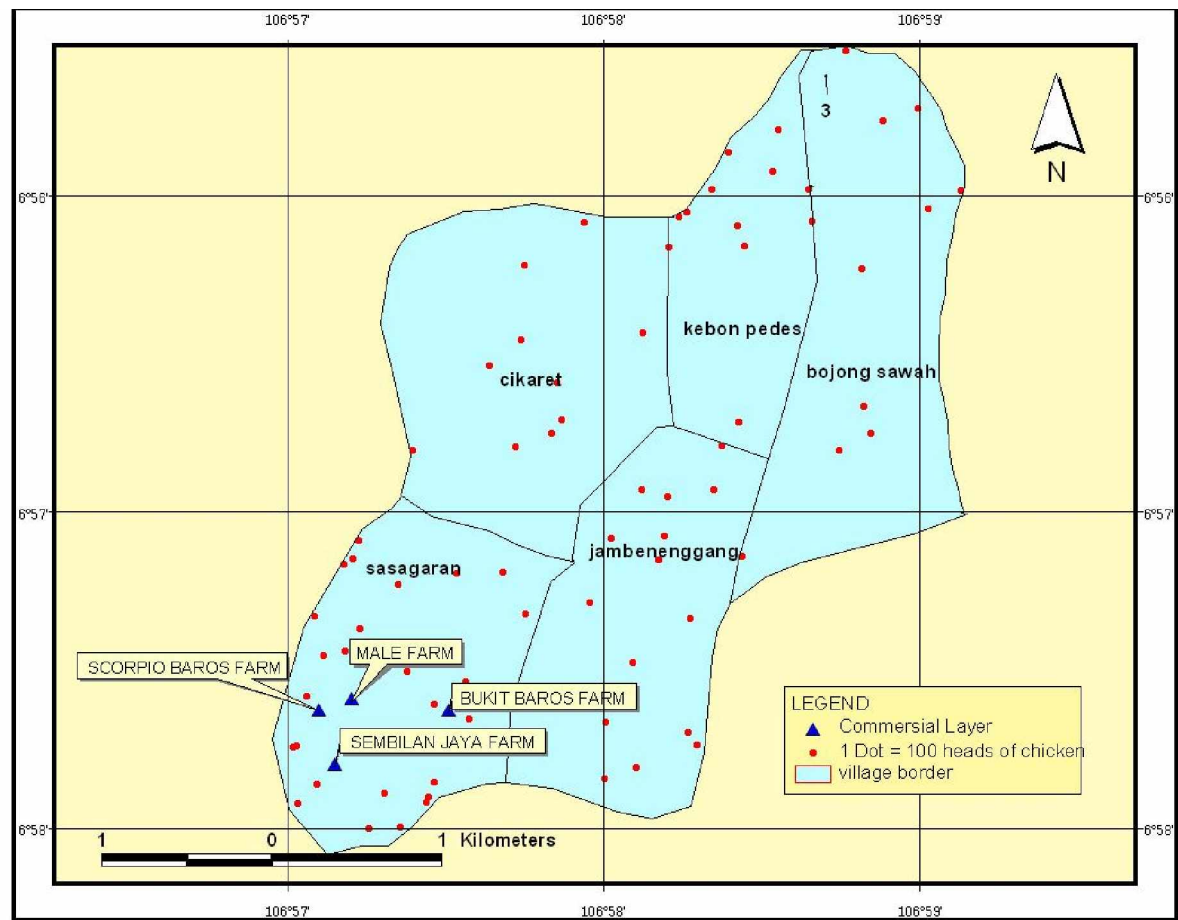


Figure 9. Potential Farms in Kebon Pedes Sub-district to be included in the field vaccination trial

Annex A. Quisitionaire Form
Inventory Forms

FORM A

FARM INVENTORY FORM

1. Name of Farm :
2. Owner :
3. Address :
 - Village :
 - Sub district :
 - District :
 - Province :
4. Type of Farm
 - ☐ Nucleus
 - ☐ Plasma, specify the name of nucleus farm :
 - ☐ Independent
5. Type of Production: Poultry production

Type of Production	Type of poultry (Hubbard, ISA, etc)
<input type="radio"/> GPS broiler breeder	
<input type="radio"/> PS broiler breeder	
<input type="radio"/> GPS layer breeder	
<input type="radio"/> PS layer breeder	
<input type="radio"/> Commercial Broiler	
<input type="radio"/> Commercial Layer	
<input type="radio"/> Hatcheries	
<input type="radio"/> Others (quail, duck, etc)	

Pig production:

Is there any pig production on the farm: Yes/No

If yes: Number of pigs:

Type of pig production:

6. Number of cages/poultry houses :.....
7. Population per house :.....
8. for Hatcheries
 - Hatching capacity :.....egg, **per** day / week/ month
9. Are any slaughtering facilities available: yes/no

If yes: daily capacity of slaughtering facilities:
10. Vaccination for AI
 - ☐ Yes
 - ☐ No
11. Name of AI vaccine :

12. On one rearing period, How many times poultry was vaccinated against AI ?

- ☐ Once
- ☐ Twice
- ☐ Three times
- ☐ More than three times.

13. History of AI

- Date/month/year :
- Number of Death :
- Laboratory Results :
- Did culling / slaughtering take place: yes / no
- If yes: was PPE (Personal Protective Equipment) used to protect cullers from infection? Yes / No
If yes, what PPE?

14. Biosecurity:

- ☐ Low
- ☐ Moderate
- ☐ High

Protection from wild birds: yes / no

If yes, through: netting / other:

15. Movement Control

- Where do you sell your product?
 - ☐ lokal Sub District
 - ☐ lokal District, specify the sub district :
 - ☐ to another district, specify the district :
 - ☐ to another Province, specify the Province :
- Can you specify the percentage of your movement product?
 - § Lokal SubDistrict :.....%
 - § Lokal District :.....%
 - § To another District :..... %
 - § To another Province :.....%

16. Number of employees / workers

- Male:
- Female:

17. How many of these employees received a human influenza vaccination since October 2003?

18. How many suspect human cases of avian influenza A/H5N1 (e.g. with symptoms of influenza-like illness) occurred since Sept. 2003 (?):

19. How many of these suspect cases were tested in a lab:.....

- Which lab:
- How many of these tested, were positive for AI H5N1:

SALESMAN /MIDDLEMEN INVENTORY FORM

1. Name :
2. Address :
 - Village :
 - Sub Districts :
 - Districts :
 - Province :
3. Type of Product
 - ☐ Live chicken/broiler
 - ☐ Carcasess
 - ☐ Egg
 - ☐ Pigs
4. No. of Suppliers :farms
5. Can you specify your supplier farms?

No	Farm's Name	Address
1		
2		
3		
.....		
6. Where do you sell your product?
 - ☐ lokal Sub District
 - ☐ lokal District, specify the sub district :
 - ☐ to another district, specify the district :
 - ☐ to another Province, specify the Province :
7. Capacity :egg/head, **per** day/ week / month.

DISTRICT /SUBDISTRICT INVENTORY FORM

1. District/SubDistrict Office Name :
 - Address :
 - District/SubDistrict :
 - Province :
 - Telephone & Fax Number :
2. Respondent Identity
 - Name :
 - Job Title :
3. Number of SubDistrict/ Village :
4. Human Population in the District / sub district

Category	No of persons
Adult man (≥ 18 years)	
Adult women (≥ 18 years)	
Youth (5 – 17 years)	
Children (< 5 years)	

5. Poultry Population Data

Poultry	Population (head)
Village Chicken	
Broiler	
Layer	
Duck / muscovy	
Quail	
Doves	
Pigeon	
Turkey	
Others.....	

6. Poultry Farm Population Data

Farm	Number of Farm	Population (head)
a) Village Chicken		
• Intensif		
• Semi intensif		
• Ekstensif		
b) Commercial Chicken		
• Layer		
• Broiler		
• Parents Stock		
• Grand parents Stock		
c) Duck		
• Intensif		
• Semi intensif		
• Ekstensif		
d) Quail.....		
e) Other birds		
f) Pigs		

7. How many animal health workers in your area?

Staff Services	Number of Manpower	Position/Job title
Veterinarians		
ParaVets		
.....		

8. No. of animal health post in the area?

Name	Address	No of technical staff

9. How many **public** (human) health workers in your area?

Staff Services	Number of Manpower	Position/Job title
Medical doctors		
Nurses		
.....		

10. No. of public health post in the area?

Type	Name	Address	No of technical staff
Puskesmas			
Hospital			
.....			

10. How many poultry markets in your area?.....

11. How many slaughter houses in your area?

12. General constraint of poultry farming in your area?

.....

.....

13. Animal Health Services Facility:

- Number of Vehicles :
- Number of motorbikes :
- Cold Chain
 - Refridgerator :
 - Ice boxes :
- Number of Syringe
 - Standard :
 - Disposable :
- PPE (personal protective equipment)
 - Boot :
 - Mask :
 - Gloves :
 - Glasses / goggles :
 - Hats :
 - Clothes / overalls :
- Disease Preparedness Equipment/Materials :
 - Rapid Test Kits :
 - Disinfectant :
 - Spayers..... :

VILLAGE INVENTORY FORM

1. Village Name :.....
- District/SubDistrict :.....
- Province :.....
- Telephone & Fax Number :.....
-

3. Name of Village Leader :.....

4. Human Population

Category	No of persons
Adult man (≥ 18 years)	
Adult women (≥ 18 years)	
Youth (5 – 17 years)	
Children (< 5 years)	

5. No. of Households :.....

6. Poultry Population Data

Poultry	Population (head)
Village Chicken	
Broiler	
Layer	
Duck/muscovy	
Quail	
Doves	
Pigeon	
Turkey	
Others.....	
Pigs	

7. Are poultry farmer formed in groups?

- Yes
- No

If yes, how many groups are available?.....

8. Does the village receive animal health services?

Staff Services	Number of Workers	etc
Veterinarians		
Paravets		
Extension workers		
.....		

9. Which is the nearest animal health (AH) post in your area?

.....

10. How many **public** (human) health workers in your area?

Staff Services	Number of Manpower	Position/Job title
Medical doctors		
Nurses		
.....		

11. Which is the nearest public health (AH) post in your area?.....

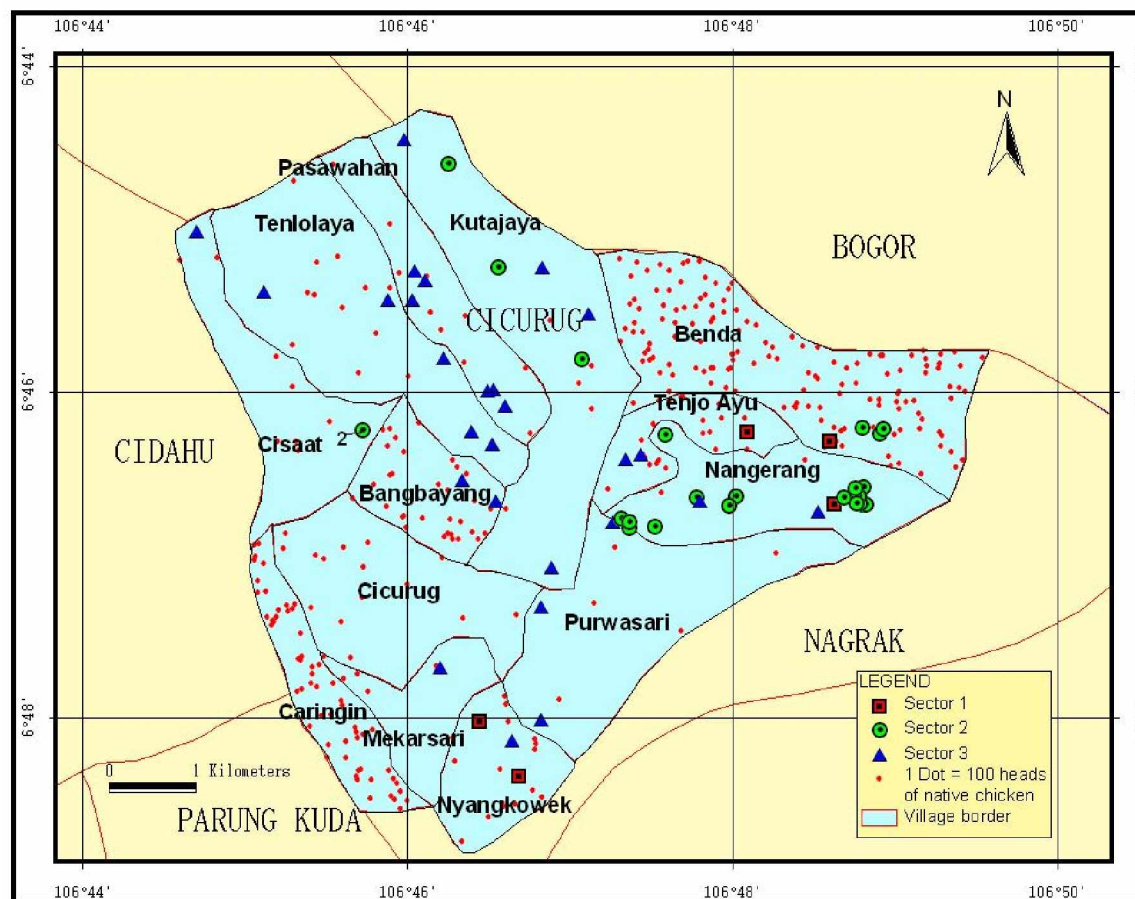
12. How many suspect human cases of avian influenza A/H5N1 (e.g. with symptoms of influenza-like illness) occurred since Sept. 2003 (?):

13. How many of these suspect cases were tested in a lab:.....

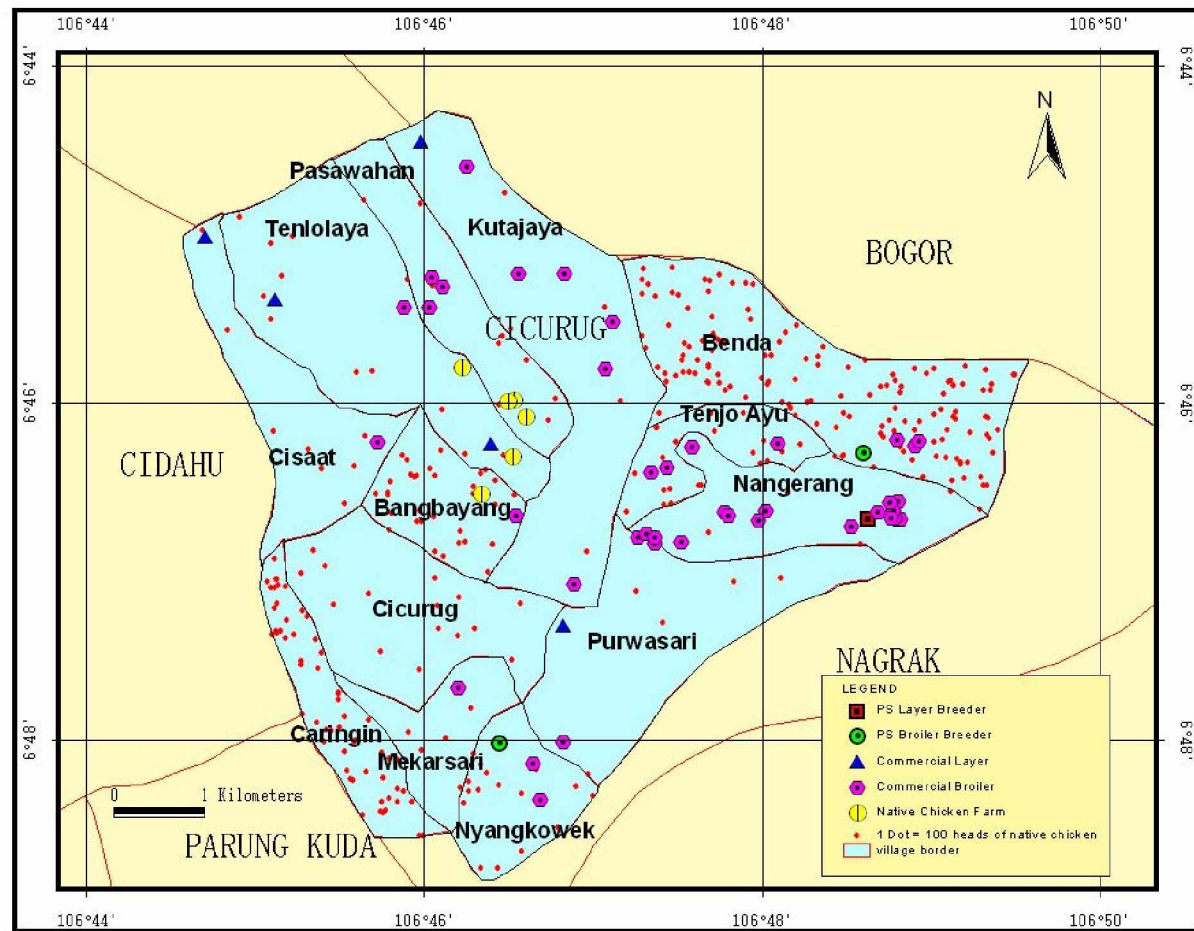
- Which lab:
- How many of these tested, were positive for AI H5N1:

Annex B. Map of Poultry Farms Distribution in Cicurug Subdistrict

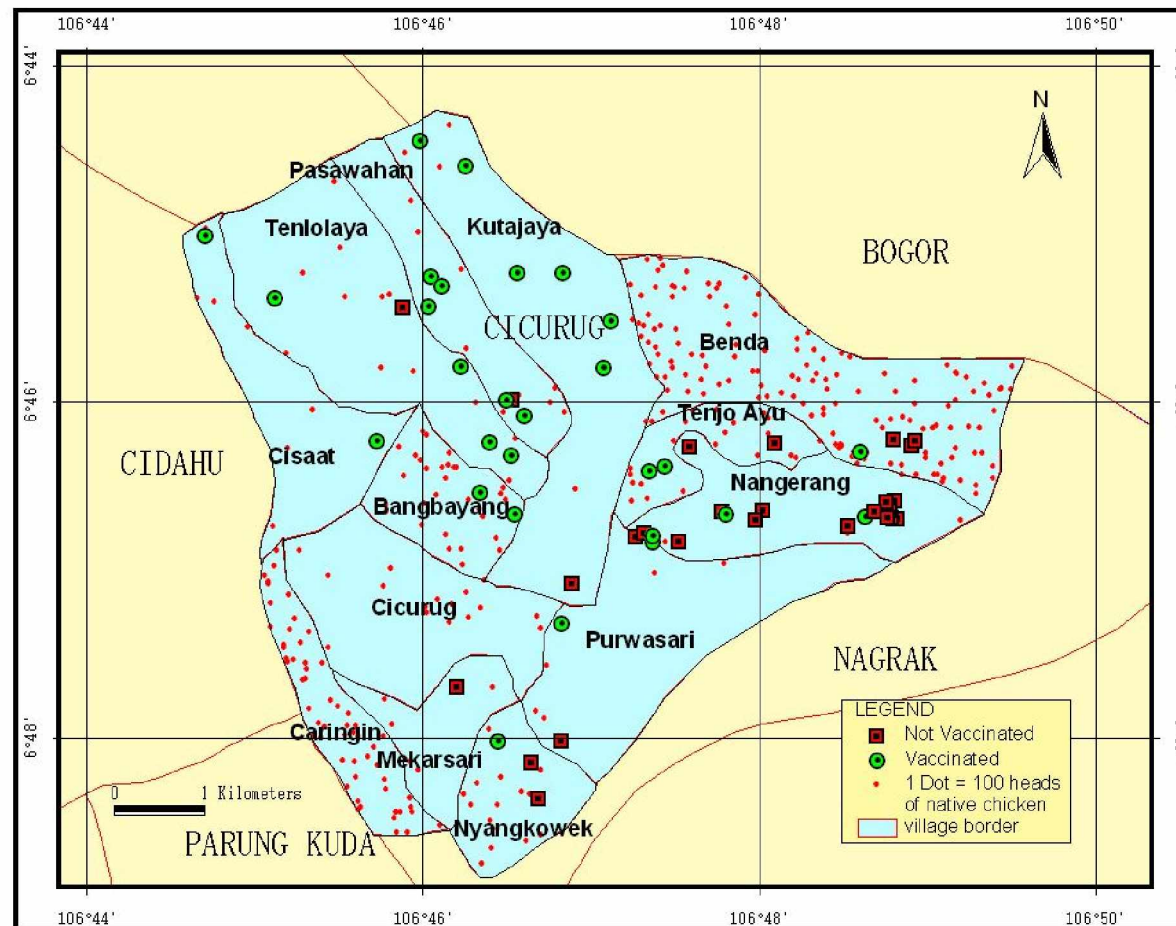
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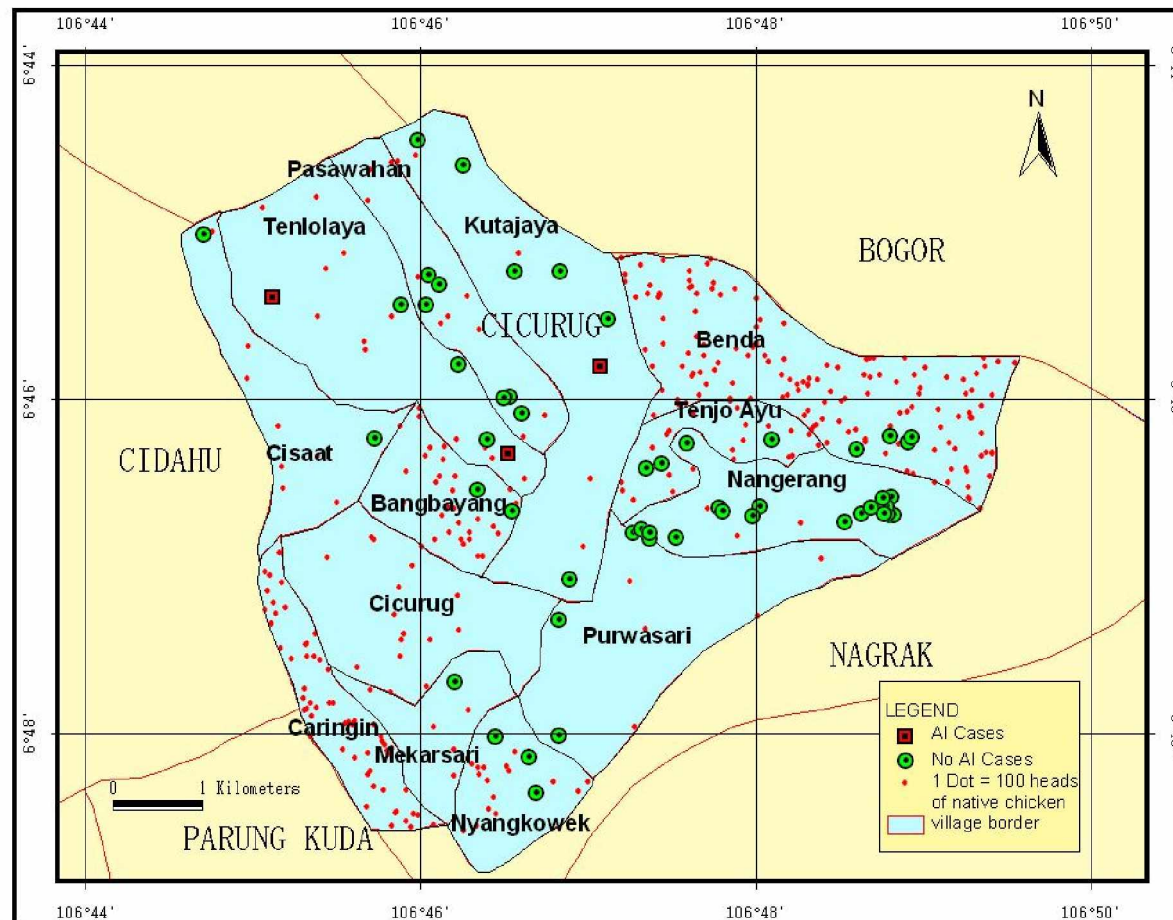
Distribution of Poultry Farms in Cicurug Sub-district by Poultry Sector



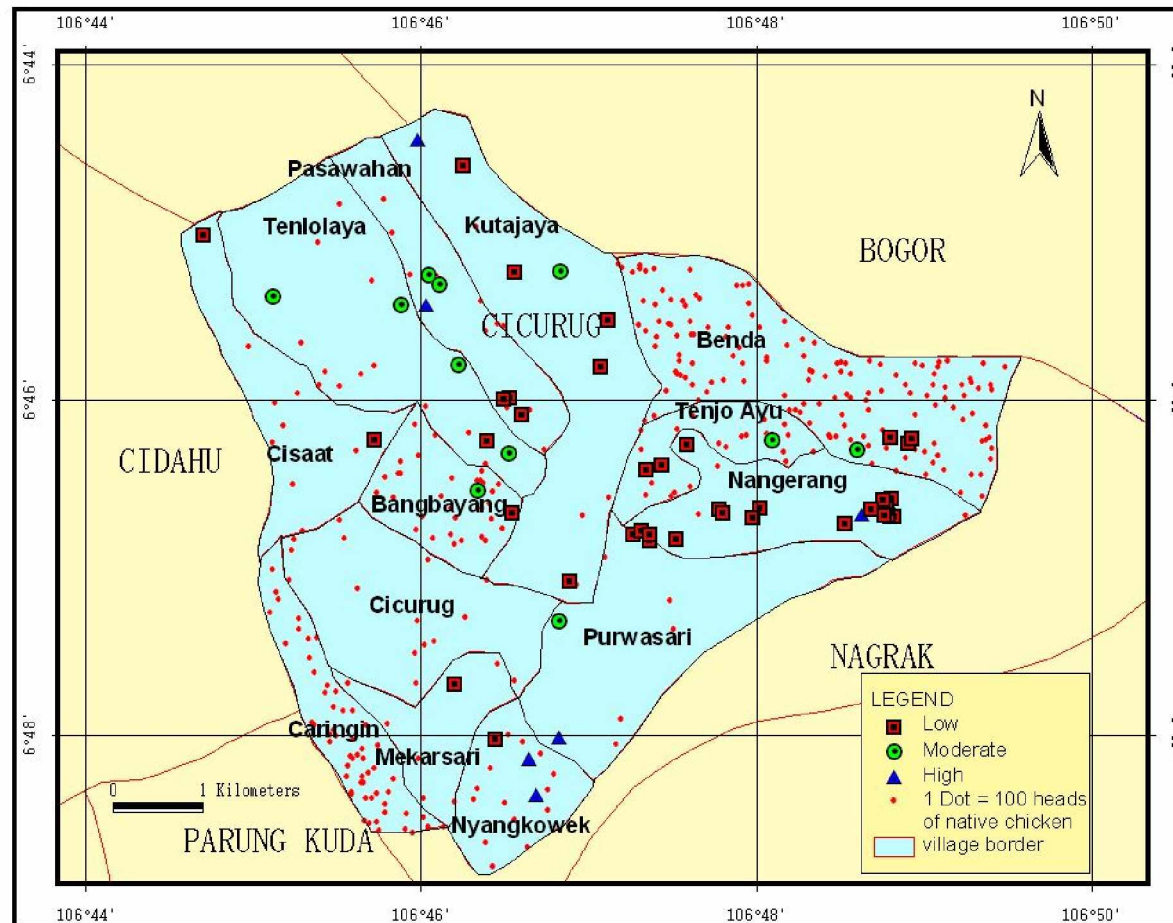
Distribution of Poultry Farms in Cicurug Sub-district by Farm Type



Distribution of Poultry Farms in Cicurug Sub-district by AI Vaccination



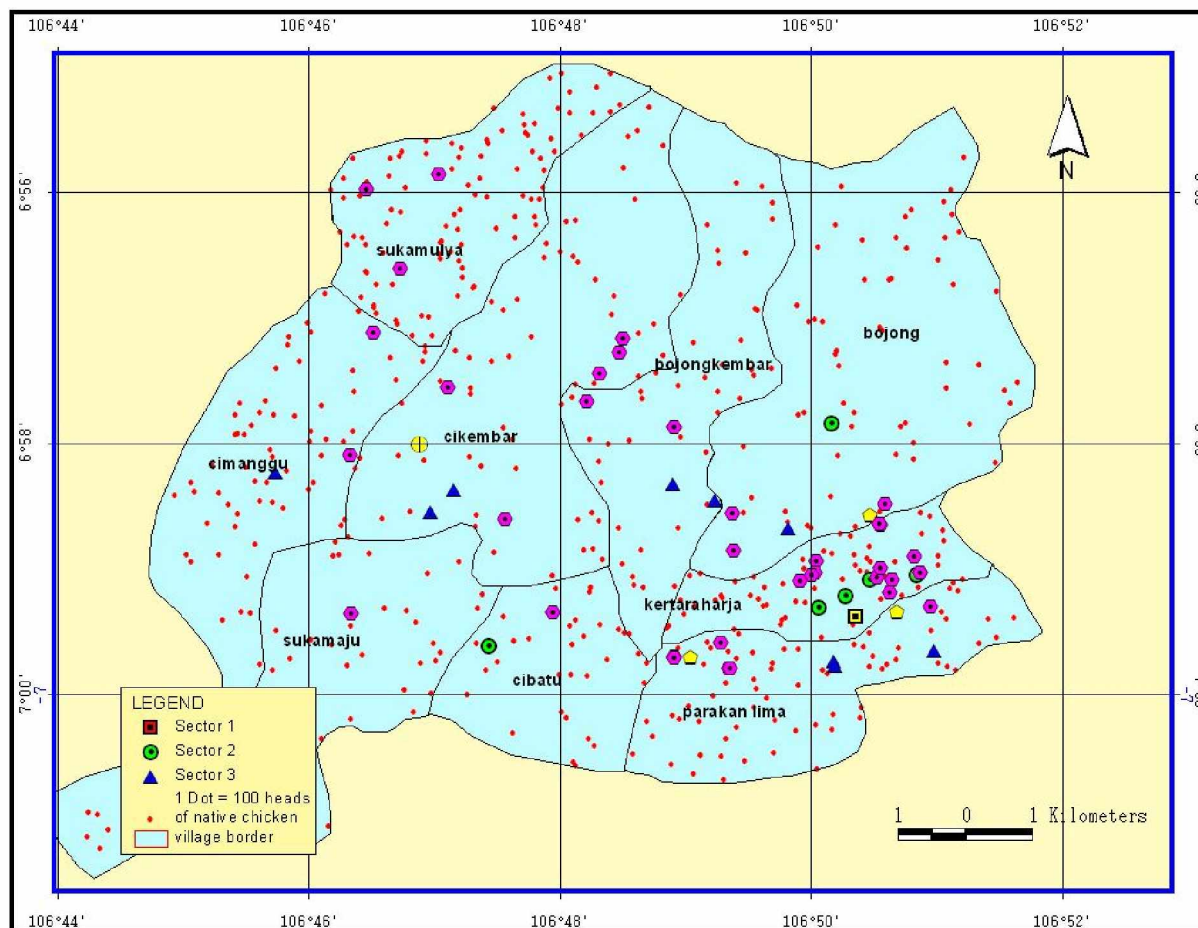
Distribution of Poultry Farms in Cicurug Sub-district by AI Case



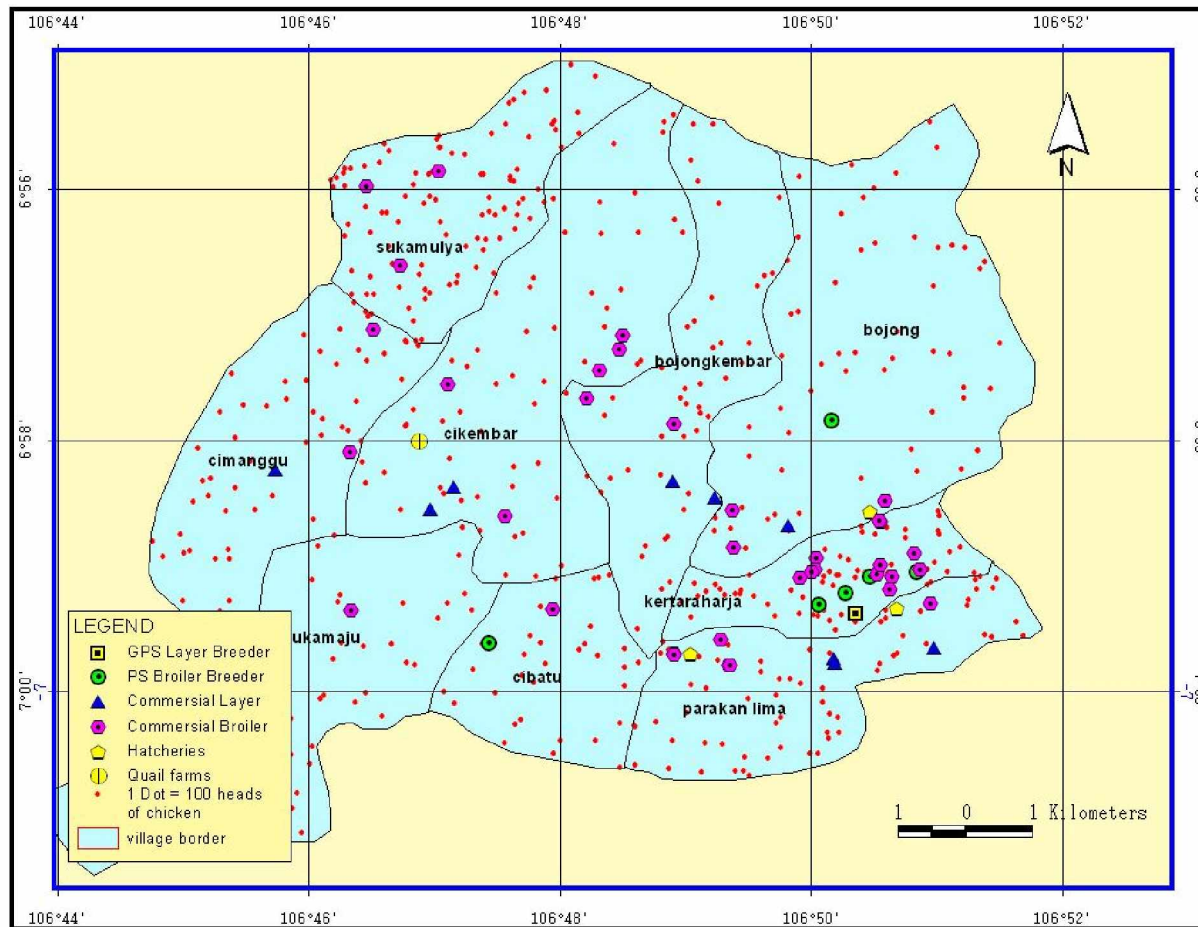
Distribution of Poultry Farms in Cicurug Sub-district by Biosecurity

Annex C. Map of Poultry Farms Distribution in Cikembar Subdistrict

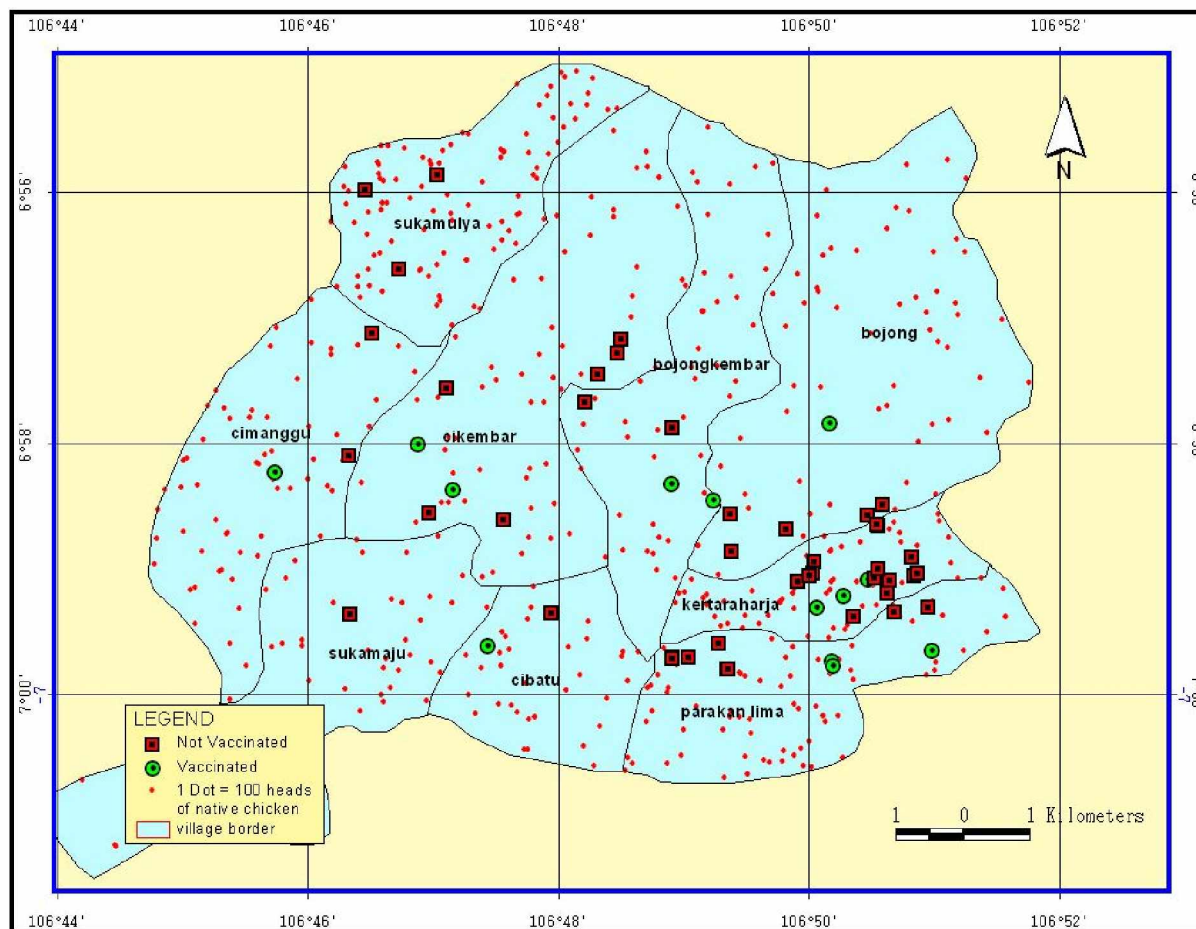
59



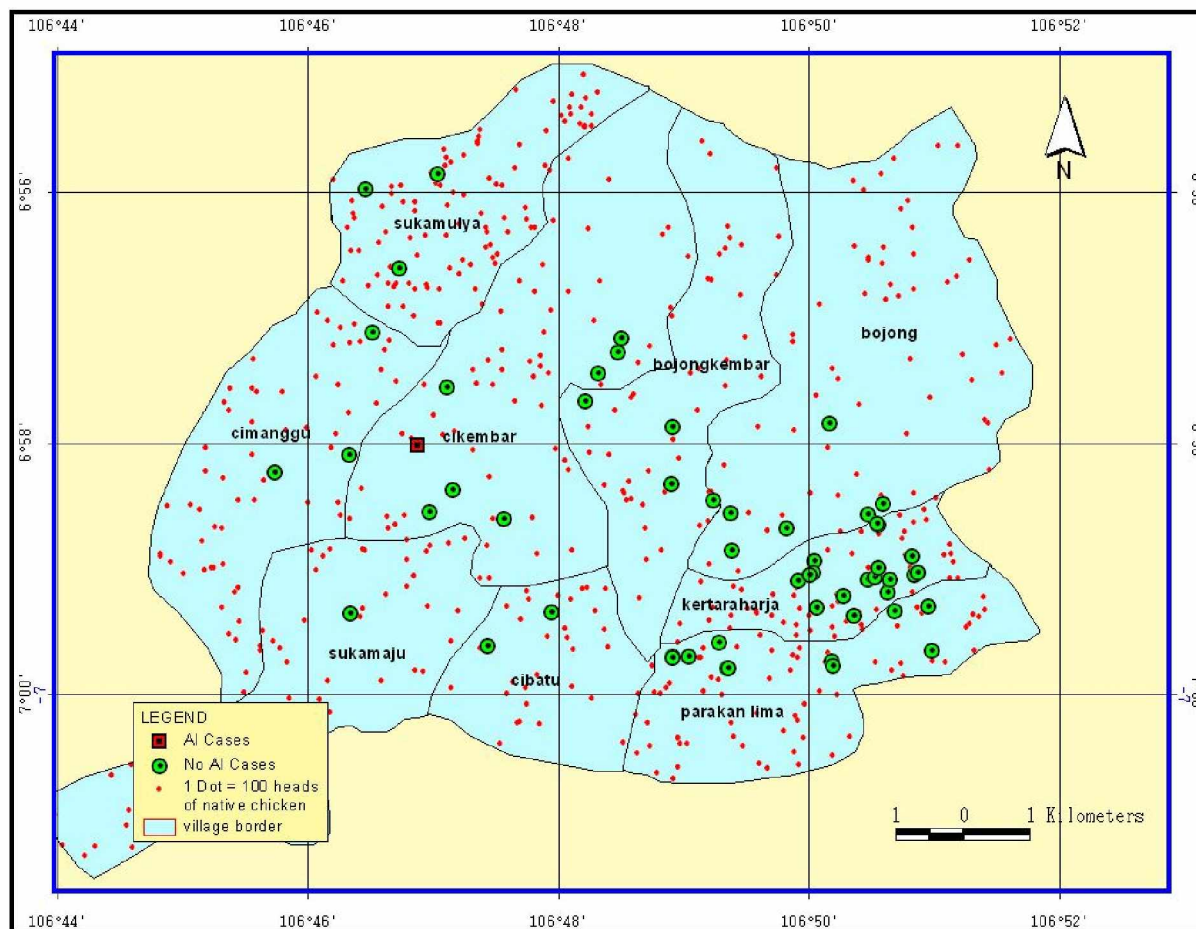
Distribution of Poultry Farms in Cikembar Sub-district by Poultry Sector



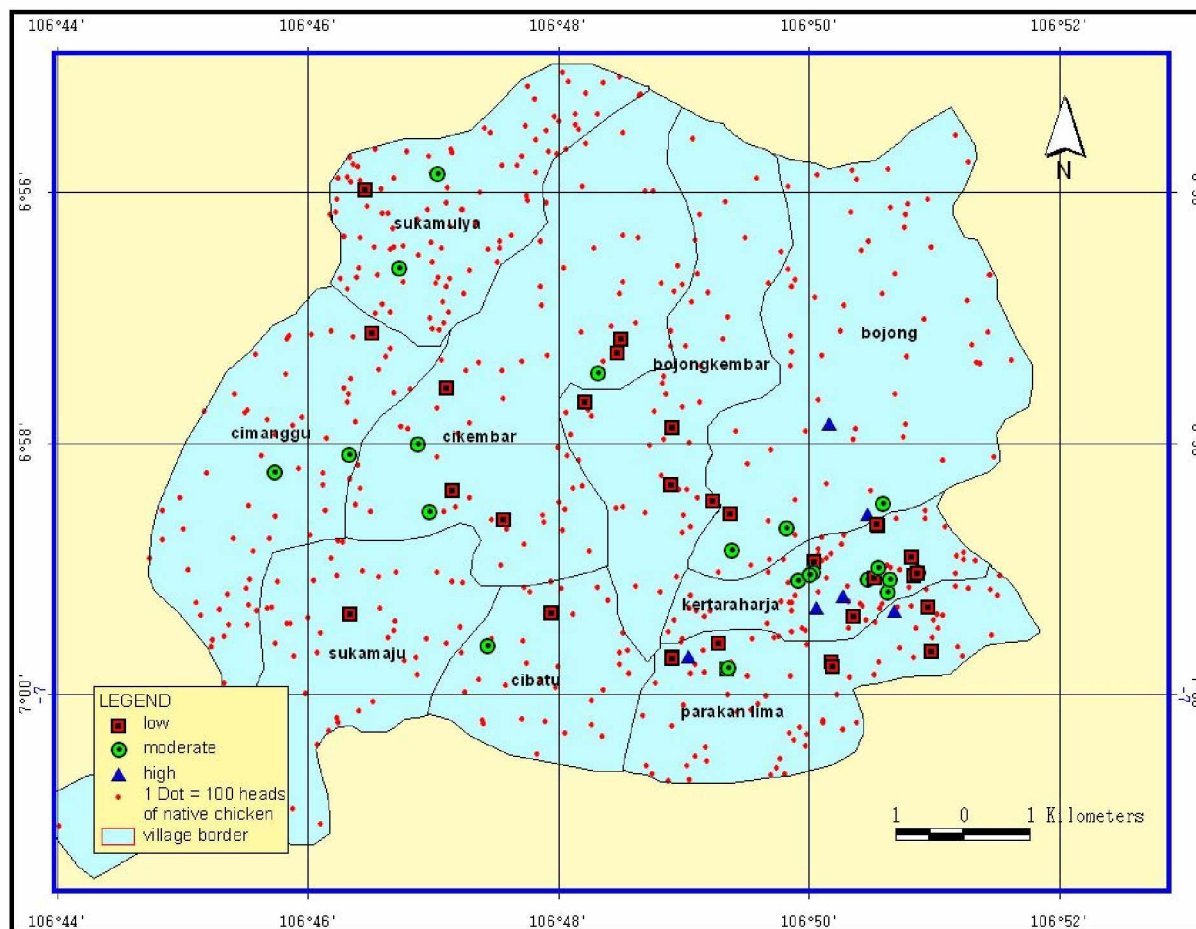
Distribution of Poultry Farms in Cikembar Sub-district by Farm Type



Distribution of Poultry Farms in Cikembar Sub-district by AI Vaccination



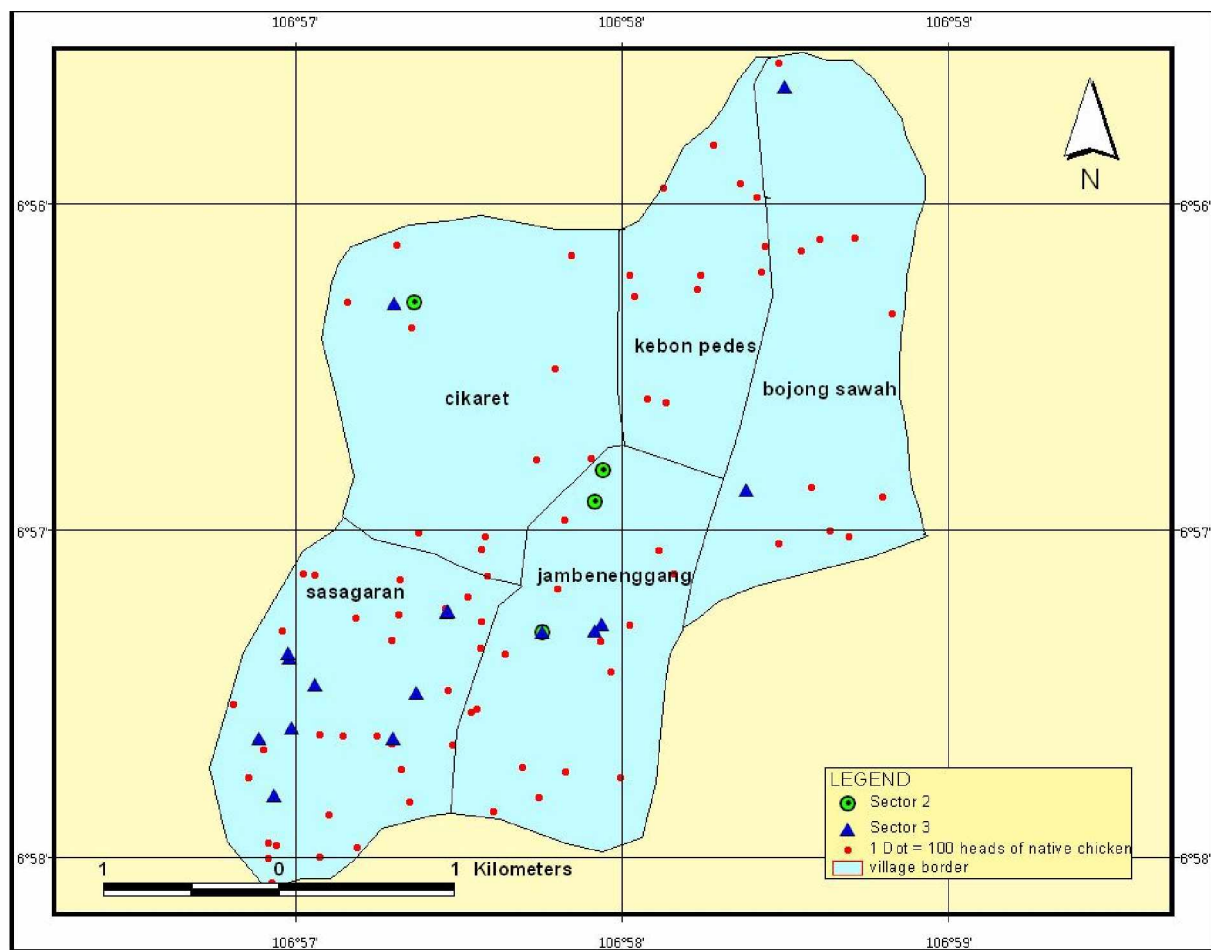
Distribution of Poultry Farms in Cikembar Sub-district by AI Case



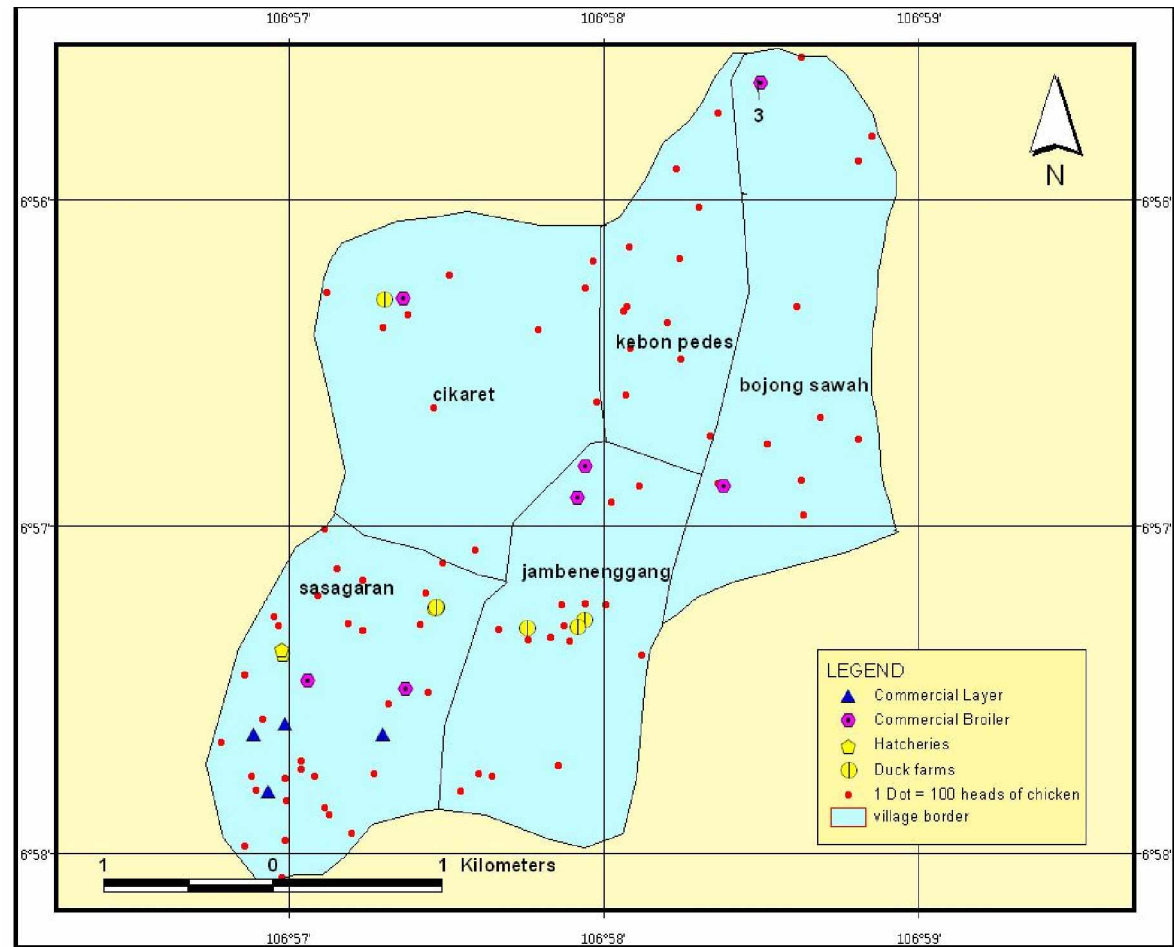
Distribution of Poultry Farms in Cikembar Sub-district by Biosecurity

Annex D. Map of Poultry Farms Distribution in Kebon Pedes Subdistrict

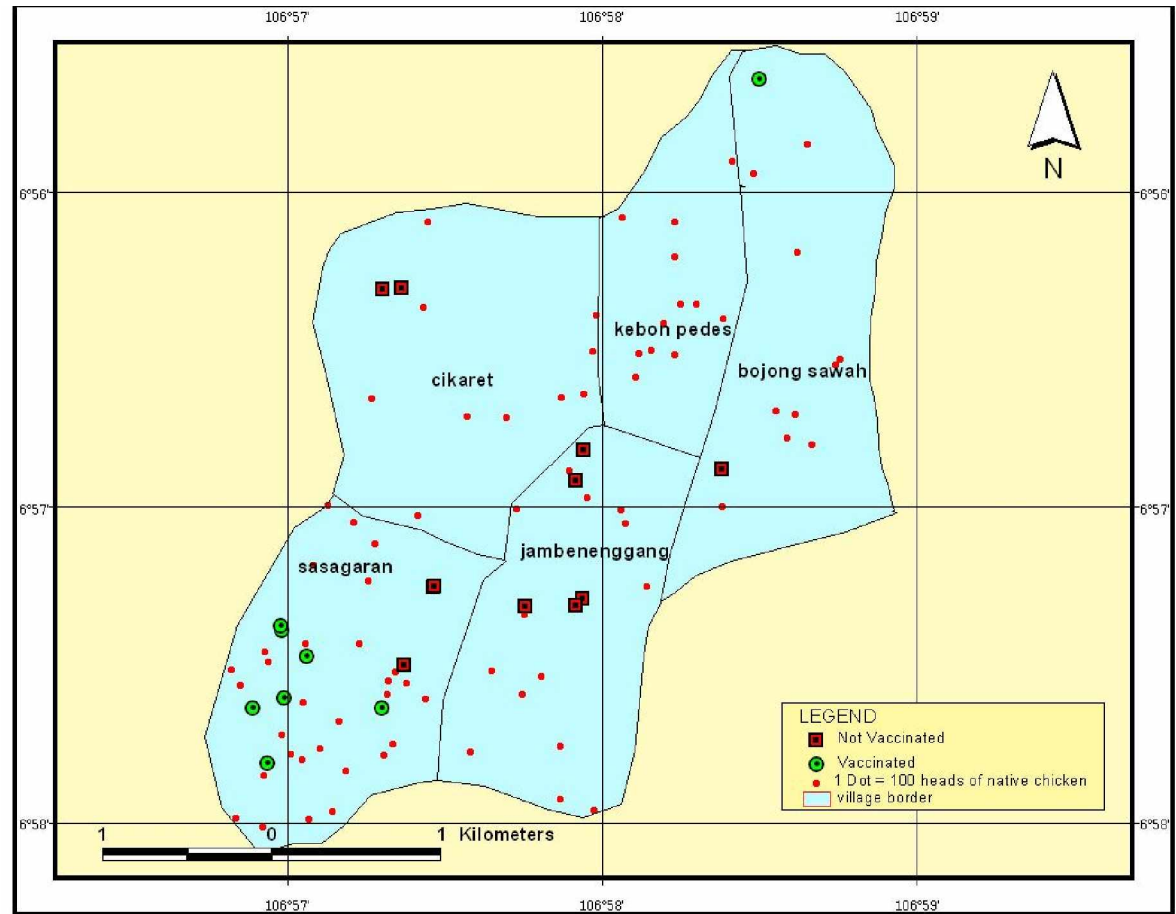
64



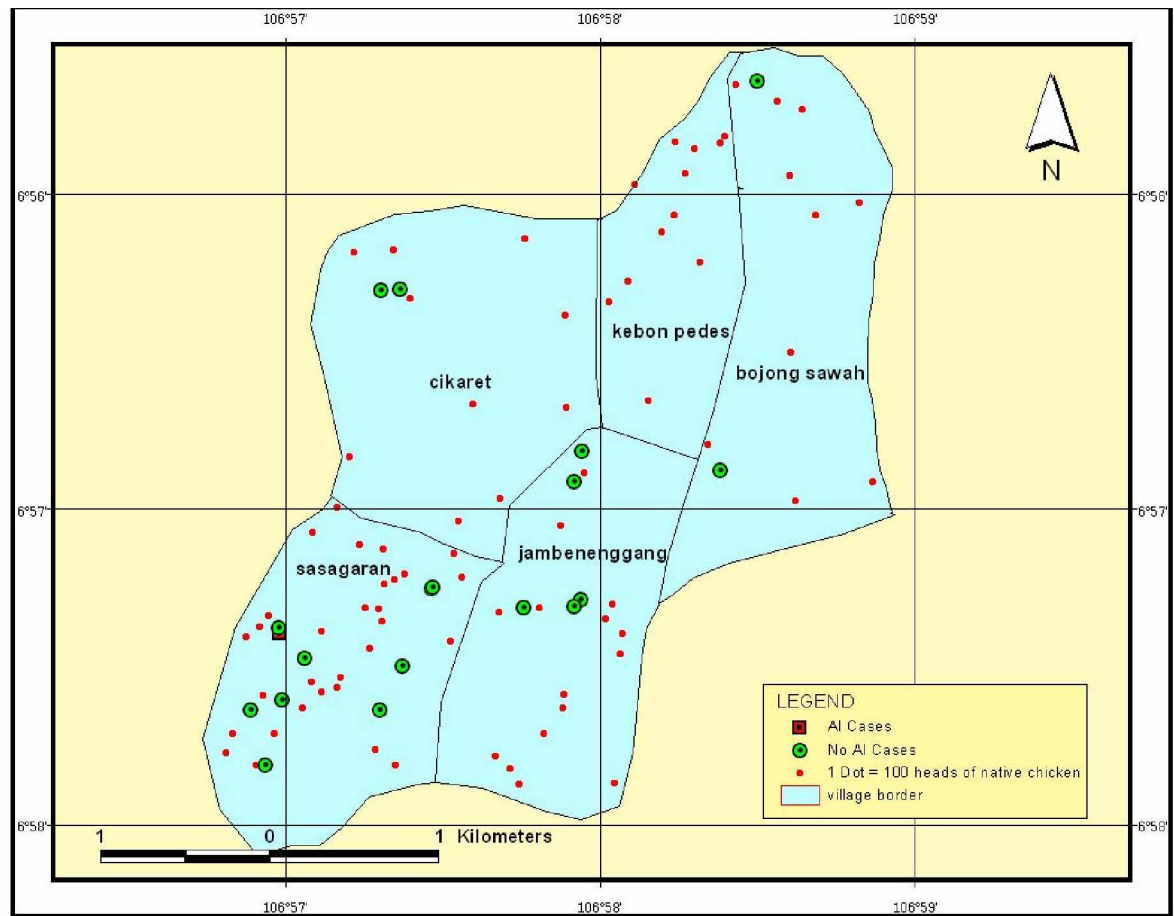
Distribution of Poultry Farms in Kebon Pedes Sub-district by Poultry Sector



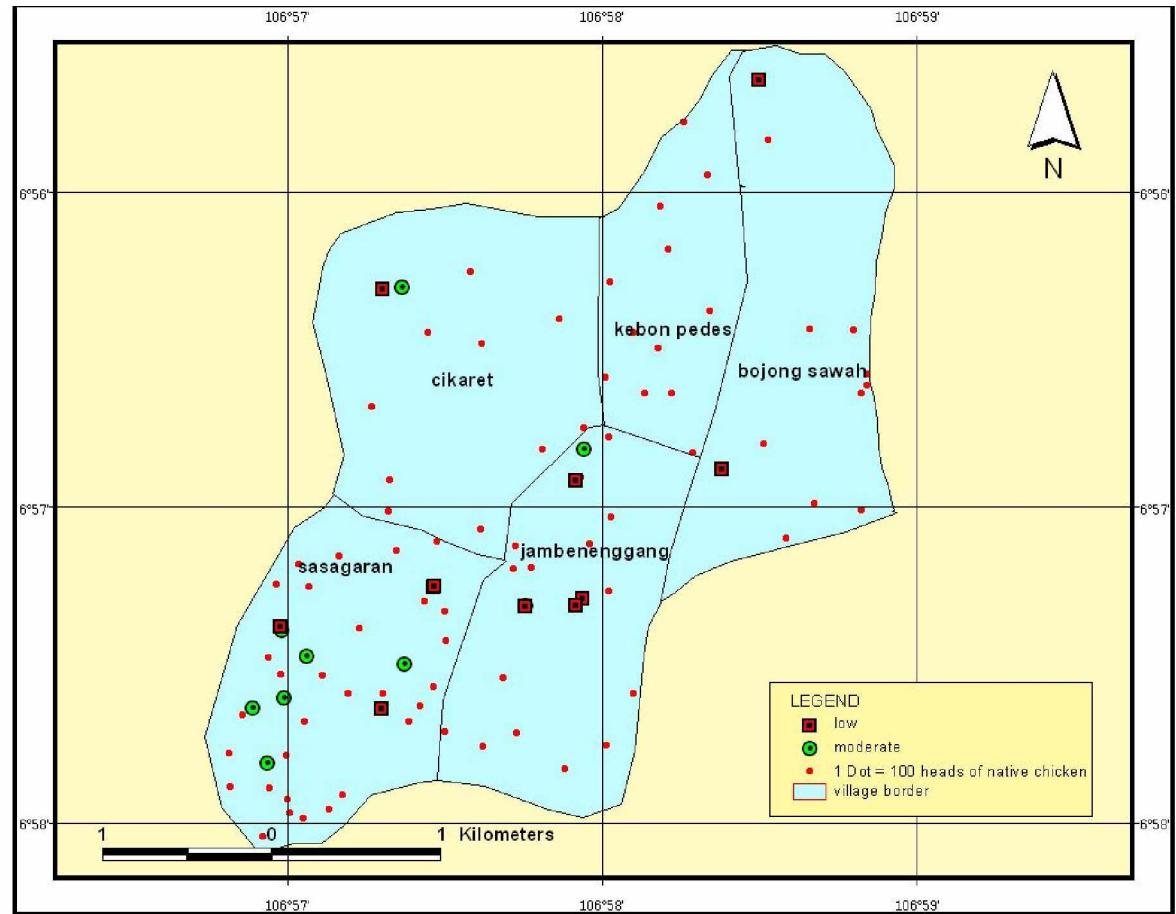
Distribution of Poultry Farms in Kebon Pedes Sub-district by Farm Type



Distribution of Poultry Farms in Kebon Pedes Sub-district by AI Vaccination



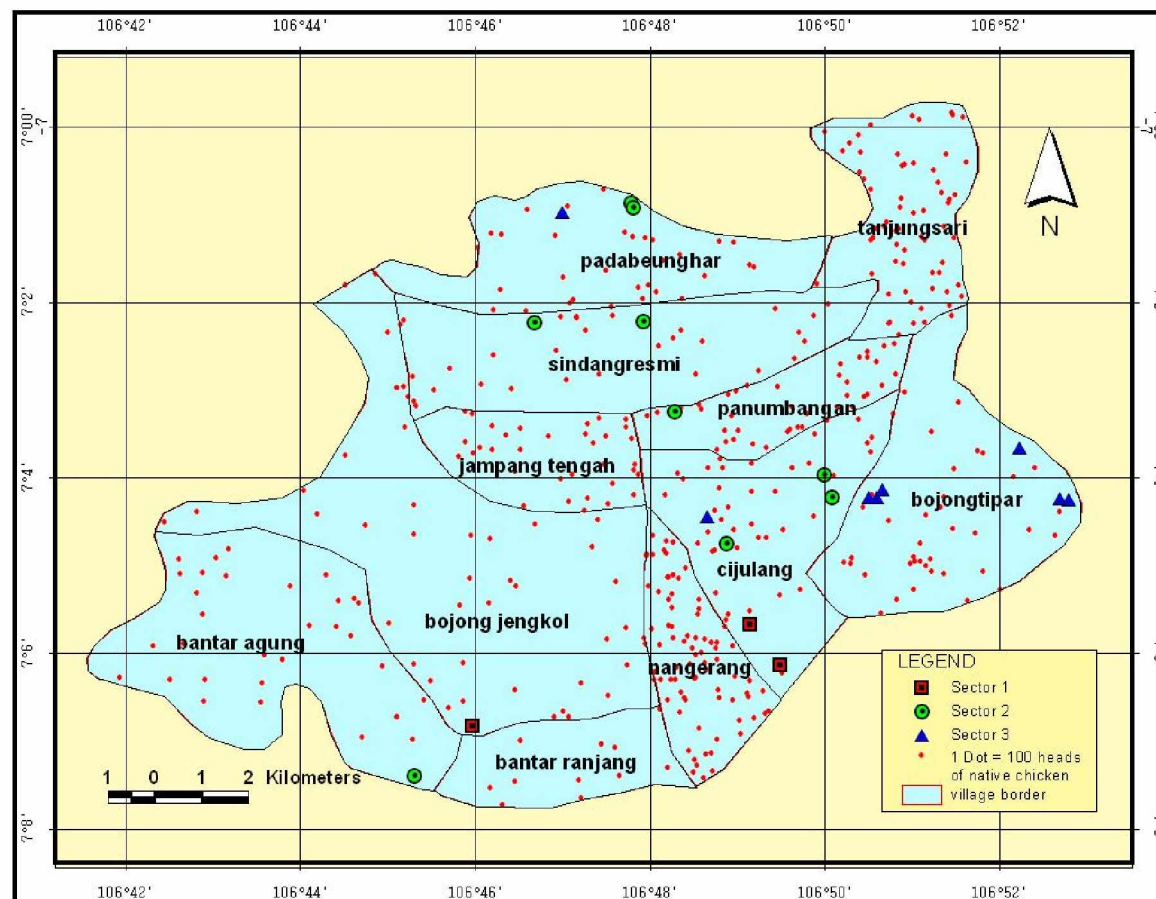
Distribution of Poultry Farms in Kebon Pedes Sub-district by AI Case



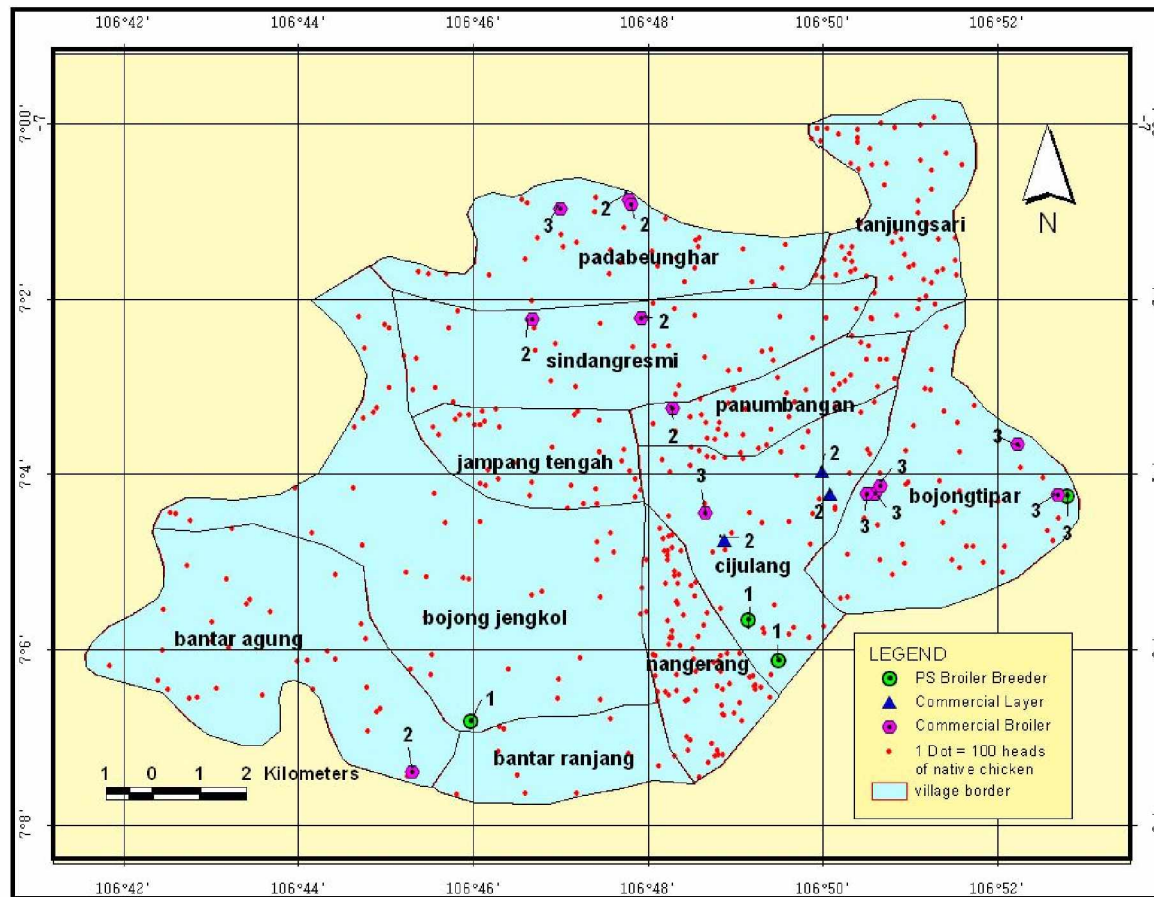
Distribution of Poultry Farms in KebonPedes Sub-district by Biosecurity

Annex E. Map of Poultry Farms Distribution in Jampang Tengah Subdistrict

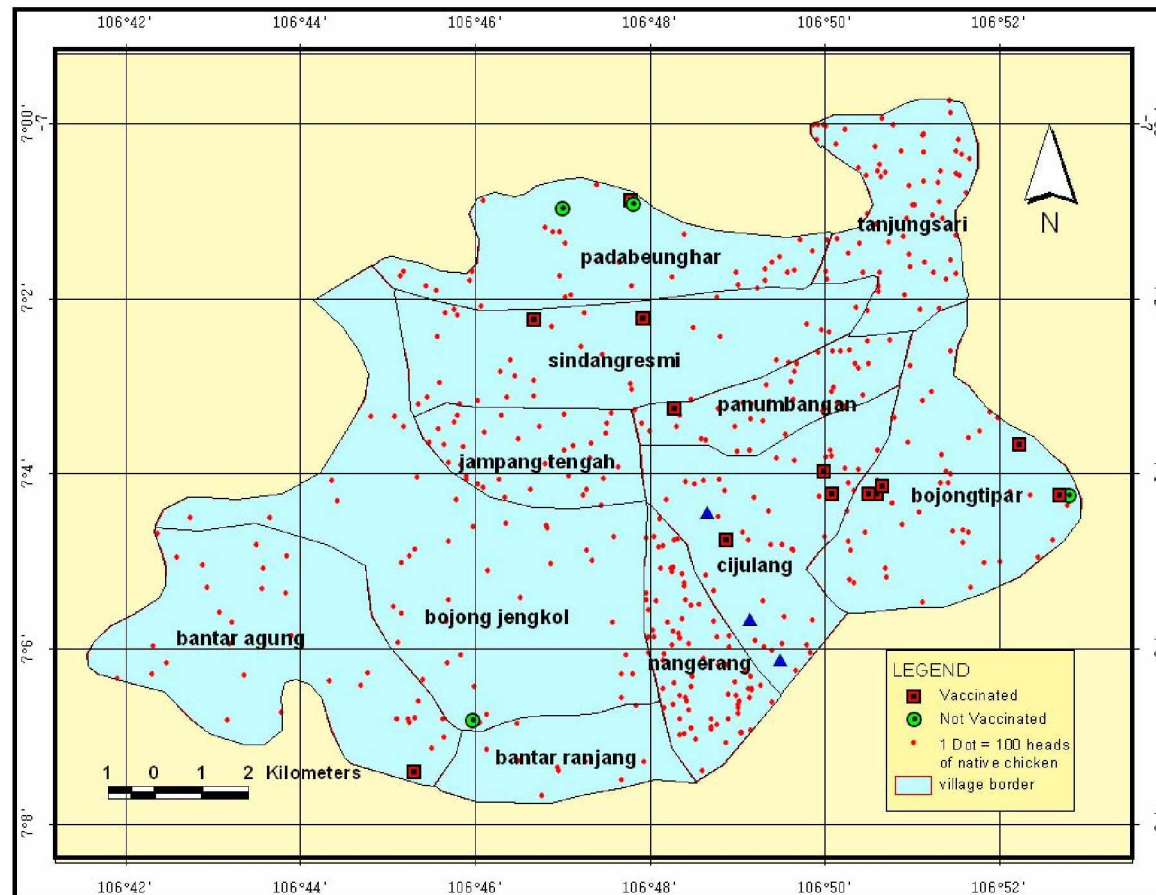
69



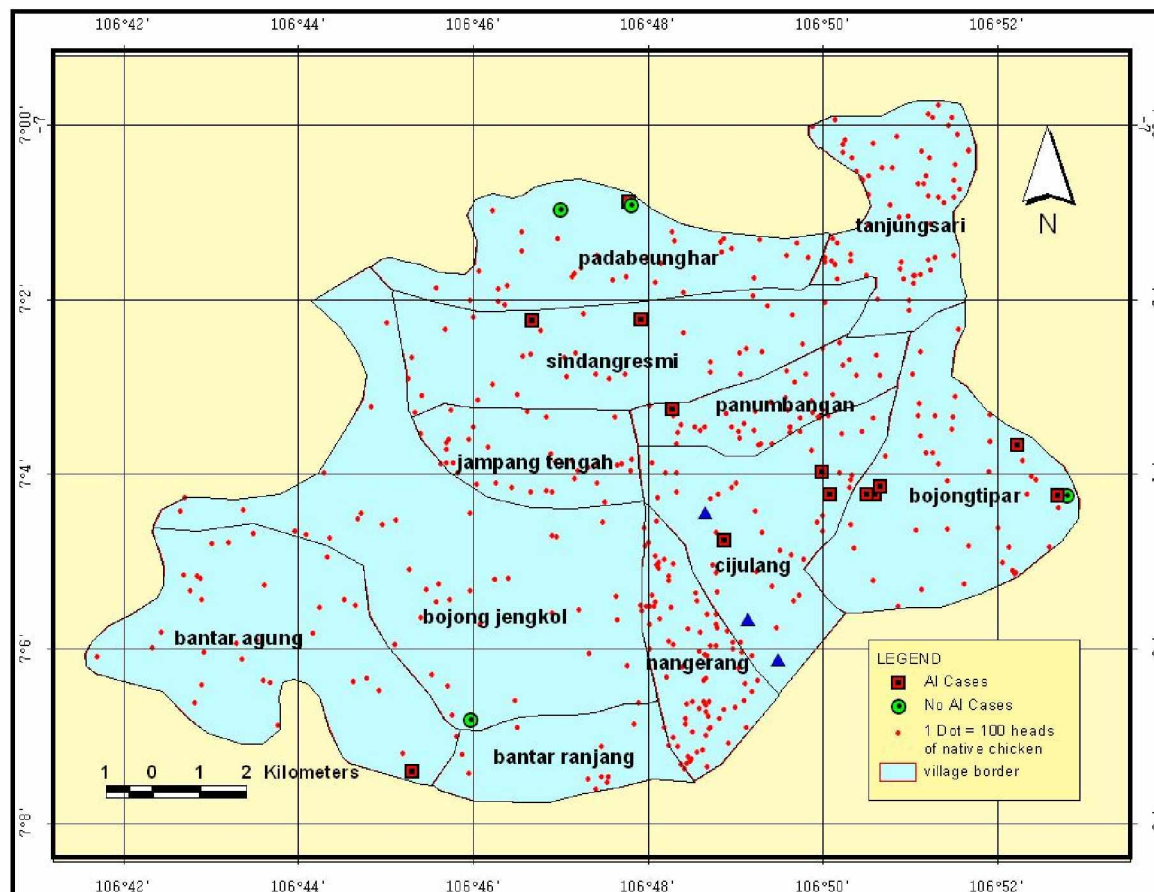
Distribution of Poultry Farms in Jampang Tengah Sub-district by Poultry Sector



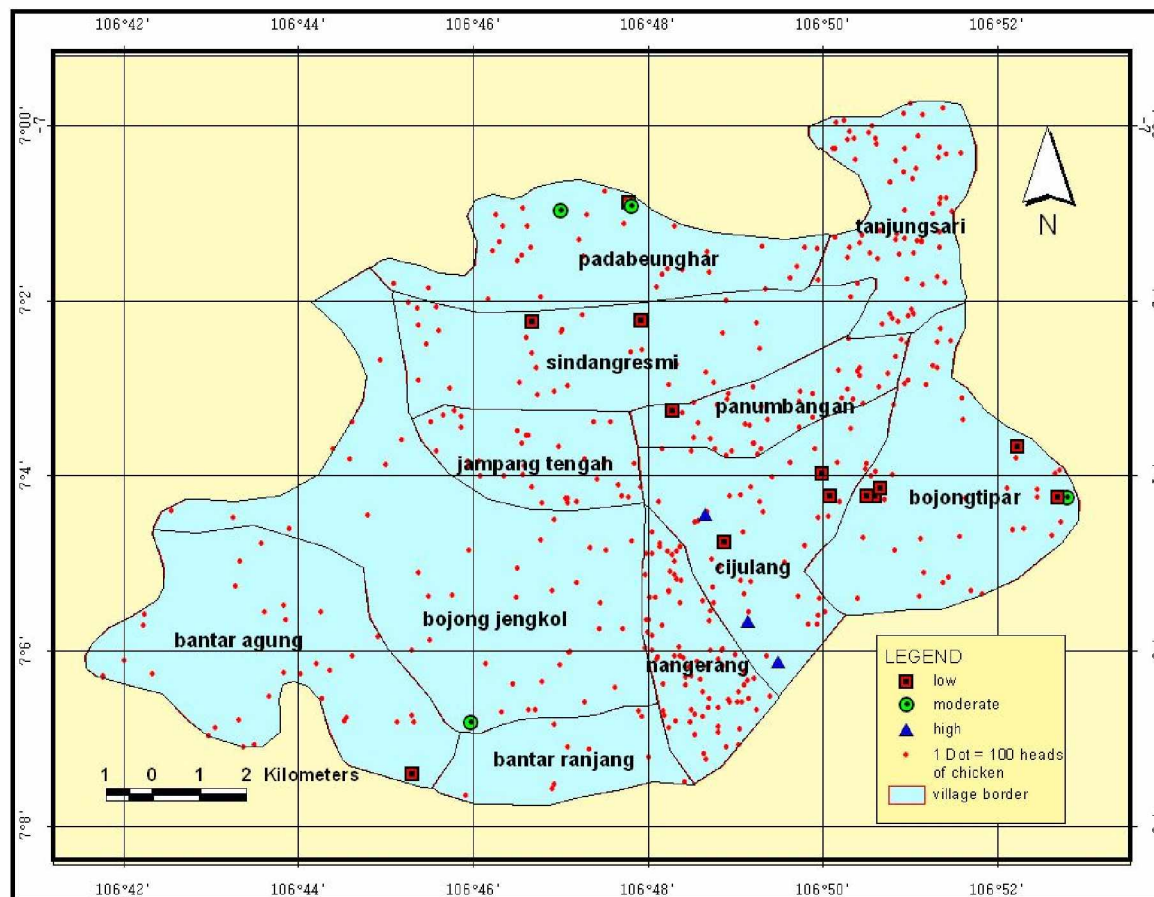
Distribution of Poultry Farms in Jampang Tengah Sub-district by Farm Type



Distribution of Poultry Farms in Jampang Tengah Sub-district by AI Vaccination



Distribution of Poultry Farms in Jampang Tengah Sub-district by AI Case



Distribution of Poultry Farms in Jampang Tengah Sub-district by Biosecurity

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