Food and Agriculture Organization of the United Nations

Avian Influenza Control Programme in Indonesia

Annual Report

Activities in support of the Ministry of Agriculture of the Republic of Indonesia


Photo: Rony Zakaria

Foreword

Poultry production and the raising of hobby birds are an integral part of Indonesian society. In cities and villages throughout the archipelago communities raise backyard poultry for both profit and pleasure. The poultry industry is one of the key areas of Indonesia's agriculture and supports a large domestic market in poultry and poultry products.

Highly pathogenic avian influenza (HPAI) remains a major threat to poultry and communities in Indonesia. Since it was first detected in poultry in 2003, millions of poultry have died due to HPAI or been depopulated during control activities. In addition, the livelihoods of people dependent on the poultry industry have been disrupted. To the end of 2008, AI had infected poultry in 31 out of 33 provinces.

The Indonesian Ministry of Agriculture has been in the front line of the response to HPAI and the Food and Agriculture Organization of the United Nations (FAO) has worked alongside the Ministry since 2005. The activities undertaken this year have laid a firm foundation for establishing a comprehensive HPAI prevention and control programme. Improving biosecurity and husbandry and trading practices will contribute to an overall improvement to poultry health and production. This will directly contribute to improved food security, food safety and welfare of the Indonesian people.

This 2008 Annual Report for the FAO Avian Influenza Control Programme in Indonesia provides an overview of the FAO activities, carried out in collaboration with and in support of local governments and Ministry of Agriculture (MoA). Achievements in the four key areas of campaign management, local government surveillance and control activities, local government Information, Education and Communication (IEC) and prevention activities, and research and development are presented.

The activities and achievements described in this report were funded by many donors and their contribution and commitment is gratefully acknowledged.

Contents

Supporting campaign management

Review and revision of National Strategic Work Plan

The National Strategic Work Plan for the Progressive Control of Highly Pathogenic Avian Influenza in Animals (2006 - 2008) was developed in late 2005 by the Directorate General of Livestock Services (DGLS)/Directorate of Animal Health (DAH) to help put in place an emergency structure and a systematic programme which could start to address the avian influenza epizootic. In preparation for the implementation of a second three-year plan to start from January 2009, and in light of the considerable insights into the epidemiological situation accrued over the last few years, the strategy and work plans for the HPAI control programme were reviewed by DGLS and FAO in May 2008. The prime objectives of the second three year strategic plan are: to exert progressive control over HPAI throughout Indonesia and to reduce significantly the incidence of human infection within two years through intensified regional programmes integrated with the national programme.

Photo: Danu Primanto

Directorate of Animal Health - Campaign Management Unit Work Plan 2008-2009

FAO provided technical support to DAH and Campaign Management Unit (CMU) to develop a comprehensive DGLS one-year operational work plan to begin implementation of the second phase of the Ministry of Agriculture National Strategic Plan for Progressive Control of HPAI. The plan divides the country into prioritized geographic regions and assigns specific goals and objectives to each region, thereby allocating and prioritizing resources for more effective implementation of the National Strategic Plan. The focus of the control strategy at this time is intensifying control activities in western Java (Banten, DKI Jakarta, and West Java). Western Java was selected for intensification due to the higher rate of human and poultry H5N1 cases in a region which has the highest human and poultry density in Indonesia. The draft work plan served as a guide for further project planning while the formal approval of the work plan was in progress.

Photo: FAO/Indonesia/Almond

Western Java intensification workshop

A workshop on western Java intensification was held in December 2008. The workshop was attended by the heads of the provincial and district livestock services, regional government secretaries, national and international partner organizations, Ministry of Health, Ministry of Home Affairs, office of market management, and other decision makers in western Java. The objectives of the workshop were to brief local governments on the National Strategic Plan for Progressive Control of HPAI, Phase II, the DGLS one-year work plan, and the most recent data on HPAI in Indonesia, and gain support for and comments on many of the key activities in the intensification campaign. Five working groups were formed: 1) Tangerang market interventions, 2) JABODETABEK market surveillance, collector yard interventions, and DKI Jakarta market restructuring, 3) vaccination and targeted studies, 4) village surveillance, prevention, and control; and 5) partnership with commercial industry. As output of the workshop, each working group presented their workplans for intensification and all local governments agreed to support intensification activities. Agreement was also reached on establishment of a Western Java Intensification Group comprising local government representatives of the three provinces, to directly coordinate the intensification campaign.

Photo: WHO

Photo: FAO/Indonesia/Brum

National Communication Strategy of the Ministry of Agriculture for the Prevention and Control of Highly Pathogenic Avian Influenza in Indonesia 2009 -2011

The draft strategy was developed in close collaboration with the CMU, and with inputs from DAH, international agencies, non-governmental organizations (NGOs), donor agencies, Quarantine, and staff from the provincial Livestock Services, Local Disease Control Centres (LDCC), and Participatory Disease Surveillance and Response (PDSR) officers. Two preliminary meetings with CMU and DAH were held to identify and prioritise audiences and behaviours. Subsequently a three day strategic communication workshop was conducted with participants from FAO, CMU, DAH, staff from provincial Livestock Services, LDCCs and PDSR officers, staff from Ministry of Health and Ministry of Communication and Informatics, international agencies, NGOs, donor agencies, and Quarantine. The purpose of the workshop was to develop a common understanding of the key risk behaviours in the transmission and spread of the virus as well as to develop an outline of the communication strategy for the MoA. The strategy includes discussion of knowledge gaps among audience groups; an illustrative list of communication packages; effective communication methodologies; and monitoring methodologies.

Sustainability of PDSR

Photo: FAO/Indonesia/Aditjondro

A Sustainability Expert with expertise in MoA budgetary mechanisms worked to further explore means of increasing government financial investment in animal disease control and HPAI control. In addition, the Provincial and LDCC National Meeting in July provided an opportunity to discuss cost-sharing and collaborative planning with provincial governments. Significant outcomes of this meeting were:

- Agreement between provincial government and central government for joint planning and cost-sharing between central and provincial government for the PDSR-LDCC system;
- Identification and strong support for the use of the Specific Allocation Budget (*Dana Alokasi Khusus)* budgetary mechanism as a means for central government to provide support to district governments for PDSR and other HPAI control activities;
- Increased advocacy by provincial leaders to provincial governors for additional budget allocations for HPAI control in animals.

Training in Geographic Information Systems

Four training courses in mapping using ArcGIS® Software were held in Medan, Bali, Yogyakarta and Maros for DIC, RMU and LDCC staff. The FAO Geographic Information System (GIS) specialist designed and conducted the training which included modules in Global Positioning System (GPS) Basic Theory, Introduction to GPS Setting, Inputting Data into GPS Devices, Transferring Data from the GPS Receiver into the Computer, GPS Troubleshooting, Basic Theory of Remote Sensing and GIS, Introduction to GIS Software (ArcGIS® 9.2), Basic Theory of Survey and Mapping, Making a Map Layout, Exporting the Result of Map Layout into Other Formats.

Photo: FAO/Indonesia/Ridwan

Review of legislation on the control of epidemic diseases of livestock

The adequacy of legislation providing the framework for effective detection, confirmation, containment and elimination of animal diseases was assessed by a consultant in Veterinary Legislation. Three legal documents that form the regulatory basis for the animal health activities of the veterinary services in Indonesia were assessed: the draft Law on Animal Husbandry and Animal Health 2008; the Director General Regulation 21055/Kpts/KU.510/F/04/2008

on Compensation Fund Payment and Operational Cost of Depopulation of Poultry Affected by Avian Influenza; and the Government Regulation No. 82 of 2000 on Animal Quarantine. A number of key constraints were identified and recommendations for improvements made.

Engagement with commercial industry

A biosecurity, cleaning, disinfection and composting Training of Trainers (TOT) programme for the Indonesian commercial poultry industry was initiated. Two training workshops were held in December for veterinarians, animal husbandry officers and commercial poultry producers from both the commercial broiler and egg industries. The three day workshops provided participants with information and tools for the introduction and/or improvement of biosecurity on poultry farms, and the implementation of cleaning and disinfection programmes and safe disposal of dead birds and manure by composting. The immediate objective of the workshops was to train a group of 20 master trainers in each commercial company. The master trainers are responsible for the development of biosecurity and disinfection plans for the company's farms and will also train other people as trainers capable of training smaller poultry farmers, the company's customers. The workshops will continue in 2009.

Photo: FAO/Indonesia/Almond

A draft Strategy to Control HPAI in Commercial Poultry Enterprises in South Sulawesi

This strategy was developed following a workshop in July to define the priority areas for the South Sulawesi HPAI strategy. The workshop was attended by representatives from provincial and district Livestock Services departments, Quarantine, RMU, CMU and commercial poultry producers. A working group of government stakeholders was established to progress the strategy, which was achieved in two follow up meetings. A further meeting was held to solicit the input of the commercial industry.

The commercial strategy comprises three broad technical components and one management component. The components include: 1) commercial industry biosecurity and risk reduction, 2) movement management, 3) surveillance and monitoring and 4) project management. The basic assumption that underlies the project is that interventions must be designed to provide direct economic benefits for the industry to ensure their participation. This will be achieved by focusing efforts to assist the industry develop a certification system to provide confidence for customers that their product is safe and healthy. For this outcome to become a reality, the industry will need to make fundamental changes to improve their biosecurity and reduce the risk of HPAI (and other zoonoses) in their enterprises and hence in the market chain.

Photo: FAO/Indonesia/Almond

At a national level, closer working ties and cooperative ventures were established with the commercial poultry industry in Indonesia. In addition to the two initiatives outlined above, other activities in which the commercial poultry industry participated during 2008 were the collection of samples for virus typing, bioinformatics training, and the drafting and implementation of industry compartmentalization plans. Profiling of commercial poultry production has been done in high priority control areas within western Java to better understand the industry.

Photo: FAO/Indonesia/Almond

Supporting local government surveillance and control activities

Photo: FAO/Indonesia/Aditjondro

Photo: FAO/Indonesia/Aditjondro

Photo: FAO/Indonesia/Watkins

Participatory Disease Surveillance and Response in Indonesia: strengthening veterinary services and empowering communities

The aim of PDSR is to control and prevent the occurrence of HPAI in village-based poultry populations (that is, in both household and small scale commercial poultry flocks located within villages). Using participatory approaches, such as those commonly employed in participatory rural appraisal, PDSR contributes to a surveillance system which is sensitive and timely, and usually results in a more representative surveillance system when appropriately applied as part of an overall surveillance programme. The same participatory principles are used by PDSR to support community-based responses to active HPAI disease, and participatory planning for communities to mobilize their resources to help prevent the occurrence of HPAI in their villages. PDSR assists the overall effort towards disease management and as such, forms an integral part of the national HPAI control strategy.

The first phase of the PDSR project emphasized the detection and control of HPAI by PDS and PDR teams primarily in sector 4 poultry at the household level. The second phase of the PDSR project has expanded geographically while at the same time incorporating participatory activities to enable all key stakeholders, from local communities to district, provincial and central governments, to have a voice in HPAI prevention and control. The ongoing evolution of the PDSR programme is expected to culminate in a community-based animal disease prevention and control programme that becomes an integral part of provincial and district livestock services and which is adequately funded through government budgeting. Operationally, the programme continues to adapt to provide the logistical and administrative support necessary to achieve programme objectives.

The effectiveness of the PDSR system was demonstrated during the outbreak of HPAI in a village in North Sumatra province. On 4 August 2008, PDSR officers were called to the village by a sub-district official. They diagnosed HPAI on the basis of clinical signs and positive rapid antigen detection test. Poultry in the village were culled and decontamination conducted. The PDSR officers informed the local government including human health authorities. Human health surveillance officers performed an investigation in the village on 5 August and by 6 August suspect case of human infection with AI (H5N1) virus had been admitted to hospital. On this occasion, all suspect human cases were negative for infection with H5N1.

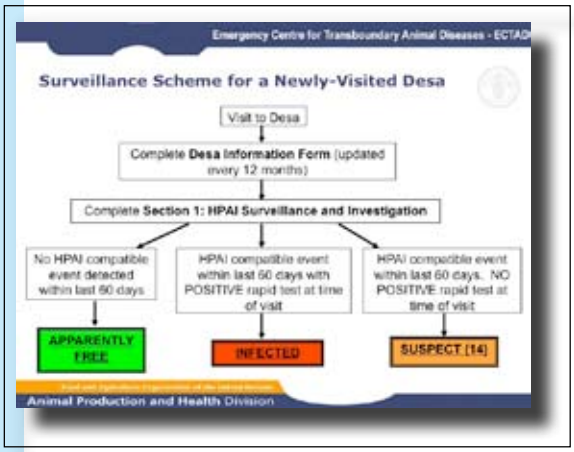
A number of initiatives to support the safety and sustainability of PDSR fieldwork have been developed and trialled in South and West Sulawesi. A reusable protective field clothing kit comprising cotton overalls, heavy duty apron, safety glasses and gloves was developed and distributed to all PDSR officers in South and West Sulawesi. The kit is intended to augment the use of disposable Personal Protective Equipment provided through the project, by providing a sustainable reuseable option for use in lower risk situations such as field sampling when disease may be present. A field sample submission kit was developed, produced locally, and distributed to all PDSR teams. The sample container is made economically from PVC pipe locally available from plumbing shops, and meets local requirements for safe submission of diagnostic specimens to the laboratory.

During 2008, 2131 PDSR officers were active in 331 districts and 27 out of 33 provinces of Indonesia. They visited 17,614 villages and completed 994 surveillance activities that resulted in diagnosis of HPAI.

New PDSR Information System

The new PDSR Information System was developed to improve the effectiveness of the PDSR programme. It became operational in May 2008. The new approach facilitates the management of prevention and control activities by animal health services at all levels and communities using participatory methodologies and sound epidemiological principles. The key elements of the new system include:

- A village-wide, instead of household-focused, approach;
- A focus on disease control;
- The control and prevention of HPAI in village-based poultry populations (i.e. in both household and small-scale semi-intensive poultry flocks);
- Assigning a disease status to each village (*desa*) in a district: NOT YET VISITED; APPARENTLY FREE; INFECTED; SUSPECT or CONTROLLED.



Expanded PDSR data for better monitoring and evaluation

A major revision of the PDSR technical approach, forms and database was implemented in 2008. This involved focusing on the village (desa) as the basic unit of disease investigation, the streamlining of forms used by field personnel to record information on disease control activities, the revision of the PDSR database to log this information, and preparation of automated reports to allow better management of the programme. An important benefit of the new PDSR system and database has been the ease with which data for programme indicators is produced. The PDSR programme is now monitored with five output indicators and eleven outcome indicators that are updated on a quarterly basis.


Photo: FAO/Indonesia/Alders

Local Disease Control Centre support

Provincial LDCCs manage PDSR teams operating in the province and/or districts within their area of coverage, usually a single province. They provide technical and operational support to the teams, are responsible for data input from PDSR field activities and provide the link between the CMU, provincial and district Livestock Services and field personnel. The LDCC is also responsible for monitoring supplies of materials essential to the work of PDSR such as rapid antigen tests and personal protective equipment. Seventeen new LDCCs were established and equipped during 2008 bringing the total number of LDCCs to the end of 2008 to 31.

Starting in April 2008, employees of the provincial agriculture and livestock services took on the responsibility of managing data entry in the LDCCs and encoding data contained in the new PDSR activity forms into the new database. All new LDCCs established during 2008 were run solely by provincial employees. This is a significant accomplishment which will enhance both the long-term sustainability and cost-effectiveness of the PDSR programme. National meetings were held with the LDCC Coordinators throughout the year to discuss various programmatic elements and ensure close collaboration. Several meetings and workshops were also held to discuss administrative issues at the LDCCs, the new PDSR Information System and train Data Encoders and Administrative Clerks in its use. An advanced training course in the new PDSR database was held in June 2008.


Photo: FAO/Indonesia/Aditjondro

South Sulawesi Priority Areas Planning Workshop

Planning and Livestock authorities from all districts and the province of South Sulawesi as well as representatives of Disease Investigation Centre (DIC) Maros/RMU, Quarantine Authorities and the private commercial poultry sector participated in this workshop held in July. Priorities for HPAI control identified by participants were ranked and a list of the most important priorities produced, which provided a basis for the development of the comprehensive provincial HPAI plan. A ten member working group with representation from DIC Maros/RMU, provincial and district livestock authorities and quarantine have further developed and refined the identified priorities to form a clear work plan.

Supporting local government IEC and prevention activities

Photo: FAO/Indonesia/Aditjondro

Materials for public awareness and continuing education

A range of communication materials were developed to assist PDSR officers in their normal field activities to communicate information about HPAI, good biosecurity and poultry health management to farmers, poultry workers and the general public. These include flipcharts, disease cards, training materials and the HPAI Q&A brochure.

The new PDSR flipcharts were tested and revised. Topics covered by the seven flip charts include safe disposal of poultry carcasses; temporary separation of new poultry; early reporting of disease; cockfighting risks; avian influenza, Newcastle disease and their control; separation of poultry species. Target audiences for the flip charts include backyard poultry producers, traders, villagers, village leaders, women's groups and school children.

The Avian Influenza: Questions and Answers for Village Leaders brochure was reviewed by CMU, pre-tested and 100,000 copies were printed. The brochure is used mainly by PDSR in their day to day activities in villages and is given to and discussed with village leaders and the heads of community groups. It is colourful, easy to read and contains practical information.

Other materials developed include the Avian Influenza Bulletin (a compilation of national and international scientific summaries and abstracts on HPAI with a commentary on a topical issue) and the PDSR Newsletter (a means for sharing stories, news and new information with and among PDSR officers). The 4th edition of the PDSR newsletter has been produced and printed in Indonesian and in English.

Photo: Kemal Jufri

Media Partnership

The HUMAN FACES OF AVIAN INFLUENZA project awarded mini-fellowships to 13 media practitioners based in Indonesia in the fields of print, radio, television, video, digital/online media, photography and multi-media. The aim was to mobilise media professionals as catalysts in the communication and advocacy process; include the views and opinions of the communities most affected by or at risk from avian influenza in the communication process; and develop a range of high-quality media materials and outputs to create awareness of and change risky behaviour in relation to avian influenza. The successful media partners were selected from over 50 candidates by a project advisory panel, and an exhibition of the candidates' work held in December. Photographs, films, radio broadcasts and multi-media/written pieces produced by project participants were disseminated through national media.

Focus group discussions

The IEC team and the National Social Anthropologist conducted focus group discussions in Tangerang, Depok and Balikpapan (East Kalimantan) municipalities and Tangerang, Labuan Batu (North Sumatra), Kulon Progo (Yogyakarta) and Gowa (South Sulawesi) districts. Groups of male and female backyard poultry farmers, male and female small-scale commercial farmers, small-scale traders/middlemen and poultry meat traders and the owners of fighting cocks participated and shared their experiences, opinions, perspectives and concerns on a variety of issues such as poultry production practices and HPAI. Information gathered from the discussions is being used to learn what factors influence people's behaviour about HPAI and which forms of communication are most appropriate for IEC materials presented to different target groups.

National Ministry of Agriculture Media Spokesperson Workshop

More than 50 participants attended the workshop, with representatives coming from 31 of the 33 Provincial Livestock Services. Topics included how to inform the media about AI policies from the human and animal health sectors, communication and social mobilization strategies during a pandemic, theories and practices of being interviewed, writing press releases, and organizing press conferences. A media trainer facilitated the workshop and speakers were from the MoA, the Ministry of Health, the Ministry of Communication and Informatics, WHO, and KOMNAS FBPI. "Guidelines on how to deal with the media" were prepared covering the following topics: 1) how to establish credibility with the news media, 2) how to develop pro-active media relations, 3) internal guidelines and policies, 4) guidelines for interviews, and 5) how to create materials for the media. The guidelines were translated into Indonesian and distributed to participants.

Photo: FAO/Indonesia/Hanum

Programmes for commercial and community radio in Tangerang and West Java

In collaboration with the CMU, local government staff in Bandung district, Indramayu district and Tangerang municipality, and Yayasan ProMedia Indonesia, FAO supported AI awareness raising activities on commercial and community radio stations. Target audiences for the programmes included small-scale commercial poultry producers, local market traders, *ojek* (motorcycle taxi) drivers, labourers, and backyard poultry farmers (male and female). The programmes aimed to: expand public and private dialogue and debate on HPAI; increase the accuracy of HPAI information shared in public dialogue and debate; enable people and communities to link their voices into debate and dialogue; and link communities sharing similar problems related to HPAI, who might otherwise not be in contact with each other.

Materials produced and broadcast included radio dramas on avian influenza, talk shows, documentaries, features and interviews. The project also supported the training of 22 radio staff. The impact of the broadcast programmes was assessed in focus group discussions with listeners. The assessment highlighted the importance of using daily language to make it easier for the audience to understand the topic.

Photo: FAO/Indonesia/Krishnan

HPAI Risk Communication Workshop

This three-day workshop held in Medan brought together representatives of government (Health, Livestock Services, Communication and Informatics, DIC, RMU, CMU), poultry industry, Veterinary and Pharmaceutical Associations, NGOs (Heifer Indonesia, American Red Cross, Red Cross (PMI) North Sumatra, Tanoto Foundation, Save the Children), University of North Sumatra, local media, FAO and UNICEF. Major outcomes of the workshop were improved communication and understanding between the poultry industry (sectors 1 - 3) and the DIC, RMU and Livestock Services. Recommendations from the workshop include that a strategy for HPAI risk communication in North Sumatra be developed and that the strategy be supported by a socio-anthropological study of local traditions and culture based on linguistic groups.

Photo: FAO/Indonesia/Aditjondro

Continuing education

During 2008 the PDSR Training Team was made up of 30 Master Trainers who had originally served in the programme as PDSR officers and three international Training Specialists. The team conducted Refresher Training Workshops; PDSR Introductory Training Workshops; workshops for PDSR officers on the new PDSR Information System; TOT workshops for Coordinators of Community Vaccinators; PDSR Operational Research Workshops; a workshop for district heads of livestock and animal health participating in Operational Research; a workshop on the new PDSR Information System for the MoA Campaign

Photo: FAO/Indonesia/Aditjondro

Photo: FAO/Indonesia/Aditjondro

Management Unit in Jakarta; Sample Submission Pilot Workshops; Continuing Education workshops; and a Training of Master Trainers workshop. A total of 4,352 participants (3,073 men; 1,279 women) were involved in the training activities listed.

The Continuing Education Programme consists of four modules covering the new PDSR Information System; Good Poultry Husbandry and Poultry Disease; Social Mobilization, Participatory Epidemiology, PDSR Tools; and HPAI Surveillance, Prevention, Outbreak Control and Monitoring.

HPAI Biosecurity for Sector 3 chicken farmers in Bali

A total of 160 participants took part in this programme. Twenty trainers participated in the 5 day TOT course and the subsequent one day workshop to discuss and finalise the 'Step Down' Training. Seven two-day courses of 'Step Down' Training were held for participants from seven regencies of Bali (Buleleng, Karangasem, Gianyar, Bangli, Tabanan, Badung/Denpasar and Jembrana). One hundred and forty government officers, industry representatives and NGO personnel participated.

The outcomes of the training were: participants trained to write a poultry farm biosecurity risk management plan; Sector 3 poultry farmers and animal health advisers in Bali understand biosecurity concepts; farmers willing to establish and able to implement and improve biosecurity of their farms; and farmers and animal health advisers capable of doing biosecurity internal and/or external audit of a poultry farm using an appropriate checklist.

Photo: FAO/Indonesia/Hutabarat

Supporting research and development

OFFLU project

This project aims to characterize and map antigenic variants of H5N1 avian influenza virus in Indonesia. This work informs and supports the development of new vaccines and an improved and appropriate vaccine and vaccination strategy for Indonesia. Capacity building is a key component of the project. At the OFFLU technical review meeting held in Jakarta in November, Indonesian scientists, the Government of Indonesia, representatives of Indonesian poultry industry and international partners met to review the results of the studies. In November seventeen Indonesian scientists, most from laboratories (government, universities and industry) participated in a workshop in introductory bioinformatics on genetic and antigenic virus characterization. Work has also commenced on the assessment of costs and cost-effectiveness of vaccination strategies in Indonesia in conjunction with Operational Research for HPAI.

Photo: AAHL

Operational Research in Indonesia for More Effective Control of Highly Pathogenic Avian Influenza

FAO and MoA are collaborating with a number of organizations and stakeholders in implementing this project. The project was designed by the International Livestock Research Institute and assesses four experimental groups: PDSR control group (i.e. implementation of the new PDSR system in conjunction with any ongoing local animal health initiatives), PDSR plus preventive AI vaccination, PDSR plus AI and Newcastle disease vaccination, and PDSR with the ability to immediately compensate for culled birds. The targets for the vaccination are sector 4 poultry and sector 3 poultry flocks of up to 5,000 birds. Sixty four Community Vaccinator Coordinators have been trained in cold chain and logistics management, community mobilization and communications, and training and supervision of community vaccinators. Materials for training community vaccinators and a flipchart on vaccination against HPAI and Newcastle disease to assist the vaccinators in working with communities have been developed, and 1008 vaccinators are active in 16 OR districts in West Java, Central Java and Yogyakarta provinces. Two vaccination campaigns were conducted in 2008.

Photo: FAO/Indonesia

Profiling of commercial poultry production in western Java

A study to profile commercial poultry producers was carried out in western Java during 2008. The study aimed to improve the understanding of commercial production in western Java and establish a relationship between local governments and commercial poultry producers. The information from the study will be used to help design an intensified HPAI control strategy. Over 9,000 poultry farms in thirteen districts/municipalities in western Java were geo-referenced and the poultry population size and type of each farm were recorded. A representative subset of these poultry producers was surveyed with respect to practices and perceptions of poultry health and husbandry, vaccination, business and marketing, as well as farm biosecurity factors. Producers of different types and sizes were found to have different characteristics regarding vaccination, product marketing and transportation, and business challenges. The information collected also indicates that certain farming practices that can be considered high-risk for disease transmission are widespread in the districts that were targeted. Greater knowledge about the poultry husbandry and practices of these producers is expected to help focus and guide HPAI intervention strategies toward producers perceived to be at greatest risk for disease introduction and transmission.

Photo: FAO/Indonesia

Photo: Danu Primanto

Poultry value chain studies

The purpose of these studies was to track and map the origin, volume and values of poultry commodities traded within a region, and gain a better understanding of the practices of individuals working within poultry industry. Three studies have been completed in North Sumatra, Bali and Jakarta. The studies included evaluations of movements of live poultry as well as poultry products and by-products that may have a role in disease spread. The Bali study elucidated and mapped the chains for commercial layers, commercial broilers, village chickens, commercial ducks and songbirds while the study in North Sumatra elucidated and mapped the chains for broilers, village chickens, layers, male layers, ducks and quail, as well as distribution chains for pet birds, feed and manure. In Jakarta the focus was on broiler chickens, layer chickens (and eggs), kampung chickens (and eggs), ducks (and eggs) throughout JABODETABEK - the greater metropolitan area encompassing Jakarta. The distribution of poultry feed and manure was also mapped. The maps and information from the study are being used to develop and strengthen effective HPAI prevention and control policies and interventions in these provinces.

Photo: FAO/Indonesia

Bali live bird market project

This project was implemented in recognition of the key role live bird markets are likely to play in disseminating HPAI virus and the need to understand markets better to be able to control this spread. All of the known Bali live bird markets were identified and described in terms of 17 risk factors. Ten markets were identified as high risk by the Bali Live Bird Market Steering Committee based on local knowledge. Generic risk factors and risk mitigation activities were listed, and those thought to be most effective in the short term were implemented as a pilot risk reduction study in three important Bali markets.

Birds were sampled in four markets, including the three selected for risk mitigation activities. Virus was inconstantly present, but all bird species were infected by H5N1. Newcastle disease was present in from 5-13% of birds sampled. Social network analysis, a technique for analyzing group movements and inter-relationships to identify important risk nodes and pathways was applied to Beringkit market. The key finding was that even though Beringkit, as Bali's biggest market, disseminates risk product widely, the movement of specific product, for example ducks may be much more limited, and specific to certain areas. The study also supported the observation that market vendors tend to source their product from favoured pools of collectors, and that certain collectors can be identified as being likely to be more important than others.

Photo: FAO/Indonesia

The Livelihoods Study

Regulation No. 15/2007 (Poultry Raising and Distribution Control) of the Governor of Jakarta bans poultry-keeping in residential areas of Jakarta. The ban became effective from 1 February 2007. This study examined the impacts of the ban on the livelihoods of those engaged in the poultry industry - from backyard raisers to traders. The study showed that control measures had significant negative socioeconomic consequences for small scale producers in Jakarta with average small producer household income decreasing by an estimated 32%. Income from backyard poultry is traditionally controlled by women household heads and it is likely that the decrease in income from poultry may reduce expenditure in areas of social expenditure such as schooling and medicine. Evidence shows that in some households who lost their poultry income, female caregivers were forced to find jobs outside the home; the impact of control measures is therefore potentially greater for households with young children that require fulltime attention from family caregiver(s).

Environmental contamination with H5N1 in western Java

Live bird markets are recognized as a reservoir of avian influenza viruses. During 2008 WHO, Ministry of Health, FAO, and the Ministry of Agriculture collaborated in a study that aimed to develop and validate a simple reliable methodology to assess the avian influenza virus status of live bird markets using environmental sampling. The presence of H5N1 avian influenza virus in the live bird market environment was assessed in 83 markets from 16 districts in 3 provinces in western Java. Swabs of 27 environmental surfaces in different zones of the market (delivery, holding, slaughter, sale and waste disposal zones) were collected from each market. A questionnaire was also administered to assess market behaviours and demographics and analysed to assess risk factors for contamination. The majority of markets sampled were urban markets, and most operated daily. The study revealed important points for intervention to achieve "healthy" markets and risk factors that need to be addressed in an intervention programme.

Photo: FAO/Indonesia/Lawson

Testing of an Avian Influenza duck vaccination protocol through the determination of H5 seroprevalence, field trials, and transmission trials

Project activities were conducted in South Kalimantan, the province with the fourth largest duck population in Indonesia. The project aims to develop and pilot an HPAI surveillance and reporting programme for grazing duck flocks and commercial duck farms in harmony with government surveillance systems; improve understanding of HPAI epidemiology in grazing duck flocks and commercial duck farms; define an effective duck vaccination schedule; and define producer and trader perceptions concerning constraints to duck production.

Sero-surveillance was conducted on five commercial duck farms in Amuntai district of South Kalimantan. Ten percent of the standing population at each farm was sampled when possible. Of 631 sera tested using the Haemagglutination Inhibition test, all but 1 were negative. Livestock Services of South Kalimantan province considers that the preliminary results help demonstrate freedom from disease in the province. They have requested that the duck vaccination trial be discontinued and replaced with a more comprehensive surveillance plan in ducks to support their declaration of HPAI freedom to the DGLS and eventually the OIE. The surveillance programme will be designed and implemented from January - July 2009.

Photo: FAO/Indonesia/Alders

Poultry movement study

The poultry movement study commenced in October in premises trading live birds in the JABODETABEK area. The study aims to describe the network of collection yards and markets in the JABODETABEK area that trade in live poultry; gain a basic understanding of poultry movements in western Java; and assess poultry movement information that can be gathered at collector yards and markets, with a view to utilize these sites as components of a HPAI virus surveillance system. The expected outputs of this project are an up-to-date list of live bird markets in participating districts, an analysis of basic information on live bird markets plus detailed information about movements of live poultry into and out of JABODETABEK districts.

By the end of 2008 the first stage (verification of basic details of premises trading live poultry) of the project was close to completion. The information collected was used to develop a sampling list for each of the districts participating in the study, which will be used in the second (or survey) stage of the project. Training sessions for enumerators were under way for the survey stage, and field visits started in late December and will continue during early January 2009.

Photo: FAO/Indonesia/Hanum

Photo: FAO/Indonesia/Lawson

Avian Influenza surveillance in ducks in live bird markets in Jakarta

This study was conducted in collaboration with the Faculty of Veterinary Medicine of Bogor Agriculture University and undertaken in a total of 10 live bird markets located in five survey areas of DKI Jakarta. Information on management and biosecurity practices was collected from vendors selling ducks in markets and viral prevalence in domestic ducks at the markets determined. The data will contribute to a better understanding of the role of domestic ducks species at live bird markets and an assessment of the risks that duck species play in the spread of HPAI H5N1.

CONCLUSIONS

This year has seen considerable expansion of the activities and focus of the FAO AI Programme both in terms of the geographic expansion of the PDSR programme on the islands of Sulawesi and Sumatra, and also the greater engagement with the commercial poultry industry and the poultry marketing chain. FAO strategic support to the DGLS has continued through inputs to the National Strategic Work Plan 2009-2011, the DAH-CMU Work Plan 2008-2009, the western Java AI control intensification workshop, the South Sulawesi priority areas planning workshop and development of a national communications strategy for the Ministry of Agriculture.

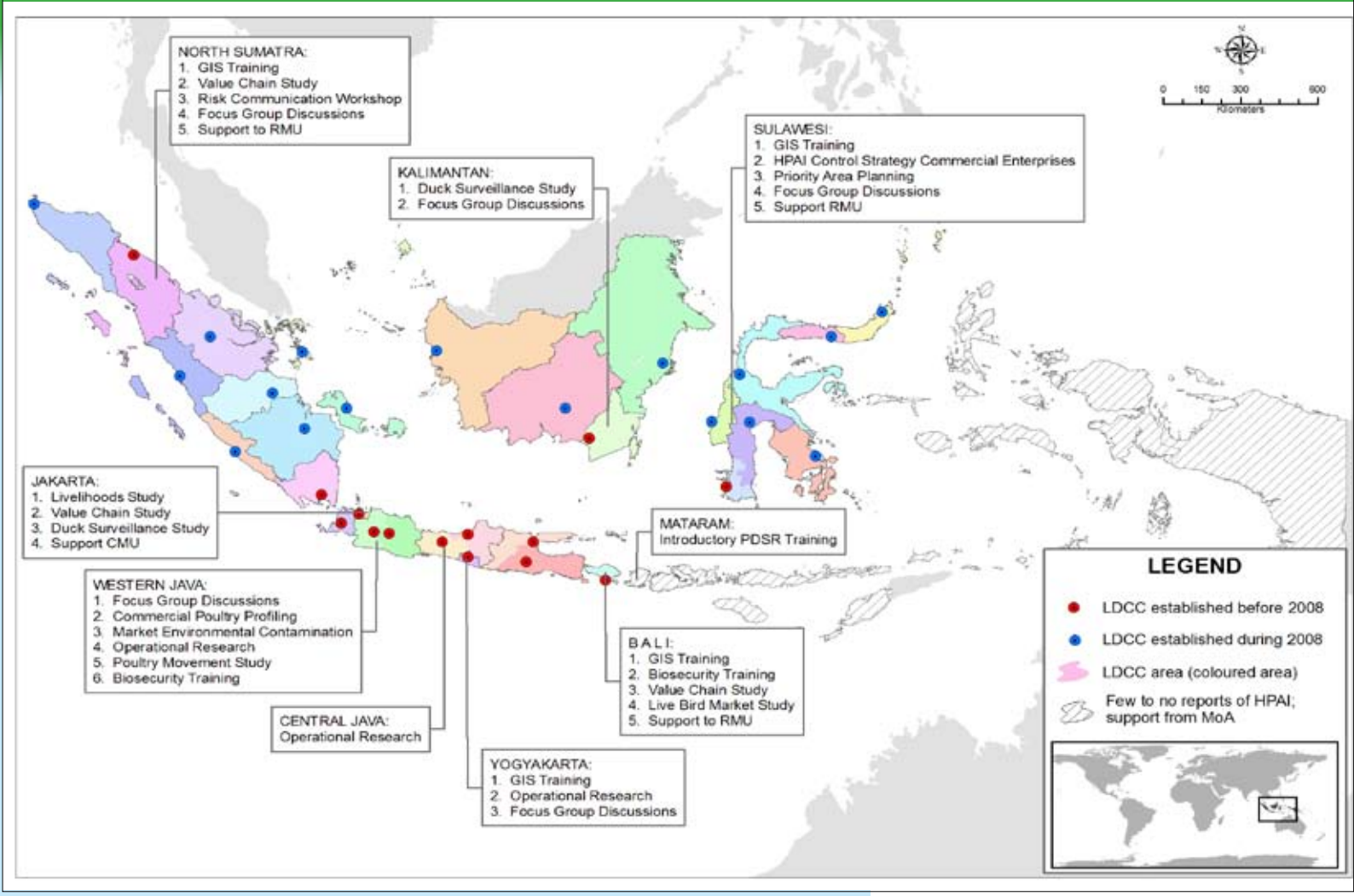
The functioning and activities of the PDSR system have been supported through consolidation of additional LDCCs, extensive continuing education activities, development of the PDSR Information System, a revision of the PDSR technical approach, exploration of sustainability issues and attention to a PDSR transition strategy. Government information, education and communication activities for AI prevention have been supported through developing and distributing a range of communication materials, through the Media Partnership project, through focus group discussions, commercial and community radio programmes and workshops for media spokespersons and risk communication.

Engagement with and support to our commercial poultry industry partners was developed during the year through provision of biosecurity training for sector 3 farmers in Bali and for sector 1 and 2 technical staff in Java. Studies on profiling commercial poultry production in western Java and the initiation of a study on poultry movements in the JABODETABEK area will be used to further support industry engagement and market chain activities in 2009. The results of the OFFLU project on mapping antigenic variants and the Operational Research project are expected to inform the refinement of future control activities. Studies on poultry value chains, on traditional markets and on ducks will also provide information for evidence-based modifications to AI control strategy in the future.

I look forward to FAO being associated with the progressive development and implementation of AI control in Indonesia in partnership with local communities, government (both central and local), private commercial industry and international stakeholders.

James McGrane, Team Leader, HPAI

Photo: FAO/Indonesia/Hanum



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Abbreviations and Acronyms

AI	Avian Influenza
CMU	Campaign Management Unit
DAH	Directorate of Animal Health
DGLS	Directorate General of Livestock Services
DIC	Disease Investigation Centre
GIS	Geographic Information System
GPS	Global Positioning System
HPAI	Highly pathogenic avian influenza
JABODETABEK	The Jakarta, Bogor, Depok, Tangerang, Bekasi areas of western Java
IEC	Information, Education, Communication
KOMNAS FBPI	National Committee for Avian Influenza Control and Pandemic Influenza Preparedness
LDCC	Local Disease Control Centre
MoA	Ministry of Agriculture
NGO	Non-governmental organization
OIE	World Organisation for Animal Health
OFFLU	OIE/FAO Network of Expertise on Animal Influenza
PDSR	Participatory disease surveillance and response
RMU	Regional Management Unit
TOT	Training of Trainers
UNICEF	United Nations Children's Fund
WHO	World Health Organization of the United Nations

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