



Food and Agriculture  
Organization of the  
United Nations

# AVIAN INFLUENZA CONTROL PROGRAMME IN INDONESIA

ANNUAL REPORT  
2010



## Foreword

Poultry production, and its associated activities, account for around one percent of Indonesia's gross domestic product and provide the majority of animal protein consumed by 232 million Indonesians. A complex array of poultry enterprises, ranging from intensive commercial enterprises, to small-scale semi-intensive broiler and layer enterprises, to small backyard flocks supply poultry meat and eggs to Indonesian consumers, predominantly through traditional markets countrywide. Some 60% of all Indonesian households keep poultry for food, additional income, entertainment and ceremonial purposes.

Since Highly Pathogenic Avian Influenza (HPAI) was detected in Indonesia in 2003, the disease has infected poultry in 32 out of 33 provinces, caused the deaths of millions of poultry, and disrupted the livelihoods of large numbers of people dependent on poultry keeping. Outbreaks continue to be reported regularly on islands with dense human and poultry populations, such as Java and Sumatra, and more sporadically in Sulawesi and

Bali. HPAI continues to present a major challenge to poultry production. An annualized poultry population of approximately 1.5 billion, a large culturally and ethnically diverse human population of around 232 million, a preference for purchasing poultry products from live bird markets, and a decentralized governance system, have all contributed to the persistence of the disease.

The FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) Indonesia works to enhance the capacity and ability of the Government of Indonesia to implement its Avian Influenza Control Programme to sustainably control HPAI at village level, in the commercial poultry industry and along the market chain in order to help safeguard the health and livelihoods of the Indonesian population and reduce the global pandemic threat.

This 2010 Annual Report provides an overview of the activities carried out under the ECTAD Programme in collaboration with and in support of the Ministry of Agriculture and local government livestock services in Indonesia. Achievements in the key theme areas of improving poultry health, public private partnerships, capacity building and strengthening veterinary services are presented.

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

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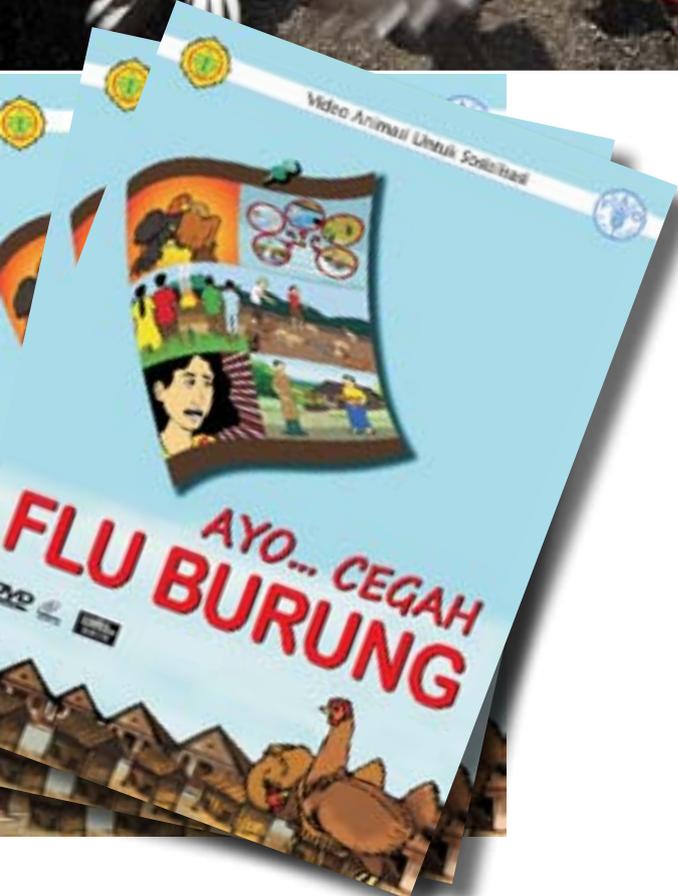
## Theme 1

# Improving poultry health

Poultry raised in the commercial sector and on family farms in Indonesia make a significant contribution to meeting the rapidly growing demand for poultry products. In the most vulnerable rural households, chickens, ducks and geese provide a source of income, improve nutrition and help meet family and social obligations. Poultry is the source of the majority of animal protein consumed in Indonesia, with a growing commercial poultry industry now producing over 1.2 billion birds per year to meet domestic demand. During 2010 a number of FAO activities contributed to improved health of poultry in Indonesia.

The Petugas Veteriner Unggas Komersial (Commercial Poultry Veterinary Officer PVUK) programme is a pilot programme designed to support HPAI prevention and control measures and improve overall disease status in small-scale sector 3 farms. Following stakeholder consultation teams comprised of dinas veterinary staff and veterinary officers from the provincial laboratory were established in eight pilot districts of Lampung, West Java, Central Java and East Java. Training methodologies and the curriculum for three levels of training modules were agreed and module preparation commenced.

To define and understand the industry in each district and to assist the dinas to make evidence-based decisions on HPAI prevention and control measures, more than 11,000 farms were profiled. Twenty-four Data Managers were trained in Quantum GIS mapping, communication, biosecurity, GPS and checking and managing the data to be collected. The data managers then assisted in the training and supervision of 379 enumerators. Basic data on the characteristics and size of the farms was collected and entered into district level databases. Draft maps showing the distribution of poultry farms were produced for each district.



The AusAID funded Village-based Biosecurity Education and Communication (VBEC) programme was developed to complement the education and extension activities of PDSR teams in South and West Sulawesi and help promote specific changes in husbandry practices that prevent disease transmission by villagers. The VBEC approach is bottom-up, with the local community taking the initiative to implement a series of HPAI prevention and control activities that are realistic and in line with local conditions.

During 2010 VBEC IEC activities targeted existing community groups such as Posyandus (village integrated health services), religious groups, self-help and women's groups, churches and mosques, school students, and other community gatherings. In villages where commercial poultry producers exist, specific technical extension messages were provided and discussions held covering management issues, poultry anatomy and practical biosecurity pertinent to the levels of production systems present. Organic matter composting demonstrations were also conducted to introduce a safe method for poultry carcass disposal.

Competitions were organized to support behavioral changes and encourage community participants to apply biosecurity practices specifically adapted to local conditions. There were competitions for best biosecurity practice in villages and for hobby birds (crowing cocks) with avian influenza awareness and biosecurity themes. Biosecurity speech contests for housewives and biosecurity quizzes for elementary school students from each pilot village were also organized to allow village-based biosecurity volunteer teams to share their experiences. This helped provide inspiration for them to continue developing village-based efforts to improve poultry biosecurity and husbandry.

Four biosecurity educational films were produced. The films are aimed at owners of backyard chickens, hobby chickens and village-based producers of broilers and layers and illustrate common village practices associated with poultry. Using computer-enabled animations the films show how viruses are able to move and spread in villages and provide practical solutions to prevent or control virus spread. A documentary was also developed with images and narration of the village-based biosecurity action plan creation process. The film focused on village field activities including meetings, training activities and competitions, as well as interviews with key partners from government, village authorities, local NGOs and respected community members.

The OIE/FAO Network on Animal influenza (OFFLU) makes an important contribution to the overall status of poultry health in Indonesia. National laboratories now have increased capacity to diagnose and monitor avian influenza viruses. Mechanisms to monitor vaccine efficacy were jointly developed and genetic and antigenic characterization of 244 viruses was undertaken. The viruses are predominantly from village based chickens and were collected during 2007-08. There is now an improved understanding



## How bird flu has spread ▶

of H5N1 HPAI virus evolution in Indonesia. The fully characterized updated candidate vaccine and challenge strains were returned to Indonesia in August 2010. Data generated from this project served as the basis for the development and evaluation of newly engineered low pathogenicity reverse genetics strains for vaccine development in Indonesia.

The Epidemiology team continued to support the activities of the FAO programme through data analysis and reporting and implementation of specific studies such as the Kalimantan Duck Profiling project and the Bali HPAI Control Programme. In six selected districts in Java, active surveillance for HPAI was conducted in village poultry. In Bali Province village surveillance, border surveillance, and live bird market network analysis were conducted. Samples collected during the village surveillance on Java and Bali were submitted to DIC Wates for analysis. A study of ducks on Java conducted to profile the industry and look at the prevalence of HPAI H5N1 was completed. A further accomplishment was the formal integration of MOA Campaign Management Unit (CMU) staff to form a joint CMU-FAO Epidemiology team.

In collaboration with the Directorate of Animal Health of the MOA, USAID, and the USAID | DELIVER PROJECT, FAO supported a targeted vaccination approach for the Intensification of Avian Influenza Poultry Vaccination (InVak) program focusing on small-scale sector 3 layer farms and intensive native chicken farms. Selected animal health centres (AHCs), were incorporated into the InVak program implementation and vaccine distribution systems to better institutionalize the vaccination program, and promote wider acceptance of the AHCs among the poultry farming community.

The Communication team continued to support the PDSR project through the development of communication tools for officers to use in their interactions with communities. A series of animation videos on good poultry rearing practices was produced and distributed to PDSR officers all over Indonesia. A video about the DKI Jakarta Livestock Services' slaughterhouse in Rawa Kepiting was produced and distributed to promote relocation.



Organization



People, Healthy Communities"

Districts

Activities of the Ministry  
of Agriculture, Forestry and Fisheries  
of Indonesia:

- To enhance the HPAI control

...able surveillance,  
and control of HPAI in village

...eillance, control and  
AI in the commercial

...e and control along  
chain.





## Theme 2

### Public Private Partnership

Within the livestock sector in Indonesia, the poultry industry is one of the most dynamic and rapidly growing. In Jakarta, and more generally in Indonesia, poultry production and the consequent marketing of live and slaughtered animals is predominantly private sector driven. However, weak relationships and poor collaboration between public veterinary services and the private poultry sector hamper disease control, which affects productivity and profitability. FAO Indonesia has worked to increase collaboration between the public and private sectors by providing platforms for engagement in dialogue, exchange of information and development of trust-building processes between stakeholders.

FAO ECTAD Indonesia supported the development of a National Poultry Quality Improvement Programme (NPQIP) to facilitate collaboration between the public and private sectors. The concept for the programme was taken forward by the Asosiasi Dokter Hewan Perunggasan Indonesia (Indonesian Poultry Veterinary Association ADHPI) and further developed into the Komite Kesehatan Unggas Nasional (National Poultry Health Committee KKUN). The KKUN is comprised of the commercial poultry industry, government, and academia with the vision of strengthening and increasing the competitiveness of national poultry production. The committee aims to coordinate the interests and collaboration of the poultry industry, government and academia; provide recommendations to policy-makers on regulations, standards and solutions of national poultry health problems; and encourage stakeholders to improve poultry health so that the resulting poultry products will be of higher quality in terms of both production efficiency and safety. KKUN also aims to oversee continuing education for private sector poultry veterinarians and to trial a private sector-funded culling compensation programme.



The Indonesia Commercial Poultry Health (IndoCPH) Programme is focused on improving HPAI prevention and control in the commercial poultry sector by working directly in partnership with farmers. IndoCPH provided specialized technical support to six high-risk layer farms in Central Java with a population range of 15,000 - 68,000 birds and evaluated the effectiveness of biosecurity measures implemented by poultry producers.

A biosecurity cost-effective study was designed to identify profitable biosecurity interventions on commercial layer chicken farms; quantify the cost-benefit ratio of biosecurity interventions on commercial layer chicken farms; and quantify the HPAI risk reduction of biosecurity interventions on commercial layer chicken farms. By the end of the study it is expected that evidence-based best practices for improving layer farm productivity will have been identified and that the HPAI Control Programme will better understand the perspective of poultry farmers and the constraints they face in improving prevention and control of HPAI.

IndoCPH is also directly engaging with poultry producers and private sector poultry veterinarians to increase awareness on best practices in avian influenza vaccination. IndoCPH actively participates in and distributes communication materials at industry meetings and conferences, including the national Indonesian Livestock Expo, to ensure that stakeholders are aware of current best practices in AI vaccination.

FAO ECTAD Indonesia is also working in collaboration with the Jakarta City Animal Health Services on the Jakarta Poultry Market Restructuring Programme. During 2010 five Communication Forums (one per district) were held to stimulate the critical stakeholders to better formulate their demands about the Jakarta market restructuring plans

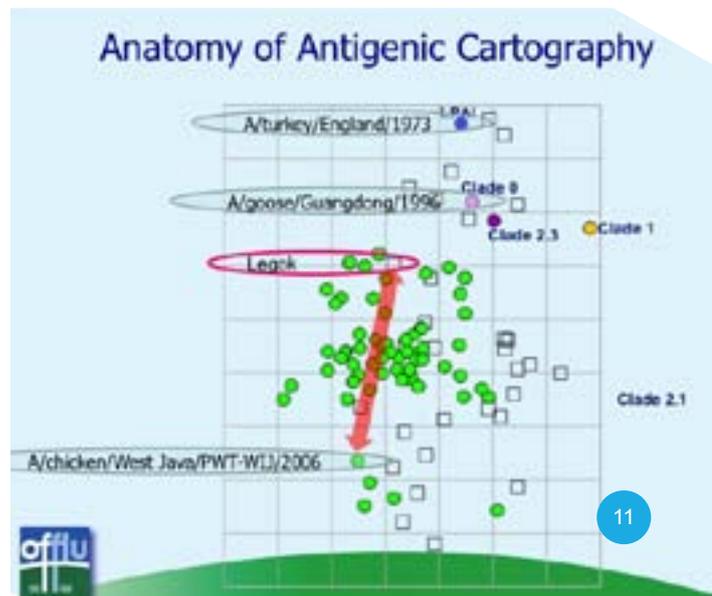


and engage in a more intensive dialogue with the Jakarta administration. In 2011 these platforms are expected to allow the representatives of the stakeholders and the management of the Jakarta Animal Health Services to agree on an implementation process that matches the minimum bio-security regulations and the socio-economic capacity of the small traders.

With the assistance of CREATE, a local NGO, FAO ECTAD Indonesia assisted local administration officials to assess the preparedness and increase the competency of the different poultry relocation centres and to analyze their organizational and training needs. Training modules and standard operating procedures were developed, and training and organization of individuals involved in poultry market restructuring implemented.

The Market Cleaning and Disinfection programme and the Petugas Veteriner Ungas Komersial (Commercial Poultry Veterinary Officer PVUK) programme also aim to improve engagement between local government veterinary services and poultry market chain stakeholders and poultry farmers, respectively. The Market programme has built two cleaning and disinfection stations at collector yards that are operated by the private sector on behalf of provincial Jakarta government, while one objective of the PVUK programme is to address problems arising from the lack of avian influenza vaccine use monitoring in the private sector.

The OFFLU programme facilitated sharing of data and biological materials for joint research efforts, as well as strengthening communication between national and international laboratories, central government, and the commercial industry. Outcomes of these efforts improved knowledge of circulating H5N1 viruses, established mechanisms for ongoing monitoring of HPAI viruses that includes participation from industry, and directly informed national vaccination policy.







## Theme 3

# Capacity Building

Capacity building is key to the role that FAO ECTAD Indonesia is playing in prevention, detection and response to outbreaks of HPAI in poultry. In collaboration with the Ministry of Agriculture of Indonesia FAO ECTAD Indonesia has worked to strengthen the capacity of institutions and individuals responsible for animal health at national, provincial and district level.

With support from the ECTAD Indonesia Local Government Training team, 52 Master Trainers (MTs) and 2239 active PDSR officers work to identify prevent and control HPAI throughout 29 provinces of Indonesia. The MTs and PDSR were supported through on-going training. Continuing education was conducted for all PDSR during 2010. The additional PDSR supported by the local government budget in Bandung and Samarinda were trained and a further four continuing education workshops were held in Bandung, Banjarbaru, Bekasi and Kupang.

Master Trainers have supported the development of the PDSR programme by participating in four Decision Makers' meetings and provided assistance at two household poultry surveillance training courses in Bali.

An external evaluation of the PDSR training and continuing education programme was conducted early in 2010 and recommended that communication and training skills of PDSR and MTs be improved so that training could be decentralised. In response, curriculum and methodology for a module for MTs on improved training skills and communication were agreed and module preparation commenced. The training will assist MTs to conduct training at Provincial and district levels. Field testing of the modules and training of all MTs and FAO training staff will be carried out in 2011.



Three National Master Trainers returned to Jakarta and have developed skills in module preparation and training. During Continuing Education training in Bandung, two received on-the-job support to improve their training skills.

A need has been identified for a training module in understanding data which will build skills in data analysis and culminate in Quantum GIS training for Provincial and District staff. This year the curriculum was developed and module preparation commenced.

The Sulawesi VBEC programme began in August 2009 with a qualitative and quantitative sociocultural assessment in six pilot villages to allow better understanding of community understanding, beliefs and practices with regards to poultry keeping, poultry disease and its movements. Prior to a village-based workshop, an initial training for field workers from local NGOs together with local livestock services staff and community leaders was provided to enhance their capacity in community engagement plus a basic understanding of causes and movement of disease and how it may be prevented, which contributed to the development of realistic biosecurity action plans.

During this process PDSR officers or local livestock services staff provided technical assistance and public awareness. The local community took the initiative of working together to implement a series of HPAI prevention and control activities that are realistic and in line with local conditions. The resulting action plans were agreed in each village with the involvement of a district livestock services staff member to ensure continuity, feedback and technical soundness.

A session of training of trainers was provided to ensure that the village team (consisting of district livestock services staff, community leaders and local NGOs field staff) had the ability to facilitate information, education and communication (IEC) activities at the village level. To improve biosecurity for commercial poultry producers, workshops were held to increase capacity in small commercial layer and broiler farmers in the prevention of HPAI.

The Communication team supported the VBEC program in South and West Sulawesi to conduct a two-day training course on the technical accuracy of Avian Influenza reporting. As a result of the training reporters and editors have the knowledge to craft stories that will assist communities to know whether they are at risk from bird flu and how they should prevent and respond to an outbreak.

In 2010 an integral part of the FAO commitment to Jakarta Poultry Market Restructuring was the facilitation of an intensive management training programme for the 5 government designated relocation centres of Jakarta. SOPs and training modules for the slaughtering of Healthy Chicken Meat in the centres in accordance with the National Food Safety Standards were developed and training of slaughterers in the centres piloted. In 2011 FAO will continue these efforts in the original centres and initiate similar interventions in new centres inside Jakarta and in the surrounding districts as the need arises.

The ECTAD Indonesia Market Surveillance and Cleaning and Disinfection (C&D) Programme developed SOPs for live bird market surveillance and conducted training in market surveillance for local government livestock service officials. SOPs were also developed for C&D of poultry trucks, crates and markets.



## Production Process of ASUH



Cold Chain Processes



C&D training was conducted and support material and equipment provided at 43 collector yards and 14 live bird markets throughout the greater Jakarta area. Training courses and focus group discussions were also conducted to raise stakeholder's awareness on HPAI prevention and control along the poultry market chain. Three cleaning and disinfection stations for exiting trucks were established at the major collector yards in East Jakarta. Sustainable usage of the stations by collector yard managers is enabled via cost recovery for consumables and facility maintenance. In order to improve C&D implementation local government livestock services were also supported to actively monitor all cleaning and disinfection activities at markets and collector yards.

Through a collaborative effort between OFFLU and the Australian Animal Health Laboratory (AAHL) the capacity of Indonesian laboratories to conduct antigenic and genetic characterization of AI viruses, analyse, report, and share results has increased. The development of antigenic cartography for avian viruses as a new tool for assessment of antigenic differences between vaccine strains and circulating viruses has also improved the understanding of avian influenza evolution in Indonesia.



Following the nomination of DIC Wates as the focal point for antigenic cartography and DIC Bukittinggi, Pusvetma, and Bbalitvet for genetic characterization, a series of consultations, working groups and workshops was held that has contributed significantly to transferring this technology from the international reference laboratories to these focal point laboratories.

Training in GPS & Quantum GIS Training (basic and advanced) was conducted for staff in the South Sulawesi Provincial Dinas and has enhanced local capacity to produce maps and provide geographic information. This is a pilot project and will shortly be conducted nationally.

Epidemiology training was conducted for staff of the Campaign Management Unit (CMU) and one CMU staff member has been assigned as a counterpart to the Epidemiology Team to do on-the-job training.







## Theme 4

# Strengthening Veterinary Services

Veterinary Services play a key role in detection, diagnosis and control of HPAI. However to respond effectively to the disease they need human, physical and financial resources, technical authority and capability and sustained interaction with stakeholders.

Throughout 2010 FAO ECTAD Indonesia worked with the Directorate General of Livestock and Animal Health Services (DGLAHS) to develop a strategy for strengthening National Veterinary Services (NVS). The strategy aims to build the capacity of animal health services to control not only HPAI but also other key animal and zoonotic diseases and develop an integrated information system for animal disease surveillance.

In close collaboration with the Directorate of Animal Health (DAH) and the Campaign Management Unit (CMU), FAO continued to coordinate with local governments to ensure provision of sufficient funding for HPAI control activities at provincial and district levels. This year Decision-Makers' Meetings were held in Riau, Banda Aceh, Semarang and Yogyakarta to engage local government in HPAI control activities and to advocate the long-term sustainability of animal disease control services. All local governments agreed to allocate funds to PDSR operational costs during preparation for the next budgets (2011 in Sumatra and 2012 in Central Java).



A Transition Strategy was developed to better integrate the PDSR programme into a National Veterinary Service and to address a wider range of priority animal diseases. In South and West Sulawesi the process of transferring the responsibilities for the management of PDSR to provincial and district animal health offices commenced and should be completed by the end of 2011.

To facilitate strengthening National Veterinary Services, the Directorate General of Livestock and Animal Health Services established a NVS Task Force. In collaboration with FAO, NVS Guidelines have been prepared which provide guidance to local governments for the establishment of Veterinary Authority and Appointment of Authorized Veterinarians. These guidelines will be implemented in pilot provinces in 2011 and 2012.

In preparation for the establishment of the NVS, a series of modules called Participatory Community Engagement (PCE) were developed. The modules focus on communication and facilitation, germ theory and participatory methods and will enable animal health staff in the Animal Health Posts (Puskesmas) to work closely with the community while investigating the five key NVS diseases (HPAI, rabies, hog cholera, brucellosis and anthrax). A curriculum for three levels of training was developed and will be field tested with the PVUK training in 2011.

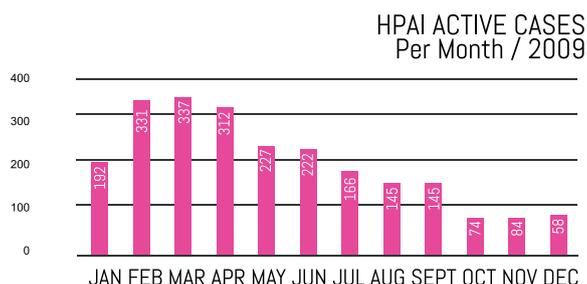
The Market Cleaning and Disinfection programme provided training and technical support to local government animal health services to conduct surveillance for H5 subtype virus in poultry markets and poultry collector yards in the greater Jakarta area. Information gathered from this surveillance has increased awareness of the level of influenza virus contamination in live bird markets in the Jakarta area and will be used to help target disease control and prevention activities.

An array of continuing education materials for government officers were published, with contents ranging from experiences of officers from the field to abstracts of research related to HPAI/H5N1 from national and international researchers. A training video from Cornell University on Sample Collection and Necropsy was also dubbed in Bahasa Indonesia and reproduced for training purposes.

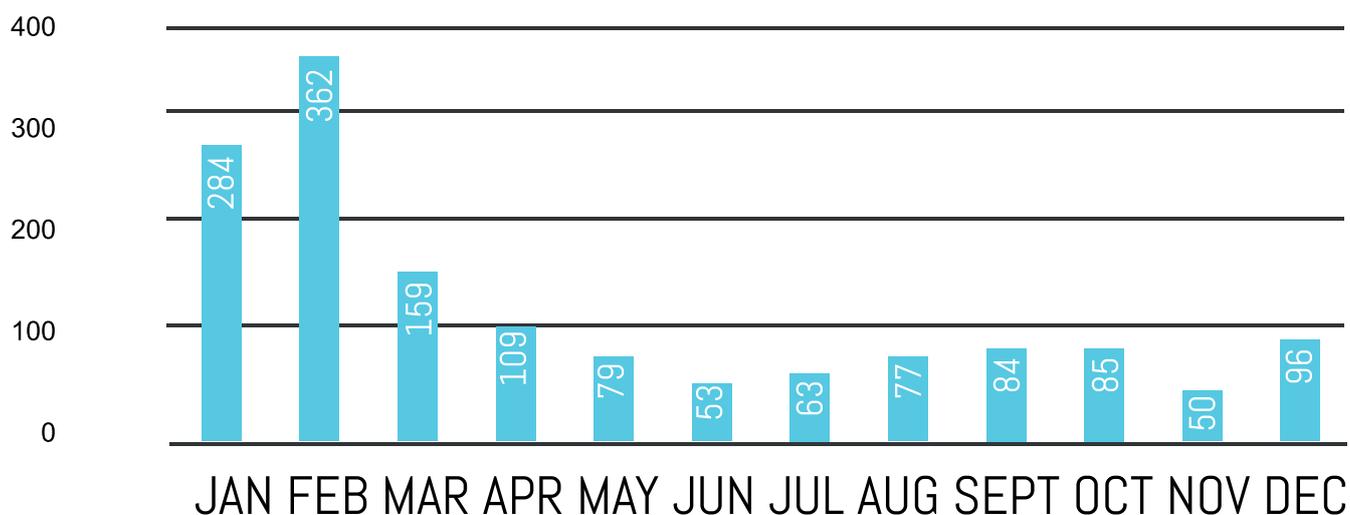


## Abbreviations & Acronyms

AAHL	- the Australian Animal Health Laboratory
ADPHI	- Asosiasi Dokter Hewan Perunggasan Indonesia (Indonesian Poultry Veterinary Association)
AHC	- Animal Health Centre
AusAID	- The Australian Agency for International Development
CMU	- Campaign Management Unit
CREATE	- Center for Human Resource Development and Applied Technology
DAH	- Directorate of Animal Health
DGLAHS	- Directorate General of Livestock and Animal Health Services
DIC	- Disease Investigation Centre
ECTAD	- Emergency Centre for Transboundary Animal Diseases
FAO	- Food and Agriculture Organization
GIS	- Geographic Information System
GPS	- Global Positioning System
HPAI	- Highly Pathogenic Avian Influenza
IEC	- Information Education Communication
IndoCPH	- Indonesia Commercial Poultry Health
InVak	- Intensifikasi Vaksinasi (the Intensification of Avian Influenza Poultry Vaccination)
KKUN	- Komite Kesehatan Unggas Nasional (National Poultry Health Committee)
KOMNAS FBPI	- Komite Nasional Flu Burung dan Pandemi Influenza
NGO	- Non-Government Organization
NPQIP	- National Poultry Quality Improvement Programme
NVS	- National Veterinary Services
OFFLU	- OIE/FAO Network on Animal influenza
OIE	- World Organisation for Animal Health
PDSR	- Participatory Disease Surveillance and Response
Posyandu	- Pos Pelayanan Terpadu (Integrated Services Clinic)
Puskesmas	- Pos Kesehatan Hewan (Animal Health Clinic)
PVUK	- Petugas Veteriner Unggas Komersial (Commercial Poultry Veterinary Officer)
USAID	- United States Agency for International Development
VBEC	- Village-based Biosecurity Education and Communication



## HPAI ACTIVE CASES Per Month / 2010



## ACKNOWLEDGEMENTS

The FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) Programme works closely with the Government of Indonesia's Ministry of Agriculture, provincial and district Livestock Services; the National Committee for Avian Influenza Control and Pandemic Influenza Preparedness (KOMNAS FBPI); the United Nations country team, particularly the World Health Organization, the Office for the Coordination of Humanitarian Affairs and the United Nations Development Programme; the United States Department of Agriculture, the Australian Department of Agriculture, Fisheries and Forestry, the Australian Centre for International Agricultural Research and non-government partners such as the Indonesian poultry veterinarians' association (ADPHI), Development Alternatives Inc and John Snow Inc.

Collectively, donor organizations fund some 11 international and 70 national staff contracted to FAO in Jakarta and South Sulawesi. FAO staff are responsible for technical and administrative support to the HPAI Campaign Management Unit, Directorate of Animal Health, undertaking a range of activities in support of avian influenza control.

In 2010 the FAO ECTAD Programme in Indonesia was primarily funded by the United States Agency for International Development and the Australian Agency for International Development, with funding for some specific projects from the FAO Netherlands Trust Fund through the Indonesia Dutch Partnership avian influenza project.



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