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<tr>
<td>ACIAR</td>
<td>Australian Centre for International Agricultural Research</td>
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<tr>
<td>ADHPI</td>
<td>Asosiasi Dokter Hewan Perunggasan Indonesia (Indonesian Poultry Veterinarians Association)</td>
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<tr>
<td>AIP-EID</td>
<td>Australia Indonesia Partnership - Emerging Infectious Diseases</td>
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<td>ASEAN</td>
<td>Association of Southeast Asian Nations</td>
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<tr>
<td>ASUH</td>
<td>Aman Sehat Utuh Halal (Safe, Healthy, Pure not mixed with other material, Halal)</td>
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<tr>
<td>AusAID</td>
<td>Australian Agency for International Development</td>
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<tr>
<td>BBPMSOH</td>
<td>Balai Besar Pengujian Mutu dan Sertifikasi Obat Hewan (National Veterinary Drug Assay Laboratory (NVDAL))</td>
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<tr>
<td>CE</td>
<td>Continuing Education (Pendidikan Berkelanjutan)</td>
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<tr>
<td>C &amp; D</td>
<td>Cleaning &amp; Disinfection</td>
</tr>
<tr>
<td>CPH</td>
<td>Commercial Poultry Health (Kesehatan Unggas Komersial)</td>
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<tr>
<td>CMU</td>
<td>HPAI Campaign Management Unit (Unit Pengendalian Penyakit Avian Influenza (UPPAI))</td>
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<tr>
<td>DAFF</td>
<td>Department of Agriculture, Fisheries and Forestry, Australian Government (Departemen Pertanian, Perikanan dan Kehutanan Australia)</td>
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<tr>
<td>DAH</td>
<td>Directorate / Director of Animal Health (Direktorat / Direktur Kesehatan Hewan)</td>
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<tr>
<td>DIC</td>
<td>Disease Investigation Centre (Balai Besar Veteriner (BBVet))</td>
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<tr>
<td>DGLAHS</td>
<td>Directorate General of Livestock and Animal Health Services (Direktorat Jenderal Peternakan dan Kesehatan Hewan (Ditjenakeswan))</td>
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<tr>
<td>DKI Jakarta</td>
<td>Daerah Khusus Ibukota Jakarta</td>
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<tr>
<td>DSO</td>
<td>District Surveillance Officer</td>
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<tr>
<td>ECTAD</td>
<td>Emergency Centre for Transboundary Animal Diseases</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<tr>
<td>FAO RAP</td>
<td>Food and Agriculture Organization Regional Office for Asia and the Pacific</td>
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<tr>
<td>GARC</td>
<td>Global Alliance for Rabies Control</td>
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<tr>
<td>HPAI</td>
<td>Highly Pathogenic Avian influenza</td>
</tr>
<tr>
<td>IBCM</td>
<td>Integrated Bite Case Management</td>
</tr>
<tr>
<td>IDENTIFY</td>
<td>Laboratory Component of USAID Emerging Pandemic Threats Programme</td>
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<tr>
<td>IVM</td>
<td>Influenza Virus Monitoring</td>
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<tr>
<td>JICA</td>
<td>Japan International Cooperation Agency</td>
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<tr>
<td>JSI Deliver</td>
<td>John Snow Inc Deliver Project</td>
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<tr>
<td>KOMNAS Zoonosis</td>
<td>Komisi Nasional Zoonosis (National Commission for Zoonoses Control)</td>
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<tr>
<td>KKUN</td>
<td>Komite Kesehatan Unggas Nasional (National Poultry Health Committee)</td>
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<tr>
<td>LBM</td>
<td>Live Bird Markets (Pasar Unggas Hidup)</td>
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<tr>
<td>MoA</td>
<td>Ministry of Agriculture (Kementerian Pertanian)</td>
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<tr>
<td>MoH</td>
<td>Ministry of Health (Kementerian Kesehatan)</td>
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<tr>
<td>MT</td>
<td>Master Trainer</td>
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<tr>
<td>NIHRD</td>
<td>National Institute of Health Research and Development</td>
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<tr>
<td>NTB</td>
<td>Nusa Tenggara Barat (West Nusa Tenggara)</td>
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<tr>
<td>NTT</td>
<td>Nusa Tenggara Timur (East Nusa Tenggara)</td>
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<tr>
<td>NVS</td>
<td>National Veterinary Services (Layanan Veteriner Nasional)</td>
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<tr>
<td>OIE</td>
<td>World Organization for Animal Health</td>
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<tr>
<td>OFFLU</td>
<td>Joint OIE-FAO Global Network of Expertise on Animal Influenzas</td>
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<tr>
<td>PCR</td>
<td>Polymerase Chain Reaction</td>
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<tr>
<td>PDSR</td>
<td>Participatory Disease Surveillance and Response</td>
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<tr>
<td>Puskesmas</td>
<td>Pusat Kesehatan Masyarakat</td>
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<tr>
<td>Puskeswan</td>
<td>Pusat Kesehatan Hewan (Animal Health Center)</td>
</tr>
<tr>
<td>Pusvetma</td>
<td>Pusat Veteriner Farma</td>
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<tr>
<td>PVUK</td>
<td>Pelayanan Veteriner Unggas Komersial (Commercial Poultry Veterinary Services)</td>
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<tr>
<td>SAFE</td>
<td>Strategies Against Flu Emergence</td>
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<tr>
<td>SOPS</td>
<td>Standard Operational Procedures (Standaar Operasional Prosedur)</td>
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<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WSPA</td>
<td>World Society for the Protection of Animals</td>
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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 34 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. Despite significant decreases in the number of HPAI outbreaks reported since 2009, 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. Indonesia is the most recent country in Southeast Asia to report a new incursion of clade 2.3.2.1 H5N1 virus in 2012, confirming the most recent country in Southeast Asia to report a new incursion of clade 2.3.2.1 H5N1 virus in 2012, confirming the continued risk of expansion of newly emerging virus clades from endemic areas to new areas and the need for countries at risk to maintain vigilance. This clade 2.3.2.1 virus spread rapidly from Java to Sumatra, Bali and Sulawesi and is now firmly entrenched in Indonesia. Detections of H5 virus from environmental sampling of live bird markets in Jabodetabek in the second half of 2013 show an increase in the number of markets evidencing environmental contamination. Both clade 2.1.3 and clade 2.3.2.1 viruses have been detected in environmental samples and are currently showing equal prevalence in Jabodetabek LBMs, indicating that both clades are co-circulating in the catchment areas of these poultry market chains. Co-circulation of both virus clades, causing outbreaks in both chicken and duck flocks, emphasises the need to review vaccination policy and the vaccine formulations which must be made available to poultry farmers to adequately protect their flocks.

The emergence of avian influenza A (H7N9) in China in April 2013 stresses the need for continuing product unggas, dan kegiatan-kegiatan terkait di dalamnya, mencapai satu persen dari produk domestik bruto Indonesia dan menyediakan protein hewani terbesar yang dikonsumsi oleh 232 juta warga Indonesia. Susunan pengusahaan unggas yang kompleks, mulai dari pengusahaan komersial yang intensif, hingga pengusahaan skala kecil semi intensif untuk ayam broiler dan layer, memasukkan unggas pekarangan yang memasok daging dan telur unggas untuk konsumen Indonesia, didominasi melalui pasar tradisional yang tersebar di seluruh negeri. Sekitar 60% rumah tangga Indonesia memelihara unggas untuk dijadikan bahan makanan, pendapatan tambahan, dan hiburan serta upacara perayaan.

Sejak adanya deteksi Highly Pathogenic Avian Influenza (HPAI) di Indonesia pada tahun 2003, penyakit tersebut telah menginfeksi unggas di 32 propinsi dari 34 propinsi, yang mengakibatkan kematian jutaan unggas, dan mengganggu sumber penghidupan sejumlah orang yang bergantung pada pemeliharaan unggas. Laporan mengenai wabah tersebut terus berdatangan dari pulau-pulau yang memiliki populasi manusia dan unggas yang padat, seperti Jawa dan Sumatera, dan muncul di Sulawesi dan Bali secara lebih sporadis. Terlepas dari penurunan angka laporan wabah HPAI yang signifikan sejak tahun 2009, HPAI tetap merupakan tantangan besar bagi produksi unggas. Populasi unggas per tahun yang mencapai kurang lebih 1,5 miliar, populasi manusia sebesar 232 juta yang memiliki keragaman budaya dan etnis, kecenderungan untuk membeli produk-produk unggas dari pasar burung hidup, dan sistem pemerintah yang terdesentralisasi, merupakan hal-hal yang berkontribusi terhadap keberadaan penyakit ini. Indonesia merupakan negara di Asia Tenggara yang baru-baru ini melaporkan adanya serangan clade 2.3.2.1 virus H5N1 di tahun 2012, yang sekaligus mengkonfirmasi adanya risiko penyebaran virus clade baru dari wilayah endemis ke wilayah baru, dan perilanya negara-negara yang berisiko untuk tetap waspada. Virus clade 2.3.2.1 menyebabkan cepat dari Jawa ke Sumatera, Bali, dan Sulawesi, dan sekarang telah berakar di Indonesia. Deteksi virus H5 dari pengambilan sampel lingkungan di pasar burung hidup Jabodetabek pada pertengahan kedua tahun 2013 menunjukkan adanya peningkatan jumlah pasar yang lingkungannya telah terkontaminasi. Baik clade virus 2.1.3 dan 2.3.2.1 telah terdeteksi dari sampel lingkungan dan saat ini pasar burung hidup di Jabodetabek memiliki prevalensi yang sama, yang mengindikasikan bahwa kedua clade tersebut saling bersirkulasi di dalam wilayah-wilayah tangkapan ranti pasar unggas tersebut. Saling bersirkulasinya kedua clade tersebut, menyebabkan munculnya wabah dalam kawanan ayam dan bebek, menekankan perlunya mengkaji ulang kebijakan vaksinasi dan formulasi vaksin yang harus disediakan bagi para peternak guna menjaga unggas mereka dengan baik.

Munculnya avian influenza A (H7N9) di Cina pada bulan April 2013 menekankan kebutuhan untuk melanjutkan surveilans terhadap virus-virus avian influenza dan memberikan peluang untuk melakukan asesmen risiko terhadap introduksi virus tersebut
surveillance for avian influenza viruses and provided an opportunity for an assessment of the risk of the introduction of this virus into Indonesia. Risk assessment and contingency planning for the introduction of emerging influenza viruses is now an ongoing task of the DAH with support from FAO at both the country and regional levels.

The FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) Programme in 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.

Rabies is endemic in several parts of Indonesia. Bali had been rabies free until the disease was first confirmed in humans and in dogs in November 2008. FAO developed a Programme of three rabies projects with the DGLAHS, funded through the FAO Indonesia country programme, AusAID and USAID. The objectives of the Bali rabies control programme were to control rabies using a One Health approach targeting control in dogs and case management in humans through collaborative, cross-sectoral and multidisciplinary mechanisms progressing towards eventual elimination of the disease. The successful implementation of four mass dog vaccination campaigns in 2010-2013 has resulted in an impressive reduction in human rabies cases, with just one human case reported in 2013; a substantial reduction in dog cases has also occurred with only 40 cases recorded in 2013 compared to 120 in 2012. A new rabies project funded by WSPA, to support control and elimination of the disease in Flores and Lembata Islands, NTT Province, was agreed and signed by the DGLAHS in November and activities are now underway.

This 2013 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 and animal health services in Indonesia to control both HPAI and rabies. Achievements in HPAI control across the key theme areas of strengthening veterinary services, capacity building, improving poultry health, and public-private partnerships are presented. Activities related to the rabies programme are presented under the strengthening veterinary services theme. The activities and achievements described in this report were funded by a number of donors and their contribution and commitment are gratefully acknowledged.
ACKNOWLEDGEMENTS

UCAPAN TERIMA KASIH

T he FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) Programme works closely with the Government of Indonesia’s Ministry of Agriculture, provincial and district Livestock and Animal Health Services; the National Commission for Zoonoses Control (KOMNAS Zoonosis); the Ministry of Health; the United Nations country team, particularly the World Health Organization; the United States Agency for International Development (USAID); the US Department of Agriculture (USDA), the Australia Indonesia Partnership on Emerging Infectious Diseases (AIP-EID) Programme implemented by the Australian Department of Agriculture (DA), ASEAN, the US Centers for Disease Control and Prevention, the Australian Centre for International Agricultural Research, the Japan International Cooperation Agency and non-government partners such as the Indonesian poultry veterinarians’ association (ADPHI), the National Poultry Health Committee (KKUN), and the JSI Deliver project. In relation to rabies control, FAO works closely with the DGLAHS and the Bali and Nusa Tenggara Timur provincial livestock services, and with DA, the World Society for the Protection of Animals (WSPA), the Global Alliance for Rabies Control (GARC), the University of Glasgow, UK and the University of Sydney, Australia.

Collectively, donor organizations fund some 5 international and 50 national staff contracted to FAO in Jakarta, Central Java and Bali. FAO staff are responsible for technical and administrative support to the Unit Respons Cepat – Penyakit Hewan Menular Strategis (rapid response unit for strategic animal diseases, previously the HPAI Campaign Management Unit), Directorate of Animal Health, and local government animal health services, undertaking a range of activities in support of avian influenza control. Some staff members also provide strategic technical support on rabies control to the DAH and the Bali and NTT provincial and district livestock services.

In 2013 the FAO ECTAD Programme in Indonesia was primarily funded by the United States Agency for International Development and the Australian Department of Agriculture AIP-EID programme, with funding for the ECTAD laboratory component and the DGLAHS Influenza Virus Monitoring (IVM) system from the IDENTIFY project of the USAID Emerging Pandemic Threats Programme.

The DGLAHS-FAO rabies control programme was funded through an FAO Indonesia Technical Cooperation project, an AusAID funded project, a USAID-funded project and a recently approved NTRabies control project funded by WSPA.

ECTAD Indonesia wishes to express its profound gratitude to all our donors and acknowledge the support of our technical partners.

Program Emergency Centre for Transboundary Animal Disease FAO bekerja secara dekat dengan Kementerian Pertanian Indonesia, Dinas Peternakan dan Kesehatan Hewan di tingkat propinsi dan kabupaten; KOMNAS Zoonosis; Kementrian Kesehatan; tim PBB untuk negara Indonesia, khususnya World Health Organization; USAID; Departemen Pertanian Amerika Serikat (USDA); Program Australia Indonesia Partnership on Emerging Infectious Diseases (AIP-EID) yang dilaksanakan oleh Departemen Pertanian Australia (DA), ASEAN, Australian Centre for International Agricultural Research, Japan International Cooperation Agency, dan mitra non-pemerintah seperti Asosiasi Dokter Hewan Perunggasan Indonesia (ADPHI), KKUN, dan proyek JSI Deliver. Dalam kaitannya dengan pengendalian rabies, FAO bekerja sama secara dekat dengan Ditjen Peternakan dan Dinas Kesehatan Hewan, dan Dinas peternakan propinsi Bali dan Nusa Tenggara Timur, dan bersama dengan DA, World Society for the Protection of Animals (WSPA), Global Alliance for Rabies Control (GARC), University of Glasgow, Inggris, dan University of Sydney, Australia.

Secara keseluruhan, organisasi-organisasi donor mendanai 5 staf internasional dan 50 staf nasional yang diperkerjakan oleh FAO di Jakarta, Jawa Tengah, dan Bali. Staf FAO bertanggungjawab atas bantuan teknis dan administratif bagi Unit Respons Cepat—Penyakit Hewan Menular Strategis (yang sebelumnya merupakan Unit Penanganan Penyakit Avian Influenza), Direktorat Kesehatan Hewan, dan dinas kesehatan hewan di tingkat pemeringkat daerah, melakukan serangkaian kegiatan untuk membantu pengendalian avian influenza. Beberapa staf juga memberikan bantuan teknis strategis untuk pengendalian rabies kepada Departemen Kesehatan Hewan, dan dinas peternakan propinsi Bali dan NTT.

Pada tahun 2013 Program ECTAD FAO di Indonesia pada awalnya didanai sepenuhnya oleh USAID dan program AIP-EID Departemen Pertanian Australia, dengan pendanaan untuk komponen laboratorium ECTAD dan Sistem Influenza Virus Monitoring (IVM) Departemen Kesehatan Hewan bersama dari proyek IDENTIFY dan Program Emerging Pandemic Threats USAID.

Program pengendalian rabies Ditjenak dan Dinas Kesehatan Hewan bersama FAO didanai oleh FAO Indonesia Technical Cooperation project, proyek yang didanai oleh AusAID, proyek yang didanai USAID, dan proyek pengendalian rabies di NTT yang baru-baru ini disetujui dengan dana dari WSPA. ECTAD Indonesia menyampaikan rasa terima kasih yang sebesar-besarnya kepada seluruh donor kami dan menghargai dukungan dari mitra untuk pelaksanaan teknis kami.
THEME 1.
TEMA 1.

CAPACITY BUILDING
PEMBANGUNAN KAPASITAS
Participatory Disease Surveillance and Response (PDSR)

Surveilans dan Respon Penyakit Secara Partisipatif (PDSR)

The PDSR approach and training were reviewed in 2012 and FAO embarked on the task of providing refresher training for all PDSR officers in Indonesia in the slimmed down PDSR Version 3 (V3). This task was completed in 2013, with the assistance of the PDSR Master Trainers (MTs) network, with a total of 1,510 local government PDSR officers (1,068 male, 442 female) receiving refresher training. This latest version of the PDSR programme is designed to simplify the work flow, reporting mechanism, and improve cost-efficiency by means of changing the PDSR approach to focus on passive surveillance of HPAI, as opposed to the active surveillance used previously. The PDSR curriculum for Introductory and Continuing Education training has been condensed and all of the modules have been reviewed and re-formatted into the standard training module format. This shortened training curriculum is more acceptable to local government services and more likely to receive ongoing support and funding from local government.

Following the training, FAO and MTs conducted 29 mentoring visits in 2013 to check on the correct implementation of the PDSR V3 and to give the PDSR officers confidence in working with their communities. When the mentoring team encountered problems in the

PEMBANGUNAN KAPASITAS

CAPACITY BUILDING

PEMBANGUNAN KAPASITAS

FAO EC TAD 2013 Annual Report 3

PDSR Officer Preparation for Field Practice in Manado, North Sulawesi on 20-25 May 2013.

Photo: FAO.
Participatory Disease Surveillance and Response (PDSR)
**Surveilans dan Respon Penyakit Secara Partisipatif (PDSR)**

In mid-2012, clade 2.3.2.1 H5N1 virus arrived in Indonesia. This newly introduced clade of H5N1 caused deaths in ducks and chickens, while the previously circulating clade (2.1) killed chickens and other poultry, but not ducks. FAO developed a training module to explain the importance and diagnosis of the new clade to PDSR officers, government staff and the community. A total of 49 MTs from the PDSR and PVUK programmes were trained in the technical issues of clade 2.3.2.1 and in effective communication practices. Following the training, MTs disseminated the knowledge they obtained to their fellow PDSR officers, local government livestock service peers, and the communities in their working areas.

Many provinces in Indonesia have realized the significance of PDSR in the prevention and control of HPAI. This is demonstrated by their willingness to allocate local budget for training of new PDSR officers. Accordingly, PDSR Introductory Training has been conducted for 179 new PDSR officers in eight provinces funded by their local government budgets, including introductory PDSR training for the NVS expansion in West Sumatra. One province has also funded Continuing Education training for 24 PDSR officers in its jurisdiction.

By the end of 2013, more than 80% of provinces in Indonesia were using PDSR V3 and 248 HPAI outbreaks had been identified and controlled during the year, several of which included cases in ducks. FAO, along with OIE, have developed humane methods of culling ducks to control HPAI outbreaks.

Sebagian besar provinsi di Indonesia telah menyadari manfaat PDSR dalam pencegahan dan pengendalian HPAI. Ini ditunjukkan melalui kesediaan mereka mengalokasikan anggaran daerah untuk pelatihan petugas PDSR baru. Oleh karena itu, Pelatihan Dasar (Introductory) PDSR telah diberikan kepada 179 petugas PDSR baru di delapan provinsi dan dibiayai dengan anggaran pemerintah daerah, termasuk pelatihan Dasar (introductory) PDSR untuk perluasan NVS di Sumatera Barat. Satu provinsi juga membiayai pelatihan Pendidikan Berkelanjutan (Continuing Education) untuk 24 petugas PDSR di wilayah mereka.

Hingga akhir 2013, lebih dari 80% provinsi di Indonesia menggunakan PDSR V3 dan 248 wabah HPAI telah diidentifikasi dan dikendalikan sepanjang tahun tersebut, beberapa diantaranya tembus kasus pada itik. FAO, bersama OIE, telah mengembangkan metode pemuhsan itik yang lebih manusiawi dalam rangka mengendalikan wabah HPAI.
Pelatihan Epidemiologi

In collaboration with the Local Government Training team, the Epidemiology team conducted a 5-day training for government animal health officers in “Outbreak Investigation and Response” to build capacity in disease surveillance and response. The course was held at the DIC (Disease Investigation Centre) Subang and attended by 22 participants from the Directorate of Animal Health, provincial and district livestock services. The purpose of the training was to improve practical skills and share knowledge among the participants on farm investigations, disease outbreak timelines, participatory mapping, disease hypothesis development, case tracing, biosecurity and outbreak control. It was planned that the results of these discussions would be brought up in an emergency disease management workshop held at central level the following week. For the core exercise, field visits were conducted to an on-going real HPAI outbreak reported by villagers in Kiaragoong village, Subang. The 2-day field visits consisted of “outbreak investigation” on the first day and “follow up” on the second day, where the participants practiced interviewing, used participatory mapping, drew disease time-lines and prepared a full investigation report.

Following the outbreak investigation and response training, the epidemiology team conducted an emergency management workshop in Jakarta, 11-13 September 2013, which was attended by 20 participants from DAH, the animal quarantine service, and the provincial animal health service. The workshop discussed responsibilities in an emergency management system (EMS) and emergency response practice; gaps were identified in the current contingency planning structures with regard to roles and responsibilities, capacities, logistics, legislation, and communication structures. The workshop also identified EMS data needs and the best format for effective decision making in outbreak control, and also assessed the socio-economic impact of decision making.

PEMBANGUNAN KAPASITAS

Epidemiology Training


Setelah pelatihan investigasi dan respon wabah, tim epidemiologi melakukan lokakarya manajemen darurat di Jakarta, 11-13 September 2013, yang dihadiri 20 peserta dari Direktorat Kesehatan Hewan, Karantina Hewan, dan Dinas yang membidangi kesehatan hewan provinsi. Lokakarya mendiskusikan tanggungjawab dalam sistem manajemen darurat (emergency management system/EMS) dan aplikasi respon darurat; telah diidentifikasi adanya perbedaan (gap) dalam struktur perencanaan situasi tak terduga (contingency) terkait dengan peran dan tanggungjawab, kapasitas, logistik, peraturan perundangan, dan struktur komunikasi. Lokakarya juga mengidentifikasi kebutuhan data EMS dan format yang tepat untuk membuat keputusan yang efektif dalam pengendalian wabah, dan juga menilai dampak sosio-ekonomi dari pengambilan keputusan.
Program Pelayanan Veteriner Unggas Komersial

Program Veteriner Unggas Komersial (PVUK) is a local government commercial poultry veterinary service programme which aims to prevent, respond to and control poultry diseases, including HPAI, in the commercial poultry sector. Since its inception in 2011, PVUK has built trust between the government and private sector including poultry farmers, poultry associations and industry. PVUK serves as an excellent means of sharing best practices in poultry health and production developed by the FAO-initiated Commercial Poultry Health (CPH) programme. The Government of Indonesia demonstrated its support for PVUK by replicating the programme in eight new districts and training 16 new PVUK officers. The PVUK program is currently implemented in seven provinces and 19 districts and one municipality, with 72 active officers (32 male and 40 female). PVUK is proud to show that such a gender balance is possible in Indonesia.

In 2013, the PVUK program conducted nine trainings to build capacity for PVUK officers, data managers, and MTs to improve field services. These trainings were attended by a total of 202 officers (94 male and 108 female) with several officers trained more than once. Following training, PVUK officers were supported through 19 mentoring visits by FAO NTAs and RRU officers. Mentoring activities help provide sound technical support to PVUK officers working with farmers, raises the confidence of PVUK officers, and ensures the quality dissemination of technical material to farmers.

Evidence of trust building has grown each year as individual poultry farmers and poultry associations request progressively more training from PVUK. This year there was an increase in the number of requests for training by individual poultry farmers and poultry associations.

PVUK Officers Visiting Farm. Petugas PVUK Melakukan Kunjungan Peternakan. Photo: FAO.

PVUK Officers Learn Vaccination by Injection. Petugas PVUK Belajar Proses Vaksinasi Menggunakan Injeksi. Photo: FAO.
for training and assistance; in many cases the farmers and associations actually funded the training themselves. Farmers have also requested assistance with vaccination, cleaning and disinfection procedures, and farm management problems.

PVUK officers train farmer groups in a range of skills such as cold chain integrity, farm cleaning and disinfection, vaccination skills, and cleaning of feeders and drinkers. During 2013, 85 training activities were attended by 1,874 poultry farmers (1,493 male and 381 female). In addition, 15 poultry stakeholder meetings, designed to introduce the PVUK programme to new areas, were attended by 387 farmers (329 male and 58 female). In 2013 there was an increase in the funding contributions from local government, farmers and poultry associations to training activities while FAO funding of field activities reduced to just over 50% compared to the previous year.

In 2013, PVUK officers conducted 148 disease investigations and provided technical support to 74 farmer groups. This year, FAO ECTAD Indonesia initiated a post-vaccination serological testing service and testing for water quality in numerous farms in PVUK districts. This has further raised the interest of farmers to work more closely with PVUK officers in disease prevention and control efforts on commercial poultry farms. Already four farmers have agreed to submit samples of sick and dead poultry to the laboratory for diagnosis; this is a significant development as previously commercial farmers concealed HPAI outbreaks.

banyaknya peternak unggas secara individual dan asosiasi perunggasan yang meminta lebih banyak pelatihan dari PVUK. Dalam tahun ini terdapat peningkatan jumlah permintaan pelatihan dan bantuan; banyak kasus dimana peternak dan asosiasi mendanai pelatihan dengan dana mereka sendiri. Peternak juga meminta bantuan untuk vaksinasi, prosedur pembersihan dan disinfeksi, dan masalah manajemen peternakan.

Petugas PVUK melatih kelompok peternak dalam berbagai keahlian termasuk rantai dingin yang sesuai, pembersihan dan disinfeksi peternakan, dan pemberian tempat pakan dan minum. Sepanjang tahun 2013, sebanyak 85 kegiatan pelatihan telah diikuti oleh 1,874 peternak unggas (1,493 pria dan 381 wanita). Sebagai tambahan, 15 pertemuan pemangku kepentingan perunggasan, didisain untuk memperkenalkan program PVUK di daerah-daerah baru, yang diikuti oleh 387 peternak (329 pria dan 58 wanita). Di tahun 2013 terdapat peningkatan kontribusi pendanaan dari pemerintah daerah, peternak dan asosiasi perunggasan dalam kegiatan pelatihan, sementara itu dana FAO untuk kegiatan lapangan berkurang hingga lebih dari 50% dibandingkan dengan tahun sebelumnya.

Di tahun 2013, petugas PVUK melakukan 148 investigasi penyakit dan memberikan dukungan teknis kepada 74 kelompok peternak. Tahun ini, FAO ECTAD Indonesia mengawali pelayanan uji serologis pasca vaksinasi dan uji kualitas air di beberapa peternakan di kabupaten PVUK. Kegiatan ini semakin menambah ketertarikan peternak untuk bekerja lebih dekat dengan petugas PVUK dalam pencegahan penyakit dan upaya pengendalian di peternakan unggas komersial. Saat ini sudah ada empat peternak yang setuju untuk mengirimkan sampel dari ayam sakit dan mati ke laboratorium untuk didiagnosis; hal ini merupakan perkembangan yang sangat baik karena sebelumnya peternak komersial selalu menyembunyikan wabah HPAI.
FAO is working with the DGLAHS to build and strengthen laboratory capacity to monitor circulating influenza viruses by establishing a sustainable influenza virus monitoring network and developing an integrated antigenic and genetic data management platform - IVM Online. Supported by the IDENTIFY programme in 2013, the laboratory team has worked to enhance DIC laboratories’ timely reporting of avian influenza to national authorities by supporting and facilitating the genetic characterization of duck isolates at DIC Bukittinggi and Pusvetma. Initial recommendations were made to the Director of Animal Health on containment of the newly introduced clade 2.3.2.1 H5N1 virus identified in Central Java, Yogyakarta and East Java provinces.

A new avian influenza virus, A (H7N9), emerged in China in March 2013 causing human deaths but without manifesting acute clinical signs in poultry. In June, FAO provided PCR reference reagents and validated protocols to Indonesia, including primers/probes, positive and negative controls, to test for both H7 and N9 genes, to determine whether the H7N9 virus was present in the country. The H7N9 real time PCR reagents were made available to 10 laboratories within the IVM network. Conventional H7N9 PCR primers, protocols and control reagents were also supplied to the Veterinary Faculty laboratory at Air Langga University, to DIC Wates, and to Jakarta BKHI Laboratory. Retrospective and LBM surveillance samples collected in Jabodetabek, Medan and Surabaya in May/June were subsequently tested for evidence of H7N9 but no H7N9 virus was detected.

In late 2012, biosafety risk assessments were conducted in Indonesia at ten DGLAHS animal health laboratories (eight DICs, NVDAL and Pusvetma) under the FAO Regional Laboratory Network programme. There are two components of the biosafety risk assessment programme; 1) a physical assessment of laboratory

PCR Testing Activity. Aktivitas PCR Testing. Photo: FAO.
facilities to understand biological safety risks at each site and provide suggested equipment, workflow and staff training solutions and recommendations to mitigate risks, and 2) testing and validation of the biosafety cabinets (BSC) at each site and suggest methods to solve any problems. The biosafety risk assessments were conducted using FAO’s Lab Mapping tool (LMT) completed with senior laboratory staff by two FAO biosafety assessors. The BSC testing and certification was done by ESCO Singapore certified technicians. The laboratories assessed during this program generally met a very high level of management and the average LMT result for the 10 laboratories assessed was 60%. BSC testing indicated that 38 of the 55 cabinets passed the accreditation and that of the 17 BSC which failed, eleven cabinets required total replacement. This year FAO allocated IDENTIFY project funds to replace four of the biosafety cabinets which failed certification during the 2012 assessment. The replacement of BSC units was prioritized for four laboratories based on the pathogens these laboratories work with.

munculnya tanda klinis pada unggas. Bulan Juni, FAO memberikan reagen reference PCR dan memvalidasi protokol di Indonesia, termasuk primers/probes, kontrol positif dan negatif, untuk menguji gen H7 dan N9, untuk menentukan apakah virus H7N9 terdapat di Indonesia. Reagen PCR real time H7N9 telah dibagikan kepada 10 laboratorium di dalam jejaring IVM. Primer konvensional PCR H7N9, protokol dan reagen kontrol juga diberikan kepada Lab Fakultas Kedokteran Hewan Universitas Air Langga, BBVet Waters dan Lab BKHI Jakarta. Sampel retrospektif dan sampel surveilans pasar unggas hidup dikumpulkan dari Jabodetabek, Medan dan Surabaya bulan Mei/Juni dan kemudian di uji untuk melihat keberadaan H7N9 namun tidak terdeteksi adanya virus H7N9.

IMPROVING POULTRY HEALTH
PENINGKATAN KESEHATAN UNGGAS
The Commercial Poultry Health (CPH) programme began 2013 with a new phase of its Biosecurity Cost-benefit Study conducted in collaboration with six poultry layer farms in the Solo area of Central Java. During this new study phase, all participating farms began to implement biosecurity interventions specific to each farm’s needs, either perfecting their existing biosecurity setup or adding an entirely new biosecurity system to the farm. The results of this activity will help farmers to quantify the cost of biosecurity implementation and measure its benefits, thereby determining how biosecurity can be implemented cost-effectively to protect layer farms from risks of infectious poultry diseases, including HPAI.

The best practices gathered during biosecurity implementation activities were integrated into a “3-zone” biosecurity system. This simple and smart biosecurity guideline is applicable to all kinds of poultry farms, and can help farmers to move from conceptual biosecurity to structural and operational biosecurity, a process usually hampered due to the lack of concrete examples or guidance to follow. The same principle of Keep It Simple and Smart (KISS) was also applied to Clean and Gentle vaccination and Simple and Effective cleaning and disinfection practices developed during the first phase of the CPH study.

During 2013, CPH best practices were presented in three technical information booths and two FAO National Farmers Seminars during two national livestock expositions: the Indolivestock Expo in Bali and the International Livestock and Dairy Expo (ILDEX) in Jakarta. CPH developed the Warung Nasi Hat booth concept, in which visitors are served a fresh meal of local Indonesian cuisine while meeting with FAO technical advisors to learn about CPH best practices and have any of their questions answered.

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Advocate Best Practices for Commercial Poultry Health

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Advocate For Best Practices for Commercial Poultry Health
Advokasi Aplikasi Terbaik untuk Kesehatan Unggas Komersial

poultry health-related questions answered. The booths have been highly popular, with FAO activities at the ILDEX Expo earning the “Most Innovative Booth” award. CPH recommended practices were also presented to poultry farmers during seminars in Central Java’s principal egg production centres of Sukorejo and Solo, as well as to academics, students and farmers in seminars at Bogor Agricultural University and Gadjah Mada University. Through these outreach events, over 2,000 stakeholders within the poultry industry learned about CPH best practices.

To further support information dissemination, specially designed CPH calendars were developed, containing informational photos, cartoons, and easy to remember slogans highlighting the key 3-Zone biosecurity and vaccination best practices. Booklets on Clean and Gentle Vaccination, and Simple and Effective Cleaning and Disinfection Guidelines, and 3-Zone Biosecurity were also produced. All of best practices developed by CPH thus far have been integrated into the PVUK training programme, further enhancing information dissemination and integration between public and private sector activities.

Untuk mendukung penyebaran informasi lebih jauh, telah dibuat kalender CPH yang berisi foto-foto informasi, kartun, dan cara yang mudah untuk mengingat slogan yang menekankan pada aplikasi terbaik biosekuriti 3 zona dan vaksinasi. Teleh diproduksi juga brosur tentang Vaksinasi Bersih dan Lembut, dan Pedoman Pembersihan dan Disinfeksi yang efektif, dan biosekuriti 3 zona. Semua aplikasi terbaik yang dikembangkan oleh CPH sejauh ini telah diintegrasikan ke dalam program pelatihan PVUK, yang meningkatkan penyebaran dan integrasi lebih lanjut antara kegiatan sektor Pemerintah dan swasta.
One of the key outputs from the CPH programme has been the development of evidence-based avian influenza vaccination guidelines. The vaccination best practices identified by CPH have been summarized in concise and easy-to-remember Clean and Gentle Vaccination guidelines for layer farmers. The CPH recommended vaccination practices, if conducted properly, will not only significantly reduce risk to HPAI at all layer bird life stages, but also avoid vaccine-related decreases in egg production and other negative impacts associated with avian influenza vaccination. The CPH programme actively promotes vaccination best practice whenever opportunities arise, including the aforementioned poultry industry expositions, trainings, and seminars, as well as ensuring that the vaccination best practices are also shared via the local government PVUK programme. Information dissemination tools have also been produced in the form of a calendar and booklet on CPH recommended vaccination practices. The main information provided in the tools can be condensed into the following key vaccination message – "Poultry layer farmers should always use recommended registered H5N1 HPAI vaccines, with the correct vaccination schedule, and the appropriate clean and gentle vaccination techniques."

Salah satu output utama dari program CPH adalah pembuatan panduan vaksinasi avian influenza berbasis-bukti. Aplikasi terbaik vaksinasi yang telah diidentifikasi CPH telah dirangkum dalam pedoman yang singkat dan mudah diingat tentang Vaksinasi Bersih dan Lembut untuk peternak layer. CPH merekomendasikan bahwa aplikasi vaksinasi, jika dilakukan dengan benar, tidak hanya menurunkan risiko HPAI secara signifikan di semua tahapan hidup unggas layer, tapi juga mencegah penurunan produksi telur terkait dengan vaksin dan dampak negatif lain yang berhubungan dengan vaksinasi avian influenza. Program CPH secara aktif mempromosikan aplikasi terbaik vaksinasi dalam setiap kesempatan yang muncul, termasuk saat pameran industri perunggasan, pelatihan dan seminar seperti yang disebutkan sebelumnya, dan juga memastikan bahwa aplikasi terbaik vaksinasi juga dibagikan melalui program PVUK pemerintah daerah. Alat-alat penyebaran informasi juga telah dibuat dalam bentuk kalender dan brosur mengenai aplikasi vaksinasi yang direkomendasikan CPH. Informasi utama yang diberikan oleh sarana tersebut dapat diingatkan menjadi pesan kunci vaksinasi sebagai berikut – "Peternak unggas layer harus selalu menggunakan vaksin HPAI H5N1 yang telah direkomendasikan, dengan jadwal vaksinasi yang benar, dan teknik vaksinasi bersih dan lembut yang tepat."
STRENGTHENING VETERINARY SERVICES
PENGUATAN PELAYANAN VETERINER
The FAO epidemiology team assisted the DAH in analyzing and reporting the HPAI situation in Indonesia. HPAI surveillance in live bird markets (LBM) has been conducted since 2009 to date within the Jabodetabek area to monitor the progress of HPAI control; environmental samples have been collected at LBMs and tested to assess the prevalence of HPAI in these markets and to monitor HPAI in the catchment areas of these markets.

Since mid-2012 both clade 2.1.3 and clade 2.3.2.1 H5N1 HPAI viruses have been co-circulating in Indonesia. It was agreed that LBM surveillance would be used to monitor the circulation of both clades over time. Regular reports were prepared and recommendations were provided to the DAH on HPAI control guidelines and vaccination to control both virus clades. FAO collaborated further with DIC Wates in a small study to validate the use of the Anigen© rapid field test in ducks, including the use of early growth feathers for detection.

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antigen detection. In the light of influenza A (H7N9) outbreaks in China, a risk based surveillance activity was designed and conducted to assess if H7N9 was present in Indonesia. The H7N9 risk based surveillance was implemented through existing LBM surveillance in three different catchment areas (Jabodetabek, Medan and Surabaya) and at one collector yard in east Jakarta which mainly channels backyard chickens from central and east Java to DKI Jakarta retail markets; all samples tested negative for H7N9.

In 2013 this LBM surveillance for H5N1 was expanded to market catchment areas in Medan and Surabaya. Expansion of activities in Medan and Surabaya started with profiling the markets for commodities information, marketing activity and movements along the value chain, and thereafter pooled environmental samples were collected at 3-monthly intervals. Since the beginning of this year, FAO and WHO have also been working together on LBM surveillance activities in Jabodetabek where FAO conducts the environmental surveillance and WHO conducts sero-surveillance in LBM workers.

While there had been a decrease in LBMs positive for H5 between 2009 and 2012, this year an increase in the proportion of LBMs positive for H5N1 has been recorded. This may have been caused by increased virus circulation due to the new clade 2.3.2.1 H5N1 virus, introduced in mid-2012 into Indonesia. H5 positive samples from LBMs are being tested by PCR to differentiate between the two clades as well as through sequencing the HA gene. Preliminary results of differential PCR screening indicate that both clades are now circulating in the LBM catchment areas, but further work is needed to elucidate patterns in the prevalence of each clade.
The FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) Indonesia works to enhance the capacity of the Government of Indonesia to sustainably control HPAI in order to help safeguard the health and livelihoods of the Indonesian population and reduce the global pandemic threat. The programme has largely achieved its objectives in HPAI control across the key theme areas of strengthening veterinary services, capacity building, improving poultry health, and developing public private partnerships. However, due to a reduction in USAID funding support for HPAI at the country level in 2012-2013, certain ECTAD project activities had to be re-focused.

ECTAD Indonesia and the Directorate of Animal Health (DAH) developed a new approach to directly disseminate information to local government livestock services on our reduced budget for FAO-supported LDCC, PDSR, PVUK, and NVS activities. Advocacy meetings were held with relevant local government technical and operational stakeholders to discuss the expectations for government funding for HPAI control activities in 2013. These semi-formal coordination meetings were held in the target high-risk provinces of the advocacy program: East Java, Central Java, Yogyakarta, West Java, DKI Jakarta, Banten, Lampung and North Sumatra. The engagements aimed to highlight the positive impacts of HPAI control activities implementation to the provincial livestock services and obtain local government budget kemitraan pemerintah dan swasta. Walaupun demikian, terkait turunnya dukungan dana USAID untuk HPAI pada tingkat negara di tahun 2012-2013 beberapa fokus kegiatan proyek ECTAD harus ditinjau kembali.

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Expansion of Government-Funded HPAI Control Activities

Perluasan Kegiatan Pengendalian HPAI Dana Pemerintah

Perluasan Kegiatan Pengendalian HPAI Dana Pemerintah

Advocacy Meeting with Local Government.
Pertemuan Advokasi dengan Pemerintah Daerah. Photo: FAO.
commitments for improved sustainability of the HPAI control programme, particularly by increasing field work conducted by veterinary services.

During 2013, the programme also advocated with the central Directorate of Animal Health to allocate a portion of their budget to support implementation of HPAI control activities and control of other strategic infectious animal diseases at the provincial level through APBN Deconcentration budget (delegated funding by the central level to a region for discharge of a function not yet decentralized). The impact of advocacy in the eight target provinces was that six increased their fund allocation for PDSR and PVUK HPAI control activities in their respective areas as follows: increases of 70% in budget allocation for HPAI control in Lampung, 49% in Banten, 36% in Jakarta, 189% in West Java, and 457% in Yogyakarta, and in Central Java, the budget allocation went from zero to over IDR500 million. In addition, other provinces which had not allocated any budget for HPAI control activities agreed to continue funding of PVUK and PDSR activities from other available funding sources, such as operational funds for vaccination, disinfection, and extension activities, so that the animal health staff whose capacity had been built by the programme could continue implementing key field activities.

In order to encourage stronger commitment from local government, DAH and FAO jointly conducted further follow-up meetings in the eight targeted provinces. The objectives of this follow-up were to:

• identify constraints to actual budget allocation for HPAI control activities as committed during the initial advocacy meeting;
• evaluate the current HPAI control reporting system funded by government;
• maximize the number of field visits and disease reports, based on the minimum target of work and available budget agreed during the initial advocacy meeting;
• advocate to local government to allocate budget for PDSR, PVUK, and PSP operations for 2013 and going forwards;
• disseminate information on the decline in PDSR

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Dalam rangka mendorong komitmen kuat dari pemerintah daerah, Direktorat Kesehatan Hewan dan FAO secara bersama-sama melakukan rapat lanjutan di delapan provinsi target. Tujuan dari tindaklanjut ini adalah untuk:

• mengidentifikasi hambatan dalam alokasi dana secara aktual untuk kegiatan pengendalian HPAI seperti yang telah dinyatakan dalam pertemuan awal advokasi;
• mengevaluasi sistem pelaporan pengendalian HPAI saat ini yang didanai oleh pemerintah;
• memaksimalkan jumlah kunjungan lapangan dan pelaporan penyakit, berdasarkan target minimal kerja dan dana yang tersedia seperti yang telah disepakati dalam pertemuan awal advokasi;
• melakukan advokasi kepada pemerintah daerah untuk mengalokasikan anggaran bagi...
performance after FAO funding ceased in 2012; identify the 2014 provincial budget allocation plan for PDSR, PVUK, PSP and NVS programmes; and

• endorse establishment of provincial URC-PHMS to take over the roles of the LDCC.

These follow-up meetings identified a number of critical issues such as: declining number and performance of active PDSR officers, complexity of fund disbursement mechanisms at the national and local levels to support the work conducted by PDSR officers in the field, and lack of financial support for data management.

One of the solutions proposed by the provinces visited was issuing of Guidelines from the central level (Directorate of Animal Health) on Budget Planning for Implementation of Animal Health Service Activities through the APBN Deconcentration Fund. Accordingly, FAO, in collaboration with DAH-DGLAHS, facilitated a series of meetings to develop National Guidelines for Central and Local Governments on Animal Health Service Management. These Guidelines will be used for local government budget planning with West Sumatra as the role model province that has successfully allocated local budget for animal health services. The ECTAD programme will provide further advocacy support in other priority provinces to conduct budget planning for their animal health service activities, including improvement of the animal health service database system.

**Fund Allocation for HPAI Control Activity in Local Government Budget 2013**

![Graph: FAO.](FAO EC TA D 2013 Annual Report 19)
The National Veterinary Service (NVS) programme was designed to empower the puskeswan (local government animal health centre) to control a range of livestock diseases using participatory methods. The NVS pilot, which trained 42 puskeswan staff, commenced in late 2012, and the three levels of training were completed in 2013 in the three pilot districts of Dumai (Riau Province), Agam (West Sumatra Province) and Klungkung (Bali Province). The first level of NVS training imparted communication and participation skills to staff to enable them to work closely with communities. The second level of training focused on syndromic surveillance (sudden death, diaphorea, respiratory distress, nervous signs, and abortion, etc.) and the control of HPAI and rabies. Following a period of field experience, Level 3 training was conducted to equip NVS staff to control other diseases. The training reviewed previous training and then introduced new diseases according to regional needs: Klungkung (Hog Cholera and Jembrana); Dumai (Jembrana and brucellosis); Agam (brucellosis and vector-borne blood parasites).

A key part of the control of rabies is the One Health approach where field staff of local government human health services and local government animal health services communicate between one another to ensure that all bite cases are followed up by the livestock health sector and that bite victims receive the appropriate treatment in the puskesmas according to the rabies status of the dog. In the pilot areas, 73 puskesmas (human health centre) and puskeswan staff were trained in Integrated Bite Case Management (IBCM), which essentially establishes a flow of information between the two sectors. Such a One Health approach was initially used in response to HPAI outbreaks and has been now strengthened by the NVS programme.

Programme Pelayanan Veteriner Nasional (PVN/NVS) didisain untuk memberdayakan puskeswan dalam pengendalian berbagai penyakit hewan dengan menggunakan metode partisipatif. Ujicoba PVN/NVS, dengan melatih 42 petugas puskeswan, dimulai pada akhir 2012, dan tiga level pelatihan telah diselesaikan di tahun 2013 di tiga kabupaten percontohan di Dumai (Provinsi Riau), Agam (Provinsi Sumatera Barat) dan Klungkung (Provinsi Bali). Pelatihan PVN/NVS tahap satu memberikan keahlian komunikasi dan partisipasi yang akan membantu mereka bekerja lebih dekat dengan masyarakat. Pelatihan tahap dua difokuskan pada surveilans sindromik (mati mendadak, diare, sulit bernafas, tanda klinis syaraf dan aborsi dll) serta pengendalian HPAI dan rabies. Setelah periode pengalaman lapangan, pelatihan tahap 3 dilakukan untuk mengekalkan petugas PVN/NVS dalam pengendalian penyakit lainnya. Pelatihan tersebut juga meninjau kembali pelatihan sebelumnya dan memperkenalkan penyakit baru sesuai dengan kebutuhan daerah: Klungkung (Hog Cholera dan Jembrana); Dumai (Jembrana dan brucellosis); Agam (brucellosis dan parasit darah).

Bagian yang penting dari pengendalian rabies adalah pendekatan One Health dimana petugas lapangan dari dinas kesehatan manusia dan kesehatan hewan saling berkomunikasi untuk memastikan bahwa semua kasus gigitan ditindaklanjuti dan korban gigitan menerima pengobatan yang tepat dari puskesmas sesuai dengan status rabies anjing. Di daerah uji coba, 73 petugas puskesmas dan puskeswan mendapatkan pelatihan Tata Laksana Kasus Gigitan Terpadu (TaKgit), yang memiliki peran penting dalam pertukaran informasi antara kedua sektor tersebut. Pendekatan One Health ini awalnya digunakan untuk merespon wabah HPAI dan saat ini telah dimodifikasi untuk digunakan dalam pengendalian rabies.

Setelah pelatihan, lima kunjungan pendampingan (mentoring) lapangan telah dilakukan oleh para National Technical Advisor (NTA) FAO dan perwakilan dari Direktorat Kesehatan Hewan, termasuk URC, Sub-direktorat Surveilans Penyakit Hewan, Sub-direktorat Kelembagaan dan Sumberdaya Kesehatan Hewan, Sub-direktorat Pengendalian dan Pemberantasan Penyakit Hewan. Melalui pendampingan lapangan, tim dapat menilai penerapan keahlian yang didapatkan dari pelatihan dan menambah kepercayaan diri petugas saat bekerja bersama masyarakat.
National Veterinary Service (NVS) Programme

Program Pelayanan Veteriner Nasional (PVN/NVS)

modified for use to control rabies.

Following the trainings, five field mentoring visits were conducted by FAO National Technical Advisors (NTAs) and representatives of the Directorate of Animal Health, including RRU, Sub-directorate of Animal Disease Surveillance, Sub-directorate of Institutional and Animal Health Resources, Sub-directorate of Animal Disease Control and Eradication. Field mentoring allows the teams to assess how well the skills passed on in the trainings are being used and to give the NVS staff confidence in working with their communities.

Five advocacy visits were conducted in the pilot areas to discuss the provision of local funding for the continuation of the NVS program in 2014 and establishment of veterinary authority in the regions. The NVS has had a rapid impact in the pilot districts with the animal health staff saving lives of people bitten by rabid dogs, through vigilance over bite cases and rumors, within weeks of completing the training. The human and livestock health sectors have enjoyed the synergy created by working together.

Based on the success of the NVS pilot, the Government of Indonesia has expanded the NVS to all districts in West Sumatra Province with the training of over 80 puskeswan staff. The costs of the expansion are shared between FAO and the local governments of West Sumatra.

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Lima kunjungan advokasi ke daerah percontohan telah dilakukan untuk mendiskusikan pengalokasian anggaran daerah bagi keberlanjutan program PVN/NVS di tahun 2014 dan pembentukan otoritas veteriner di daerah. PVN/NVS telah memberikan dampak yang cepat di kabupaten percontohan dimana petugas kesehatan hewan menyelamatkan nyawa korban gigitan anjing rabies melalui kewaspadaan terhadap kasus gigitan dan rumor, beberapa minggu setelah pelatihan diselesaikan. Sektor kesehatan manusia dan hewan telah mendapatkan manfaat melalui sinergi yang tercipta dari saling bekerjasama.

Berdasarkan keberhasilan ujicoba PVN/NVS, Pemerintah Indonesia telah memperluas NVS ke seluruh kabupaten di Provinsi Sumatera Barat dengan melatih lebih dari 80 petugas puskeswan. Biaya untuk perluasan tersebut berbagi antara FAO dan pemerintah daerah Sumatera Barat.

Cow Blood Sampling in Dumai, Riau on 21 August 2013.
Pengambilan Sample Darah Sapi di Dumai, Riau pada 21 Agustus 2013. Photo: FAO.

Pelatihan IBCM One Health untuk Petugas Kesehatan Umum dan Kesehatan Masyarakat di Agam, Sumatera Barat pada 8 Oktober 2013. Photo: FAO.
Kegiatan Pengendalian Rabies

Bali government livestock services implemented the fourth round of mass dog vaccination in Bali resulting in the vaccination of 334,500 dogs. FAO worked closely with government to modify the vaccination strategy to focus more on vaccination of puppies and un-owned dogs. This was supported by improving dog catching skills of specially selected A-teams so that they could be deployed to catch the dogs that could not be caught by the other teams. Three A-team trainings were held and an intensive vaccination programme was conducted in Bangli where 15 teams from Bali and Sumatra caught and vaccinated over 6,500 dogs in only 4 days.

FAO also conducted rabies refresher training for over 600 government staff through field-based training. There were limited classroom sessions and the majority of the work was aimed at improving dog catching and vaccination skills. In four districts, IBCM refresher training was held to bring the rapid response teams from the animal health sector and the puskesmas staff together to review their bite management activities.

As long-lasting collars are essential to identify vaccinated dogs and hence vaccination coverage, a study was conducted from September-December 2012 to evaluate survival rate for four different collar types. The collar types tested were nylon webbing attached with rivets, a plastic collar secured by an integrated plastic double-locking mechanism (Buatier, France), the same plastic collar secondarily secured with an iron rivet and a cloth ribbon collar secured with a plastic locking clip. The study concluded that the French plastic collar lasted longer and that there was little benefit to the riveting, which took too long to apply. The study concluded that the French plastic collar lasted longer and that there was little benefit to the riveting, which took too long to apply.

Dinas Peternakan Provinsi Bali telah melaksanakan putaran keempat vaksinasi anjing secara massal di Bali dan telah memvaksinasi 334,500 anjing. FAO bekerjasama erat dengan pemerintah untuk memodifikasi strategi vaksinasi agar lebih fokus pada vaksinasi terhadap anak anjing dan anjing tak berpemilik. Kegiatan ini didukung dengan meningkatkan keahlian menangkap anjing terutama pada tim pilihan yang tidak dapat ditangkap oleh tim lain. Tiga kali pelatihan A-team dan program vaksinasi intensif di Bangli telah dilakukan dimana 15 tim dari Bali dan Sumatera telah menangkap dan memvaksin lebih dari 6500 anjing hanya dalam 4 hari.

FAO juga memberikan pelatihan penyegaran/refresher rabies kepada lebih dari 600 petugas pemerintah melalui pelatihan berbasis-lapangan. Ada beberapa sesi terbatas di dalam kelas dan mayoritas kegiatan ini ditujukan untuk meningkatkan kemampuan menangkap dan memvaksinasi anjing. Di empat kabupaten, telah dilakukan pelatihan refresher TakGit yang mendorong tim respon cepat dari sektor kesehatan hewan dan petugas puskesmas untuk saling bekerjasama dalam mengkaji ulang kegiatan tata laksana kasus gigitan terpadu mereka.

Oleh karena kalung yang tahan lama merupakan bagian penting dalam identifikasi anjing yang telah divaksin dan selanjutnya cakupan vaksinasi, pada bulan September-Desember 2012 telah dilakukan studi untuk mengevaluasi tingkat ketahanan dari empat jenis kalung yang berbeda. Jenis kalung yang berbeda adalah tali rajut nilon yang diikat dengan paku sambut, kalung plastik yang diikat dengan mekanisme kunci-

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**Rabies Vaccination Activity in Bali.** Kegiatan Vaksinasi Rabies di Bali. Photo: FAO.
suggested considering another locking mechanism to make application easier.

To support the communication and socialization of rabies control, this year FAO produced two short documentary videos on rabies control. The “Fighting Rabies in Bali with One Health” video focused on the One Health approach, explaining the human and animal health roles in rabies control for the Asia region. This video was circulated locally in Indonesia and regionally in Southeast Asia. The “Saving Lives in Bali” video explains the DAH Bali rabies control strategy to target audiences in other rabies-infected provinces of Indonesia; this video was produced both in English and Bahasa Indonesia and will be used for rabies control programme advocacy with Indonesian government partners and other stakeholders.

The impact of mass dog vaccination in Bali is clearly apparent. Before mass vaccination began, up to 11 people were dying a month from rabies and 82 people died in 2010, while there was only one human case in all of 2013. In addition, the number of canine rabies cases has reduced by over 90%. Over 800 government staff has proven skills in diagnosis of rabies, mass vaccination of dogs, IBCM and analysis of vaccination data.

Lessons learned in Bali are being scaled up in the NVS pilot districts on Sumatra Island and a new rabies control programme is also being rolled out in Flores. DAH and FAO have already conducted a field assessment to develop an appropriate control strategy and pilot vaccination activities will begin throughout Flores and Lembata Islands in early 2014.

Kegiatan Pengendalian Rabies

Rabies Control Activities

ganda (Buatier, Prancis), kalung plastik yang sama yang mempunyai pengaman sekunder berupa paku sambut besi dan kalung pita yang diikat dengan klip pengunci plastik. Studi ini menyimpulkan bahwa kalung plastik Prancis lebih tahan lama dan tanpa paku sambut pun sebenarnya tidak terlalu berpengaruh, karena butuh waktu lama untuk memasangnya. Kajian tersebut juga menyarankan untuk mempertimbangkan mekanisme pengunci lain yang dapat mempermudah pemasangan kalung.


PUBLIC-PRIVATE PARTNERSHIP
KEMITRAAN PEMERINTAH-SWASTA
The Public Private Partnership programme continued its efforts to establish a viable partnership between the government and poultry industry at the national level by developing and endorsing KKUN (National Poultry Health Committee) activities to increase interaction between the government and the industry. FAO-funded KKUN meetings have resulted in an agreement to begin farm biosecurity promotion and dissemination activities as an essential element of good poultry farming practice, and to induce a new habit of sharing experience and problem solving among poultry veterinarians in the form of “Grand Rounds”. Since then, the Commercial Poultry Health team has made presentations on 3-Zone Biosecurity at two university seminars in Bogor and Yogyakarta, attended by more than 200 university staff, poultry veterinarians and poultry farmers.

A newly proposed national Poultry Health Programme (PHP) was initiated recently by FAO in collaboration with the RRU and the Indonesian Poultry Veterinarians Association (IPVA). By proposing inclusion with the 2014 DGLAHS Strategic Plan, the RRU hopes to make the PHP a Government of Indonesia programme, which in turn will be advocated to BAPPENAS (National Development Planning Agency). FAO will provide initial funding, and consolidate expertise and experience for the programme, while IPVA and KKUN will encourage the poultry industry to provide further funding for the programme, just as they have done for funding joint KKUN/IPVA activities.


Baru-baru ini FAO bekerja sama dengan URC dan Asosiasi Dokter Hewan Perunggasan Indonesia (ADPHI) memprakarsai sebuah proposal baru bagi Program Kesehatan Unggas nasional. Dengan mengusulkan untuk memasukkan hal ini ke dalam Rencana Strategis Direktorat Jenderal Peternakan dan Kesehatan Hewan 2014, URC berharap okan menjadikan Program Kesehatan Unggas sebagai sebuah program Pemerintah Indonesia, dan nantinya akan diadvokasikan kepada BAPPENAS (Badan Perencanaan Pembangunan Nasional). FAO akan menyiapkan dana awal, dan mengkonsolidasikan keahlian dan pengalaman ke dalam program, sementara ADPHI dan KKUN akan mendorong industri perunggasan untuk memberikan dana bagi kelanjutan program, seperti yang mereka lakukan saat mendanai kegiatan gabungan KKUN/ADPHI.

KEMITRAAN PEMERINTAH-SWASTA
In order to reduce HPAI infections in poultry farms, the use of appropriate Indonesia-produced vaccines based on local antigens has been recommended by the DAH and implemented since 2012. Since H5N1 undergoes rapid and consistent evolution – through the process of genetic drift – the specific problem faced by the veterinary authorities is to know when action is required when strain variation is detected. In practical terms this might require changing recommendations for vaccines and/or moving from vaccines containing only a single antigen to ones containing two or more antigens. Sharing of influenza virus data and isolates between government and private laboratories should be supported to assure the quality of current vaccines.


Berkolaborasi dengan AAHL dan tim pengembangan software di Bali, telah dikembangkan Alat Preskrin (alat preskrin H5N1) untuk menyimpan dan mengelola hasil skrining virus yang dilakukan oleh jeiring IVM, dan sejalan dengan semakin luasnya peran mereka, alat ini kemudian dinamakan dengan IVM Online. Beberapa lokakarya pengembangan IVM Online telah berhasil dilakukan di 2013, dengan sebuah lokakarya user acceptance testing (UAT) yang dikombinasikan dengan pertemuan jeiring IVM yang dilakukan pada bulan Agustus. Tujuan dari pertemuan ini adalah untuk menginformasikan staf BVet dan BVet serta laboratorium mitra sekuensing mengenai kemajuan yang telah dicapai dengan pengembangan IVM Online dan untuk mengetahui umpan balik mereka terhadap kemampuan fungsi program tersebut. Sebuah subset isolat H5N1 (>50 isolat) lengkap dengan data antigenik dan genetik telah dikompilasi untuk dilakukan analisa bioinformatika lanjutan untuk memperbaiki
functionality of the platform. A subset of H5N1 isolates (>50 isolates) with complete antigenic and genetic data was compiled for advanced bioinformatics analysis to refine the analysis functions and validate the algorithms. The benefits of the IVM network approach to HPAI surveillance was demonstrated by the detection of the newly introduced clade 2.3.2.1 H5N1 virus in Indonesia in late 2012. The new clade virus, which caused high mortality in domestic ducks, was detected in Java through PDSR field surveillance; the virus was isolated by the Wates DIC, and then sequenced by the IVM partner laboratories. The resulting antigenic and genetic characterization of this new clade virus led to the successful and timely development by Pusvetma of a clade 2.3.2.1 vaccine ("Afluvet"), based on the Sukoharjo virus isolate.
Studies have shown that H5N1 virus moves along poultry marketing chains from the source production farms to retail markets through collection yards, slaughterhouses and live bird markets. Starting in 2008, ECTAD Indonesia, in collaboration with the Ministry of Agriculture and local government Agriculture and Market Management Services, developed a Cleaning and Disinfection (C&D) programme for poultry transport vehicles, collector yards, slaughter houses and markets. The purpose of the programme is to reduce H5N1 virus spread via the poultry market chain. By reducing viral contamination in the poultry market chain, the risk of virus spread from farm to consumer should be reduced. In 2013 C&D on poultry vehicles, the environment and equipment were conducted in 22 live bird markets in Jabodetabek and at Semanggi market, Surakarta city, Central Java Province.

Semanggi market, Surakarta is one of the largest suppliers of native chickens to Jakarta. The market trades daily and is operated by Surakarta city local government in partnership with the Agriculture service. The number of native chickens sold in Semanggi market is approximately 11,000-15,000 birds per day, 75% of which are dispatched onwards to Jakarta. The areas of origin of these native chickens are East Java, Central Java and Yogyakarta. Chickens are transported to Semanggi market in small trucks, with 15-20 trucks delivering chickens every day. This year, in collaboration with the RRU, the FAO market cleaning team conducted introductory C&D training for C&D station workers and local government staff at Semanggi market and also raised C&D awareness of poultry truck owners and drivers who entered the market. C&D training was also held in Jabodetabek for cleaning workers in 22 markets in collaboration with local livestock services in order to strengthen ongoing C&D activities.

C&D introductory training and Training of

PUBLIC-PRIVATE PARTNERSHIP

Improve Biosecurity along Post-Production Market Chain

Meningkatkan Biosekuriti di sepanjang Rantai Pasar Pasca Produksi

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C&D introductory training and Training of
Trainers (ToT) courses were held for local livestock services, cleaning workers and market managers in Semarang, Central Java and Surabaya, East Java; these events were funded by the national budget. FAO provided technical support for livestock service trainers to conduct C&D refresher training for cleaning workers and market managers in Bekasi, West Java, funded by the local livestock service. FAO and WHO also conducted joint C&D training for cleaning workers and vendors in Bangka market as well as rehabilitating the live bird market of Baru Market, Bekasi. Quarterly monitoring and evaluations were also conducted to assess the implementation of C&D activities at LBMs in Jabodetabek, identify constraints, and provide sustainable solutions.

Joint FAO-WHO C&D activity at Sungailiat Market, Bangka. Photo: FAO.


ulling compensation schemes have consistently been associated with successful HPAI control and eradication throughout the world; however implementation in Indonesia has been extremely challenging. The private sector-funded compensation system proposed would rely on private sector funding and leadership to ensure financial viability and sustainability, either as a standalone program or as part of a comprehensive poultry health programme. A private sector centered approach is favored over a system using public sector funding due to limited budget availability and a very low disbursement rate by government in the past. One of the ongoing challenges facing the implementation of culling compensation is poultry market price fluctuation, which makes it difficult for poultry farmers to set up a levy collecting scheme since they are primarily focused on cost reduction and maximizing their profits, with poultry health insurance being the least of their concerns. FAO has been continually communicating with top level management of core broiler farming companies to identify a viable compensation option which would ensure successful launch of a private sector-funded culling compensation pilot to be initiated in 2014.

**Conduct Trials on Private Sector-Funded Compensation System**

**Melakukan Uji Coba Sistem Kompensasi yang Didanai Swasta**

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