Food and Agriculture Organization of the United Nations

Annual Report **2017**

Emergency Centre for Transboundary Animal Diseases (ECTAD) Indonesia

PROTECTING PEOPLE AND ANIMALS

Annual Report 2017

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Food and Agriculture Organization of the United Nations
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Cover photo
Kalimantan livestock service and FAO EPT2 programme staff sample and release whistling duck (*belibis*) after avian influenza and emerging virus surveillance at the poultry/wildbird interface. © FAO/Sadewa

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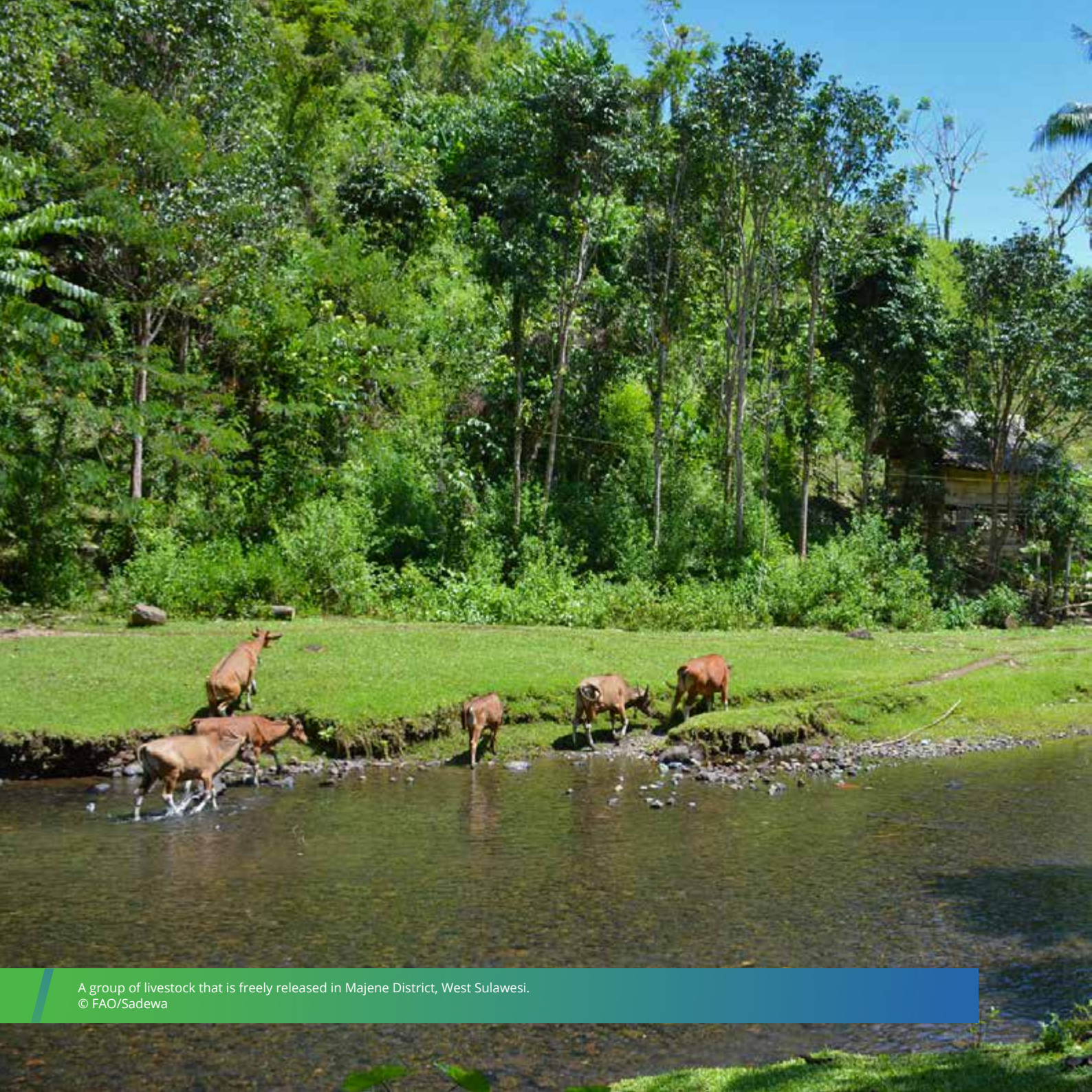


A group of livestock that is freely released in Majene District, West Sulawesi.

Message from Dr. I Ketut Diarmita on ECTAD work in Indonesia in 2017

Firstly, I would like to thank God Almighty for the completion of the 2017 DGLAHS-FAO ECTAD Indonesia Annual Report. Since 2006, the Directorate General of Livestock and Animal Health Services (DGLAHS) has been working closely with FAO to enhance Government capacity and ability to sustainably control Highly Pathogenic Avian Influenza (HPAI) in Indonesia. Building upon the success of previous programmes, we are now working on broader aspects through the second Emerging Pandemic Threats (EPT-2) programme.

Since 2005, Indonesia has become one of the global epicentres for avian influenza (AI) virus infections with more human fatalities and human cases than any other country until 2014. There is ample evidence of the large economic loss and loss of lives, both human and animal, caused by HPAI. This has made us realize the importance of controlling zoonotic diseases. Currently, there are 300 animal diseases that could "spill over" into humans, and Indonesia is considered a hotspot for zoonoses and emerging infectious diseases.

The DGLAHS is a technical institution, which is responsible to increase livestock production to meet animal protein demands from Indonesia's people, and also to improve animal health to prevent zoonoses (i.e. health threats which "spill over" into humans from animal populations). The DGLAHS receives support and assistance from FAO ECTAD Indonesia in preventing and controlling there animal diseases.

The FAO ECTAD 2017 Annual Report consists of information related to DGLAHS activities with FAO in facing emerging pandemic threats, antimicrobial resistance (AMR), emerging infectious disease and zoonoses. We also work together to increase livestock and poultry production to ensure food security in Indonesia, discuss the successes, the challenges and the solutions that need active participation from the public, especially for the EPT-2 programme.

Using this opportunity, I would like to convey my appreciation and gratitude to FAO ECTAD Indonesia, which has supported the efforts of the Directorate General of Livestock and Animal Health Services on preventing and controlling zoonoses, especially AI, and rabies, but also emerging infectious diseases and issues related to AMR. For the future, I hope we can continue to advance this work to achieve Indonesia free from animal diseases threats.

Dr. I Ketut Diarmita

Director General of
Livestock and Animal Health Services
Ministry of Agriculture

Children playing with a goggle received from an animal health officer during triangulated surveillance sampling activities in Majene, West Sulawesi.

Message from Dr. James McGrane on ECTAD work in Indonesia in 2017

The Ebola crises in West Africa (2013-2016) and in the Democratic Republic of Congo (2018), the HPAI H7N9 avian influenza epidemic in China, the corona virus Middle-East Respiratory Syndrome (MERS), as well as the recent Nipah virus outbreak in India remind us of the importance of improving the capacity to detect and respond to emerging infectious diseases (EID) and zoonoses. The spread of emerging diseases such as MERS-CoV, H5N1, H5N6 and H5N8 avian influenza viruses is of concern, in a world which is now so inter-connected. These biological threats present major challenges for animal health, human health, the health of the environment, and global economic development. To prevent or limit the spread of these diseases, a comprehensive and proactive approach is needed involving cross-sectoral collaboration, a range of technical disciplines and multiple resources – the One Health approach.

With rapid population growth, globalization and environmental degradation, health threats have become more complex and cannot be solved by one sector alone. The One Health approach leverages the idea that problems impacting the health of humans, animals, and the environment can only be solved by working together across sectors.

As part of the USAID Emerging Pandemic Threats 2 (EPT2) programme, FAO works closely with the Ministry of Agriculture, Ministry of Health and the Ministry of Environment and Forestry to build greater capacity to address emerging infectious diseases and zoonoses. The global health threat of Antimicrobial Resistance (AMR), was given greater attention within the ECTAD programme this year and both AMR and communicating One Health to the public will receive even more support in the final year of the EPT2 programme.

To accomplish its objectives, the FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) works closely with Government of Indonesia line ministries, local government Livestock and Animal Health Services, WHO, USAID, the Australia AIP-EID project, private sector partners and civil society organisations.

FAO wishes to thank our technical partner the Directorate General of Livestock and Animal Health Services, and our donor USAID for their continuing programme support. The guidance and support of the FAO Representative in Indonesia is also gratefully acknowledged.

Dr. James J. McGrane

FAO ECTAD Indonesia Team Leader

2017 FAO ECTAD work in numbers

LIVE BIRD MARKET ENVIRONMENT SAMPLE NUMBERS

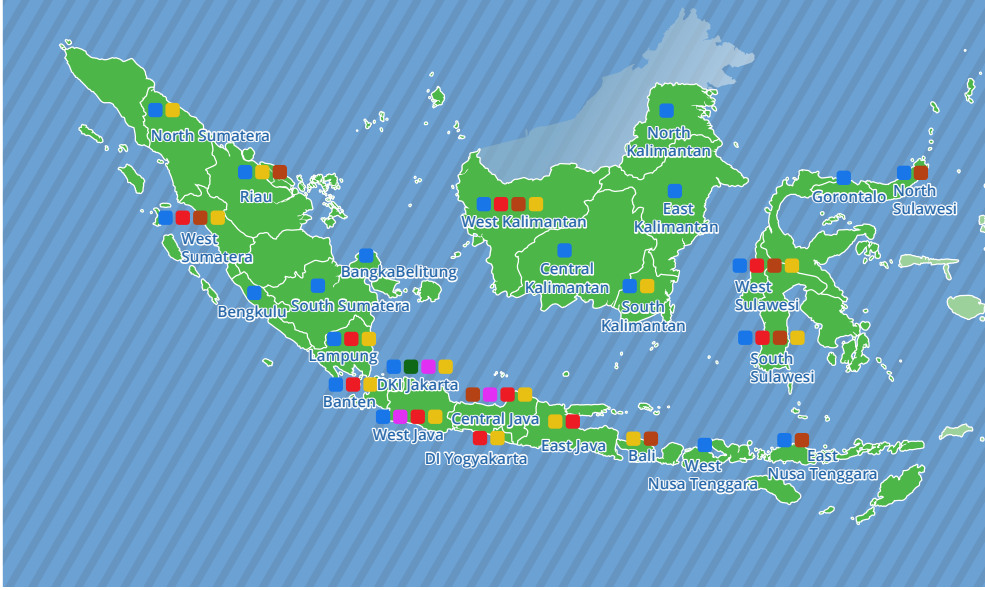
±2500
specimens

RABIES CASES 2015-2017

in humans
87%

in animals
83%

EPT2 AREA OF INTERVENTION IN INDONESIA



ANTIMICROBIAL USAGE ON FARM

Top 5 anti-biotics

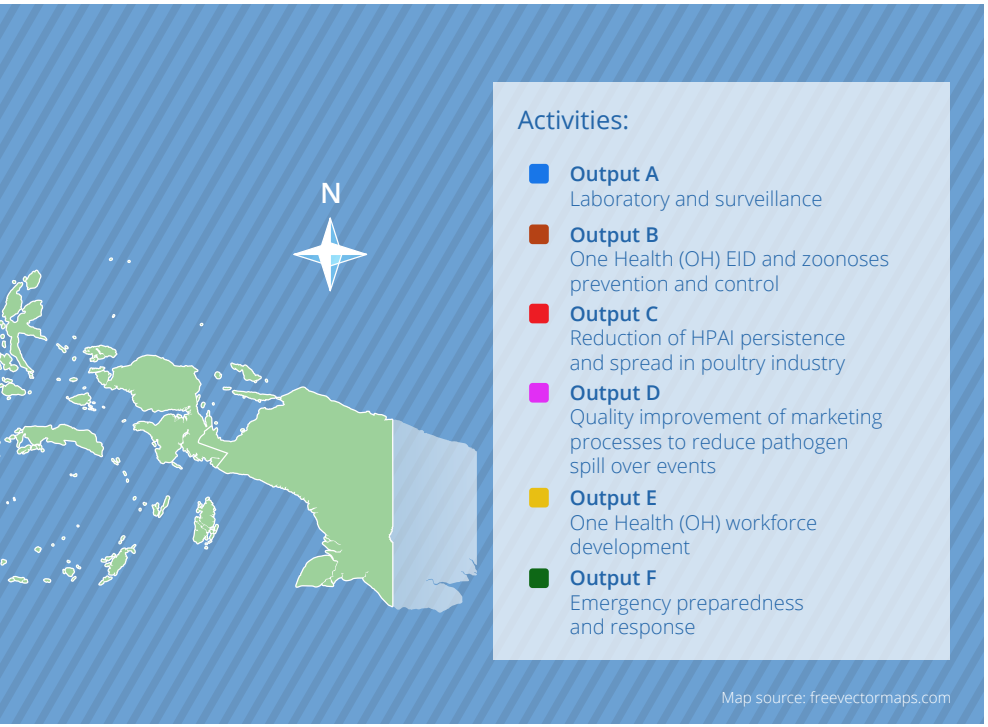
- Enrofloxacin 175
- Amoxicillin + Colistin 125
- Sulfadiazine + Trimethoprim 50
- Doxycycline 47
- Ciprofloxacin + Tylosin 18

purpose of usage

- 80% Prevention
- 30% Treatment
- 0.3% Growth Promotor

CAPACITY BUILDING IN EPIDEMIOLOGY AND SURVEILLANCE

Bioinformatic	39 (26 ♀, 13 ♂)	Surveillance	85 (48 ♀, 37 ♂)
Veterinary Epidemiology	142 (71 ♀, 71 ♂)	Risk assessment	22 (10 ♀, 12 ♂)



CAPACITY BUILDING ALONG THE VALUE CHAIN AND ANTIMICROBIAL RESISTANCE (AMR)

Farmers	262	115 / 147
GoI officers	81	24 / 57
University student	52	22 / 30

CAPACITY BUILDING ALONG PULTRY MARKET CHAIN AND FOOD SAFETY

Biosecurity training	520	116 / 404
Ayam ASUH campaign to women group	205	

AMU AMR campaign

in 5 Universities	to women group	to farmers
868	300	148

CAPACITY BUILDING IN LABORATORIUM

Technical Capacity	132	81 / 51
Quality Assurance	51	22 / 29

CAPACITY BUILDING IN ONE HEALTH APPROACH

Ministry of Agriculture	93	61 / 32
Ministry of Health	82	51 / 31
Ministry of Enviroment and Forestry	92	23 / 69

The prevention and control of Zoonoses and EID rely on the early detection of the causal agent of the disease. Early detection of these pathogens plays an important role in policy making for disease prevention, especially for control and mitigation. Therefore, having well equipped laboratories with the capacity to detect Zoonoses and EID in a timely manner is pivotal for disease risk management in Indonesia.

Targeted surveillance of high-risk environments and animals at high risk of contracting zoonoses and EID, including farmed wildlife and migratory birds, is one of the pillars in achieving rapid detection of the diseases.

A whistling duck (*belibis*) hunter in Bararawa Village, Hulu Sungai Utara District, South Kalimantan, showing his catch. H9N2 was detected among high-risk migratory birds in South Kalimantan © FAO/Sadewa

Risk Management for Avian Influenza, other Zoonoses and Emerging Infectious Diseases (EID) in Indonesia

1

1.1 Increased capacities to detect and prevent EID in Indonesia

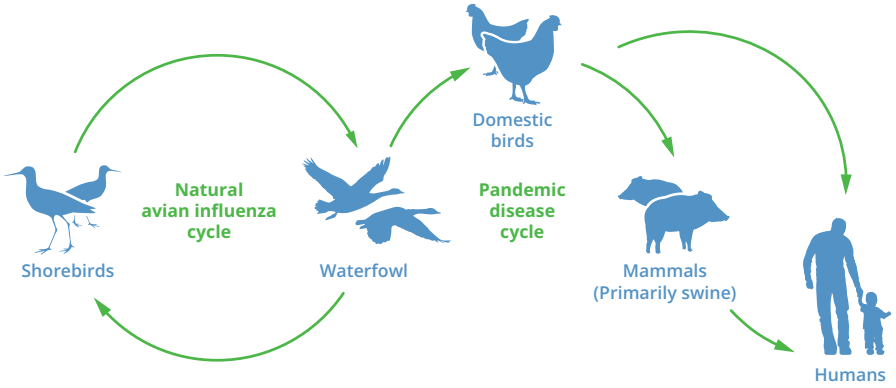
Indonesia now has the ability for early detection of EID

Indonesia has been identified as one of the 'hotspots' for emerging infectious diseases (EID) in Asia. The risk of emergence of novel avian influenza viruses through re-assortment and mutation, especially in view of the co-circulation of different H5N1 clades and other avian influenza viruses such as H9N2 LPAI, has become imminent.

Wild birds are recognized as the reservoirs of most influenza A viruses.

In 2017, H9N2 was detected in whistling ducks in South Kalimantan. This result should encourage efforts to makewhistling duck surveillance a routine surveillance activity in the area

Hulu Sungai Utara district in South Kalimantan Province is a stopover area for one wild bird species, whistling duck (*Dendrocygna arcuata*). Whistling duck has economic value for the communities in Hulu Sungai Utara, where it is sold as duck meat. People capture the birds to farm.



Spread of avian influenza virus from wild birds with a risk to pandemic

This behaviour leads to close contact between wild birds and domestic poultry, livestock and humans in the swamps, the poultry markets and the collector areas. The above reasons prompted Disease Investigation Centre (DIC) Banjarbaru, together with FAO ECTAD, to initiate whistling duck surveillance in South Kalimantan.

In 2017, H9N2 was detected in whistling ducks in South Kalimantan. This result should encourage efforts to makewhistling duck surveillance a routine surveillance activity in the area.

Swine, also play an important role in the ecology of influenza A viruses because they are susceptible to viruses of both the avian and mammalian lineages and may serve as a "mixing vessel" for different influenza viruses leading to re-assortment and host adaptation.

In 2017, DIC Subang, DIC Medan together with FAO ECTAD conducted influenza surveillance in swine as part of their routine surveillance programme. The initial test results of swine surveillance in North Sumatra showed that influenza A was detected and had circulated in pig populations in the targeted areas.

SWINE INFLUENZA

1631 samples

19 positive Influenza type A
237 serology positive for antibody type A

BELIBIS SURVEILLANCE

528 birds samples

39 serology positive for antibody H9N2
8 positive for influenza type A

1.2 A Competent Surveillance System for Avian Influenza

LBM Surveillance system was able to early detect the H9N2 virus.

Since 2009, live bird market (LBM) surveillance has been adopted by the Directorate of Animal Health (DAH), Ministry of Agriculture (MoA) as the main surveillance tool for monitoring HPAI virus circulation in Indonesia. Almost 100% of the H5N1 viruses detected and isolated from LBM surveillance sampling are now clade 2.3.2.1, while the older clade 2.1.3 virus is only now found in North Sumatra.

Since, 2016 low pathogenic avian influenza (LPAI) H9N2, has been detected in Indonesia. The circulation continues to increase and has spread widely in the country. In 2017, the level of H9N2 that was detected in the markets was even higher than H5N1. H9N2 has caused severe production losses in layer farms, although mortality is limited (<5%).

1.2.1 Harmonizing Laboratory Record Forms and SOPs to improve quality assurance (QA)

8 DICs agreed to take more responsibility in improving and harmonizing the laboratory record sheet.

In 2017, the level of H9N2 that was detected in the markets was even higher than H5N1. H9N2 has caused severe production losses in layer farms, although mortality is limited (<5%).

The FAO ECTAD Laboratory component works closely with DICs in improving their protocols and systems. One of the problem areas, identified during trainings, was their laboratory record forms. In general, the record form does not capture all the information needed to assure the quality of test results.

A good record form should have a standardized format, including information on positive controls and batch number of the reagents, allowing for better traceability and proof of the validity of test results. While quality assurance (QA) systems in DICs are already in place, this minor issue could lead to bigger problems in the future, especially if there is a dispute between the laboratory and the client requesting the test.

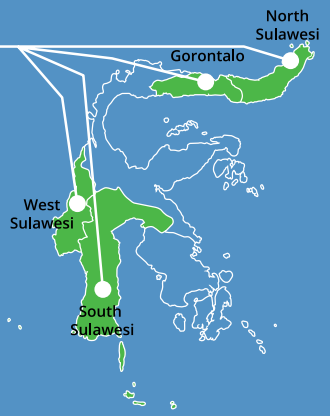
Box 1.1

Triangulated Surveillance, an effort to identify potential EID threats in Indonesia

984 animals in **4** provinces

2769 specimens

51 were positive for **paramyxo**, **corona** and **influenza** virus



Triangulated surveillance follows a One Health approach, which involves the monitoring of wildlife-livestock-human interfaces in order to detect viruses early that could become EID.

DIC Maros was appointed as the focal point for the triangulated surveillance activities. DIC Denpasar supported testing the samples to identify the viruses. The activities were a collaboration between the Ministry of Agriculture (MoA), FAO ECTAD and PREDICT2.

In 2017, DIC Maros and DIC Denpasar together with FAO ECTAD detected viruses from potential EID virus families (corona virus, paramyxovirus and influenza virus) in livestock on Sulawesi island in areas with a high interface with wildlife reservoirs.

Following a series of Quality Assurance (QA) training events conducted by FAO in 2017, each DIC agreed to take more responsibility for improving and harmonizing their record forms. Furthermore, they will also take the necessary steps to produce and distribute network positive controls, which will further validate laboratory test results.

1.3 Emergency Preparedness and Response System for Zoonotic diseases and EID Improved

Targeted prevention and rapid response can be achieved through competent risk communication.

As a result of the activities, the Directorate General of Livestock and Animal Health Services (DGLAHS) became aware of the importance of scheduling EID risk assessments. GOI has allocated budget to conduct risk assessments across the MoA.

Indonesia is considered to be at high risk for zoonotic disease incursion from neighbouring countries and is also considered an emerging infectious disease hotspot in Asia. Therefore, Indonesia needs an effective, comprehensive and integrated approach for early detection, targeted prevention and rapid response. To effectively target the use of resources to manage the risks of an outbreak, it is necessary to assess the potential risks of human and/or animal pathogens.

In 2017, a risk assessment (RA) workshop was conducted for MoA officials. The workshop successfully trained an animal health risk assessment team from different units and with different expertise within the MoA (DGLAHS, BBLITVET and Animal Quarantine). The team was trained to assess potential EID hazards in high risk areas as part of the disease preparedness mechanism. International expert Dr Caryl Lockhart (Kansas State University) facilitated the training.

Following the training in 2017, an animal health risk assessment was completed in West Kalimantan. The assessment identified Nipah virus as a potential hazard in the province. The RA results will be used to improve the animal health emergency preparedness guidelines for EID in Indonesia.

As a result of the activities, the Directorate General of Livestock and Animal Health Services (DGLAHS) became aware of the importance of scheduling EID risk assessments. GOI has allocated budget to conduct risk assessments across the MoA.

Also in 2017, a zoonoses and EID risk mapping workshop was conducted by FAO and DGLAHS with cross-sectoral ministries and stakeholders. As a result, EID risk mapping will now be incorporated in the Coordinating Ministry for Human Development and Cultural Affairs' risk mapping system.

Box 1.2

Aligning Indonesian laboratories' capacity with global standards

The FAO Laboratory Mapping Tool (LMT), which represents one of the global standards to assess laboratories' capacities to diagnose emerging infectious disease and detect important pathogens, has been introduced to DGLAHS animal health laboratories since 2012. In early 2017, application of the FAO LMT was expanded to public health and One Health university network (INDOHUN) laboratories.

Through USAID PRESTASI funding, E-learning videos were produced to support the LMT training process. In addition, the English version of the FAO LMT was translated into Indonesian and is now ready for wider distribution and use by Indonesian laboratory staff.

The tools have been fully adopted by the Directorate General of Livestock and Animal Health Services (DGLAHS) and are seen as a user-friendly way for routine laboratory self-assessment to track laboratory capacities over time and improve or expand capacities where indicated.

13 animal health laboratories,
13 human health laboratories,
9 university laboratories,
9 provincial animal health labs and
7 provincial health laboratories

gained expertise in applying the General/core FAO Laboratory Mapping Tool

Story from the field

Cross Sectoral cooperation is needed for Triangulated Surveillance

To enable early disease detection, close cooperation between officials from animal health, human health, wildlife and the community is needed.


© Muflihanah

Dr. Muflihanah, a molecular biologist at the Maros Disease Investigation Centre (DIC), South Sulawesi, has rarely had a serene day at work. She is responsible for the difficult task of investigating sudden deaths of livestock and poultry in the 10 provinces in Eastern Indonesia, which are served by DIC Maros. According to Dr. Muflihanah, also simply known as Doctor Hanah, the sudden death of livestock and poultry can pose a serious threat to public health.

"In Sulawesi, one of the Islands served by DIC Maros, there is high biodiversity including a fairly large livestock population. Consumption of bush meat is common among Sulawesi people, which is also a potential risk factor for the "spill-over" of wildlife diseases to humans. Therefore, early detection of zoonoses (diseases of animals that can be transmitted to humans) and Emerging Infectious Diseases (EID) is very important," said Dr. Hanah.

However, this early detection effort does not come easy when considering Dr. Hanah's daily challenging animal health work. Cross-sectoral cooperation as well as community involvement is needed to help report livestock high-mortality events. "So when FAO introduced us to Triangulated Surveillance for the first time in 2015, it seemed quite useful to early detect new emerging diseases, especially those passed from wild animals to livestock or from wildlife to humans," said a livestock farm worker and mother of two children.

Dr. Hanah explains that through Triangulated Surveillance, the three sectors that focus on animal health, human health and wildlife health are encouraged to work together to cope with the disease threats. An example of this kind of cooperation is when Dr. Hanah goes to take livestock samples. She communicates with PREDICT Indonesia, a project which focuses on wildlife and human health to ensure that the livestock sampling location is close to that of the wildlife sampling. "If the locations are close to one another then there is a good possibility of interaction between wild animals and livestock" explained the doctor.

There are still many challenges to be faced by Dr. Hanah and her team at DIC Maros. Nevertheless, through coordinating and integrating Triangulated Surveillance, Dr. Hanah can at least breathe a little sigh of relief, knowing that the threat of zoonoses and EID will be well anticipated.


© FAO

One Health capacity building

2

Zoonotic disease control globally is moving in the direction of the new "One Health" concept. "One Health" is a collaborative effort of health practitioners (veterinarians, MDs, public health officers, epidemiologists, ecologists, toxicologists, environmentalists and others) and their related agencies to achieve optimal health levels for the community, agriculture and livestock, wildlife and the environment.

Synergizing cross-sectoral collaboration in the fight against emerging and re-emerging infectious diseases (EID), the FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) Indonesia has paved the way for One Health capacity development among the different sectors working at the human, animal and environment health interfaces.

Wildlife is coming to the attention of many parties, especially the health sectors, considering the diseases of wildlife which are potential zoonoses. Capacity development in the wildlife sector is essential to have an integrated system to prevent, detect and control zoonotic disease.

A simulation of One Health approach implementation to multi-sectoral stake holders in Ketapang, West Kalimantan.

2.1 Building Human Resource capacity in three sectors for a One Health Programme

Bogor Agreement as basis for One Health programme activities in Indonesia.

At the heart of One Health capacity building are early detection, reporting and response. Together with three sectoral ministries, FAO ECTAD took the first step in designing One Health capacity building by assessing resources in each ministry and identifying their capacity building needs.

Developing One Health capacity is not only the most effective way of responding to the threats posed by Emerging Infectious Disease (EID) and zoonotic diseases, but also acts as a catalyst for fostering stronger collaboration, mutual support, and sharing knowledge, good practices and information among the Ministry of Agriculture (MoA), the Ministry of Health (MoH) and the Ministry of Environment and Forestry (MoEF).

In 2017, the three ministries agreed on One Health competencies for their field front-liners. Within the MoA, competencies are built in the areas of disease surveillance and rapid response, targeting veterinary service officers at Animal Health Centres. The competencies for the MoH are targeted at Public Health Centre officers, focusing on surveillance, prevention, and control. For the MoEF, capacity development is focused on early disease detection in wildlife, which involves Forest Ecosystem Control Officers, Forest Rangers, and Wildlife Health Officers.

The pledge was signed by representatives of the three ministries and the coordinating ministry for human resources and cultural affairs in a document named "the Bogor Agreement". Complementing these competencies are competencies on Integrated Disease Outbreak Investigation for the three sectors, which includes information sharing, rapid risk assessment, and disease investigation.

2.2 North Sulawesi selected as "One Health" capacity building expansion area

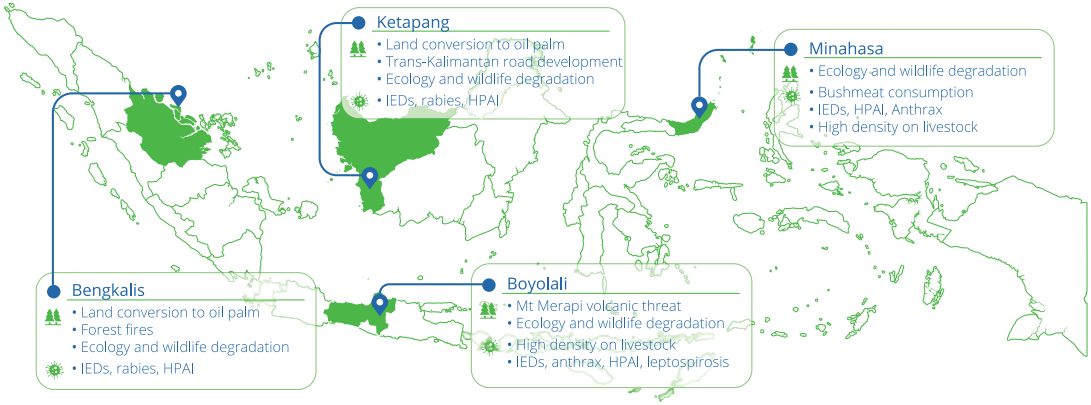
The pivotal role of the wildlife sector to prevent, detect and control zoonotic disease in One Health capacity development has now been recognized.

Government officials from the three sectoral ministries, Ministry of Agriculture, Ministry of Health and Ministry of Environment and Forestry, together with FAO ECTAD agreed upon the selection of Minahasa district, North Sulawesi, as the fourth area for One Health piloting.

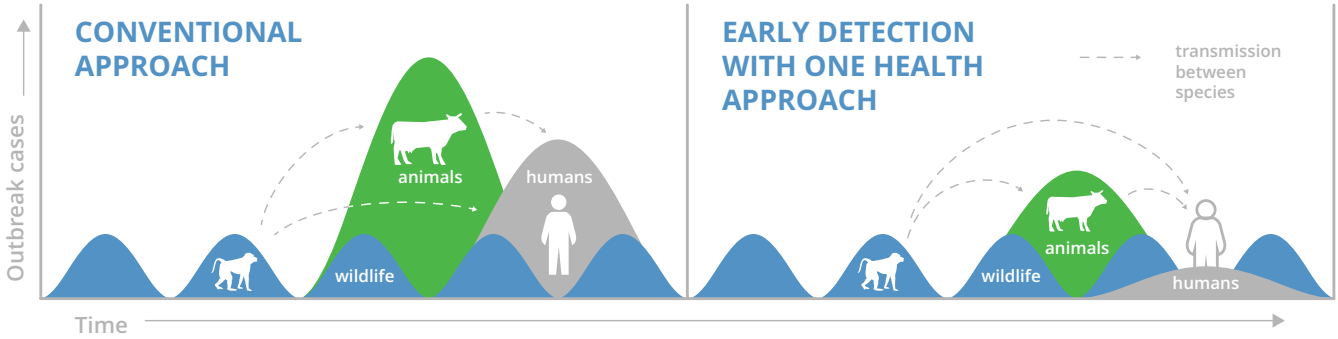
Minahasa was selected because it possesses a high risk for EID and zoonoses. In Minahasa, people interact closely with wildlife as part of their culture. Consumption of bush meat is common in Sulawesi and Minahasa is identified as an illegal wildlife trade hub. Its connections to other countries in South East Asia also make Sulawesi vulnerable to the introduction of new diseases.

Minahasa was also strongly supported by North Sulawesi provincial and district governments to participate in the progamme, and has a solid health infrastructure system and human resources.

The MoA Directorate of Animal Health, in collaboration with FAO has already implemented One Health capacity building in three pilot districts since 2015. The three districts are Boyolali,Central Java Province; Bengkalis, Riau Province;



Four sites of One Health pilot project with its risk factors



Benefit of early detection to prevent outbreak

and Ketapang, West Kalimantan Province. The areas were selected based on the presence of identified drivers for zoonoses and EID, the potential for spread of these diseases, and the strong interest and support from local government to participate in the programme.

2.3 Increasing Awareness in the Wildlife Sector for the One Health Approach

MoEF showed strong commitment to participate in One Health Capacity development

In the past, collaboration on zoonoses prevention and control only existed between the animal health and public health sectors, with limited awareness and capacity within the wildlife sector on EID detection and control.

However, since the prevention and control of zoonoses and EID relies on early detection of the causal disease agent, the paradigm of disease detection has now changed to early detection at source before it spills over or spreads to new species, domestic animals and humans. Early detection is also important to conserve the ecology of Indonesian ecosystems' wildlife and habitat. This approach is critical for policy making on disease prevention, control, and risk mitigation.

Advocacy, coordination meetings and training programs have been conducted to develop the capacities of central and local government Forest Rangers, Forest Ecosystem Officers, and One Health Master trainers in the four pilot areas: Minahasa (North Sulawesi), Bengkalis (Riau), Ketapang (West Kalimantan) and Boyolali (Central Java).

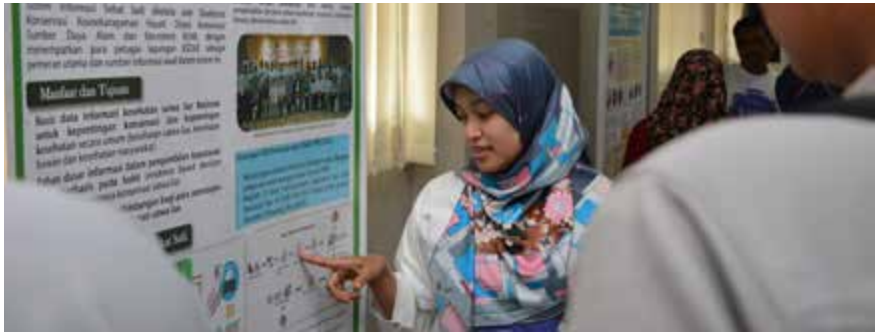
Basic skills and One Health capacities were developed, including understanding EID and zoonoses in wildlife, wildlife conservation, disease investigation, risk reduction,

Box 2.1

A participant of Sehatsatli workshop accessing the application by sending SMS on disease events using mobile phone.

Sehatsatli app. bridging wildlife with zoonoses and EID

The SehatSatli (www.sehatsatli.menlhk.go.id) system development and subsequent training for web administrators and field officers in four pilot areas was funded through USAID PRESTASI with technical assistance of FAO ECTAD Indonesia. Furthermore, the maintenance and operation of SehatSatli system were further organized and sustained by the MoEF with provision of national budget and human resources with expansion plan to other in-situ and ex-situ sites.



A MoEF Officers presenting Poster on Sehat Satli and early detection on wildlife event during One Health Workshop. @FAO/Sadewa

response mechanisms (prevention and control), rapid risk assessment and joint outbreak investigation, coordination and networking, and integrated surveillance.

The Directorate of Biodiversity Conservation has shown its commitment and support for the One Health approach through a review of policies, surveillance and reporting facilities, recruitment of additional veterinarians and budget identification for a sustainable field officer capacity building program and expanding the programme to other areas in Indonesia using the State budget.

Further improvement is needed especially in view of the absence of a strong medical background of wildlife field officers. Extra efforts are needed to address the gaps between the wildlife, animal health and public health sectors during One Health training, as well as to ensure prioritization of EIDs and zoonoses on the MoEF's high-level agenda.

2.4 Strengthening epidemiology capacity of veterinary services

Directorate General of Livestock and Animal Health Services (DGLAHS) launches Field Epidemiology Training Programme for Veterinarians (FETPV/PELVI) in Indonesia as vehicle to improve veterinary epidemiology in Indonesia.

FETPV/PELVI which was launched by MoA in 2017 is a critically important programme for Indonesia. FETPV is considered the most efficient and effective approach to improving field veterinary epidemiology capacity in Indonesia.

The FETPV mission is to create veterinarians and animal health workers with improved field epidemiology capacity through skills-based training. FETPV-trained staff can then make animal disease control decisions based on field evidence, thus protecting the livestock economy, safeguarding public health, and serving rural communities. FETPV is expected to help improve public health through early detection and response to zoonotic diseases through outbreak detection, investigation, and sound epidemiology. For the development of FETPV, the MoA worked together with the regional FETPV programme, the MoH FETP Indonesia programme, and with UGM and IPB universities.

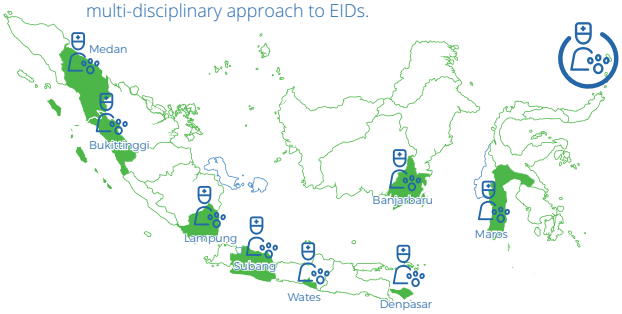
2.5 Communication strategy workshop in Boyolali

A One Health-focused Communication Strategy is needed at every level of government as the foundation for Zoonoses and EID communication activities.

CAPACITY BUILDING FOR FIELD EPIDEMIOLOGY TRAINING PROGRAMME

Mission FETPV works to provide GOI with competent veterinary field epidemiologists and strengthen linkages with public health agencies to improve effectiveness and timeliness of disease detection and response through "training through service" using multi-disciplinary approach to EIDs.

Vision Build applied veterinary field epidemiology capacity to meet the critical needs for detection and response of existing and emerging infectious diseases at the national and sub-national levels.



Built Capacities

- Surveillance capacity for zoonotic, animal-specific and emerging diseases
- Animal Health Situation assessment (surveillance) capacity
- Timely, effective, coordinated outbreak investigation of zoonotic and newly emerging infectious diseases

Communication is very important for disease control and prevention. Communication and outreach is a crucial part of strengthening government capacity in preventing and controlling targeted zoonoses and EID in Indonesia.

In 2017, FAO ECTAD together with the Directorate of Animal Health conducted a "Workshop on the Development of Communication Strategy using a One Health Approach for Zoonoses and EID" in Boyolali. The objectives were to assess local government communication needs. The workshop activities aimed to strengthen local government capacity in developing a Communication Strategy on Zoonoses and EID, especially at the provincial level. The workshop also gathered local (provincial and district) level inputs for consideration at the national level in formulating a National Communication Strategy on Zoonoses and EID.

As a result of the workshop, the participants (local and central government staff from three sectors – human health, animal health and environment) identified EID communication components, and developed a better understanding of the means to deliver a communication strategy.

2.6 Controlling Rabies in Bali through a One Health approach

The significant decrease in rabies cases in dogs and humans in Bali contributes to rabies eradication in Indonesia.

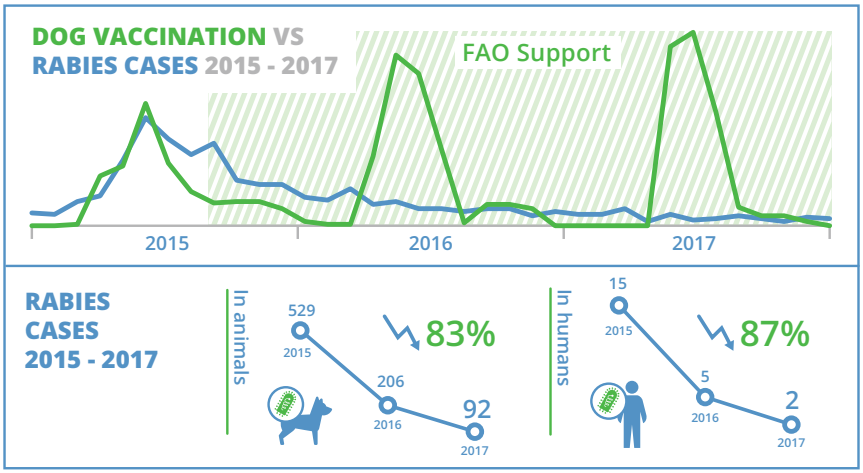
In order to support the global goal of rabies freedom by 2030, the Indonesian government is working hard to eradicate rabies from several priority areas in Indonesia. Bali, which is one of the priority areas, is currently trying to reduce rabies cases in dogs.

The involvement of village vaccinators in the implementation of mass vaccination was added as a special strategy to achieve higher vaccination coverage than in previous years.

A more rigorous, intensive and coordinated vaccination campaign has been implemented to reduce the incidence of new dog cases, to reduce the risk of human fatalities, and to progress to eventual elimination of the virus in Bali. Annual mass dog vaccination was implemented effectively and was followed by targeted sweeping vaccination of infected areas in 2017. Because of these campaigns a significant decline in human and animal rabies cases was achieved.

A pilot dog population management (DPM) project was implemented in one village in Bali in collaboration with the public and private sectors to encourage responsible dog ownership, increase dog vaccination, and stabilize the dog population. This DPM pilot introduced a new approach to dog population management that could be used to support effective rabies control in other villages in Bali and other rabies-endemic areas in Indonesia.

The 2017 mass dog vaccination campaign used a different approach than in previous years. The involvement of village vaccinators in the implementation of mass vaccination was added as a special strategy to achieve higher vaccination coverage than in previous years, while continuing to support provincial and district livestock services and the district dog catching and vaccination A-Teams.



Story from the field

No more Humans die because of Rabies in Bali

Rabies in Bali can be more controlled since the government moves forward to apply the One Health approach in handling rabies cases.

"We were confused, we did not know what we were supposed to do," said I Wayan Pujana, staff of the Bali Province Health Office Disease Prevention and Control unit, as he described the situation when his team dealt with pastvrabies outbreaks.

At that time, when "a dog bite case" occurred, people did not know where to go to report the case. Most of the victims were taken to the public health centre, but public health did not involve the animal health service in handling the case. The lack of coordination and information sharing made the situation worse; human deaths due to rabies continued to increase.

Rabies has been a frightening disease on the island of the Gods for many years. The incidence of bites from potential rabies-infected animals (GHPR) on this island has always been the highest compared to other parts of Indonesia. In the past, the disease has frightened tourists away from Bali.

"Rabies spread easily from one village to another in Bali because of a lack of coordination between the animal health office and public health office," Wayan said.

Wayan explained that zoonotic disease is not the responsibility of the animal health sector alone. "It is a cross-sectoral responsibility, including the community. to the communities' care for their dogs is decisive in rabies control" he said.

In 2017, Wayan and his colleagues were introduced to the "Integrated Bite Case Management (IBCM)" protocol through a workshop, initiated by FAO ECTAD together with the Directorate of Animal Health (DAH). The protocol details the steps for dog bite investigation, emergency response and vaccination, through cross-sectoral collaboration, particularly with public health officials. The approach is known as One Health. Since then, the IBCM protocol has been implemented across Bali. Over the year, the number of human and dog rabies cases has been considerably reduced.

Having witnessed the benefit of IBCM protocol implementation, Wayan has become actively involved inIBCM training and promotion. He has come forward as a speaker and master trainer for other provinces that would like to improve their capacity to prevent and control EID and zoonoses, through the One Health approach.

However,I a huge challenges still remains to control rabies in Bali and elsewhere in Indonesia. Community knowledge and awareness to deal with dog bites is still very low. In some areas, people are still opposed to dog vaccination.

"This is the homework for us - people who work in animal health and public health. We have to relentlessly raise community awareness to improve knowledge and understanding about rabies, and to play a more active role in preventing and controlling the disease, " he said.

Building capacity to control HPAI along the value chain and fighting Antimicrobial Resistance (AMR)

3

The risk of pathogen amplification, including avian influenza viruses, and spill-over to humans can be reduced by improving effective biosecurity and good management practices. These include vaccination on farms, especially sector-3 commercial poultry farms and biosecurity interventions along the market chain.

Interventions should be applied at every stage from production farm to collector yard to live bird markets, one of the places with the highest risks for pathogen spill-over.

Evidence-based studies are needed to convince poultry farmers, other poultry industry stakeholders, and policy makers to reform their poultry production and marketing practices along the poultry value chain.

Asia is one of the epicentres of global antimicrobial resistance (AMR). Extensive antimicrobial use (AMU) in livestock production is one of main factors fuelling AMR in Asia. The Global Health Security Agenda strongly encourages countries to combat AMR by controlling antimicrobial use in livestock, including poultry. To support the Indonesian Government in tracking AMR trends and AMU in livestock, AMR surveillance and an AMU survey were initiated in Indonesia in 2017.

Directorate General of Livestocks and Animal Health, Ministry of Agriculture staff visited a layer farm in Blitar, East Java.

3.1 Healthy farms for better productivity

The Highly Pathogenic Avian influenza H5N1 clade 2.3.2 virus was first detected in 2012. The mortality rate, caused by this virus in young ducks could reach 75-100% causing high economic loss for the farmer.

The demand for duck has continued to rise over the last 10 years. This has resulted in a significant growth in the number of enterprises that raise ducks for consumption. With increased numbers of poorly managed commercial duck farms, diseases continue to emerge. The highly pathogenic avian influenza H5N1 clade 2.3.2 virus was detected in ducks in Indonesia for the first time in 2012.

This strain of avian influenza virus causes a high rate of mortality, reaching around 75-100%, in young ducks. In this case, ducks not only act as carriers and spreaders of the virus, but their deaths also represent high economic losses for the farmer.

In 2017, FAO ECTAD Indonesia, together with the Ministry of Agriculture through the USAID-funded EPT2 programme, initiated a pilot study on cost-effective biosecurity and improved management practices in small-scale duck farms.

Because of this, in 2017, FAO ECTAD Indonesia, together with the Ministry of Agriculture through the USAID-funded EPT2 programme, initiated a pilot study on cost-effective biosecurity and improved management practices in small-scale duck farms.

The program involves around 50 commercial duck farms, both layers and meat ducks, in Mojokerto, East Java Province. This study will provide information to the Indonesian government for improved poultry policy making and inform commercial duck farmers on how to ensure better duck farming biosecurity and management, and increase flock productivity.

The study consists of two phases, a baseline phase where data is obtained on duck farm production and an intervention phase which involves the implementation of selected interventions to improve farm biosecurity, flock vaccination and duck farm management.

Duck farm sampling in Mojokerto conducted by MoA, supported by FAO. ©FAO/Alfred Kompudu

3.2 Shielding flocks from H9N2 virus with effective on-farm Biosecurity practices

Awareness raising on Low Pathogenic Avian Influenza (LPAI) H9N2 virus infection, which causes egg drop syndrome, has increased interest of farmers in farm biosecurity practices.

The LPAI H9N2 virus has been detected through Live Bird Market surveillance and on commercial poultry farms (mainly layer farms) over the past two years. The virus causes a drop of up to forty percent in egg production on affected farms.

In 2017, the DGLAHS together with FAO ECTAD promptly responded to this situation by giving specific training to district veterinary service officers and on farm technical support to small-scale commercial poultry farmers. The training provided information on poultry diseases including egg drop syndrome associated with LPAI H9N2. Additional activities included active H9N2 surveillance on farms, conducted together with DIC Wates

Indolivestock 2017 workshop and seminars in Jakarta. ©FAO/Billy Anderson

Workshops and seminars, including media campaigns aimed to raise awareness on effective biosecurity practices and good on-farm management practised to reduce the risks of pathogen introduction and to improve farm productivity.

in several districts in Central Java province.

Workshops and seminars, including media campaigns, to present poultry farming best practices were delivered in several cities in Indonesia. A poultry stakeholders seminar took place in Banten and also in the sidelines of the Indolivestock Expo in Jakarta. Public lectures were conducted in Hassanudin University, Makassar and during the 2017 World Egg and Meat day in Lombok. In Pare-pare, a refresher training for Veterinary Service Officers (VSO) and poultry farmers was conducted.

The activities aimed to raise awareness on effective biosecurity practices and good on-farm management practicesd to reduce the risks of pathogen introduction and to improve farm productivity.

3.3 Improved knowledge in Greater Jakarta Women's Groups to drive market restructuring

Women's' groups in the Greater Jakarta Area recognize the benefit of purchasing healthy chickens.

The DKI Jakarta government facilitated the control of HPAI H5N1 in DKI Jakarta by implementing a poultry market chain restructuring programme based on Local Government Regulation No. 4/2007. This program aims to restrict the movement and trade of live poultry in Jakarta by redirecting live poultry trading to peripheral relocation centres identified by the government. However, the implementation of the program is not progressing well due to the socio-economic issues faced by poultry business actors along market chain.

A cost benefit study has been conducted to evaluate implementation of the poultry market chain restructuring program, taking account of the opinion of poultry slaughterers, collectors, relocation centre managers, market managers and consumers in DKI Jakarta. This study provides recommendations for DKI Jakarta, to

Campaign with women's groups on the benefits of chilled chicken meat in Jakarta. ©FAO/Gunawan Budi Utomo

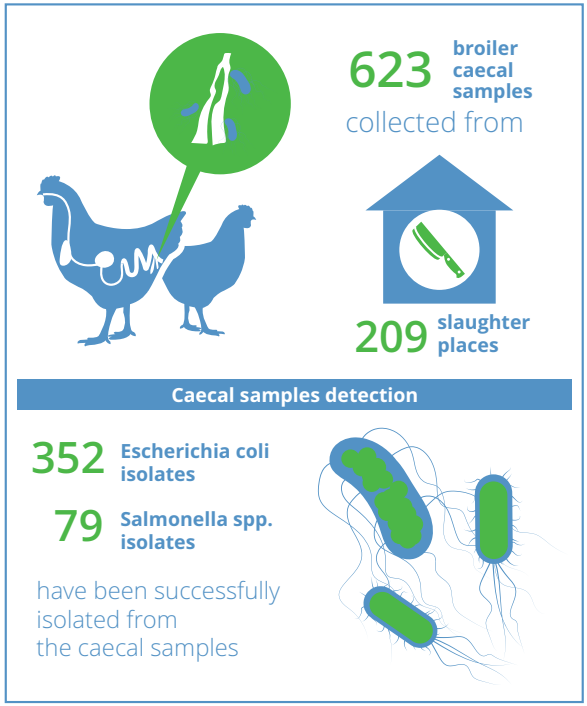
successfully implement the market restructuring program. DKI Jakarta must continue to improve the quality and slaughtering capacity of the relocation centres and encourage the significant cultural change required by slaughterers and consumers to move to producing and consuming chilled or frozen chicken (ayam ASUH).

Women play a central role in deciding their families' diets. Their awareness on the consumption of healthy chicken is decisive in the successful restructuring of the Jakarta poultry marketing chain. In 2017, FAO ECTAD together with the Ministry of Agriculture and provincial officials in DKI Jakarta, Bekasi city and Depok city, conducted an intensive campaign with women's groups on the benefits of chilled chicken meat from hygienic slaughterhouses and the danger of buying live chickens in live bird markets contaminated with avian influenza viruses.

As part of the promotion campaign, five educational videos on healthy chicken meat consumption and poultry market chains were distributed through social media, and on Jakarta commuter line trains.

In 2017, DKI Jakarta allocated budget for public awareness events targeting several women's groups in East Jakarta in 2018. The key message is to adopt the "Ayam ASUH" campaign that was initiated by DGLAHS and FAO.

3.4 Fighting Antimicrobial Resistance



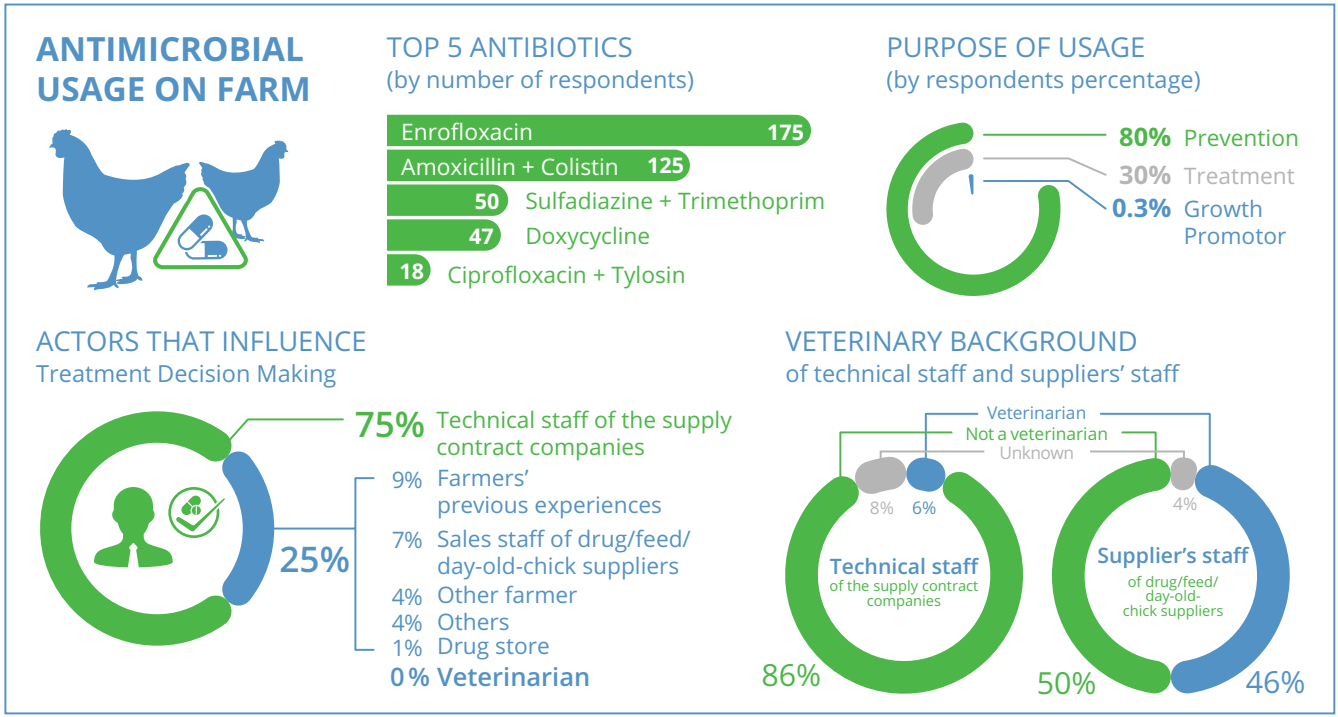
As part of the global efforts to address Antimicrobial Resistance (AMR), FAO ECTAD together with the MoA initiated AMR surveillance and an Antimicrobial Usage (AMU) survey in Indonesia.

Surveillance, as one of the main components in the "Global Action Plan on AMR", is the cornerstone for assessing the burden of AMR and for providing the necessary information and evidence for decision-making and action.

The FAO Assessment Tool for Laboratory and Antimicrobial Resistance (ATLASS) was used to assess the capacity of laboratories involved in AMR surveillance in Indonesia. In March 2017, a joint FAO /Chulalongkorn University team, with support from the Directorate General of Livestock and Animal Health Services, conducted an assessment of AMR laboratory capacities and preparedness at the National Veterinary Product Assay Laboratory (BPMSPH) and the National Veterinary Drug Assay Laboratory (BBPMSOH). The assessment focused on assessing laboratory aspects of AMR surveillance and encompassed on-going AMR activities, technical capacities, biological management practices and quality assurance.

The assessment focused on assessing laboratory aspects of AMR surveillance and encompassed on-going AMR activities, technical capacities, biological management practices and quality assurance.

As the continuation of the assessment, together with DIC Subang, FAO ECTAD conducted the first round of pilot AMR surveillance in Indonesia. The AMR surveillance was initiated in 15 districts in Greater Jakarta and Bandung, areas covered by DIC Subang. The surveillance was designed to detect the prevalence of resistant *Salmonella spp*. and *E. coli* in broiler chickens, the main meat producing sector in Indonesia. The results of the AMR pilot project will be used to make AMR policy recommendations.



3.5 Antimicrobial Usage Survey on Poultry Farms

Antimicrobial use in livestock needs to be monitored to increase awareness of the need to reduce antimicrobial use.

In view of the prominent role of farmers in the misuse of antimicrobials which may accelerate antimicrobial resistance, a pilot antimicrobial usage (AMU) survey was conducted on sector three broiler farms in three provinces (West Java, East Java and South Sulawesi) to determine and monitor the pattern of antimicrobial usage in broiler farms.

Initial results of the pilot AMU survey showed that approximately 80% of the respondents use antibiotics for disease prevention.

The research also found that the technical staff of the poultry contractor companies are the actors who have the biggest influence on antibiotic use decision making and most of them do not have any veterinary background. Enrofloxacin, a combination of amoxycillin-colistin, and trimethoprim-sulfadiazine and doxycycline are top four most used antibiotics on broiler farms. These findings will be taken into consideration when evaluating Antibiotic Sensitivity Test (AST) results of AMR surveillance.

Sampling in broiler farms to determine the use of antibiotics. ©FAO

Story from the field

Raising Awareness on "Ayam Asuh"

Just like most other housewives, shopping at traditional markets is the preferred choice of 44-year-old Hefi.


© Hefi


© FAO

Besides being cheaper and fresher, the diversity of available food at traditional markets is sufficient to meet her family's daily needs. However, as Hefi knows, the traditional market sellers rarely pay attention to hygiene and sanitation standards. For example, she comments "if we buy a chicken, sometimes we see the seller place it on the dirty market floor". Hefi believes that this occurs due to the lack of knowledge of food hygiene of the sellers as well as the buyers at the market. According to her, they do not understand the health dangers of eating food such as chicken or beef that are not treated hygienically.

As a housewife with a background in health education, Hefi was troubled by the insanitary conditions she observed at markets. She wished she could provide an understanding to the people around her about how to sell and buy food with good hygienic quality. However, the mother of two children was confused as to where to start. One day, the Department of Food Safety and Agriculture of Depok City, in cooperation with FAO ECTAD Indonesia, held an event to educate a group of women's associations (PKK) about food safety. Hefi said that she was introduced to the concept of ASUH chicken, an abbreviation of Aman, Sehat, Utuh dan Halal (Safe, Healthy, Wholesome and Halal).

ASUH chicken refers to the processing of poultry meat from the point of slaughter to the hands of consumers. It was also mentioned that poultry sold as chilled meat is much healthier than when it is still warm. "Before this time, we believed that chilled chicken is less fresh. However, the truth is just the opposite", said Hefi.

Armed with the educational materials obtained in the two meetings, Hefi began actively inviting the housewives who live around her house to only buy chilled chickens. However, what Hefi has been doing has not been easy.

Besides the issues of fixed mindsets (the belief that chilled chicken is not fresh), there are only a few housewives who have followed Hefi's advice because the price of chilled chicken is more expensive compared to warm chicken. "There is also an infrastructure issue" she said. "In traditional markets there are almost no cooling facilities for chicken or beef. The traders must buy the expensive chilling machines themselves. Housewives also continue to refuse to buy chilled chicken meat because the price is more expensive and rarely found in traditional markets," Hefi further explained.

Despite the challenges she faced, Hefi did not give up. She remained diligent in campaigning for ASUH chicken, hoping to gain the support from the local government to install cooling machines in traditional markets. "Without government intervention, it will be difficult to change the behaviour of sellers and buyers," she concluded.

Communication and Outreach

4

Communication is an important part of the work of FAO ECTAD in Indonesia. During 2017, FAO continued to play an active role in raising public awareness through optimizing the role of the media as a bridge to raise public awareness on EID, and use other communication channels such as producing films and infographics. The FAO website is also constantly updated with FAO ECTAD activities, and through collaboration with the FAO Global Animal Health Group, ECTAD Indonesia success stories are disseminated to the world. This year we also added three video collections containing information to raise community raising awareness and demonstrate the achievements of DGLAHS-FAO activities.

Media highlights

One Health Seminar

Indonesia has confirmed its commitment to advance One Health collaboration, with five ministries issuing a joint communique on the implementation of One Health in the country, to respond to emerging disease threats and address global health challenges including Antimicrobial Resistance (AMR). During the seminar on "One Health Stakeholders Collaboration – Action on Antimicrobial Resistance" held by the DGLAHS and FAO Indonesia in Jakarta on 16 March 2017, the Ministry of Agriculture, the Ministry of Health, the Ministry of Environment and Forestry, the Ministry of Marine Affairs and Fisheries, and the Coordinating Ministry of Human Development and Culture recognised that health security is a shared responsibility that cannot be achieved by a single actor or sector of government. The FAO Assistant Director General for Asia and the Pacific, Ms Kundhavi Kadiresan participated in the seminar and made a keynote address.

Selected media article:

Gov't Implements Holistic Program to Combat Antimicrobial Resistance
https://bit.ly/2HoHISE

US UN Rome: Media reporting tour to Indonesia highlights U.S. and UN efforts in fighting hunger

In May 2017, a team lead by officials from the U.S. Mission to the UN Agencies in Rome visited Indonesia with a group of international journalists to highlight U.S. assistance in achieving food security through the work of the Rome-based UN Agencies and the U.S. Agency for International Development (USAID).

Subsequent to their visit, the journalists generated over a dozen articles and broadcasted reports in English, Thai, Malay, Indonesian, and Burmese. The FAO ECTAD influenza virus monitoring surveillance system and platform *"IVM Online"* was one of the main objects of the media visit. The journalists visited the Terban Live Bird Market in Yogyakarta and the DGLAHS Disease Investigation Centre (DIC) laboratory in Wates to understand the surveillance process and the *IVM Online* influenza virus detection and characterization system

Selected media articles:

Indonesia boosts chicken checks to keep bird flu at bay
https://bit.ly/2LZHkgW

Launching of FETPV

FAO ECTAD is supporting the development of the Field Epidemiology Training Programme for Veterinarians (FETPV) in Indonesia in order to strengthen

the epidemiological capacity of Government veterinary services. The programme, called PELVI, was launched by the Ministry of Agriculture and FAO ECTAD Indonesia in Tangerang, Indonesia, on 31 May 2017.

Selected media article:

Kemtan dan FAO lakukan edukasi penyakit hewan
https://bit.ly/2JwFSo4


© Antara/Budi Afandi

World Rabies Day

With the global theme of Rabies: Zero by 2030, FAO ECTAD, along with the Indonesian Ministry of Agriculture, Ministry of Health and other related institutions organized several One Health activities in Bogor and Sukabumi, West Java from 6-8 October 2018, to raise community awareness about the dangers of rabies, as well as to commemorate World's Rabies Day.

Selected media article:

FAO-Kementan Siap Wujudkan Indonesia Bebas Rabies
https://bit.ly/2M0vLWS


© FAO/Sadewa

World Antibiotic Awareness Week Campaign

FAO ECTAD Indonesia, together with the Ministry of Agriculture and private sector stakeholders successfully held several events which aimed to raise people's awareness of the dangers of misusing antimicrobial agents such as antibiotics. The activities comprised of four events: media engagement, veterinary student engagement, farmer engagement and community engagement.

Selected media article:

DGLAHS Asked Poultry Farmers to Stop Using Antibiotics
bit.ly/2sAbuiW

© BaliTV

Video documentaries

Raising awareness of AMR, Ayam ASUH and biosecurity practices

An informational video on AMR, five public service announcement (PSA) videos on Ayam Asuh (healthy chilled chicken meat) and two videos on best on-farm biosecurity practices were produced during the year. The videos highlight FAO ECTAD commitment to reach out and raise public and community awareness on EID and zoonoses.

This video shows the story of two poultry farmers who have successfully reduced their antibiotic and disinfectant usage by up to 40% by implementing 3-zone biosecurity and good poultry farming practices in Semarang and Karanganyar, Central Java.

Testimony of the farmers on 3-zone biosecurity:
https://bit.ly/2JQBgVT

This 4-minute infographic video describes how implementing 3-zone biosecurity on farms is proven to not only reduce the use of antibiotics but also to increase production and profit.

Step by step 3-zone biosecurity infographic:
https://bit.ly/2Oc3OMQ

The imprudent use of antibiotics is becoming more concerning. The video documents ways to reduce antimicrobial usage and prevent Antimicrobial Resistance (AMR).

The role of agriculture in preventing AMR spread infographic:
https://bit.ly/2lc1Ayp

Series of five videos to raise consumers and poultry sellers' awareness on how to choose and sell ayam ASUH (safe, healthy, wholesome, and Halal chicken meat)

https://bit.ly/2JeMHeG

https://bit.ly/2sAAAhG

https://bit.ly/2HnSjgS

https://bit.ly/2xPUMkl

Exhibitions

Indolivestock 2017

With the support of the MoA's Director General of Livestock and Animal Health Services, the 12th biannual Indo Livestock Expo & Forum was held in Surabaya, East Java on 17-19 May 2017. The event was a perfect opportunity to showcase DGLAHS-FAO ECTAD collaborative activities, to strengthen the capacity of the animal health sector to support and work with other sectors (human and environment) under a One Health umbrella, as well as to educate the public. The FAO booth was awarded second prize for Best Booth Design by the organizer.


© FAO/Sadewa

The 3th International Livestock and Dairy Expo (ILDEX)

ILDEX is an international poultry exhibition initiated by the Federation of Indonesian Poultry Societies (FMIPI) that has been held every two years since 2013. In 2017, the event was held in Jakarta from 18 to 20 October 2017 and showcased 230 leading exhibitors from 34 countries, attracting 9,109 trade participants from 47 countries. FAO ECTAD participated in the event by opening a 6 x 7 square metre booth and organizing a National Poultry Farmers' Seminar with the theme: AMR and the future of Indonesian poultry farms. The FAO booth was awarded first prize for Best Booth Design by the organizer.


© FAO/Sadewa

Campaign through Commuter Line

Various efforts have been made by the Indonesian Government to disseminate information, education and communication (IEC) materials and strengthen the public's awareness on ayam ASUH (Safe, Healthy, Wholesome and Halal chicken) in the Greater Jakarta area. To maximize outreach, for the first time in 2017, an advertising campaign through Commuterline was successfully implemented. This campaign was considered an effective way to disseminate information, since commuter trains are one of the modes of mass transportation used by many inhabitants of the Greater Jakarta area, serving a wide range of social and economic classes.


© MacroAd

Internal engagement

Internal communication is vital in maintaining FAO's commitment to the programme's objectives and involvement with its activities. During 2017, FAO Indonesia published two edition of the PULSE e-newsletter as well as contributing 10 stories to the FAO Indonesia website and the FAO Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES-AH) e-newsletter thus distributing the stories to global audiences.

https://bit.ly/2xMPg2j

https://bit.ly/2sNRQiD

Directorate General of
Livestocks and Animal Health
Ministry of Agriculture

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