

Teaching Farms

Improving Biosecurity and
Good Farming Practices

EXCHANGE
FOOTWEAR
BEFORE
ENTERING



USAID
FROM THE AMERICAN PEOPLE

SAFE
STRATEGIES AGAINST FLU EMERGENCE

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PURPOSE

The purpose of this booklet is to present the teaching farm as a model for motivating Sector 3 broiler farmers to improve biosecurity conditions at their farms and to apply good biosecurity and farming practices.

STRATEGIES AGAINST FLU EMERGENCE

SAFE is a USAID funded program created to help reduce the risk of transmitting avian influenza (AI) among poultry and from poultry to humans. SAFE works in partnership with the Government of Indonesia, the Indonesian poultry private sector, and civil society, to reduce the transmission of AI by improving knowledge of best practices and supporting behaviors that lower the risk of AI transmission throughout the poultry value chain.

BACKGROUND

Indonesia is one of the five countries where AI remains endemic in poultry and one of the countries where the virus causes human infections. One of the points of disease transmission in the poultry value chain is the small poultry farmer.

There are thousands of small broiler farms across Indonesia that work in partnership with larger integrated poultry companies and poultry shops to produce over 1.3 billion broiler chickens per year.

Biosecurity at these small farms has always been minimal due to a lack of understanding of the consequences of poor biosecurity, the belief that implementing biosecurity is too expensive and out of the financial reach of small farmers, and poor regulatory enforcement. In addition, investments by large companies in small farm biosecurity have been stifled by the current industry structure which allows small farmers to move easily from one company to another. Also, Indonesian's recent increase in purchasing power and increased consumption

of poultry has suppressed the industry's need to export and improve biosecurity standards across the supply chain.

Nevertheless work implemented under the CBAIC project¹ demonstrated that small farmers were open to making biosecurity changes to reduce poultry mortality and morbidity, and improve farm productivity and revenues, but lacked information on the options best suited to each farm's particular needs. Farmers needed to "see" these changes, and they needed to learn how they could implement them inexpensively.

From a farmer perspective, biosecurity changes would result in good business practices and improved revenues. From a public health perspective, biosecurity would reduce the risk of transmitting poultry diseases such as AI, and ultimately reduce the risk of animal-to-human transmission of AI.

¹ CBAIC – The Community-Based Avian Influenza Control Project (CBAIC), was a USAID funded project implemented by Development Alternatives Inc. from 2006 to 2010



PARTNERS

The teaching farms were made possible through collaboration with the following partners: Charoen Pokphand/Indonesia, JAPFA Comfeed Indonesia and PKP-JAPFA Group, Sierad Produce, Super Unggas Jaya, Rinjani Poultry Shop, Tunas Mekar

Farm Poultry Shop, Sukahati Poultry Shop, Dramaga Unggas Poultry Shop, Bogor Agricultural University (IPB), Padjadjaran University (UNPAD), and SMK Agro Nurul Huda vocational school.



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POKPHAND



PT. SUPER UNGGAS JAYA



SieradProduce



RINJANI
PERDAGANGAN SAPRONAK DAN PRODUKSI AYAM



TME
Tunas Mekar Farm



DUF
DRAMAGA UNGGAS FARM

APPROACH

SAFE met with key industry stakeholders and associations representing 80% of all poultry production in the country and agreed on the teaching farm model, access to contract and independent farmers, and technical assistance from industry technical services staff.

At the same time, SAFE gathered a group of Indonesian and international experts to define the key members of the poultry value chain and the priority biosecurity behaviors each should practice to reduce the risk of transmitting AI. Experts included SAFE partners from the Government of Indonesia; industry representatives Charoen Pokphand/Indonesia, JAPFA Comfeed Indonesia and PKP-JAPFA Group; international partners FAO, WHO, USDA, JSI/Deliver, the Indonesian-Dutch Partnership, ACIAR; and USAID. As a result of this meeting, priority audiences and behaviors were collectively defined for the program.

The behaviors for small Sector 3 farmers were operationalized through the creation of 12 teaching farms; these facilities were working farms already owned and operated by farmers from Sector 3 and academic institutions. These teaching farms were devised as a "see and do" approach to educate the farmers, technical service staff and students on risk reduction practices.

SAFE guided the structural biosecurity changes at each of the teaching farms and worked with the industry and academia to train farm managers and workers on best practices, and new techniques. Farmers and students were then brought in to learn about biosecurity.

Industry, academia and SAFE strived to:

- Create a visual experience for the small broiler farmer
- Demonstrate biosecurity options and practices
- Provide technical assistance to farmers to implement biosecurity changes
- Reinforce farmers' behavioral changes
- Provide hands-on experience for students

The teaching farms were created in western Java, an area with thousands of small broiler farms and an active trade route that carries live chickens to the larger urban centers such as Bandung and the Jakarta metropolitan area.

THE TEACHING FARM MODEL

Development of a Teaching Farm

The teaching farm created in Indonesia is based on a model farm or model display – a concept that has been employed in various countries over many years to introduce new technologies in agriculture.

Sites were chosen in partnership with large poultry companies, poultry shops and academia. These farms were created by making improvements to existing small commercial farms so that visiting farmers could easily associate their own farms with the model teaching farms.

The technical staff of industry partners brought workers from farms to one of the 12 teaching farms, and later provided the farmers with technical assistance and guidance so that they could make similar biosecurity changes at their own farms. Students from two Indonesian universities and one vocational school supplemented classroom poultry lectures with hands-on visits to their teaching farms to review biosecurity measures and options.

Farmers and students walked through as many as 26 “stations” at the teaching farms and listened to pre-recorded messages highlighting the suggested biosecurity conditions and practices. Table 1 lists the ten priority biosecurity and good farming practices demonstrated at the teaching farms.



Table 1: Ten Priority Biosecurity and Good Farming Practices ²

- Vehicles park outside the farm
- Footwear worn by staff and visitors is exchanged at the farm entrance
- All gates are kept locked
- A pass-through or pass-over system is used
- Hands are washed prior to entering the farm area and prior to leaving the farm
- Footwear is exchanged at the chicken house doors, or a proper dip system is used
- Dead chickens are disposed of properly
- Poultry mortality is recorded
- Buildings and equipment are cleaned properly
- Chickens consume good drinking water

Now imagine you are a poultry farmer, and take a journey through a composite of the 12 teaching farms that opened during 2012.

² Based on 2011 Consensus Report: Priority Audiences and Behaviors for Reducing the Risk of AI Transmission in Indonesia





As we approach a group of chicken houses we see a sign that reads: "Parking area. Vehicles must not enter the farm."

Cars, trucks, motorcycles and even bicycles can carry undesirable micro-organisms. Keeping these vehicles off the farm assures the farmer that these micro-organisms will also be kept out.



We leave our vehicle and see a locked vehicle gate and a locked pedestrian gate with another sign, marked "Entrance". People and their clothing are the primary carriers of disease. The best way to prevent people bringing in microbes on their clothing is to keep the people out of the farm, hence the fences and locked gates. These barriers also improve the security of the farm and impress upon the employees the importance of proper management of the chicken farm.



Our next activity is to wait for the manager of the farm to let us pass through the gate.

We then remove our footwear and step over the threshold that separates the "dirty outside" from the "clean farm".



We put on a uniform over our clothes and "farm" sandals. The uniform is not required; it is a reminder that clothing should be changed, leaving the harmful microbes at the entrance to the farm and so preventing them from reaching the chicken house environment. Likewise, clothes worn on the farm should not be worn at home.

After washing our hands and filling in the guest book, we put on the headphones, turn on the MP4 player and begin the self-guided tour.

We see a variety of numbered stations (up to 26). The station numbers correspond with the narrative emanating from the MP4 player. Each station has a description and real-life demonstration of the biosecurity techniques and good farming practices used on this farm. During the tour, farmers also have the opportunity to ask questions from the farm manager, professor or technical staff that have brought them to the teaching farm.

We notice that some signs are in yellow, and ask the farm manager what this means. He explains that they highlight the most important biosecurity techniques. Later, we see these yellow signs at the pass-over, pass-through, and sandal exchange at the chicken house doors, and in the cleaning and disinfection area.

At Station 3, the pass-through and pass-over systems are demonstrated. These systems make it possible to keep delivery vehicles and drivers off the farm. Bags of litter, boxes of day-old chicks, and bags of feed are passed through an opening in the fence or building to someone inside the farm area.

Once outside, technical staff often hold question and answer sessions to review what the farmers have seen and discuss how best to adopt the techniques to their farm environments.



Another station demonstrates the footwear exchange system used at the chicken house doors. This is one of the most important biosecurity techniques, and is also the easiest and least expensive measure to implement. The undesirable microbes found on shoes and sandals are left outside the chicken house as the farmer changes into a new pair of sandals or boots that are exclusively used inside the chicken house.



At Solihin teaching farm, proper cleaning of the chicken house is very important. One station shows and explains the steps necessary to clean and disinfect the chicken house and equipment. Another station shows disposal of dead chickens.



At the end of this 20-minute tour, we have listened to, seen and practiced basic biosecurity measures. Next, we hand in the audio equipment, put comments in the guest book, wash our hands, remove the uniform, receive a gift bag containing scissors, rubber gloves, and a booklet explaining what we have seen, exchange our footwear and leave through the same gate we entered.



We know that we have learned a great deal, have not brought any nasty organisms onto the farm with us, and are not leaving any behind at the farm. Our visit is now complete.

SAFE staff used the sign-in and sign-out sheet information to follow up with farmers and support them with technical know-how and assistance. Farm data showed that farmers would often return to the teaching farm to check on a technique before implementing it.



COMMUNICATION AND EDUCATIONAL MATERIAL

Visual and Educational Material Developed to Support the Program

The teaching farm display illustrated here is meant to be put up on a wall. It demonstrates appropriate biosecurity techniques as well as some key good

farming practices, such as having open spaces in the sidewalls to provide ventilation. Most importantly, it demonstrates options available.

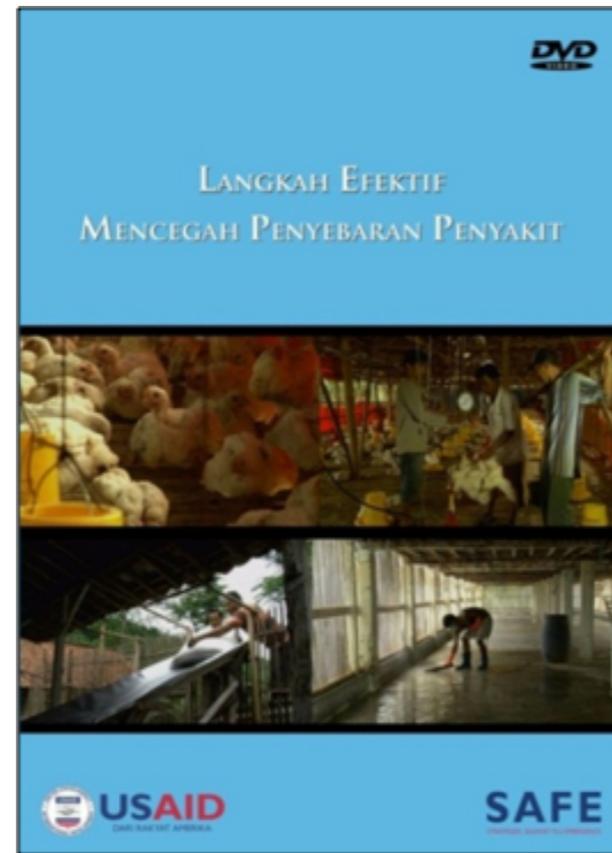


The booklet **Effective Measures to Prevent the Spread of Disease** illustrated below uses simple language and illustrations to explain the techniques demonstrated at the teaching farm and shown in the teaching farm display.



Over 5,000 copies of the Indonesian-language booklet “Effective Measures to Prevent the Spread of Disease” were distributed.

A farmer-to-farmer video captures the experiences and the results of the program. It was filmed on commercial broiler farms and on farms located at educational institutions.



Over 1,000 copies of this farmer-to farmer video were distributed.

RESULTS

Sector 1 and Poultry Shops Take Action

Almost 60 industry technical service staff brought over 500 farmers to visit one of the 12 teaching farms to observe and practice good biosecurity. The staff were trained in technical and communication skills and then provided technical assistance through over 400 visits per week to farmers interested in making changes.

Farmers Take Action

Over 300 farmers self-financed biosecurity and good farming changes in 12 districts in West Java and Banten between May 2012 and March 2013. Related data were collected by technical service staff and are captured in Table 2.



Table 2 . Summary of Physical Changes at Farms

	1	2	3	4	5	6	7	8	9	10	11	12
Number of farms	Parking area outside farm	Footwear at the entrance to farm		All gates have locks	Pass-through or pass-over	Upgraded hand washing area	Footwear exchange at chicken house doors		Proper disposal of dead chickens	Record sheet	Buildings and equipment clean	Good drinking water
		For staff	For visitors				Footwear for the inside of chicken house	Small fenced area for footwear				
5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
9		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
2	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
12	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
1	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
12	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓

In addition to their visits to the teaching farms, farmers were also influenced by multiple sources of information, including SMS messages, the information contained in the booklet on “Effective Measures to Prevent the Spread of Disease”, and discussions with SAFE and technical service staff from the Sector 1 firms and poultry shops. In order to reduce mortality on his farm, Ujang improved ventilation by removing bamboo strips.



Improved ventilation at Ujang’s Farm – before (top) and after (bottom)



Mr. Sanusi invested 2 million rupiah (US\$200) to improve his farm with a new gate for vehicles and people. He also built fences and introduced a sandal exchange system at the farm entrance and at the chicken house doors.



A sandal exchange system at a chicken house on Oyon Farm.

Educational Institutions Take Action

More than 1,100 students visited one of three teaching farms associated with their respective educational institutions. Integrating good biosecurity instruction into pre-service education is more cost-effective and efficient than trying to change poor

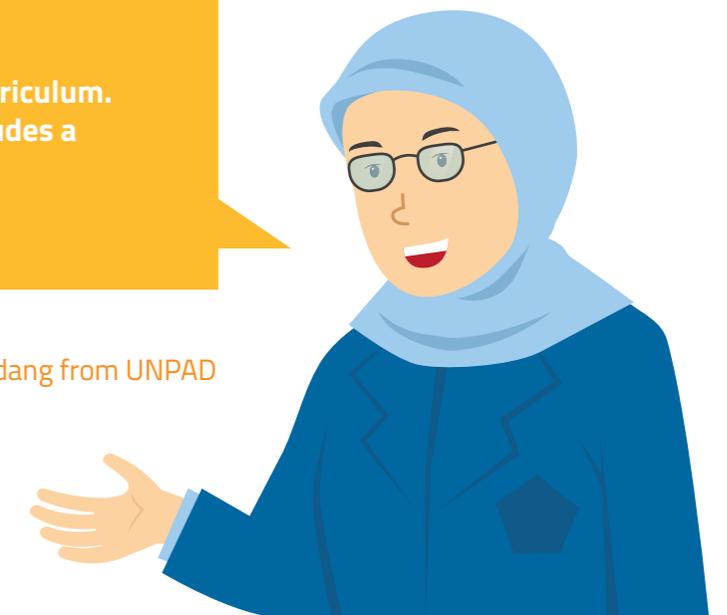


habits following years of neglect of good biosecurity practices. These students will begin working in the poultry industry with the knowledge that biosecurity and good farming practices make a difference.



“Biosecurity is now part of the curriculum. There is a dedicated unit that includes a field visit to the teaching farm.”

Ibu Endang from UNPAD





“Students learn about biosecurity in the first semester. This makes it easier for them to do things right once they have their own farm. It is difficult to change farmers now. We have a meeting area at our teaching farm to encourage discussion about what they see. The teaching farm is also visited by people in the community. Farmers, students from other schools, and even people from Sumatra have visited our teaching farm.”

The Headmaster of SMK Agro Nurul Huda vocational school, Ciamis.

“We plan to follow up and continue doing the things that we have learned.”

Dr. Ir. Luki Abdullah
Dean of Faculty of Animal Husbandry at IPB



Industry Replicates Teaching Farm Model

The poultry industry has recognized the effectiveness of teaching farms.

Ir. Paulus Widanarko, general manager for contract farming at PT. Cheil Jedang Indonesia, told a group of key managers from major firms in Indonesia, “We had thought it would not be possible for farmers to change, but now we know that they can”. CJ plans to identify 15 farms in Bogor, Bandung and other areas, and upgrade them to become teaching farms.

As of April 2013, four firms had created new teaching farms with technical guidance from SAFE. They are now open and being used to disseminate and teach the biosecurity and Good Farming Practices advocated by the project. These are:

Cibuntu Farm – Tri Group
In addition to providing tours of the farm with biosecurity-related explanations at key points, Cibuntu Farm plans to hold meetings of small groups of farmers in a semi-classroom environment. This activity will replicate the technical and farmer group discussions conducted under the SAFE project.

Yaya Farm – Dramaga Unggas Farm
Nearby farmers have already begun visiting the farm. In the near future, technical service staff will collect farmers living in Banjor district and bring them to Yaya Farm to learn about biosecurity and Good Farming Practices.

H. Darto – Rinjani Poultry Shop
The first group of visitors came from the University of Indonesia.

Hendra Pangkalan Farm – TMF
This farm is used to teach about construction for new poultry farms. Various biosecurity techniques presented in the SAFE teaching farms are now being incorporated in the design of new farms and being taught to farmers and managers.



H. Darto Farm, Rinjani Poultry Shop



Yaya Farm, Dramaga Unggas Farm

FUTURE CONSIDERATIONS

During its two-year program, SAFE learned the following:

- Farmers will self-finance biosecurity changes.
- Their motivations are clear:
 - Economic: Based on a desire to improve performance and reduce poultry mortality rates in order to increase revenues.
 - Social: A willingness to follow the lead of other farmers and replicate their biosecurity changes and successes.
 - Health: A desire to provide their families and neighbors with healthy chickens.
- Farmers need constant input and guidance. Biosecurity is not a one-time intervention.
- Communication materials designed especially for farmers can reinforce change.
- Industry and academic partnerships work.
- It is easy to go back to old patterns unless there are disincentives to do so.
- Industry leadership through technical assistance, incentives and motivational efforts will continue to be needed.

