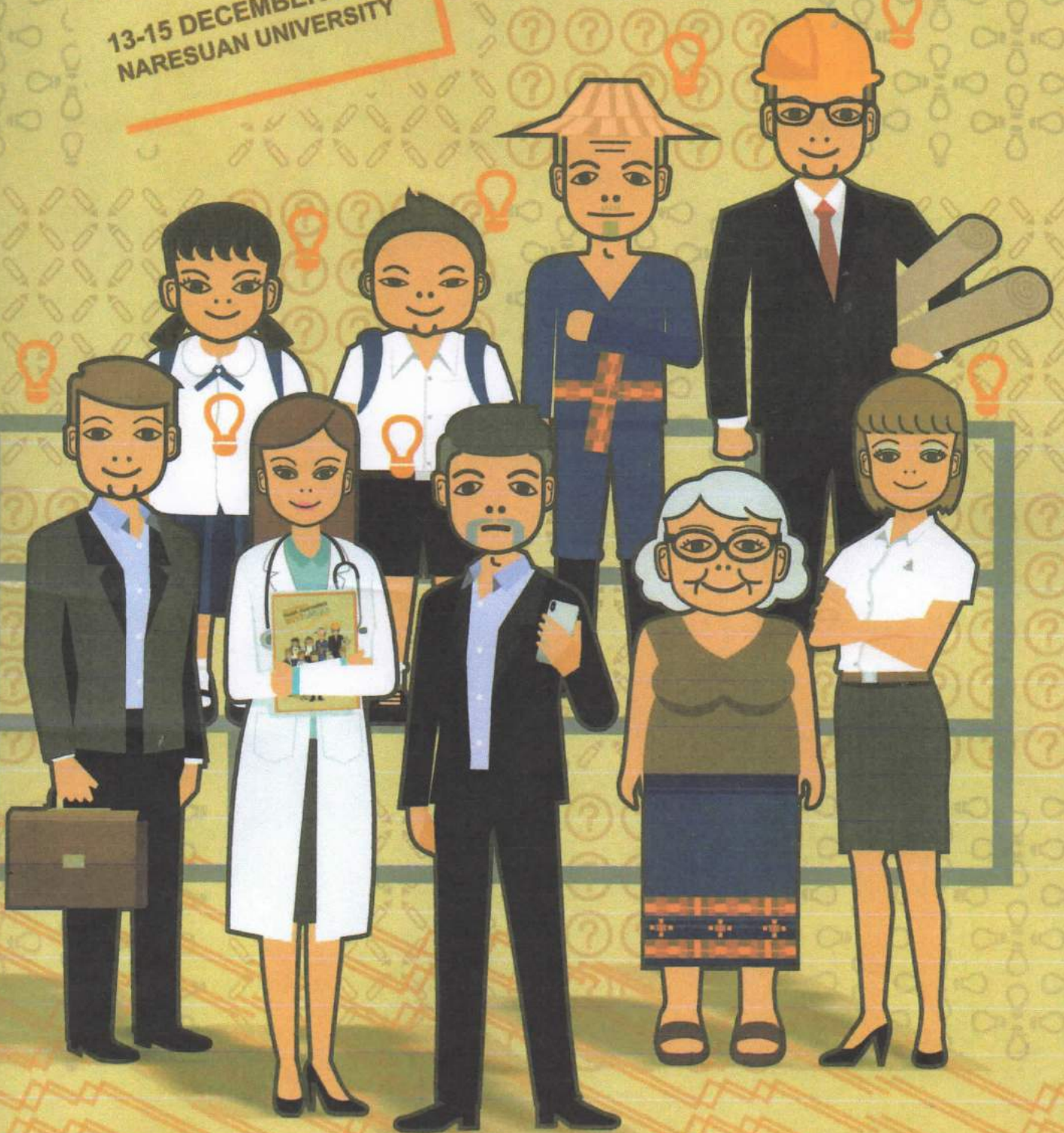


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## The Role of Human, Animal, Environment to Maintain Ecosystem as Global Food Security

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### Abstract

Emerging and reemerging disease for animal in Indonesia still appear for every year. These diseases not only caused by viral disease like Avian Influenza, Malaria, Rabies, but there are some kind of other infectious disease like bacterial disease as well as brucellosis, anthrax's, tuberculosis (TBC) and also parasitic disease like toxoplasmosis. These way model prevention of emerging and reemerging disease in Indonesia more important role, although base on the globally of infectious disease on two years ago have founded new infectious disease, that call Zika virus in Brazilian become large problem in the world. The veterinarian profession is a valued partner for their comprehensive education and expertise within healthcare professional networks and respected leaders in multidisciplinary teams. In the 21<sup>st</sup> century global food security and access to safe water are concerns. In the one health approach are for establishing guidance and policy, and approach relies on disciplines amongst other welfare, health, economics, social and environmental science. One Health concept is a worldwide strategy for expanding interdisciplinary collaborations and communications in all aspects of health care for humans, animals and the environment. This approach model have been done and realized at our university through collaboration between some research center at the university, and were combined between program in regional, national government and international.

**Key Words:** Emerging and reemerging disease, preventing, one health concepts, multidisciplinary teams

### Introduction

Indonesia is once big countries in the world, and has about 261,1 juta population, 20 % living in the city and 80% living the village. Public health is important role to maintenance of ecosystem that have involved human, animal, and environment regarding with infectious diseases and biosafety including emerging and reemerging disease. Although disease patterns change constantly, communicable diseases remain the leading cause of mortality and morbidity, and also in least and less developed countries. There are many models to eradicate of infectious disease or zoonotic diseases, but the most problems are human resources, less communication, and less coordination. This way empowering of human resources program is important role in line with global safety program (CDC, 2014).

Communicable diseases in Indonesia is one of the most public health problems that belong environment that can influence indirect to animal or ecosystem



because first, is that despite policies and interventions to prevent and control diseases as well as communicable disease have failed to eradicate vaccine-preventable disease, and also still have a high burden of communicable disease. Secondly, sustainable financing to scale up intervention is lacking, especially for emerging and re-emerging diseases that can produce epidemics. Third, political context and global economic is important to understand regarding with the funding allocations for the prevention, control and treatment of communicable diseases (WHO, 2008, 2017)

Many kinds agents can cause public health problem that possibility come from environment, animal, and human as well as Avian Influenza, Malaria, Rabies, brucellosis, anthrax's, tuberculosis (TBC) and also parasitic disease like toxoplasmosis, and Zika. Base on the increasing of global warming perhaps will be influence to change of the properties of agents then can be causing new emerging or reemerging disease (Morens, et al., 2004; Weiss, et al., 2004). Therefore, it has been needed some concepts to provide problems solving through biosecurity, biosafety and early warning system. That is important role to realise that Indonesia is a very large country with 261 million people, 14.000 islands, and over 5000 kilometers in length with high complexity human resources, animals, and environment.

Our analysis considers the emerging and re-emerging disease, food safety, social and economic progress. We attempt to understand whether the current focus of disease prevention is appropriate and to ascertain what changes in direction might enable national and global policy-making to deal more effectively with communicable diseases and food safety.

### **Methodology**

We have used some approach through a cross sectoral that have involved human, animal, and environment. First step, we have characterized problems using planning matrix; second step, we have developed model bioecosocio cultural; third step, we have developed model of early warning system concept.

### **Results**

The implementation our concepts above shown that important effect because can help all sector regarding with the prevention, decrease spreading of infectious diseases, response to the repairing of ecosystem that involved human animal and environment can shake to positive resultat. There are some strategies can be used to make a concepts leading on the track although with some different ethnic, language, and different skill to encourage public health problems. All the concepts have not far from guidance of World Health Organization (WHO), Organization Internationale of Epizootic (OIE) and Food an Agriculture Organization (FAO) (WHO, 2008; 2017).

At the University of Airlangga has concerned to eradicate of infectious disease including either of communicable disease and other non communicable disease. Some center have good responsible for these project are Institute of Tropical Disease, Special hospital of Infectious Disease, Faculty of Public Health, Faculty of Medicine, Faculty of Veterinary Medicine, Faculty of Economics and Business, Faculty of Law, Faculty of Arts and Culture, Faculty of Social and Politics. That mean, all of center inside of faculty moved to collaboration regarding with problems as well as social sector, economic sector, health sectors, prevention sectors, zoonotics sectors, culture sector, and rule design and implementation. All of concepts have resourced from the resultant of basic problems as well as survailance all sectoral, public awareness, early detection, early response, early recover. That can be used as empowering respons of public health, disease prevention, food security, biosecurity, and biosafety, social and



economics respons in regional and nasional issue. Finally it can be established a model of problem solving from public to government, and developed with some modified flow cahrd of CDC – WHO had very efficient to implemented (Hitoshi, et al., 2008; CDC, 2017)

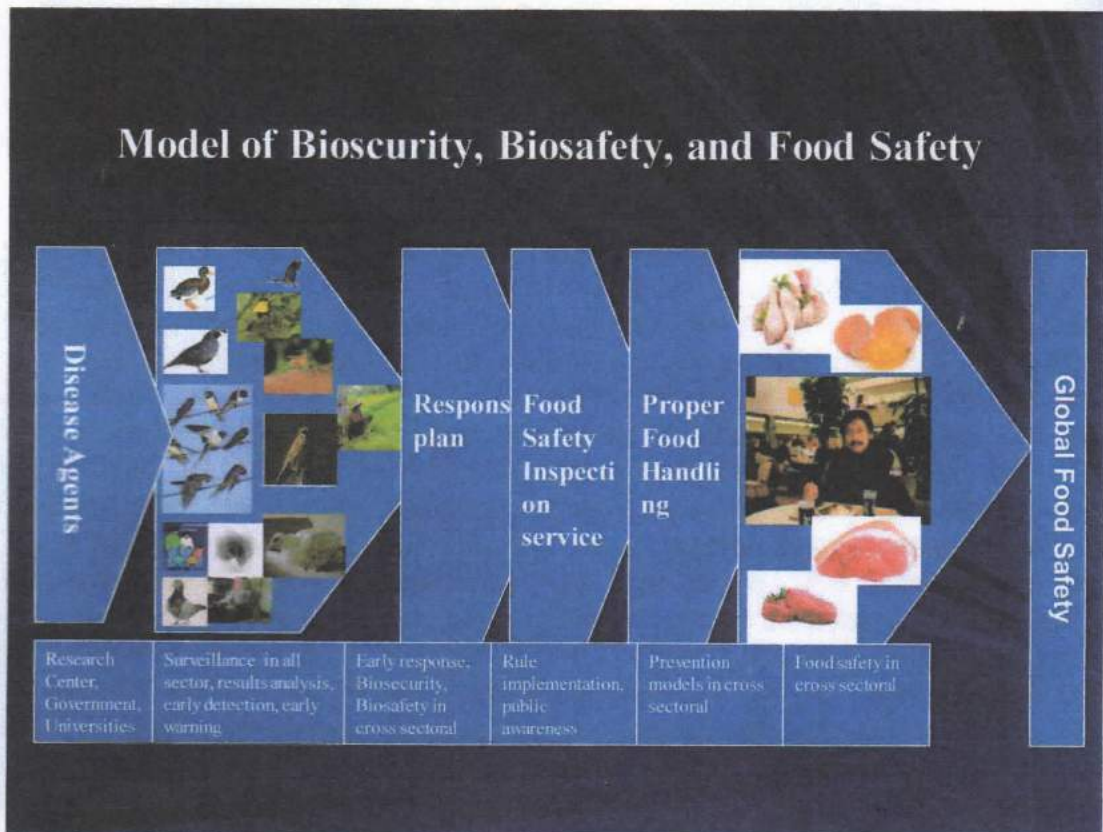


Fig.3. A Model of biosecurity, biosafety, and food safety to safe ecosystem

The Indonesian Ministry of Health address a wide range of high-priority public health needs, including infectious diseases, noncommunicable diseases, and surveillance, because every change including in technology, social, economics, and demography, vegetation, land use, have relations also a potential change in the ecology of pathogens and their reservoirs and vectors and therefore a change in the pattern of infectious disease epidemiology (Smith, et al., 2003, 2007). Preventing and responding to traditional, emerging and re-emerging communicable diseases is therefore a complex endeavour therefore needed increasing the funds available to fight selected diseases (Rantam, et al., 2008; CDC, 2017)

The global public good character of some communicable diseases warrants concerted world action. Nevertheless, significant gaps in funding as well as regional variations require a more diverse set of national and international aid measures. Although regional and global collaboration is critical, future policies for reducing the burden of communicable diseases in the region will only be affective if they are based on evidence and country-led. Finally, under our strategies and concepts to realize of prevention can be minimized of infectious disease spreading, and also through empowering human resources, public awareness in all sectoral, have very effective to build of the preventing of infectious disease.



One Health concept is a worldwide strategy for expanding interdisciplinary collaborations and communications in all aspects of health care for humans, animals and the environment. This approach model have been done and realized at our university through collaboration between some research center at the university, and were combined between program in regional, national government and international.

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