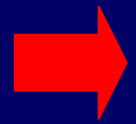


# Establishing and tailoring appropriate BSL 3 laboratories and network in Indonesia

National Institute of Health Research and Development  
Ministry of Health, Republic of Indonesia



I. Introduction

II. Biological Threats in Indonesia (diseases)

III. Institutions with Capacity to Identify pathogenic microorganisms

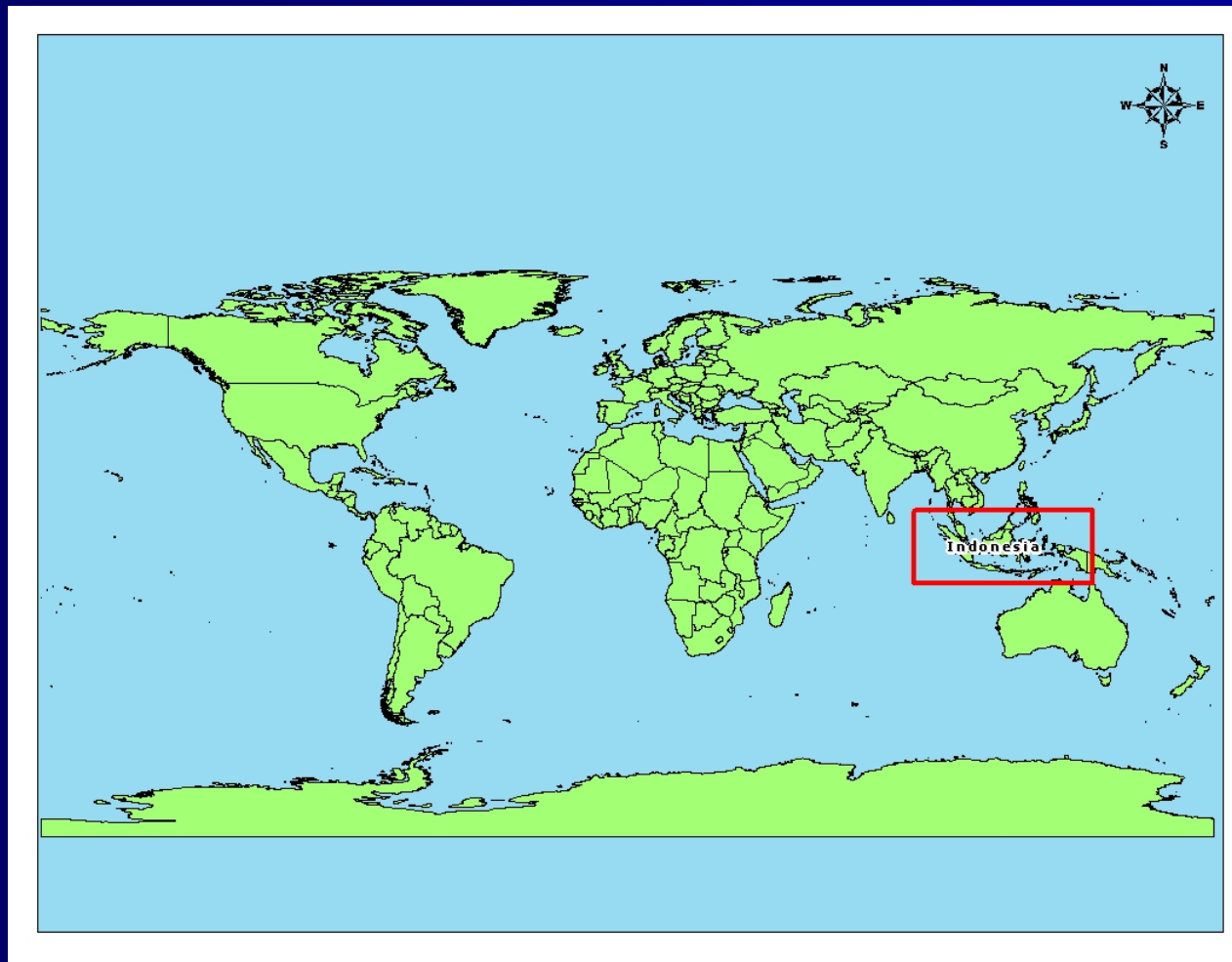
IV. Biosafety and Biosecurity efforts in Indonesia

V. Challenges of possible future threats

VI. Conclusions

# I. Introduction .... (1)

## Geography, climate and population



# I. Introduction .... (2)

## Geography, climate and population

- Indonesia consists of 5 major islands, +/- 3,000 medium & +/- 13,677 small islands
- The total area is 5,193,250 km<sup>2</sup> (39% land and 61% sea territory)

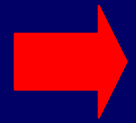


# I. Introduction .... (3)

## Geography, climate and population

- dry and rainy seasons
- temperature : 20°C to 30°C
- humidity : 65% to 90%
- divided into 33 Provinces,  
441 districts, 5.175 sub-districts  
and 66,721 villages
- population : +/- 220 million with  
pop. density of 113 persons/km<sup>2</sup>
- there are > 300 ethnic groups

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## II. Biological Threats in Indonesia (diseases)

Anthrax

Smallpox

Tuberculosis

HIV-AIDS

Typhoid Fever

Meningitis

etc..

Hemorrhagic Fever

Plaque

Malaria

Avian Influenza

Hantaan & Nipah virus

Rickettsioses

## II. Biological Threats in Indonesia (diseases)---> epidemiological aspect

Animal diseases



Human diseases  
(no immunity)



Rapid and prompt responses  
(surveillance, early detection, etc)



Safe and secure laboratories



## II. Biological Threats in Indonesia (diseases) ---> evolution of terrorism

Fire weapon armament



Chemical & radioactive weapon



Biological weapon



Rapid and prompt responses  
(surveillance, early detection, etc)



Safe and secure laboratories

# Safe and secure laboratories



BSL 1 ?



BSL 2 ?



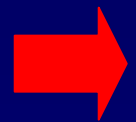
BSL 3 ?



BSL 4 ?

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### III. Institution with Capacity to Identify Pathogenic Microorganisms .....(1)

- Jakarta :  
NIHRD Lab., Eijkman Inst. Lab., Infectious Disease Hospital Sulianti Saroso, Persahabatan Hospital, & Namru – 2 Lab
- Bogor :  
Indonesian Centre for Veterinary Res.
- Bandung :  
Biofarma Laboratory  
(WHO suggestion: this lab is used for vaccine development)

### III. Institution with Capacity to Identify Pathogenic Microorganisms .....(2)

- Surabaya :  
Veterinary Research Institute
- Local Health Lab. at the Prov. Capitols  
in Hospitals and Prov. Health Lab.
- Several universities i.e. : Dept. of Microb.  
Univ. of Indonesia in Jakarta, Dept. of  
Microb. & CID Airlangga in Surabaya,  
Medical & Vet. Med. Faculties in Bogor,  
Yogjakarta, Semarang, Medan, Bali, and  
Makassar, etc)

# Map of Indonesia



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## IV. Biosafety and Biosecurity Efforts in Indonesia ...(1)

- Decree of the MOH of The Rep. of Indonesia No. 1244 of 1994 regarding Guidelines on Biosafety in Microb. and Biomed. Laboratories
- Decree of the Minister of Trade and Industry of The Rep. of Indonesia No. 254/MPP/Kep/2000 regarding the export & import of certain dangerous materials, including chemical & biological agents



## IV. Biosafety and Biosecurity Efforts in Indonesia ...(2)

- Centre for Health Emergency Preparedness and Response established by Min. of Health the Republic of Indonesia
- National Team for Disaster Management, headed by the Coordinating Minister of People's Welfare the Republic of Indonesia

## IV. Biosafety and Biosecurity Efforts in Indonesia ...(3)

- Outbreak Response Team established by DG of CDC and NIHRD of MOH the Republic of Indonesia
- Early Warning & Outbreak Response System (EWORS) established by DG of CDC and NIHRD of MOH the Republic of Indonesia

## IV. Biosafety and Biosecurity Efforts in Indonesia ...(4)

- The National Committee on Avian Flu Control and Pandemic Influenza Preparedness (Presidential Decree, 2006)
- Regional Committee on Avian Flu Control and Human Pandemic Influenza Preparedness
- Regional laboratories in both veterinary and human disease

## IV. Biosafety and Biosecurity Efforts in Indonesia ...(5)

- Reference laboratories for diagnosis of AI and other emerging infections in humans (national and regional level = 44)
- National animal reference laboratory and a network of Disease Investigation Centres (national and regional level = 8)

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## V. Challenges of possible future threats .....(1)

Some conditions in our country need more attention:

- Geographic, climate, and population
- Some diseases as “biological threat” are endemic in certain areas of Indonesia
- Big proportion of population with low income capacity, poor health environment condition & health status

## V. Challenges of possible future threats ..... (2)

The preparation efforts towards those conditions:

- Strengthen national capacity building i.e.: personal, equipment, surveillance system, nat. coord., coop. & management
- Enhancing collaboration and networking within country and with other countries

## V. Challenges of possible future threats ..... (3)

Building capacity to better diagnose disease in humans and animals → improved lab. cap.:

NIHRD is establishing a BSL-3 laboratory in Jakarta (build a large BSL-2 lab, animal and office facility with a smaller, modular BSL-3 lab adjacent to the building) → technical assist. has been conducted in collaboration with the US BEP



## V. Challenges of possible future threats ..... (4)

Eijkman Institute Laboratory, Dept. of Microbiology-Univ.of Indonesia, & National Animal Reference Laboratory (Balitvet) also establish BSL3 laboratory

A clear division of labor and function, as well as an appropriate referral system, is therefore paramount

## V. Challenges of possible future threats .....

Bio-security include transfer and sharing of biological materials to international laboratories :

The WHO High-Level Meeting on Responsible Practices for Sharing Avian Influenza Viruses and Resulting Benefits on 26-27 March 2007 in Jakarta, Indonesia

## V. Challenges of possible future threats .....

Sharing of influenza virus isolates will only be used for risk assessment purposes (identification, characterization, and monitoring)

WHO will modify it's best practices to ensure that they are transparent to the developing countries which are providing samples, and which have requested to share in the benefits resulting from those viruses.

## V. Challenges of possible future threats .....

Rapid and accurate assessment, using resources within countries and internationally, as close to the point-of-collection as possible

Making full use of qualified laboratories within each country as the primary focus rather than seeking first to send specimens to far-off locations

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## VI. Conclusion .....(1)

- Pattern of Possible “Biological Threats” in Indonesia
- Some efforts have been done regarding “biosafety & biosecurity
- Best efforts should be conducted to build in country laboratory capacity → support to increase the numbers of accredited labs

## VI. Conclusion .....(1)

- The future plan is that Indonesia should be able to diagnose disease with certainty and in the shortest possible time to ensure more rapid response
- The world must work in union against diseases and not fight each other to advance global health security

# Thank you

