



Food and Agriculture  
Organization of the  
United Nations



## **REGIONAL WORKSHOP ON BIOINFORMATICS SYSTEM AND CAPACITY DEVELOPMENT FOR ASIA – FOR POLICY MAKERS**

(OSRO/RAS/402/USA, OSRO/GLO/503/ROK)

16 August 2018, Yogyakarta Indonesia

As part of the 1<sup>st</sup> Avian Influenza Group for ASEAN (AIGA) Meeting

13-16 August 2018, Yogyakarta Indonesia

### **Background**

In alignment with and to support the effective implementation of the Regional Strategic Framework for Laboratory Capacity Building, a regional consultation on strengthening bioinformatics capacities in Asia was held in May 2016 in Bangkok, Thailand. The aim of this consultation was to develop a regional strategy for bioinformatics to support existing prevention and control strategies on emerging pandemic threats from animal and zoonotic diseases within the region.

Key meeting outputs included: (1) an overarching strategic goal for bioinformatics in the region; (2) key objectives to reach that goal; (3) specific activities under each objective; and (4) a draft timeline for the implementation of activities. The meeting identified regional gaps and needs in bioinformatics capacities, including human resources, technology and knowledge that should be addressed to improve the use of bioinformatics in controlling and preventing animal and zoonotic diseases. Key recommendations of the consultation were to develop basic and advanced training modules for workshops, as well as modules for other stakeholders, including decision-makers, epidemiologists and communications experts, and to organize regional workshops on bioinformatics, targeting member states for the presentation of the regional strategy and the piloting of the training modules.

Subsequent to this consultation, four bioinformatics training modules were developed by experts from Duke-National University of Singapore Medical School (Duke-NUS), Australian Animal Health Laboratories (AAHL) and The University of Hong Kong (HKU) in 2017.

- Module 1: BIOINFORMATICS, THE SETUP, which cover the general pipeline processes for Sanger sequencing and Next Generation sequencing
- Module 2: BIOINFORMATICS, THE BASICS, which will cover the general principles of bioinformatics
- Module 3: BIOINFORMATICS, ADVANCED MODULE, which will cover advanced pathogen specific exercises
- Module 4: BIOINFORMATICS FOR DECISION MAKERS, aimed to give executives and policy makers a basic understanding of possible applications of bioinformatics

The Regional Workshop on Bioinformatics System and Capacity Development for Asia was organized in Bangkok during 27 November-1 December 2017. The specific objectives of this workshop were to pilot and evaluate Modules 1-3 (Setup, Basics, Advanced Bioinformatics) of the regional bioinformatics training curriculum; to strengthen the understanding of bioinformatics of the training participants; and to plan for next steps for the strengthening of bioinformatics capacity in the region. A total of 16 national staff from eight countries attended this workshop who are engaged in using bioinformatics in their day-to-day work, or have a basic understanding of molecular principles and have experience in molecular diagnosis or molecular epidemiological analysis of avian influenza virus, foot and mouth

disease virus or other animal disease infectious agents. The training Modules 1-3 of the regional bioinformatics training curriculum were piloted through this bioinformatics training workshop that aided the planning of the next steps of the regional bioinformatics capacity strengthening. This workshop is the first opportunity to pilot Module 4 for executives and policy makers to enhance their basic understanding of possible applications of bioinformatics on disease control.

**Objectives:**

1. To pilot and evaluate Module 4 of the regional bioinformatics curriculum;
2. To plan the next steps of the regional bioinformatics capacity strengthening.

**Expected Outputs:**

Workshop Report on the piloting of Module 4 (BIOINFORMATICS FOR DECISION MAKERS) including recommendations to improve the module

**Dates and Venue:**

16 August 2018  
Yogyakarta, Indonesia

**Expected Participants:**

Total 20 participants - one AIGA focal point from each of the ASEAN Member States and observers

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**DRAFT AGENDA**

Time	Activity	
08:30 – 09:00	<ul style="list-style-type: none"> <li>Registration</li> <li>Opening ceremony</li> </ul>	
<b>MODULE 4: BIOINFORMATICS FOR DECISION MAKERS</b>		
	<b>Topics</b>	
09:00 – 10:30	<ul style="list-style-type: none"> <li><b>Course introduction &amp; objectives</b></li> <li><b>Presentation I:</b> Why are you here? Scene-setting.               <ul style="list-style-type: none"> <li>Identifying issues, the problem of working with “Big Data”</li> <li>What can be done using bioinformatics?</li> <li>Bioinformatics as a cost-effective tool beneficial to animal and public health</li> </ul> </li> <li><b>Q&amp; A</b></li> </ul>	Gavin Smith
10:30 – 11:00	Coffee break	
11:00 – 12:30	<ul style="list-style-type: none"> <li><b>Presentation II:</b> What we want from you/policy recommendations.               <ul style="list-style-type: none"> <li>Making informed policy decisions – Conclusions we can and cannot make from bioinformatic analysis</li> <li>Support us to support you – What resources and support are required for an effective bioinformatic capacity?</li> <li>Identify gaps and solutions in bioinformatics capacities</li> </ul> </li> <li><b>Q &amp; A</b></li> </ul>	Gavin Smith
12:30 – 13:30	Lunch	
13:30 – 15:30	<ul style="list-style-type: none"> <li><b>Discussion:</b> Problem-solving scenario               <ul style="list-style-type: none"> <li>Real-world scenario based on participants’ experiences</li> <li>Requiring information-sharing to develop coherent policy</li> </ul> </li> <li>Presentation of a short <b>Motivational Video</b> to raise interest &amp; awareness               <ul style="list-style-type: none"> <li>What is bioinformatics?</li> <li>Real-world examples of how bioinformatics is used in decision making</li> <li>Provision of one-page handout substitute</li> </ul> </li> </ul>	Gavin Smith
15:30 – 16:00	Coffee break	
16:00 – 17:00	<ul style="list-style-type: none"> <li>Closing</li> <li>Discussion on next step on Bioinformatics System and Capacity Development for Asia</li> <li>Event evaluation</li> </ul>	