



# BIOCourier

Volume XXIV Quarter  
March 2022

1

## The Rich Natural Resources of Tolikara Regency, Papua Province



SEAMEO BIOTROP Strengthens Its  
Collaborations with Universitas  
Sumatera Utara



SEAMEO BIOTROP's Internship  
Program for Students from the  
Universitas Pembangunan Nasional  
Veteran of East Java



Communication Forum:  
Risks of GMO Products





## Advisors:

Dr Zulhamsyah Imran  
Dr Perdinan

## Editors:

Haritz Cahya Nugraha (Head of  
Knowledge Management, Publication and  
Communication Unit)  
Sri Ismawati Soerianegara (Editor)

## Contributors:

Haritz Cahya Nugraha  
Sri Ismawati Soerianegara (Editor)  
Deda Annasia Yuliasatri

## Designer:

Asep Saepudin

## Address:

### SEAMEO BIOTROP

(Southeast Asian Regional Centre  
for Tropical Biology)  
Jalan Raya Tajur Km. 6, Bogor 16134  
INDONESIA  
Phone: +62-251-8323 848  
Fax: +62-251-8326 851  
E-mail: kmd@biotrop.org  
Website: www.biotrop.org



4

The Rich Natural Resources of Tolikara  
Regency, Papua Province

Masoi was chosen as the primary commodity in this internship program for SMKN Tolikara because Tolikara Regency is rich with Masoi tree barks.

5

Strengthening the Provision of  
Seaweed Seedlings in the Southeast  
Maluku Regency

The visit held on 14 January 2022 aimed to strengthen the provision of seaweed seedlings in supporting seaweed cultivation in the Regency of Southeast Maluku.

6

54<sup>th</sup> SEAMEO BIOTROP  
Anniversary Celebration

Agenda for Sustainable Development Goals (SDGs) 2030, Conference of the Parties (COP) of the Convention on Biological Diversity (CBD), The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), and the ASEAN Center for Biodiversity.

8

SEAMEO BIOTROP's Internship  
Program for Students from the Universitas  
Pembangunan Nasional Veteran East Java

This program involves the role of lecturers from the interns' home universities to accompany the interns during the internship program.

10

Identification of Training Needs in Tropical Biology  
for Vocational High Schools in Indonesia

To improve the abilities and competencies of Vocational High Schools graduates that are needed by the business and the industrial sector.

11

Communication Forum:  
Risks of GMO Products

Biotechnology is an alternate solution for several worldwide issues, such as food availability.



12

## The Importance of Workload Analysis for the Well-Being of An Organization

Workload analysis is important for evaluating the work performance of the employees in accordance with the visions, missions and targets of the organization.

12

## SEAMEO BIOTROP Identifies Potential Implementation of MBKM Program in Indonesia

Director of SEAMEO BIOTROP, Dr Zulhamsyah Imran, expected that the participants practiced good cooperation with universities, industries and the government agencies to jointly implement the MBKM program.

13

## SEAMEO BIOTROP Strengthens Its Collaborations with Universitas Sumatera Utara (USU)

SEAMEO BIOTROP and Universitas Sumatera Utara (USU) agreed to initiate collaborative programs.

14

## SEAMEO BIOTROP Implements the Save Biodiversity Program in Supporting the Merdeka Belajar Kampus Merdeka (MBKM) Program

SEAMEO BIOTROP plans to re-open and expand the types of programs that can be followed by students to improve competence, knowledge and experience in various fields in the context of tropical biology.

15

## Endangered Faunas

Flores Hawk-Eagle (*Nisaetus floris*) belongs to the Accipitridae family and *Nisaetus* genus. This large raptor is an endemic species to the Flores and Sumbawa in Nusa Tenggara Islands (Lesser Sunda Islands).

## Director's Message

Greetings from SEAMEO BIOTROP!

Heraclitus, a pre-Socratic Greek philosopher, once stated a quote "Change is the only constant in life". The exact quote comes into my mind when parting with the year 2021. Changes happen everyday in our life. Most certainly true for us in SEAMEO BIOTROP, who have spent the entire year of 2021 working tirelessly in promoting and disseminating the real values of tropical biology.

Our newsletter has been one of the Center's means for outreaching wider audiences in regards to the Center's activities, programs and achievements. Throughout its journey, the BIOTROP Newsletter has undergone many changes from its initial publication. With times, it is prudent to say that a new refreshing concepts of the Newsletter is in demand for making a more elegant and eye-catching newsletter.

At the beginning of 2022, SEAMEO BIOTROP focused its activities on formulating and planning the programs and activities toward its 11<sup>th</sup> FYDP. Several focus group discussions were conducted to gather insights on the needs, opportunities and resources crucially required for promoting the Center's Save Biodiversity programs.

SEAMEO BIOTROP also facilitated the Merdeka Belajar Kampus Merdeka Program of the Ministry of Education, Culture, Research and Technology (MoECRT) of the Republic of Indonesia by providing short lectures program for the students of the Agrotechnology Department, Faculty of Agriculture of the Universitas Pembangunan Nasional Veteran of East Java. The Center also hosted the internship programs for 6 students of the SMKN Tolikara, Papua Province.

We were honored to welcome the visit from the Assistant Deputies of the Coordinating Ministry of Maritime Affairs and Investment accompanying the Regent of the Southeast Maluku and directors of several private companies in seaweed industries. During this visit, SEAMEO BIOTROP was happy to assist in implementing tissue culture technology for propagating seaweed to produce quality and sustainable seaweed seedlings.

Welcome 2022! Save Biodiversity!





## The Rich Natural Resources of Tolikara Regency, Papua Province

Tolikara Regency is among regencies in Papua Province having rich natural resources from the agricultural, forestry, agro-industrial, mining and tourism sectors. The natural forest of Tolikara is known for having many tree species that produce essential oils, such as Masoi (*Cryptocarya massaia* (Oken) Kosterm.), Cinnamon/Akar Lawang (*Cinnamomum* spp), Ylang-Ylang/Cananga (*Cananga odorata*) and Spiked Pepper/sirih hutan (*Piper aduncum* L.).

In supporting the Merdeka Belajar Kampus Merdeka Program of the Ministry of Education, Culture, Research and Technology of the Republic of Indonesia, SEAMEO BIOTROP Natural Products Laboratory held an internship program for the SMKN Tolikara. Six students of SMKN Tolikara actively participated in this 2-month event. The internship materials were the distillation of essential oil of Masoi tree barks and the making of the perfume, as well as aromatherapy soap bars and liquid soap by using the essential oil extracted from the Masoi tree barks.

Masoi was chosen as the primary commodity in this internship program for SMKN Tolikara because Tolikara Regency is rich with Masoi tree barks. David, an internship student of SMKN Tolikara, mentioned that people in his village sell around 10 tonnes of Masoi tree barks monthly.

The Masoi tree barks are sold in Jayapura City. It needs a 24-hour road trip from David's village to Jayapura City, causing the high transportation cost of selling Masoi tree barks which leads to the expensive price of Masoi tree barks.

The internship program for SMKN Tolikara was held to increase the capacity of human resources in the Tolikara Regency. It is expected that the technology learned by the students at SEAMEO BIOTROP can be directly implemented in the school and the Tolikara Regency. "In this internship program at SEAMEO BIOTROP, I have learned a lot about the technology of essential oil distillation from Masoi tree barks, along with the technology for making perfume, soap bars and liquid soap by using Masoi essential oil," stated Agriva, an internship student of SMKN Tolikara. She further mentioned that she will convey her knowledge to her school and communities in her home village.

Overall, the capacity building of human resources in the Tolikara Regency is expected to develop the utilization of natural resources toward the production of semi-finished goods or finished goods as merchandise for improving the livelihood of communities in the Tolikara Regency. This effort should be supported by appropriate technology of handling, manufacturing, packaging, storing, marketing and distributing. (sis, hcn).



# Strengthening the Provision of Seaweed Seedlings in the Southeast Maluku Regency

The Director of SEAMEO BIOTROP accompanied with the Deputy Director for Administration, the Managers and Head Units warmly welcomed the visit of the Assistant Deputy for Maritime Resources and Downstreaming, Assistant Deputy for Aquaculture Development and Professional Experts from the Coordinating Ministry of Maritime Affairs and Investment, the Regent of Southeast Maluku and the directors of private companies in seaweed industries. The visit held on 14 January 2022 aimed to strengthen the provision of seaweed seedlings in supporting seaweed cultivation in the Regency of Southeast Maluku.

Seaweed has long been a primadonna of aquaculture commodities from Indonesia. In 2020, Indonesia is the second-largest seaweed producer worldwide after China, with an export volume of 195,574 tonnes valued at USD 278.58 million in 2020 (<https://kkp.go.id/djpb/artikel/32618-tingkatkan-pertumbuhan-ekonomi-kkp-komitmen-genjot-produksi-rumput-laut>). Even during the pandemic, Indonesia's seaweed export for the period of January-October 2021 increased by 11.68% compared to the same period in 2020 (<https://www.suara.com/bisnis/2021/12/27/164000/ekspor-rumput-laut-indonesia-meningkat-di-tengah-pandemi>).

This promising export potential of seaweed has urged the Government of Indonesia to strengthen the seaweed as an export commodity. Among efforts is to develop promising locations for seaweed cultivation. Southeast Maluku Regency is among potential locations for seaweed cultivation. Along with its scenic and beautiful sites, the Regency has quite an amount of seaweed fishermen and several seaweed industries. The seaweed cultivation areas are already mapped in accordance with environmental zoning areas based on the survey conducted by the Southeast Maluku Regency Office of Environment and Forestry.

The main constraint of seaweed cultivation in the Southeast Maluku Regency is the sustainability of superior seaweed seedlings provision. Based on the long search within research institutions, it is finally found that SEAMEO BIOTROP has a long experience in seaweed propagation by using tissue culture techniques for producing superior and sustainable seaweed seedlings.



The discussion during this visit led to focused planning that a laboratory for superior and sustainable seaweed seedlings should be established in the area nearby the seaweed cultivation areas in the Southeast Maluku Regency. SEAMEO BIOTROP involves in this planning as a resource to conduct technology transfer on seaweed propagation by using tissue culture techniques for producing superior and sustainable seaweed seedlings. (sis, hcn).





On 22 February 2022, SEAMEO BIOTROP celebrated its 54<sup>th</sup> Anniversary with the theme “Save Biodiversity for Future Generations” through a blended platform. Several programs were presented in the celebration event, such as the launch of the products of the Ten Bs Program and the launch of the New Podcast Studio. The celebration event also presented Podcast on Save Biodiversity for Future Generations: SEAMEO BIOTROP’s Contribution to Saving Biodiversity and National Education Priorities, hosted by Mr. Harry Imantho, MSc, a researcher of SEAMEO BIOTROP, with two outstanding resource persons Dr Zulhamasyah Imran, the Director of SEAMEO BIOTROP and Ms. Yunitasari from the Bureau of Cooperation and Public Relation of the Ministry of the Education, Culture, Research and Technology of the Republic of Indonesia.

SEAMEO BIOTROP has been trying to overcome the issues happening in the tropical biology field at the national and regional levels to deliver the Center’s vision. The acknowledgment of the Center’s role as “a leading Center in promoting and enriching the real values of tropical biology in Southeast Asia”, is the basic fuel of the Center to encourage the action program using the tagline “Save Biodiversity”. The action programs are framed with the target of Tropical Biodiversity from Mountain to Ocean (MoTO), and derived into three flagship programs, namely: 1) Ecosystem Restoration and Conservation, 2) Sustainable Use of Biodiversity, Bioenergy, Biotechnology to Support Food Security, 3) Resilience in the face of Global Climate Change.

In her remarks, the Director of SEAMEO Secretariat expressed her deepest appreciation to the excellent achievements of SEAMEO BIOTROP by implementing the Center’s programs that benefited various stakeholders including schools, communities, government and private sectors in Southeast Asia and beyond. She further expressed that those programs are also in support of SEAMEO’s Priority Areas in Education, Science and Culture, especially on Addressing Barriers to Inclusion, Resiliency in the Face of Emergencies, Promoting Technical and Vocational Education and Training, Revitalizing Teacher Education, and Adopting a 21<sup>st</sup> Century Curriculum. She also mentioned that these programs are strategic to promote cooperation in education, science and culture for a better quality of life in Southeast Asia.



# 54<sup>th</sup> SEAMEO BIOTROP Anniversary Celebration



The Secretary-General of the Ministry of Education, Culture, Research and Technology of the Republic of Indonesia expressed her hopes that the programs of SEAMEO BIOTROP are able to increase the achievement and impact of the Center to support the ministry's achievements in accordance with the RENSTRA KEMENDIKBUD (Strategic plans of the Ministry of Education, Culture, Research, and Technology). She also mentioned her confidence that these programs of SEAMEO BIOTROP also support SEAMEO's Priority Areas in Education, Science, and Culture, particularly in Overcoming Barriers to Inclusion, Resilience in the Face of Emergencies, Promoting Technical and Vocational Education and Training, Revitalizing Teacher Education and Adopting 21<sup>st</sup> Century Curriculum. Furthermore, she stated that these strategic programs can be implemented to encourage multilateral cooperation in the field of education, in support of international efforts to reduce the global impact of Covid-19 pandemic on Education, according to the declaration stated by the President of the Republic of Indonesia in the Presidential Agenda of the G20 countries this year which was carried out in Indonesia.

In his remarks, the Director of SEAMEO BIOTROP stated that SEAMEO BIOTROP is ready to be at the frontline to support the priority education agenda proclaimed at the presidential G20. SEAMEO BIOTROP will join to "Recover Together, Recover Stronger" to support "SAVE BIODIVERSITY FOR FUTURE GENERATIONS", through its 54<sup>th</sup> anniversary programs to successfully support the G20 meeting output on education and environment issues.

Happy 54<sup>th</sup> Anniversary SEAMEO BIOTROP!

May all the excellent achievements continuously elevate the visibility of SEAMEO BIOTROP!

Keep up the optimism! Stay healthy and safe! (sis).





## SEAMEO BIOTROP's Internship Program for Students from the Universitas Pembangunan Nasional Veteran of East Java







In supporting the “Merdeka Belajar Kampus Merdeka” Program (MBKM Program) of the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia, SEAMEO BIOTROP initiates an internship program especially designed for university students. This program involves the role of lecturers from the interns’ home universities to accompany the interns during the internship program. The program is worth 20 credits for each chosen subject. The internship is carried out using several means of learning methods, i.e., classroom, mentoring, practicum (field and laboratory), and working practice.

The first batch of the internship program was participated by 5 students from the Agrotechnology Department, Faculty of Agriculture of the Universitas Pembangunan Nasional Veteran of East Java, from 11 October 2021 to 24 January 2022. There were 4 internship programs offered, i.e., 1. Management of Invasive Species and Modern Biotechnology; 2. Risk Management and Environmental Quality; 3. Sustainable Urban Farming; and 4. Applied Biotechnology. From the 4 offered programs, the students preferred to study the Management of Invasive Species and Modern Biotechnology Program, which consisted of 5 topics: 1. Community Development; 2. Integrated Pest Management of Stored-Product Insect Pests; 3. Modern Biotechnology; 4. Post-harvest Fungi and Mycotoxins in Food and Feed Stuffs; and 5. Management of Weeds and Invasive Alien Plant Species. The objective of learning these topics was to support the sustainability and conservation of the environment and biodiversity. In the future, the program might be enhanced to plant propagation by using tissue culture technique, plant nursery management and germplasm conservation.



At the closing ceremony of this internship program conducted on 25 January 2022, the Director of SEAMEO BIOTROP, Dr Zulhamsyah Imran stated that this program is very beneficial for students after graduating from university. “This MBKM program will be very useful to improve students’ hard skills and soft skills so that they are ready to enter the industrial world,” he stated. Furthermore, he also hoped that this program would be continued. The MBKM internship program is also in line with the goal of SDGs number 4, which is to improve quality education in Indonesia. (sis, day).



# Identification of Training Needs in Tropical Biology for Vocational High Schools in Indonesia

To improve the abilities and competencies of Vocational High Schools graduates that are needed by the business and the industrial sector, SEAMEO BIOTROP held an activity “Workshop and Focus Group Discussion: Identification of Vocational High School Development Needs in the Field of Tropical Biology”. This activity is carried out online via zoom on 23 February 2022. The purpose of this activity is to identify problems, potentials, and needs for capacity building of SMKs, as well as formulate capacity building activities and collaboration with vocational high schools in Indonesia.

This activity was divided into two sessions. The first session was held by a workshop and presenting the resource person including Dr Wardani Sugiyanto, MPd (Director of Vocational High School, Ministry of Education, Culture, Research and Technology), Dr Supriyanto (Affiliate Scientist at SEAMEO BIOTROP), and Riza Aitiando Pasaribu SPi, MSi (Coordinator of the Commission on Research, Cooperation and Internationalization, Faculty of Fisheries, IPB University). Some of the topics presented included Learning Models and Prototype Curriculum for vocational capacity building; “Best Practice” SEAMEO BIOTROP’s coaching and collaboration activities with vocational high schools in Indonesia through the SMARTS-BE Program; Introduction to the Marine Science and Technology Study Program and the prospects for the Tropical Ocean in Indonesia. The second session was followed by a focus group discussion which was divided into two groups.

This event was opened by Acting Head of Bureau of Cooperation and Public Relations (BKHM), Anang Ristanto, SE, MA. In his opening remarks, he hoped that this activity could be a medium for improving the quality of education, especially vocational schools throughout Indonesia, in producing competent, competitive and adaptive graduates to the demands and needs of business and the industrial sector. This is in line with a message conveyed by the Director of SEAMEO BIOTROP, Dr Zulhamsyah Imran who emphasized the need to improve the quality of graduates who are ready to work. “To create an independent and highly competitive vocational high school, it is necessary to conduct a Training Need Analysis (TNA),” he said.

Furthermore, Dr Zulhamsyah Imran also explained that the TNA was conducted to find out the competency gap required by business and the industrial sector and vocational schools in Indonesia, especially in the field of tropical biology.

Responding to the TNA analysis, Dr Wardani Sugiyanto, MPd in his speech also explained that there are gaps between the curriculum and the needs of business and the industrial sector, so the project-based learning (PBL) curriculum is needed. “Lack of technological innovation in agriculture, animal husbandry, and fisheries in vocational schools is realized when faced with industrial-scale production. Therefore, it is necessary to develop a curriculum based on project-based learning (PBL),” he stated.

The implementation of this activity is also to support the goal of SDG’s No. 4, namely to improve quality education. This activity was attended by 259 vocational school educators from all over Indonesia. (day).





# Communication Forum: Risks of GMO Products

Biotechnology is an alternate solution for several worldwide issues, such as food availability. SEAMEO BIOTROP has been including biotechnology in its programs, such as in the cultivation of Vannamei Shrimp and Cottonii Seaweed. SEAMEO BIOTROP uses *Agrobacterium tumefaciens* as an intermediary agent to transform seaweed so that the seaweed can withstand the hypersaline condition. The Tissue Culture Laboratory of SEAMEO BIOTROP has been developing seedlings of high economic value such as teak (*Tectona grandis*), bur-flower (*Neolamarckia cadamba*), sweet chestnut (*Castanopsis argentea*), Chinese Albizia (*Albizia chinensis*), agarwood (*Aquilaria malaccensis*), eucalyptus (*Melaleuca* sp.); water ornamental plant such as *Anubias* sp.; tubers such as Satoimo taro (*Colocasia esculenta* var. *antiquorum*); ornamental plants such as *Alocasia* sp., *Calathea* sp., *Aglaonema* sp., and several other local plants.

SEAMEO BIOTROP shares its active role and concerns on food safety by collaboratively organizing a Communication Forum on Risks of GMO Products with IndoBIC (the Indonesian Biotechnology Information Center) and the Research Institute of Universitas Sumatera Utara on 19 January 2022. This event was held as a risk management study for agricultural biotechnology products in Indonesia. Outputs of this event will be considered among inputs for stakeholders and policymakers in the field of genetically modified products, especially for food commodities. (sis).





# The Importance of Workload Analysis for the Well-Being of An Organization

SEAMEO BIOTROP took an initiative to hold a Workshop on Evaluating Workload Mechanisms and Preparing Employee Formation of the 7 SEAMEO Centers in Indonesia. In preparing for this workshop, SEAMEO BIOTROP invited the Directors and Deputy Directors of Administration of the 7 SEAMEO Centers in Indonesia to discuss about the importance of workload analysis for the well-being of an organization.

In his opening remarks, Dr Zulhamsyah Imran, the Director of SEAMEO BIOTROP stated that workload analysis is important for evaluating the work performance of the employees in accordance with the visions, missions and targets of the organization. The work performance is valued based on the main tasks and functions of each employee in an organization.

Workload analysis can detect whether an organization has unbalanced work performance of the employees or not, which situation should then be improved to attain balanced work performance for each employee in the organization. Furthermore, the required number of employees for an organization in order to effectively and efficiently achieve the organization's goals will also be determined based on the workload analysis.

In this discussion, Mr Sukma Kamajaya, MM was the resource person. He shared his experience in conducting workload analysis at SEAMEO BIOTROP in 2021. The definite dates of the workshop were determined unanimously to be on 16 and 17 February 2022. (sis).

## SEAMEO BIOTROP Identifies Potential Implementation of MBKM Program in Indonesia

SEAMEO BIOTROP carries out a Workshop and Focused Group Discussion on "Potential for Implementation of the MBKM Program for Higher Education in Indonesia". This activity is a form of SEAMEO BIOTROP support for the Merdeka Belajar Kampus Merdeka (MBKM) program launched by the Ministry of Education, Culture, Research, and Technology (MoECRT) of the Republic of Indonesia.

The expected output of this activity is to identify potential cooperation in implementing the MBKM program that focuses on internships/work practices in the industry, certified internships, project-based learning, and entrepreneurship.

This activity was held on 9 March 2022 and divided into two sessions. The workshop session was facilitated by two speakers, namely Nurhadi Ibadh, Deputy Chair II of the Kampus Merdeka Management Office (PMO) Program, and Beni Bandanajaya as Academic Director of Vocational Higher Education.

The second session is a Focus Group Discussion (FGD) session which is divided into two groups. This FGD was expected to identify problems, solutions, and expectations of higher education institutions in the implementation of MBKM program.

Learning Coordinator, Directorate of Learning and Student Affairs, Directorate General of Higher Education, Research, and Technology (Ditjen Dikristek) Dewi Wulandari officially opened this event. "I hope more universities will be aware and participate in the MBKM program,". Also present, Henri Togar Hasiholan Tambunan as Director of Institutional and Vocational Higher Education Resources.

Director of SEAMEO BIOTROP, Dr Zulhamsyah Imran, expected that the participants practiced good cooperation with universities, industries, and the government agencies to jointly implement the MBKM program.

The implementation of this activity is also to support the fourth SDG's goal, namely to improve quality education. This activity was attended by 80 participants who are lecturers from universities and vocational colleges throughout Indonesia. (day SEAMEO BIOTROP/ Denty A.)



SEAMEO BIOTROP and Universitas Sumatera Utara (USU) agreed to initiate collaborative programs. This agreement was resulted from a joint meeting between SEAMEO BIOTROP and the Collaborative Team of Universitas Sumatera Utara.

During the collaborative meeting, the Director of SEAMEO BIOTROP, Dr Zulhamsyah Imran, proposed several collaboration subjects, such as:

1. Research and development in tropical biology  
Currently, there has been a collaborative project on Mangrove Ecosystem Studies between SEAMEO BIOTROP and the Faculty of Forestry of Universitas Sumatera Utara.
2. Strengthening the provision of seedlings by using tissue culture techniques  
SEAMEO BIOTROP has developed 56 tissue culture protocols for seedlings of forest trees, agriculture commodities and ornamental plants. SEAMEO BIOTROP offered to promote the Faculty of Agriculture of Universitas Sumatera Utara to become one of Perguruan Tinggi Negeri Badan Hukum (Legal Entity State University) in Indonesia.
3. Geospatial technology utilization  
The Geospatial technology can be utilized to enhance and strengthen the monitoring system for agricultural commodities, including monitoring for plant pests and diseases, as an integrated part of the expert system developed by SEAMEO BIOTROP, based on Agriculture 4.0.
4. Dissemination of scientific publication  
In 2019, SEAMEO BIOTROP and Universitas Sumatera Utara collaboratively organized a National Seminar in Forestry, with the Faculty of Forestry. Future collaborative scientific seminars and workshops can be held to elevate the visibilities of the two institutions in national, regional and international scopes.
5. Internship for university students  
SEAMEO BIOTROP initiates an internship program especially designed for university students to support the “Merdeka Belajar Kampus Merdeka” Program of the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia. The program is worth 20 credits for each chosen subject. SEAMEO BIOTROP also has an internship program with counterparts from Japan to provide the working experience for university students, e.g., students from Universitas Padjadjaran (Bandung), Universitas Djuanda (Bogor) and Universitas Satya Negara Indonesia (Jakarta). (sis).





# SEAMEO BIOTROP Implements Save Biodiversity Program in Supporting Merdeka Belajar Kampus Merdeka (MBKM)

To support the Merdeka Belajar Kampus Merdeka (MBKM) program by the Ministry of Education, Culture, Research, and Technology (MoECRT) of the Republic of Indonesia, SEAMEO BIOTROP held the first series of BIOTROP to School Webinar in 2022 titled “Implementation of the Save Biodiversity Program”. This event was held online on 31 March 2022.

“Collaboration between SEAMEO BIOTROP, universities, and schools is needed to create a learning ecosystem that supports the efforts and approaches to saving biodiversity,” said Dr Zulhamsyah Imran, Director of SEAMEO BIOTROP in his opening remarks in front of 79 participants from the public and private universities, vocational academies and schools, senior high schools, government agencies, and Non-Governmental Organizations (NGOs) from all over Indonesia.

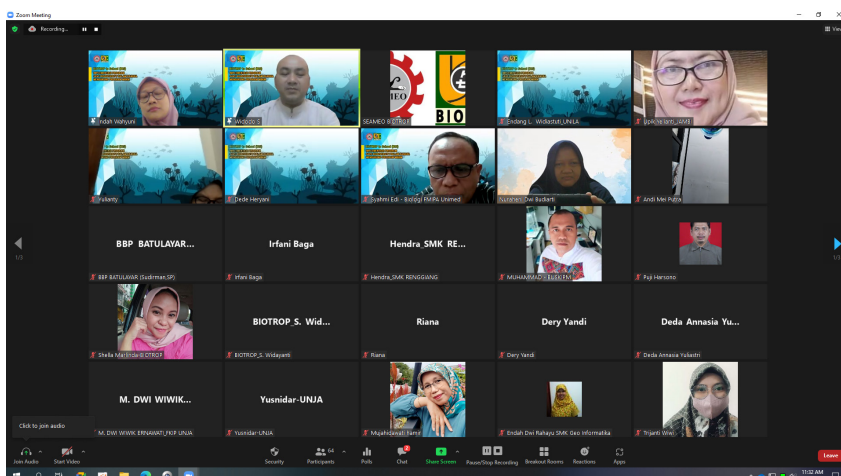
In his presentation, Mr. Slamet Widodo Sugiarto said that SEAMEO BIOTROP as a regional center in the field of tropical biology has facilitated the MBKM program in 2021. “This year, SEAMEO BIOTROP plans to re-open and expand the types of programs that can be followed by students to improve competence, knowledge, and experience in various fields in the context of tropical biology,” he explained.

There are three flagship programs of SEAMEO BIOTROP, namely: 1) Ecosystem Restoration and Conservation; 2) Sustainable Use of Biodiversity, Bioenergy, Biotechnology to Support Food Security; 3) Resilience in the face of Global Climate Change.

Through these three flagship programs, SEAMEO BIOTROP formulates five main activities, namely 1) Save Biodiversity for Future Generations; 2) Biodiversity Ranking and Database from Mountain to Ocean; 3) Agro-Eco-Edu Tourism; 4) School of Ecology, Biodiversity and Aquatic; and 5) Climate, Energy, Environment and Literacy on Biodiversity.

Furthermore, Mr. Slamet explained that the five main activities of SEAMEO BIOTROP will be formulated into the topic of the MBKM program that can be participated by students. “Our goal is to increase the capacity and competence of human resources within the scope of saving biodiversity; and produce modules, models, and prototypes related to activities to save biodiversity which are used as learning reference materials,” he explained.

The nine main topics of the MBKM program offered by SEAMEO BIOTROP are climate change; conservation and aquaculture; introduction of invasive alien plants and their impact on ecosystems in Indonesia; precision agriculture, food security, and urban agriculture; land restoration and conservation of rare trees; modern biotechnology and tissue culture; manufacturing and agricultural, fishery, forestry derivative products; spatial and remote sensing technology; as well as learning media and digital literacy (hcn SEAMEO BIOTROP, Denty A)





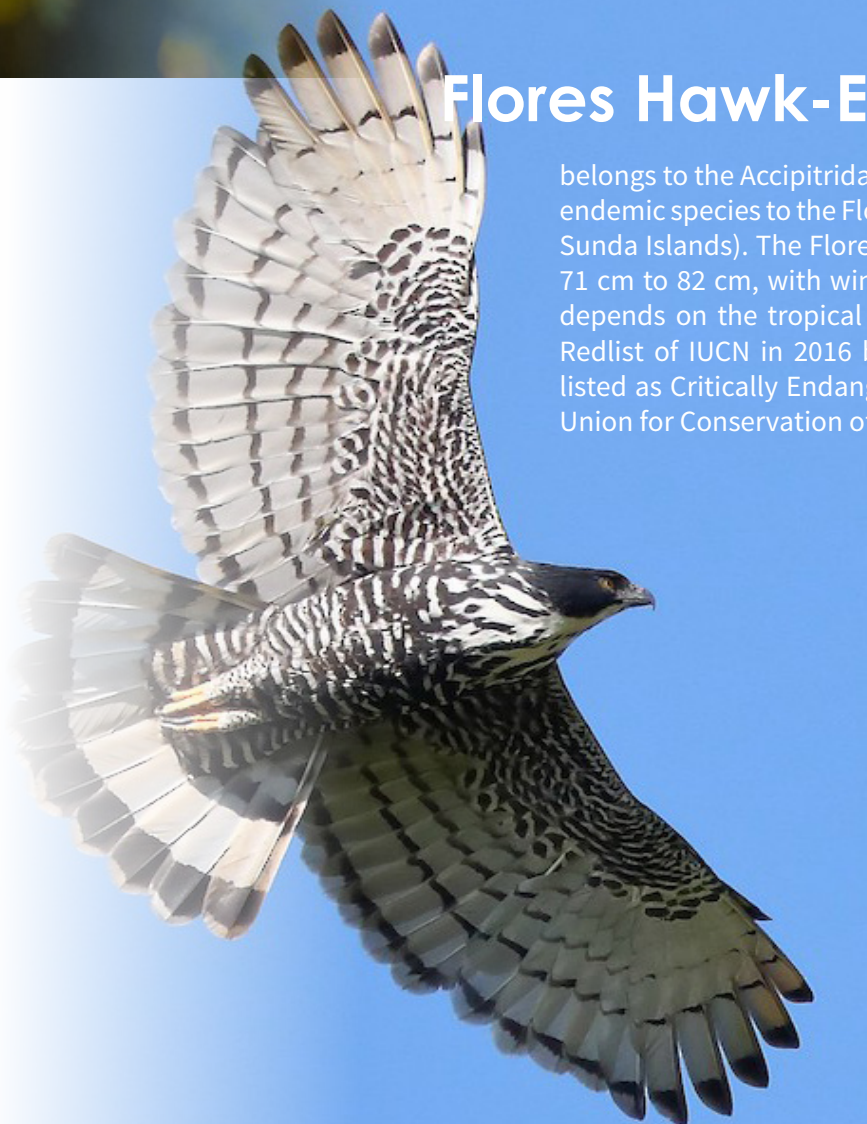
# Endangered Faunas



Credit: Shutterstock

## Flores Hawk-Eagle (*Nisaetus floris*)

belongs to the Accipitridae family and *Nisaetus* genus. This large raptor is an endemic species to the Flores and Sumbawa in Nusa Tenggara Islands (Lesser Sunda Islands). The Flores hawk-eagle has a total body length ranging from 71 cm to 82 cm, with wing chord from 43 cm to 46.2 cm. This bird species depends on the tropical rainforest for its habitat. Being introduced to the Redlist of IUCN in 2016 by BirdLife International, the Flores hawk-eagle is listed as Critically Endangered in 2018 by the Redlist of IUCN (International Union for Conservation of Nature).





# The Red Panda (*Ailurus fulgens*)



<https://www.smartresize.com/>

The red panda (*Ailurus fulgens*) is a carnivore native to the Himalayas of eastern and western China. It is listed as critically endangered on the IUCN Red list due to its estimated wild population of less than 10,000 mature individuals and is steadily declining due to habitat loss and fragmentation and inbreeding depression.

The red panda has reddish-brown fur, a long, bushy tail, and a staggered gait due to its shorter front legs; about the size of a domestic cat, although with a longer body.

Due to its shy and introverted nature, and mostly nocturnal habits, observing red pandas is difficult, therefore population figures in the wild are determined by population density estimates and not direct calculations.