



# SEAMEO BIOTROP Annual Report FY 2016 - 2017





# SEAMEO BIOTROP

Annual Report FY 2016 - 2017

Southeast Asian Regional Centre for Tropical Biology  
Jalan Raya Tajur Km. 6  
Bogor 16134, Indonesia







**Vision:**

**A Leading Centre in enriching and promoting the real values  
of tropical biology in Southeast Asia**

**Mission:**

**To provide scientific knowledge and capacity building in conserving  
and managing tropical biology sustainably for the well-being  
of communities and the environment of Southeast Asia**





## MESSAGE FROM THE GOVERNING BOARD CHAIR

On behalf of SEAMEO BIOTROP Governing Board, I would like to extend my heartfelt congratulations to SEAMEO BIOTROP for its achievements during the Fiscal Year (FY) 2016-2017.

The Governing Board members are delighted to see the pronounced and continuous developments in the Centre's programs and operations during the fiscal year in review. The Centre's research, training, knowledge transfer, and community development activities have been contributing significantly toward achieving its vision to be a leading Centre in enriching and promoting the real values and sustainable uses of tropical biological resources in Southeast Asia. We appreciate the Centre's efforts to increase its collaborations, especially with the Governing Board member countries, as well as strengthening its services to secondary and vocational schools and expanding also to primary and special education schools. These developments certainly enhance the Centre's regional relevance and visibility.

We commend SEAMEO BIOTROP officials and staff for their commitment to carry out the activities they have planned for the fiscal year in review toward completing its 9th Five-Year Development Plan (FYDP). We are sure that your effective and efficient services are well recognized by your clients and partners.

With its 10th FYDP already in operation since July 2017, we wish SEAMEO BIOTROP all the best in "Forging Ahead with Tropical Biology for Environmental and Societal Transformations in Southeast Asia" as the Plan's overarching theme. We assure the Centre of the Board's full support to ensure the successful implementation of the Plan through the next five years.

We look forward to another interesting report on the Centre's accomplishments in the next fiscal year.

### **Mrs Zaitunah binti Haji Kurus**

*Principal School of Agro-Technology and Applied Sciences  
SEAMEO BIOTROP Governing Board*







## MESSAGE FROM THE DIRECTOR

The past five years of implementing our Centre's 9th Five-Year Development Plan (FYDP 2012-2017), including the fiscal year reviewed in this annual report, have been a challenging but rewarding experience to us. With commitment and diligence, we are proud to have carried out all the activities we have planned out each year.

I am pleased to present our Centre's accomplishments for Fiscal Year 2016/2017 in this annual report in terms of our research, capacity building, information exchange and community mandates on our two program thrusts, namely: Tropical Biology for Community Welfare and Tropical Biology for Environmental Integrity. Our accomplishments are also categorized under SEAMEO's three Key Result Areas, namely regional leadership, regional visibility and solid resource base.

During the fiscal year in review, we were thrilled with the new linkages we established with higher learning institutions and regional development organizations in Indonesia, Malaysia, the Philippines, Thailand, and Vietnam. We were privileged to expand our target clients to include primary and special education school heads and teachers, farmers, and housewives through our training and community development programs. With these developments, we are excited to introduce new programs and activities under our 10th FYDP 2017-2022 in forging ahead with tropical biology for environmental and societal transformations in Southeast Asia.

For all our achievements in FY 2016/2017, we would like to express our sincere appreciation and gratitude to our Governing Board members and their respective governments for the guidance and continued support in implementing our programs and activities. We are grateful to the Government of Indonesia and SEAMEO for the financial support. We extend our sincere gratitude to our partners and clients for their continuous trust in patronizing our products and services.

**Dr IRDIKA MANSUR, M.For.Sc**

*Director of SEAMEO BIOTROP*





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# EXECUTIVE SUMMARY

The fiscal year in review marks the end of BIOTROP's Ninth Five-Year Development Plan (9th FYDP 2012-2017). Under this 9th FYDP, the Centre has envisioned itself to be "A Leading Centre in enriching and promoting the real values of tropical biology in Southeast Asia."

Like the previous fiscal years, the Centre made notable accomplishments in implementing its 9th FYDP as well as its other targets set for the fiscal year in review.

With its mission of "providing scientific knowledge, technology and developing organizational and human resource capacity in conserving and managing tropical biological assets sustainably for the welfare of society and environmental sustainability in Southeast Asia", the Centre saw itself contributing to addressing community and environmental issues and concerns through its mandates in research, capacity building, information exchange and community development. These accomplishments are summarized under SEAMEO's key result areas, namely: regional leadership, regional visibility, and solid resource base

## REGIONAL LEADERSHIP

BIOTROP completed 22 research projects during the first half of the fiscal year in review through its in-house researchers, partner-institutions, PhD thesis grantees and youth environmental outreach (YEO) grantees. Topics of research projects this year focused on addressing issues in food and feed safety, renewable energy development, pest and plant diseases management, natural product development, conservation and management of biological diversity and land rehabilitation and ecosystem functions. For the second half of the fiscal year in review, BIOTROP carried out 23 more research projects.

For its YEO Grants Program, BIOTROP provided technical assistance to SMK Wikrama in conducting its action research titled "School-Based Mushroom Cultivation for Socio-Preneurship and Nutritional Improvement of Students and Community". The project was aimed to improve the skills teachers and students in conducting applied research through mushroom production and eventually to become a medium of learning for students to become entrepreneurs in processing and marketing mushroom products. The Centre also supported another project called "Rumah Mangrove: A community mangrove education, restoration and nursery project for Bulak Coastal, Jepara, Indonesia" by the youth group, "Bersama Pecinta Alam Jepara". The main purpose of the project was to raise awareness among school children, youth, and the local community members on the relationship between their lifestyles and its environmental impact to the mangrove areas.

BIOTROP continued its partnership with the British Council, seven universities in Indonesia, one university in UK and USA, and one state mining company in conducting its 3-year research project on Transforming Degraded Lands into Productive Landscapes under the Global Innovation Initiative (GII). The project is aimed to provide answers to the challenges of ex-mining site reclamation in Indonesia.

The Centre conducted 21 educational activities attended by 4,270 participants consisting of primary, secondary and vocation school teachers and university lecturers, researchers, professionals, and community members. The training activities were held both in national and regional levels. Participants came from Indonesia, Malaysia, Thailand, Timor Leste, and the UK.

## REGIONAL VISIBILITY

BIOTROP sustains its programs and activities through collaborations. In 2016/2017, 30 Memoranda of Understanding (MoU) were signed between BIOTROP and various institutions in Indonesia and in Southeast Asia. There were 10 MoUs that were completed and ended in 2016. The MoUs covered collaboration in research, capacity building, community development, and provision of technical assistance.

A total of 244 students from vocational high schools, diploma institutions, and universities underwent internship activities while 22 university students conducted their research activities in BIOTROP. The scopes of internship covered plant propagation techniques through tissue culture, herbarium management, laboratory analysis techniques, information technology, and office administration.

In collaboration with 5 SEAMEO Centres in Indonesia, BIOTROP continued to coordinate and implement activities for the SEAMEO Star Village Program. The Centre's activities for this Program included providing training and mentoring to farmers, housewives, and out-of-school youths to learn life skills on agricultural production, processing, and entrepreneurship to improve their livelihoods. For the fiscal year in review, the Centre offered training courses on catfish cultivation for 15 farmers, sheep feed formulation for 15 farmers, and smoked catfish processing for 20 housewives. The SEAMEO Star Village is located at Cihideung Ilir Village, Bogor Regency.

BIOTROP received by 5,281 visitors from various institutions, provinces, and countries. Seventy-six percent of the visitors were students from various education levels. In general, the visits were conducted to enhance the students' knowledge on the implementation of biological science in the real world, which will lead to developing students' interest enriching their knowledge.

The Centre published six books and proceedings written by its researchers and staff, two issues of its scientific journal BIOTROPIA (Vol. 23 No. 2, and Vol. 24 No. 1) in printed and online versions (<http://journal.biotrop.org>), four issues of its newsletter BIOTROP Courier, one Annual Report, as well as 17 leaflets, banners and posters. These publication products were electronically disseminated through the Centre's websites and sent to 1,604 requesting institutions.

### **SOLID RESOURCE BASE**

BIOTROP enhanced the capacities of its staff by holding 17 in-house trainings and workshops. Ninety-six BIOTROP staff attended these activities and served as resource persons in other relevant training, seminar and workshop held by other institutions.

BIOTROP's Product Development and Services Department produced a total of 94,583 seedlings of Teak (*Tectona grandis*) and 139,743 Banana (*Musa* sp.) seedlings through tissue culture technique. The Department also produced 35,960 baglogs of Oyster mushroom (*Pleurotus ostreatus*) and Wood Ear mushroom (*Auricularia auricula*) which were distributed to private companies and individual clients all over Indonesia.

# **REGIONAL LEADERSHIP**







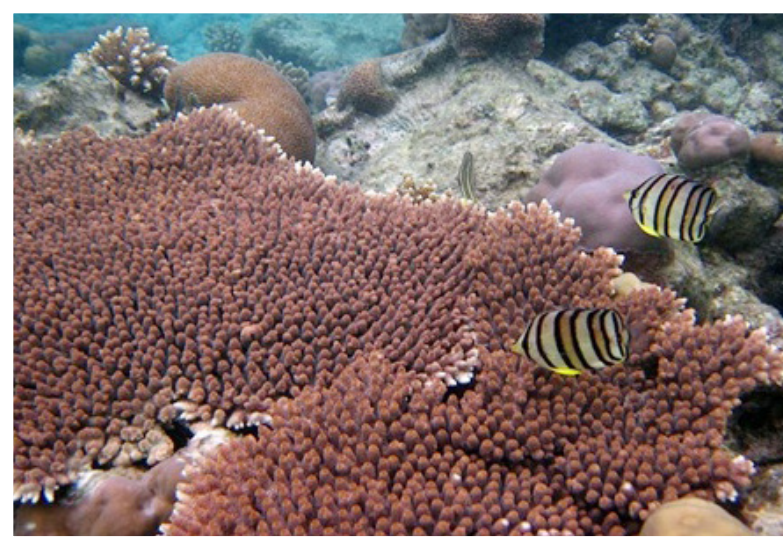
## RESEARCH AND DEVELOPMENT

Since this fiscal year in review was the culminating period for SEAMEO BIOTROP's 9th FYDP, the research activities conducted by the Centre, both basic and applied, were thus still focused on its two program thrusts, namely: Tropical Biology for Community Welfare and Tropical Biology for Environmental Integrity. These research projects remained true to the Centre's mission to provide science-based information to enable communities and institutions to address critical biological problems and benefit from the real values and sustainable use of the region's tropical biological resources.

In October 2016, SEAMEO BIOTROP launched its School Garden Action Research Grants Program. This Program indicates the Centre's continued commitment to advocate school gardening toward improving students' literacy, nutrition and entrepreneurship after conducting its first national training on the same topic in March 2016 as one activity during the implementation of the SEAMEO College.

For FY 2016/2017, the Centre completed 22 research projects during the first half and started implementing 23 more during the second half (*See Appendix 1*). All these research projects were funded by the Government of Indonesia. Below are the details of these research projects by program type.





## Research Projects by Centre Researchers and Partner-Research Institutions

The Centre completed 18 research projects in 2016 and implemented 15 more in 2017 through its in-house researchers and researchers from partner-institutions.

The research projects covered the following areas: food and feed safety, renewable energy development, pest and plant diseases management, natural product development, conservation and management of biological diversity and land rehabilitation and ecosystem functions.

One of the ongoing joint research projects is between Indonesian and Philippine researchers on the topic "Characterization of Soil Biophysicochemical Properties and Collection of Beneficial Soil Microorganisms Potential to Restore Post-Gold Mining Area in Indonesia and the Philippines."







## National School Garden Action Research Grant Program

Four schools in Indonesia became the first batch of recipients of SEAMEO BIOTROP's action research grants for 2017 for its School Garden for Improvement of Student Literacy, Nutrition, and Entrepreneurship Program. The grantees consist of two senior high schools and the other two are vocational and special education schools.

The initiative to provide action research grants is part of SEAMEO BIOTROP's 5-year development plan for its School Garden Program that started in 2016. It specifically aims to (1) establish empirical data and best practices on the benefits of school garden in improving the literacy, nutrition, and entrepreneurial skills of school students in Indonesia; (2) enhance the capacities of school teachers in Indonesia in conducting action research; and (3) generate learning and promotional materials on the benefits of school gardens based on the research results of the grantees.

The proponents of the action research projects are alumni of the Centre's first training on school garden for improving student literacy, nutrition, and entrepreneurship conducted in March 2016 in Bogor. This training benefited 53 primary, vocational, special education, and secondary schools from nine provinces in Indonesia.

SEAMEO BIOTROP's School Garden Program took off from SEAMEO College's Project on Participatory Action Research on School/and Community-based Food and Nutrition Program for Literacy, Poverty Reduction, and Sustainable Development initiated in 2016 through funding support from the Japan Fund for Poverty Alleviation through the Asian Development Bank.



## PhD Thesis Grants Program

Three PhD thesis grantees completed their research in 2016 and two PhD students received thesis grants from the Centre to implement their research in 2017. All the grantees were pursuing their PhD degrees at the Institut Pertanian Bogor (IPB).

The theses completed in 2016 focused on watershed management, biocontrol of plant virus, and fauna species characterization. On the other hand, the research theses accepted for 2017 revolve around the conservation of critically endangered species, especially rhinoceros and orangutans in Indonesia.

The PhD thesis grants program aims to increase the number of highly qualified researchers, teachers and other staff working at higher education institutions and government agencies in Indonesia.

The program is also the Centre's way of recognizing potential among PhD students to produce relevant research and to help them establish their careers.

Six years since its launching in 2011, the program has benefitted 49 PhD students from 22 Indonesian institutions.





## Youth Environmental Outreach (YEO) Grants Program

SEAMEO BIOTROP's Youth Environmental Outreach Grants Program aims to heighten the roles of youth by supporting the implementation of meritorious action research project proposals from deserving youth organizations.

For 2017, the Centre provided grants to two project proponents. The first recipient is Mr Kevin Alvianto, Head of the Pecinta Alam Jepara (PAJ), for his project titled "Rumah Mangrove: A Community Mangrove Education, Restoration and Nursery for Bulak Coastal, Jepara, Indonesia". This project aims to (1) raise awareness among children, youth and the local community on the relationship between environmental impact and their lifestyles towards the mangrove area; (2) involve local communities to actively participate in the restoration of mangrove areas and preserve; and (3) contribute to the formation of mangrove areas and reduce abrasion on the Bulak beach.

The other grantee is Ms Rina Finanti, a teacher of Wikrama Bogor Vocational School (SMK Wikrama), for her action research project on "School Based Mushroom Processing for Socio-Preneurship and Income Improvement of Students and Community." This is a continuation of SMK Wikrama's first project in 2016 which was about microclimate computer-based instrumentation for mushroom cultivation. From the grant, the school had built two oyster mushroom farming houses for training of their students as part of their extra-curricular activities and villagers surrounding the school.



SMK Wikrama's project for 2017 focuses on producing oyster mushroom-based snacks (i.e., mushroom meatballs and mushroom satay which they formulated in 2016) for improving nutritional status of students and villagers as well as help them develop home and community-based enterprise for additional income.





## Internationally-Funded Research Project

For the second year, BIOTROP continued to coordinate the project called “Establishing a Network of Research Excellence for Mine Reclamation in Southeast Asia.” With funding from the British Council under the Global Innovation Initiative (GII), the project is collaboration among the Centre, seven universities in Indonesia, United Kingdom and United States of America, and one private mining company in Indonesia. The partner institutions are Aberystwyth University, Bangor University, Western Carolina University, Institut Pertanian Bogor (IPB), Universitas Brawijaya, Universitas Sriwijaya, Institut Teknologi Bandung (ITB) and PT Bukit Asam. In this collaboration, the consortium conducted six research projects aimed to further understand and build capacity in approaches to remediating and transforming landscapes affected by mining activities. The research topics were as follows:

- a. The response of growth promoting hormone and the composition of the growth media on the successful rates of *Melaleuca cajuputi* tip cutting at Bukit Asam Ltd.
- b. The effect of compost of *Acacia mangium* litter on the growth of *Melaleuca cajuputi* grown on ex-mine soil.
- c. Modeling for selection of site to establish wetland to manage acid mine water at Bukit Asam Ltd.
- d. Utilization of organic waste for industrial scale of compost production to support mine reclamation program.



- e. Enrichment of revegetation site with *Arenga pinnata*.
- f. Utilization of liquid organic waste of oil palm factory to improve soil fertility of ex-mine site.

The project plans to explore incorporating livestock as a source of in situ bio-fertilizer for further improving soil quality and biogas for energy toward maximizing productivity of the agroforestry system in the research site. Thus, three SEAMEO BIOTROP’s affiliate scientists recently visited the research site at Bukit Asam Ltd. They were Prof M. Winugroho, an expert on cattle farm and the development of cattle farm entrepreneur group in Indonesia; Dr Buhanuddin Masyud, an expert on deer captive breeding; and Dr Maria Ulfah, an expert of local poultry.





## TRAININGS AND OTHER LEARNING EVENTS

### Regular and National Training and Seminar-Workshop program

In fiscal year under review, 4,270 individuals across the SEAMEO region and beyond benefited from the 21 training courses, seminars, and workshops offered by SEAMEO BIOTROP (See *Appendix 2*). Three of these learning activities are new initiatives by the Centre, namely: Training on Digitizing Herbarium Collection, Focus Group Discussion on Mycorrhiza Research and Development, and Roundtable Meeting on Establishing a Mangrove Conservation Education Program in Indonesia and Thailand.

Highlights of some of these learning events are as follows:



• **5th Regional Training Course on Risk Assessment and Management of Invasive Alien Plant Species**



Twenty-six participants representing various government and non-governmental agencies and academic institutions from Timor Leste, UK, Malaysia, and Indonesia attended SEAMEO BIOTROP's 5th regional training course on Management of Invasive Alien Plant Species on 29 August-1 September 2016 at the Centre's headquarter in Bogor.

The six-day training course was designed to enhance the existing knowledge and skills of the participants and, at the same time, strengthen their linkages in working towards a more integrated effort in the management and control of Invasive Alien Plant Species (IAPS) in the region.

Topics discussed during the training course included: Leveling off on the knowledge and practice of Management and Control of Alien Plant Species at the participants Institutions; A Review of the Concepts of Invasive Plant Species and their Impact; Process of Plant Invasion; Identification of IAPS; Practical on Identification of IAPS; Data Management; Biological control of IAPS; Prevention; Early Detection & Rapid Response; Vegetation Analysis; Weed Risk Management; Control and Management of Invasive Alien Plant Species; Restoration; Discussion on IAPS at Cibodas Botanic Garden; Cost Recovery; National Strategy and Action Plan; Creating Public Awareness on Invasive Plant Species; and Discussion on the BIOTROP as the center of Invasive Plant Species Management in Southeast Asian Region.

The participants developed individual action plans on either conducting a research project or integrating the concepts and principles of managing invasive alien plant species in university curriculum as the major requirement of the training.



The training also served as the venue for launching the Centre's book entitled "75 Important Invasive Plant Species in Indonesia". The book was written by Dr Sri Sudarmiyati Tjitrosoedirdjo, Drs. Imam Mawardi and Dr Soekisman Tjitrosoedirdjo, the Centre researchers on herbarium and invasive plant specie.





• **FGD on Mycorrhiza Research and Development**

SEAMEO BIOTROP, in collaboration with the Indonesian Mycorrhiza Association (AMI/ Asosiasi Mikoriza Indonesia), conducted a focus group discussion on charting a five-year roadmap for mycorrhiza research and development in Indonesia which could also benefit for Southeast Asia on 14-15 November 2016 at the Centre's headquarter.

The formulation of the roadmap was aimed to enhance and promote the effective and efficient use of mycorrhiza for restoring degraded lands and increasing productivity in Indonesia and eventually for the region.

There were 5 presentations made by SEAMEO BIOTROP scientists and invited speakers during the FGD, namely: (1) Status of mycorrhiza research in Southeast Asia; (2) Regulations and future path for biofertilizers; (3) National and regional institutional scale of mycorrhiza research; (4) Mycorrhiza research required in Indonesia and Southeast Asia; and (5) Possible sources of funding for mycorrhiza research.

The FGD was attended by SEAMEO BIOTROP officials and research staff and representatives of member-institutions of AMI, namely: Universitas Tanjung Pura, Pontianak; Universitas Bengkulu, Bengkulu; Universitas Padjadjaran, Bandung; Institut Pertanian Bogor (IPB), Bogor; Universitas Nusa Bangsa, Bogor; Pusat Penelitian Bioteknologi dan Bioindustri Indonesia, Bogor; and Herbarium Bogoriense, Bogor.







- **Training on Digitizing Herbarium Collection**

SEAMEO BIOTROP organized a Training on Digitizing Herbarium Collection on 20-24 February 2017 at its headquarter in Bogor specifically for 14 delegates representing four herbaria, namely BIOTROP Herbarium, Herbarium Bogoriense, Herbarium of Forest Research and Development Center and Nature Conservation and Herbarium Universitas Jambi.

The training was made possible by the Japan Ministry of Education, Culture, Sports, Science and Technology (MEXT) under its Expert Dispatch Program through the Southeast Asian Ministers of Education Organization (SEAMEO). The MEXT dispatched Prof Motomi Ito, an expert in Biodiversity Informatics, Evolutionary Biology and Plant Taxonomy from the Department of General Systems Sciences of Tokyo University, to serve as a resource person for the training.

The training was aimed to (1) ensure a more organized and user-friendly search, retrieval and storage system for identification and information of herbarium collections; (2) protect actual specimen from further damage due to frequent retrievals of users and other natural forms of deterioration; and (3) make herbarium collection more accessible to a much wider range of users via online system.

Prof Ito oriented the participants on the proper workflow in digitizing herbarium collections and introduced Darwin Core which is used as a de-facto



standard schema for sharing biodiversity data. He also explained how to make herbarium specimen information fit Darwin Core and how to input the local specimen database into Global Biodiversity Information System. He also reviewed and gave suggestions for improvement on the current digitalization activities of the respective herbaria of the institutions represented in the training. He specifically advised ways on how to properly maintain and maximize the use of a digitized herbarium collection to fully address the needs of users.

Part of the training was visits to Herbarium of Forest Research and Development Center and Nature Conservation, Bogor Botanical Garden and its Herbarium as well as Herbarium Bogoriense on 24 February 2017.





- ***Training on Warehouse Pest Management through Proper Fumigation Practices***

SEAMEO BIOTROP held the training on warehouse pest management through proper fumigation practices on 3-6 April 2017 in its headquarter in Bogor. It was participated in by 45 individuals from various private companies, government institutions, research institutions and universities across Indonesia.

The objectives of this training were: (1) to deliver knowledge on alternative fumigants for warehouse pest control and proper fumigation technique; and (2) to discuss and share each experience among the participants in overcoming the pest problems.

Subjects presented in the training were delivered in theory and practicum sessions and consisted of: (1) introduction of warehouse insect pests; (2) integrated warehouse pest management; (3) Indonesian government policies in pesticide registration; (4) proper fumigation using sulfuryl fluoride as well as using liquid and solid phosphine; (5) fumigation technique for silo, archiving room and museum; (6) eradication of destructing organisms on wood and archived materials; (7) eradication of destructing fungus on post-harvest food products; and (8) general pest control.





- **Roundtable Meeting on Establishing a Mangrove Conservation Education Program in Indonesia and Thailand**

SEAMEO BIOTROP, together with three other SEAMEO Centres and six partner-institutions in Indonesia and Thailand engaged in a Roundtable Meeting on 27-28 April 2017 held in Demak, Central Java, Indonesia. The meeting was aimed at building consensus about the concept of the program on establishing a sister-school project on Mangrove Conservation Education Program in Indonesia and Thailand, as well as levelling off the expectations and roles of all the participating institutions on the Program. The meeting also formalized commitment of all participating institutions to the Program through signing a Framework of Collaboration (FoC).

The FoC will deal with mangrove conservation and restoration, education, and socioeconomic and cultural development within the Program sites in Indonesia and Thailand. The partners are expected to cooperate on (1) exchange of information and expertise toward effecting environmental, educational, socioeconomic and cultural development in the Project sites in Indonesia and Thailand; (2) research and development to address the environmental, educational, socioeconomic and cultural issues and concerns in the Project sites in Indonesia and Thailand; (3) capacity building to enhance the capacities of school students, teachers, community members and other relevant stakeholders in the Program sites

in Indonesia and Thailand as well as eventually empower them to effectively and efficiently work for the environmental, socioeconomic and cultural development through education in their respective areas; (4) networking with other relevant individuals and institutions for the successful operation and sustainability of the Program; and (5) promotion, dissemination, and advocacy on the importance of mangroves in socioeconomic and cultural development of communities as well as the Project activities, outputs and outcome to the public.







## Quarterly Public Seminars

The Centre organized four Quarterly Public Technical Seminars during the fiscal year in review at its headquarter in Bogor featuring speakers from various disciplines in accordance with the Centre's program thrusts.

The seminar topics and speakers were as follows:

1. "Should there be controversies in managing or conserving peatland in Indonesia?" by Dr Fahmuddin Agus, a senior soil scientist at the Indonesian Soil Research Institute of the Ministry of Agriculture on 7 November 2016, aimed at enhancing the knowledge of participants on managing peatland areas in Indonesia;
2. "Novel Uses of Active and Passive Remotely Sensed Data for Monitoring Spatiotemporal Dynamics of Mangroves" by Dr Aslan, an Indonesian researcher at the University of Texas Rio Grande Valley, USA on 18 January 2017;
3. "Trends and Future Directions in Digitized Herbarium in Japan" with Prof Motomi Ito, an expert in Biodiversity Informatics, Evolutionary Biology and Plant Taxonomy from the Department of General Systems Sciences of Tokyo University, on 23 February 2017 at the Centre's main building; and



4. "Possibilities and Limits of Forest and Landscape Restoration" by Prof Dr Ralph Mitlohner, a forestry professor from University of Gottingen on 17 April 2017, to enhance the knowledge of participants on Possibilities and Limits of Forest and Landscape Restoration.

# **REGIONAL VISIBILITY**





## Roundtable Meeting on Formalizing a Sister-School Project on Mangrove Conservation and Education

Amanahis Hotel, Demak, 27 - 28 April 2017



## RECOGNITION AND BENCHMARKING

### Partnerships and Linkages

SEAMEO BIOTROP sealed 30 new national and regional Memoranda of Understanding and Agreement (MoUs/MoAs) with various institutions during the period in review. This number exceeded the Centre's yearly target of 20. These collaborations cover conducting joint research programs and capacity building activities, developing and enhancing professional skills, providing technical assistances, and exchanging knowledge and knowledge products. (See *Appendix 3*). Seventeen of these MoU/A were signed between July and December 2016 and 13 from January to June 2017.

At the regional level, SEAMEO BIOTROP, together with three other SEAMEO Centres and six partner-institutions in Indonesia and Thailand signed a Framework of Collaboration (FoC) on 28 April 2017 held in Demak, Central Java, Indonesia. This FoC aims to establish a sister-school project on mangrove education and conservation.

From Indonesia, the other SEAMEO Centres and partner-institutions are the SEAMEO Regional

Centre for Quality Improvement of Teachers and Education Personnel (QITEP) in Science, SEAMEO Regional Open Learning Centre (SEAMOLEC), Universitas Diponegoro, Yayasan Inspirasi Keluarga KeSEMaT (IKAMaT) Semarang, Bedono 1 National Primary School and Satu Atap 3 National Junior High School in Sayung, Demak, Central Java Province. From Thailand, the project collaborators are the SEAMEO Regional Centre for Archaeology and Fine Arts (SPAFA), Khlong Phitthayalongkorn Primary School (KPS) and Bangpakong Secondary School (BPS) in Bangkok.

SEAMEO BIOTROP formalized its collaboration several universities, namely: Nong Lam University (NLU) in Vietnam; Universidade Nacional Timor Lorosa'e (UNTL) in Timor Leste; Pampanga State Agricultural University (PSAU) and De La Salle Araneta University in the Philippines; and the Faculty of Agriculture, Yamagata University in Japan.

The collaboration will involve joint implementation of research and training activities, staff and student exchange and consultations, and information exchange on tropical biology and related topics.

At national level, SEAMEO BIOTROP and the Directorate General of Aquaculture of the Ministry of Maritime Affairs and Fisheries (MMAF) agreed to continue their collaboration in developing seaweed seedlings through tissue culture by extending the effectivity period of their Memorandum of Understanding (MoU) for another three years from 2016 to 2019. This collaboration aims to strengthen research, engineering, technology transfer and multiplication of superior seaweed seedlings using tissue culture techniques.

The Centre also strengthened its linkages with 3 government agencies, 2 research centres, 3 universities, 10 private companies, and 1 SEAMEO intercentre collaboration.





## Technical Assistancess

SEAMEO BIOTROP Experts have also been invited to share their expertise to government agencies and private institutions in Indonesia and other SEAMEO countries during FY 2016/2017.

Among the major technical assistances provided by the Centre's researchers and officers during the period in review were as follows:

1. Capacity building on "Seminar Nasional Pengembangan Potensi Sumberdaya Lokal Berwawasan Lingkungan untuk Penguatan Produk Pertanian Nasional Berdayasaing Global" on 6 Agustus 2016 at Fakultas Pertanian Universitas Muhammadiyah Purwokerto, through Dr Irdika Mansur as a resource person.
2. Capacity building on "Pelatihan Budidaya Jamur untuk Masyarakat Bekasi" on 8 September 2016, through Mr Sunardi Ikay and Mr Sugih Mukti as resource persons.
3. Capacity building on "Pengembangan Usaha Budidaya Jamur Tiram" on 31 Oktober 2016 for lecturers and students of STPP Bogor, through Mr Sugih Mukti as resource person.
4. Capacity building on "International Conference" on Community Mining in Indonesia on 2-3 November 2016 at ANTAM Building, through Dr Irdika Mansur as resource person.
5. Capacity building on "Pelatihan Hidroponik" on 20 Mei 2017 for students of Pendidikan Luar Sekolah FKIP-UIKA Bogor, through Dr Arief Sabdo Yuwono, Ms Riana Hartati and Mr Budiyo as resource persons.
6. Advisory consultancy services for Water Quality Laboratory Marine Observation Research Center of the Ministry of Marine and Fisheries in Jembrana Bali in applying and obtaining ISO 17025 accreditation.
7. Provision of spatial data and analysis in support of research and other development-related activities of one local government agency, one research institution, five private organizations and two universities through the Centre's Knowledge Management Department. The institutions were:  
(a) Kantor Lingkungan Hidup Kab. Lombok Utara;  
(b) PT. Tigenco, PT. EOS Consultant, PT. Rimba Kayu, PT. Prabu Alaska, PT. Barn Cita Laksana, PT. Bumi Makmur Lestari, PT. Jorong Barutama Greston, PT. Citra Multi Consult; (c) Institut Pertanian Bogor (IPB) and Universitas Pakuan.





## Students' Internships/On-the-Job Trainings

In support of Indonesia's Ministry of Education and Culture's mission, SEAMEO BIOTROP supports the improvement of the knowledge, skills and understanding of school students through students' internship program.

SEAMEO BIOTROP also provides opportunities for on-the-job training of university students and staff of research institutions in various areas of tropical biology.

In FY 2016/2017, the Centre accommodated 266 students and officials from 56 learning institutions for their internship and/or on-the-job training (See *Appendix 4*). This number is broken down as follows:

92 high school students, 15 vocational school/ diploma students, 147 university students, and 12 research centre staff.

These internships and/or on-the-job trainings were on the following areas: silviculture, entomology, hydroponic, natural products, biotechnology, herbarium, waste management, tissue culture, food and feed analysis, mushroom cultivation techniques, geographic information system, information technology and office administration.

Moreover, the Centre also facilitated the conduct of research of 22 undergraduate students from 5 universities in Indonesia.







## Visitors

SEAMEO BIOTROP accommodated 3,679 visitors from 65 various institutions consisting of schools (61 percent), universities (18 percent), government (17 percent), private (2 percent) as well as regional/international institutions (2 percent). The number of visitors increased by 8 percent compared to last fiscal year (i.e., 3,417 visitors).

SEAMEO BIOTROP's essential oil research attracted Mr E.V.S Prakasa Rao, Ph. D, FNAAS, FISA, FISS, from India together with four members of the Indonesian Essential Oil Council (Dewan Atsiri Indonesia) to visit the Centre on 24 October 2016 to conduct comparative study on the essential oils produced by the Centre's Natural Products Laboratory.

Five lecturers and college students of Kyungpook National University, South Korea visited the Centre on 1 February 2017 to gain knowledge on essential oil production, hydroponic system, mushroom farming and seaweed tissue culture technique conducted by SEAMEO BIOTROP.

On 15 May 2017, Prof Keitaro Tawaraya from Yamagata University in Japan discussed about establishing research partnership in the field of silviculture.

Two lecturers from Universitas Putra Malaysia namely Prof Azhar Kasim and Prof Mohd Zuki Abu Bakar visited the Centre on 17 May 2017 to explore possible research collaboration on conservation of heritage chicken and songbirds.





## INFORMATION EXCHANGE

### Books and Proceedings

SEAMEO BIOTROP produced three monographs and one proceedings during the fiscal year in review through the funding support from the Government of Indonesia (DIPA) (See Appendix 5) as follows:

1. Books on “Pengelolaan dan Pemanfaatan Limbah Pertanian/Management and Utilization of Agricultural Waste”
2. Books on “Tumbuhan Invasif dan Pendekatan Pengelolaannya/Invasive Plant and Its Management Approach”;
3. Books on “75 Important Invasive Plant Species in Indonesia”;
4. Proceedings of SEAMEO BIOTROP 2nd International Conference on Tropical Biology: Ecological Restoration in Southeast Asia: challenges, gains, and future directions.
5. Prosiding Inovasi Silvikultur Tropika: Menuju Revitalisasi Pembangunan Kehutanan Indonesia/ Proceedings of Tropical Silviculture Innovation: Towards Revitalization of Indonesian Forest Development
6. Prosiding Focus Group Discussion Potensi Pengembangan Rusa sebagai Komoditas Ekspor dan Penangkaran sebagai Sarana Rehabilitasi Kawasan Konservasi/ Proceedings of Potential of Deer Development as Export Commodity and Captive Breeding as Rehabilitation Facilities of Conservation Area



### Journals and Newsletters

- **BIOTROPIA**

On 29 September 2016, BIOTROPIA received the certificate of national accreditation from the Ministry of Research, Technology and Higher Education (MRTHE) of the Republic of Indonesia. The accreditation is in recognition of the journal's quality and high public trust on the scientific works published therein.

With the growing number of manuscripts being submitted to BIOTROPIA, SEAMEO BIOTROP decided to increase the number of issues from two to three annually as well as the number of articles from six to eight per issue.

During the fiscal year in review, BIOTROPIA published two issues, i.e. Vol. 23 No. 2 and Vol. 24 No.1. The online version can be accessed at <http://journal.biotrop.org>.

In August 2017, the BIOTROPIA Editorial Board agreed to collaborate with international conference organizers to produce online special issues of conference papers that are presented orally and along the scope of the journal. This decision was to increase the visibility of the BIOTROPIA at regional/ international level.

In FY 2016/2017, BIOTROPIA has been disseminated to 120 partner institutions, 180 libraries of national and international universities, and 35 subscribers from various national and international research institutions.





- **BIOTROP Courier**

Four issues of BIOTROP Courier, the Centre's quarterly newsletter, were published during the fiscal year in review (i.e. July-September 2016, October-December 2016, January-March 2017 and April-June 2017 issues).

The issues contain highlights of completed major activities of the Centre for the information of its stakeholders and the general public.

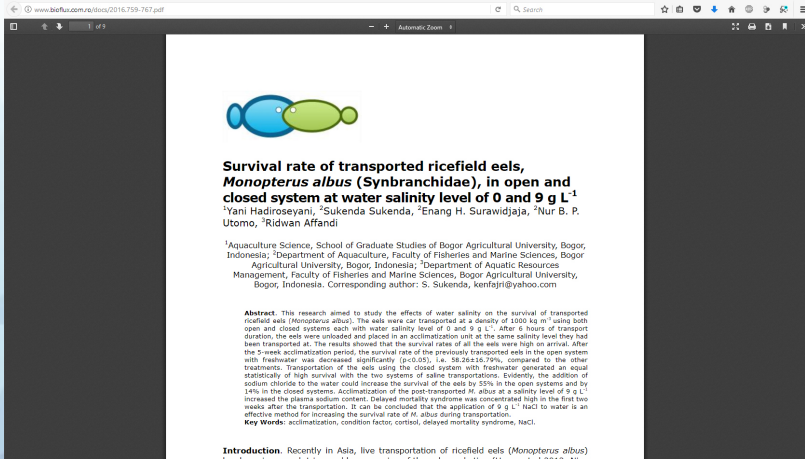
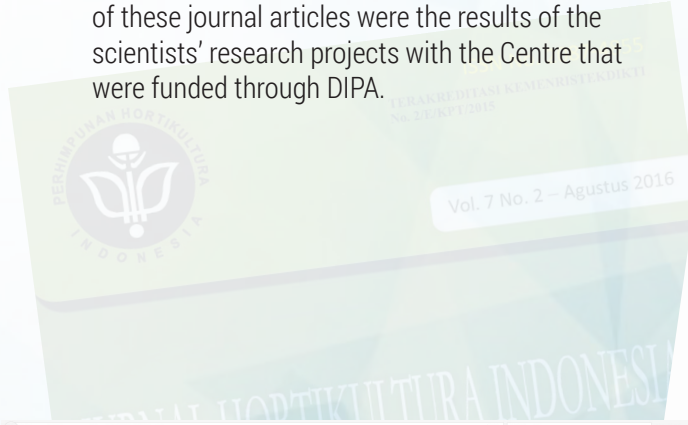
The Courier featured new sections, namely: 1) "Where Are They Now?" on the whereabouts of BIOTROP alumni; 2) popular articles on BIOTROP research results (i.e. "Boosting *Cottonii* Seaweed Production through Tissue Culture Technique" and "Stored Product Insect Pests Management in Indonesia: What Could Be the Next Promising Option?"; and 3) BIOTROPIA Research Articles in Brief.

During the fiscal year under review, copies of BIOTROP Courier were disseminated to 565 various national and international institutions, libraries, universities, subscribers, and exchange partners.



- **Articles, Technical Papers in Peer-Reviewed Journals and Proceedings**

In FY 2016/2017, SEAMEO BIOTROP scientists published 9 articles in peer-reviewed journals and an article in refereed proceedings. Most of these journal articles were the results of the scientists' research projects with the Centre that were funded through DIPA.







## Library Services and Database

Currently, the Centre's library holds and manages 13,251 books and 17 e-books as library's collections. A total of 4,044 collections are related to the Centre's program thrust on Tropical Biology for Community Welfare (1,067 books on pest and diseases management; 1,302 books on biosystematics; 142 books on natural products; 1,372 books on biotechnology; 163 books on Food and feed security and safety). On the other hand, 1,371 collections are related to the Centre's program thrust on Tropical Biology for Environmental Integrity (242 books on biodiversity conservation and management; 833 books on water, waste and ecosystem management; 123 books on landscape restoration; 122 books on management of tropical ecosystem functions and services; and 51 books on ecosystems health monitoring). Catalogue of collections can be accessed through <http://lms.biotrop.org/opac>.

In FY 2016/2017, a total of 114 people from national and regional/international institutions consisting of 52 universities, five research institutions, two international organizations and 55 schools visited the Centre's library. About 87 percent of visitors expressed their satisfaction on the Centre library services.

The Centre's library also received five books as gifts from various institutions. The books are biography and biotechnology. The Centre's library also registered 187 serial publications (journals, proceedings, newsletters,

annual reports and magazines), consisting of 103 as gifts and 84 as exchanges.

The Centre packaged and published the knowledge and information generated through its Centre's research, workshop, seminar and training activities through DIPA funding. For FY 2016/2017, a total of 132 new publications were added to the database. It covers articles in refereed journals, books, monographs, articles and posters in proceedings, research and training reports, modules, journals and newsletters.



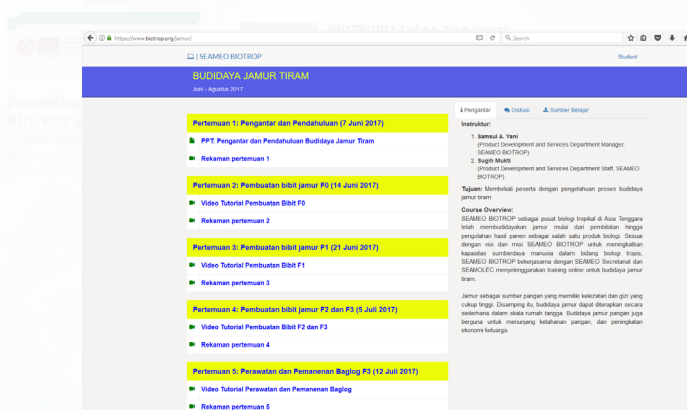
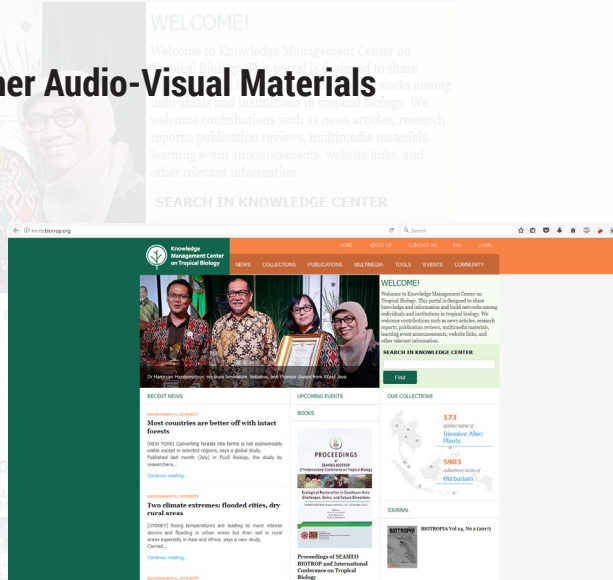


## Website Maintenance and Development of Other Audio-Visual Materials

The Centre website (<https://www.biotrop.org>) is an important medium for articles and announcements on the Centre's research and capacity building activities, services, and other development initiatives. During the fiscal year in review, 73 articles were uploaded in BIOTROP's website consisting of 36 articles on the Centre's activities, 3 highlights of research results, 34 articles on events of SEAMEO Secretariat and other SEAMEO Centres and partner institutions and 5 book reviews. On the other hand, 18 information updates were also uploaded on the new Centre's publication section (e.g. proceedings, books, research reports, training/seminar reports, newsletters, annual report and selected photo gallery).

The Centre's virtual knowledge management centre on tropical biology (<http://kmtb.biotrop.org>), which provides exhaustive knowledge and information in line with the Centre's two program thrusts, featured 12 news on Community Welfare and 15 News on Environmental Integrity during the period in review.

The Centre's Knowledge Management Department conducted readership survey of KMTB from August to December 2016. The survey was participated by SEAMEO BIOTROP Staff, training alumni, and colleagues from partner-institutions. The respondents came from Indonesia (75 percent), Vietnam (12.5 percent), Brunei Darussalam (6.25 percent) and Malaysia (6.25 percent). Webqual 4.0 methods were used to measure the quality of the website.



The results from the survey are:

Category	Satisfied (%)	Unsatisfied (%)	Neutral (%)
Usability	62.4	0	37.6
Information Quality	77.2	0	28.8
Service Interaction	59.4	0	40.6

Based on the results, the quality of articles published in KMCTB website has been maintained well. Furthermore, users experienced that the website was helpful to find required information. But there are still rooms for improvement in all categories, particularly in usability category (i.e. site design and navigation aspect) and service interaction category (i.e. communication and personal information safety aspect).

SEAMEO BIOTROP also stepped up its spatial information dissemination to keep its stakeholders and the public apprised of the Centre's services by developing Spatial Information & Services Website (<http://spatial.biotrop.org>) to share Centre's Landsat

data collection and news on geospatial technology and applications. A total 27 articles were uploaded into this website.

The Centre also produced educational videos on (1) Catfish Hatchery and Nursery; and (2) Oyster Mushroom Cultivation.

To support the online course on oyster mushroom cultivation, educational videos and website for resources management were developed and can be accessed by the participants at <https://www.biotrop.org/jamur>.





## Promotion and Media Exposure

Advertising the Centre's events and activities in the local media, distribution of promotional brochures and flyers to prospective clients, wider circulation of the Centre's publications, hosting of regional and national seminars, as well as the display of banners and posters at regional events outside BIOTROP and official visits by officers and scientists had helped to promote the Centre's programs and facilities widely.

SEAMEO BIOTROP's official webpage and social networking site such as Facebook/Twitter/Instagram supplemented the dissemination of Centre's information materials. Contents were updated regularly and reflected current and upcoming programs and activities for all users across the region.

In FY 2016/2017, the Centre disseminated information on its programs, activities and other special initiatives, either in print and digital formats to 176 schools, 163 universities, and 5 community societies in Indonesia and beyond. The distributed promotion materials were: The Centre's Biodiversity Conservation Photo Competition, PhD Thesis Grants Program, Youth Environmental Outreach (YEO) Grants Program, Web-based Knowledge Management Centre on Tropical Biology, Spatial Data Provision and Analysis Services, Centre Products and Services, as well as Catalog of Centre Publications.

The Centre implemented media promotion throughout the period instead of conducting the usual annual media day during its anniversary celebration every February. Nineteen news articles were published in several reputable national media consisting of three

news in printed newspapers, one in magazine as a headline report, and 15 published as online news. The news topics were on the Centre's anniversary, launching of SEAMEO BIOTROP as Community Learning Parks, STAR Village program, mining reclamation program, SEAMEO BIOTROP photo competition, collaboration with Ministry of Marine Affairs and Fisheries Republic of Indonesia on cottonii tissue culture, PhD research grants, community development program and sister school program on mangrove education and conservation. The Centre also advertised its available products and services in Forest Digest February-April 2017 edition.

The launching of SEAMEO BIOTROP as a Community Learning Park on 4 October 2016 by Bogor City Mayor, Dr Bima Arya, was the most publicized event of the Centre during the fiscal year in review.





**1<sup>st</sup> Prize  
General Category**

## Regional Biodiversity Photo Competition

In August 2016, the Centre launched its 4th Regional Photo Competition on Biodiversity Conservation with the theme “People and Biodiversity”. It was aimed to promote the various important economic, sociocultural, and environmental uses of the region’s rich biodiversity on people’s lives. For the first time, the Centre opened two categories for the competition, namely: general category (i.e., above 17 years old) and student category (i.e., 13 - 17 years old). The Centre also solicited the participation of the general public to select the Most Favorite Photo through Facebook.

Mr Abd Aziz Mohd Yaras from Malaysia and Wilgi Sandes Hendarpan from Indonesia are 2016’s first prize winners for the general and student category, respectively as seen above. They bested 433 contestants from 7 countries who joined the competition. The winner for the Most Favorite Photo was Ari Raharjo from Indonesia for his photo titled “Forest and Agriculture”.

The winning photos were judged based on four main criteria, i.e. the relevancy with the theme, originality, image quality (technique, concept, photo content, composition, lighting and other aspects of aesthetics) as well as creativity.



**1<sup>st</sup> Prize  
Student Category**

The Judges were notable professional photographers from Indonesia, namely: (1) Ir Arbain Rambey; (2) Ir Gunawan Wibisana, MSP, MM, LRPS, PSA; and (3) Drs. Riza Marlon.

The article related with 4th Regional Photo Competition on Biodiversity Conservation was published in Kompas on November 22, 2016 with the title “Biodiversity dan Pemaknaannya dalam Fotografi (Biodiversity and Its Meaning in Photography)”.



## SPECIAL PROGRAM

### Indonesian Biotechnology Information Center (IndoBIC)

IndoBIC has implemented one International Conference, five seminars, four workshops, and two visits during the period in review. These activities were supported by several partner-institutions, namely: The International Service for the Acquisition of Agri-biotech Applications (ISAAA), Croplife Indonesia, Croplife International, Indonesian Agency for Agricultural Research and Development (IAARD) of the Ministry of Agriculture of Indonesia, US Department of Agriculture, Indonesia Institute of Sciences, National Outstanding Farmers and Fishermen Association (NOFA), International Food Information Council (IFIC) Foundation, the Indonesian Society for Agricultural Biotechnology (PBPI) and various Indonesian universities. A total of 948 individuals from government institutions, private sectors, academe, farming communities and media practitioners benefited from IndoBIC's activities.

Notable of these activities are the following:



- **Socialization of Food and Feed Safety Assessment of Genetically Engineered Product**

Over 80 policymakers, members of the academe, government, industry representatives and other stakeholders attended the seminar on Socialization of Food and Feed Safety Assessment of Genetically Engineered Product on November 14, 2016 at Salak Tower Hotel, Bogor, Indonesia.

The seminar was aimed to make Indonesian stakeholders to be well-informed about the assessment process of biotech products in Indonesia. the new regulation and GM crops.

The event was organized by Indonesian Biotechnology Information Centre (IndoBIC), in collaboration with the Ministry of Agriculture and the National Agency of Drug and Food Control, SEAMEO BIOTROP and International Service for the Acquisition of Agri-Biotech Applications (ISAAA).







- **Corn Harvest and Farmers Meeting (Sarasehan Petani) on Modern Corn Farming “From Lamongan to Indonesia”**

Farmers in Lamongan, Indonesia are ready to use biotechnology to support corn self-sufficiency program in the country. This was stated by some 35,000 farmers from Lamongan and surrounding districts who attended the Farmer Meeting and Corn Harvest event in Lamongan, East Java, Indonesia on January 24, 2017. High government officials from the Ministry of Agriculture, Chairperson of the Presidential Advisory Council, and the IndoBIC director served as resource persons.

The event was officially opened by the Regent of Lamongan, Mr Fadeli followed by a ceremonial corn harvesting at Demfarm Region, Modern Village Banyubang, Solokuro, District of Lamongan, East Java. In his opening remarks, Mr Fadeli said that Lamongan continues to support agricultural productivity by application of improved corn varieties. Lamongan is expected to become one of the centers of corn production in East Java and is ready to be a pilot project when biotech products are released in the Indonesian market. The event also recognized corn farmers who produced high yield in Lamongan.







- **National Seminar on “Application of Agricultural Biotechnology and Its Contribution to Food Security in Indonesia**

ISAAA’s most recent report, *Global Status of Commercialized Biotech/GM Crops: 2016* was launched at Universitas Gadjah Mada, Yogyakarta, Indonesia during a one-day seminar on May 23, 2016. The event, organized by ISAAA and the Indonesian Biotechnology Information Centre (IndoBiC) was attended by some 90 members of the academe, local government representatives, media practitioners, and students. The event was graced by Ir Arofa Noor Indriani MSI, Director of Food Security Agency, Yogyakarta Province, who gave the welcome message.

Dr Rhodora R. Aldemita, ISAAA Senior Program Officer, presented the 2016 *Global Status of Commercialized Biotech/GM Crops*. Dr Mahaletchumy Arujanan, Executive Director of the Malaysian Biotechnology Information Centre (MABIC), gave an overview of biotech/GM crop adoption in Asia, while Dr Muhammad Herman discussed the research and development of biotech product and its regulation in Indonesia. Scientists from Universitas Gadjah Mada, Institut Pertanian Bogor (IPB), and Yogyakarta province presented updates on agri-biotech research.

Drs. Aldemita and Arujanan, together with IndoBiC Director, Prof Dr Bambang Purwantara, and Dr Herman were guests on live television interviews on Jogja TV on May 22, and Kompas TV on May 23.







## COMMUNITY DEVELOPMENT PROGRAM

### SEAMEO STAR Village

SEAMEO BIOTROP continued its coordinator's role in implementing the SEAMEO STAR Village Program since it was in October 2015. As the first community-based collaboration among the six SEAMEO Centres in Indonesia, the Program generally aims to develop a community-based sustainable development model that could reinforce the SEAMEO Community Involvement Program especially in helping address the SEAMEO 7 Priorities and the Sustainable Development Agenda 2030.

For the fiscal year in review, SEAMEO BIOTROP conducted three training courses for farmers and housewives in Cihideung Ilir Village as the Program's site.

The first training was on catfish pond cultivation held on 21-23 July 2016 for 15 farmers from the village. The training was in response to the villagers' need to have alternative source of livelihood as identified during the needs assessment survey conducted by





the Centre in December 2015. In particular, the Centre introduced to the participants a knock-down type of fishpond technology for catfish production during the training. The technology is cheap and easy to construct and maintain and catfish can be marketable within three months. A pond with the size of three sqm each is expected to provide an income of IDR 430,000 per harvest to the group.

As a requisite to start the catfish production project in the village under the SEAMEO STAR Village Program, training covered the following topics: 1) Catfish pond culture techniques; 2) Business analysis and marketing of catfish; and 3) Feeds and feed manufacturing. The



participants also visited a local businessman that produces catfish fingerlings within the village.

After the training, SEAMEO BIOTROP's Community Development Unit staff conducted regular visits to the village to monitor the progress of the catfish pond production project as well as provide technical assistance to the villagers where necessary. These visits were done twice a month.

On 20-21 October 2016, SEAMEO BIOTROP conducted the second training for Cihideung Ilir on Community-based Sheep Production with special focus on feed formulation using locally available materials. Seventeen village farmers attended this training which was aimed to enable the villagers to produce feed that is constantly available and affordable to them thereby reducing production cost but at the same time, ensuring proper growth of their animals. Other than feed formulation, the participants also learned about the proper time management in giving feed ration to their animals, and planning the production of appropriate grasses and other plants to address the feed requirements of their animals. The Centre tapped resource persons from Institut Pertanian Bogor (IPB) for this training.

SEAMEO BIOTROP did not only provide training for the production of catfish. The Centre conducted a five-month capacity building project for Cihideung Ilir on catfish product development and processing through a funding support from the Directorate General of Course





Development and Training of the Ministry of Education and Culture of Indonesia. The project consisted of two phases, i.e., skills development training and technical assistance/mentoring of the beneficiaries. The beneficiaries were divided into four groups which were required to develop their respective catfish products and business plans, namely: fresh catfish, catfish chips, catfish nuggets, and catfish dried shredded meat.

To add more value to catfish and increase the income of households in the Village, SEAMEO BIOTROP conducted another training on catfish processing for another group of 20 village housewives on 21-22 and 29 March 2017. The training was specifically on smoked catfish processing. Other than lectures and hands-on exercises, the participants visited the factory of one successful entrepreneur engaged in smoked fish production in Desa Pengasinan, Gunung Sindur, Bogor to gain inspiration for them to develop their own community-based enterprise plan as the major output of the training. After the training, SEAMEO BIOTROP arranged a series of meetings with the Village head, representatives from the training participants, and officials from IPB's Institute of Research and Community Empowerment to discuss how the business plan of the participants could take off as well as how to provide regular technical assistance/mentoring to them. SEAMEO BIOTROP also negotiated with IPB's Faculty of Agricultural Technology to initially make their oven for smoking available to the villagers as they start their business.





# **SOLID RESOURCE BASE**









## Administration and Management

### Staff Development

In fiscal year under review, the Centre provided staff development opportunities to 92 percent of the Centre staff which included training, conferences, seminars, workshops and symposia in Indonesia and abroad (See Appendix 5).

These staff development activities were organized through the Centre's Human Resources Management Department (HRD).

The Centre also supported its staff to present research and technical papers at international, regional and national knowledge events.

Mr Arif Nuryadin, SEAMEO BIOTROP Supervisor of the Plant and Soil Laboratory, was chosen as SEAMEO BIOTROP Employee of the Year and received the SEAMEO Service Award during the SEAMEO Council Conference held from July 24 to 26 in Jakarta, Indonesia.

For the first time, SEAMEO BIOTROP conducted two staff outings i.e., in March and April 2017 to Yogyakarta and Malang, respectively. These activities were meant to enhance employee relations, provide a well-deserved respite from work for the staff members, and educate them on some agro-based enterprises that they visited.







## Facility Improvement and New Equipments

The Centre completed the renovation of the following facilities: MIT building, one training room, Entomology Laboratory and 10 greenhouses. The Centre also established one mushroom nursery for Wood Ear mushroom (*Auricularia auricula*) considering its high customers' demand.

All these renovations are recorded on the database for Accounting Management Information for Government's Properties and reported to the Secretariat General, Ministry of Education and Culture of Indonesia.





## Product Development and Services

The Centre's Product Development and Services Department (PDS) produces high quality commercial biological products, such as forest and fruit tree seedlings, food crops, ornamental plants, mushroom and organic fertilizer.

In FY 2016/2017, PDS produced a total of 139,743 seedlings of Teak (*Tectona grandis*), Banana (*Musa sp.*), Jabon (*Anthocephalus cadamba*), and Satoimo (*Colocasia esculenta var antiquorum*) through tissue culture technique.

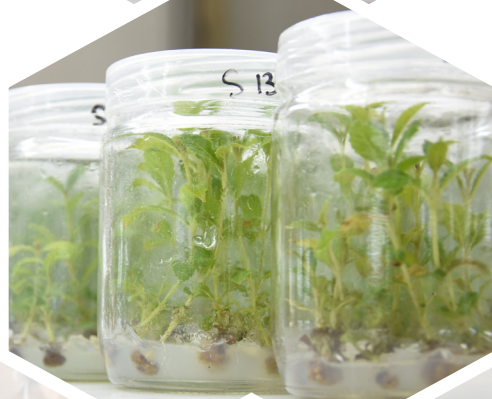
The Department also produced 35,960 baglogs of Oyster mushroom (*Pleurotus ostreatus*) and Wood Ear mushroom (*Auricularia auricula*) which were distributed to private companies and individual clients.

During the fiscal year in review, as many as 38,000 seaweed callus and 1,500 planlets have been produced by PDS. As part of the MoU between MMAF and BIOTROP, as much as 13.5 tons seaweed seeds have been distributed to various regions in Indonesia, namely: South Lampung, Pesawaran, East Lampung, Aceh Besar, Bengkalis, East Belitung, Pandeglang, Serang, Karimun Jawa, Sumenep, Takalar, Manado, Lombok, Kupang, Sikka and Ambon.

On 1-2 September 2016, the National Accreditation Committee carry out reassessment for the Centre's Services Laboratory related to the ISO 17025 reaccreditation. This is joint assessment between KAN and Ministry of Environment and Forestry. Since the Services Laboratory has an Environment sub laboratory, it must comply with PERMEN LH No. 06/2009 (Environmental Laboratory's Guidance). For this purpose, the Services Laboratory proposed 152 testing parameters consist of water and air quality parameters, soil fertility parameters and aflatoxin content on peanut and maize. On 14 December 2016, the Services Laboratory received ISO 17025 accreditation for the fourth cycle. This certificate is valid until December 13, 2020.

On 16 March 2017, the Environmental Laboratory also received a formal recognition as the Environmental Laboratory of the Ministry of Environment and Forestry.

During the fiscal year under review, the Laboratory served 143 customers and analyzed 8,271 water, air, soil, plant, food and feed samples.





## Financial Viability

In fiscal year 2016/2017, SEAMEO BIOTROP received US\$ 1,815,092 or 39.5 percent lower than the previous fiscal year (FY 2015/2016) in grants and income.

The Centre recorded a decrease in grants (i.e. Capital, Operating and Special Funds) received from the Government of Indonesia as of 30 June 2016. Nonetheless, financial operations had, as in the past fiscal year, been effectively controlled. The management gave sufficient emphasis towards income generating activities and controlling expenditures by maximizing the use of resources, professional as well as activities.

The Unallocated Funds decreased by 14.98 percent due to implementation regulation of the Government of Indonesia on management of non tax-revenue (Penerimaan Negara Bukan Pajak, PNBP), particularly funds generated from renting Centre's facilities and dormitories.

The statement of operations and changes in fund balances for FY 2016/2017 compared to FY 2015/2016 is summarized below:

No	Item	Fiscal Year		Variance
		2016/2017	2015/2016	
1	Capital Funds	159,101	523,784	364,683
2	Operating Funds	1,276,525	1,326,653	50,128
3	Special Funds	71,000	71,000	-
4	Other Funds	169,756	283,694	113,938
5	Unallocated Funds	138,709	326,466	187,757
<b>Total</b>		<b>1,815,092</b>	<b>2,531,597</b>	<b>716,505</b>

Sources:

- \*) BIOTROP Financial Audit Report FY. 2016/2017 (audited)
- \*\*\*) BIOTROP Financial Audit Report FY. 2015/2016 (audited)



# APPENDICES



