Commercialization of Green Technologies: Experience of Indonesian Institute of Sciences

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International Conference on Green Technologies for Achieving Sustainable Development Goals, 28 November 2017, Makati-Manila, Philippines, organized by UNESCOAP - APCTT and TAPI-
Department of Science and Technology, Philippines
Outline

Pengantar
  • LIPI dan STP

Brief Review STP

STP LIPI
  • Ekosistem
  • Perkembangan
    • Tahun 2015 dan Tahun 2016-2019

Penutup
“Introduction to LIPI in Brief”

Indonesian initiative on STP

Cibinong STP LIPI

Kegiatan Alih Teknologi LIPI
INTRODUCTION TO LIPI

- 26 R&D Centers (Technical Sciences, Life Sciences, Social and Humanities, Scientific Services, Erath Sciences)
- 18 Technical Implementation Units
- Managing 4 botanical garden
560 LIPI registered patents till 2015

Law. 18 /2002 dan Govt Regulation No. 20 /2005

R&D Results must be disseminate to industry and other users for people wellfafe
RESEARCH FACILITIES
COOPERATION

Japan Society for the Promotion of Science (JSPS), Jepang; Chinese Academy of Sciences (CASS), China; the Royal Botanic Garden Edinburgh; Academy of Sciences of the Czech Republic; The Korea Research Institute of Standards and Science of the Republic of Korea (KRISS); Kyushu University; The Deutsche Forschungsgemeinschaft; The National Museum of Natural History Naturalis, Leiden, the Netherlands; The International Rice Research Institute (IRRI); Koninklijk Instituut Voor Taal-, Land-En Volkenkunde (KITLV); Guangxi Botanic Garden of Medicinal Plant; Korea Ocean Research and Development Institute; Kyōto University; Chiba University; Research Institute for Humanity and Nature (RIHN); Fraunhofer (Gesellschaft Zur Förderung Der Angewandten Forschung e. V.); Korea Research Institute of Standards and Science, Korea; Man of Forest Foundation (MOF); Georg-August Universität Göttingen; Regents of University of California; Earth Observatory, Nanyang Technological University; Nadaoka Laboratory, Graduate School of Information Science and Engineering; Swiss German University; Hoseo University, Korea Selatan; Department of Ecology and Evolutionary Biology University of California; Sookmyung University; KOICA; Tokyo University of Agriculture, Japan; Flinders; JICA; PCG- Portugal; Universiti Putera Malaysia; The Third Institute of Oceanography, The State Oceanic Administration – PRC.
Organic fertilizer (POH) beyonic LIPI.

New Variety of rice for dry land
Varietas Inpago LIPI Go2

Biotek Peternakan Modern

Soybean seeds

Micro Hydro Power Generator (PLTMH)

Biomass-based Bioetanol

Food Security

Energy

Environment and Disaster

KR ENREKANG

KR KUNINGAN

KR KATINGAN

KR

Pengembangan Kebun Raya
Pengembangan kebun raya daerah sebagai pusat konservasi ex-situ

IPAG60: Penjernih Air Gambut
Air gambut dapat diolah menjadi air bersih dengan kapasitas 60 liter per menit.
Program Rehabilitasi Terumbu Karang (COREMAP II)

Sistem Peringatan Dini Bencana Lingkungan Perairan
Sistem ini telah di-install di berapa lokasi (Danau, Waduk dan Lingkungan Perairan Tambang)

Laboratorium Pengujian

Radar ISRA untuk Wilayah Pantai

National Metrologi Institute
Laboratorium metrologi LIPI sebagai nasional Institute dan laboratorium metrologi acuan nasional

Perkembangan Peneliti Nasional dan Perkembangan Paten LIPI 2010-2014

Rekap Peneliti Nasional 2010-2014

Perkembangan Paten 2010-2014
Local licensing

**Technology:**
- Patent registered No. P00201000878
- Coastal Surveillance Radar
- Supporting by RISTEK in terms of research funding

**Technology Transfer Means:**
- Licensing with exclusive rights

**Licensee:**
- PT. INTI
- State Enterprise with business core in ICT business.
Services of Center for Innovation

**Services**

1. IP Protection and IP Valuation
2. Technology Licensing
3. Business Matching
4. Business Planning
5. Technology Appraisal

**Services**

1. Mentoring
2. Office space
3. Production facility
4. Training on business management
5. Facilitation:
   - Access to market
   - Access to funding
   - Access to expertise and lab

**IP Management**

**Technology Transfer**

**Technology Incubation**

**CI**
Technology Commercialization Process in Indonesian Institute of Sciences

R&D Centers in LIPI ➔ Research Output to CI ➔ IP Protection ➔ IP Valuation

Commercial Services ➔ Prototypes Dev’t ➔ Pre-Incubation ➔ Startup INCUBATION ➔ Graduates ➔ License/Cooperation ➔ Market

External Sources ➔ Pre-Incubation ➔ Startup INCUBATION ➔ Graduates ➔ Market
Cibinong STP LIPI

Funding
Infrastructure
Strategy
HR

Tata Kelola & Kebijakan

Core Program

IPR

Center for Innovation

Technology transfer and dissemination

R&D Centers at CSC

Industry/ Users/ Community
Objectives of Cibinong STP LIPI 2015-2019

Objectives

• To accelerated the growth of technological innovation-based industry as a significant pillar or economy in the region
  • Creating a conducive innovation ecosystem
    • Policy instruments and regulation
    • Infrastructure
    • networking

To accelerate the development and transfer of technology from technology provider to industri and society

• Commercialiation and dissemination
Cibinong STP LIPI

SITE PLAN CIBINONG NATIONAL SCIENCE AND TECHNOLOGY PARK - LIPI

11 November 2015
Tahap 1: Pilot Plant (2016); Gedung Kantor dan Produksi skala terbatas Tensnt STP (2017)

Tahap 2: STP Gues House (2018), Convention Center, Technopreneurhsip Traning Center, dan Newtoarking center (2019)
Cibinong N-STP Strategy

- C N-STP LIPI
- Tech Trans & Dissem
- Start up Devt
- Tech Transfer Governance/S TP Governance and Policy
- Partnership and promotion

Diamond Program C N- STP-LIPI
## Output of Cibinong STP LIPI 2017

| Facilitation of establishment of **623 startups**; |
| Dissemination of 11 technologies to industry, SMEs, and community; |
| Implementation of 14 training packages to support tech dissemination; |
| **7 technology showcase**; |
| Governance strengthening; |
| **Mentoring**; |
| Development of STP infrastructure (in 2 stages) |
### Conception Stage:
- Advocacy of the STP concept, 5 Startup, 11 tech dissemination, 2 new product for industri, train 100 SMEs/comm, Masterplan

### Development Stage:
- Facilitation of 6 Startup, 11 tech dissemination, 2 new product for industri, 2 teh licency, train 120 SMEs/comm, Pilot plant and spacemakers

### Growing Stage:
- Facilitation of 6 Startup, 11 tech dissemination, 2 new product for industri, 2 teh licency, train 120 SMEs/comm, Pilot plant and spacemakers, Industry Zone

### Mature Stage:
- Facilitation of 6 Startup, 11 tech dissemination, 2 new product for industri, 2 teh licency, train 120 SMEs/comm, Pilot plant and spacemakers, Industry Zone, Conv. Center
Startup/Tenant Center for Innovation LIPI
Statistik selama 3 tahun (2014 – 2017)

- 25 tenant
- 12 Inwall
- 10 Outwall
- 2 Graduate
- 3 Startup to be graduated
- 9 Startup succeed raised fund
- Rp 1,9B Total funding raised
- 75+ New Employment
Case of Commercialization of Bio-Fertilizer: The Farmers’ “Friends”
General Description of Bio-Fertilizer

- Bio-Fertilizer (POH/ByoMilk):
  - 1 registered patent
  - Consortium of more than 10 microbes and yeast

- Environmental Benefit:
  - Reduce the use of Inorganic Chemical fertilizer up to 50%

- Performance:
  - Can increase harvest between 15% to 40%
Technology Commercialization Strategy of Bio-Fertilizer (POH)

Dissemination: (250 L Scale)

Objective:
People Empowerment/Inclusive Model; Market validation; Open market for starter

Target:
Farmers, Farmers group, local gov., etc.

Licencing
(Non Exclusive): Commercial Scale

Objective:
Technology Commercialization

Target:
Tech Liscencing to Companies, SoE

POH LIPI
Production Model: 3000 Lt
Bio-Fertilizer Overall Achievement

- 2 technology licencees
- 3 Licencing under negotiation
- 2 New Companies
- Disseminated at 68 District across the country
GAP STP LIPI – CSC BG dan Ekosistem Inovasi Regional

**Zona Intermediasi dan Industri (6 Ha):**
- Inkubator teknologi
- Validasi teknologi dan ekonomi
- Alih Teknologi
- Interaksi Industri
- **Tenant industri:** perusahaan besar, Start up, IKM
- Pusat Inovasi, PDII, P2M, P2SMTP, UPT. BPI
- Akelerator: Pilot Plant/Prototyping (Food, healthcare, Farmasi/obat, biofuel, green manufacuring)
- Jasa pengetahuan/ bisnis dan intermediasi lainnya-HKI dan alih teknologi

**Flow in:** Teknologi, investasi, SDM
**Flow out:** Produk, teknologi

**Pemerintah:**
- Regulasi/ Kebijakan
- Pajak, innovation fund, pasar, infrastruktur, SDM, diklat, perijinan, pengujian, HKI

**Aktor-aktor inovasi lainnya**

**Zona Industri STP LIPI Tahap 2**: Raiser ikan hias DKP

**Hotel Horison Smart Biotech Centre**

**Kawasan Industri Sentul**

**Bidan Informasi Geospasial**

**Puspiptek**

**Smart Biotech Centre**

**Pasar Domestik/Global**

**UI**

**IPB**

**Kawasan Industri Sentul**

**STP CSCBG LIPI menjadi Model Nasional**

**Satker LIPI:**
- Validasi teknologi
- Aplikasi di daerah
- Pilot
- Showcase
- Publik outreach
- Kerjasama
- Jasa Konsultansi dan pengujian
- Pelatihan

**Biologi**

**Biotek**

**Biomaterial**

**Limnologi**

**Pusbindiklat**
Closing Remarks

Some Key Success Factors of Green technology commercialization

- Rapid experimentation
- Validate technical and economical aspects
- MVP-mini/pilot scale demonstration/production
- Flexible model of technology commercialization
THANK YOU