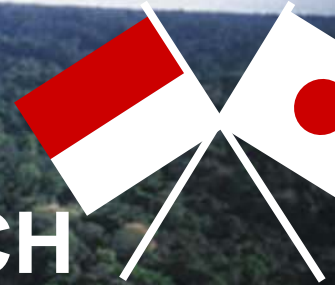




EXPERIENCES IN COLLABORATIVE RESEARCH BETWEEN INDONESIA AND JAPAN



Siti Nuramaliati Prijono

**Deputy Chairman for Life Sciences,
The Indonesian Institute of Sciences**

**E-mail: siti.nuramaliati.prijono@lipi.go.id;
sn-prijono@cbn.net.id**

**Side Event , ICNP-3 Meeting, Pyeongchang, Korea
24 February, 2014**



THE INDONESIAN INSTITUTE OF SCIENCES (LIPI)

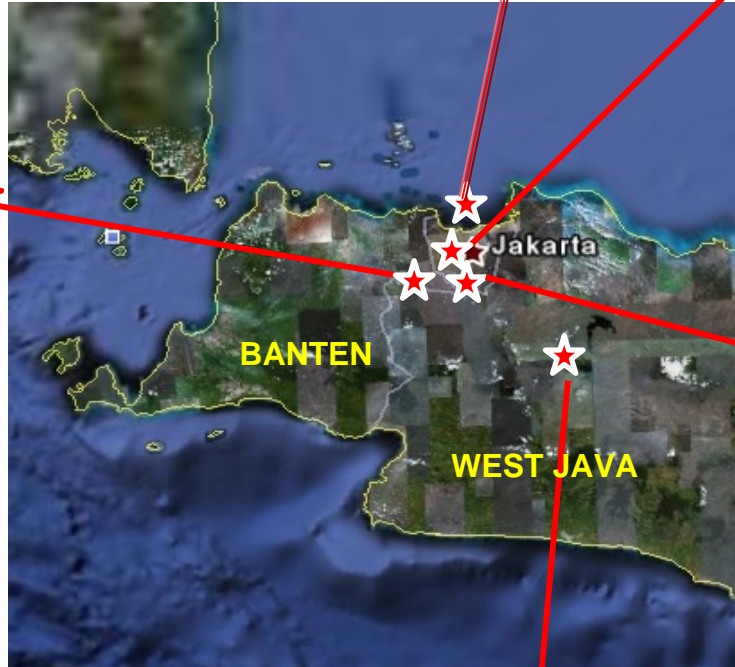


- Non-ministerial government institute, in which chairman of LIPI is appointed by and responsible to the President of Republic of Indonesia, which was established by Government decree in 1967.
- Scientific Authority for conservation of biodiversity (as stated in Indonesia regulation No. 8/1999 and No. 60/2007).
- Focal Point for Global Taxonomy Initiative (GTI) and Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA-CBD),
- **Member of Implementation team for Task force on the Implementation of Nagoya Protocol in Indonesia**



ANCOL CAMPUS
RC-Oceanography

JAKARTA CAMPUS
Headquarter and administration
bureaus
RC's SHS, Econ, Population St,
PolSci, RegSt
Posinov and PDII



PUSPIPTEK CAMPUS
RC's Chem, Physics,
Metalurgy, CIM, QSTT.

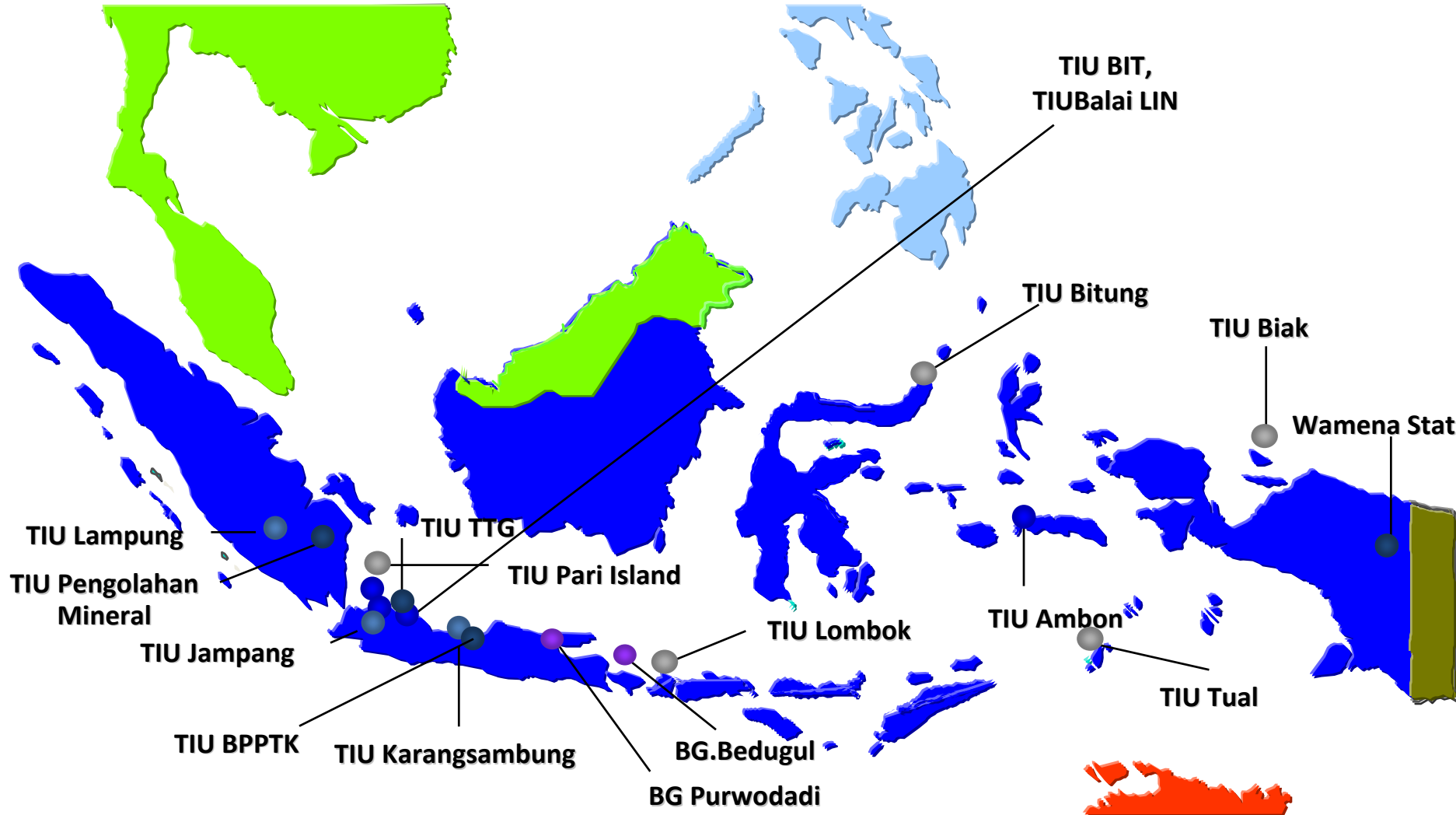
CIBINONG SCIENCE CENTER CAMPUS
RC's Biology, Biotechnology,
Limnology, Tech. Implement. Unit
for Biomaterial
Center for Supervising, Training &
Education for Researchers

BANDUNG RESEARCH CENTER CAMPUS
RC's Geotech, CompSc, ElectrTel., ElectrPower &
Mechatronics

LIPI CAMPUSES & RESEARCH CENTERS



Technical Implementation Units and Research Station of LIPI





CSC

CIBINONG SCIENCE CENTRE



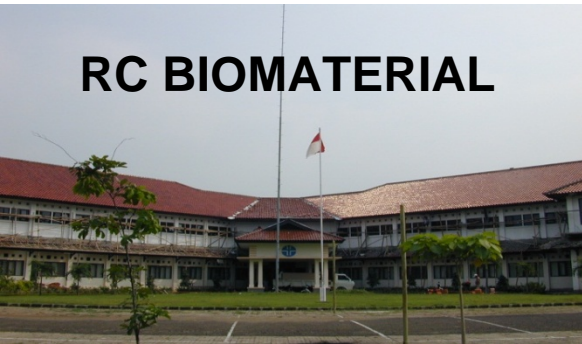
RC BIOTECHNOLOGY



RC BIOLOGY



RC BIOMATERIAL



ECOLOGY PARK





LIPI

Kebun Raya LIPI Botanical Gardens



Bogor (250 m asl.)



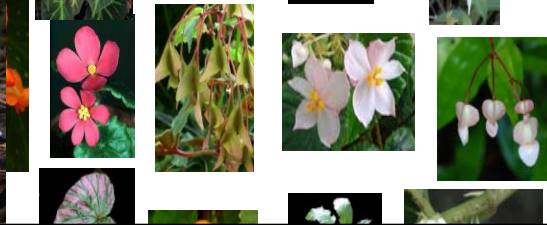
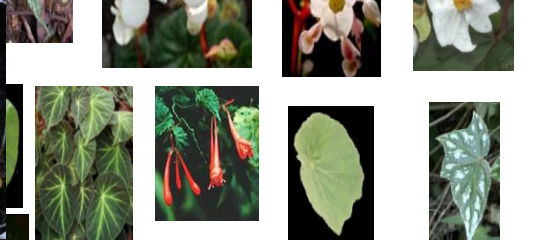
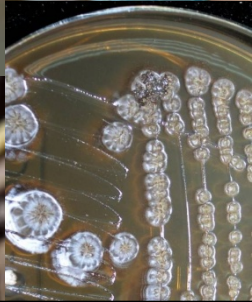
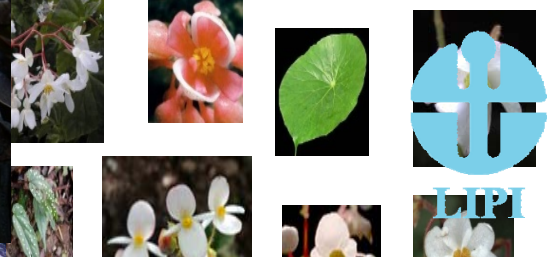
Cibodas (1250 m asl.)



Purwodadi (300 m asl.)

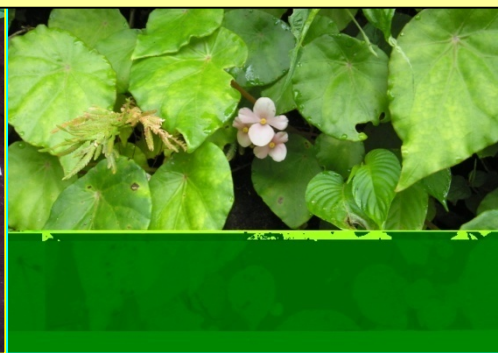


Bedugul, Bali (1250 m asl.)



Estimates of global species diversity have near 5-30 million, and only 1,78 million have actually been named.

Indonesia is one of mega-biodiversity countries which is blessed with extremely Rich biological resources with high biodiversity. A lot of new species are still being discovered in Indonesia.





ECOSYSTEM

SPECIES

GENETICS

Efforts to conserve biodiversity in the tropical region and archipelagic areas, such as Indonesia are very important since many places are centres of origin, centres of diversity and centres of endemism

The key to conserving genes, species, and ecosystems is increasing our knowledge of biodiversity and its role in human society..



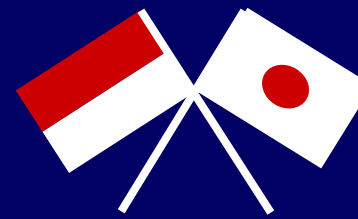
LIPI play key important role on biodiversity research and strongly contribute on the national biodiversity action plan, and actively promoting global research partnership on biodiversity.

Promoting biodiversity research means much more than just setting research agendas. It requires improving skills and institutional capacity. Advancing the research agenda will require intensified cooperation between developed and developing countries.

Indonesia and Japan establish long term research partnership from the 1980-an, as shown by mutual research collaboration between the scientist of both countries. Since 1995 the Government of Japan has implemented a wide range of cooperation projects on biodiversity conservation in Indonesia.



COLLABORATIVE RESEARCH BETWEEN INDONESIA AND JAPAN (1)



1. BIODIVERSITY CONSERVATION PROJECT

- **Grant Aid (Building & Research Facilities for Zoological Division, RC for Biology-LIPI) 1995-1996**
- **Technical Cooperation 1995 -1998 (Phase 1)
1998 - 2003 (Phase 2)**

2. THE PROJECT FOR IMPROVEMENT OF RESEARCH FACILITIES FOR BIODIVERSITY CONSERVATION AND UTILIZATION

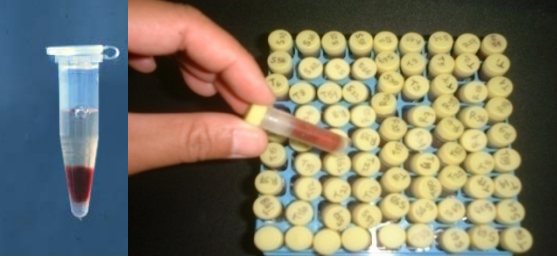
- **Grant Aid (Building & Research Facilities for Botany/Herbarium and Microbiology Division), 2004-2006**
- **Technical Cooperation project on Improvement of Collection Management and Biodiversity Research Capacity (2007-2009).**

ZOOLOGY DIVISION (MUSEUM ZOOLOGICUM BOGORIENSE)



LIPI through the Grant Aid from the Japanese Government established a new modern facilities for Museum Zoologicum Bogoriense (Widyasatwaloka Building). This a 8.209 m sq on 26.000 m sq land was open by the Vice President Try Sutrisno on Juli 29, 1997 Holding more than 2 million reference specimen collections.





ZOOLOGY DIVISION



Division of Botany (*Herbarium Bogoriense*) and Division of Microbiology

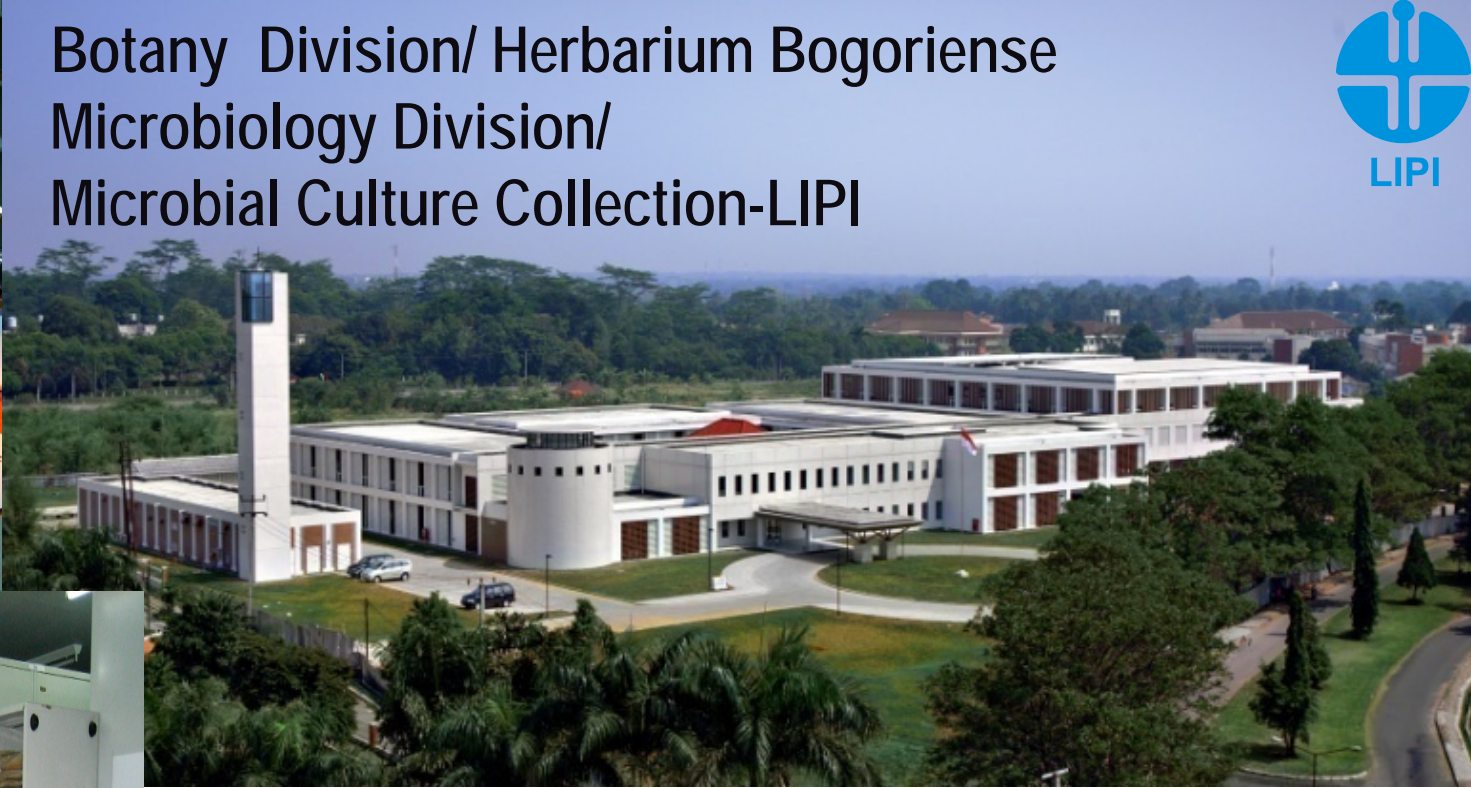


- **Biodiversity Conservation Program in Indonesia: Support of facilities for Biodiversity Collection Development (Botany and Microbiology Division) (2004-2006). The building of 12,331 m sq on a 48.000 m sq land space and inaugurated by President of Republic of Indonesia Dr. Susilo Bambang Yudhoyono on 23 May 2007**
- **The Project on improvement of collection management and biodiversity research capacity of RCB-LIPI (2007-2009)**

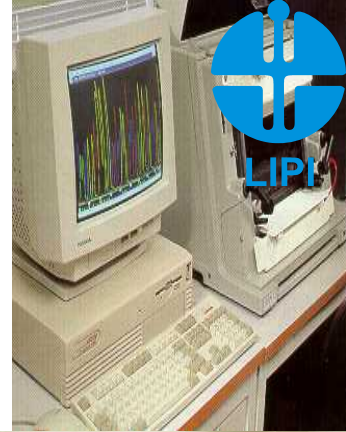
Photo: Botany & Microbiology Building of RCB-LIPI



Botany Division/ Herbarium Bogoriense Microbiology Division/ Microbial Culture Collection-LIPI



LABORATORY





Development of Research Activities & Capacity Building in Research Center for Biology, Indonesian Institute of Sciences (RCB-LIPI) after Receiving Grant Aids from the Government of Japan



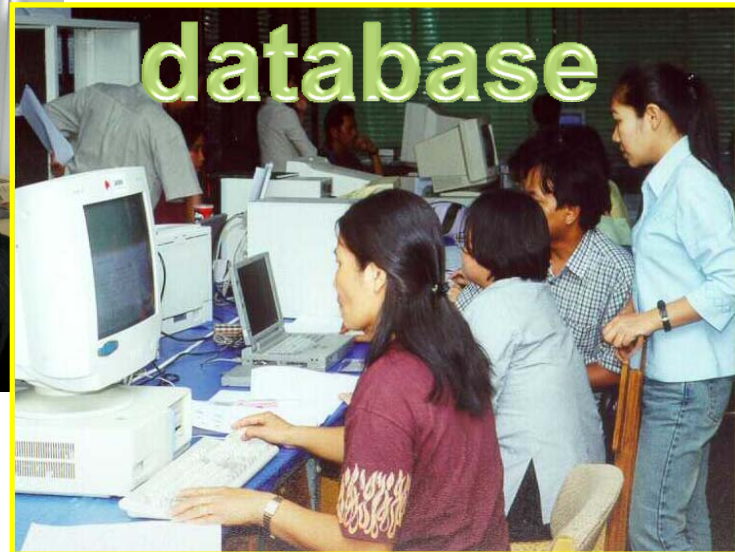
CAPACITY BUILDING



In the field



process

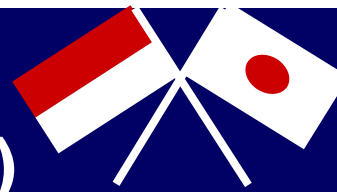


database



PUBLIC AWARENESS





3.. ENVIRONMENTAL MANAGEMENT OF WETLAND ECOSYSTEMS IN SOUTH EAST ASIA, 1997- 2006

LIPI - JSPS Core University Program

Core universities

Japan: Hokkaido University

Indonesia: Research Center for Biology, Limnology
and Geotechnology - LIPI

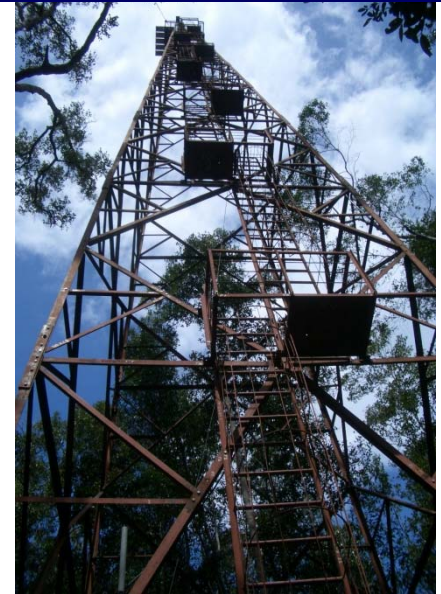
Collaborative Universities

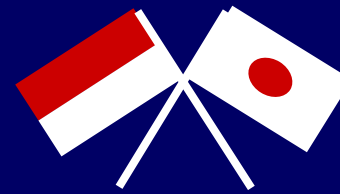
Japan: 10 universities

Kyoto University, Kagoshima University,
Kansai University, Tokyo Agricultural University etc.

Indonesia: 3 universities

Bogor Agricultural University,
Bandung Institute of Technology,
University of Palangka Raya





4. IMPACTS OF FOREST FIRES ON THE NATURAL RESOURCES AND EVALUATION OF RESTORATION OF ECOSYSTEMS AFTER FOREST FIRES, 2000-2003

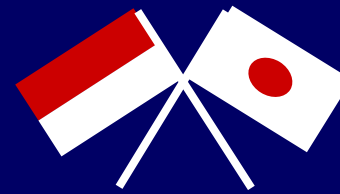
- RC for Biology LIPI-National Institute for Environmental Studies (NIES) Tsukuba
- Funded by: **Ministry of the Environment JAPAN**

5. IMPACTS OF FOREST FIRES ON THE NATURAL RESOURCES AND EVALUATION OF RESTORATION OF ECOSYSTEMS AFTER FOREST FIRES, 2005-2007

- RC for Biology LIPI-Kagoshima University
- Funded by: **Ministry of the Environment JAPAN**



COLLABORATIVE RESEARCH BETWEEN INDONESIA AND JAPAN (4)



6. EVALUATION AND FORECASTING OF THE CDM-PLANTATION INFLUENCES ON BIODIVERSITY, 2004 – 2008

- RC for Biology-LIPI ; Forestry and Forest Product Research Institute (FFPRI) Tsukuba
- Funded by: **Ministry of the Environment JAPAN**

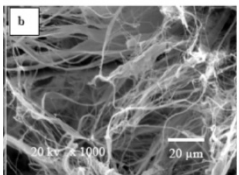
7. TAXONOMY AND ECOLOGICAL STUDY OF ACTINOMYCETES AND FUNGI IN INDONESIA, 2003-2008

- **LIPI and NBRC-NITE, Japan COOPERATION**

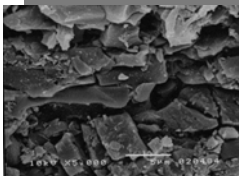
8. WILD FIRE AND CARBON MANAGEMENT IN PEAT-FOREST IN INDONESIA, 2009-2012

- Indonesia: LIPI, LAPAN, University of Palangkaraya, FORDA, BSN
- Japan: Hokkaido University
- JST-JICA

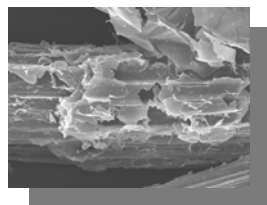
RESEARCH AND DEVELOPMENT ACTIVITIES



BIO-NANO COMPOSITES FROM CELLULOSE MICRO FIBRIL FOR RAW MATERIAL INDUSTRIES



CARBON FIBER FROM NATURAL FIBER FOR ELECTRON CONDUCTOR AND SMART CONCRETE



PRETREATMENT AND HYDROLYSIS OF BIOMASS AND PURIFICATION OF BIOETHANOL

BIO-PESTICIDE FROM NATURAL RESOURCES AS BIO-CONTROL OF URBAN PEST



DENSIFIED WOOD PRODUCTS FOR HOUSING CONSTRUCTION



ECO-HOUSE TECHNOLOGY INNOVATION FROM BIOMATERIALS



COLLABORATIVE RESEARCH



RISH, KYOTO UNIVERSITY

TOYOTA MOTOR ASIA PASIFIC ENGINEERING & MANUFACTURING CO., LTD.

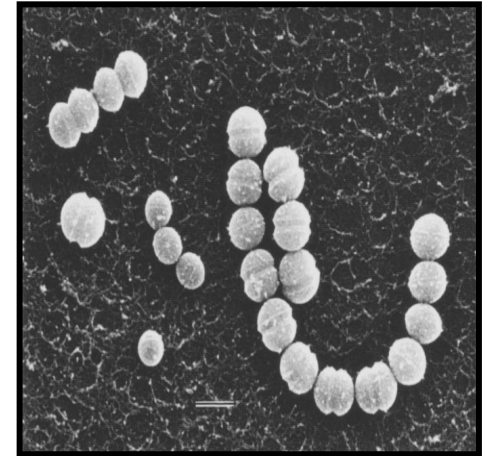
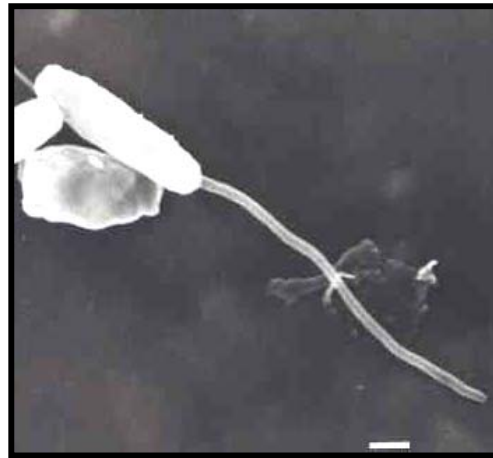


Science and Technology Research Partnership for Sustainable Development (SATREPS)

- JST, in cooperation with JICA, launched “Science and Technology Research Partnership for Sustainable Development (SATREPS)” program to promote international joint research between Japan and developing countries targeting global issues in areas such as environment and energy, natural disaster prevention and infectious diseases control.
- Under this program, JST provides support for research expenses in Japan, while JICA bears the costs of the counterpart developing country under a framework of ODA technical cooperation. Management of research and development (R&D) for the international joint research as a whole is conducted cooperatively between JICA (which operates technical cooperation to developing countries) and JST (which possesses expertise in operation of funding projects for research institutions in Japan).



PROJECT FOR DEVELOPMENT OF INTERNATIONALLY STANDARDIZED MICROBIAL RESOURCE CENTER TO PROMOTE LIFE SCIENCE RESEARCH AND BIOTECHNOLOGY (2011-2016)



Project Purpose:

Internationally standardized microbial resource center as a core of Biological Resource Center to promote life science research and biotechnology is established

Purposes of The Project

- ◎ An *ex-situ* conservation of Indonesian microbial resources through improvement of InaCC in LIPI
- ◎ Development of Indonesian microbial resources for human health and environmental restoration
- ◎ Sustainable utilization of Indonesian microbial resources for improving food and health
- ◎ Creating global partnership between culture collection center and stimulating development of bioindustry in Indonesia and Japan



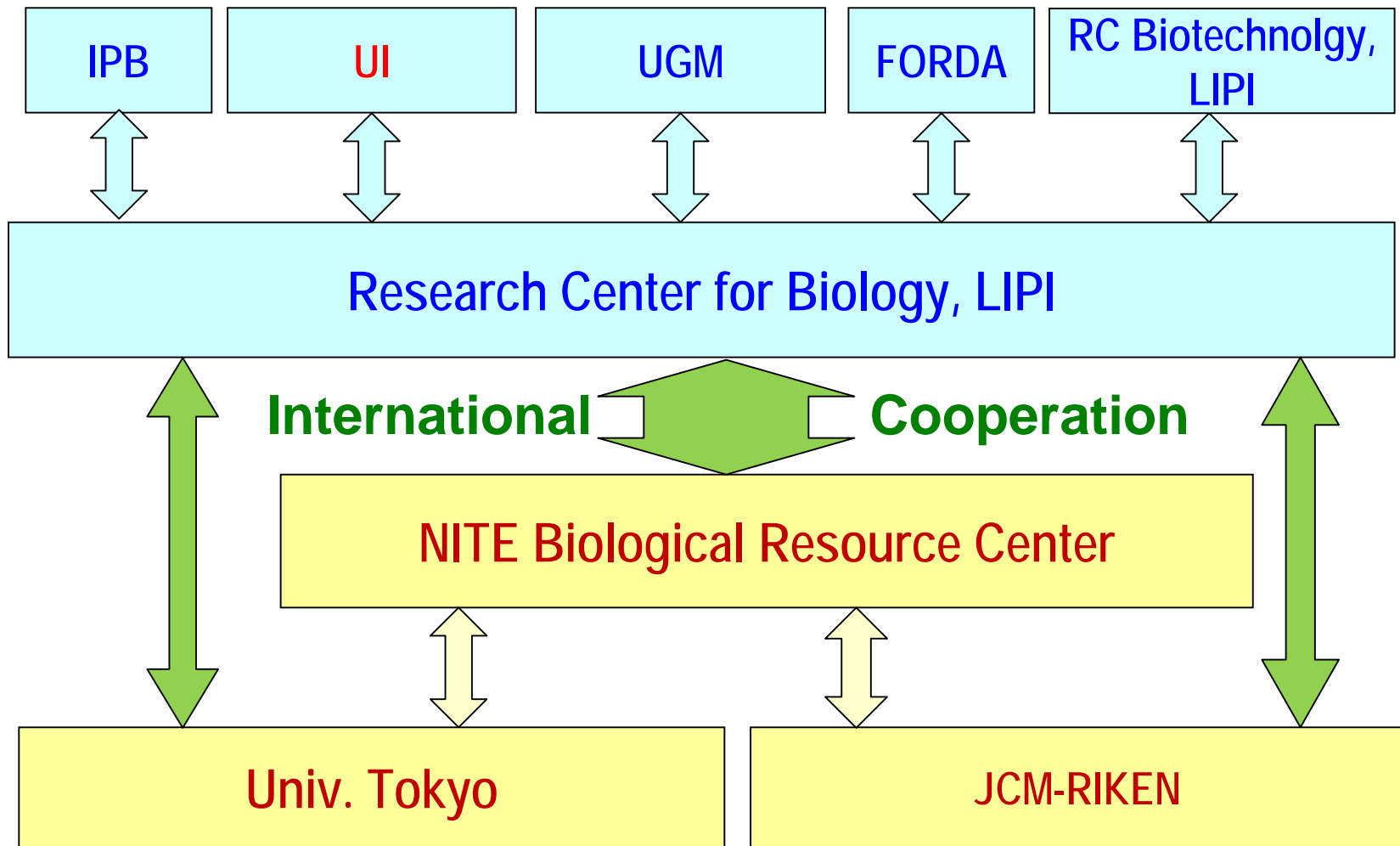
- *LIPI Microbial Collection (LIPIMC)* has been registered → *World Federation of Culture Collection (WFCC)*.
- LIPIMC → InaCC (Indonesian Culture Collection)



“Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure”.



Organization for the Project

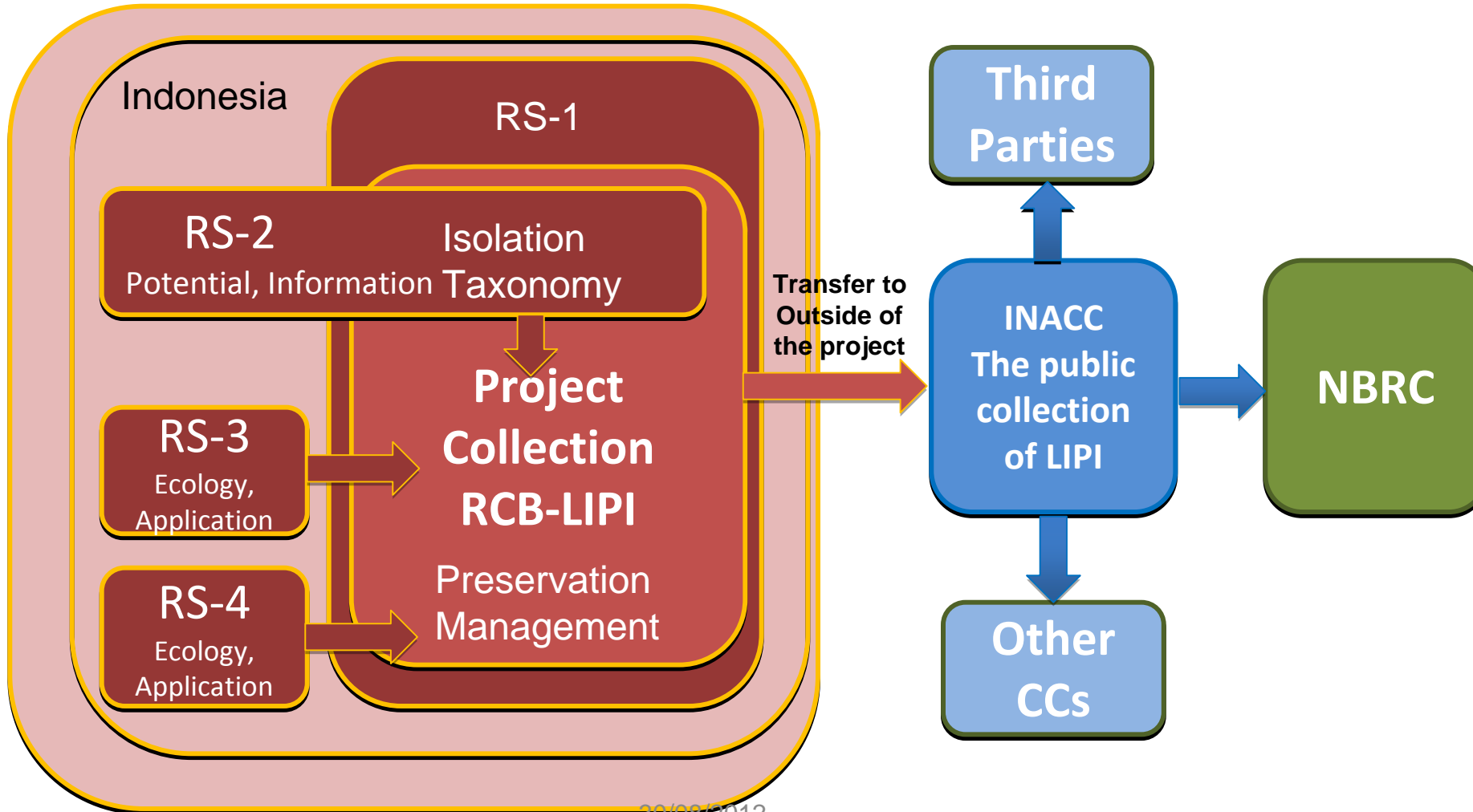


RESEARCH SUBJECT

- 1. Development of functions of microbial resource center in LIPI to be a national reference collection and to serve as a center for research, *ex-situ* conservation, training and sustainable utilization of microbial resources (Research Subject 1).**
- 2. Collection of new microbial resources originated from Indonesia, which is beneficial to human welfare, food production, agriculture, and environmental restoration (Research Subject 2).**
- 3. Isolation and characterization of soil microorganisms that have beneficial effects on agriculture, ecosystem conservation, and environmental restoration (Research Subject 3).**
- 4. Isolation, identification and selection of animal gut microbiota for probiotics (Research Subject 4).**

Project Collection for Transfer of Materials for the Output of the Project

SATREPS Project



Impact

- 1. Capacity of Indonesia to manage its own bio resources will be developed as the results of project activities.**
- 2. Contribution to the global scientific knowledge base on microorganisms and biodiversity conservation will be expected as the results of the project.**
- 3. InaCC will also facilitate ABS with other organizations in Indonesia and beyond.**
- 4. InaCC will facilitate the development of new bio-technology for the food, agriculture, environmental conservation etc.**
- 5. Exposure visits of policy makers to Japan - created supporting environment for InaCC.**
- 6. InaCC will be as a core of the culture collections in Indonesia by the end of the project.**

Sustainability

- 1. The technical transfer has been well in progress.**
- 2. The confidence level of the Indonesian members to sustain the Project outputs and to further develop by themselves is high.**
- 3. Documents required for ISO9001 lay out the procedures for the management of InaCC, which will help InaCC to maintain the standardized management system.**
- 4. There is a possibility of further collaboration between the Indonesian and Japanese researchers.**

POTENTIAL MICROBIAL RESOURCES

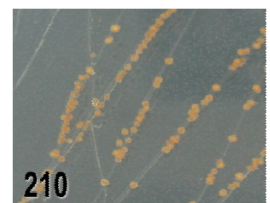
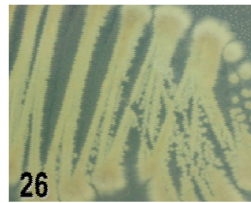
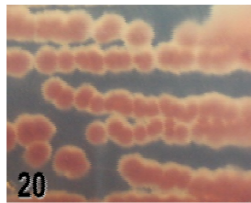
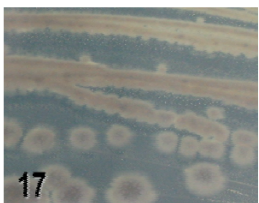
JST-JICA SATREPS PROJECT FY 2010-2015, LIPI and NBRC-NITE
**International Standardized Microbial Resource Center
to Promote Life Science Research and Biotechnology**



Development of Indonesia Culture Collection (InaCC)



Next step :
**Development and Implementation of Indonesian
Biodiversity-based Science & Technology
Integrated Bio-refinery Process**



Science and Technology Research Partnership for Sustainable Development (SATREPS)



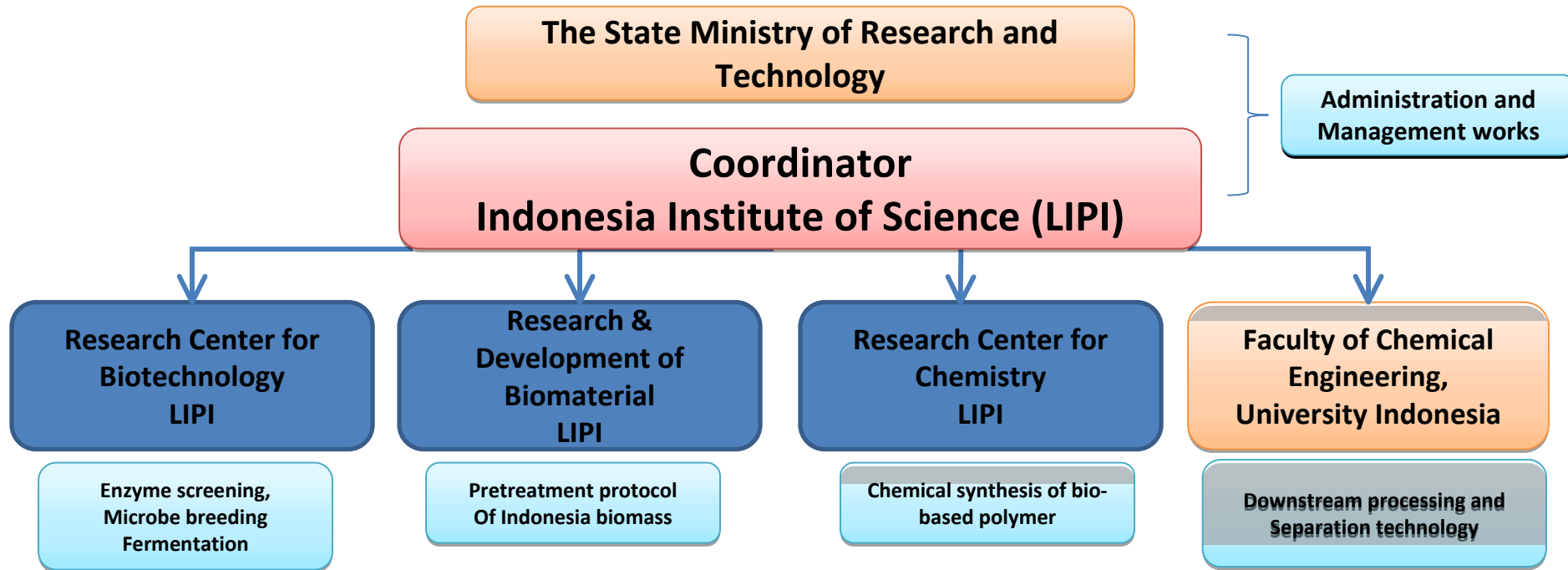
FY 2012-2017



Innovative Bio-Production Indonesia (iBioI) :
Integrated Bio-Refinery Strategy to Promote
Biomass Utilization using Super-microbes for Fuels
and Chemicals Production

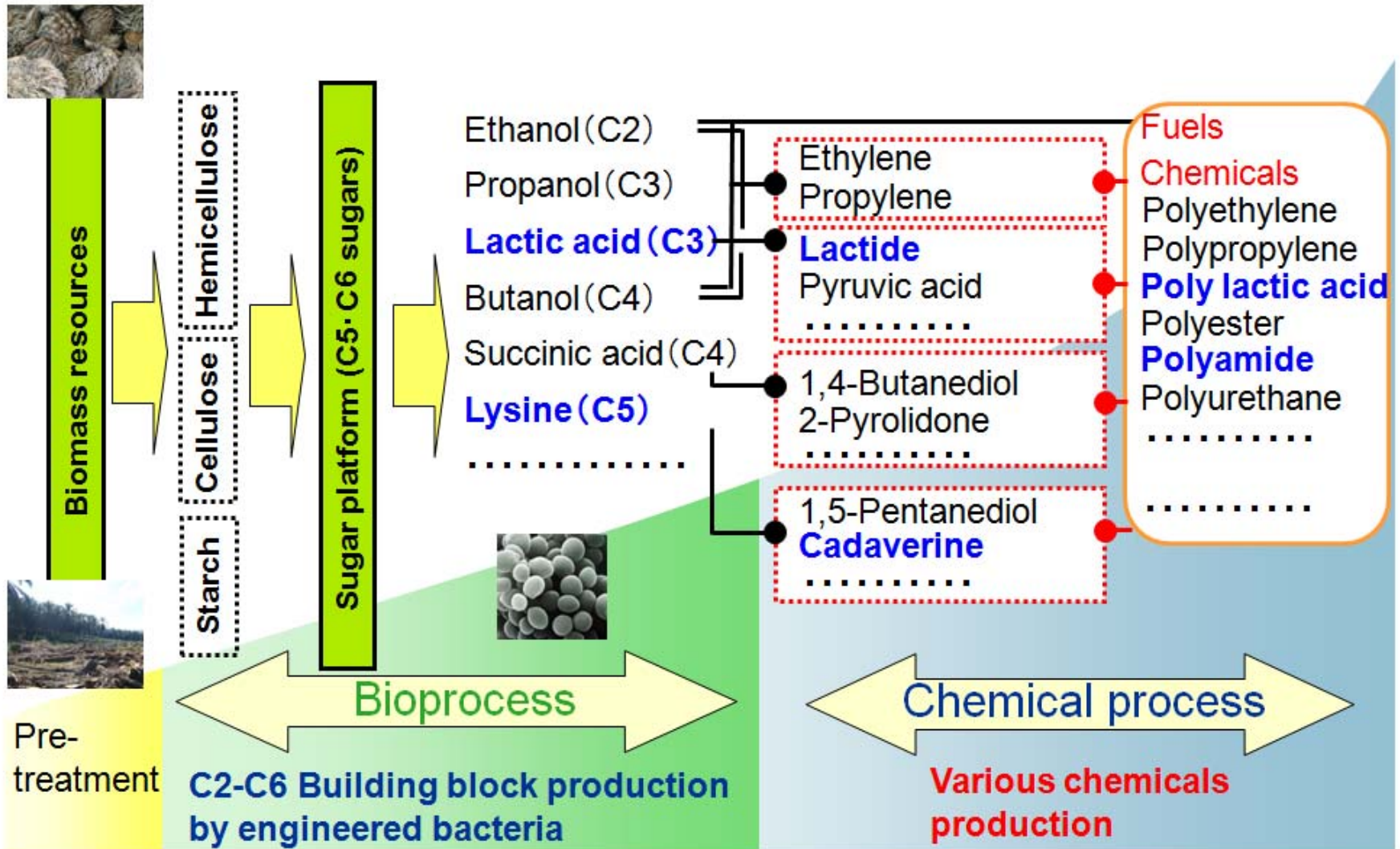


Indonesia Team for Bio-Refinery Research



Purpose of the Project

Establishment of *Bio-refinery research center in Indonesia*, especially for utilization of lignocellulose biomass to produce bio-fuels and bio-chemicals product using super-microbes



CONCLUSION

- **The collaborative research between Indonesia and Japan through several projects on Biodiversity demonstrates not only promotes and safeguards the fair and equitable sharing of benefits arising from the utilization of genetic resources, it also significantly contributing to the national capacity building of the provider in both management and scientific skill and improve public awareness. It is obvious that the cooperation projects are examples for the implementation of Nagoya Protocol.**



Thank You



ありがとうございました。

