

LIPI MEDIUM-TERM STRATEGIES, CORE RESEARCH TOPICS, AND CONTRIBUTION TO EXPERT NETWORK BUILDING IN SOUTHEAST ASIA



**2nd International TWIN-SEA Workshop on
“Climate and Societal Change in Coastal Areas in
Indonesia and South East Asia
Jakarta, 23-24 March 2015**

***Dr. Siti Nuramaliati Prijono
Executive Secretary of LIPI***



OUTLINE



Medium term institutions
towards world class

Existing collaboration

ROLE OF RESEARCH INSTITUTION:



Supporting Indonesia's transformation process in the field of technology, social, economic, and political

Improving human resources capacity and the quality of life for the people

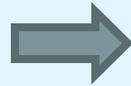
Improving Indonesia's competitiveness in the knowledge-based economic development at international level

Creating and developing S & T –based innovation

LIPI VISION AND MISSION

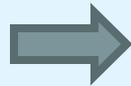
2015 - 2019

VISION



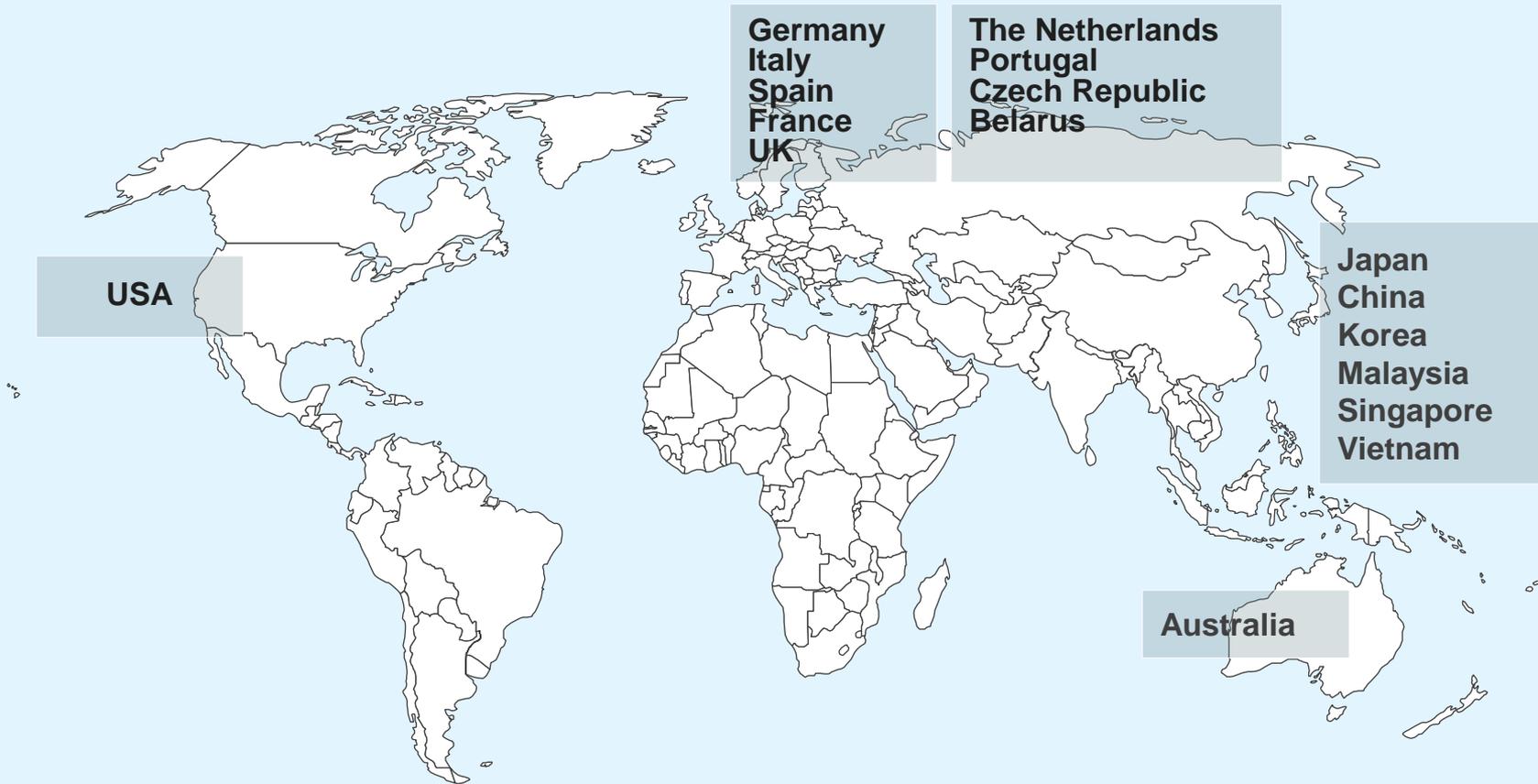
To be a world class research institution, in research, development and utilization of science enhance nation's competitiveness

MISSION

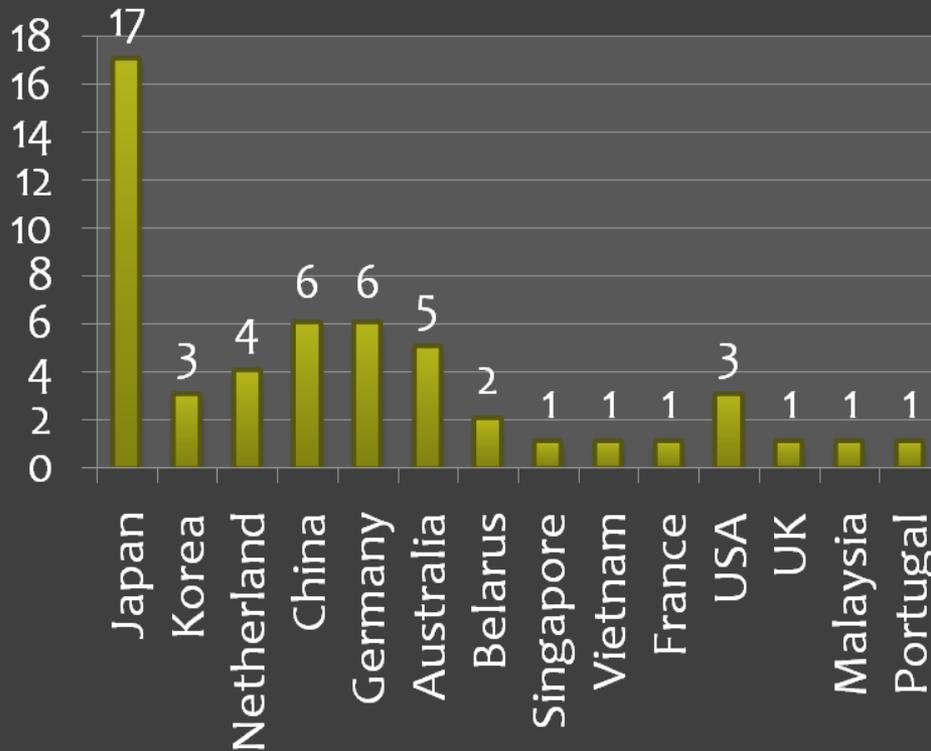


- Create inventions that can encourage innovation and enhance the economic competitiveness of the nation.
- Develop science that useful for the conservation and sustainable use of resources
- Increasing international recognition in the field of science
- Improving the quality of Indonesian human resources through scientific activities

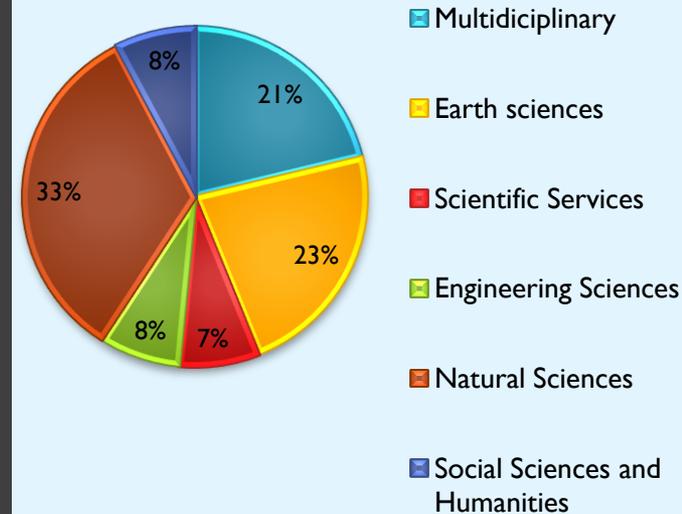
Worldwide Network



International Collaboration (2010 – 2014) : 52 Collaborations



AREAS OF COOPERATION



LIPI NATIONAL AND INTERNATIONAL ACTIVITIES



UNESCO NATIONAL FOCAL POINTS

- IHP (International Hydrological Program)
- APCE (Asia Pacific Center for Ecohydrology)
- IOC (Intergovernmental Oceanographic Commission)
- MOST (Management of Social Transformations)
- MAB (Man and the Biosphere)
- 8 Biosphere Reserves Nation Wide
- IGBC (Intergovernmental Bioethics Committee)

ASEAN COST National Focal Points ASEAN Commission on Science Technology:

- SC on Committee on Biotechnology
- SC on on Materials Science and Technology
- SC on Sustainable Energy Research
- SC on Microelectronics and Information Technology
- SC on Food Science and Technology
- SC on Marine Science and Technology

Membership International Organizations

- SCA (Science Council of Asia)
- Asia HORCs (Asian Heads of Research Councils)
- AASSREC (Association of Asian Social Science Research Councils)
- APCTT (Asian and Pacific Centre for Transfer of Technology)
- CODATA (Committee on Data for Science and Technology)
- ICSU (International Council for Science)
- PSA (Pacific Science Association)
- IFSSO (International Federation of Social Science Organization)
- WAITRO (World Association of Industrial and Technological Research Organization)
- APMP (Asia Pacific Metrology Program)
- BGCI (Botanic Gardens Conservation International)
- IFMF (International Flora Malesiana Foundation)
- GBIF (Global Biodiversity Information Facility)

S&T POLICY AND DEVELOPMENT STRATEGIES 2015 – 2019



Food and Agricultures

Energy (Renewable energy, Bioenergy, etc)

Health and Medicine

Telecommunication, Information and Communication

Transportation Technology

Defense and security Technology

Advanced Materials

Metrology and Testing

Bio-resources (terrestrial and Marine)

Social and humanitarian

LIPI – GERMANY COLLABORATION



BIODIVERSITY COLLABORATION

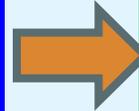
* Joint research LIPI-RCB – Museum für Naturkunde since 1999. Due to the mere size of Indonesia's biodiversity large databases will be required with fast access possibilities to speed up the process of screening, analysis and identification of any given species. Museum für Naturkunde – Berlin will assist and conduct with LIPI the field research in the selected areas and in establishment of database.

* Joint proposal between LIPI and Fraunhofer IME in exploration of Indonesian insects as natural sources of active compounds against malaria and *Mycobacterium tuberculosis (Mtb)* using knowledge-based approaches. Insect biotechnology (yellow biotechnology) is concerned with the development of interface technologies and the use of new active agents from insects for therapeutic or diagnostic purposes,



Remaining Microbial Collection Need to Explore

- 150 strains of endophytic fungi (approx. 50 new strain will isolate per year)
- 450 strain of actinomycetes (approx. 100 strain will isolate per year)
- 400 strain of soil and leaf litters fungi (approx. 100 strain will isolate per year)



2015 : More than 1000 microbial strains will screen for their antimicrobial, antioxidant and anticancer activities

2025: One or two new drugs will pass a clinical studies



A joint research will accelerate the research outcome



Joint Research RCO-Leibniz Center for Tropical Marine Ecology (ZMT) – MARINE SCIENCES

Response of benthic algae to disturbance and consequences for reef recovery (Under The “Science for the Protection of Indonesian Coastal Marine Ecosystems (SPICE II)

- Nov’ 2009- Feb 2010, Derawan

Rapid assessment of key issues and stakeholders relating to the use of coastal marine resources in the Berau Archipelago

- Dec 2009, Berau

Managing the resilience of Indonesian coral reefs in a changing environment: reef health, governance, and coastal livelihoods

- May 2011-end 2013, Berau

Effect of environmental stressors on the ecophysiology of marine organisms” and “Effect of sea surface temperature on tropical marine biofilms and implications for coral larvae settlement

- May 2014-May 2015, Lombok & Pari Island

MARINE GEOLOGY SCIENCES

SPICE III Program: Marine Geology and Geochemistry

Climate versus anthropogenic forcing of Late Holocene environmental change affecting Indonesian marine, coastal, and terrestrial ecosystems

Dr.Haryadi Permana
Indonesia Institute of Sciences (LIPI)

- 1) Research Center for Geotechnology
- 2) Marine Geological Institute (MGI)
- 3) Geology Department of Institute Technology of Bandung, Indonesia
- 4) Research Center for Oceanography –LIPI Ambon, Indonesia

German partners:
Prof. Dr. Dierk Hebbeln
University Bremen

- 1) MARUM - Zentrum für Marine Umweltwissenschaften
Univ. Bremen
- 2) Leibniz-Zentrum für Marine Tropenökologie (ZMT)
- 3) Department of Palynology and Climate Dynamics
Universität Göttingen



WIDYA NUSANTARA (E-WIN)

“ INTEGRATED RESEARCH AMONGST
MULTI-DISCIPLINES AND SECTORS
IN MARINE AND COASTAL
REGIONS, AND SELECTED SMALL
ISLANDS”

2015

Enggano Island

Research Focus:

**Marine → Physical oceanography
Upwelling (Kesuburan\
Perairan)
Tuna Studies**

**Terrestrial → Terrestrial Flora &
Fauna**

Location: Border area

**Participants: P20 LIPI, P2B LIPI,
P2L LIPI. Local University,
ZMT-German**



TWIN-SEA APRA PROJECT

Expert network and twinning institute on
climate and societal change for Southeast Asia



UNITED NATIONS
UNIVERSITY

UNU-EHS

Institute for Environment
and Human Security

- Funded by the German Ministry for Education and Research (BMBF) / APRA
- **Objective:** “Creating a research network in Southeast Asia with German universities for improving preparedness and developing “low-regret” adaptation measures and strategies to climate change and its related effects induced by natural hazards in the coastal zones in Southeast Asia and Indonesia.”
- **Project period:**
 - July 2013 to June 2015 (initial phase):
Knowledge generation, development of e-learning material and the development of adaption options (“business opportunities”)
 - July 2015 to June 2017 (follow-up phase):
Identification of business cases and orientation towards implementation
- **Project partners:** FI Hannover, UNU-EHS, LIPI, expert network



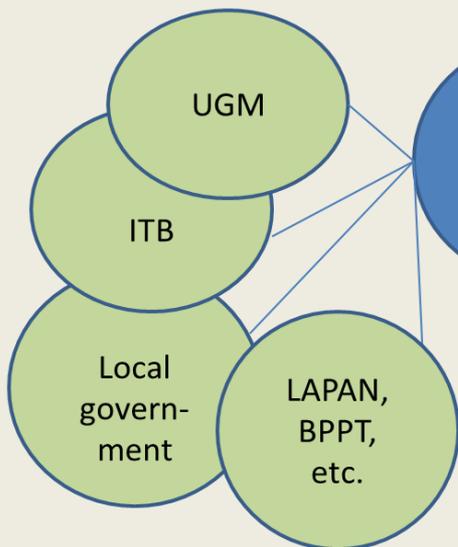
Bundesministerium
für Bildung
und Forschung



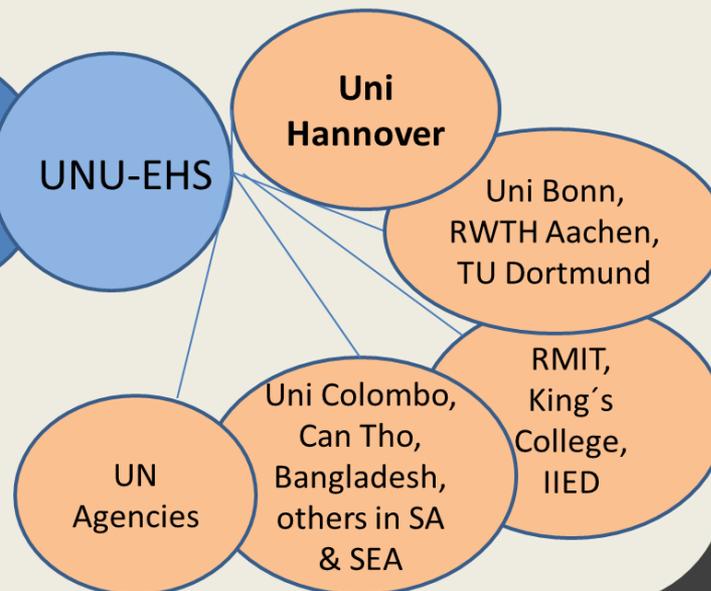


Next Step: Partnership Building

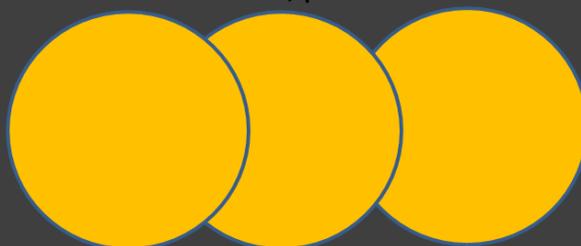
Indonesian research partners
and practitioners



German and International
Partners



Business/private



Integration of major
questions and topics
identified in LIPI
research strategy

Concept note of joint
education program &
exchange program

E-learning platform

Specific joint research
activities within WGs

LIPI AND UNU EHS COLLABORATION



- **LIPI and UNU EHS has been developed collaboration since 2007 with project on early warning systems in some areas of Indonesia.**
- **In 2012, LIPI and UNU EHS have signed a MoU with main objective to develop further cooperation based on mutual interest each other especially in the field of human security to natural hazards and climate change.**

First Twin Sea Workshop in 2014, succeed to establish three working groups.

- WG 1: ecosystem services
- WG 2: socio-economic vulnerability
- WG 3: e-learning on DRR and CCA

ESTABLISHED ACTIVITIES UNDER THE COLLABORATION



- A senior researcher from UNU-EHS, has been started to settled in Jakarta since August 2013 for a 2 year period to catalyze the institutional cooperation with between LIPI and UNU EHS.
- Starting from February 2014, one PhD researcher from LIPI has been started to conduct focusing on adaptation to climate change and dynamic vulnerability in coastal Jakarta funded by TWIN SEA Project
- A senior researcher from LIPI stayed for 1,5 months in UNU EHS, Bonn, Germany as a visiting scientist with various scientific activities including joined international workshop in Rotterdam, supported by TWIN SEA Project
- Developing join proposal for research on vulnerability and risk in Indonesia

FURTHER ACTIVITIES



Capacity building
(program degree)

- PhD
- Master

Capacity building
(non degree)

- Visiting scientist
- Joint publication
- Science policy platform

Partnership
program

- Joint proposal development
- Joint research activities
- Joint workshop

LIPI'S RESEARCH ORIENTATION ON CLIMATE CHANGE AND DISASTER



•LIPI has high commitment to contribute scientific researches related to climate change and disaster issues such as:

- Midterm strategic orientation focuses on climate change and disaster issues.
- National Priority program 9 (PN 9) of climate change has been produced several important findings on climate change adaptation and understanding on climate change in Indonesia.
- Competitive Research of climate change has been also served update scientific finding to support decision makers in Indonesia.

•Scientific publications and policies brief has been produced and disseminated to related institutions and agencies as well public.

LIPI'S CONTRIBUTION TO COLLABORATION



- LIPI, as a strategic research institute in Indonesia potentially become hub of the expert networking among Indonesian, European and Southeast Asia scholars.
- Scientific findings on related issues with multidiscipline of researchers could be able support further development of networking

Thank you