

Joint workshop on “The current situation and challenges concerning the development of research environments for advanced research equipment between ASEAN countries and Japan”

The current status of research infrastructure in Indonesia
ELSA (Electronic Science Service):
MANAGING RESEARCH INFRASTRUCTURES

Friday, 24th February 2023

Dr. Tjahjo PRANOTO
Acting Chairman Director of Laboratory Management,
Research Facilities, and Science and Technology Park
National Research and Innovation Agency (BRIN)

OUTLINE

1. (WHO) *National Research and Innovation Agency (BRIN):
Integration of Govt. Research Institutions, BRIN as the only one Govt. Research
Institution in Indonesia*
 - (HOW MANY) *Researcher, Research Facilities*
 - (WHAT) *The Policy and Strategy*
2. (HOW TO) **Managing Research Facilities**
 - (WHAT IS THE CONCEPT) *BRIN's Open Platform*
 - (WHAT IS THE INSTRUMENT) *ELSA*

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BRIN is a governmental body directly under President

10.000 Researcher

Not under coordination of any ministries / coordinating ministries.

- Integrating all (human, infrastructure, budget) resources of 48 governmental research organizations across ministries and institutes.
- Covering all research fields.
- BRIN is responsible for national STI policy and executing agency of research.



BRIN → MORT + 4 GRI + 44 Ministerial RI



BRIN is mandated to overcome drastically low critical mass of research resources in Indonesia to:

- Improve research capacity and competences, in particular in term of research infrastructures.
- Attract the young talents on research to join and to contribute in any research activities in Indonesia.
- Support global engagement and collaboration → speed up knowledge and skill transfer through research collaborations.
- Enable government as a facilitator / enabler for local business players to conduct R&D based product development with relatively low investment.

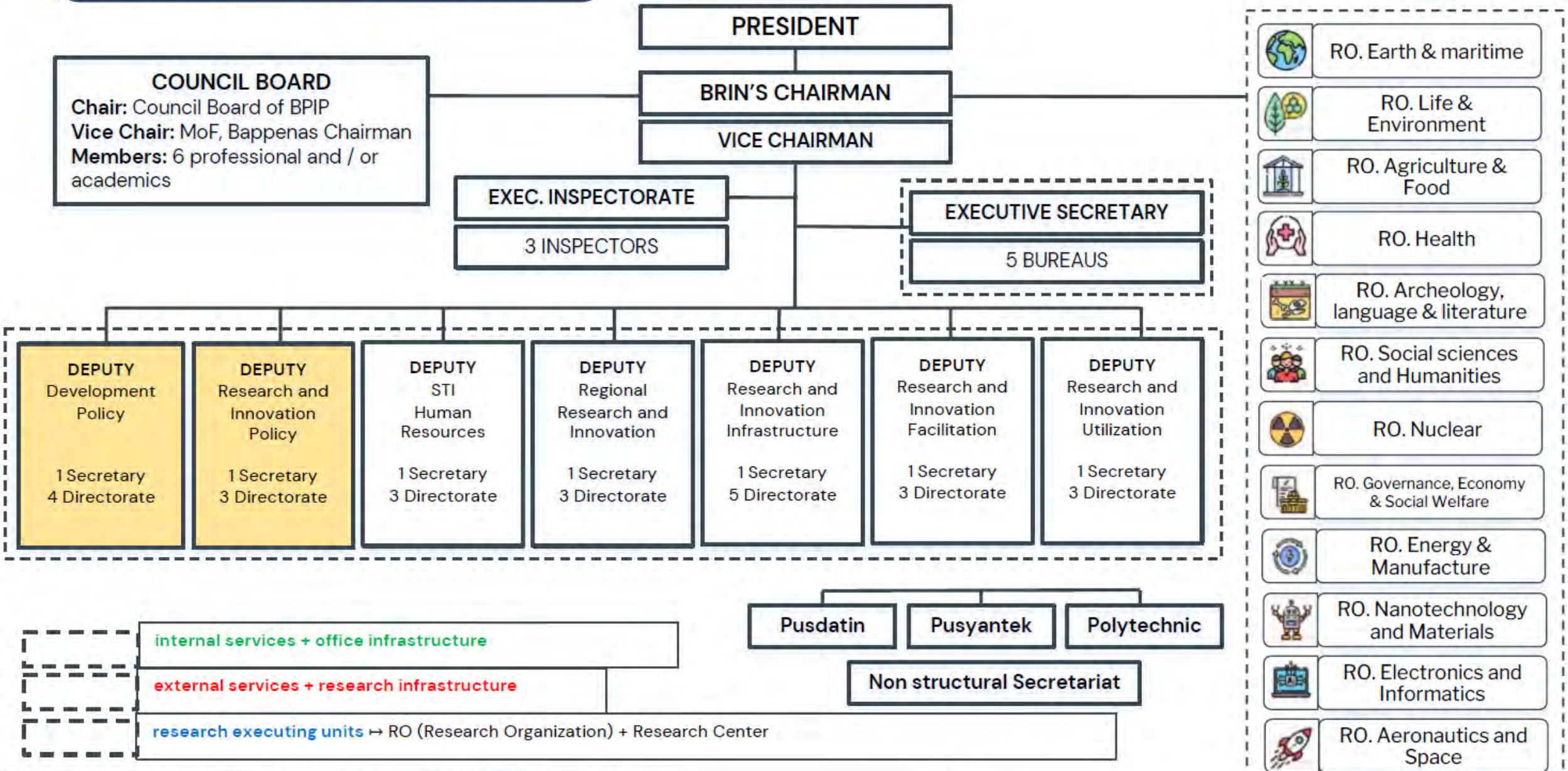
Constitution 11/2019 about National System for S&T

Constitution 21/2013 about Space

Constitution 25/2004 about National Development Planning System

Constitution 10/1997 about Nuclear

BRIN's Organization



Source: Presidential Decree 78/2021 about BRIN, Peraturan BRIN 1/2021 about BRIN's Organization

RESEARCH INFRASTRUCTURE (LIFE SCIENCE): SCIENCE TECHNOLOGY PARK: CIBINONG

CHEMICAL CHARACTERISATION



BIOREACTOR LABORATORY



MOLECULAR CHARACTERISATION



RT-PCR ABI



CELL AND STEMCELL LABORATORIUM



RESEARCH INFRASTRUCTURE (LIFE SCIENCE): SCIENCE TECHNOLOGY PARK: CIBINONG

PROTEIN CHARACTERISATION



MOLECULAR CHARACTERISATION : SEQUENCING

DATABASE

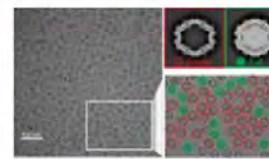
HIGH PERFORMANCE COMPUTER

.....CryoEM Laboratory

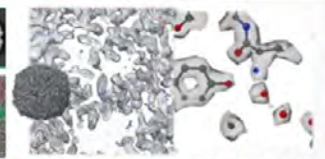


CryoEM Workflow For Translational Science

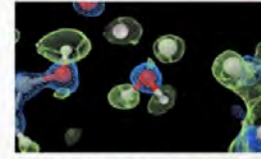
Thermo Fisher SCIENTIFIC



DRUG DELIVERY
LIPID NANOP, VIRAL VECTOR



SCREENING - INITIAL MODEL
EPI TOPE MAPPING, SIDE CHAINS



ATOMIC RESOLUTION
DRUG DISCOVERY, INTERACTION



HIGH RES CELL BIOLOGY
INSITU STRUCTURAL BIOLOGY



Strength of Structure Technology

STATIC & DYNAMICS

Failure Analysis



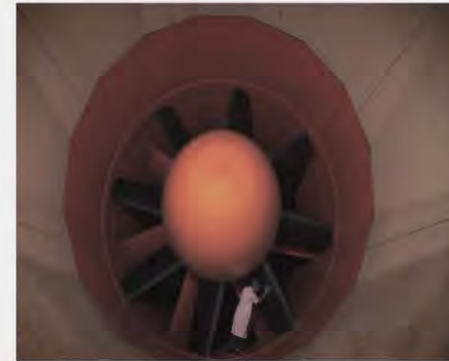
Fuel Technology



Irradiation



Aerodynamics



Direct Ra
DIGITAL DE
Computed
HR-CR-35-N

- Xray Mac
- NOVA au
- GE Film D
- Darkroom
- Ultrasoni
- Magneti

Indonesian Low Speed Tunnel (ILST)
Terowongan pengujian pesawat. Kecepatan maksimum pada seksi uji dalam keadaan kosong adalah 110 m/s. Suplai udara bertekanan 60 bar yang dipakai untuk pengujian power-on. Fasilitas ground board untuk simulasi take-off dan landing.

RESEARCH INFRASTRUCTURE: MARINE, BIODIVERSITY, GOOD LAB./MAN. PRACTICE



BRIN'S MARINE STATIONS

OPEN RESEARCH INFRASTRUCTURE WITH NATIONAL AND INTERNATIONAL STANDARDS
(Good Laboratory Practice/GLP, Good Manufacturing Practice/GMP)



Cibinong Science and Technology Park



Integrated Modern Technology Laboratory



The Center of Biodiversity and Intellectual Property (2020-2022)



Traditional Food Processing with GMP and Halal standards



National Integrated Center for Genomic, Tropical Biodiversity and Environment

1. Ambon: Research Center for Deep Sea
2. Lombok: Center for Marine and Terrestrial Bioindustry



BOTANICAL GARDENS



Surabaya



Jagathnata, Jembrana



Lampung Barat



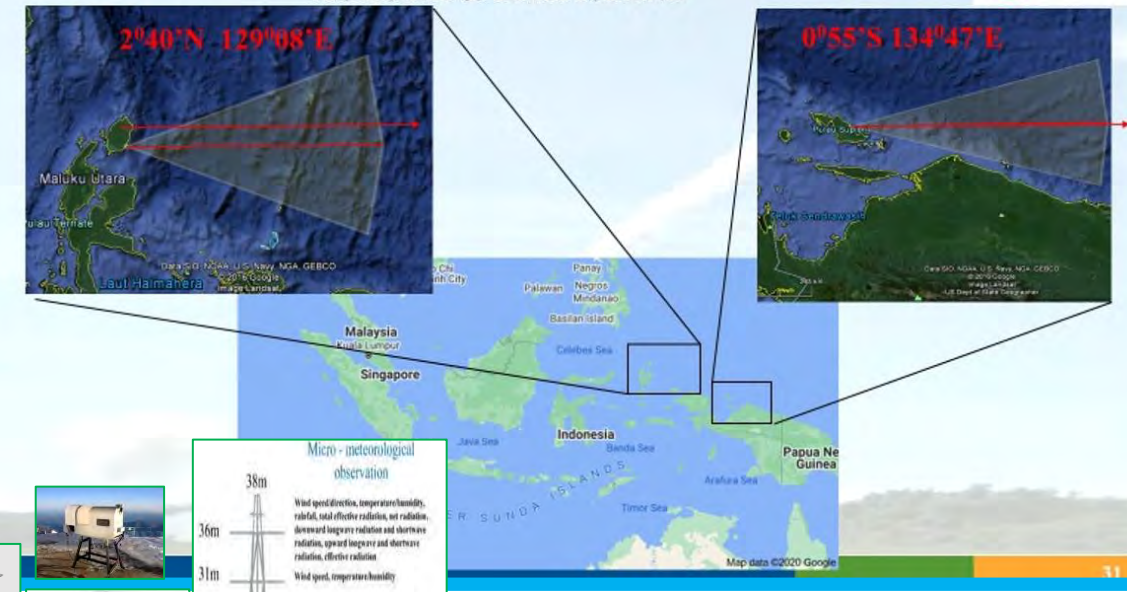
Lemor, Lombok Timur

NATIONAL FACILITIES

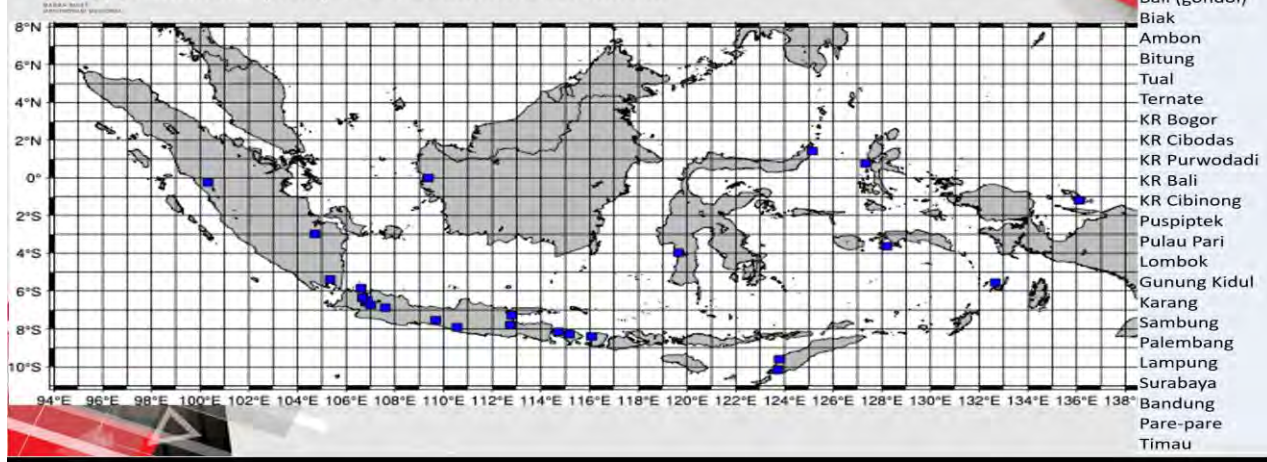
- Microsatellite development & operation
- Remote sensing satellite application



POTENTIAL LOCATION FOR INTERNATIONAL SPAEPORT : MOROTAI & BIAK ISLAND




Field Stations: Research on Climate Change in the Indonesian Maritime Continent (IMC) -> 25 Location Distribution



3 Directions and 7 Targets

Directions



Integrating research and innovation (human, infrastructure, budget) resources 1

To improve critical mass, the capacity and competence of Indonesian research in producing inventions and innovations as the foundations of Indonesia Maju 2045.



Creating an open (inclusive) and collaborative "global standard" research ecosystem 2


For all parties (academia, industry, community, government).




Creating the foundation of a strong and sustained research and innovation based economy 3

With focus on sustainable digital - green - blue economy.

Targets




Integrating major governmental research institutions by January 1st, 2022. 1




Transforming business process and research management to increase the critical mass of research and innovation (human, infrastructure, budget) resources. 1



Refocusing the research program to increase the value added of local natural resources and (bio, geo, art and culture) diversity. 1




Making Indonesia as a global platform for natural resources and diversities based research. 2



Facilitating and being the enabler for national industries and business players to conduct R&D based product development. 2



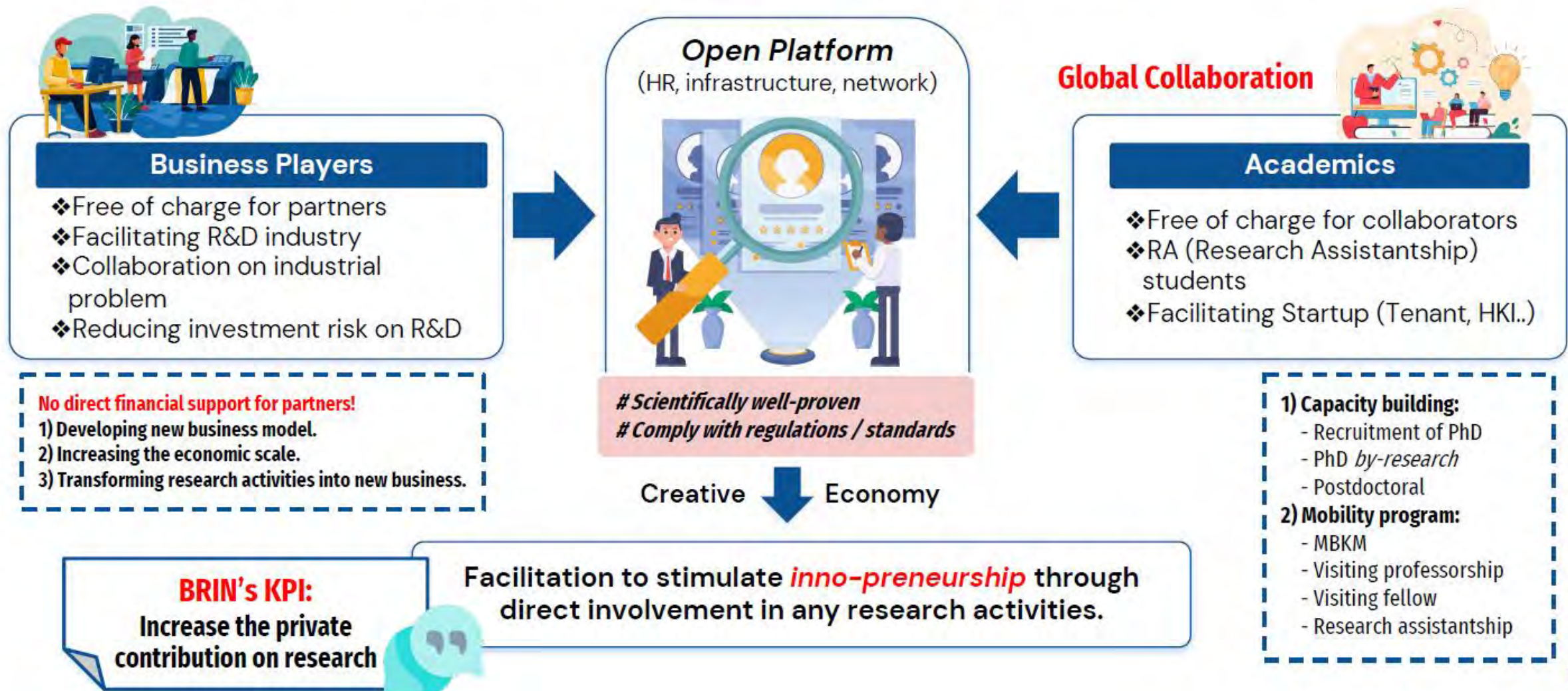
Providing a platform for talented human resources in any research fields, and research and innovation based entrepreneurs. 2



Increasing direct economical impact from any research activities, and turning the research and innovation sector into a long term investment destination. 2

IMPROVING RESEARCH and INNOVATION ECOSYSTEM: Implementation, outcomes, and future plans

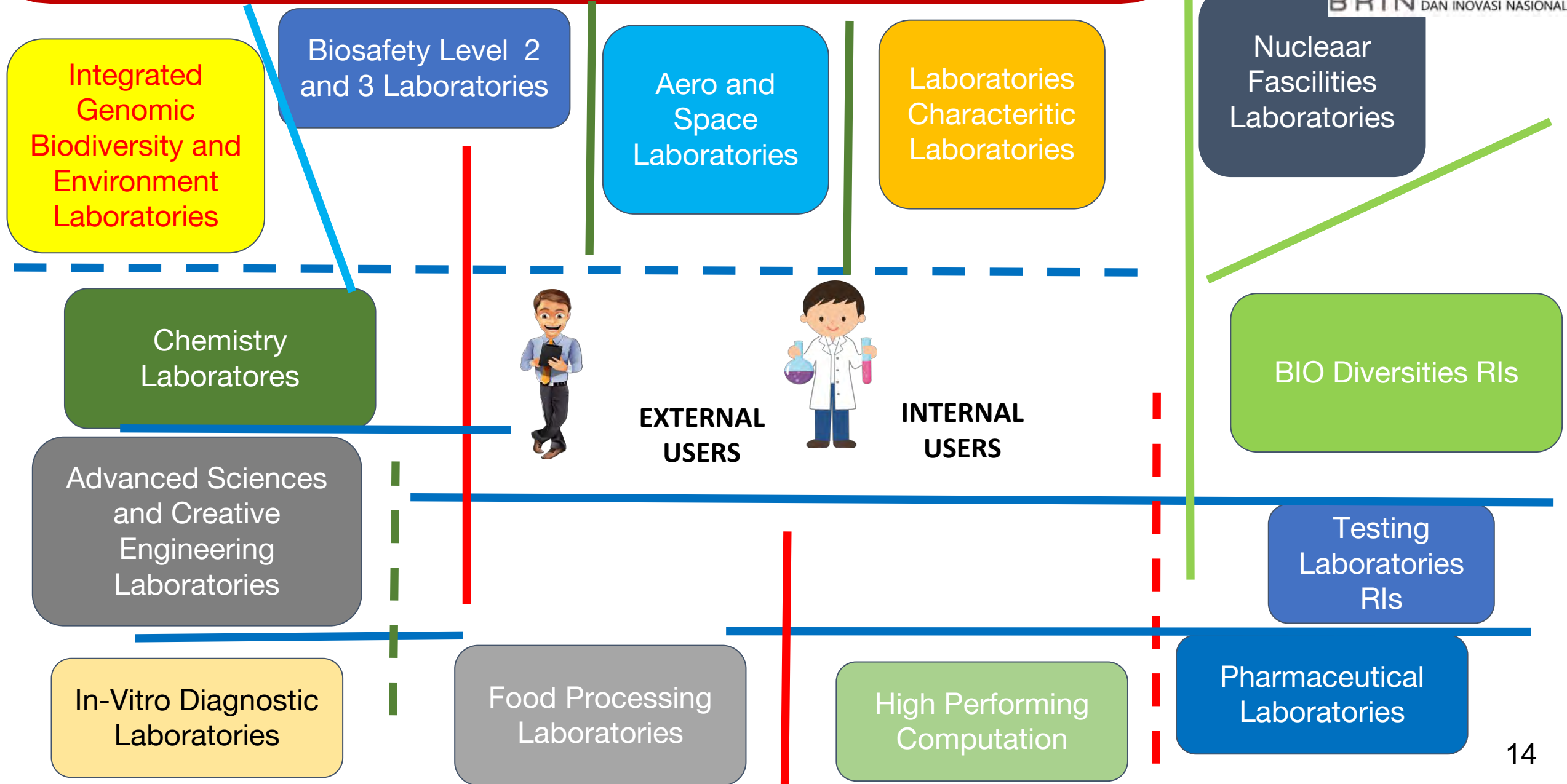
BRIN is the ultimate solution for low *critical mass*, creating the *collaboration hub + enabler* for multi local and global stakeholders, in particular local industries to enter R&D based product developments.



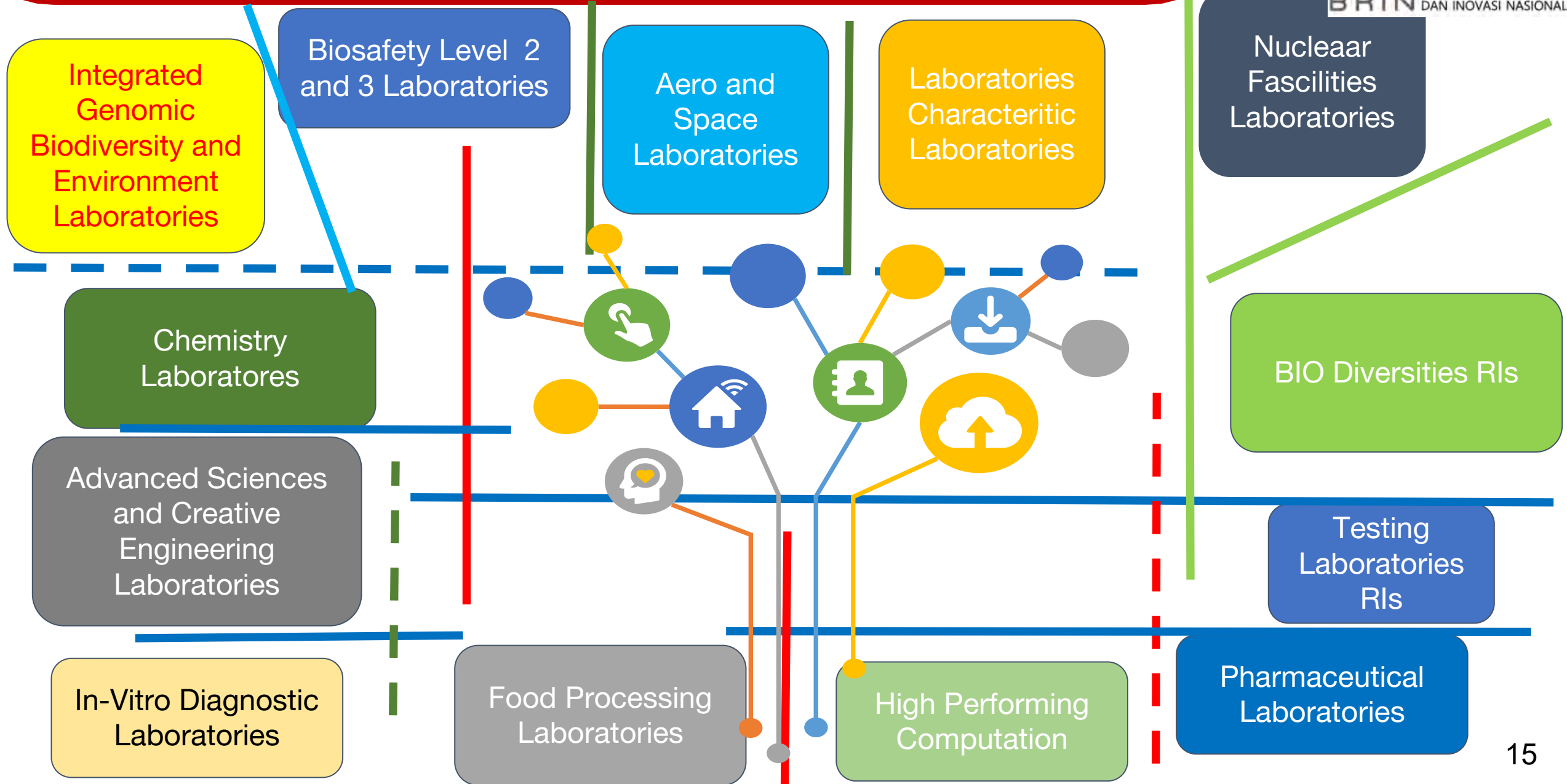
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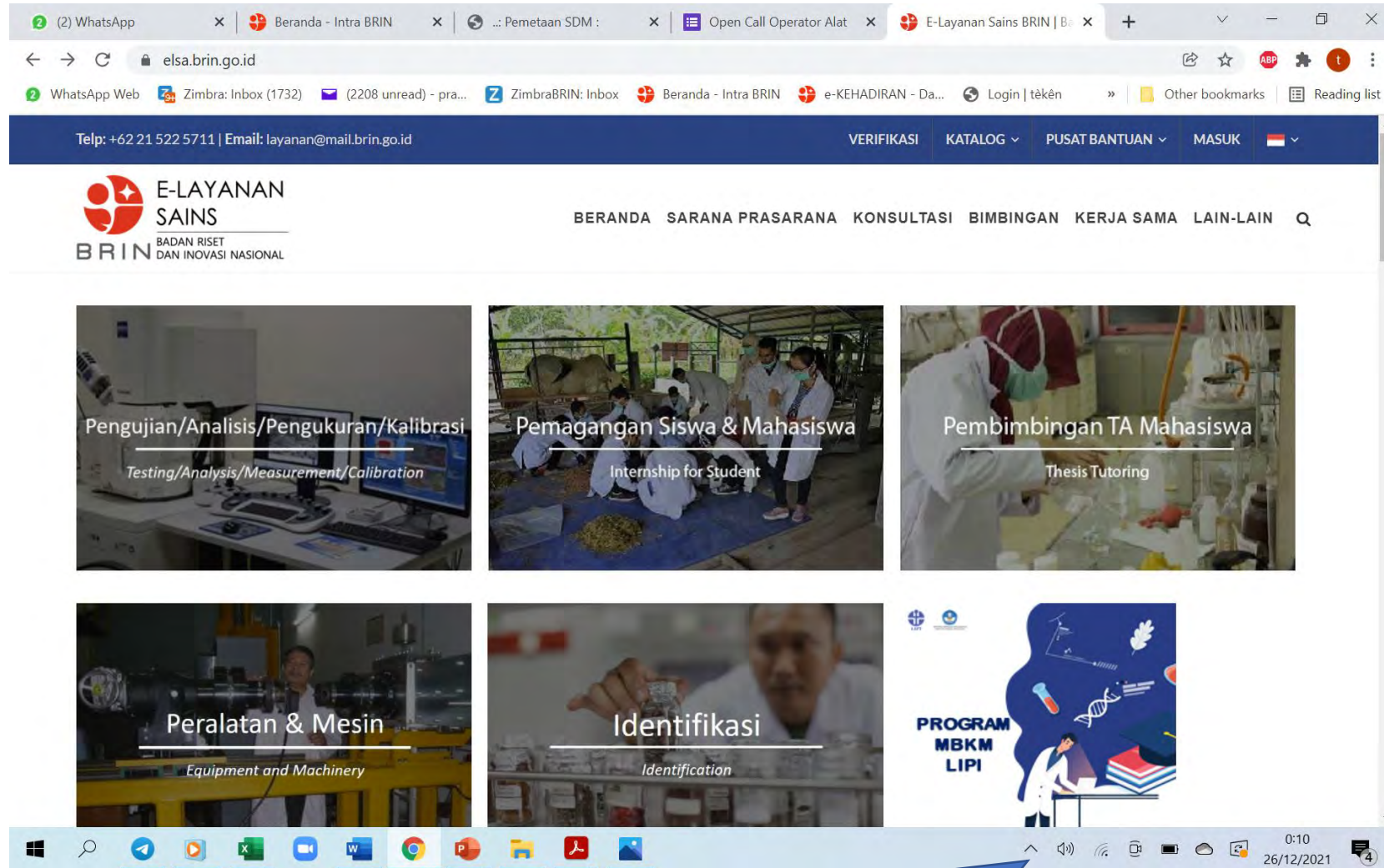
(BEFORE) CLOSED - PLATFORM RESEARCH INFRASTRUCTURES



(PRESENT/CURRENT STATUS) ...IS OPEN- PLATFORM...! OF RESEARCH INFRASTRUCTURES



Electronic Science Service (ELSA): INTEGRATED RIS SERVICES



The screenshot shows the ELSA website interface. At the top, there is a navigation bar with the following items: VERIFIKASI, KATALOG, PUSAT BANTUAN, and MASUK. Below this is the main header with the E-LAYANAN SAINS logo and the text "BADAN RISET DAN INOVASI NASIONAL". The main content area features a grid of six service categories, each with a representative image and text: "Pengujian/Analisis/Pengukuran/Kalibrasi" (Testing/Analysis/Measurement/Calibration), "Pemagangan Siswa & Mahasiswa" (Internship for Student), "Pembimbingan TA Mahasiswa" (Thesis Tutoring), "Peralatan & Mesin" (Equipment and Machinery), "Identifikasi" (Identification), and "PROGRAM MBKM LIPI". The bottom of the screenshot shows a Windows taskbar with various application icons and a system tray with the date 26/12/2021 and time 0:10.

One Stop Station

Web-based System

Online Tracking

Elsa Poin

<https://elsa.brin.go.id/>

Electronic Science Service (ELSA): INTEGRATED RIs SERVICES



Cari Lebih Detail Pilih Lokasi Pilih Satuan Kerja Urutkan Cari

MANAGING SERVICES:

1. WHAT SERVICES/SPECIFICATION ?

2. HOW MUCH THE SERVICE COST?

3. HOW LONG IN THE QUEUE

4. HOW TO ACCESS?

5. WHEN - WHERE-WHO...

LAYANAN TERPOPULER

- JASA ANALISIS - Fourier-Transform...
★★★★★
- JASA ANALISIS Brunauer...
★★★★★
- JASA ANALISIS Difraksi...
★★★★★
- Karakterisasi Lanjut...
★★★★★
- JASA ANALISIS Gas Chromatography-Mass...
★★★★★



JASA ANALISIS Differential Thermal Analysis (DSC) - TGA
Rp. 500.000
Pusat Penelitian Kimia Serpong



Karakterisasi Lanjut CVAAS untuk Pengujian logam merkuri...
Berbayar
Loka Penelitian Teknologi Bersih Bandung



Analisa dengan alat kromatografi gas (Parameter :Pyretroid,...)
Berbayar
Loka Penelitian Teknologi Bersih Bandung

AN TERBARU

- Konsultasi Pakar Jakarta
- Penggunaan climatic... Cibinong
- nanodrop IVD(elsa point) Cibinong
- Minton (elsa point) Cibinong
- Promethion (elsa point) Cibinong



JASA ANALISIS - SEM fotomikrograf



Karakterisasi Lanjut Scanning Electron Microscope (SEM)...



Karakterisasi Lanjut Scanning Electron Microscope (SEM)...

GLOBAL PLATFORM

digital, blue,
green economy



BRIN
BADAN RISET
DAN INOVASI NASIONAL



**INDONESIA
TANGGUH
INDONESIA
TUMBUH**

Thank you

ขอบคุณ

Badan Riset dan Inovasi Nasional
National Research and Innovation Agency



Gedung B.J. Habibie
Jl. M.H. Thamrin 8, Jakarta 10340, Indonesia



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BRIN Indonesia



brin_indonesia



<http://www.brin.go.id>