



STRENGTHENING JAPAN-ASEAN PARTNERSHIP : BPPT'S STI INITIATIVES

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Deputy Chairman

Agency for the Assessment and Application of Technology (BPPT) - Indonesia

The Asean Integration and Regional Collaboration in S&T Symposium
The Soukairo Hall, the National Graduate Institute for Policy Studies
Tokyo, March 5, 2014

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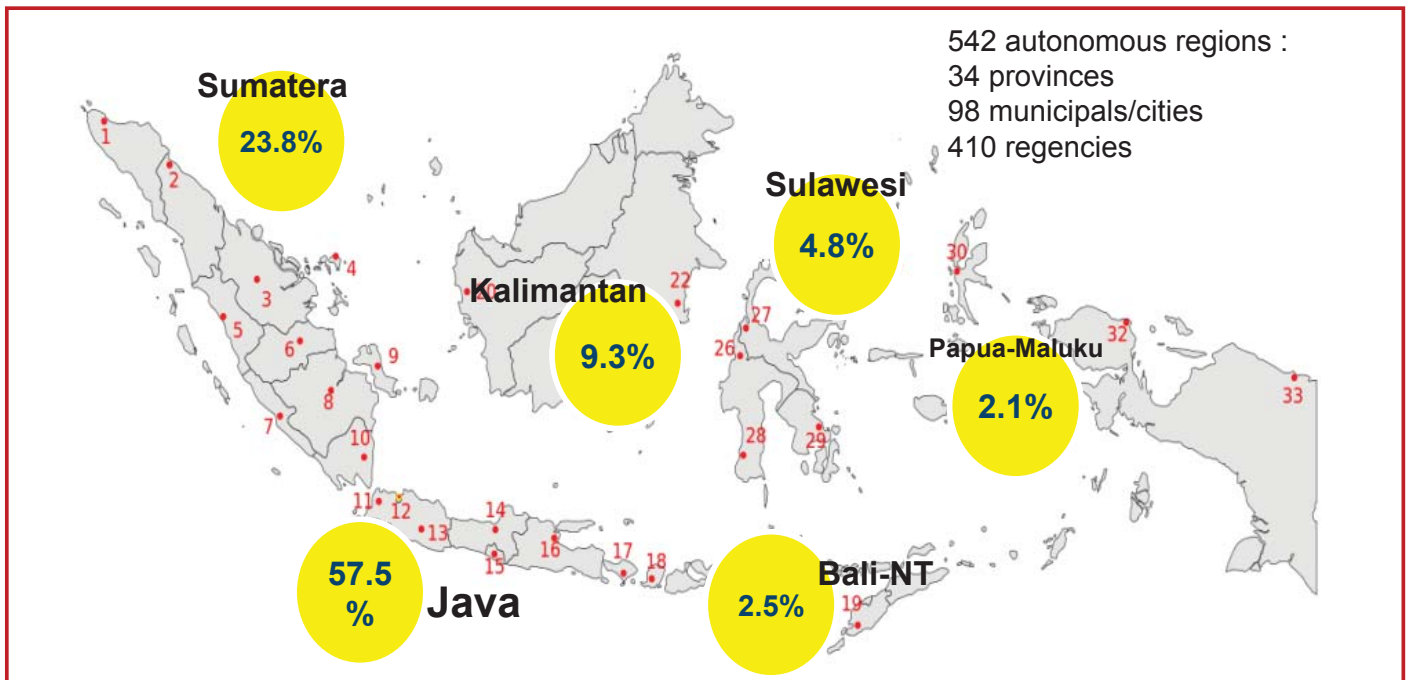
SUMMARY - 1

- Cultural similarities vs. heterogeneities among and within countries
- Needs to develop contextual science, technology and innovation (STI) policies and strategies suitable to their national development agenda
- BPPT : to initiate a generic innovation system strengthening approach as a 'platform' for the national and regional (sub-national) as well as international agenda (project started in 2012, proposed for the next 2015-2019 National Midterm Development Plan).

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AN EXAMPLE OF NATIONAL-REGIONAL CHALLENGES : CONTRIBUTIONS OF THE SIX ECONOMIC CORRIDORS

**THE DOMINATION OF JAVA ISLAND IN SHAPING THE NATIONAL GDP
(BPS, Dec. 2012) ~ US\$ 910 B**



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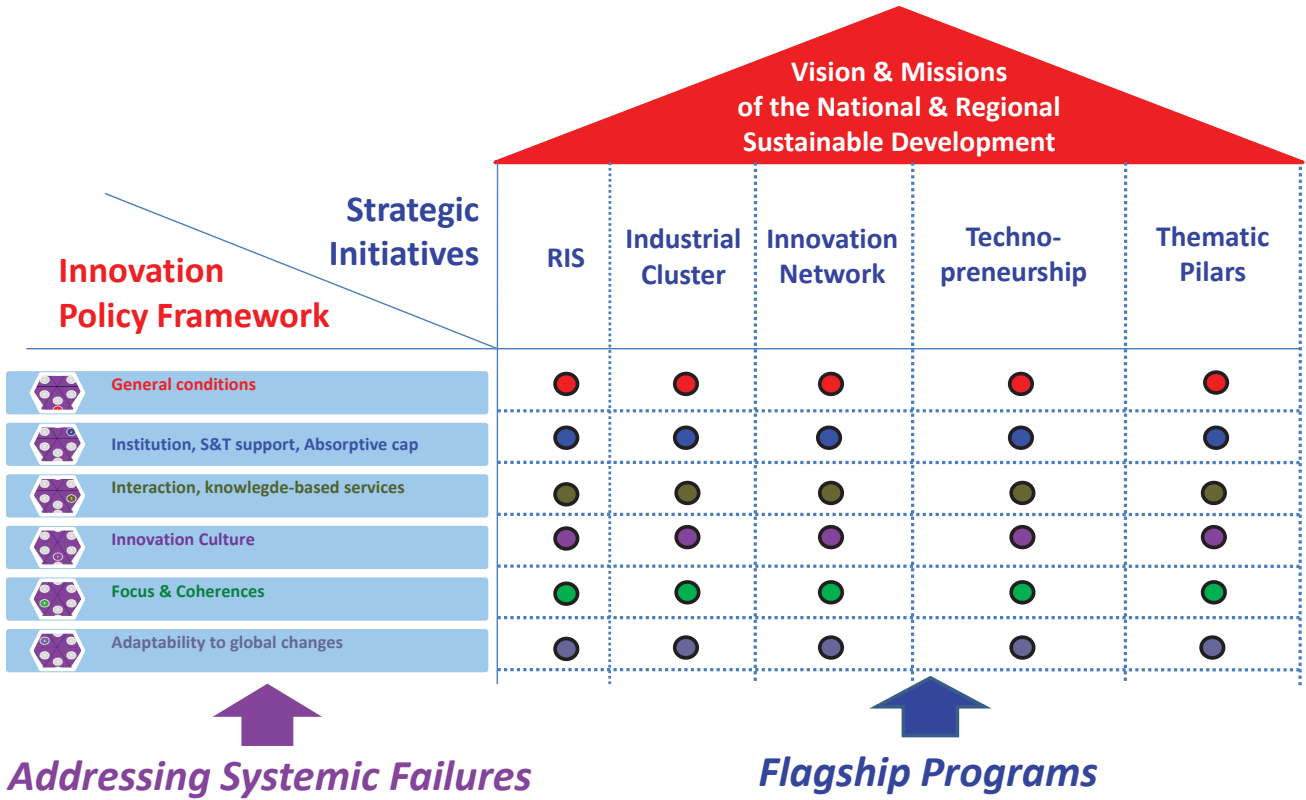
SUMMARY - 2 : STI FLAGSHIP PROGRAMS

Basically, the approach consists of 5 (five) interrelated strategic initiatives proposed as flagship programs, i.e.,

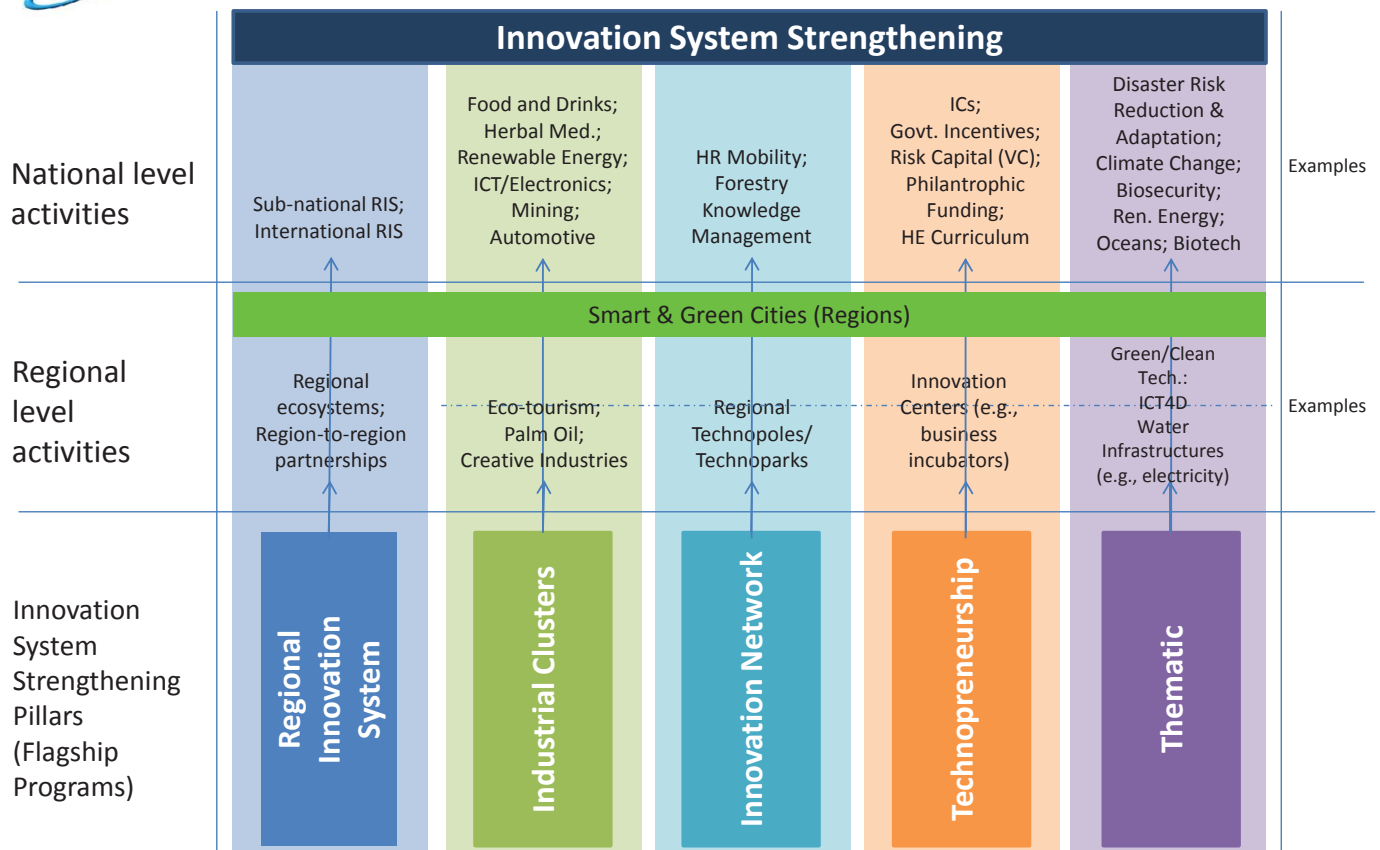
1. **Regional Innovation System Strengthening** : as a vehicle to strengthen pillars for fostering creativity-innovation at regional (sub-national) levels (as an integral part of the National Innovation System);
2. **Industrial Cluster Development** : as a vehicle to develop the best collective industrial potentials and to enhance industrial competitiveness;
3. **Innovation Network Development** : as a vehicle to develop linkages and partnerships among actors, and dynamizing the flow of knowledge, innovation, diffusion, and learning;
4. **Technopreneurship Development** : as a vehicle to foster innovative businesses, and modernize business/economy & society, and to develop innovation culture;
5. **Thematic Development** : as a vehicle to improve the thematic and contextual elements of the innovation system, particularly by fulfilling particular (high prioritized) technological needs.

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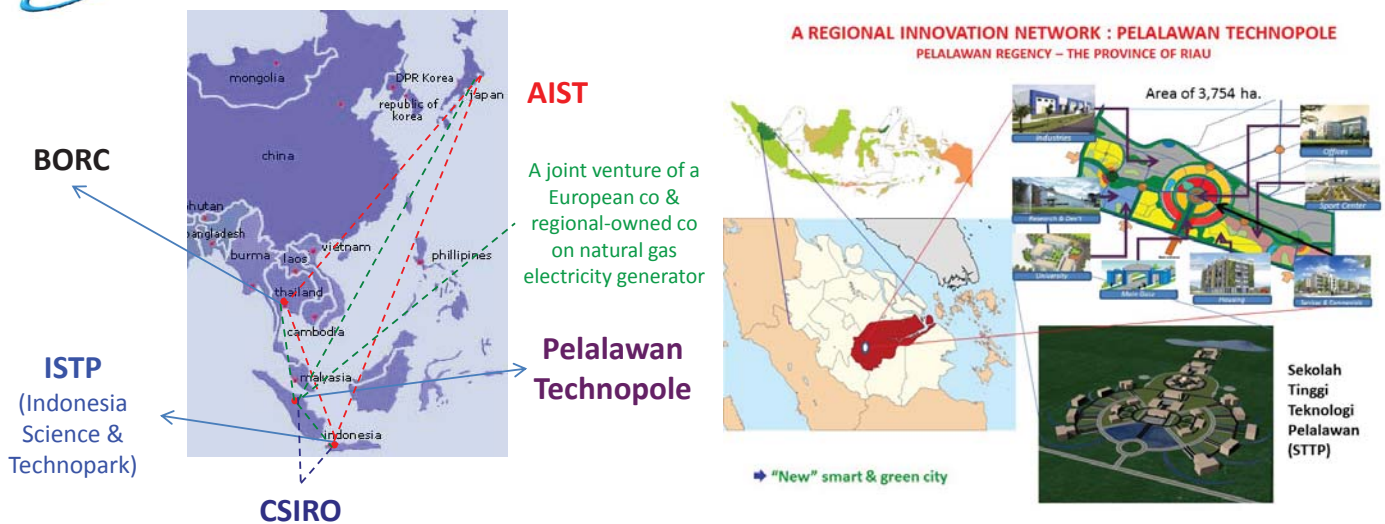
INNOVATION POLICY FRAMEWORK AND STRATEGIC INITIATIVES



SUMMARY - 3 : GENERIC INTERNATIONAL STI PARTNERSHIP FRAMEWORK



AN EXAMPLE FOR OPEN INNOVATION CENTER



- BPPT helps Pelalawan Regency (PR) in improving STI-based regional development plan
- Coordinating Min. for Economy and Min. for R&T endorsed the 'Technopole' initiative
- PR collaborates with UTM – Malaysia
- PR sent 5 students (candidates for a local university lecturers, STTP) for graduate studies under a supervision from an Indonesian professor working at UTM (since 2012)
- 2013 they registered 3 patents on palm oil process technology
- 2014 STTP plans to start its academic activities
- Initial field works on an integrated palm oil – cattlestock program started with CSIRO.

SUMMARY - 4 : IMPORTANT AREAS FOR COLLABORATIONS

- To have better impacts from Japan-ASEAN STI partnerships on development, it is necessary to focus and work in a longer term on
 1. Improving generic systemic failures
 2. "Basic need" STI areas
 3. Particular STI areas to strengthen complementary competences of countries involved
- Ref. 1 : regulatory-related issues, higher education, funding, etc.
- Ref. 2 : STI areas that are extremely important for improving inclusiveness in many ASEAN countries, e.g, renewable energy, clean water, waste management/technology, functional foods, health, etc.
- Ref. 3 : heavily depends on each country's STI strategies.

- 1. HR exchange ~ Technical experts from more advanced countries needed** : sustainable regional development; technopreneurship; business incubators; innovation funding; creative industries; renewable energy; functional foods; health development & management; ICT; disaster management & technology; advanced material engineering
- 2. Area of importance for HR to be sent abroad are** : innovation (STI) policies; technical knowledge such as renewable energy; environmental engineering; biomedical engineering; disaster management & technology; advanced material engineering
- 3. Collaborative projects** : 'basic need technological projects'; technopark/technopole or open innovation centers; technology transfer; SME development; innovative funding



Gerakan Membangun Sistem Inovasi, Daya Saing dan Kohesi Sosial di seluruh Wilayah Nusantara
(National movement to develop innovation system, competitiveness, and social cohesion through out the Country)

... in harmony we progress ...

Arigatou gozaimasu

Thank You

Dr. Tatang A. Taufik
Deputy Chairman

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INTRODUCTION : ASEAN & INDONESIA

BPPT'S APPROACH IN PROMOTING KNOWLEDGE-BASED DEVELOPMENT

PROMOTING REGIONAL INNOVATION & OPEN INNOVATION RESEARCH CENTERS : A MODEL FOR RENEWABLE ENERGY

REMARKS

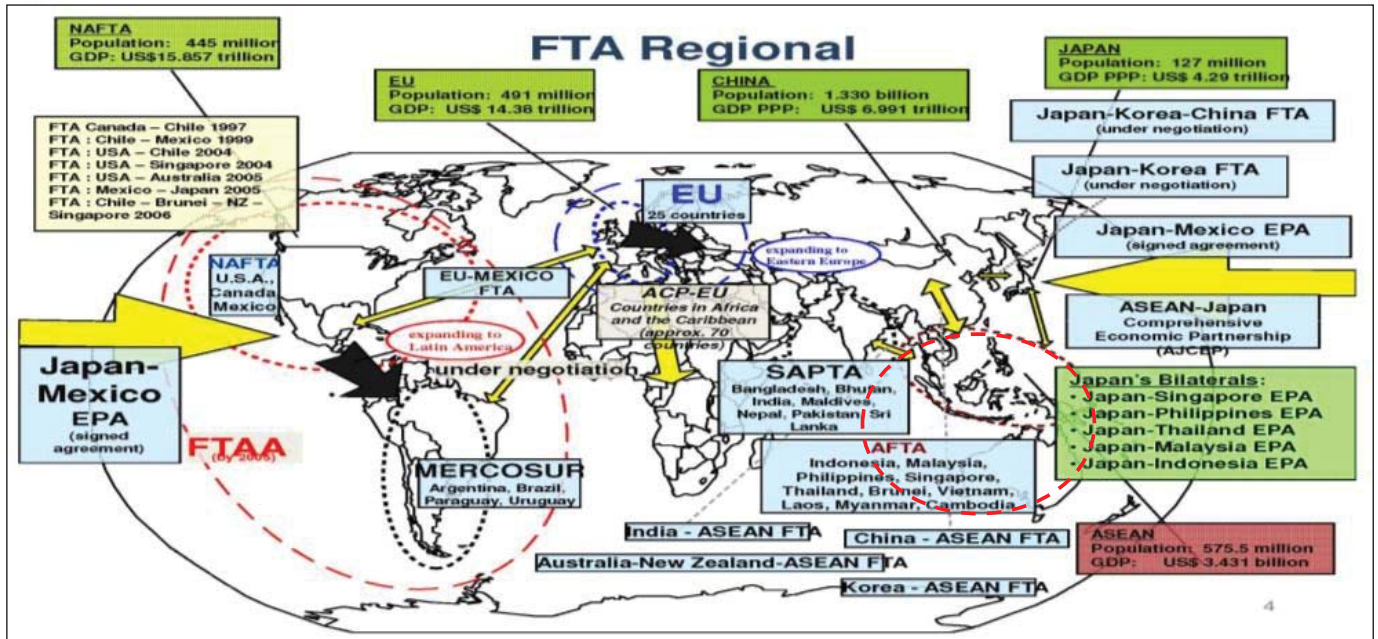
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ECONOMIC PARTNERSHIPS TOWARDS A GLOBAL ECONOMIC INTEGRATION



Regulating Governance Institutions, e.g.,

1. UN
2. WTO
3. WCO
4. ISO

Supporting Government Institutions, e.g.,

1. World Bank
2. IMF

Private Cooperation Institutions, e.g.,

1. ICC
2. ITC
3. CODEX

The Characteristic of International Economic Cooperation:

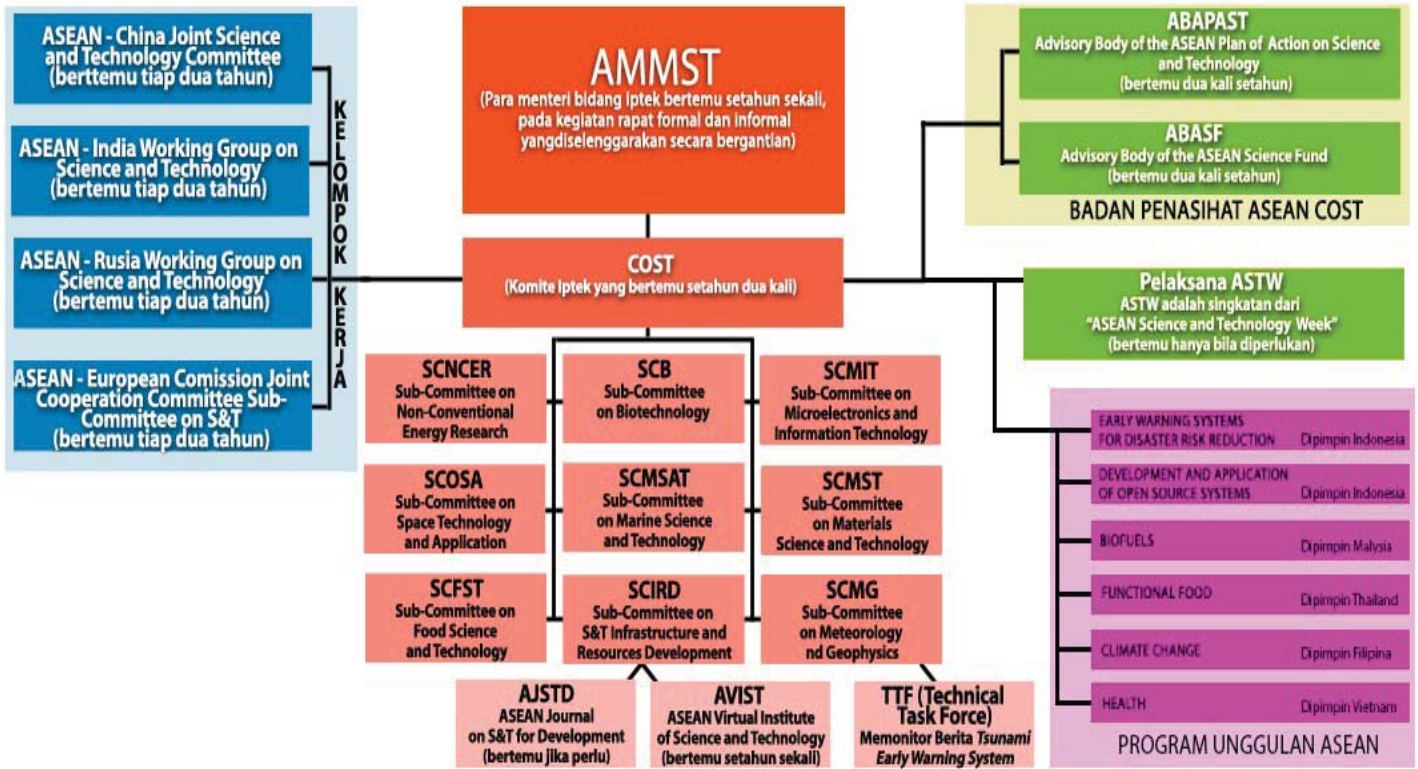
1. Market Expansion/FTA
2. Market Block
3. Economy Potential Exchange

ASEAN COUNTRIES STRATEGIES: TO PROMOTE ECONOMIES, NOT PROTECTION

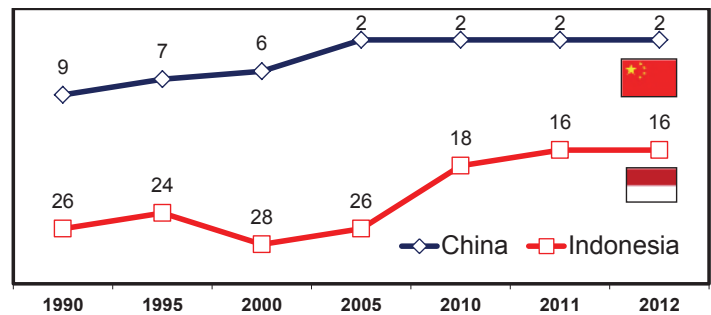
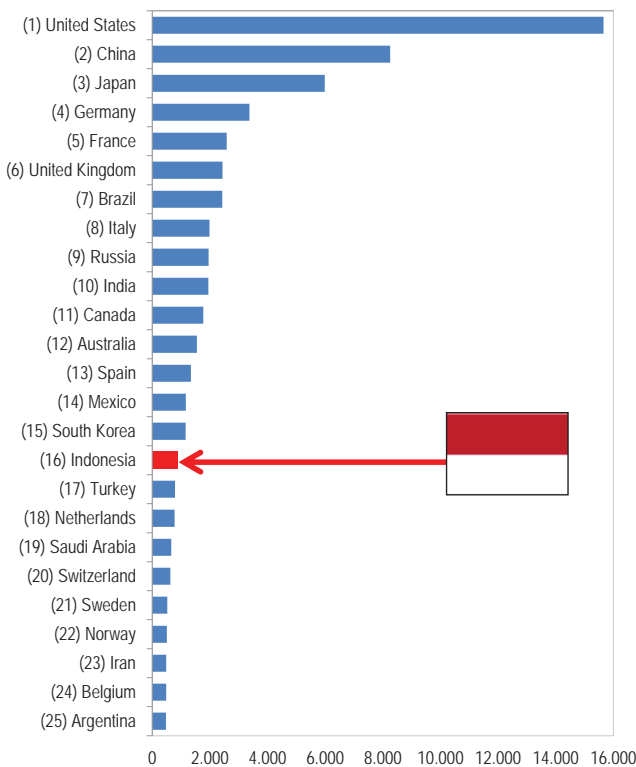
A S E A N	Malaysia	<ul style="list-style-type: none"> ◆ Progressive liberalization ◆ FDI liberalization process ◆ Enhancing FTA ◆ Learning from foreign best practices: <i>Adopt Quality Standards for Goods and Services and Convert Existing Malaysian Standards into International Standards</i>
	Thailand	<ul style="list-style-type: none"> ◆ Promotion agencies . ◆ Enhancing Economic Development Zone – Export Processing ◆ Implementing FTA to reduce trade barriers
	Singapore	<ul style="list-style-type: none"> ◆ Developing Technology Economic Development Zone, remove entry barriers. ◆ Enhancing Services in all business cycles ◆ Trying to remove discriminatory in pre-investment conditions in all sectors
	Philippines	<ul style="list-style-type: none"> ◆ Investment facilitation (more transparent, consistent and predictable investment rules, regulations, policies, and procedures). ◆ Promote the growth and development of SMEs and MNEs . ◆ Introduce a new Custom and Tariff Modernization Act to comply with the Revised Kyoto Convention (RKC) ◆ Reduce Regulatory Bottlenecks, Entry Barriers and Discriminatory Provisions to Investment
	Vietnam	<ul style="list-style-type: none"> ◆ Promote joint investment missions that focus on regional clusters and production networks. ◆ FDI liberalization process ◆ Enhancing step-up efforts to simplify the way of doing business, to comply with international business best practices and to increase investors' confidence

INDONESIA: The direction is being discussed on the strategy of each sector in facing the ASEAN Economic Community 2015. The Masterplan of Acceleration and Expansion of Economic Development of Indonesian, or known as MP3EI is a strategy to face the global economy dynamics including the ASEAN Economic Community 2015. Therefore Enhancing Global Competitiveness Programs for HR, Entrepreneurial, and Goods and Services Products intended also to face ASEAN Economic Community 2015

S&T IN ASEAN : AMMST AND ASEAN COST (1978)



CURRENT ECONOMIC SITUATION (2012)



- ❑ In 2005, Indonesia was in 26th ranking. The success of Indonesia's economic development has brought Indonesia into G-20.
- ❑ Recent survey of JIBC stated that Indonesia is the country with the most medium term potential for the industrial actors in Japan
- ❑ McKinsey & Company, in "The Archipelago Economy: Unleashing Indonesia's potentials," said Indonesia will ranks 7th in the world in 2030. The requirements to reach that rank: 1) the rapid increase in labor productivity, 2) the improvement of the quality of the economic growth, and 3) the improvement of the rapid increase management of the middle class consumer population (the efficiency of logistic systems, etc..).

**Indonesia: from 50th* ranking (2012-2013)
→ to 38th ranking (2013-2014)**



Source: WEF

* from 148 countries

INDONESIA ON SCIENCE, TECHNOLOGI AND INNOVATON : TOWARDS ASEAN INTEGRATION

1. Accelerating Indonesia STI “readiness” to deal with greater challenges and opportunities of ASEAN Economic Community, and to escape from middle income trap threat
 2. Fostering strategic complementary STI partnerships within ASEAN members and ASEAN – other countries
 3. Strengthening particular STI excellence supported by best indigenous national and regional/local unique potentials.
- Q : common strategic STI framework?

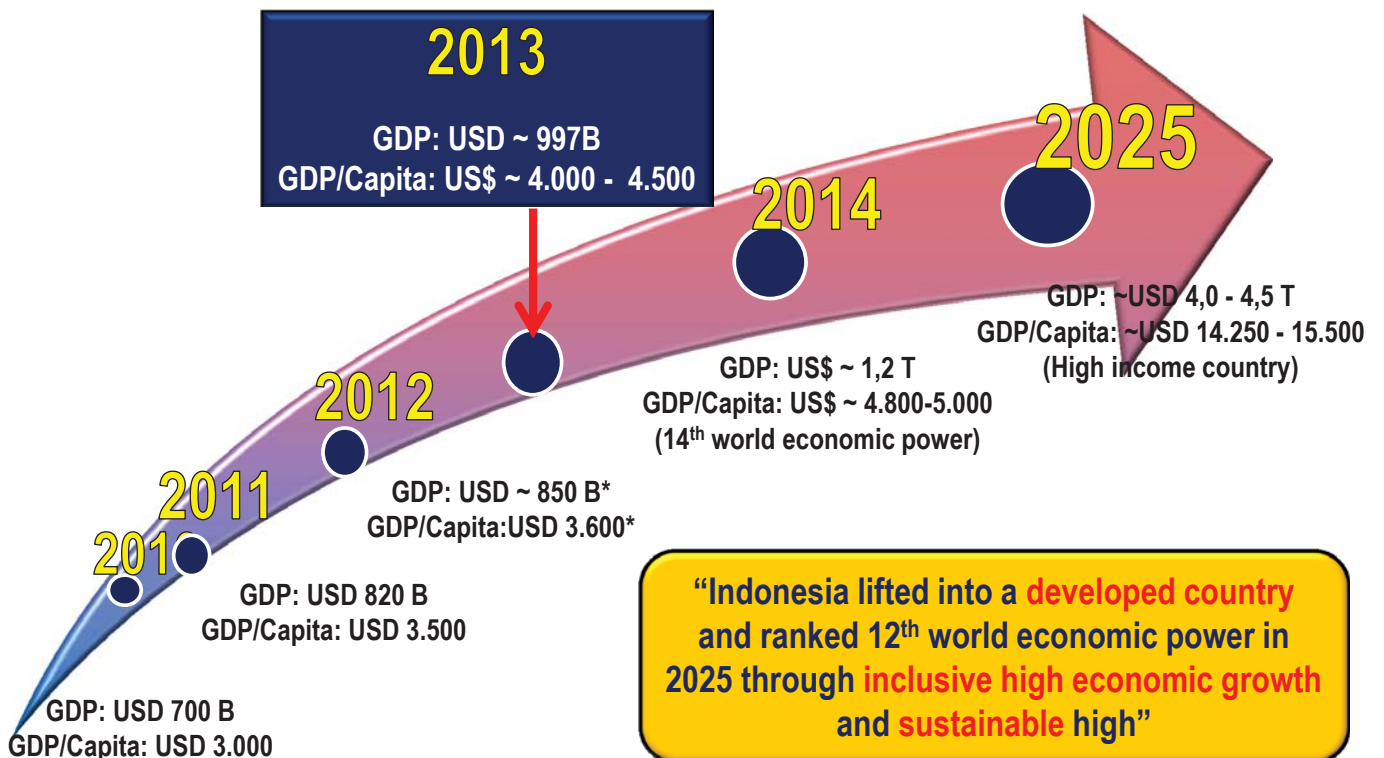
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2025 VISION: INDONESIA BECOMES A DEVELOPED COUNTRY



* Source : MP3EI

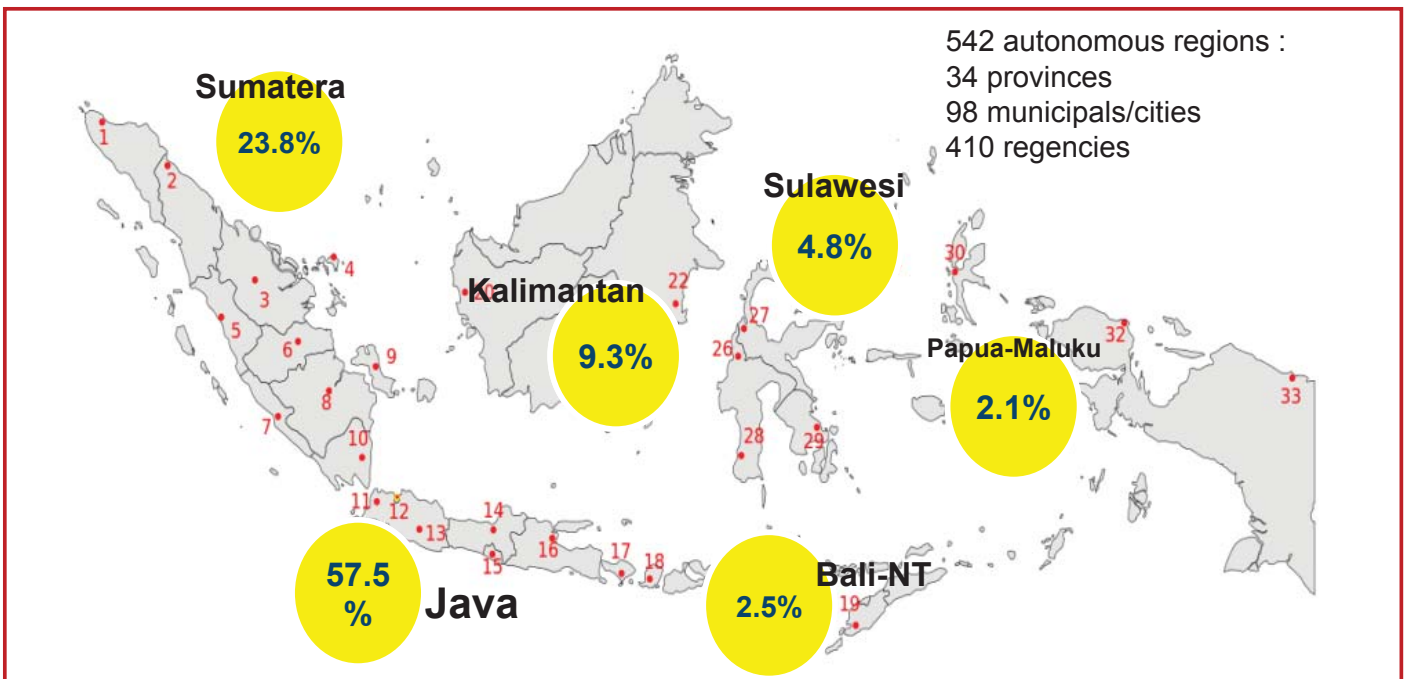
MP3EI - NATIONAL ECONOMY SECURITY DEVELOPMENT GUIDANCE



* Source : MP3EI

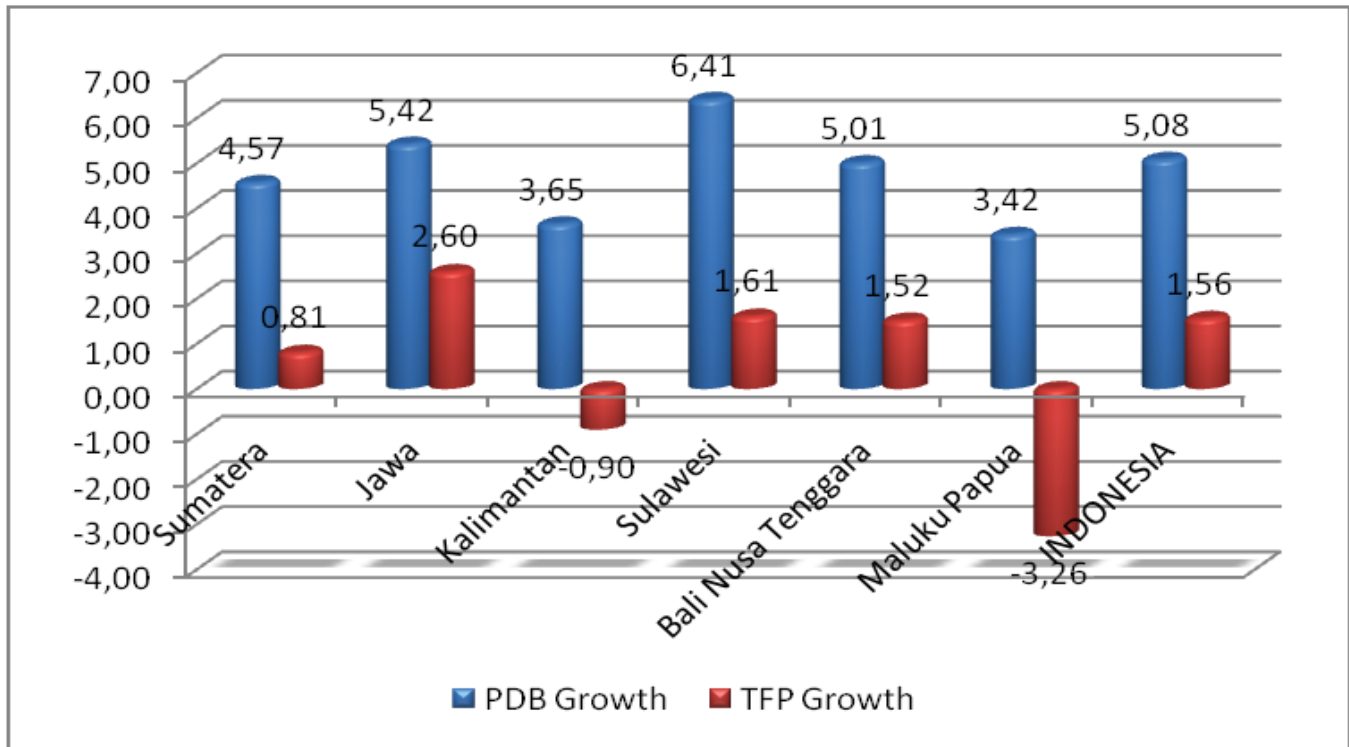
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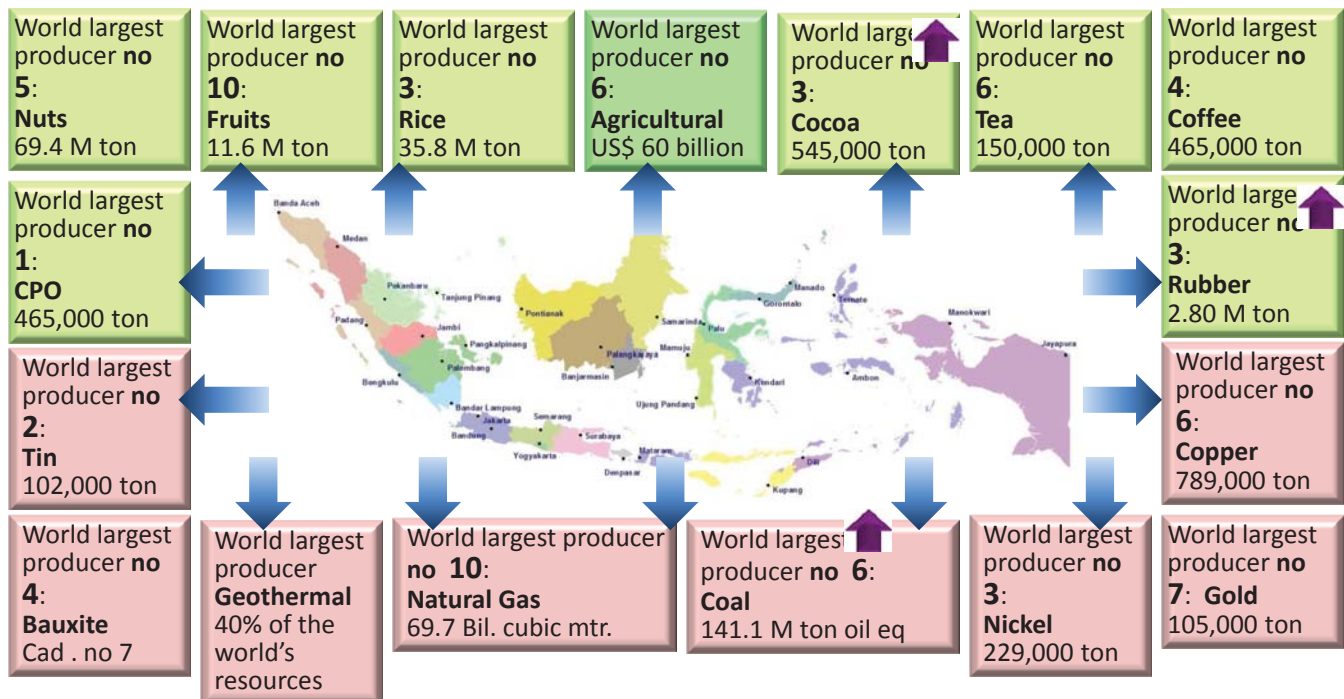


PROVINCIAL TFP GROWTHS 2002 - 2010 (INDONESIA AND ECONOMIC CORRIDORS)

AVERAGE 2002-2010:



NATURAL RESOURCE-BASED PRODUCTIONS ~ LOW VALUE ADDED PRODUCTS



Source : Indonesia Engineer Association, 2011

EDUCATION BASED WORKING POPULATION

Highest Education Attained	2011		2012		2013
	February	August	February	August	February
	(1)	(2)	(3)	(4)	(5)
Elementary School and below	55.12	54.18	55.51	53.88	54.62
Middle School	21.22	20.70	20.29	20.22	20.29
High School	16.35	17.11	17.20	17.25	17.77
Vocational School	9.73	8.86	9.43	9.50	10.18
Diploma I/II/III	3.32	3.17	3.12	2.98	3.22
Universities	5.54	5.65	7.25	6.98	7.94
Total	111.28	109.67	112.28	110.81	114.02

Source: Berita Resmi Statistik No. 35/05/Th. XVI, 6 Mei 2013

The employment up to February 2013 was still dominated by low-educated working population.

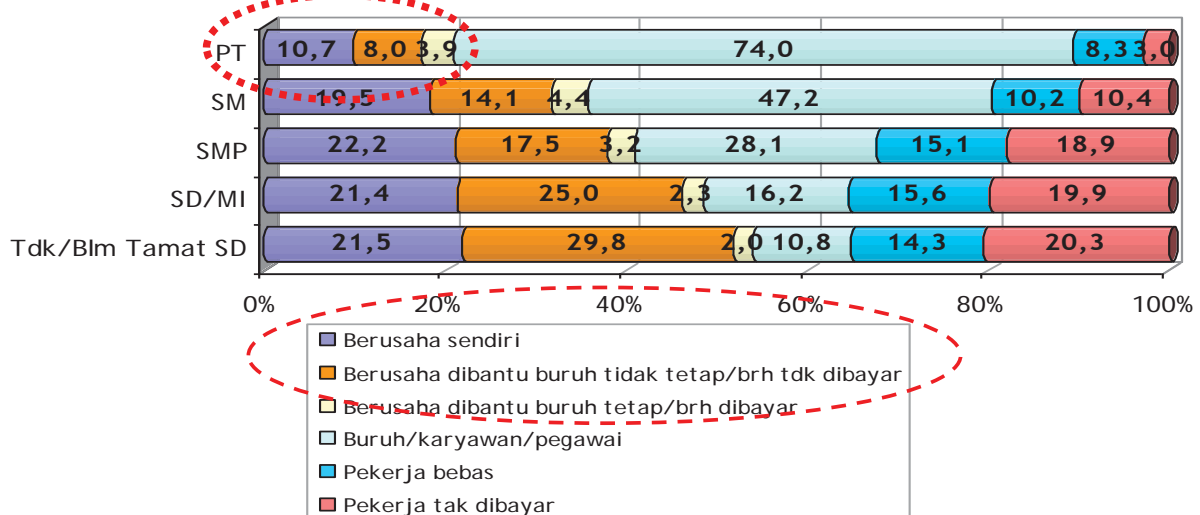
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EDUCATIONAL LEVEL vs CAREER TRENDS

The higher level of education

The higher the tendency to work in existing employment

The major employment status of the people of 15 year-old and above by level of final education

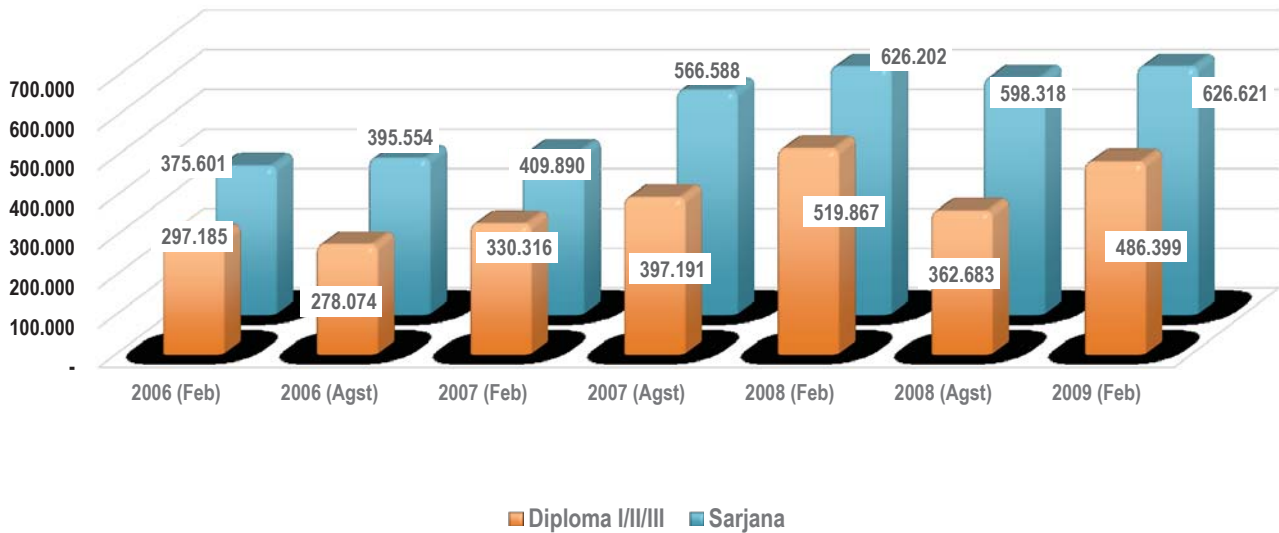


* Source : Vice Minister for E&C, 2012

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Unemployment* rates are always high

indicating an **over-supply educated job seekers**



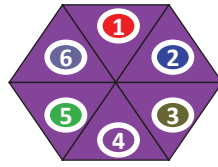
* Source : Vice Minister for E&C, 2012

MULTIDIMENSIONAL ISSUES TO BE ADDRESSED ~ MULTIDIMENSIONAL STRATEGIES

- 1. REGIONAL-LOCAL DIMENSION** ~ heterogenous regions ➔ regional ecosystem to innovate
- 2. INDUSTRIAL DIMENSION** ~ variety industries & different industrial characteristics ➔ industrial competitiveness (value added enhancement)
- 3. KNOWLEDGE DIMENSION** ~ weak relevance & linkages ➔ innovation network to enhance performance, utilization & diffusion of knowledge actors
- 4. INNOVATIVE ACTORS & BUSINESS DIMENSION** ~ low competitiveness of existing business ➔ technopreneurship development to enhance innovative businesses and revitalize economy (capitalizing demographic bonus & gender equality enhancement)
- 5. SPECIFIC CONTEXTS** ~ low provisions for specific /contextual technological needs ➔ accelerate thematic technological utilizations.

Innovation Policy Framework : The Hexagon

- National R&T Coord. Meeting 2008
- Strategic Plan of MRT 2010-2014

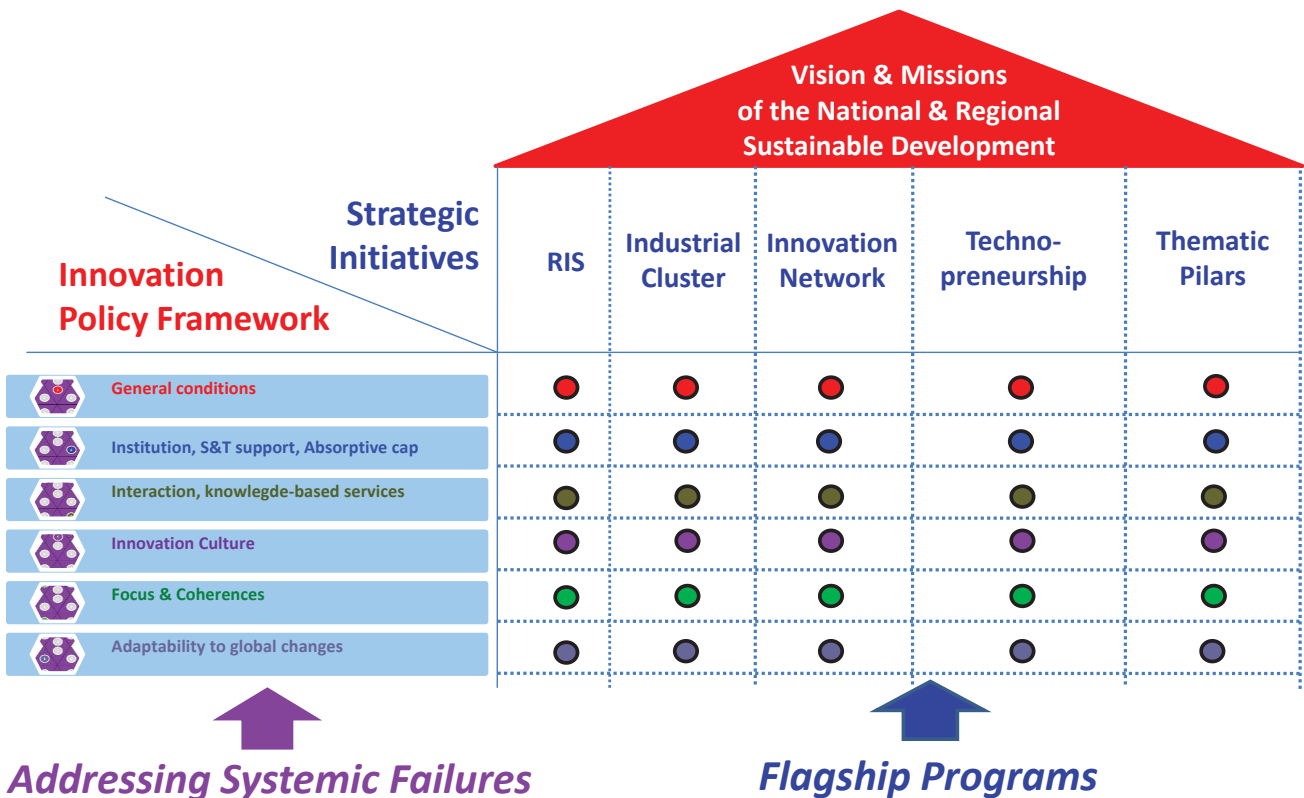


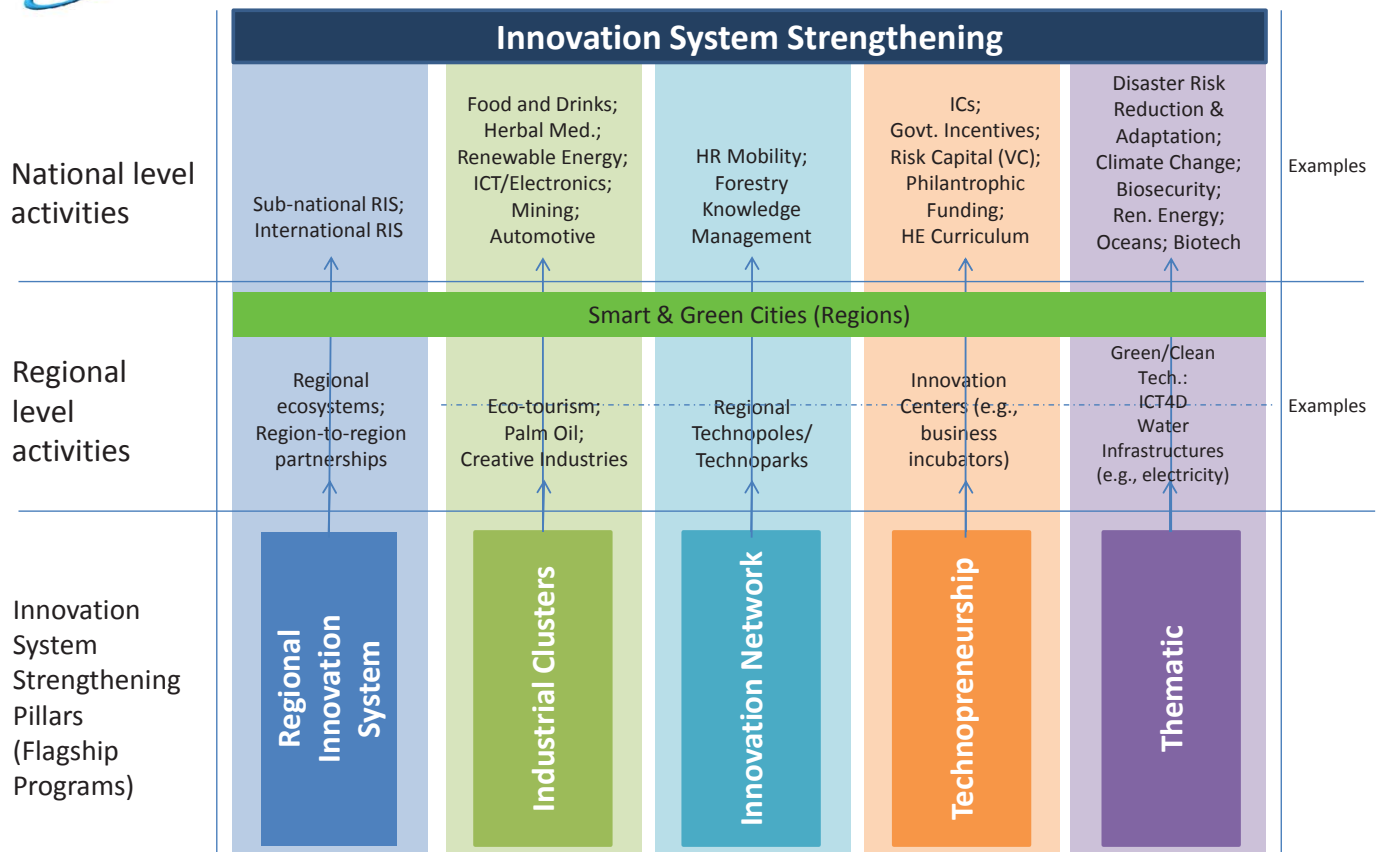
- 1. Develop conducive general framework/conditions for innovation and business.**
- 2. Strengthen knowledge institutions and S&T supports, and enhance absorptive capacity of industry (esp. SMEs).**
- 3. Develop synergetic collaboration for innovation and its diffusion, and increase knowledge-/ technology-based services.**
- 4. Foster innovation culture.**
- 5. Develop and strengthen integrated efforts of innovation system and industrial cluster development (at the national and regional levels).**
- 6. Develop and adapt strategic responses to global changes and challenges.**

Strategic Initiatives:

- 1. Strengthening Regional Innovation System (RIS)** : as a vehicle to strengthen pillars for fostering creativity-innovation at regional levels (as an integral part of the National Innovation System).
- 2. Industrial Cluster Development** : as a vehicle to develop the best collective potentials and to enhance industrial competitiveness.
- 3. Innovation Network Development** : as a vehicle to develop linkages and partnerships among actors, and dynamizing the flow of knowledge, innovation, diffusion, and learning.
- 4. Technopreneurship Development** : as a vehicle to modernize business/economy & society, and to develop innovation culture.
- 5. Strengthening Thematic Pillars** : as a vehicle to improve the thematic and contextual elements of the innovation system.

INNOVATION POLICY FRAMEWORK AND STRATEGIC INITIATIVES





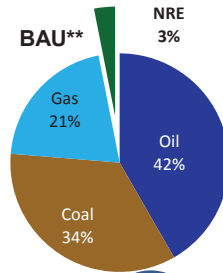
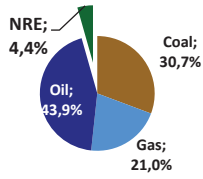
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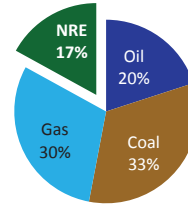
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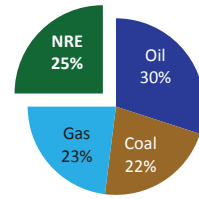
POLICY DIRECTION



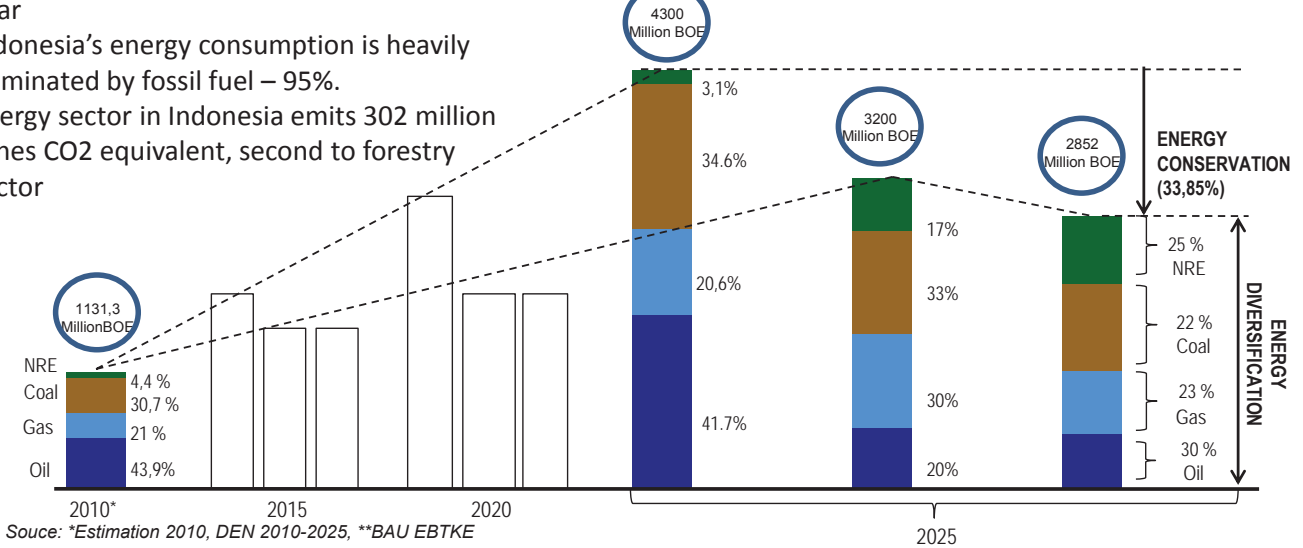
PERPRES 5/2006



VISION 25/25



- Energy consumption increases by 7% per year
- Indonesia's energy consumption is heavily dominated by fossil fuel – 95%.
- Energy sector in Indonesia emits 302 million tons CO2 equivalent, second to forestry sector



ELECTRIFICATION RATIO IN NED OF YEAR OF 2013



	REALIZATION (Year)								Plan
	2006	2007	2008	2009	2010	2011	2012	2013	2014
Electrification Ratio	63%	64,3%	65,1%	65,8%	67,2%	72,95%	76,56%	80,4%	81,5%

* Source : Coordinating Min. for Ec, 2012



THE IMPORTANCE AND GOALS OF INTERNATIONAL OPEN INNOVATION CENTERS

To strengthen synergetic STI partnerships (Indonesia-Japan) :

1. to support STI contributions on more progressive & better economy advancement, inclusive, and sustainable development;
2. to increase STI-based industries (innovative businesses) in national as well as international markets; and
3. to enhance STI contributions on the common vision of one world – better international society (quality of life of human being), inclusive (equitable), and sustainable (living & environment) development.

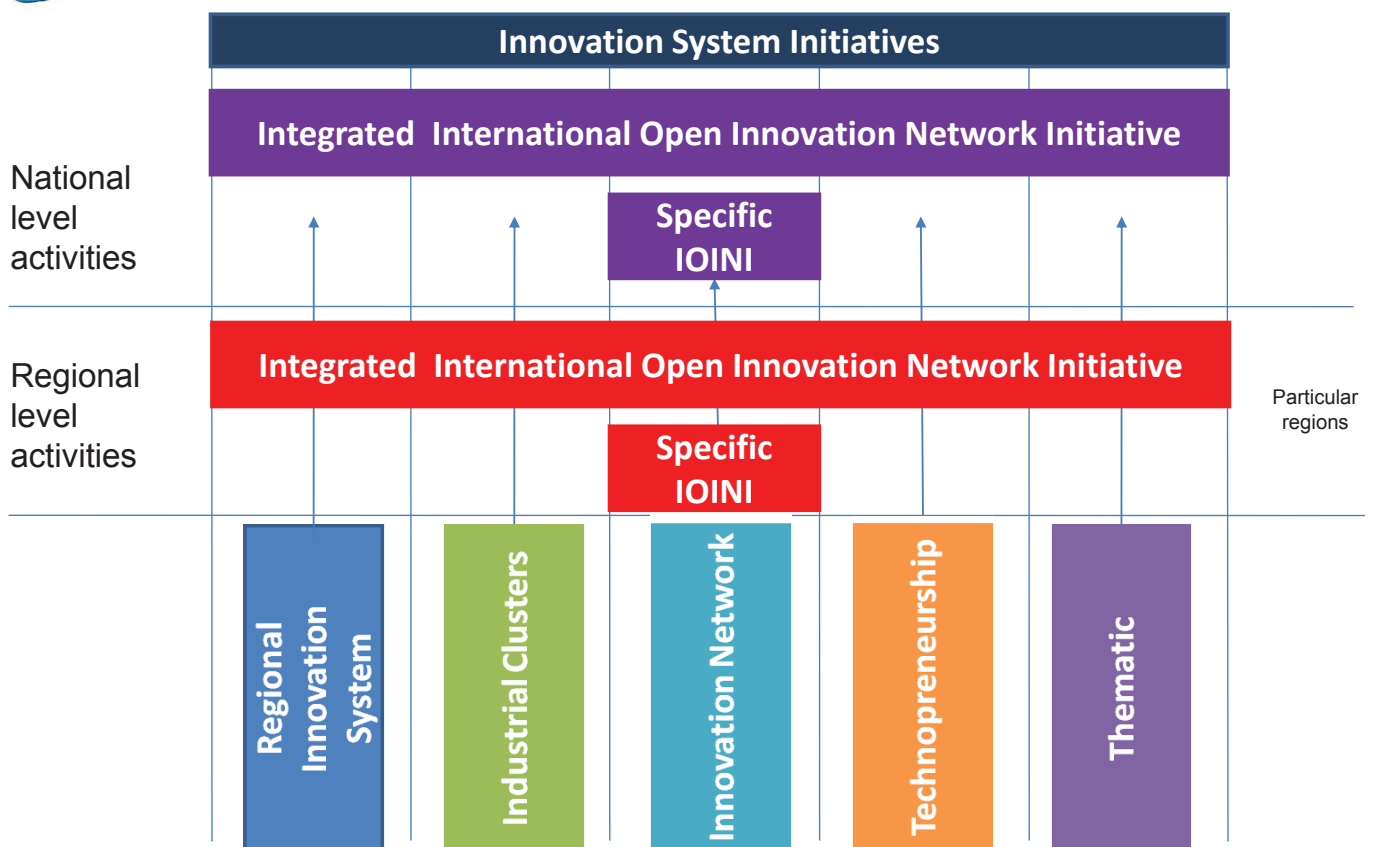
To strengthen synergetic STI partnerships (Indonesia-Japan) : **by establishing**

International Open Innovation Network Hubs on Renewable Energy in order

1. to support STI solutions on common platforms in renewable energy;
2. to increase renewable energy industries (innovative businesses) in Indonesia, Japan and international markets; and
3. to enhance collaborative STI contributions by providing affordable renewable energy technology options in supporting – better international society, equitable, and sustainable development around the world.

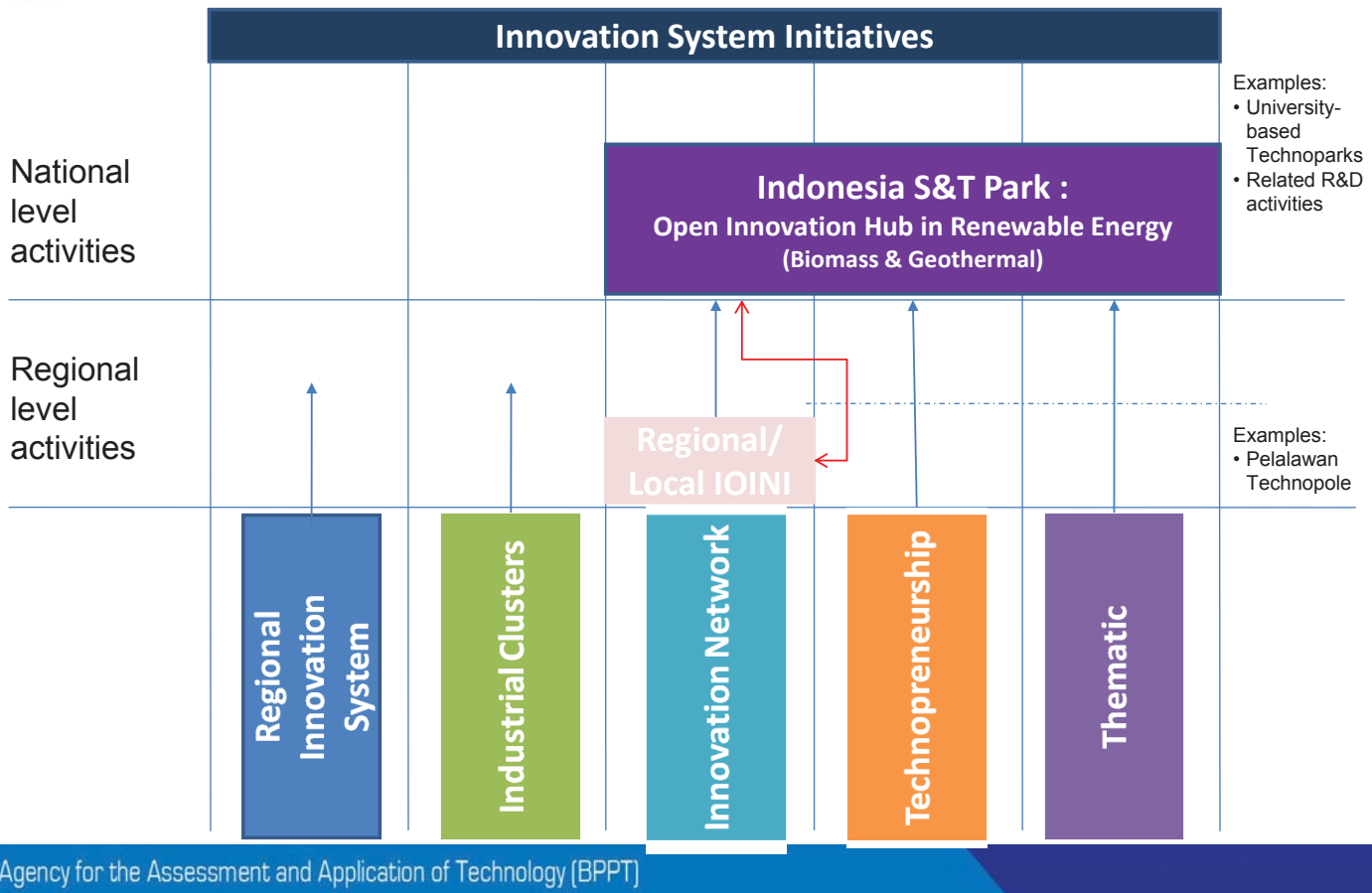


FRAMEWORK OF COLLABORATIVE ACTIVITIES BPPT - PARTNERS

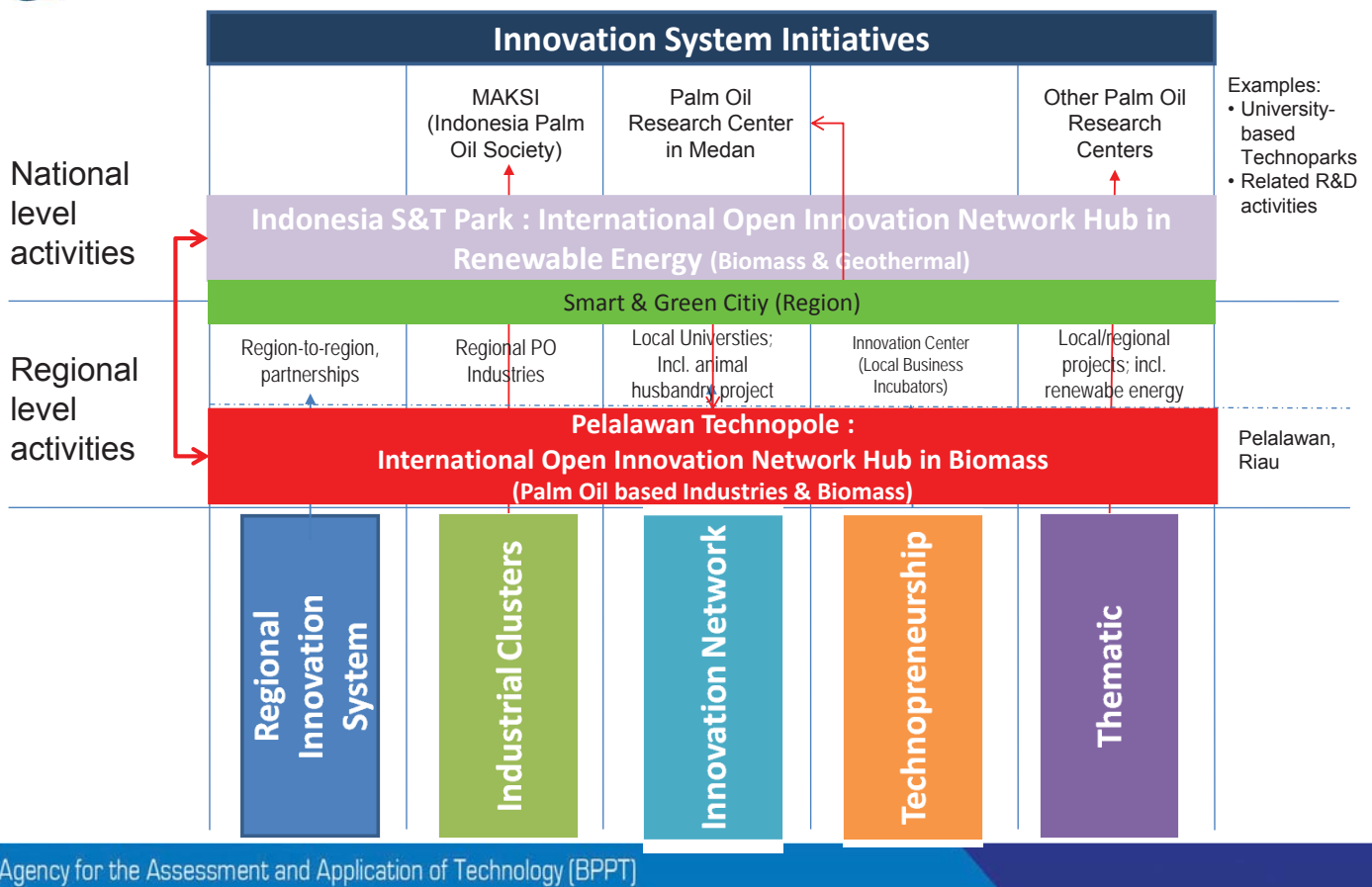




INTERNATIONAL OPEN INNOVATION INITIATIVE : NATIONAL HUB



INTERNATIONAL OPEN INNOVATION INITIATIVE : REGIONAL HUB



THE SETTING

		Notes
PRIORITIES	<ol style="list-style-type: none"> Biomass / Biofuel Geothermal 	<ul style="list-style-type: none"> Indonesia potentials on renewable energy BPPT competence & priority programs

Hubs	Roles/Functions	Notes
1. ISTP	International & National Hub <ul style="list-style-type: none"> Integrated national STI facilities Adequate STI HRs Main location of BPPT's renewable energy R&D activities 	International stakeholders : <ul style="list-style-type: none"> BORC (in Thailand) AIST National stakeholders , e.g., : <ul style="list-style-type: none"> MEMR MRT BPPT LIPI ITB MAKSI GAPKI

THE SETTING (2)

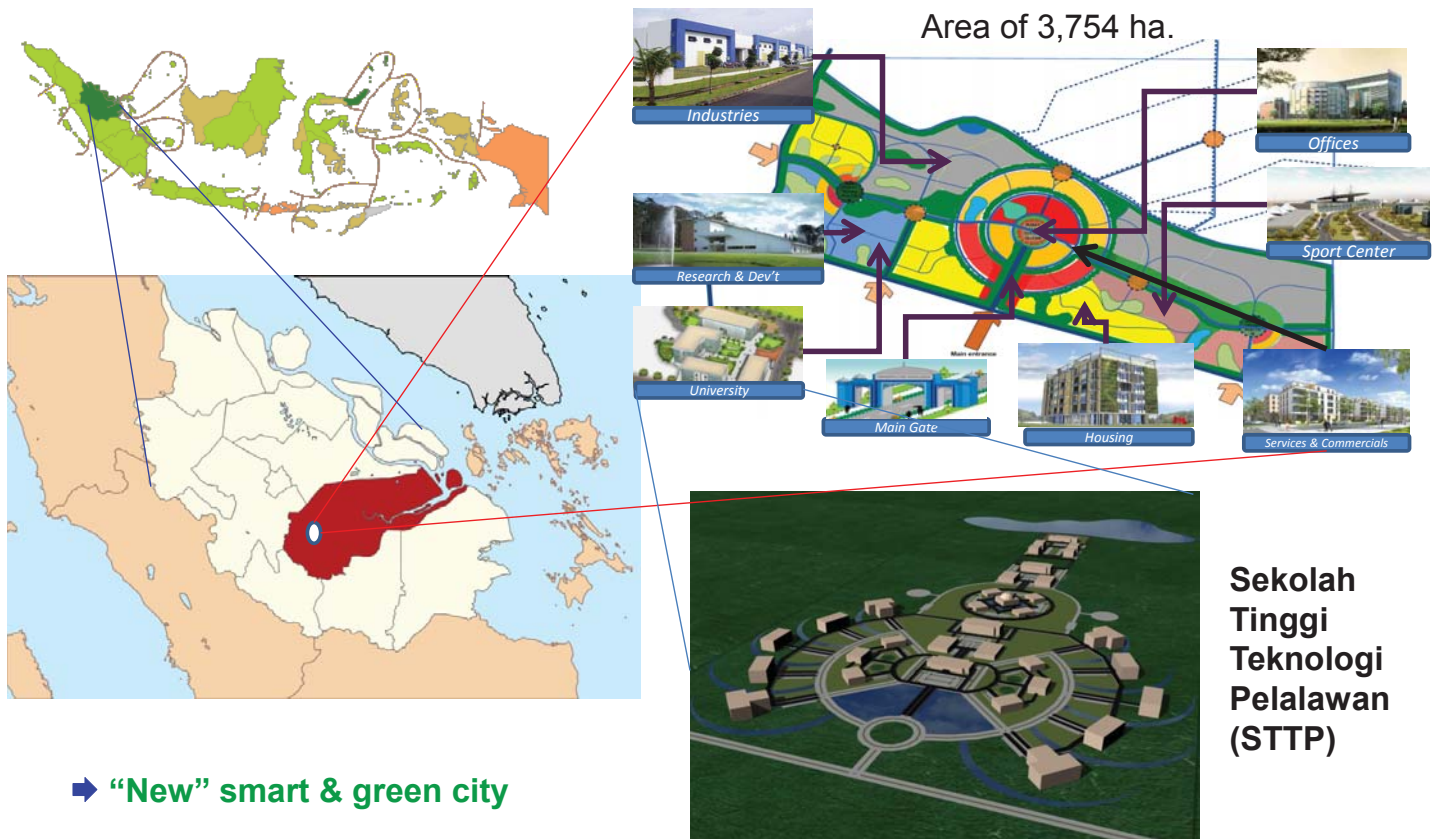
Hubs	Roles/Functions	Notes
2. Pelalawan Technopole	Regional Hub for Biomass/Biofuel Tech Transfer & initial regional project location <ul style="list-style-type: none"> Abundant biomass resources Challenging energy needs Rapid regional growth Proactive local government Supporting local stakeholders 	Regional stakeholders : <ul style="list-style-type: none"> Pelalawan Regency Riau Prov. Gov. & local govts. PPKS (Medan) Local universities, industries & associations





A REGIONAL INNOVATION NETWORK : PELALAWAN TECHNOPOLE

PELALAWAN REGENCY – THE PROVINCE OF RIAU



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STANDARD & IPR RELATED ASPECTS/ISSUES

	Type	Notes
STANDARD	Open standard technology	<ol style="list-style-type: none"> Key technologies (e.g., energy conversion; energy storage; energy efficiency; possible hybrid technology) End –products (quality; environmental aspects) – Mutually recognized national & international standards

INNOVATION UTILIZATIONS

	Technology/Industrial Schemes	Model Options
IPR Licensing (Proprietary IPs)	<ol style="list-style-type: none"> Medium & Large scales Fuel cell based 	Fee-based licensing
	Small scale	Free fee-based licensing (royalty fee is waived) for small enterprises/industries

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Issues	Needs	Notes
Accreditation & Certification Systems	Common Recognition	Establish an agreement setting
STI/R&D Human Resource	Qualifications	<ul style="list-style-type: none"> Professional grading system HRD development
	HR Exchange	<ul style="list-style-type: none"> HR mobility agreement
Technology prototyping status	How to assess the Technology Readiness Level (TRL)	TRL assessment/ measurement methods
STI/R&D Facility, including MSTQ Facility (Measurement/Metrology, Standard, Testing, Quality Management)	Shared Facility Utilization	<ul style="list-style-type: none"> Partnership forms Mechanisms

Issues	Needs	Notes
Starting points	Where & how to start STI/R&D collaborative projects within IOIN framework	<ul style="list-style-type: none"> Consensus on the initial projects
Join R&D Management	How to manage collaborative/ join R&D projects	<ul style="list-style-type: none"> Organization Resources provision & resource sharing Partnership management scheme
Knowledge assets	<ul style="list-style-type: none"> Knowledge/information access 	<ul style="list-style-type: none"> Publication Knowledge Management
	<ul style="list-style-type: none"> IP policy 	<ul style="list-style-type: none"> IP ownerships IP Management Business models

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CLOSING REMARKS

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- 2. Area of importance for HR to be sent abroad are** : innovation (STI) policies; technical knowledge such as renewable energy; environmental engineering; biomedical engineering; disaster management & technology; advanced material engineering
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Gerakan Membangun Sistem Inovasi, Daya Saing dan Kohesi Sosial di seluruh Wilayah Nusantara
(National movement to develop innovation system, competitiveness, and social cohesion through out the Country)

... in harmony we progress ...

Arigatou gozaimasu

Thank You

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