

Indonesian research funding systems and infrastructure

Directorate General of Higher Education (DGHE)
Ministry of Education and Culture
Republic of Indonesia





Outline

- Research policy and management in Indonesia
- Strategic issues and development
- National standards for research – standards for funding and financing



RESEARCH POLICY AND MANAGEMENT



Research grant under
decentralization
schemes

Research grant under
national competition
schemes

Schemes of research management (www.dikti.go.id)

To strengthen academic
autonomy and to
support early career

To improve national
excellence



Research programs and funding

National Competitive:

Excellence Strategic National Research

Collaboration between Industry and HEI Research

Overseas Collaboration and International Publication Research

Competence Grant Research

Strategic National Research

National Priority Research (MP3EI)

30%

Decentralisation:

Excellence Higher Education Institution Research

Competitive Grant Research

Fundamental Research

Postgraduate Grant Research

Collaboration between HEIs Research (PEKERTI)

Doctor's Dissertation Research

Young Lecturers Research

70%



Research Programs

Rp 100 million-Rp 1 billion/yr/proposal – multiyear programs

National Competitive:

Excellence Strategic National Research

Collaboration between Industry and HEI Research

Overseas Collaboration and International Publication Research

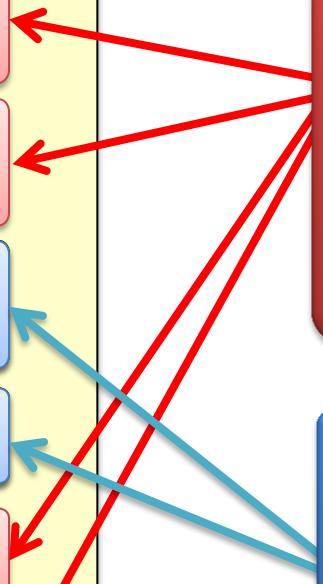
Competence Grant Research

Strategic National Research

National Priority Research (MP3EI)

Based on Government Policy (National Research Agenda)

Based on Competence





Research Programs

<Rp 100 million/yr/proposal – single-multiyear program

Based on Research
Roadmap
in each Higher
Education
Institutions

Decentralisation:

Excellence Higher Education
Institution Research

Competitive Grant Research

Fundamental Research

Postgraduate Grant Research

Collaboration between HEIs Research
(PEKERTI)

Doctor's Dissertation Research

Young Lecturers Research

Research Fields

National Research Agenda

1. Food Safety and Security

2. Energy

3. Information and Communication Technology

4. Technology and Management of Transportation

5. Defense and Security Technology

6. Health and Medicine Technology

7. Advanced Material

Excellence Strategic National

1. Food Safety and Security

2. Health and Medicine

3. New and Renewable Energy

4. Defense and Security

5. Information and Communication Technology

6. Maritime and Oceanic

7. Arts and Culture

Strategic National

1. Poverty alleviation

2. Climate Change and biodiversity

3. New and Renewable Energy

4. Food Safety and Security

5. Health, Tropical diseases, Nutrition and Medicine

6. Disaster Management

7. Nation integration and Social Harmony

8. Regional Autonomy and Decentralization

9. Arts and Culture or Creativity Industry

10. Infrastructure, Transportation, and Defense Technology

11. Information and Communication Technology

12. Human Development and Competitiveness

Research Fields

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1. Food Safety and Security

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Excellence Strategic National

1. Food Safety and Security

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5. Information and Communication Technology

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Strategic National

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9. Arts and Culture or Creativity Industry

10. Infrastructure, Transportation, and Defense Technology

11. Information and Communication Technology

12. Human Development and Competitiveness



Overseas Collaborative Research and International Publications

To encourage the implementation of existing MoU between Indonesian universities with overseas universities/research institutions.

To stimulate the new MoU between Indonesian universities with overseas universities/research institutions.

The expected benefit is the wider establishment of research networks

The final target of this program is to increase significantly the international publications number of Indonesian researchers



Objectives:

Extending the research network for the Indonesian university researchers with their overseas partners

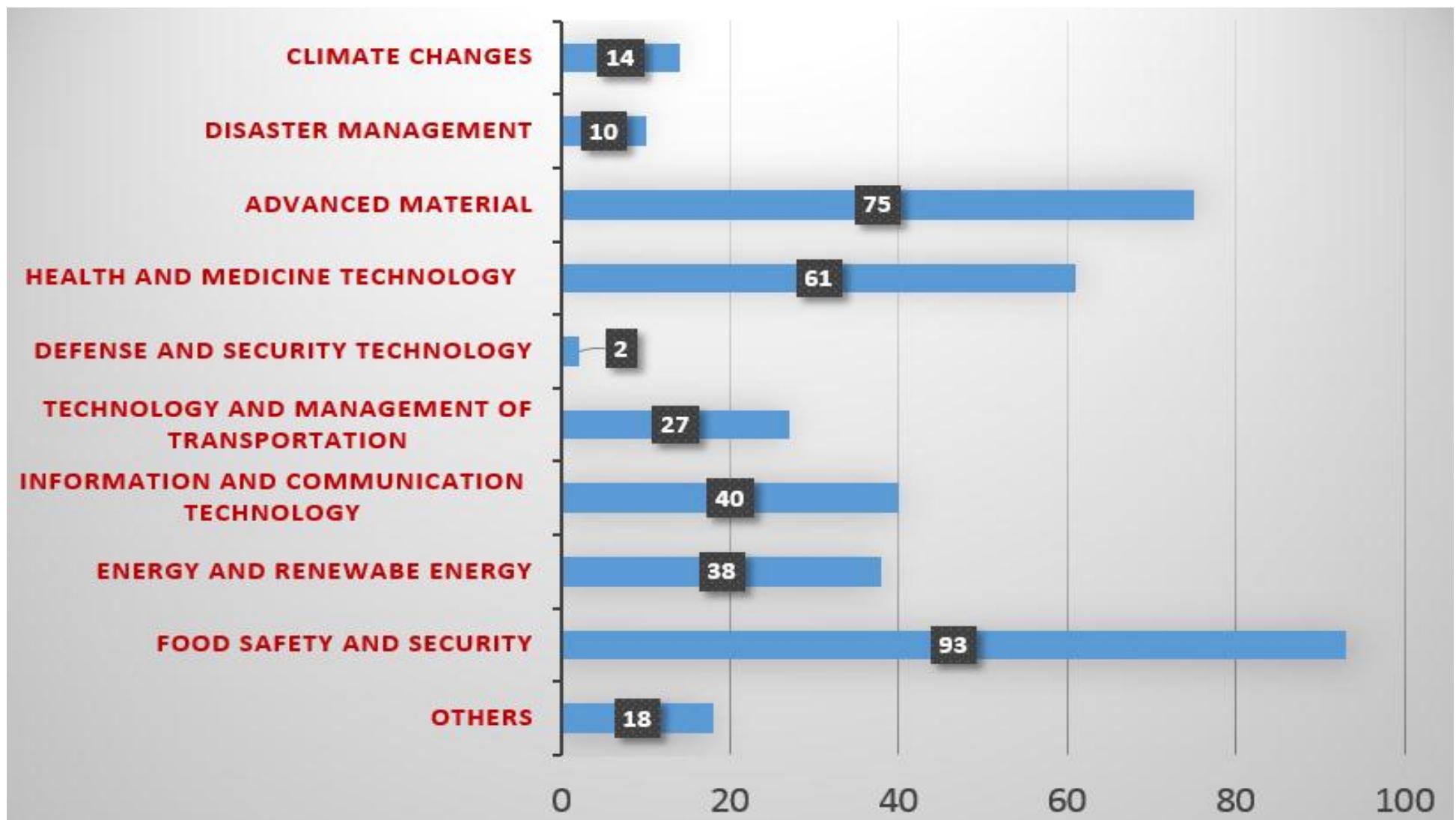
Increasing the ability of Indonesian university researchers to conduct a collaborative research

Increasing the research quality and the number of publications in the international scientific journals

Increasing the *citation index* of Indonesian researchers publications



OVERSEAS COLLABORATIVE RESEARCH by FIELDS, 2012-2014





STRATEGIC ISSUES AND DEVELOPMENT

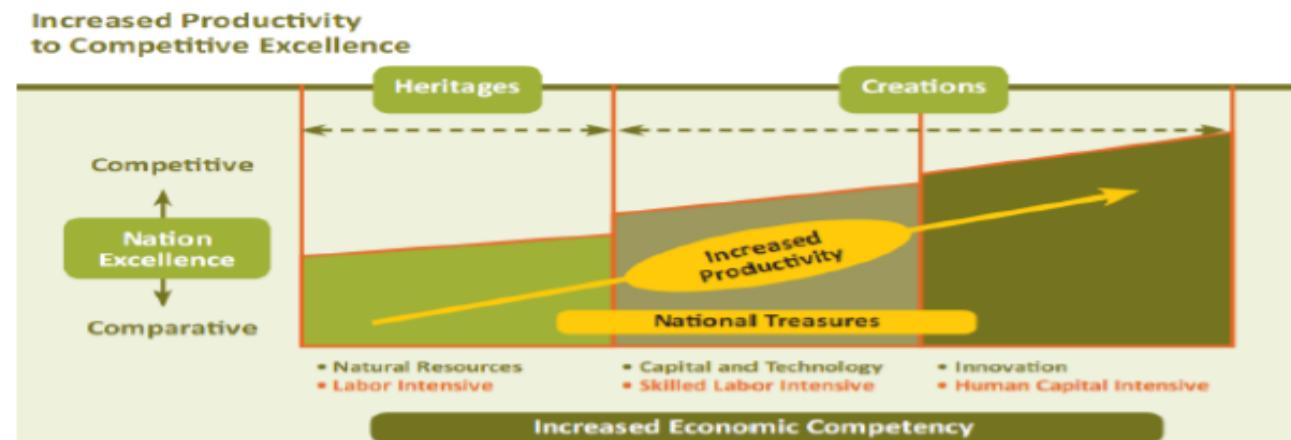


Indonesia sees R&D as key for driving economic development.

- In May 2011, the Government of Indonesia launched a new policy direction
- Aiming at accelerating the Indonesian economic development called “Masterplan for acceleration and expansion of Indonesia economic development 2011-2025”
- S&T and Human capital development are seen as one of the key 3 pillars of this program

Some of the President's innovation 1-747 initiatives include:

- Increase the R&D fund to 1% of GDP
- Enhance researchers remuneration
- **Develop R&D Infrastructure**
- Develop research funding system and management that support innovation





Identified strategic issues (Ministry of Education and Culture)

1. Fulfillment of the right to a quality basic education services
2. Expansion of quality secondary education
3. Improve access , quality , relevance and competitiveness of higher education
4. Increase education and early childhood development
5. Develop quality, improvement of learning
6. Improve management of teachers , teacher education , and reform knowledge & technology
7. Increase workforce skills
8. Increase religious education and civic education
9. Increase the efficiency of education financing
10. Increase education governance



Problems in quality, relevance, and competitiveness in higher education

- 62% of teaching staff with master's degree and only 12% of doctoral degree
- Low number of scientific publication in international journal and low number of cited article
- Low capability of HEIs in developing knowledge & technology
- Low relevance between HE and work force, as indicated by relatively high unemployment
- Weak partnership between HEIs and industry in developing technical skills as needed by the industry, as well as low contribution to technological capability and innovation
- Weak autonomy of the HEIs.



Triple Helix concept (Etzkowitz)

TRIPLE HELIX I:

STATIST REGIME

Government at the center

TRIPLE HELIX II:

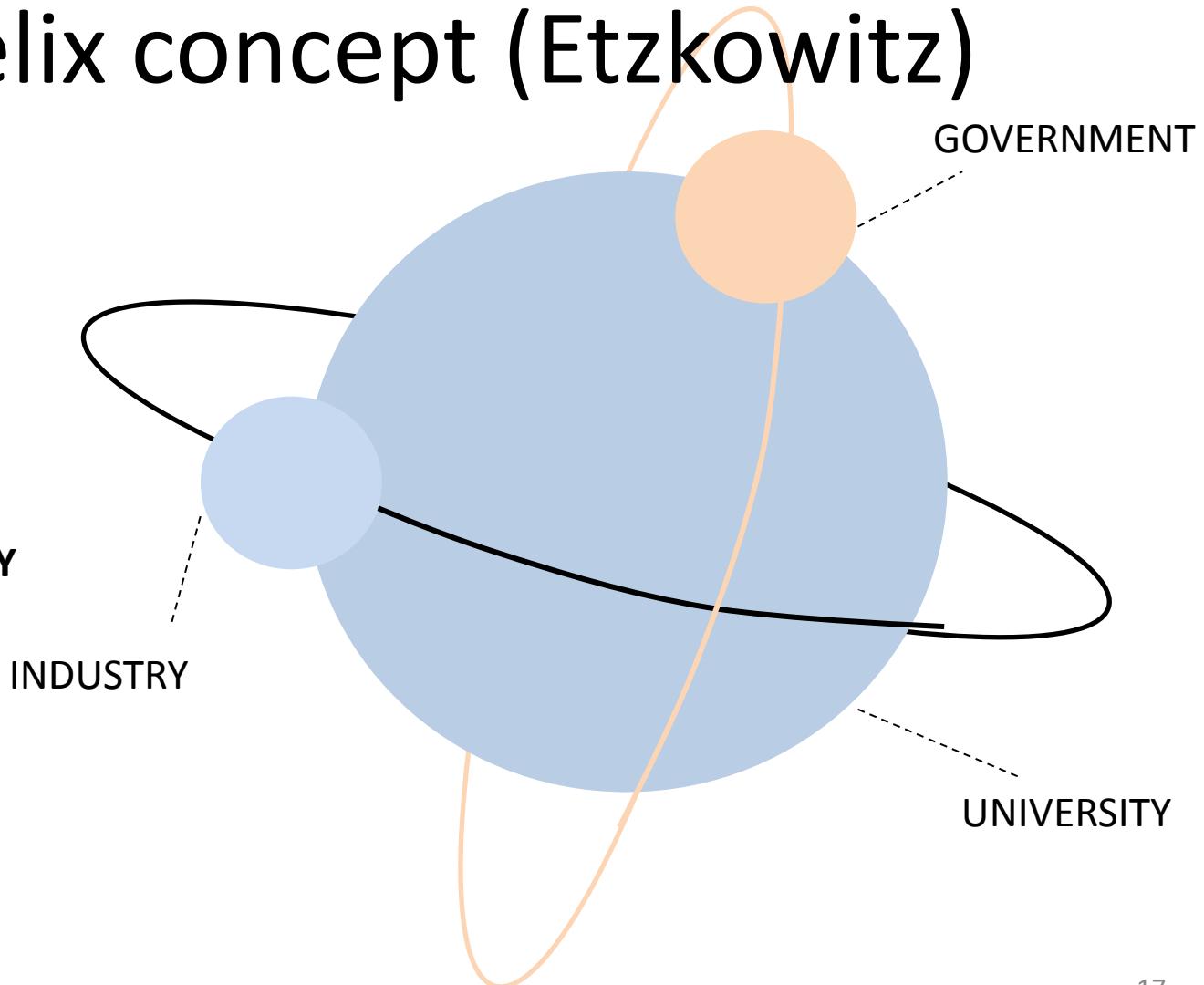
LAISSEZ_FARE

Industry at the center

TRIPLE HELIX III:

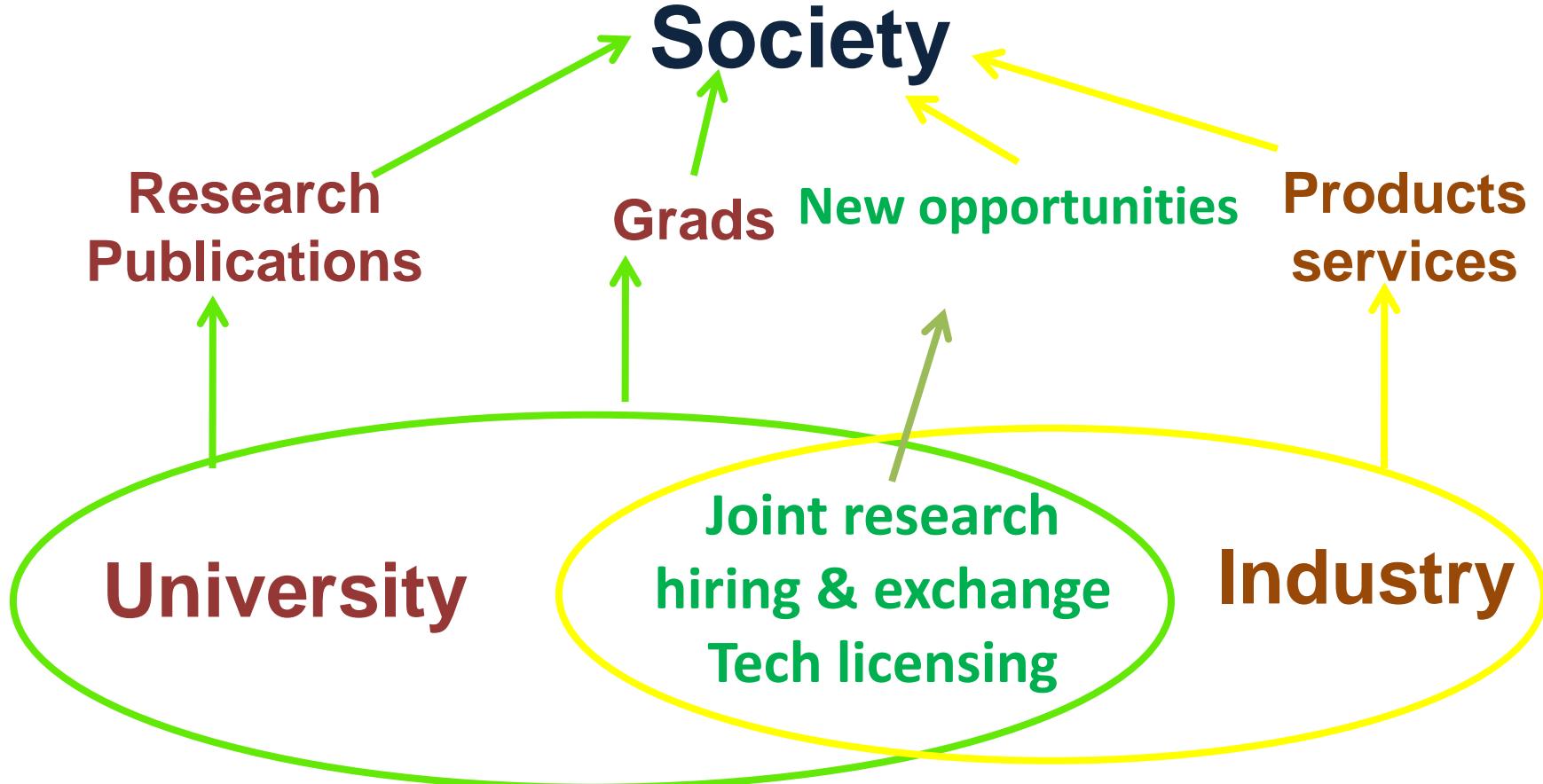
KNOWLEDGE BASED SOCIETY

University at the center





New Demand: University-Industry partnership





SKEMA

“Triple Helix” Dikti





No	Skema Hibah	Tahun 2006		Tahun 2007		Tahun 2008		Tahun 2009		Tahun 2010		Tahun 2011		Tahun 2012		Tahun 2013	
		Usulan	Didanai														

Panel A: Skema Penelitian Desentralisasi

1	PUPT	-	-	-	-	-	-	-	-	-	-	-	-	-	5.381	3.889	3.514	2.403
2	PHB	2.287	1.164	2.181	1.798	2.816	1.545	5.806	1.755	7.947	1.346	5.666	1.480	4.736	3.544	6.664	2.922	
3	PF	1.385	613	1.099	778	1.335	585	2.110	490	2.392	398	1.510	559	1.406	1.079	2.059	898	
4	PPS	152	101	233	172	180	110	204	82	374	95	248	116	186	155	245	132	
5	PEKERTI	239	130	67	63	136	121	320	100	348	73	187	70	145	128	272	150	
6	PDD	-	-	-	-	-	-	1.102	1.102	1.706	681	204	204	857	790	1.653	982	
7	PDP	5.334	2.498	5.817	5.569	5.541	1.788	5.514	1.193	1.200	1.200	-	-	3.166	2.357	4.571	3.477	
Total		9.397	4.506	9.397	8.380	10.008	4.149	13.157	4.722	13.967	3.793	7.815	2.429	15.849	11.954	18.978	10.964	

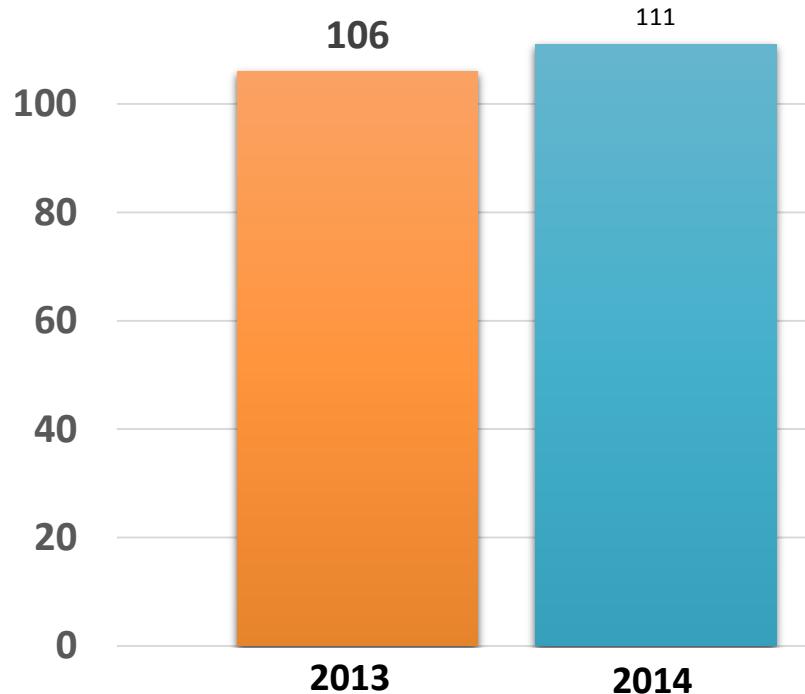
Panel B: Skema Penelitian Kompetitif Nasional

1	PUSNAS	-	-	-	-	-	-	487	46	46	24	896	21	83	28	80	13
2	RAPID	88	6	49	7	29	7	49	20	84	24	74	7	57	25	41	29
3	KLN	-	-	-	-	-	-	952	431	206	112	112	65	242	114	276	160
4	HIKOM	-	-	-	-	803	150	1.319	295	655	331	331	147	586	163	631	212
5	STRANAS	-	-	-	-	-	-	5.862	2.780	5.861	1.240	770	312	1.376	697	1.145	428
6	MP3EI	-	-	-	-	-	-	-	-	-	-	39	35	1.028	402	734	231
Total		88	6	49	7	832	157	8.669	3.572	6.852	1.731	2.222	587	3.372	1.429	2.907	1.073
Grand Total		9.485	4.512	9.446	8.387	10.840	4.306	23.725	8.294	20.819	5.524	10.037	3.016	19.221	13.383	21.885	12.037

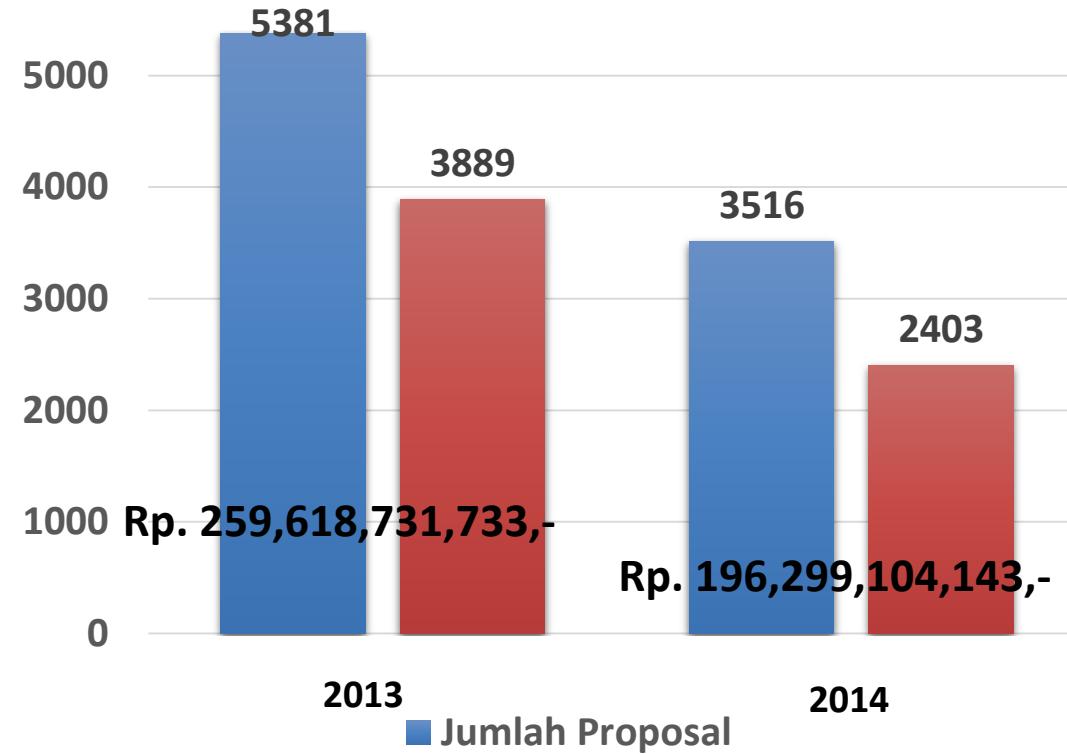


SKEMA PUPT

JUMLAH PARTISIPASI PT



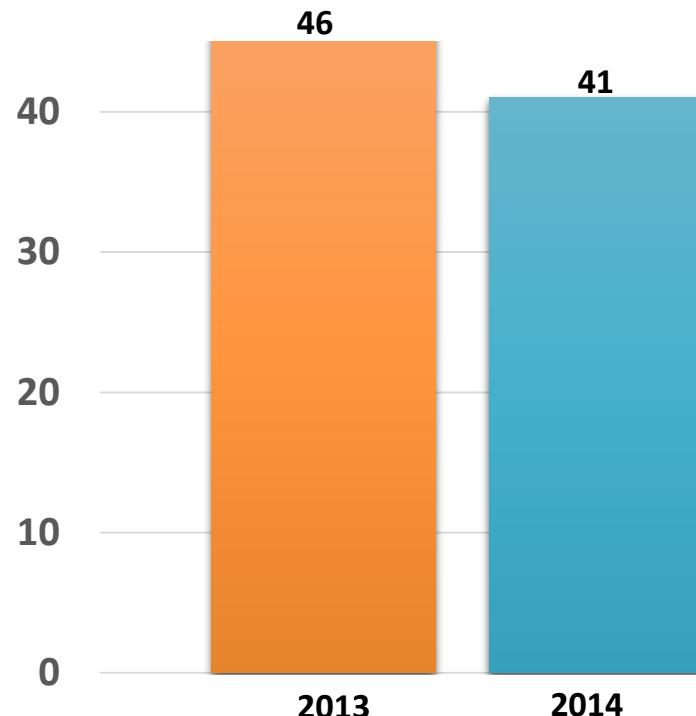
JUMLAH USULAN DAN TOTAL PENDANAAN





SKEMA UNGGULAN STRANAS

JUMLAH PARTISIPASI PT



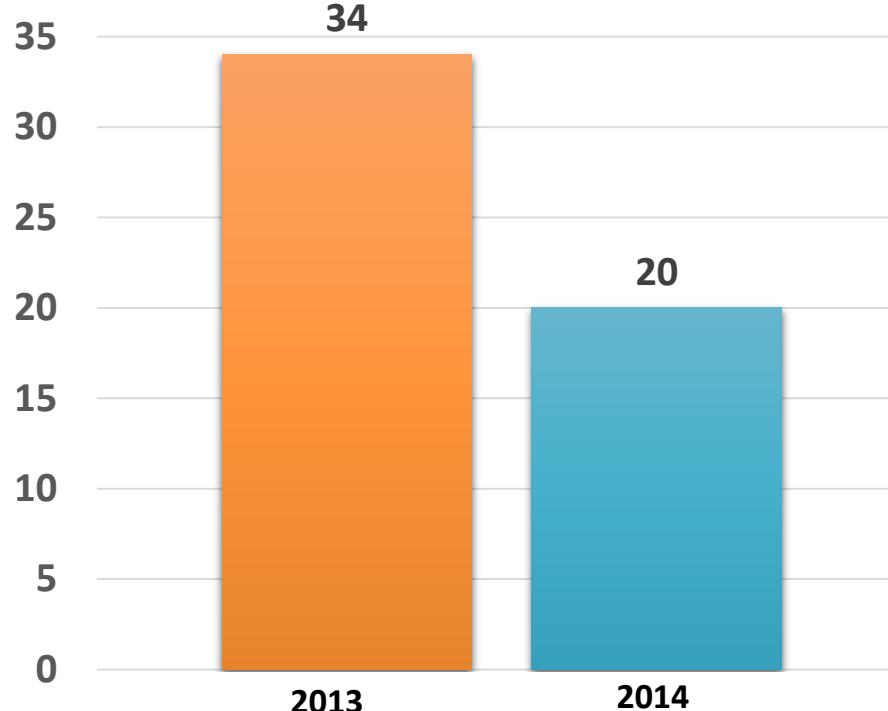
JUMLAH USULAN DAN TOTAL PENDANAAN





SKEMA RAPID

JUMLAH PARTISIPASI PT



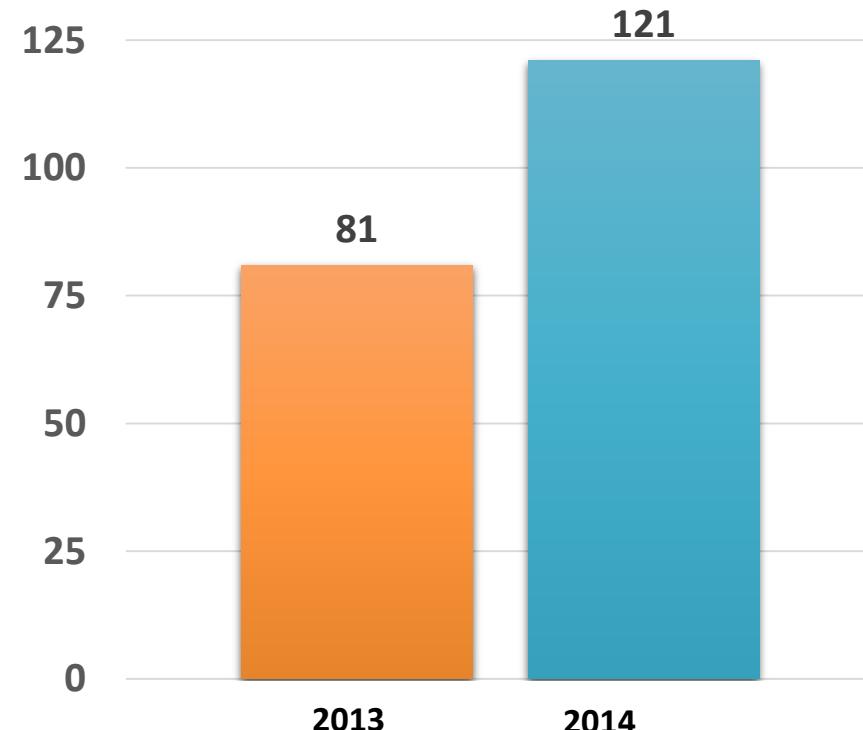
JUMLAH USULAN DAN TOTAL PENDANAAN



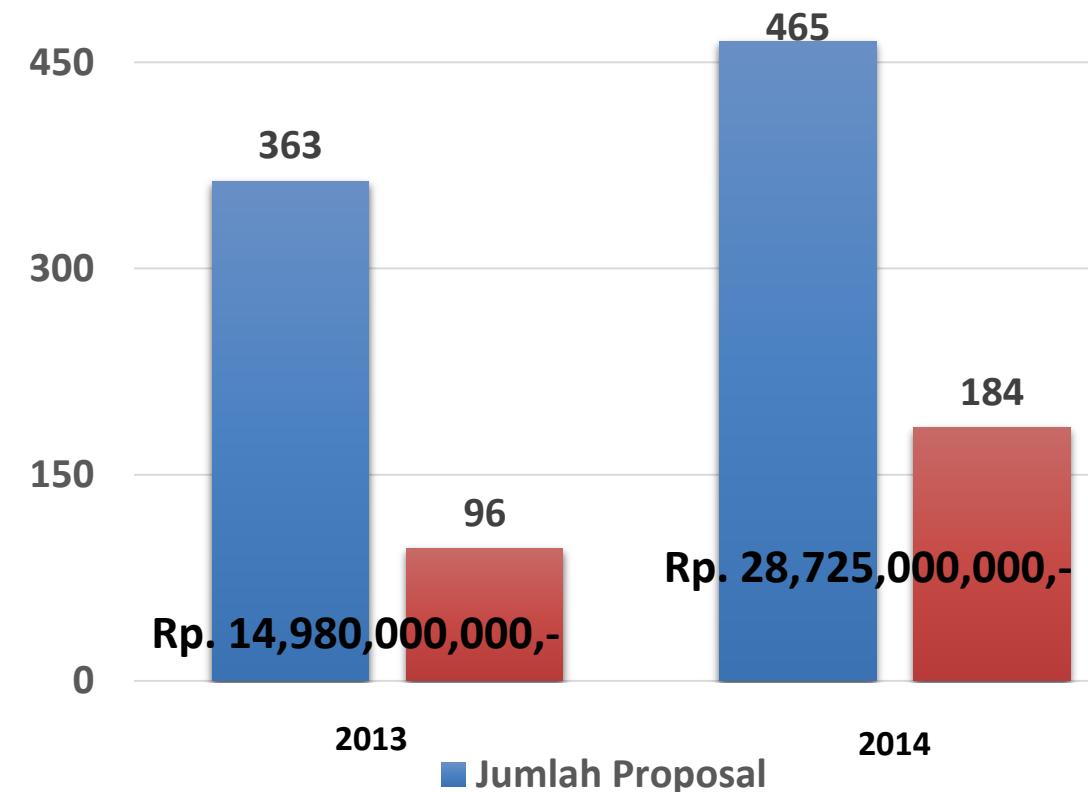


USULAN BARU SKEMA MP3EI

JUMLAH PARTISIPASI PT

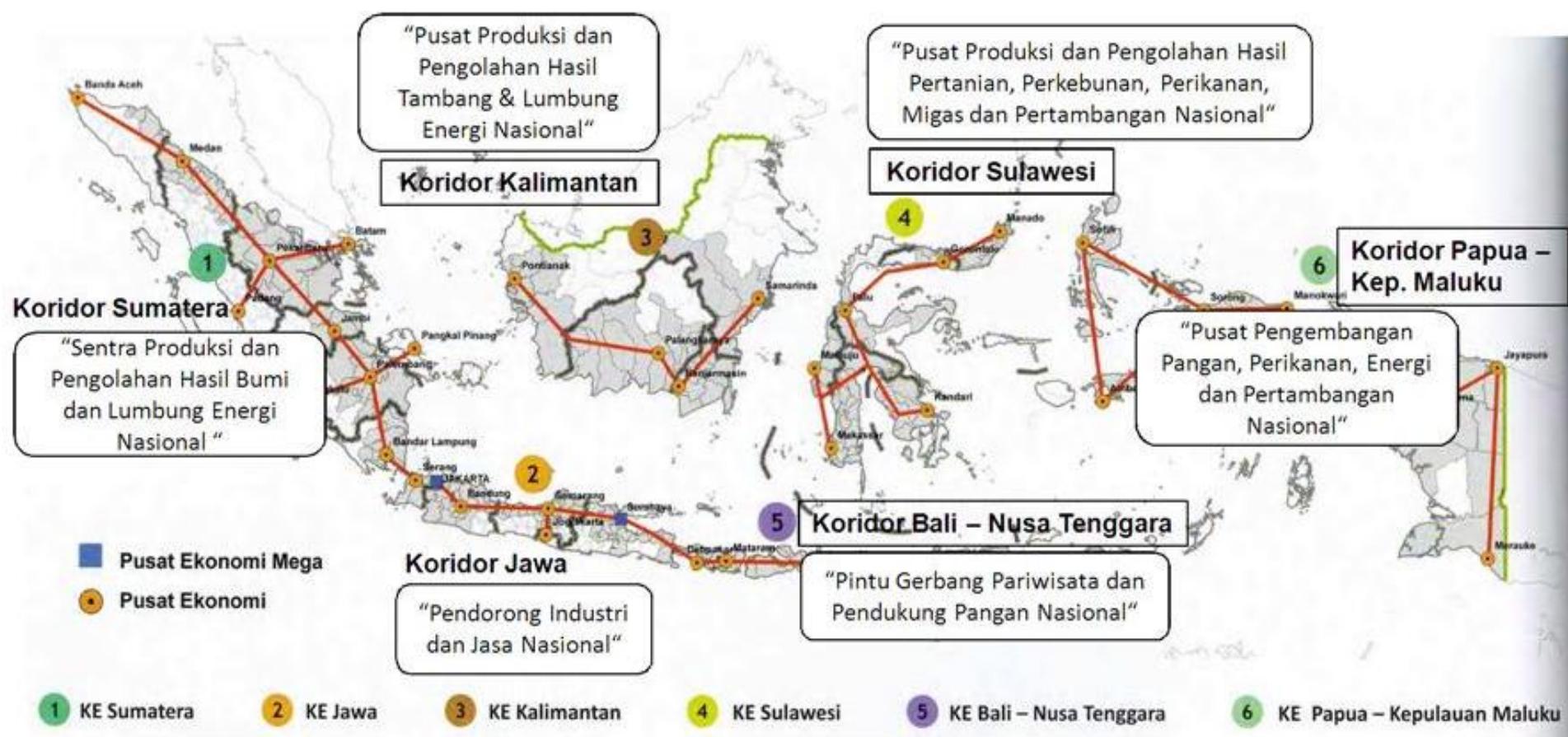


JUMLAH USULAN DAN TOTAL PENDANAAN

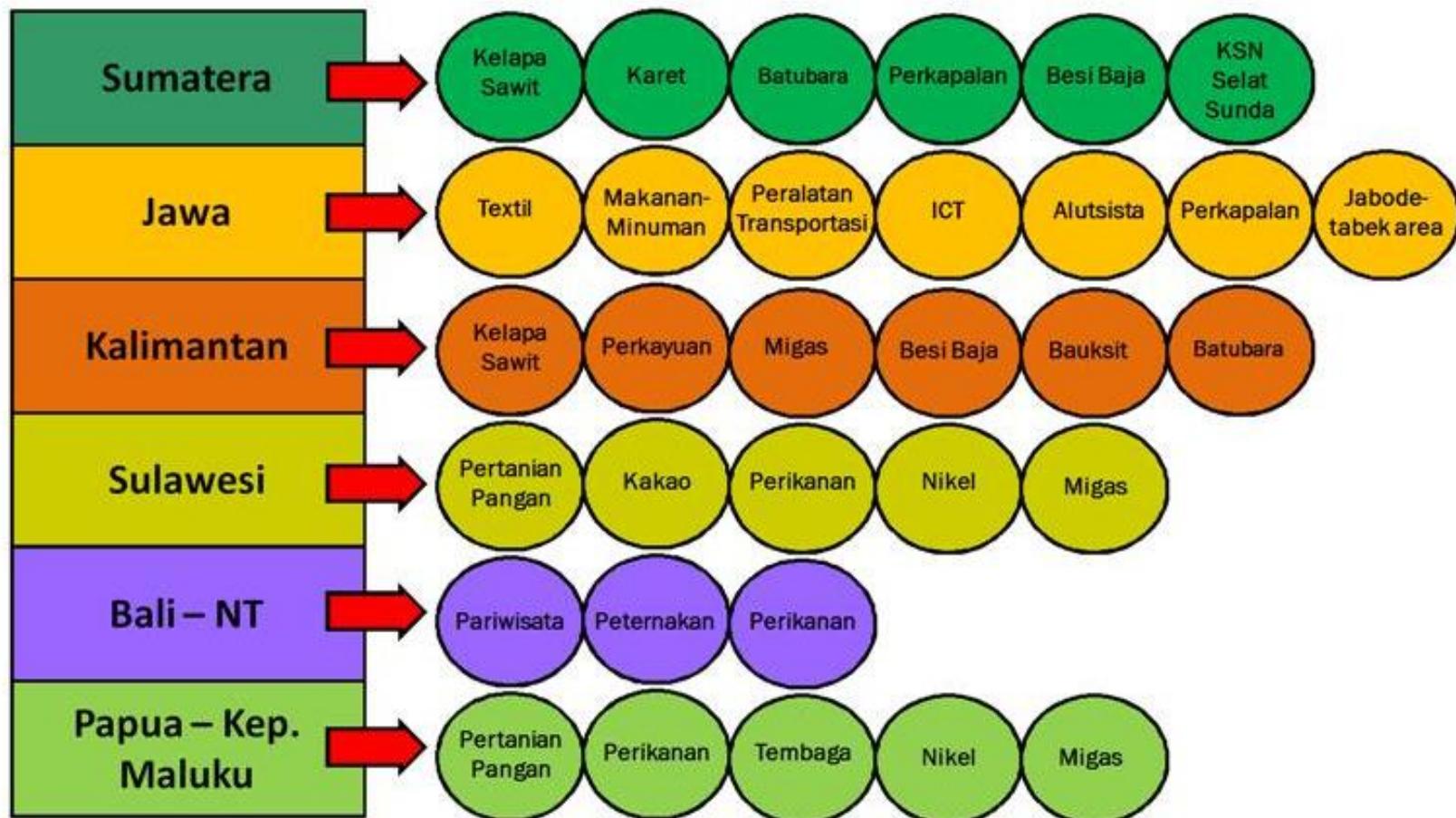


Tema Pembangunan Koridor Ekonomi

Berdasarkan Keunggulan dan Potensi Strategis Masing-Masing Wilayah



Distribusi 22 Kegiatan Ekonomi Utama dalam Setiap Koridor Ekonomi





Distribusi 22 Kegiatan Ekonomi Utama MP3EI 2014

Bauksit, 1
Perkayuan, 10
Jabodetabek-area, 2

Alutsista, 5
ICT, 24

Peralatan
Transportasi, 16

Makanan-
minuman, 27

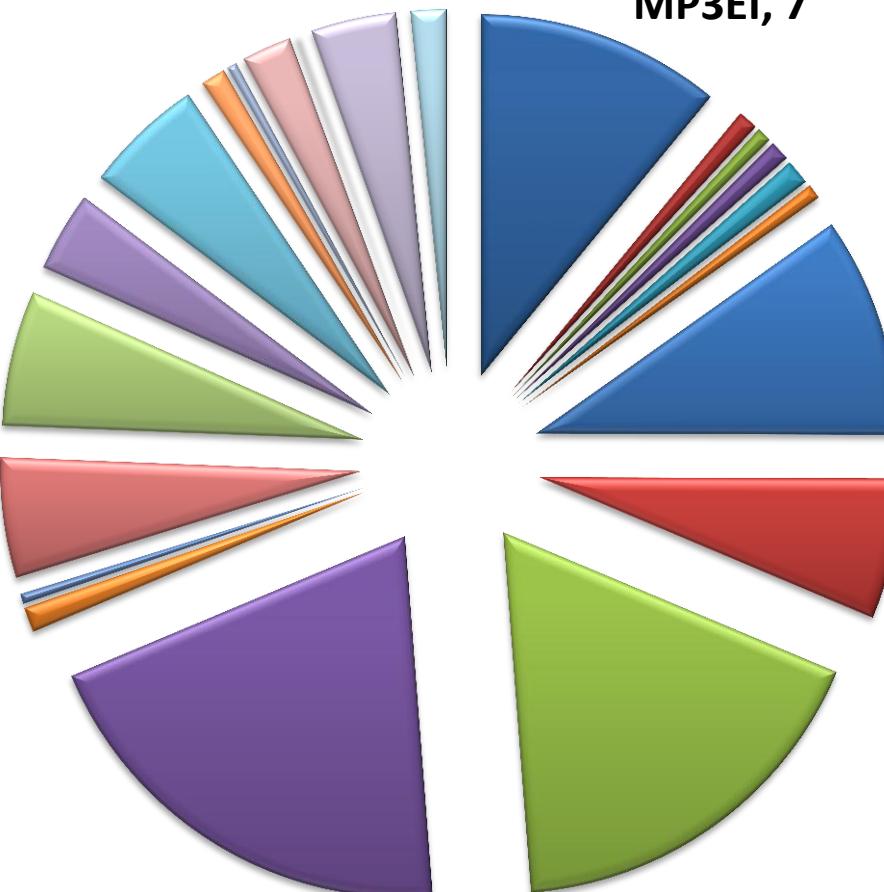
Textil, 24

Migas , 2

Nikel, 5

Tembaga, 0

Pertanian Pangan,
89



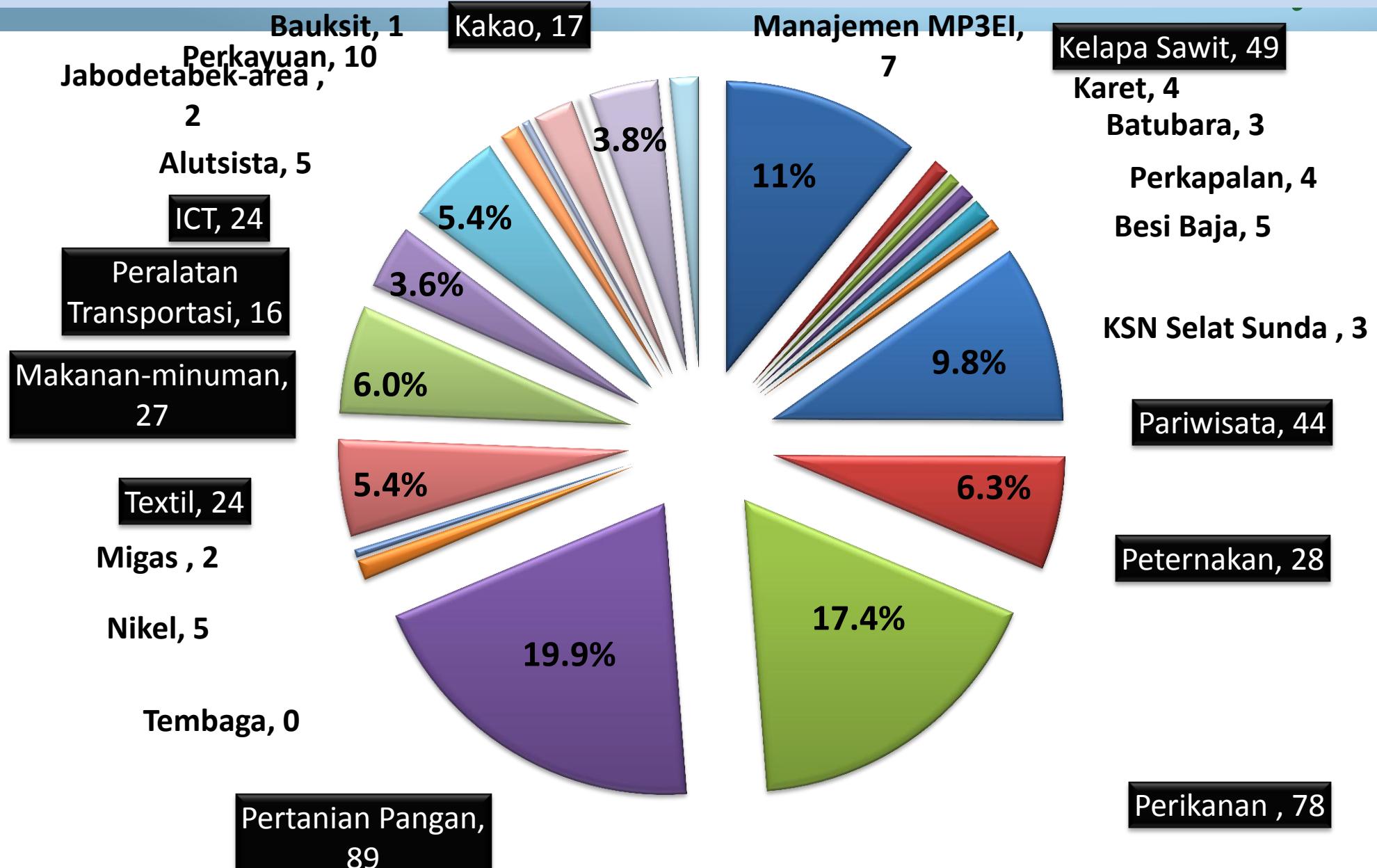
Kelapa Sawit, 49
Karet, 4
Batubara, 3
Perkapalan, 4
Besi Baja, 5
KSN Selat Sunda ,
3

Pariwisata, 44

Peternakan, 28

Perikanan , 78

Distribusi 22 Kegiatan Ekonomi Utama MP3EI 2014

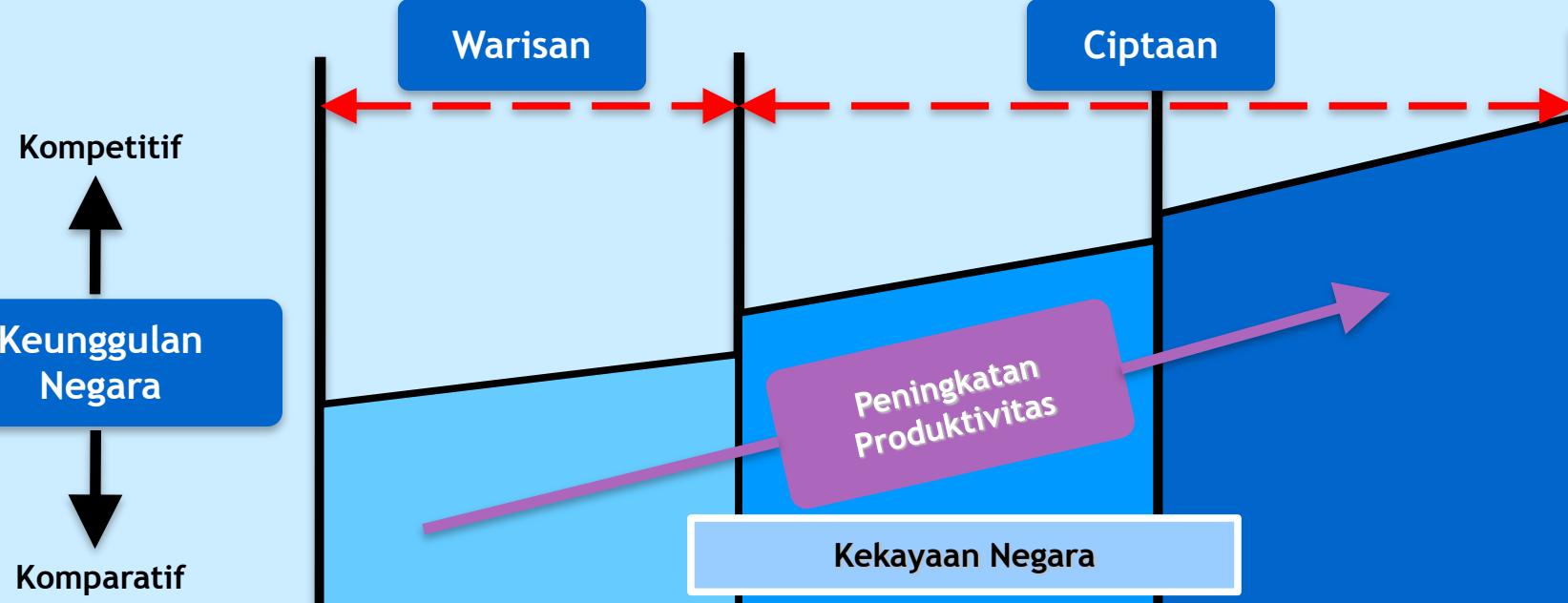




KEGIATAN PENELITIAN MP3EI 2014 DI ENAM KORIDOR

KORIDOR		22 KEGIATAN EKONOMI UTAMA MP3EI					
1	Sumatra	Kelapa Sawit	Karet	Batu Bara	Perkapalan	Besi Baja	KSN Selat Sunda
		39	4	1	2	1	3
2	Jawa	Textil	Makanan Minuman	Peralatan Transportasi	ICT	Alustista	Perkaapalan
		24	27	16	24	5	2
3	Kalimantan	Kelapa Sawit	Perkayuan	Migas	Besi Baja	Bauksit	Batubara
		10	10	1	4	1	2
4	Sulawesi	Pertanian Pangan	Kakao	Perikanan	Nikel	Migas	
		34	17	27	4	0	
5	Bali-Nusa Tenggara	Pariwisata	Peternakan	Perikanan			
		44	28	6			
6	Papua dan Kepulauan Maluku	Pertanian Pangan	Nikel	Perikanan	Tembaga	Migas	
		55	1	45	0	1	

PENINGKATAN PRODUKTIVITAS MENUJU KEUNGGULAN KOMPETITIF



- Sumber Daya Alam
- *Labor intensive*

- *Capital and Technology*
- *Skilled Labor intensive*

- *Innovation*
- *Human Capital intensive*

Peningkatan Kemampuan Ekonomi

Ekonomi Berbasis SDA

Ekonomi Berbasis Industri

Ekonomi Berbasis Inovasi

Factor Driven

Investment Driven

Innovation Driven

INISIATIF INOVASI : 1-747

1% dari GDP per tahun	7 Langkah Perbaikan Ekosistem Inovasi	4 Wahana Percepatan Pertumbuhan Ekonomi	7 Sasaran Visi Indonesia 2025
<p>Untuk menunjang program inovasi melalui skema 747 diperlukan dana R&D hingga 1% dari GDP per tahun s/d tahun 2014.</p> <p>Peningkatan tersebut dapat dilaksanakan secara bertahap sesuai dengan daya dukung pemerintah, BUMN dan partisipasi swasta</p>	<ol style="list-style-type: none"> 1. Sistem Insentif dan Regulasi yang mendukung inovasi dan budaya penggunaan produk dalam negeri 2. Peningkatan Kualitas dan Fleksibilitas perpindahan sumber daya manusia 3. Pembangunan Pusat-pusat Inovasi untuk mendukung IKM 4. Pembangunan Klaster Inovasi Daerah 5. Sistem Remunerasi Peneliti 6. Revitalisasi infrastruktur R&D 7. Sistem dan Manajemen Pendanaan Riset yang mendukung inovasi 	<ol style="list-style-type: none"> 1. Industri kebutuhan dasar (pangan, obat-obatan, energi dan air bersih) 2. Industri kreatif (berbasis budaya dan <i>digital content</i>) 3. Industri berbasis daya dukung daerah (<i>S & T Park & Industrial Park</i>) 4. Industri strategis (pertahanan, transportasi dan ICT) 	<ol style="list-style-type: none"> 1. Meningkatkan jumlah HaKI dari penelitian dan industri yang langsung berhubungan dengan pertumbuhan ekonomi 2. Meningkatkan infrastruktur S&T berstandar internasional 3. Mencapai swasembada pangan, obat-obatan, energi dan air bersih yang berkesinambungan 4. Meningkatkan ekspor produk industri kreatif menjadi dua kali lipat 5. Meningkatkan jumlah produk-produk unggulan dan nilai tambah industri dari berbagai daerah 6. Mencapai swasembada produk dan sistem industri pertahanan, transportasi dan ICT 7. Mencapai pertumbuhan ekonomi yang berkesinambungan, kemakmuran yang merata, dan memperkokoh NKRI

INPUT

PROSES

OUTPUT



NATIONAL STANDARDS FOR RESEARCH – STANDARDS FOR FUNDING AND FINANCING



Research standards Permendikbud 49/2014

- research results
- studies content
- research process
- research assessment
- researcher qualification
- research facilities
- research management
- research funding



Research in Indonesian HEIs

- The results should be directed to develop science and technology, and improve the welfare of society and the nation's competitiveness
- The results shall be disseminated through seminars, publication, and/or patented, unless the research is confidential, disturbing, and/or endanger the public or national interest
- The depth and breadth encompass basic and applied research
- The applied research must be oriented to the research outputs in the form of innovation and the development of science and technology that are beneficial to the community, business, and/or industry



Infrastructure

- Research facilities and infrastructure is HEIs facility that is used to facilitate the study of at least related to the study program
- Facilities and infrastructure is also used for learning and community service activities
- Facilities and infrastructure must meet quality standards, safety, health, comfort, for the researchers, communities, and the environment
- Management of the research shall be conducted by the unit related to research and community service activities
- Regulations, guidelines, and internal quality assurance systems refer to the guidelines as defined by the DGHE



The respective research institute shall:

- formulate & develop a strategic research plan of the respective HEI
- formulate & develop regulations, guidelines, and internal quality assurance systems
- facilitate research implementation
- carry out monitoring and evaluation on the implementation of the research
- facilitate the dissemination of research results
- improve the ability of researchers to carry out research, scientific writing, and acquisition of intellectual property rights (IPR)
- give awards to outstanding researchers



Standards for Research Funding and Financing

- The HEIs shall provide internal research funds
- In addition to internal research budget, funding can be sourced from the government, in collaboration with other institutions both in-country and abroad, or from public funding
- Funding is used to finance planning, implementation, monitoring & evaluation of research, dissemination of research results, and for internal research management.



THANK YOU

