# Inclusive Industrial Strategy ($i^3S$): Industry Priorities & Innovation Policy

DTI strategy for strengthening Manufacturing in fulfillment of the SDGs

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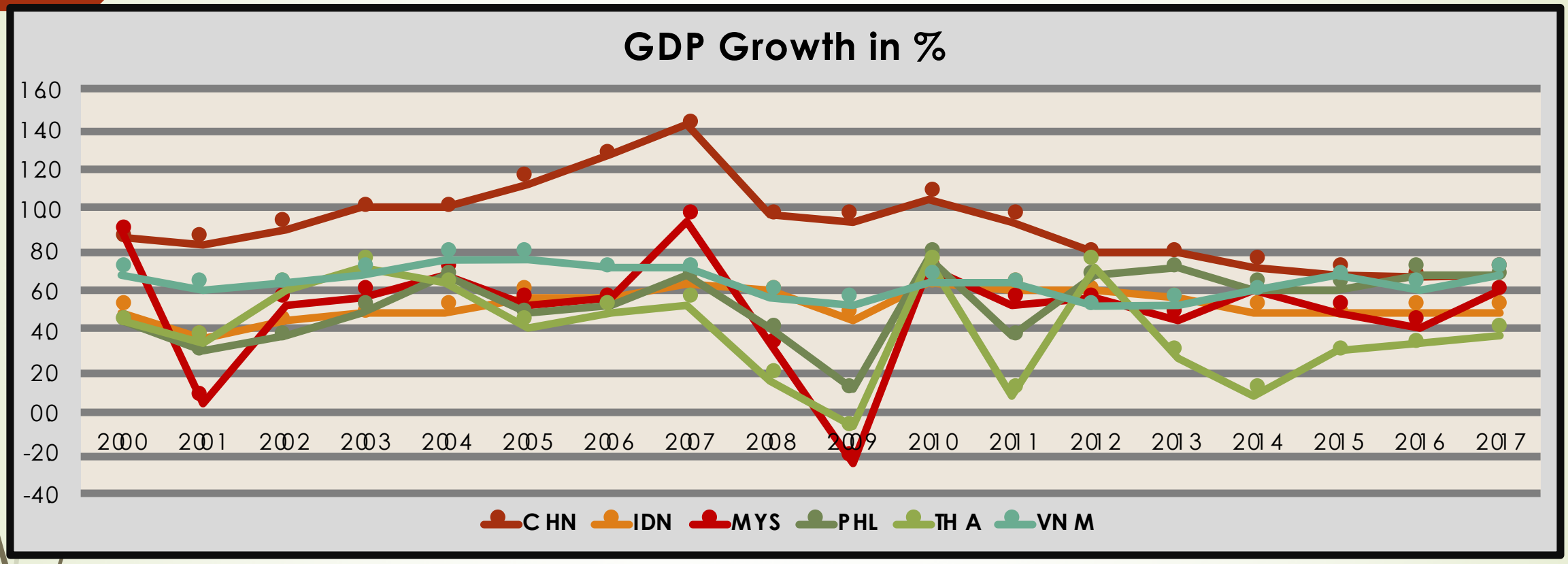
# Presentation Outline

**Inclusive & sustainable innovation-led industrial policy for poverty reduction and economic transformation**

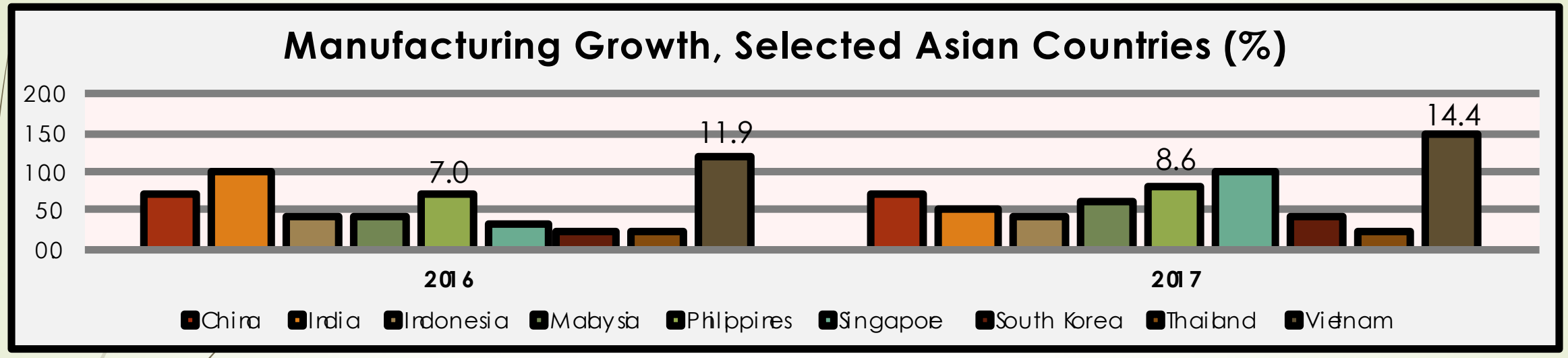
- New Industrial Strategy: inclusive, innovation industrial strategy ($i^3$s)
  - Top 12 Industry Priorities
  - Five Pillars and Strategic Actions
- Inclusive Filipinnovation & Entrepreneurship Roadmap
  - Current state of innovation: strengths, weaknesses
  - Roadmap: what is our vision, where do we want to go, and how to get there

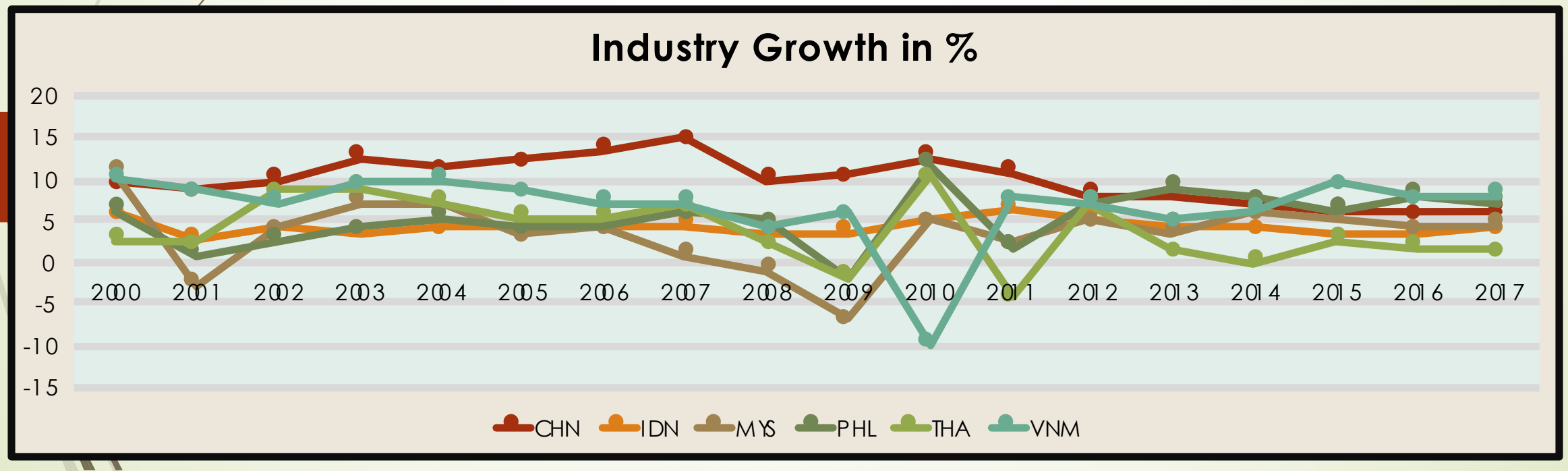
# Macro Performance



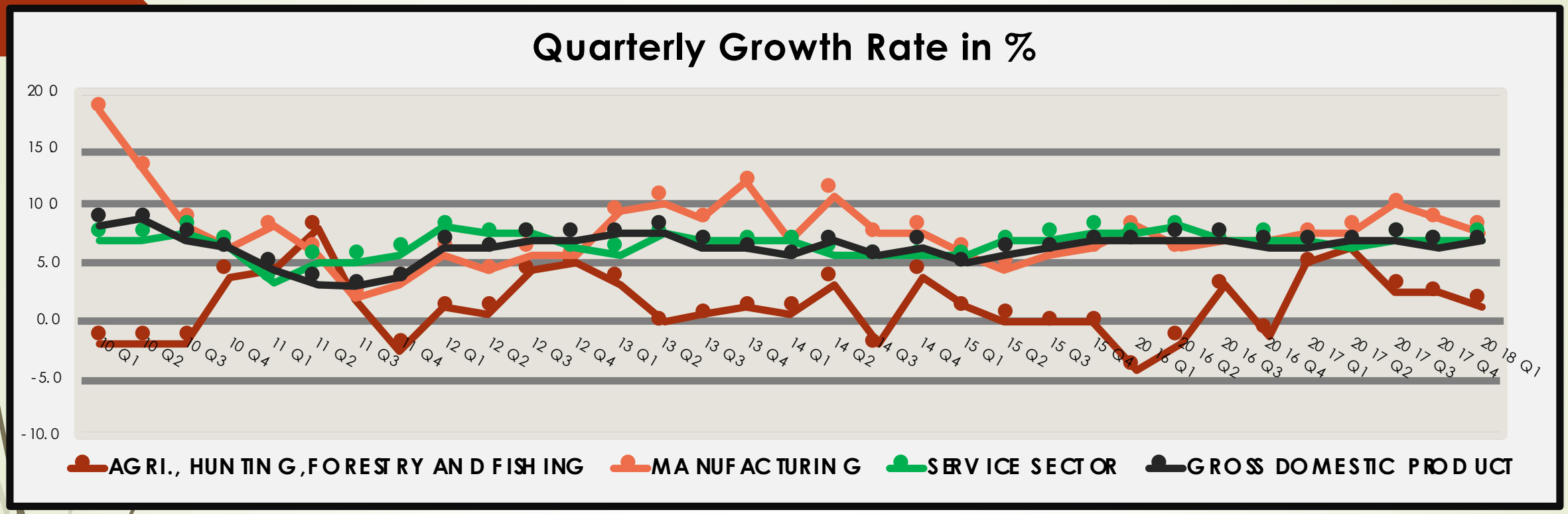

- Amid economic & global uncertainty, PH grew 6.4% from 2010 to 2017
- 2017: China 6.9%, Vietnam 6.8%, **Philippine 6.7%,** Malaysia 5.9%, Indonesia 5.1%, Thailand 3.9%

# High industry growth driven by manufacturing



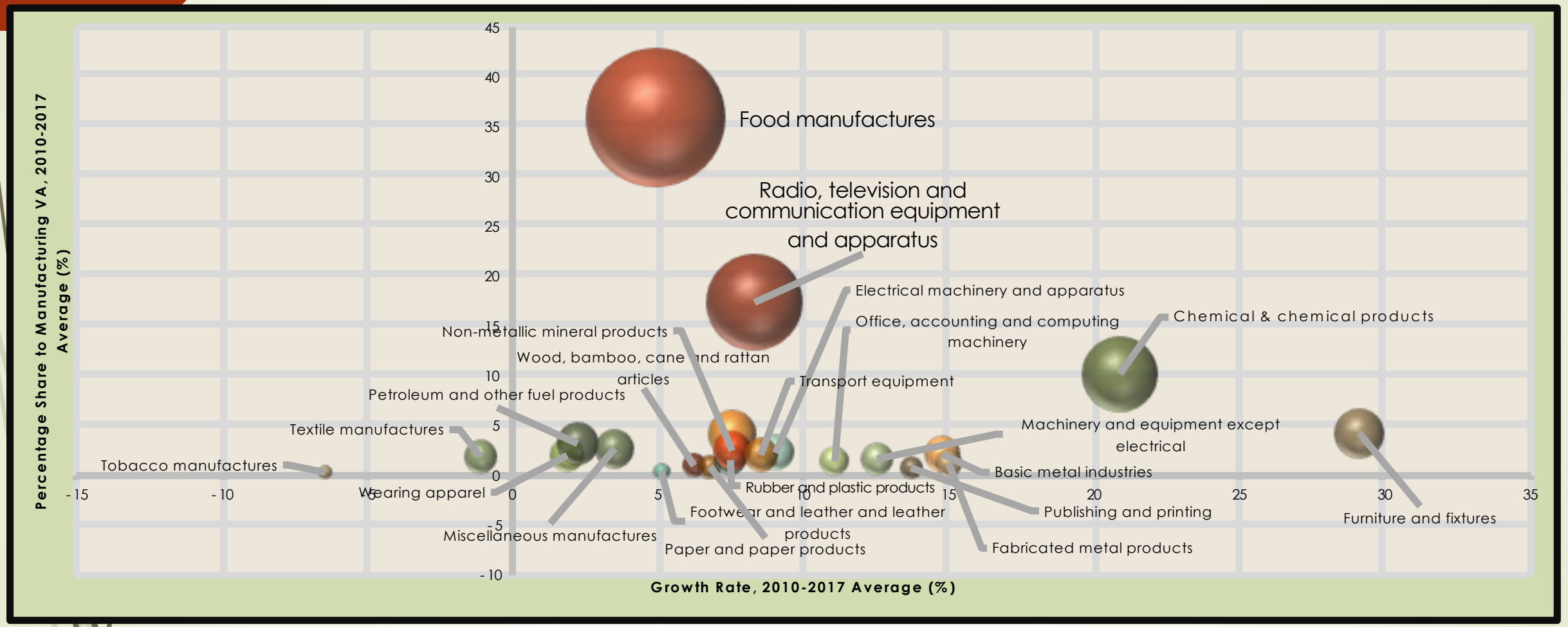
# PH experiencing a manufacturing resurgence




- rising costs in China; growing domestic market, growing middle class, good macro performance; stable business & consumer confidence; young English speaking workforce

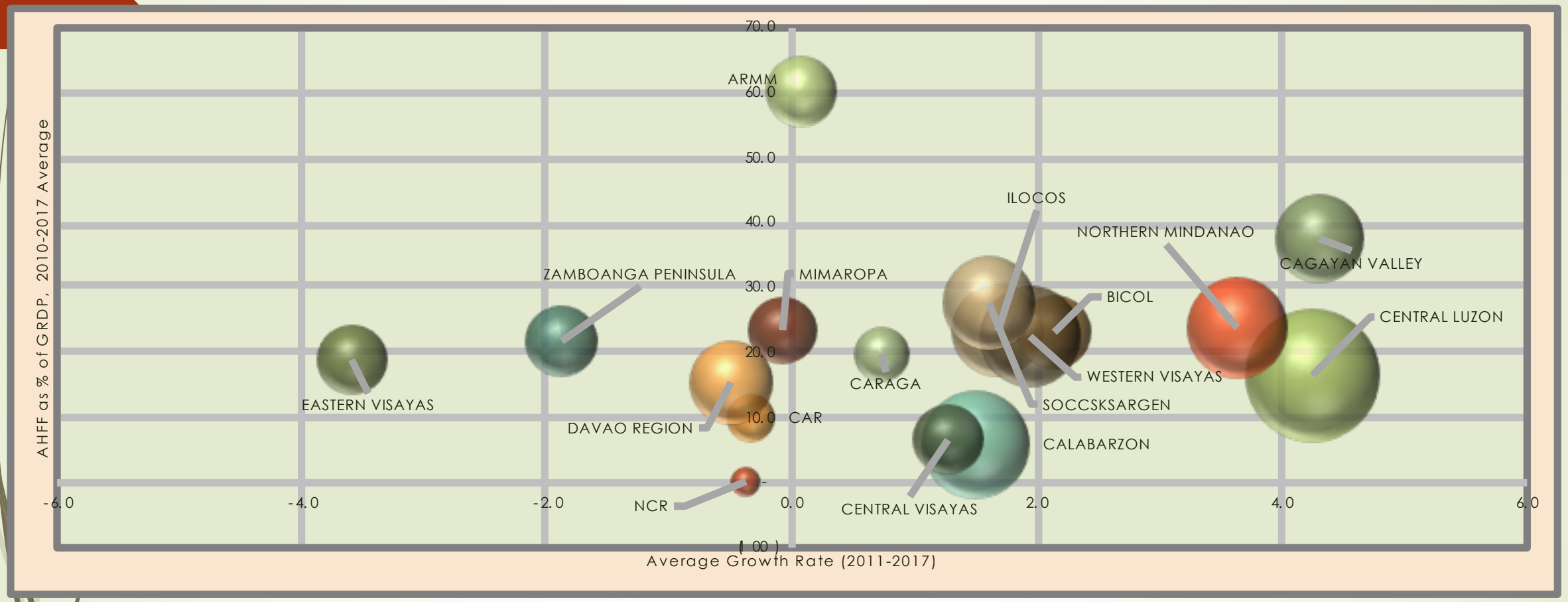
| Period | Manufacturing | Services | Agriculture, fishing, forestry |
|---|---|---|---|
| 2000-2009 | 3.2 | 5.2 | 3.2 |
| 2010-2017 | 7.6 | 6.7 | 1.4 |

# Leading sectors: food manufacturing, electronics, chemicals



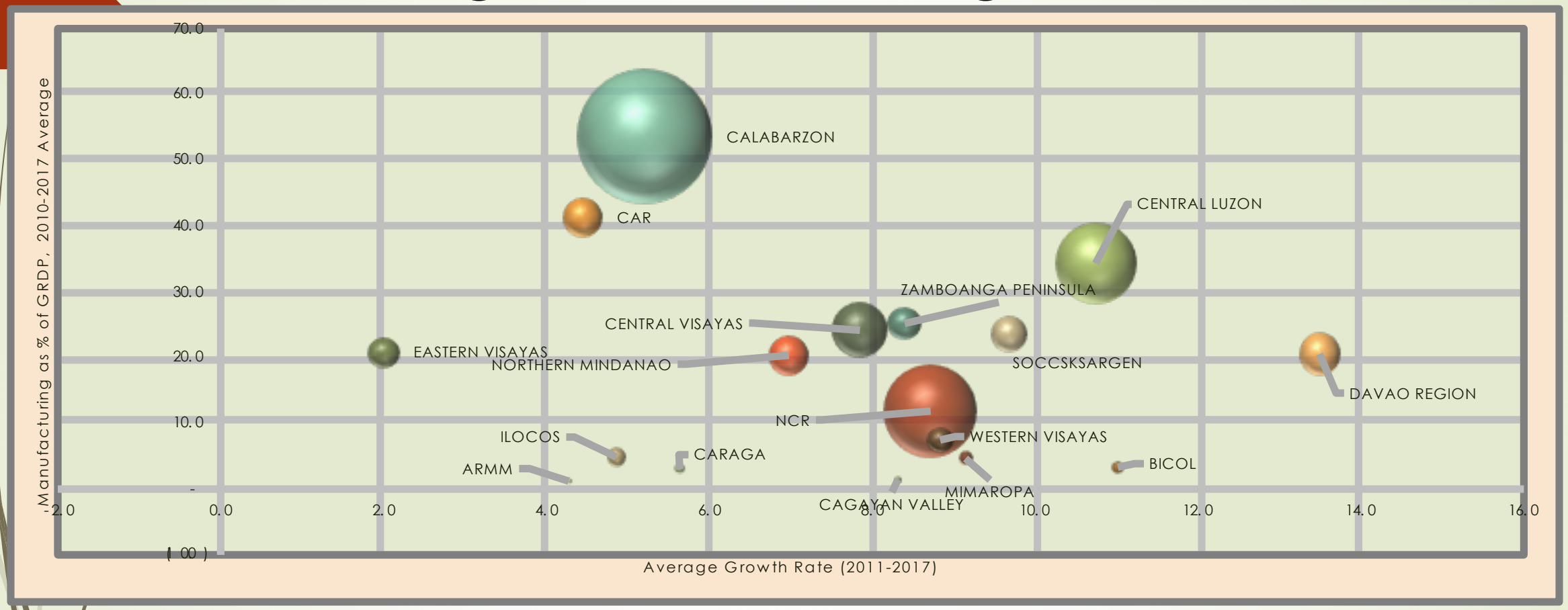

- Food manufacturing dominated with a share of 33.5% in 2017
- Growth in 2017: 5%, 8.2% in 2016

# Regional economies still dependent on agriculture



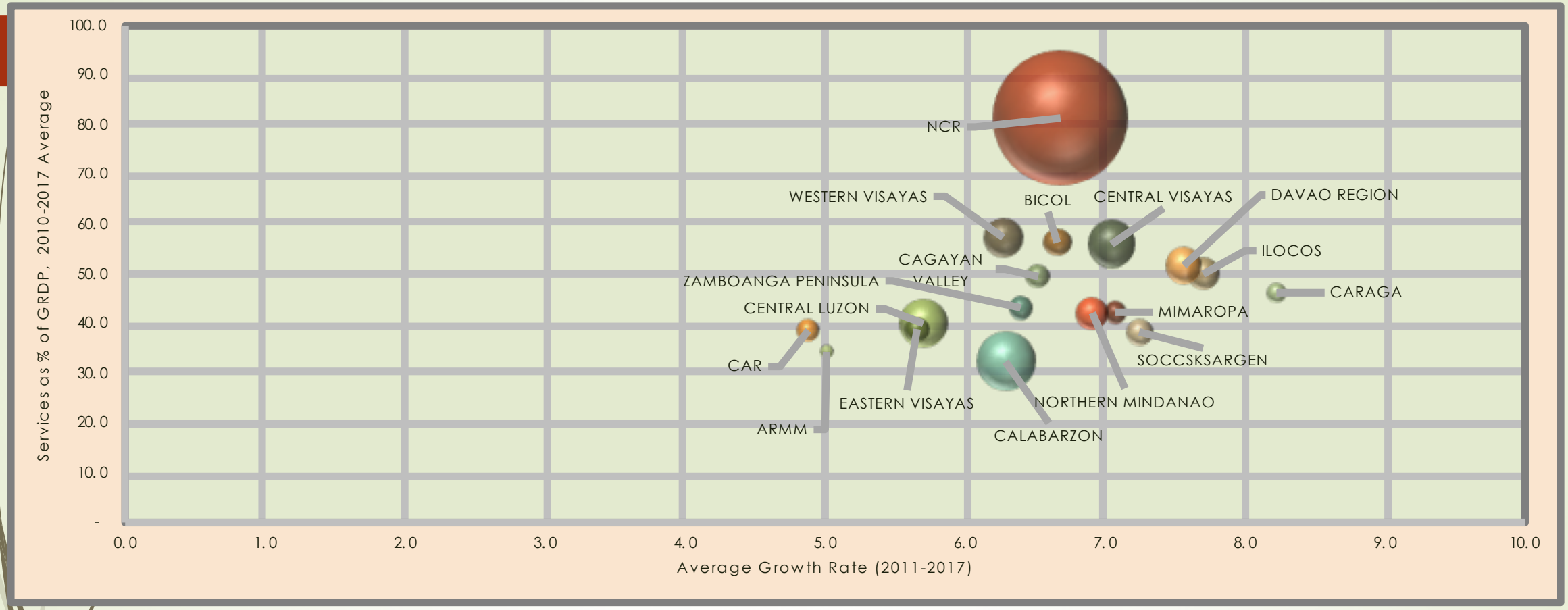

- Except for NCR, our regional economies are still dependent on agriculture, forestry, and fishery
- In terms of size, the largest contributors are led by Central Luzon (14.8%) followed by CALABARZON (10.0%), Western Visayas (8.9%), Northern Mindanao (8.6%), & SOCCSKARGEN (7.4%)

# Manufacturing is confined in Regions 4A, NCR, & 3



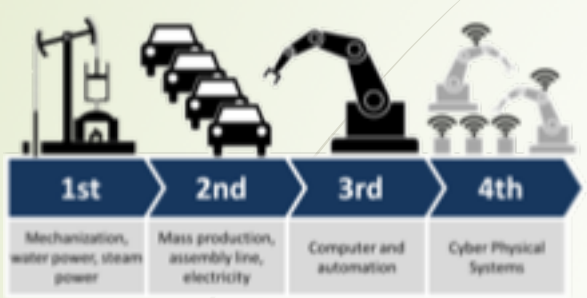

- Manufacturing activities have been largely confined in CALABARZON (41.0%), followed by NCR (18.5%) and Central Luzon (13.5%)
- Central Visayas (6.6%) and Davao (3.3%) trying to catch-up

# Services is concentrated in NCR



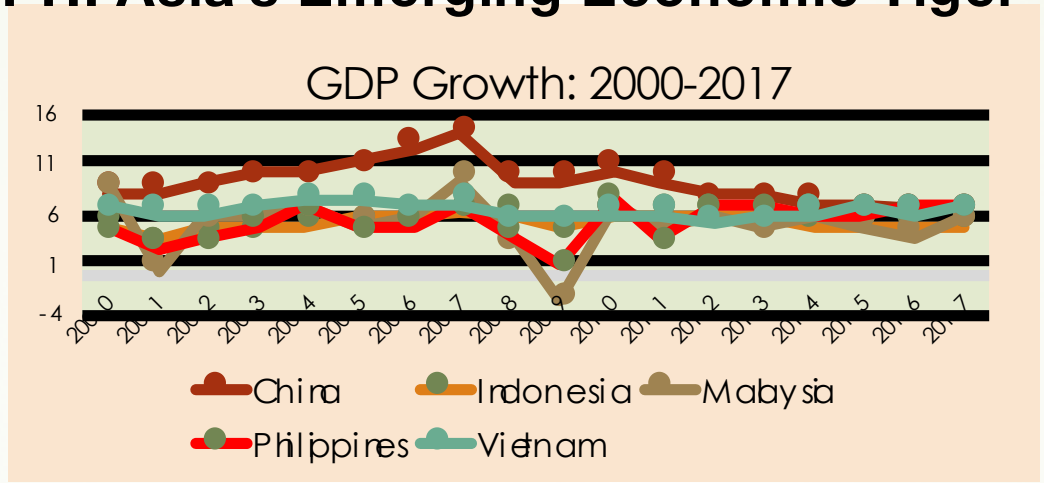

- Huge imbalance among the regions in terms of services; services is highly concentrated in highly urbanized NCR accounting for 51.8% of total
- Outside NCR, services is quite high only in relatively large economic areas led by CALABARZON (9.9%) followed by Central Luzon (6.6%), & Central Visayas (6.2%)

# New Industrial Strategy
## GLOBAL & DOMESTIC CONTEXT






### PH: Asia's Emerging Economic Tiger




### Poverty incidence remains high

| | | | |
|---|---|---|---|
| ARMM | 53.7% | N. Mindanao | 36.6% |
| CARAGA | 39.1% | Bicol | 36% |
| E. Visayas | 37.3% | Zamboanga | 33.9% |

i3s Inclusive Innovation Industrial Strategy



# Industry 4.0 disrupting business models at an accelerated pace, **is PH ready?**

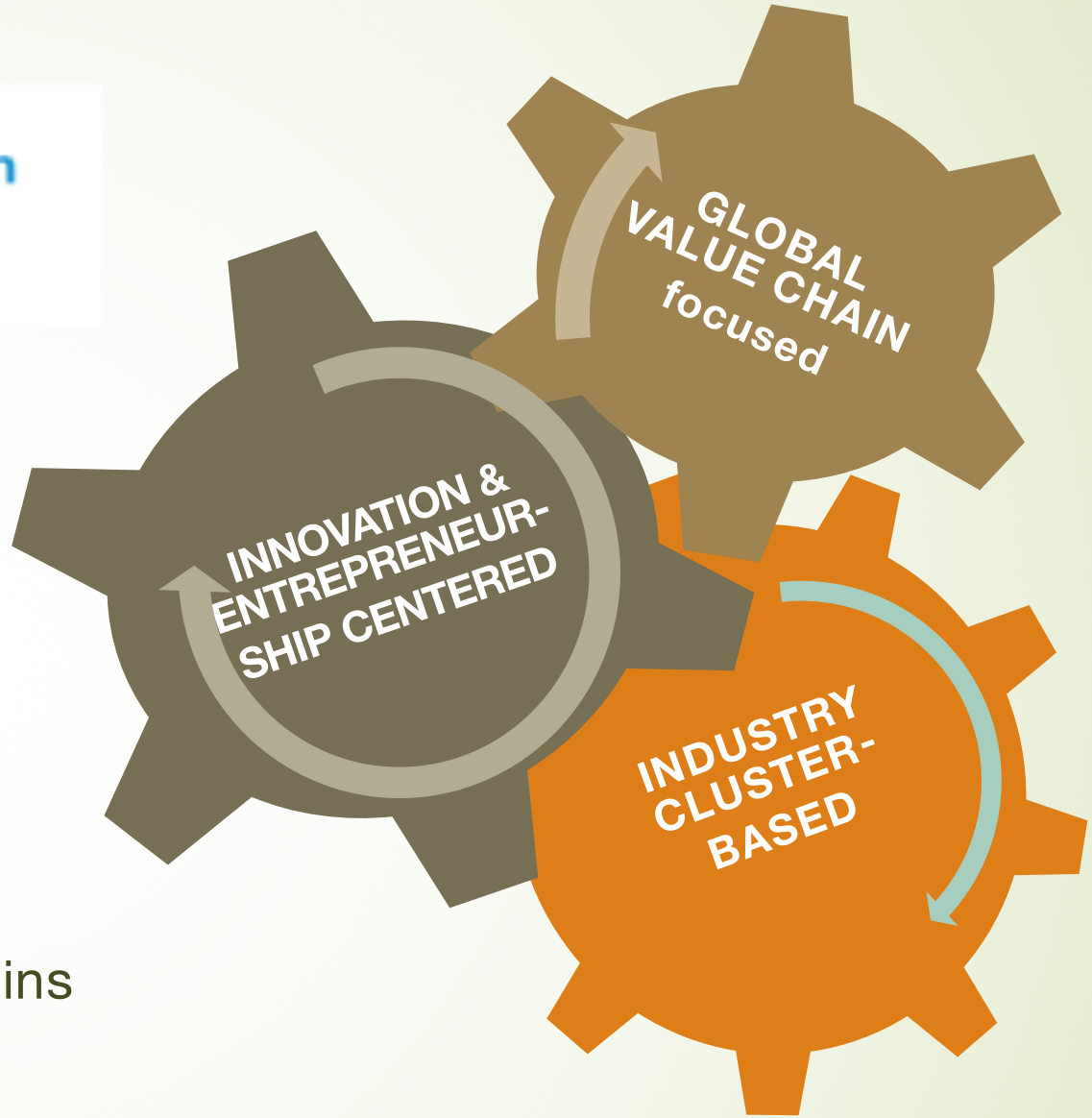


- PH: low level of readiness for future production, at risk
- Weak institutional framework, human capital, technology & innovation (WEF 2018)
- Upgrade technology platform, reskill/up- skill workers
- **Innovation: animating force behind the future of production**

i³s Inclusive Innovation Industrial Strategy

# Overall Goal

- Build innovation & entrepreneurship ecosystem
  -> upgrade & develop new industries
- Remove obstacles to growth
  -> attract investments, create jobs
- Strengthen domestic supply chains & participation in global/regional value chains
  -> link manufacturing with agriculture & services

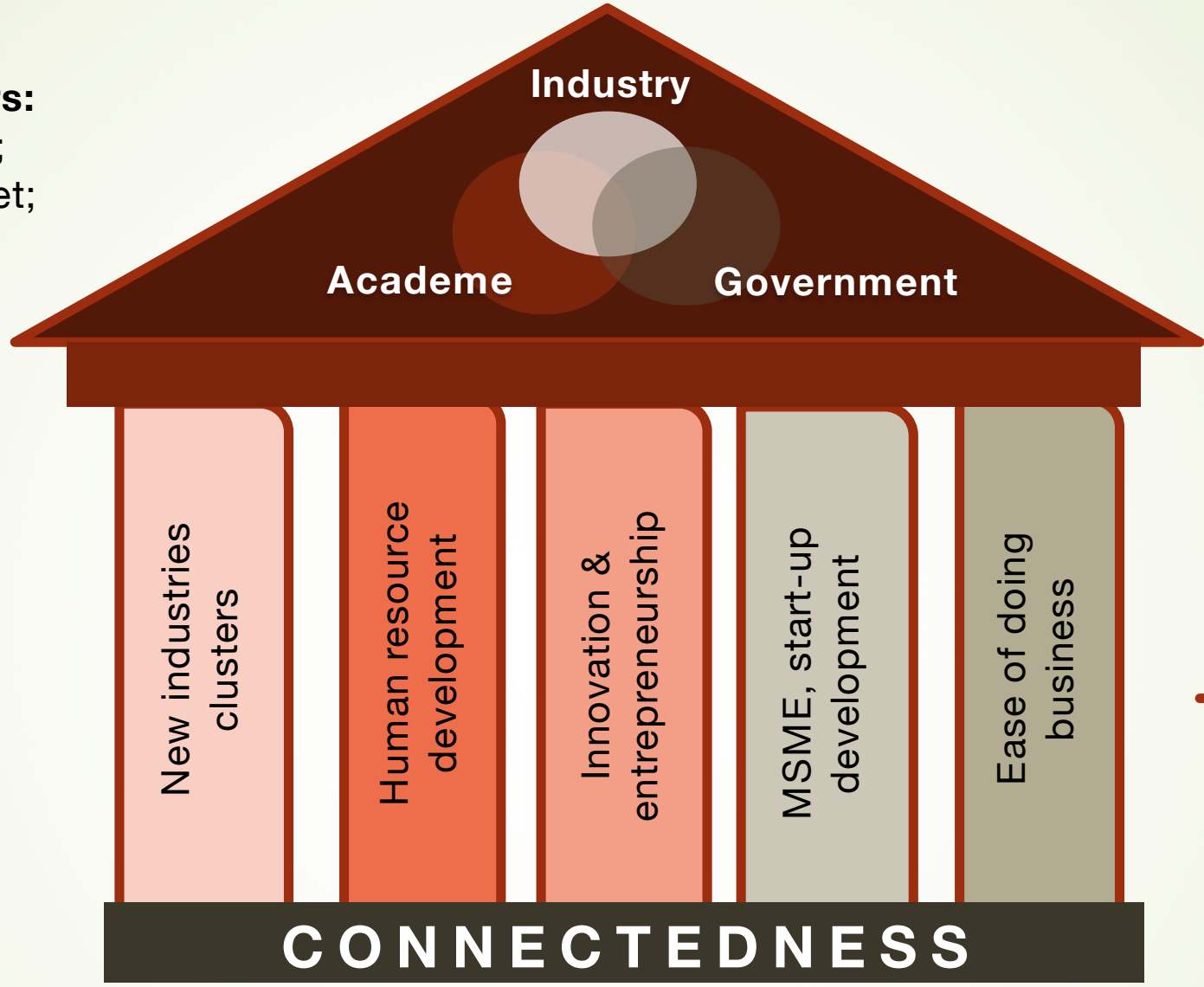



**Role of Government: a**ddress coordination & market failures; create proper environment for private sector growth

**New Industries, clusters:** supply/value chain gaps; domestic & export market; trade & investment promotion; incentives

**Human Resource Development** upgrading education curricula, skills training programs, improving digital skills

**MSMEs**: access to finance, markets, skilled labor, technology
7Ms: mindset, mastery, mentoring, money, machine, market, models




**Innovation & Entrepreneurship:** government-academe-industry linkage, market-oriented research; R&D centers, innovation incentives; shared facilities & support for startups, regional inclusive innovation hubs

**Ease of Doing Business:** simplification of processes, automation; power, logistics, infrastructure

**Strong government-academe-industry collaboration**

# i³S Five Major Pillars

# Investment activities that are efficiency-seeking & would cater to both domestic & export markets

## Opportunities

- New high level growth trajectory
- Growing market, middle class
- Political stability
- Young, English speaking workforce
- Stable business confidence
- AEC & FTAs
- Industry 4.0

**100+ Million Consumer Market as springboard**

**PH as regional hub, linked with GVCs**

## Challenges

- Complex regulations
- High cost of power
- Lack of ports, airports, roads
- SME access to finance
- Supply chain gaps
- Industry 4.0

## Strategic Policies

- Trade & Industry
- Infrastructure
- **Investment Promotion**
- Skills training, HRD
- Innovation, R&D
- Green growth
- MSME & startup development

# Top 12 Priorities for Both Domestic & Export Markets

Electrical & Electronics

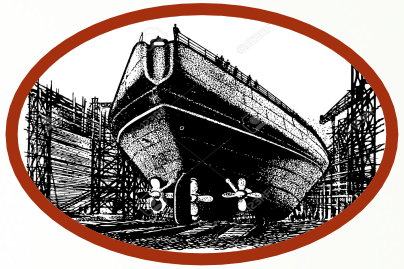
IT BPM, E-Commerce

Agri-business

Transport, Logistics, Construction, Tourism

Auto & Auto Parts

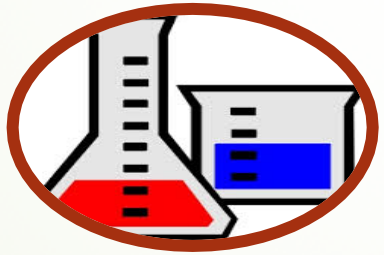
Tool & Die, Iron & Steel



Shipbuilding, RORO

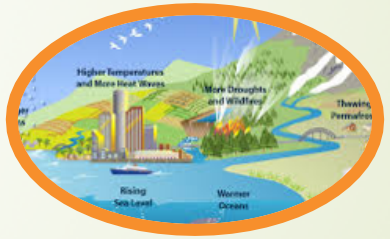

Innovation, R&D

Aerospace Parts



Chemicals

Furniture, Garments, Creative



Inclusive Business, Climate Change

Hi-technology, innovation/R&D, infrastructure, regional imbalance, labor-intensity, sustainability, spill-over/multiplier effects, value/supply chain linkage

# Regional Industry Priorities

**CAR**: coffee, processed vegetables, aerospace, electronics, tourism

**4B**. seaweed, tablea, rubber, coco coir, tourism

**5.** metal casting, coco coir, health care, agribusiness

**6**. processed meat, processed shrimp, tourism

**7.** seaweed/carrageenan, dried mangoes, furniture, IT-BPM, shipbuilding, tourism

**10**. rubber, bamboo, cacao, coco coir, coffee, agribusiness, tourism

**11**. processed meat, seaweed/carrageenan, cacao/ tablea, agribusiness, tourism


**ARMM**: coffee, rubber, cacao, palm oil, agribusiness

**1**. coffee, cacao, processed fruits, processed meat, tourism

**2**. processed fruits, processed meat, coffee, furniture, cacao, agribusiness

**3**. bamboo, furniture, aerospace, processed meat, shipbuilding, aerospace

**4A**. auto, electronics, petrochemical, IT-BPM, chemicals, aerospace

**8.** processed meat, copper, processed marine, processed fruits, natural health, agribusiness

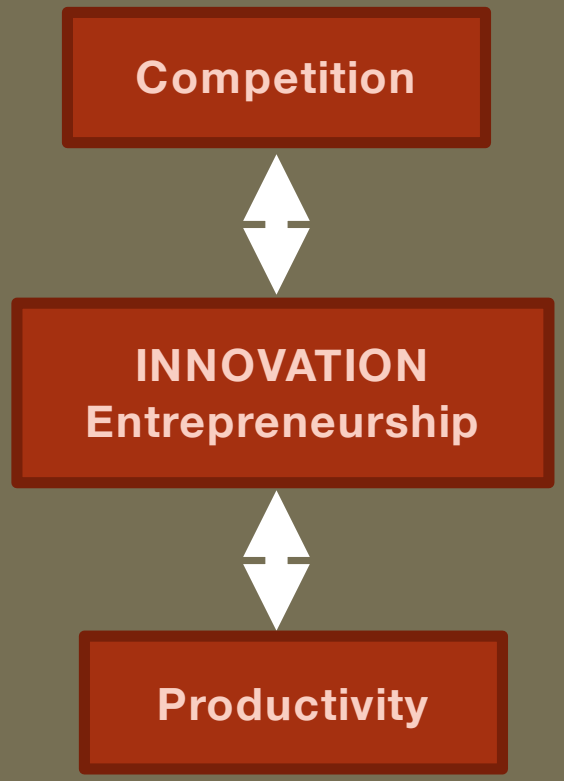
**9**. rubber, cacao, processed fruits (mango), coconut, agribusiness

**12**. rubber, palm oil, processed fish/aquamarine, tourism, agribusiness

**13**. processed marine, palm oil, rubber, agribusiness

Global Innovation Index 2017

# Innovation is at the front & center of our new industrial policy



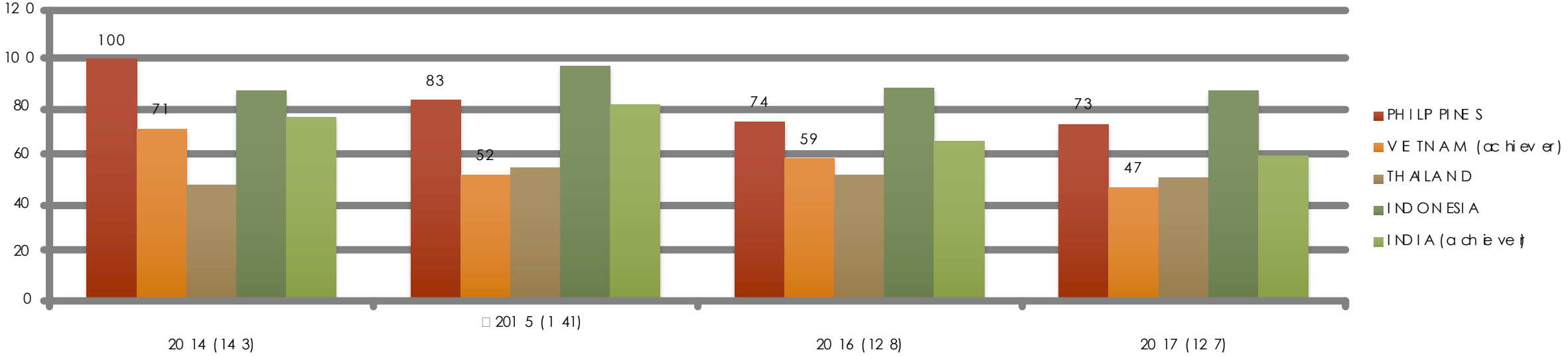

**Underlying Framework of PH industrial strategy**

**COMPETITION- INNOVATION-PRODUCTIVITY NEXUS**


**ASEAN**

7. Singapore
37. Malaysia
47. Viet Nam
51. Thailand
60. India
**73. Philippines**
87. Indonesia

# Global Innovation Index 2017




**STRENGTHS:**

graduates in science & engineering (#27);

trade, competition & market scale (27);

firms offering formal training (9);

research talent (8);

high & medium high-tech manufactures (18);

ICT services exports (16)

**WEAKNESSES:**

ease of starting a business;

education (#113);

expenditure on education (#106);

government expenditure/pupil (#99);

pupil-teacher ratio (#99);

tertiary inbound mobility (#105)

global R&D companies; science & technical articles (#120);

global R&D companies; science & technical articles (#120);

new businesses/'000 population; creative goods & services (#115),

online creativity (92)

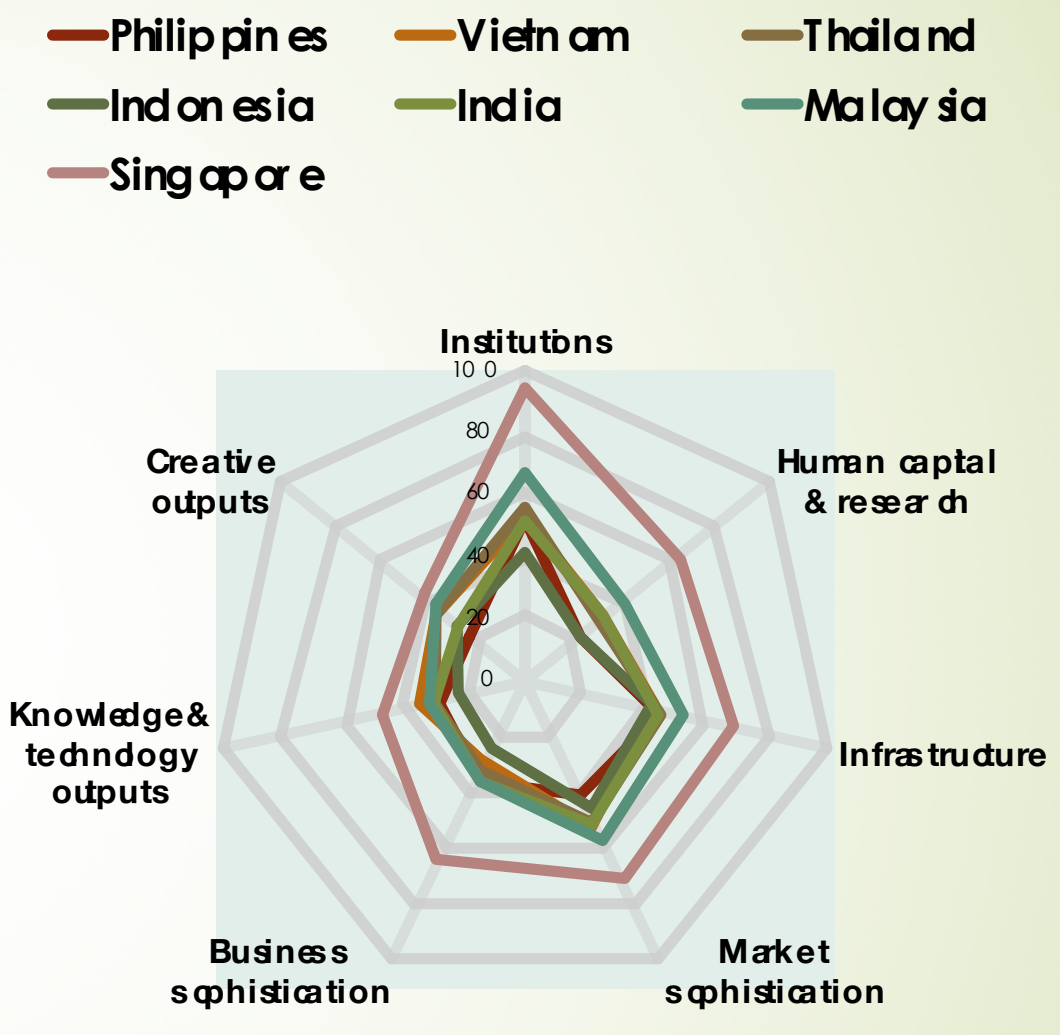
# 2 Global Innovation Index 2017

## PH Scored Lowest in:

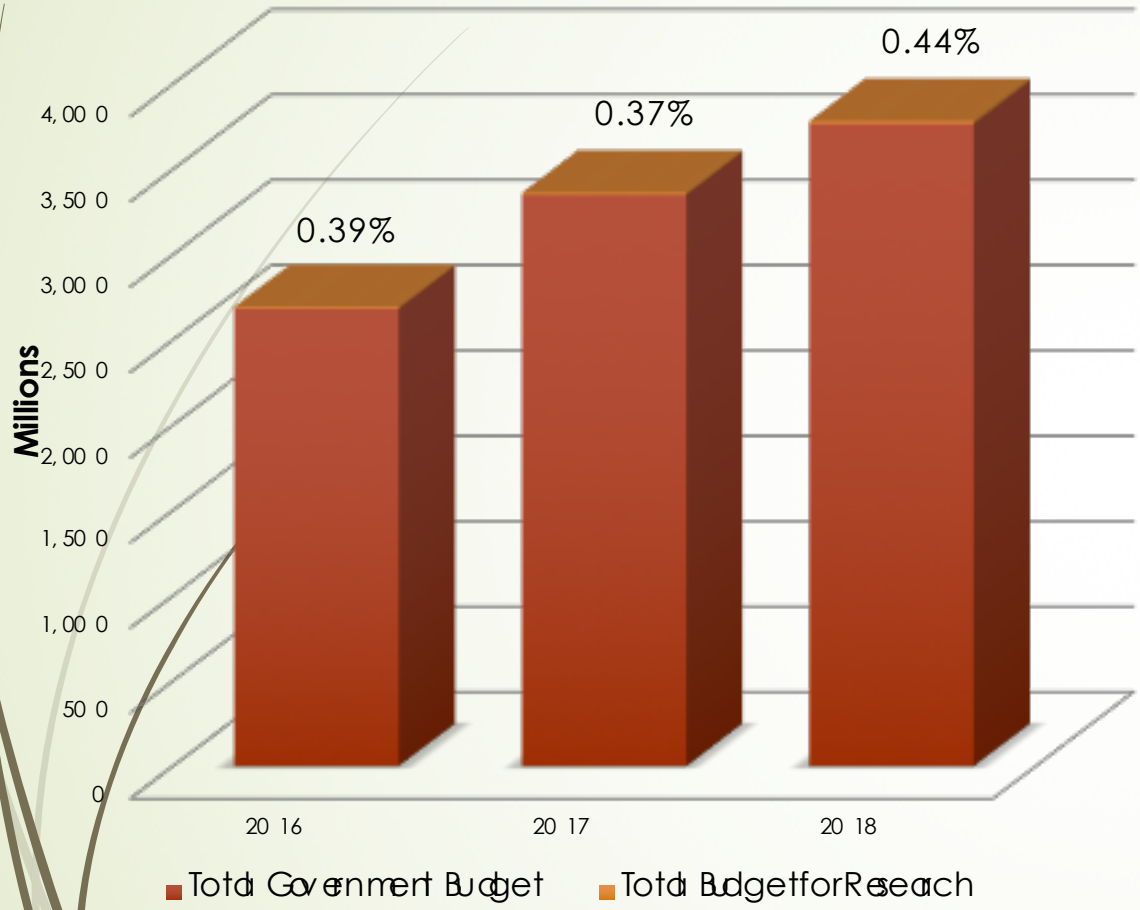
- Creative outputs: intangible assets (trademarks, industrial designs, ICT & business model), creative goods & services (cultural & creative services exports), online creativity (video uploads on YouTube)
- Human capital: education, tertiary education (enrolment), R&D expenditure, global R&D
- Market sophistication: credit (ease of getting credit, microfinance loans), investment (ease of protecting minority investors, venture capital deals)

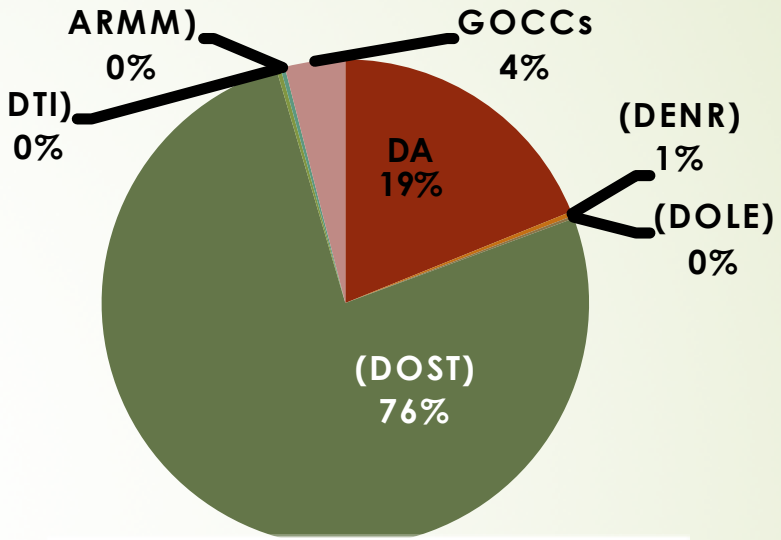
More needs to be done

- ICT infrastructure: access #89, ICT use #88
- Innovation linkages (#95)

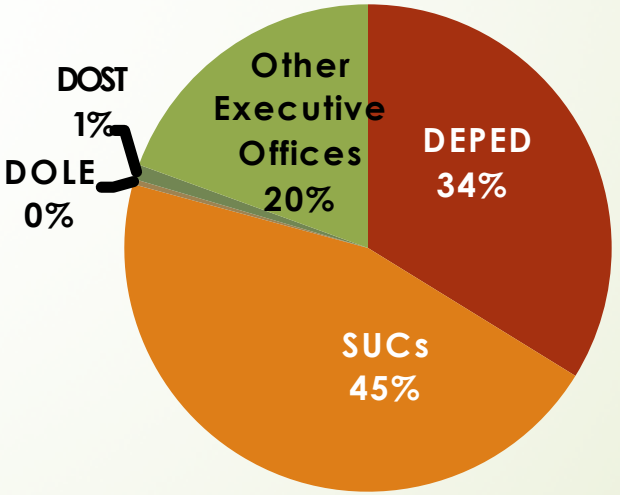


# Government Research Budget



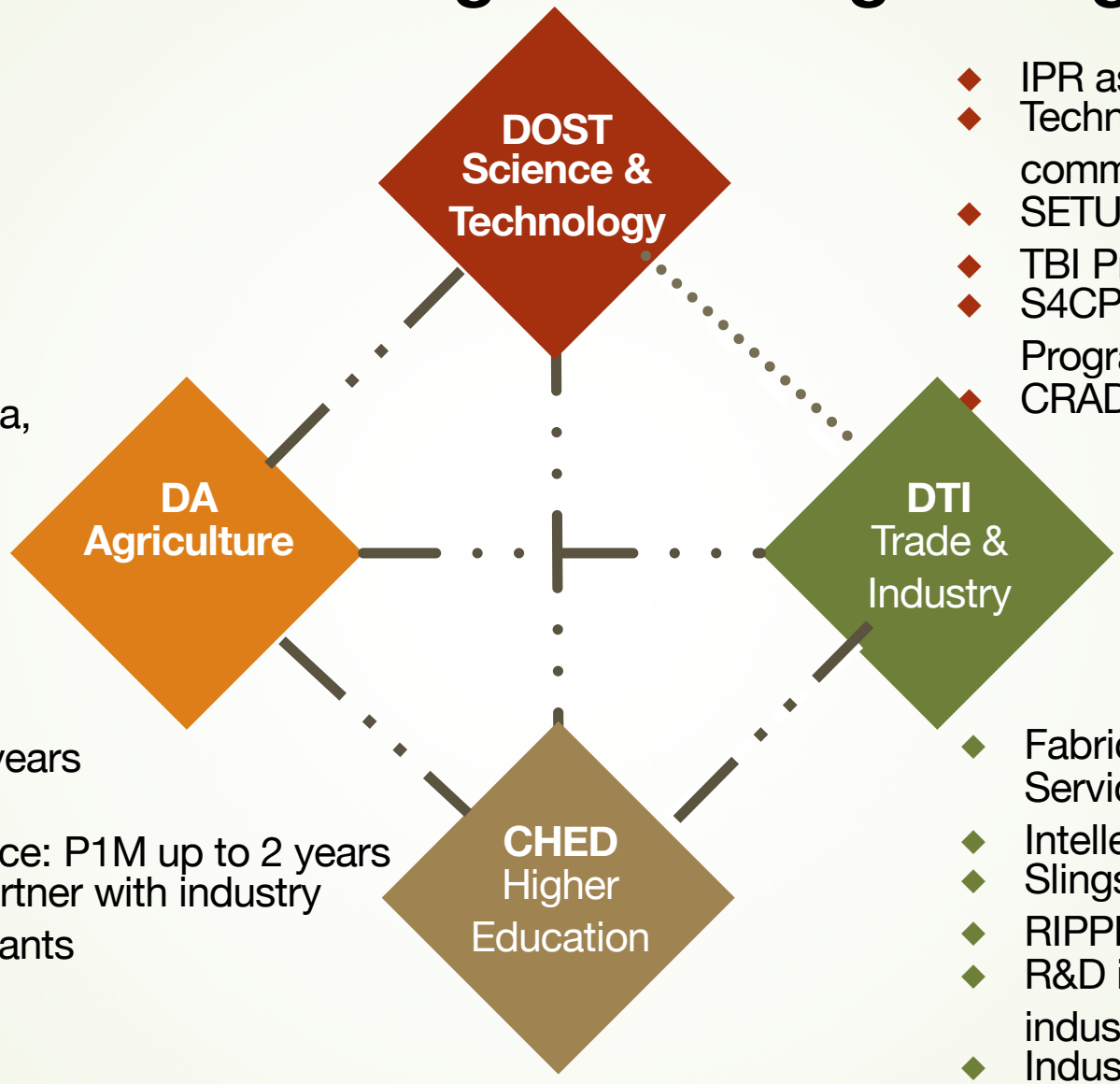

R&D Economic Affairs 2018




R&D Education 2018

# 2 Limited coordination among research-granting agencies

- Community-based participatory action research (CPAR)
- National Technology Commercialization Program (NTCP)
- National Commodity Programs: rice, corn, cassava, HVCs
- National thematic programs: organic agriculture, climate change, biotechnology

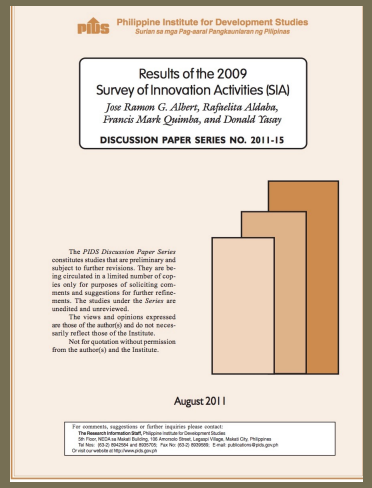



- IPR assistance thru TAPI
- Technicom: technology innovation for commercialization
- SETUP
- TBI Program: diffusion of technology
- S4CP: NICER, R&D Leadership Program
- CRADLE, BIST

- Block Grants: P10M up to 2 years
- Regular GIA: P500-P10M
- Frontiers in research excellence: P1M up to 2 years
- Industry 4.0 grants: HEI to partner with industry
- International Collaborative Grants
- Masters or Doctoral Theses
- REALM: capacity building

- Fabrication Laboratories, Shared Services Facilities, Negosyo Centers
- Intellectual Property Protection
- Slingshot, Funding: SBCorp
- RIPPLES
- R&D incentives & incentives for new industries, technologies
- Industry development & roadmaps

# 2 Weak linkage between industry & academe



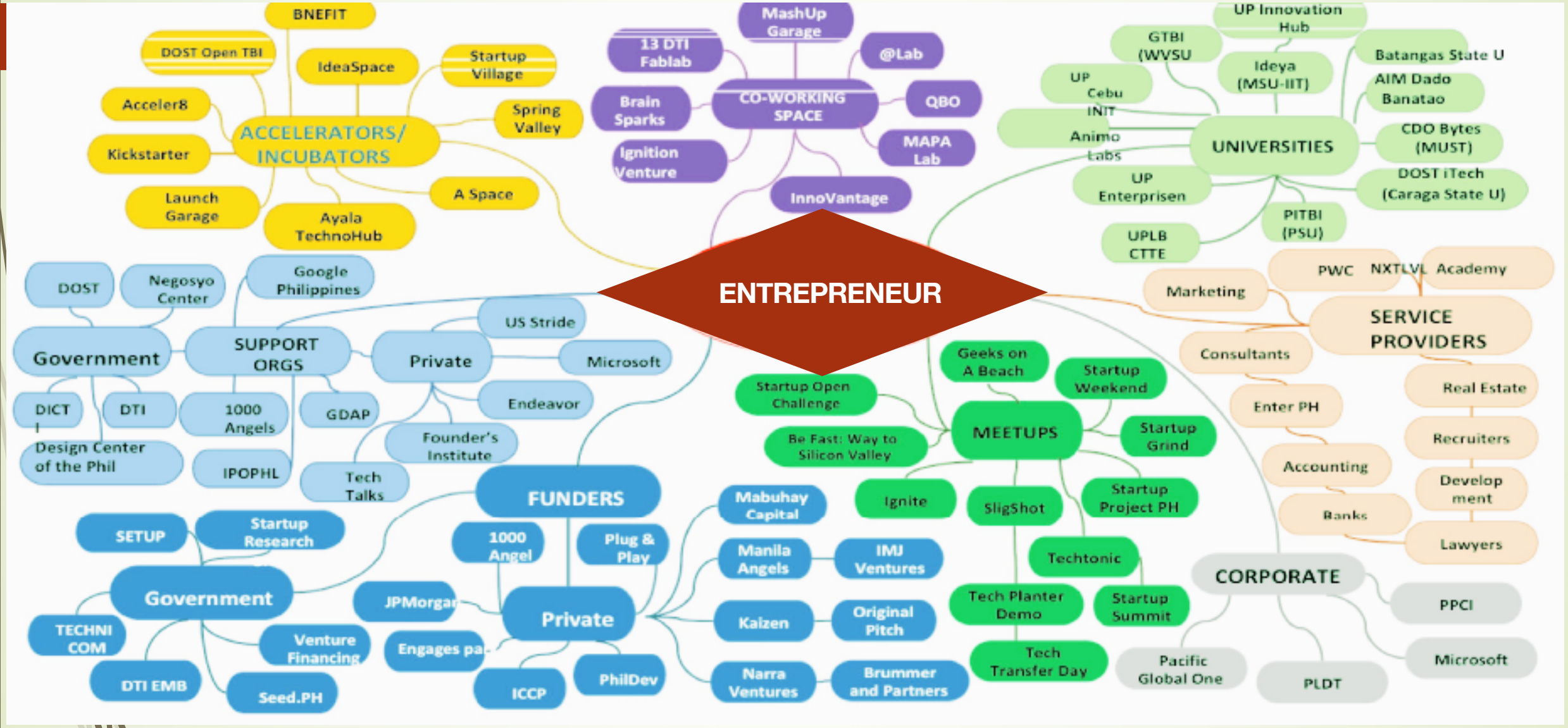




- Low GERD due to limited resources
- 42.9% of surveyed firms are innovation active
- Lack of appropriate incentives to produce competitive & relevant research at universities
- Widespread mistrust between university & industry communities, more competition than collaboration
- Lack of strong culture of research in universities

- Open innovation exist in the supply chain but not with academe
- Lack of STEM-oriented PhD programs, limited post-doctoral research training
- No critical mass in terms of volume of research
- Difficulties in procurement laws

# PH start-up ecosystem: missing linkages & players, lack of connectedness



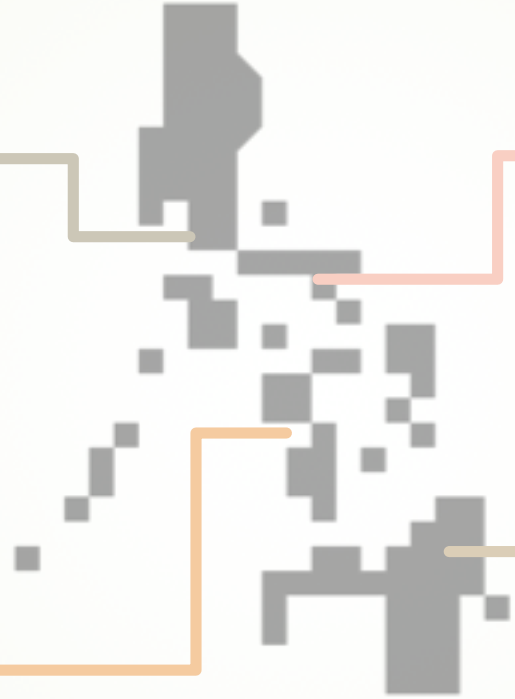
# FGDs: Voices from the Regions
# Building Connected Creative Innovative Communities

**R&D collaboration between industry & academe**

- Research hubs / R&D collaboration centers at select HEIs
- Test technologies & innovations developed by partner sector

**Integration of innovation and entrepreneurship in education curriculum**

- education modules to strengthen STEAM programs & align it with Industry 4.0
- faculty training on innovation & entrepreneurship
- Provide government subsidy



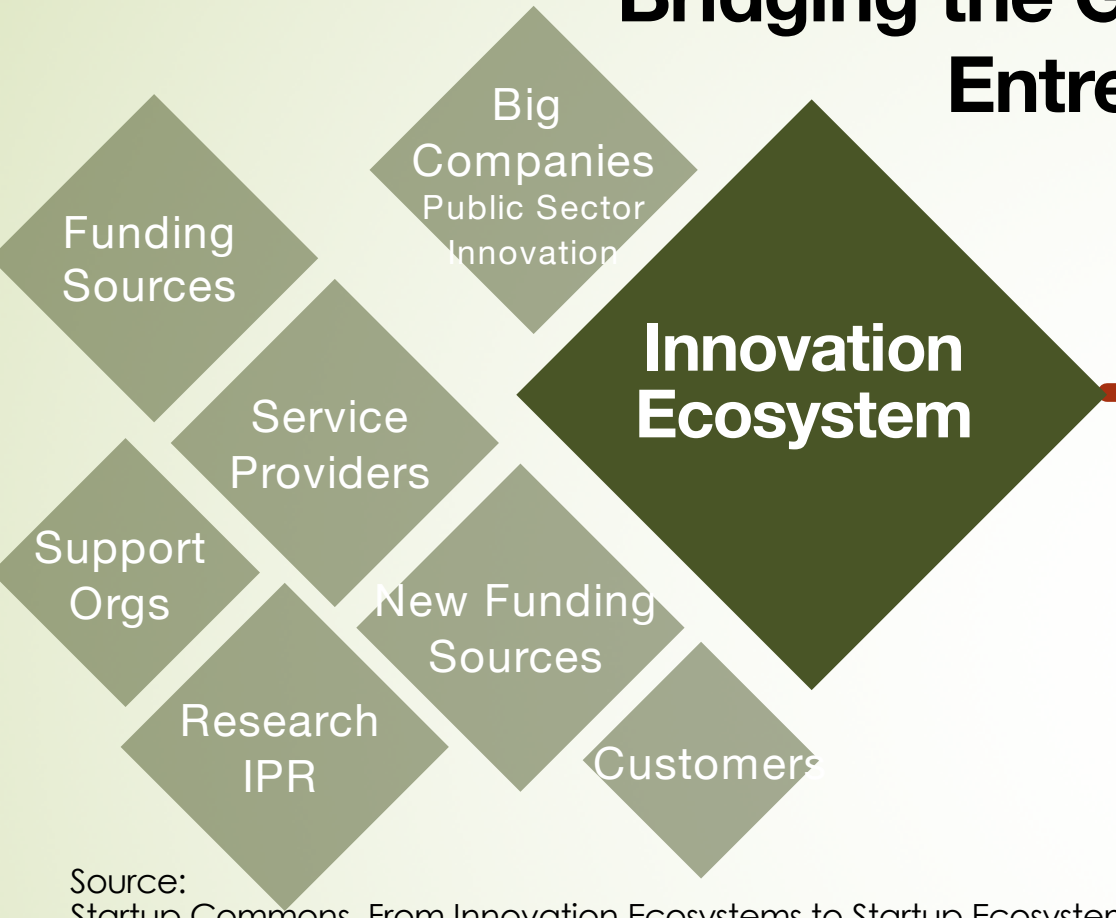
**Legislation and policies to strengthen R&D based on local industry needs**

- Support Philippine Innovation Act and National Innovation Roadmap
- Policies for regional & cluster innovation, including increased R&D funds for LGUs

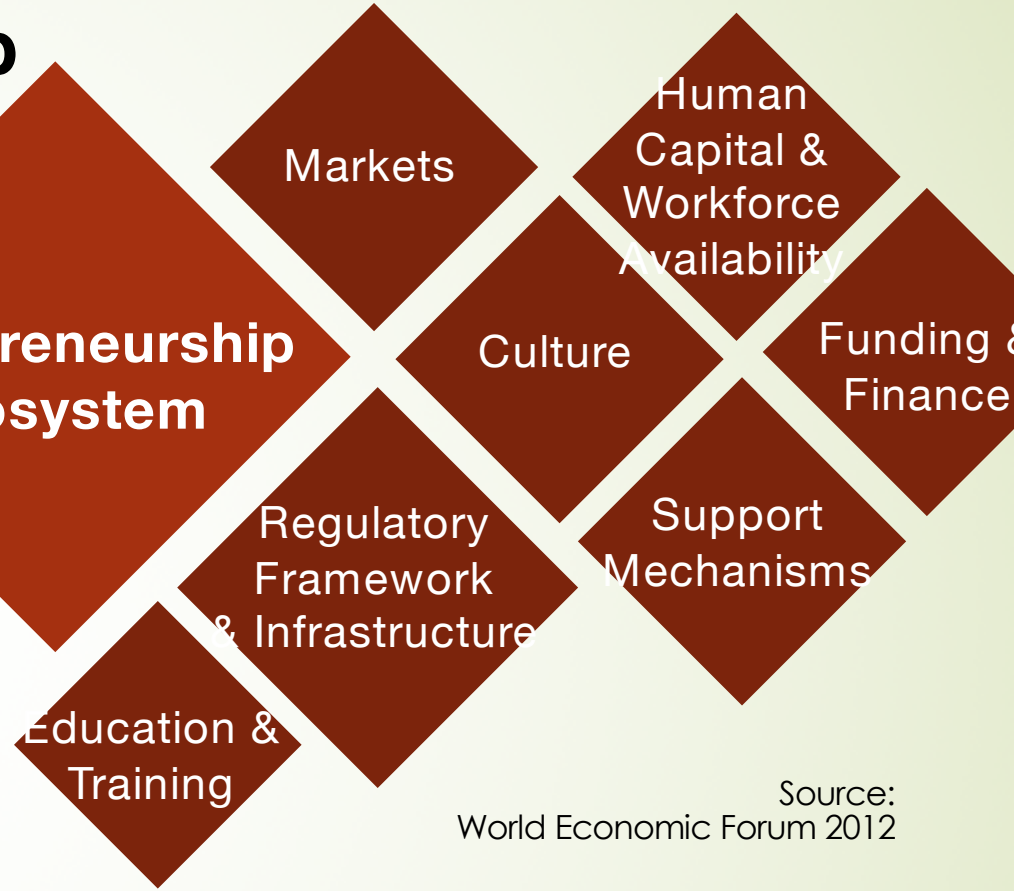
**Improved quality and utilization of government's shared infra i.e., SSFs, FabLabs, FICs, etc.**

- S&T & innovation skills of personnel running SSFs, FICs
- MSME training on the use of SSFs; access to SSFs

# Bridging the Gaps in Innovation and Entrepreneurship




Source:
Startup Commons, From Innovation Ecosystems to Startup Ecosystems, 2017



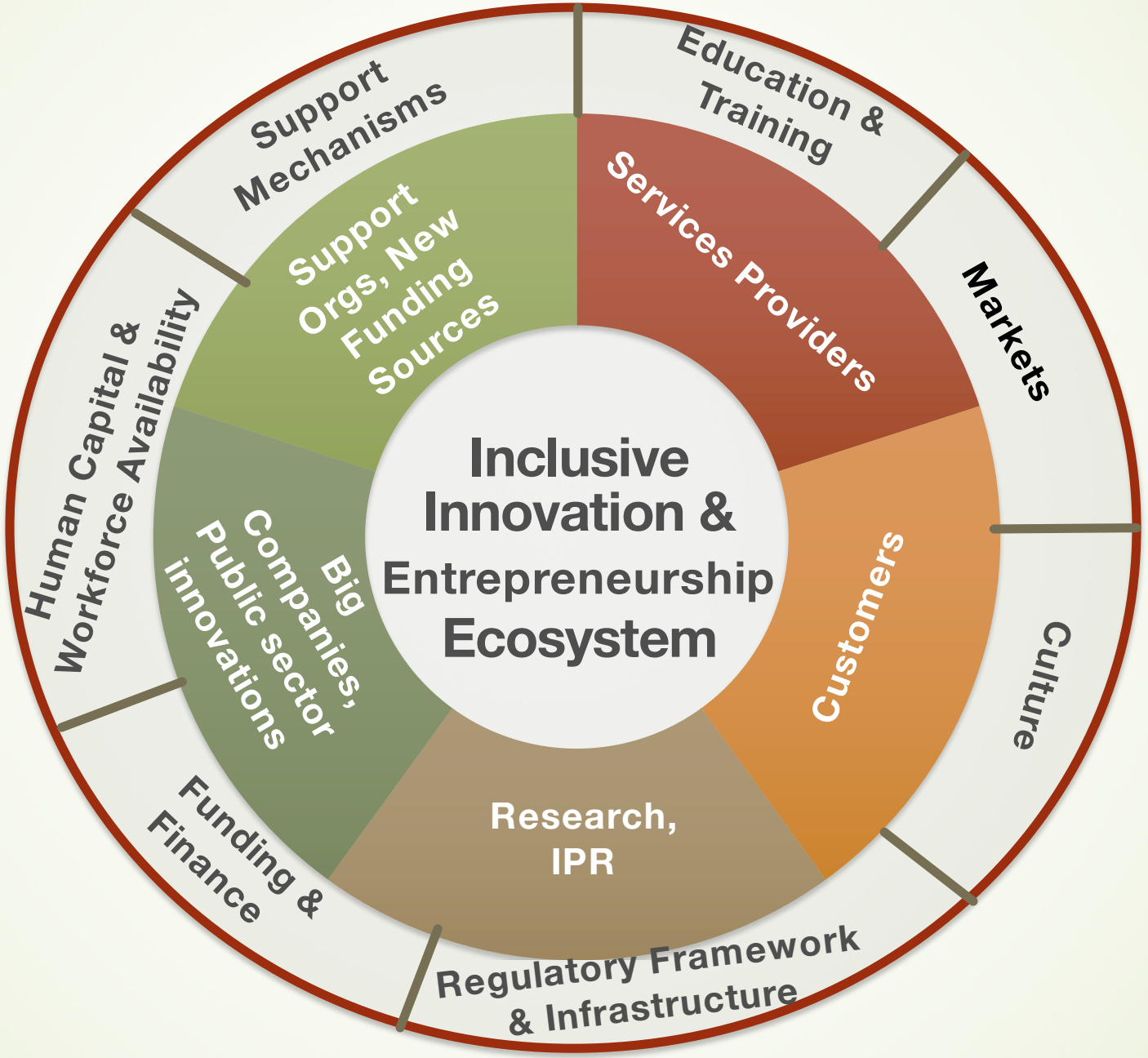

Source:
World Economic Forum 2012

- **Strong collaboration among government, academe, industry**
- **Strong business & policy environment**
- **Creative talent pool: critical mass**

→ **sustainable growth** → **connected country** → **poverty reduction**

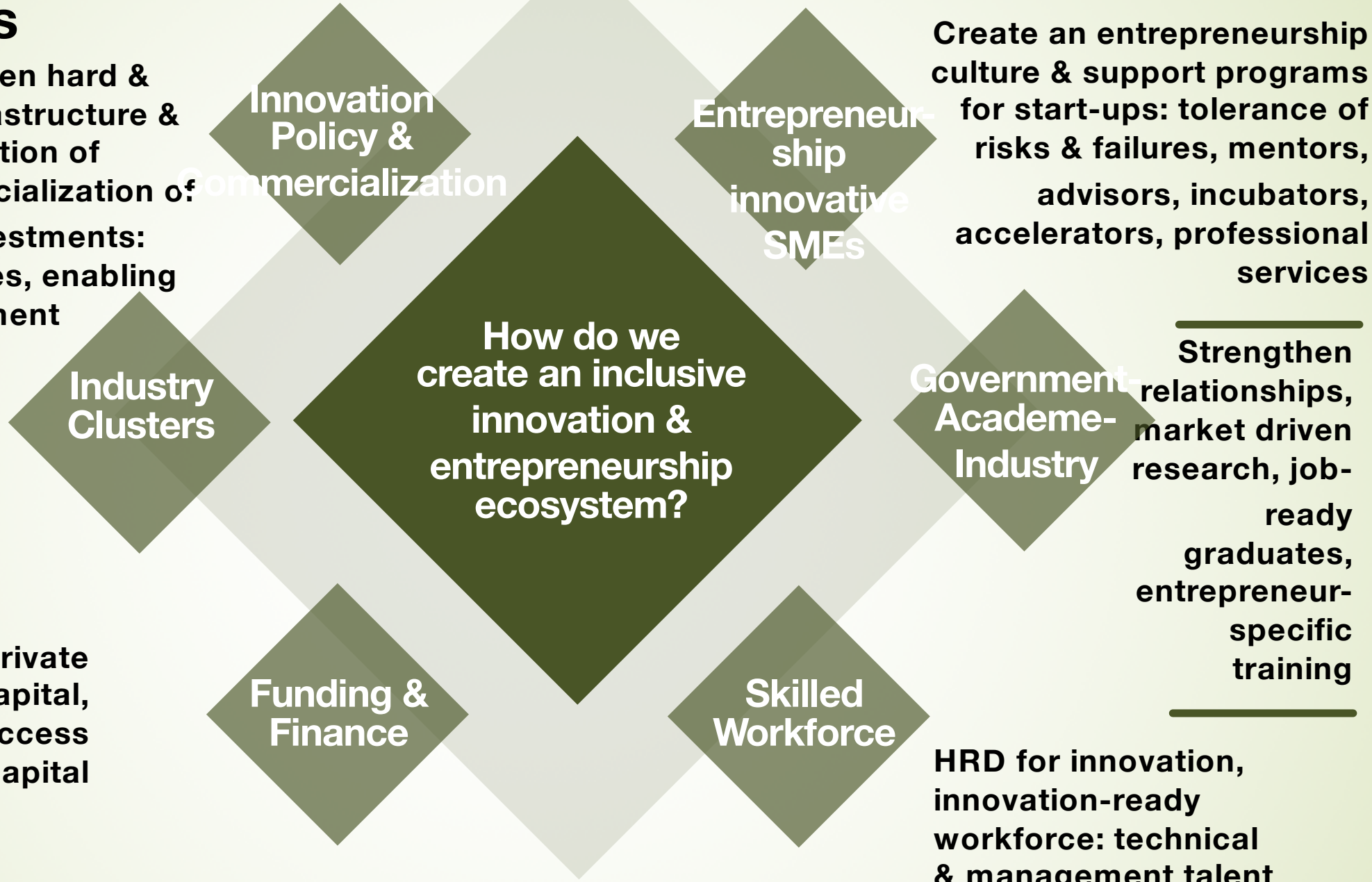
# Vision: Inclusive Innovation & Entrepreneurship Ecosystem

- Strong collaboration: connected country
- Strong business & policy environment: innovation, jobs, investment
- Creative talent pool




- Incubation of innovation
- Academe industry partnerships to conduct baslc, applied, market oriented research
- Support by government & funders
- Involve researchers & experts & industries across the country

# 6 Elements




Strengthen hard & soft infrastructure & acceleration of commercialization of R&D investments: incentives, enabling environment

Create an entrepreneurship culture & support programs for start-ups: tolerance of risks & failures, mentors, advisors, incubators, accelerators, professional services

Position innovative industries for rapid growth

Strengthen relationships, market driven research, job-ready graduates, entrepreneur-specific training

Family & friends, private equity, venture capital, angel investors, access to capital

HRD for innovation, innovation-ready workforce: technical & management talent

# Consultation Workshops: Recommended actions

**Technical collaboration between academe & industries** foreign & local, market-driven research, open innovation platforms, manufacturing engineering fellowships

**HRD/trainings, industry responsive curricula, university research & extension**

**Academe-industry shared facilities** for rapid prototyping & demonstration, testing equipment, fast & reliable ICT networks, communication platforms

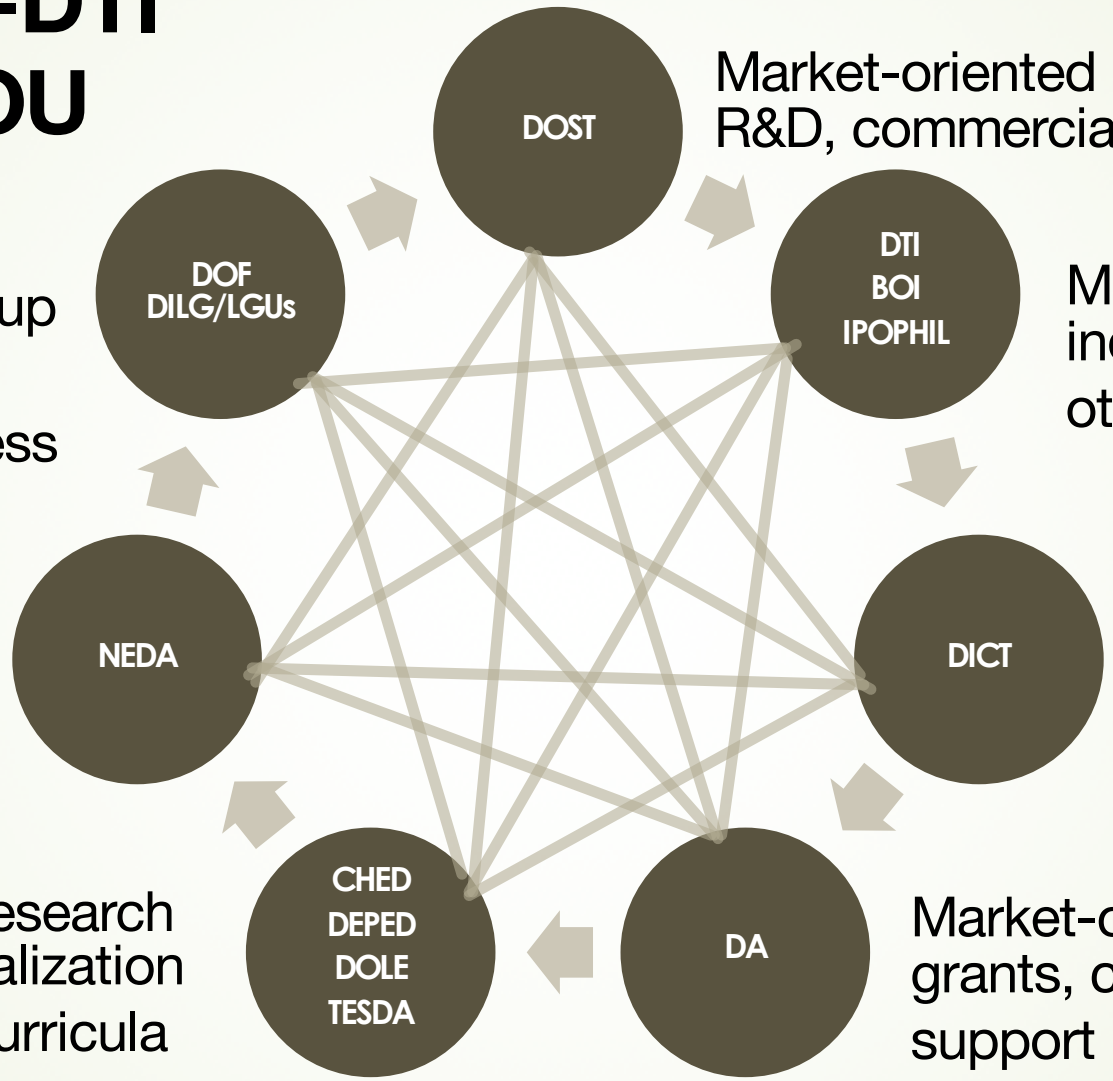
**R&D incentives, tax credit, accelerated depreciation, R&D grants, innovation vouchers**

**Technology transfer offices, science parks, business incubators, accelerator programs,** (professionals), funding networks

**Leverage BPO model for high value tech based design, digitization, big data,** , manufacturing, materials

To promote collaboration & closer coordination within government

# Expand DOST-DTI Innovation MOU




Market-oriented research grants, R&D, commercialization support

Market studies, linking industries with academe & other government agencies

Physical innovation infrastructure

Market-oriented research grants, commercialization support

Market-oriented research grants, commercialization support, HRD & curricula

Innovation policy monitoring/evaluation of implementation

DOF: Fiscal support for innovation & R&D, start-up activities, MSMEs, LEs, commercialization process
DILG: LGUs

# Regional Inclusive Innovation Hubs/Centers

**2018**

- MOU signing
- **Revival of Filipinovation Council**
- Regional inclusive innovation hubs
- **Pilot areas: CALABARZON, Cebu, Bicol, CDO**
- DTI Market research group
- Coordination with CHED & TESDA on future skills & curricular reforms

**2019-20**

- Regional inclusive innovation hubs
- R&D Centers
- Evaluation of innovation policy & impact
- **Central portal/database** of innovation related research grants, projects, & programs

**2020-22**

- More Regional inclusive innovation hubs & R&D Centers across the country

- Regional & local inclusive innovation hubs: cornerstone of i3S, lie at the heart of our economic transformation
  - Bridge gap between industries & academe
  - Create regional ecosystem: virtual & physical made up of universities, R&D labs, S&T parks, incubators, fab labs, co-working spaces, investors, & LGUs, start-ups, SMEs, LEs
  - DOST & other agencies, industry, & academe
- Innovation focus on electronics, auto, aerospace, chemicals, IT-BPM, agribusiness

# i3S is vital for reaching our SDGs: sustainable & inclusive development

- Manufacturing growth important to create more high-quality, high paying jobs
  - For inclusive & sustainable manufacturing growth, it has to be productive
  - Innovation is crucial to maintain high productivity level

- PH new industrial policy is innovation-focused
  - Innovation strategy: creative, connected communities
  - Government-academe-industry: basic & applied research providing solutions to societal issues & industry needs

- Regional inclusive innovation centers: at the heart of economic transformation, bridge gap between innovation & entrepreneurship
  - No one size fits all approach: regional/local conditions
  - Industry clusters, strong business environment: investments, jobs, eliminate poverty

**THANK YOU FOR YOUR ATTENTION!**