

Revitalizing Agricultural Education: Challenges and Opportunities



Roles of PHILIPPINE HIGHER EDUCATION

Expands and enhances career and life choices and chances of individuals

Serves as INSTRUMENT for

- Poverty alleviation
- Human capital formation
- Technology-driven national development & global competitiveness



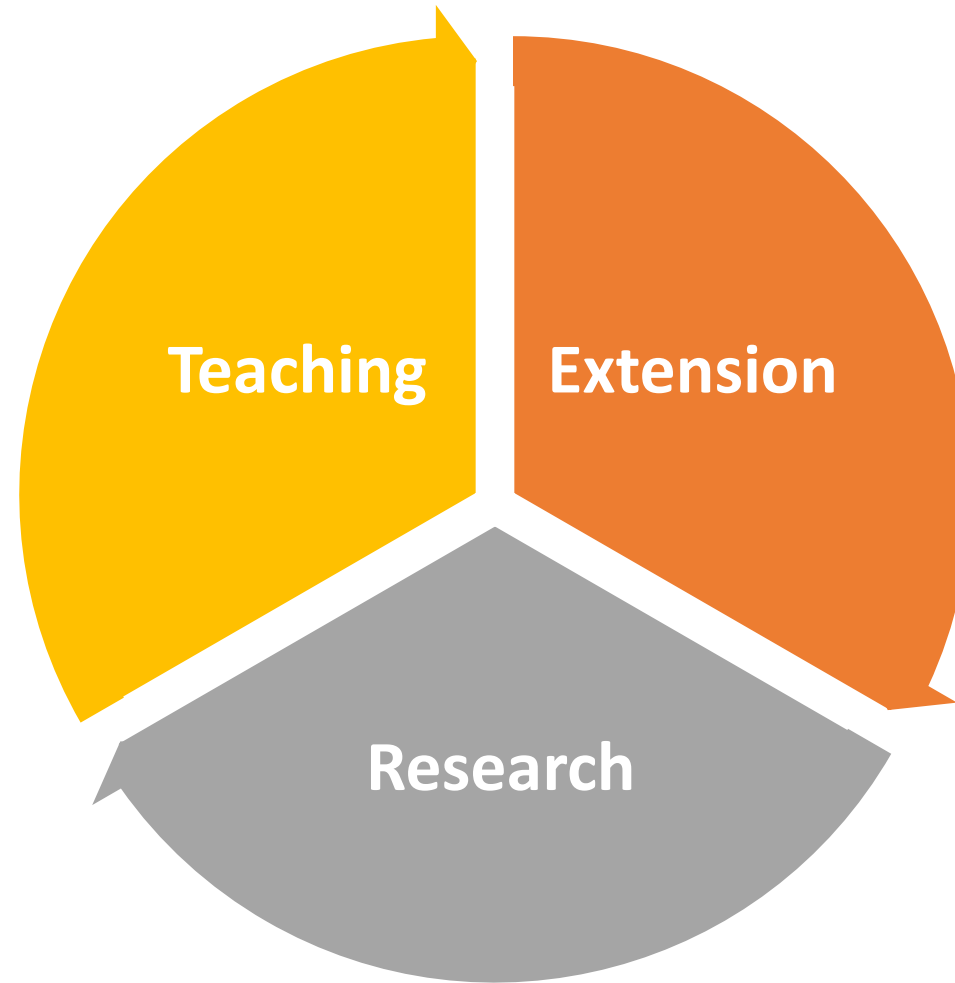
Republic Act 7722:

“Analysts of the **knowledge society** or **knowledge economy** characterize the university not just as a generator of knowledge, an educator of young minds and a transmitter of culture but also as a major agent of economic growth. It is both a **Research and Development laboratory** and a mechanism through which the nation builds its **human capital** to enable it to actively **participate in the global economy.**”



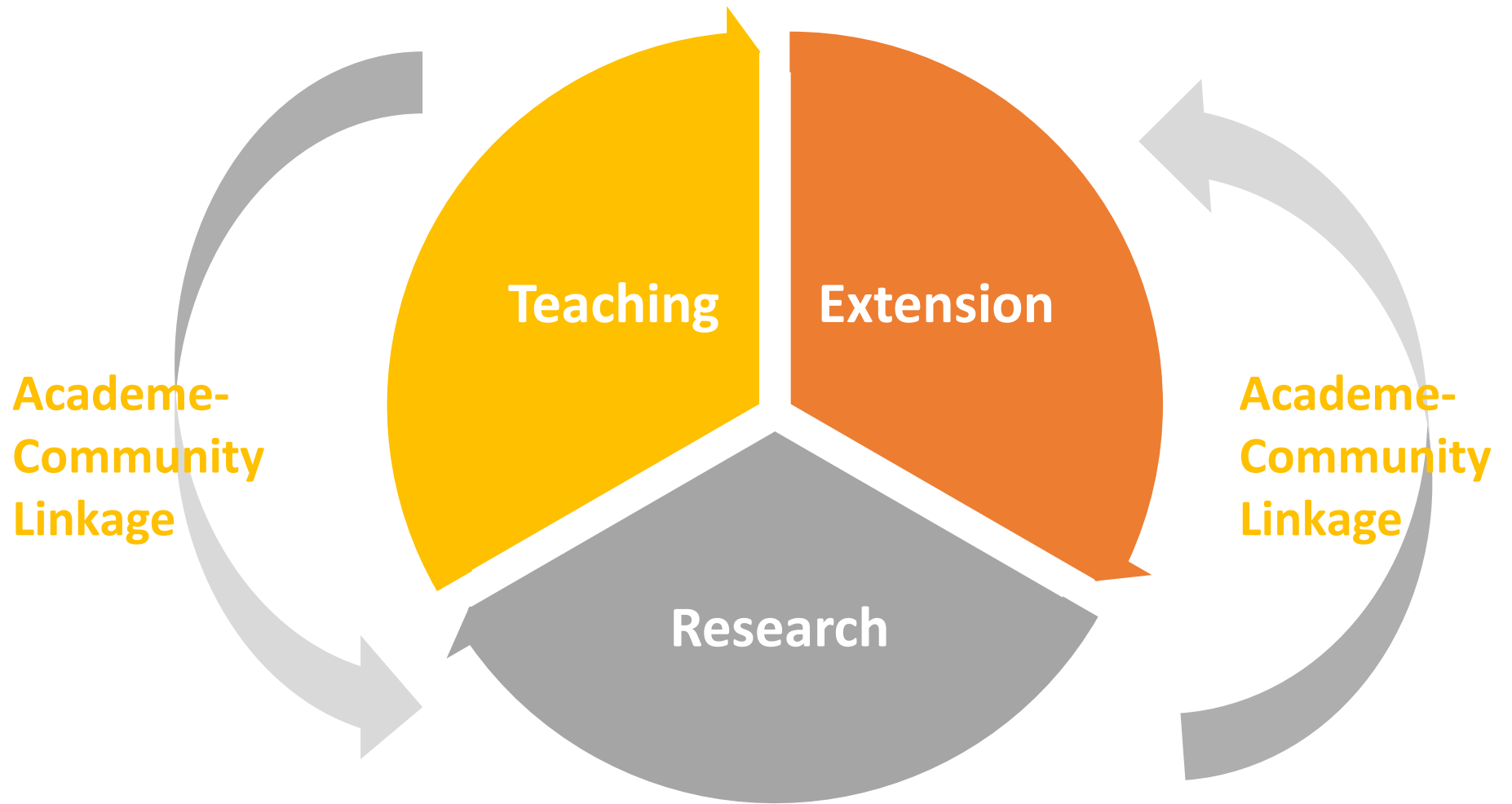
Universities and the Knowledge Production- Innovation Loop





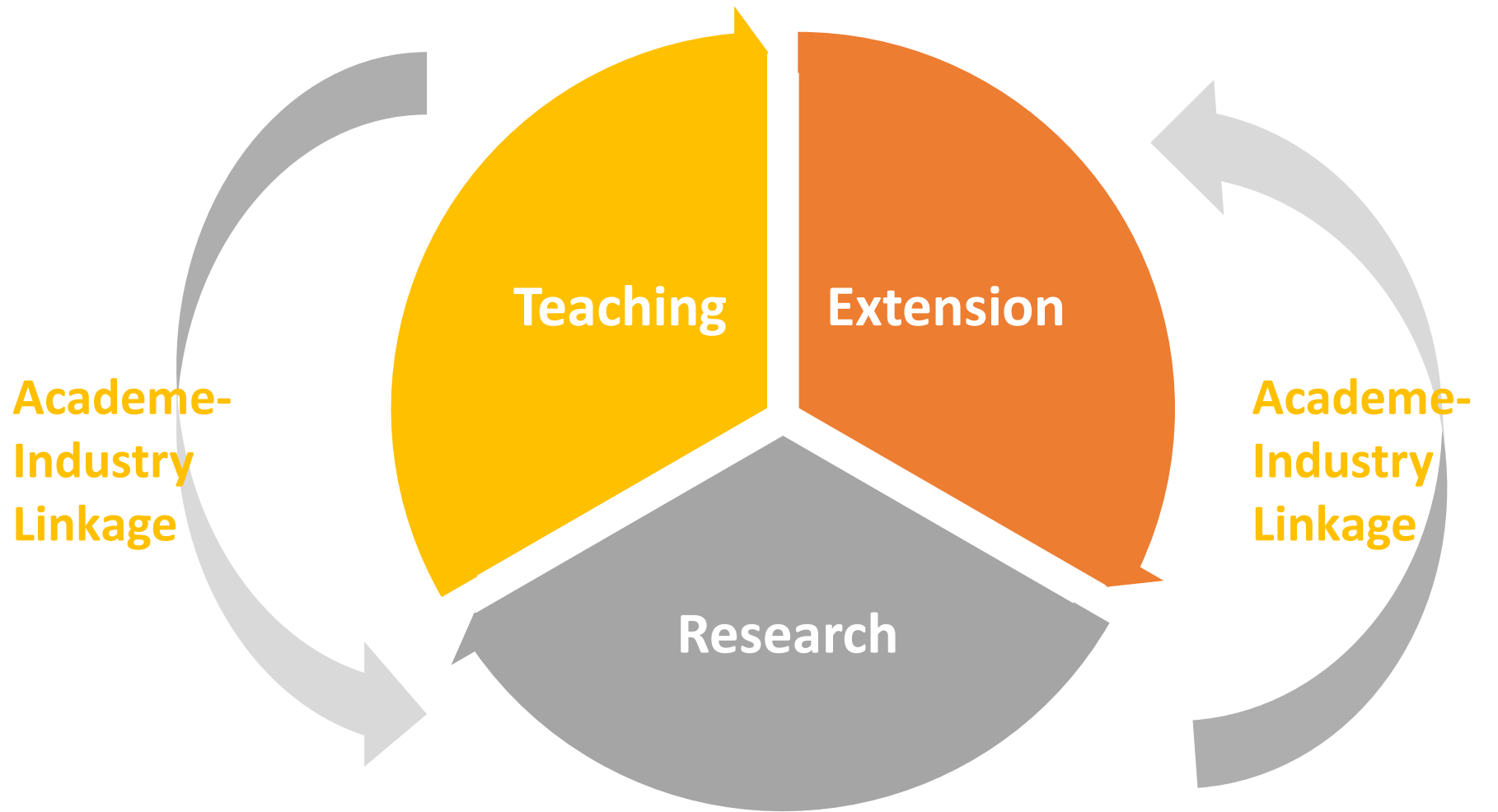
Knowledge and Innovation Production Loop





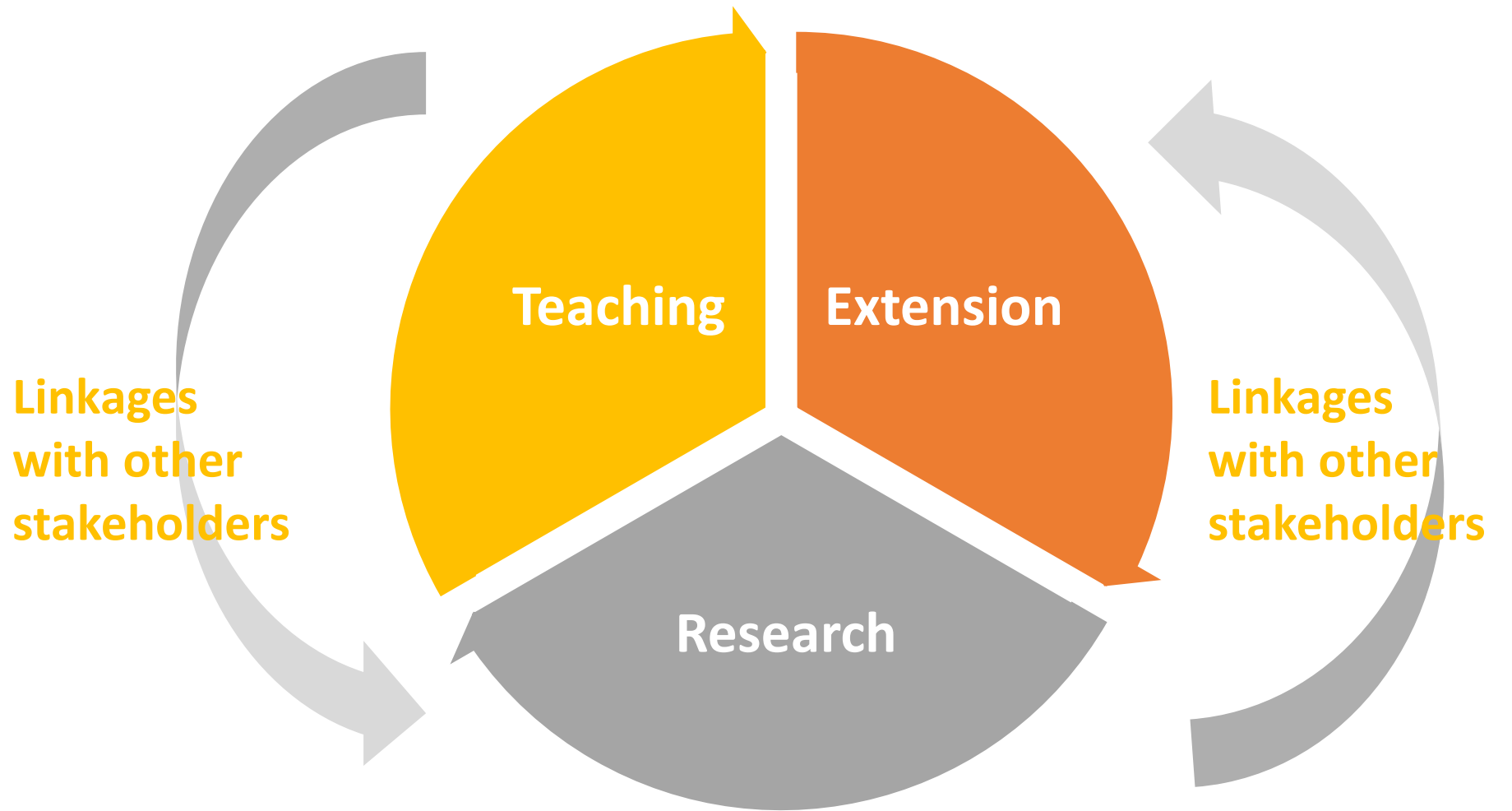
Knowledge and Innovation Production Loop





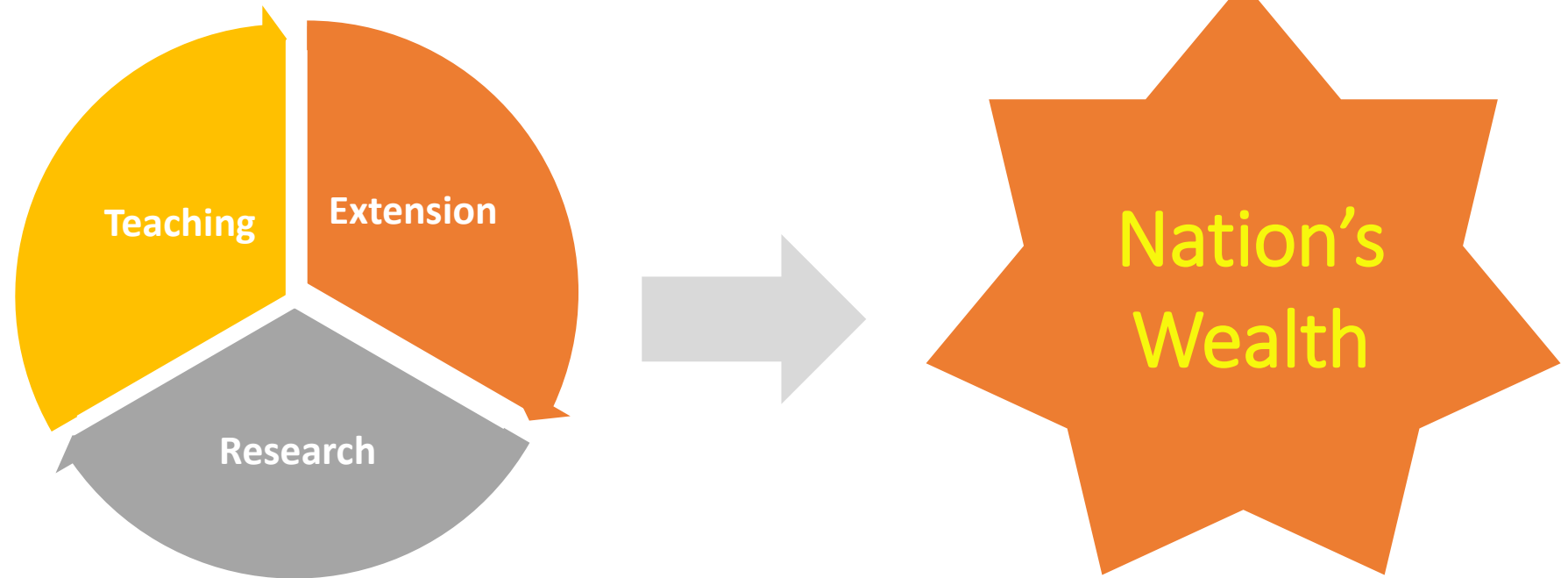
Knowledge and Innovation Production Loop





Knowledge and Innovation Production Loop





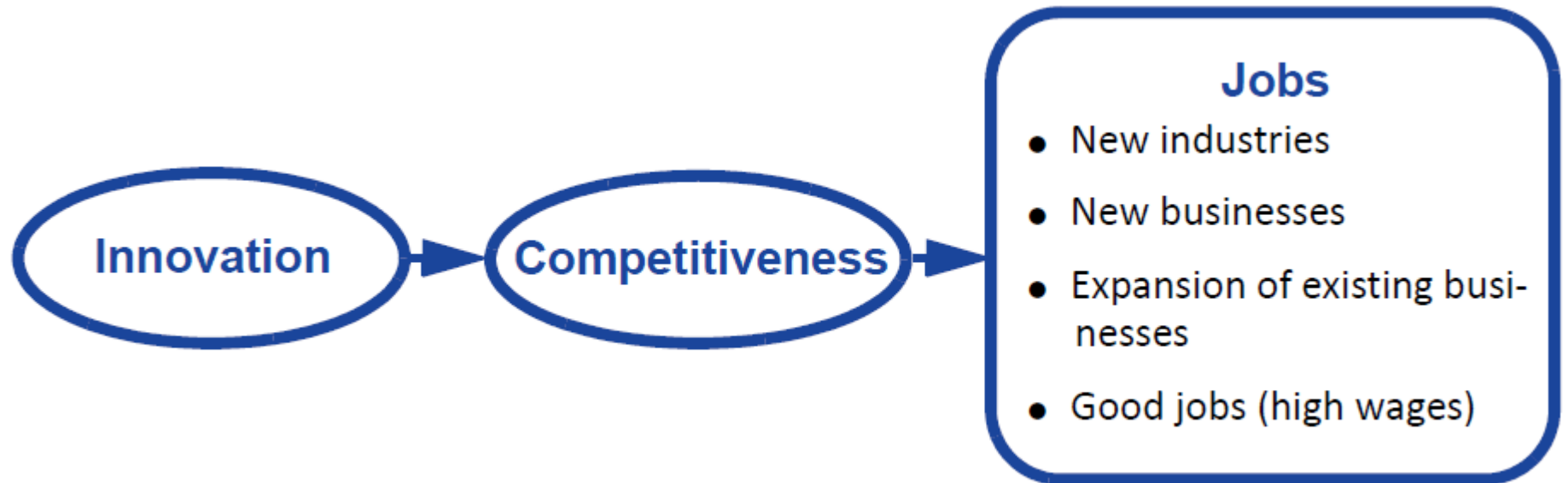
Human Capital;
Enterprises;
Explorations and Discoveries;
Inventions, Programs, and Designs;
Creations, Books, Data; Others



In our increasingly interconnected and globally competitive world economy, **unleashing innovation** is an essential component of a comprehensive economic strategy.



The impact of innovation



What's going on?



Philippine HE map of HEIs (2015)

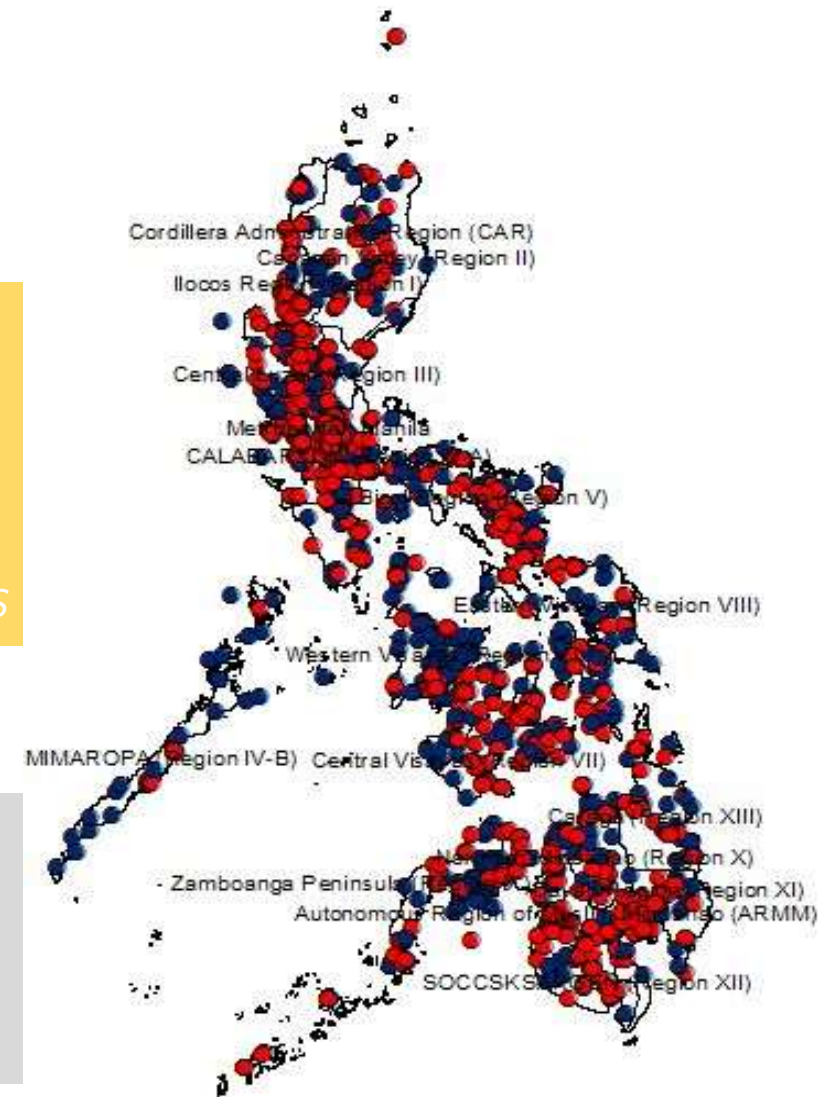
Distribution of Higher Education Institutions (HEIs)

- Public = 227 (12%)*
- Private = 1,708 (88%)
- Total = 1,935**

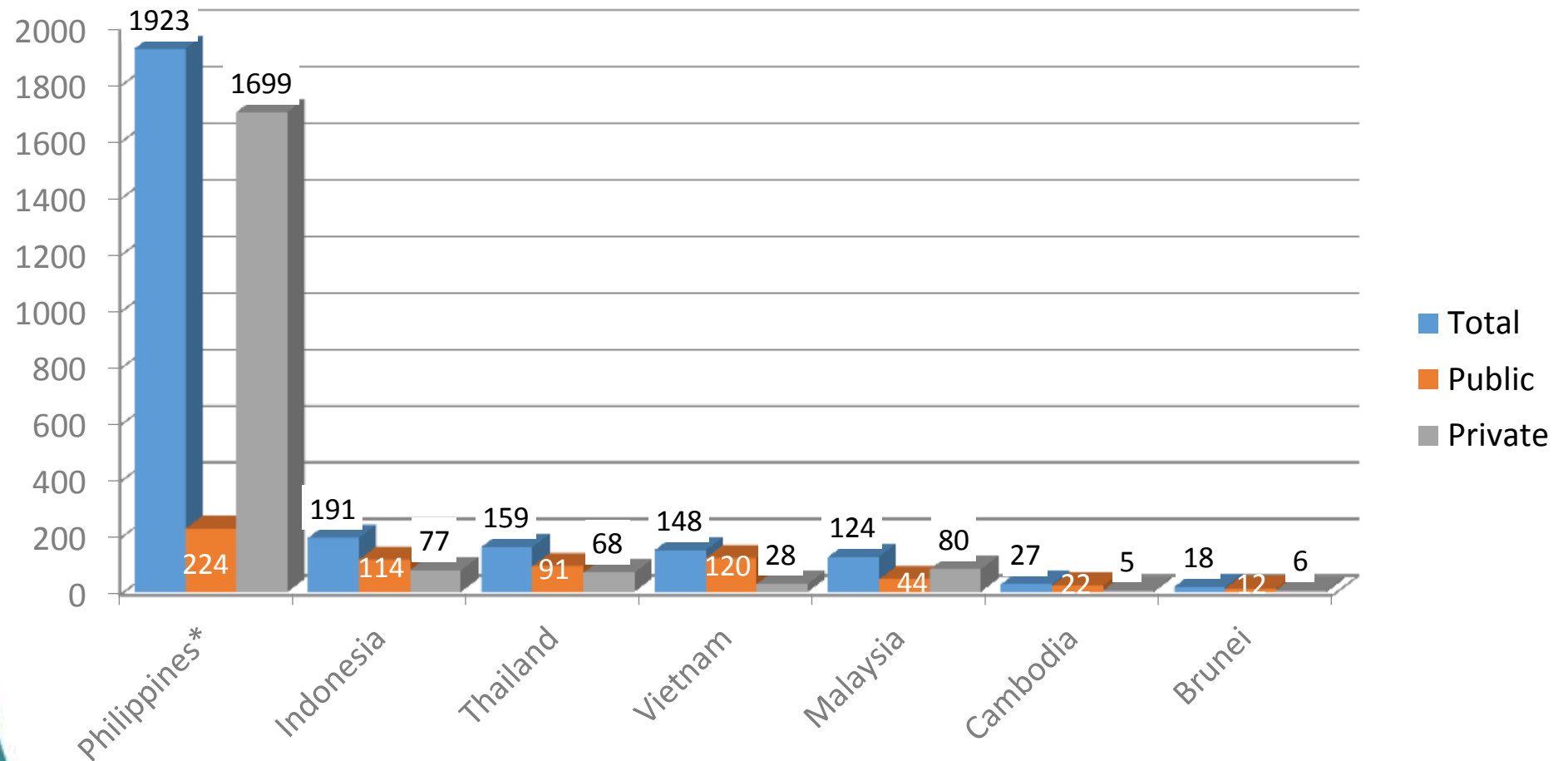
**excluding 453 SUC satellite campuses*

Distribution of Students

- Public = 1.7M (44%)
- Private = 2.1M (56%)
- Total = 3.8M**



Number of Higher Education Institutions (HEIs), AY 2013-2014



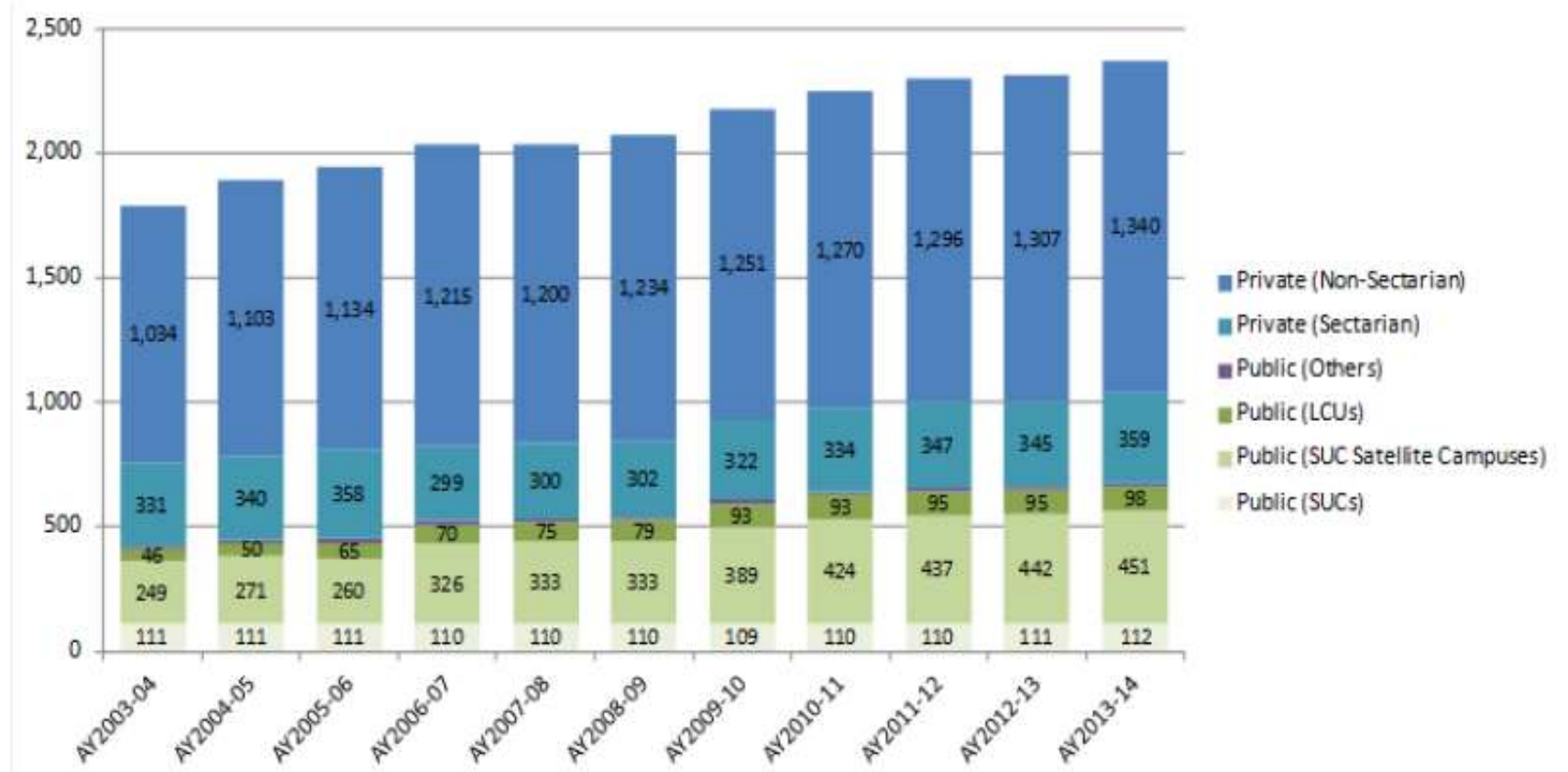
Source: http://en.wikipedia.org/wiki/List_of_universities_in_Asia#Asia

* Office of Planning, Research and Knowledge Management, Commission on Higher Education, 2014

During the past 10 years, HEIs especially private non-sectarian and satellite campuses of SUCs have increase rapidly.

- Rapid expansion of higher education causes a concern of the quality of education.

Number of HEIs by Institution Types AY2003-2013



Philippines' Innovation Challenge

Global Innovation Index

Export

Rank	Country	Score	Value	Percentage Rank	Score View
7	Singapore	59.2	-	0.96	
10	Hong Kong (China)	56.8	-	0.94	
16	Korea, Rep.	55.3	-	0.89	
17	Australia	55.0	-	0.89	
18	New Zealand	54.5	-	0.88	
21	Japan	52.4	-	0.86	
29	China	46.6	-	0.80	
33	Malaysia	45.6	-	0.77	
48	Thailand	39.3	-	0.67	
56	Mongolia	37.5	-	0.61	
71	Viet Nam	34.9	-	0.51	
87	Indonesia	31.8	-	0.39	
88	Brunei Darussalam	31.7	-	0.39	
95	Fiji	30.4	-	0.34	
100	Philippines	29.9	-	0.30	
106	Cambodia	28.7	-	0.26	
140	Mayanmar	19.6	-	0.02	



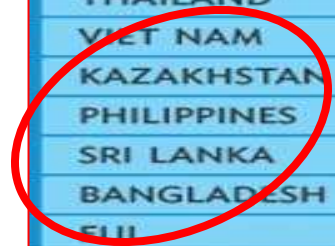
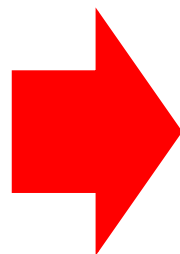


INNOVATION		
World Ranking	Score	Asia Countries
4	5.52	Japan
9	5.04	Singapore
12	4.81	Korea, Rep
24	4.10	Malaysia
26	3.92	China
29	3.91	Hong Kong SAR
36	3.71	Indonesia
39	3.62	India
49	3.40	Vietnam
52	3.34	Thailand
69	3.08	Brunei Darussalam
108	2.75	Cambodia
111	2.73	Philippines

Source: *Global Competitiveness Report 2010-2011*

Table: www.techpinoytrend.blogspot.com (13 February 2011)

	OVERALL	INPUT	OUTPUT
JAPAN	1	8	4
FINLAND	2	6	1
REPUBLIC OF KOREA	3	9	8
UNITED STATES	4	3	3
TAIPEI, CHINA	5	7	9
NEW ZEALAND	6	5	5
HONG KONG, CHINA	7	2	2
AUSTRALIA	8	4	7
LAO PDR	9	23	17
SINGAPORE	10	1	6
PEOPLE'S REPUBLIC OF CHINA	11	11	11
INDONESIA	12	21	16
MALAYSIA	13	10	10
INDIA	14	15	13
THAILAND	15	12	12
VIET NAM	16	14	14
KAZAKHSTAN	17	13	15
PHILIPPINES	18	17	18
SRI LANKA	19	20	19
BANGLADESH	20	22	21
FIJI	21	18	20
MYANMAR	22	24	23
PAKISTAN	23	16	22
CAMBODIA	24	19	24



VERY HIGH
HIGH
MEDIUM
LOW

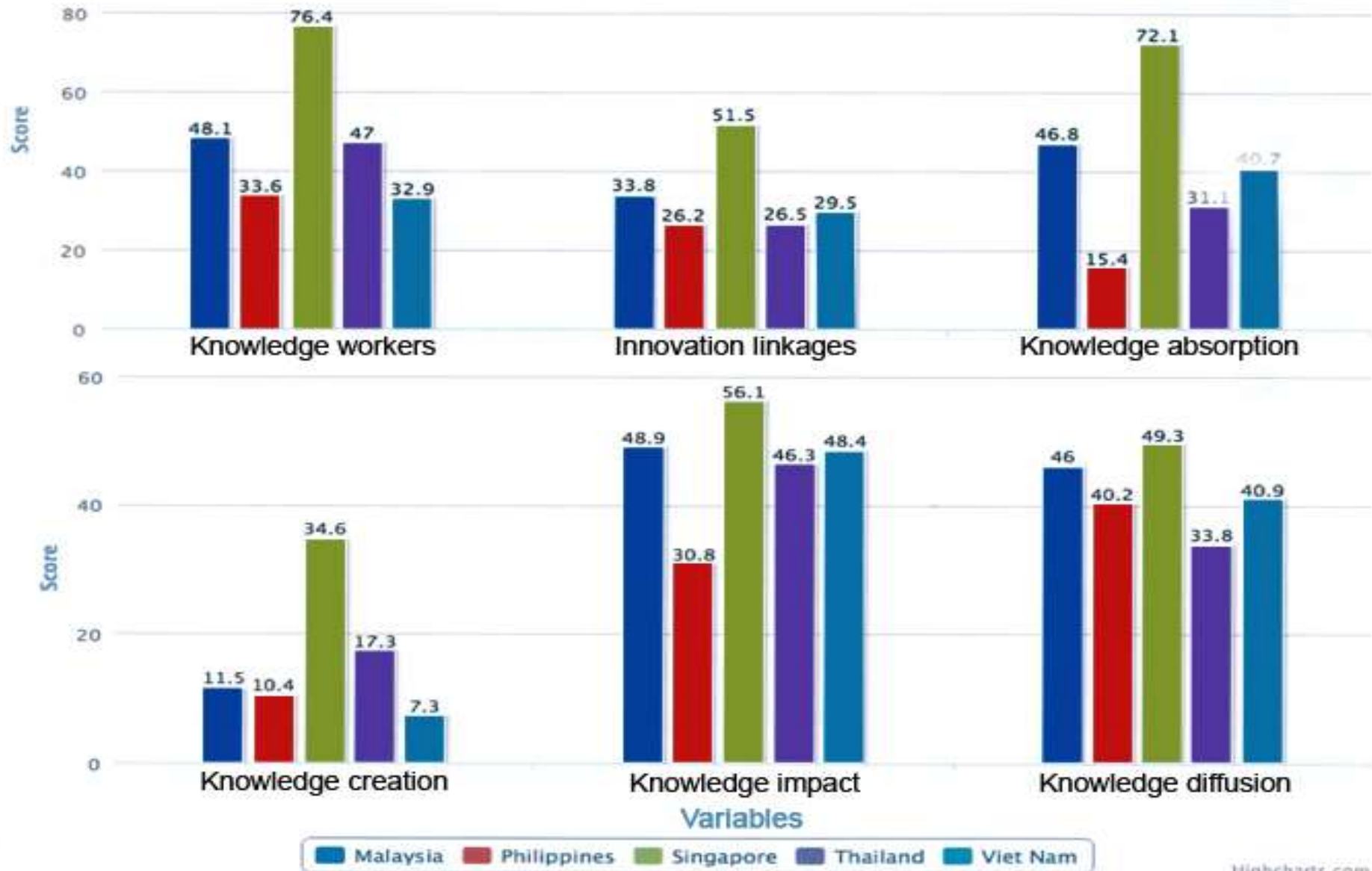
SOURCE
 • Asian Development Bank and The Economist Intelligence Unit Ltd. *Creative Productivity Index: Analysing creativity and innovation in Asia*



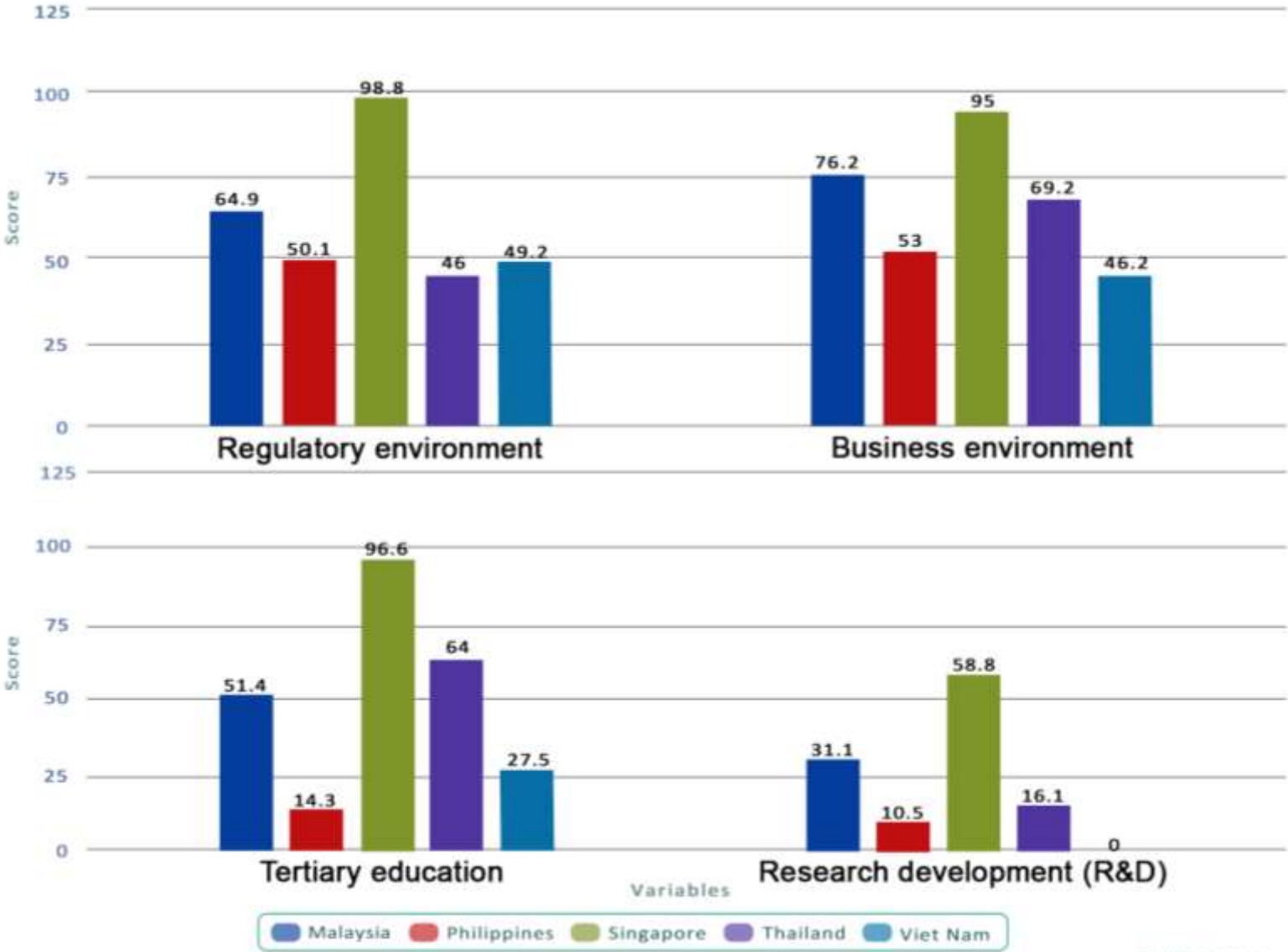
ASEAN Member	Estimated Number of Researchers per million population	Estimated Total Population	Number of HEIs
1. Singapore	6,927	5.3 M	4
2. Malaysia	1918	29.7 M	124
3. Thailand	581	67 M	159
4. Brunei	281	417,784	18
5. Indonesia	205	250 M	191
6. Vietnam	115	89.7 M	148
7. Philippines	81	102 M	1,935
8. Myanmar	18	53.2 M	176
9. Cambodia	17	15.1 M	77
10. Lao PDR	16	6.7 M	80



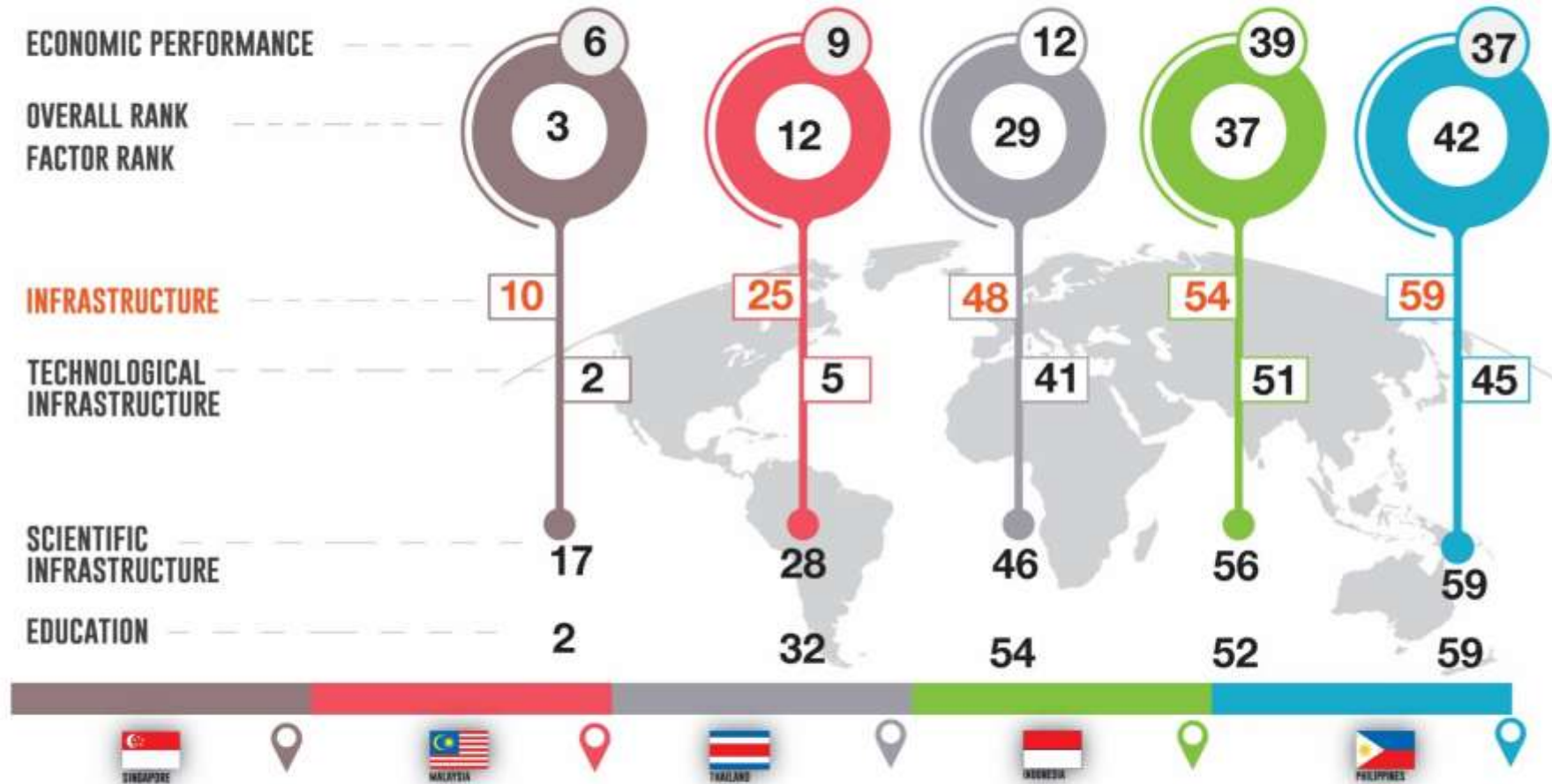
Innovation Challenge



Innovation Challenge



WORLD COMPETITIVENESS *RANKING OF SELECTED SOUTHEAST ASIAN COUNTRIES, 2014



* World competitiveness ranking is based on the country's economic performance, government efficiency, business efficiency, and infrastructure.

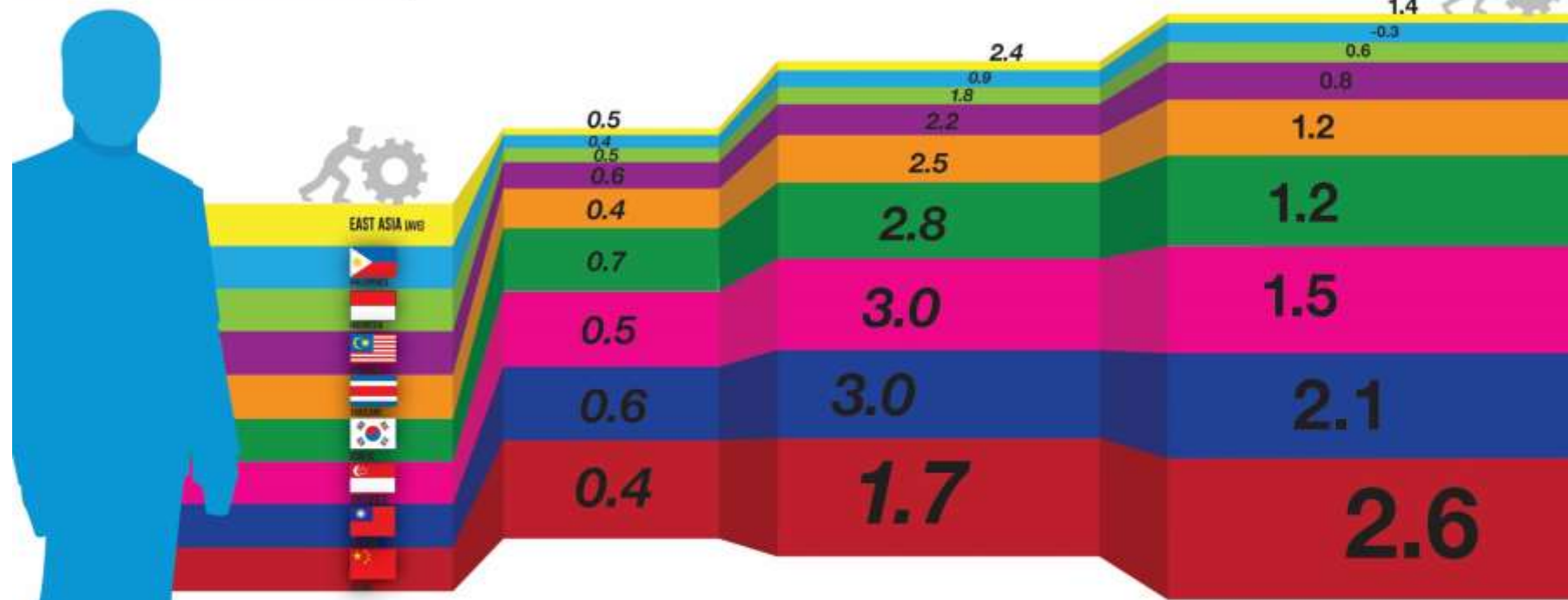
Infrastructure is one of the competitive factors that measures the extent by which basic, technological, scientific and human resources meet the needs of business. Its sub-factors include basic, technological and scientific infrastructure; health and environment; and education.

Note: 60 countries are included in the rankings

Source: International Institute for Management Development (IMD), World Competitiveness Yearbook 2014, http://www.conicyt.cl/wp-content/uploads/2014/07/IMD_WCY-2014.pdf



TOTAL FACTOR PRODUCTIVITY (TFP) OF EAST ASIAN COUNTRIES, 2013



Contribution to Growth of
Human Capital **Physical Capital** **TFP**



Source: World Bank, Philippine Development Report 2013: Creating More and Better Jobs, <http://www.worldbank.org/content/dam/Worldbank/document/EAP/Philippines>

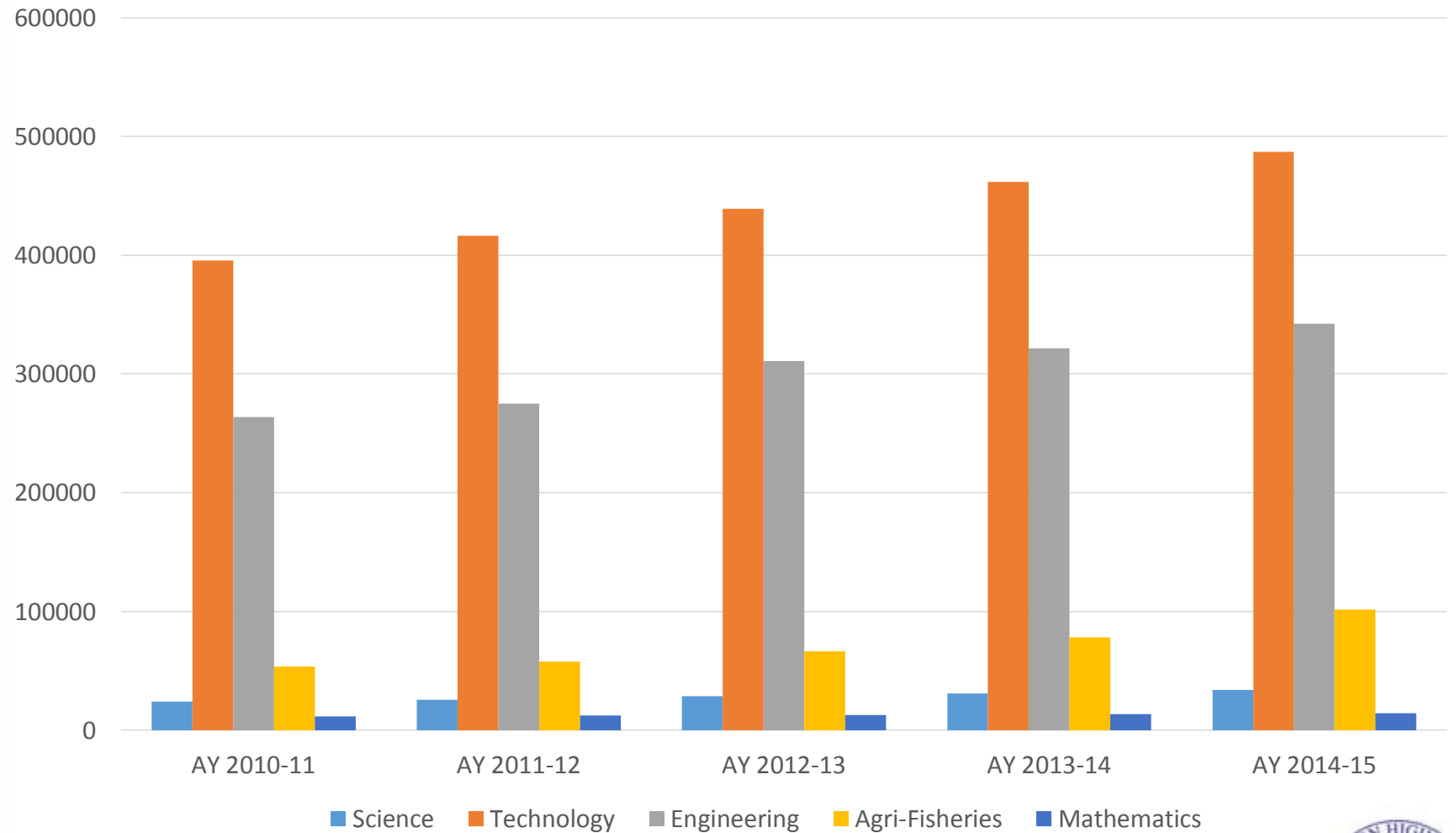
HIGHER EDUCATION STATISTICS ON PHILIPPINE AGRI-FISHERIES



Enrollment in STEAM Baccalaureate Programs (5-year trend)



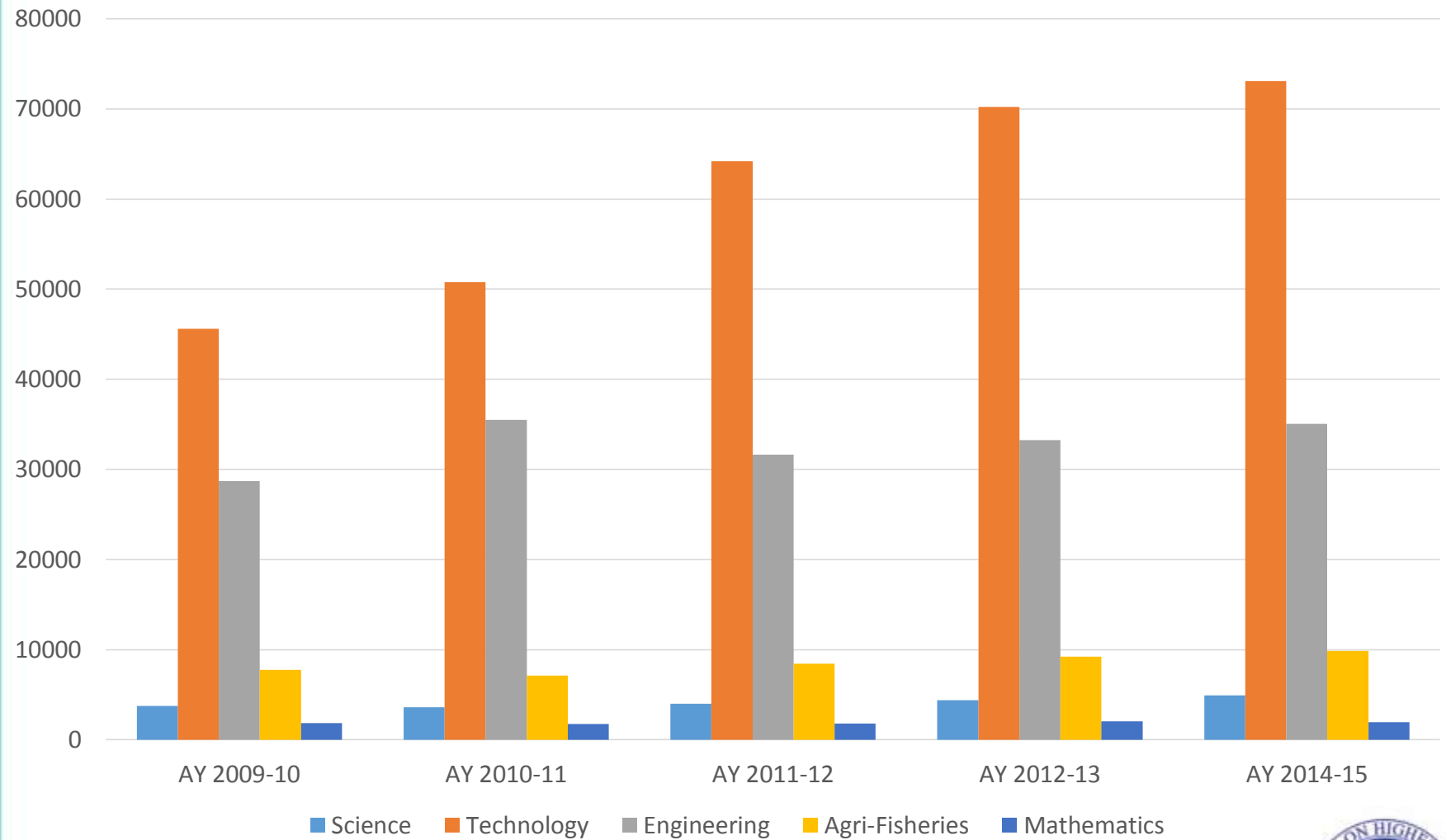
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Number of Graduates in STEAM Baccalaureate Programs (5-year trend)



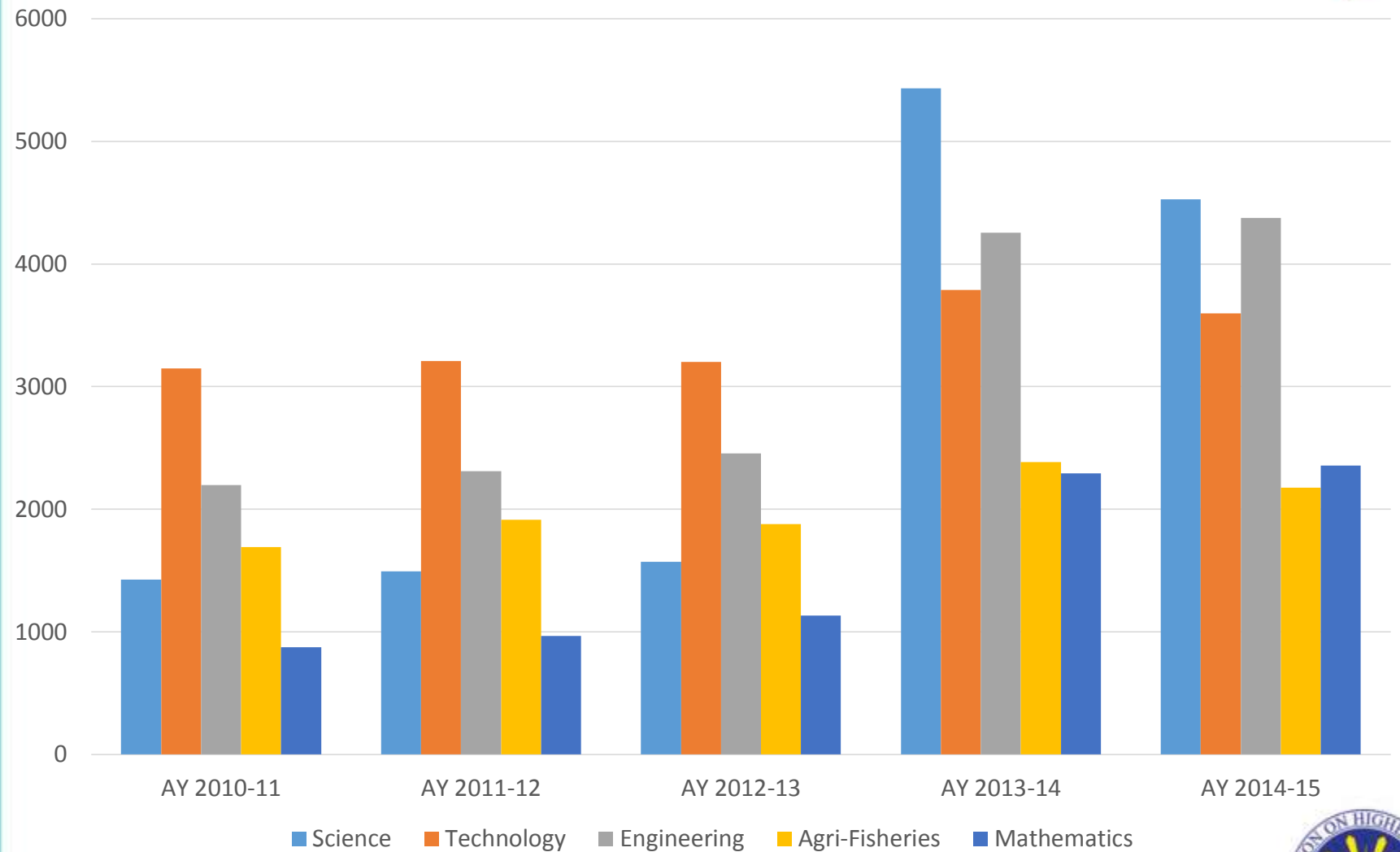
HIGHER EDUCATION STATISTICS
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Enrollment in STEAM Graduate Programs (5-year trend)



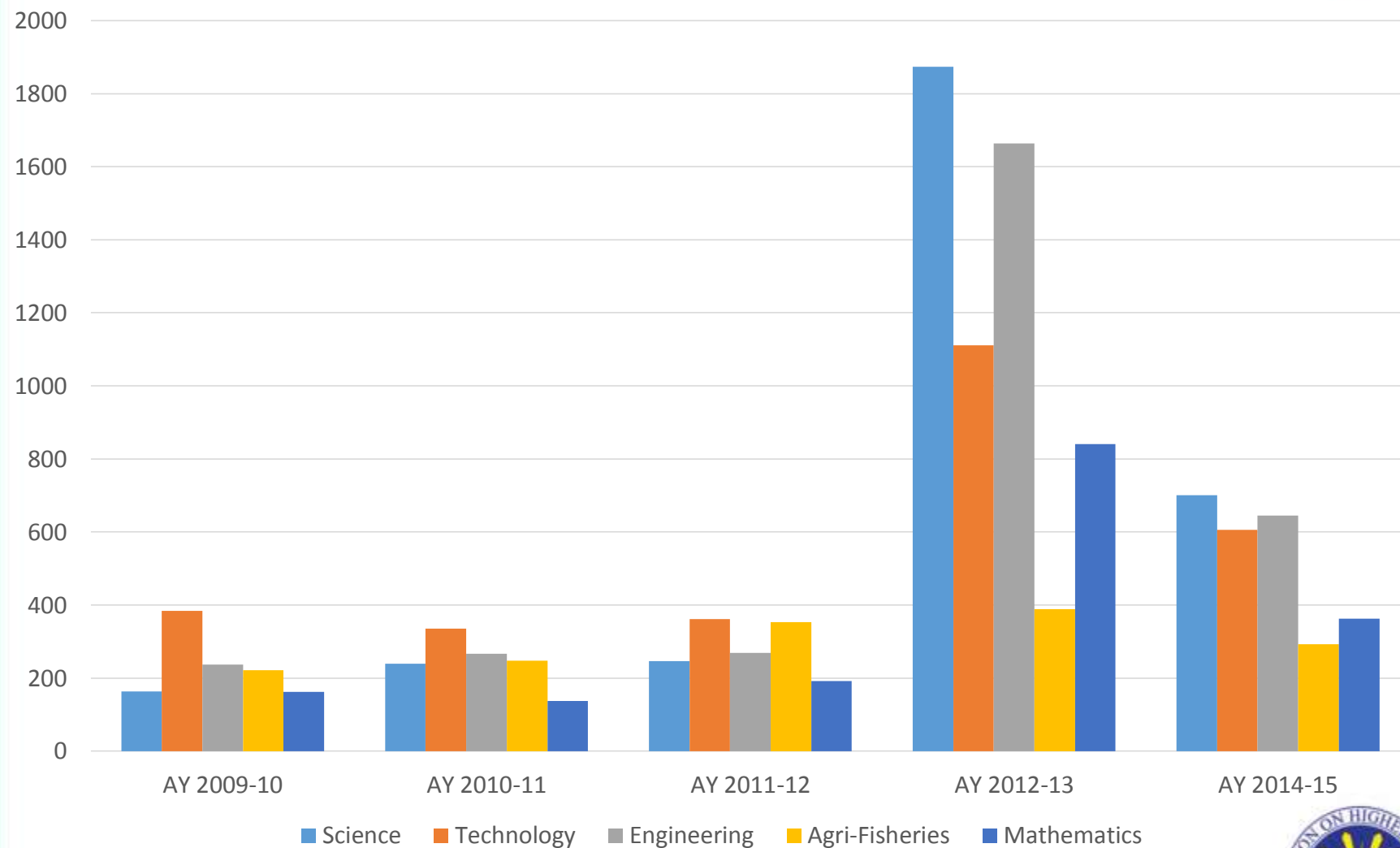
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Number of Graduates in STEAM Graduate Programs (5-year trend)



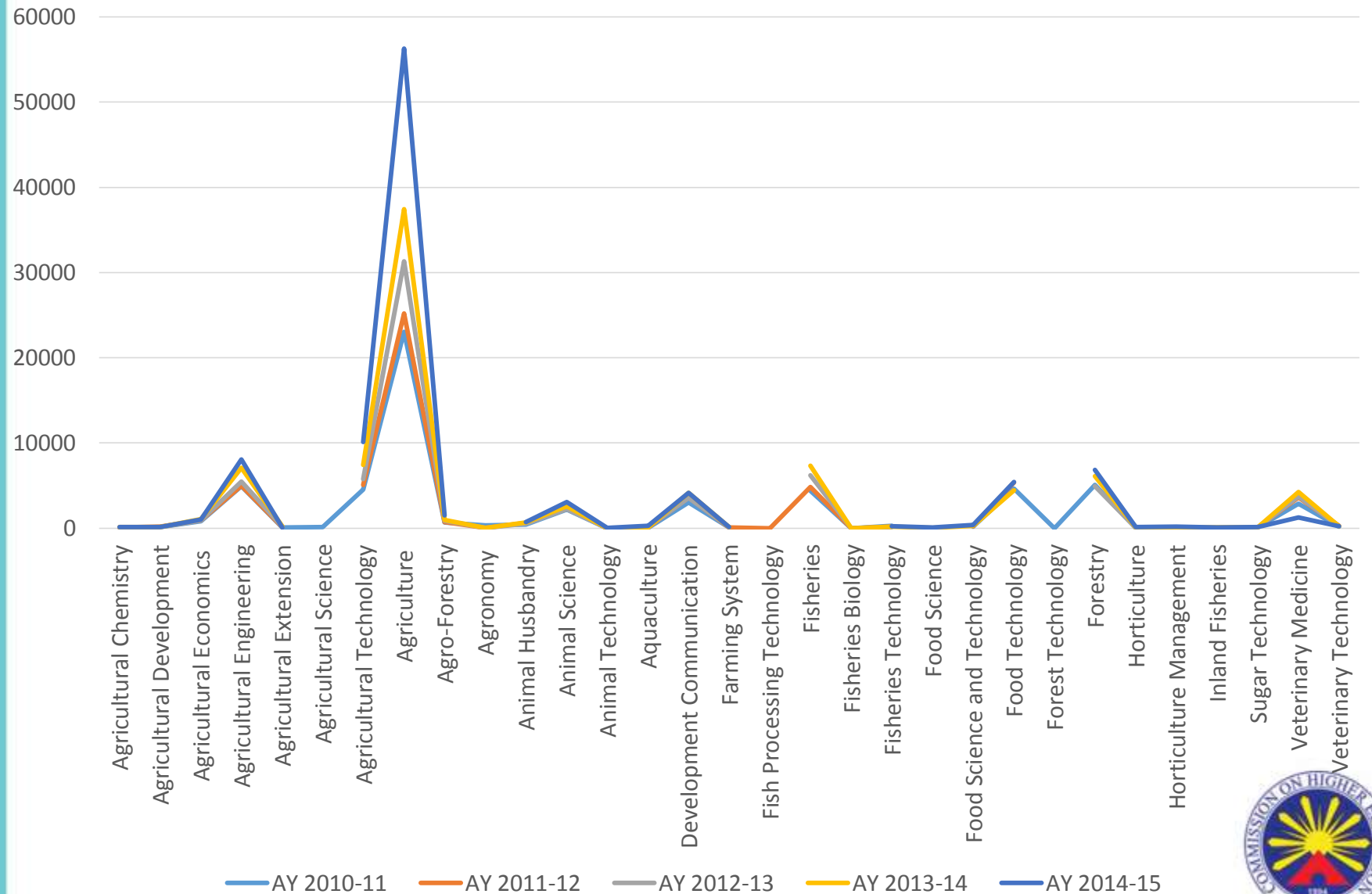
HIGHER EDUCATION STATISTICS
ON PHILIPPINE AGRI-FISHERIES



Enrollment in Agriculture Baccalaureate Programs (5-year trend)



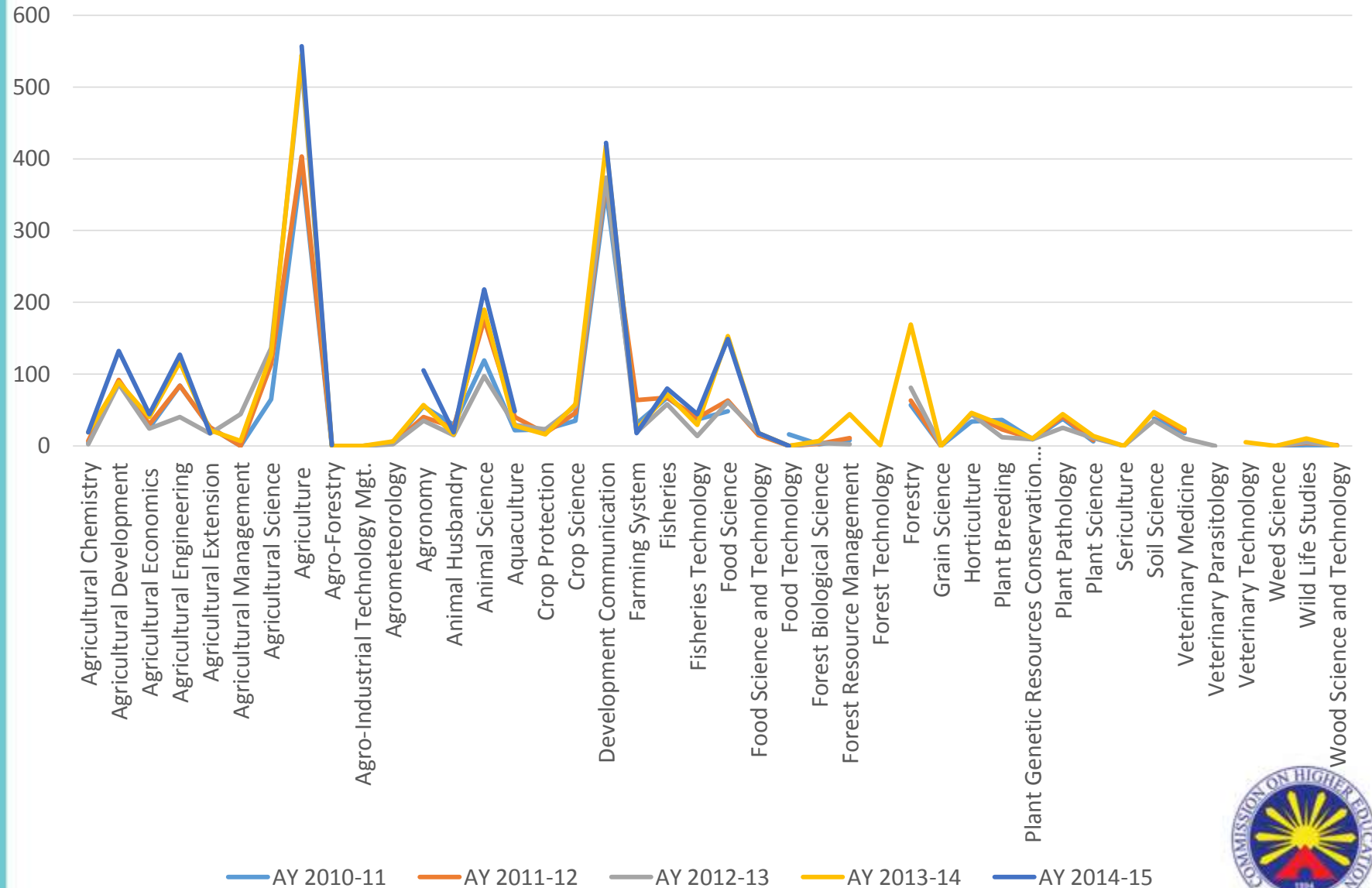
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Enrollment in Agriculture Master's Programs (5-year trend)



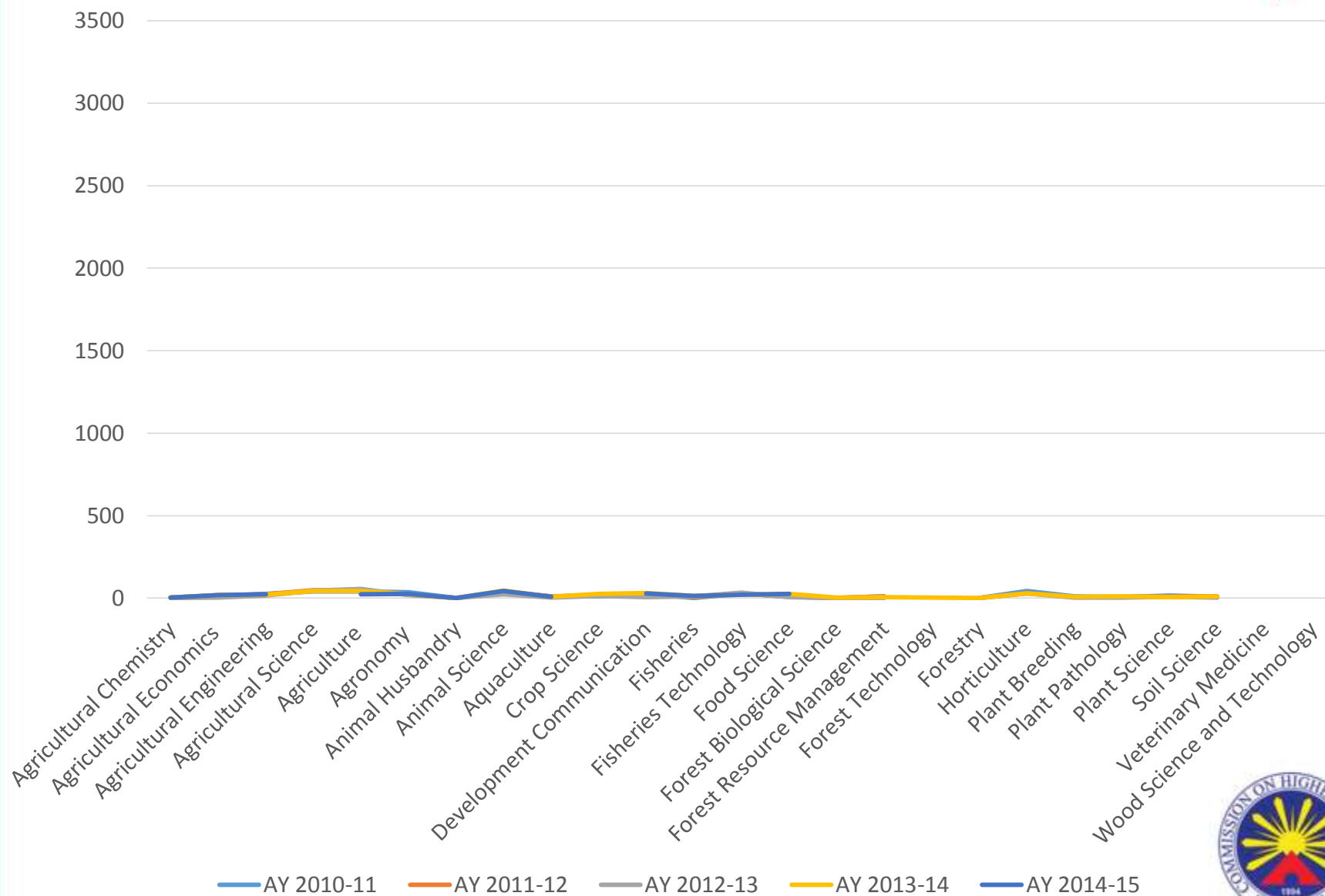
HIGHER EDUCATION STATISTICS ON PHILIPPINE AGRI-FISHERIES



Enrollment in Agriculture Doctoral Programs (5-year trend)



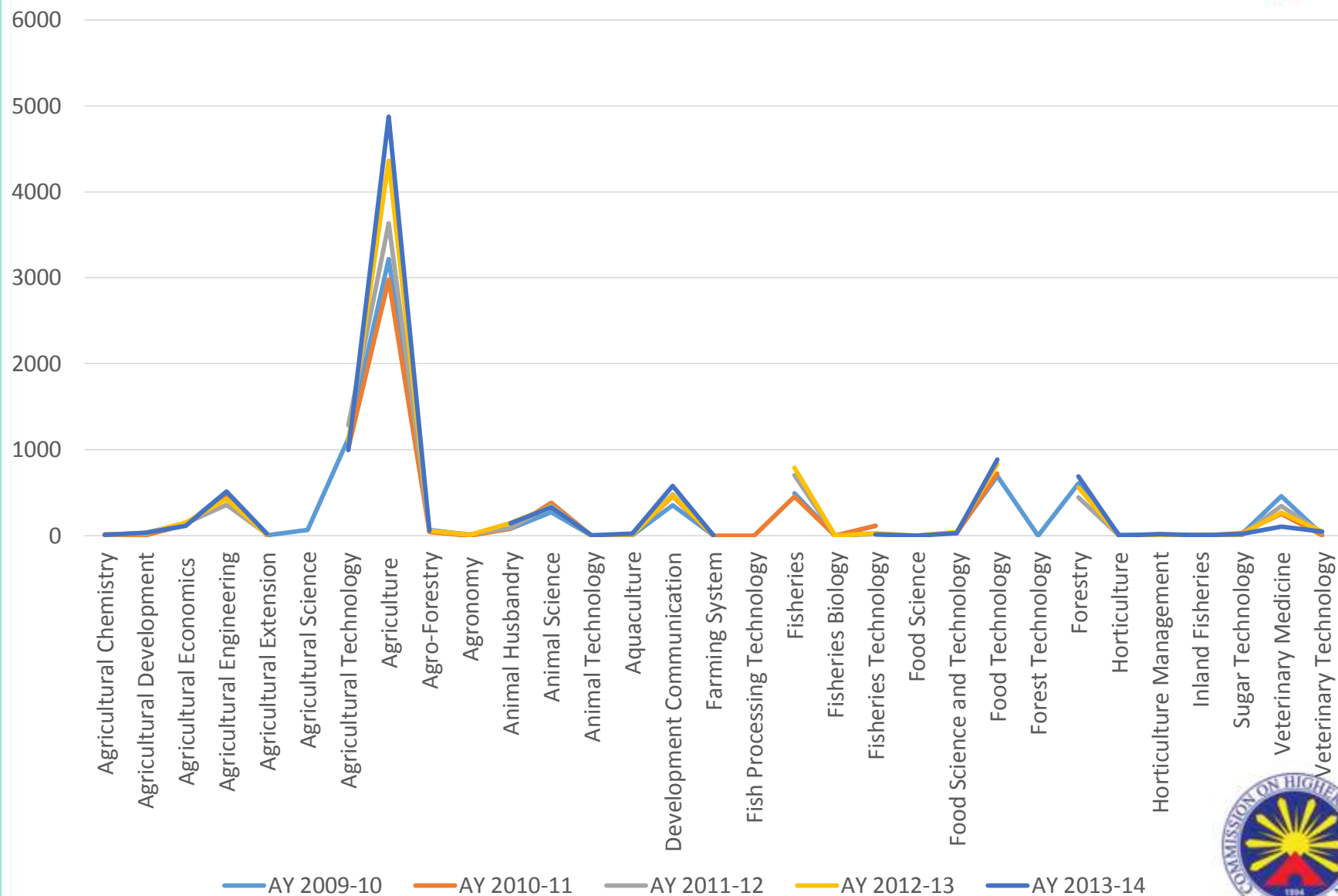
HIGHER EDUCATION STATISTICS
ON PHILIPPINE AGRI-FISHERIES



Number of Graduates in Agriculture Baccalaureate Programs (5-year trend)



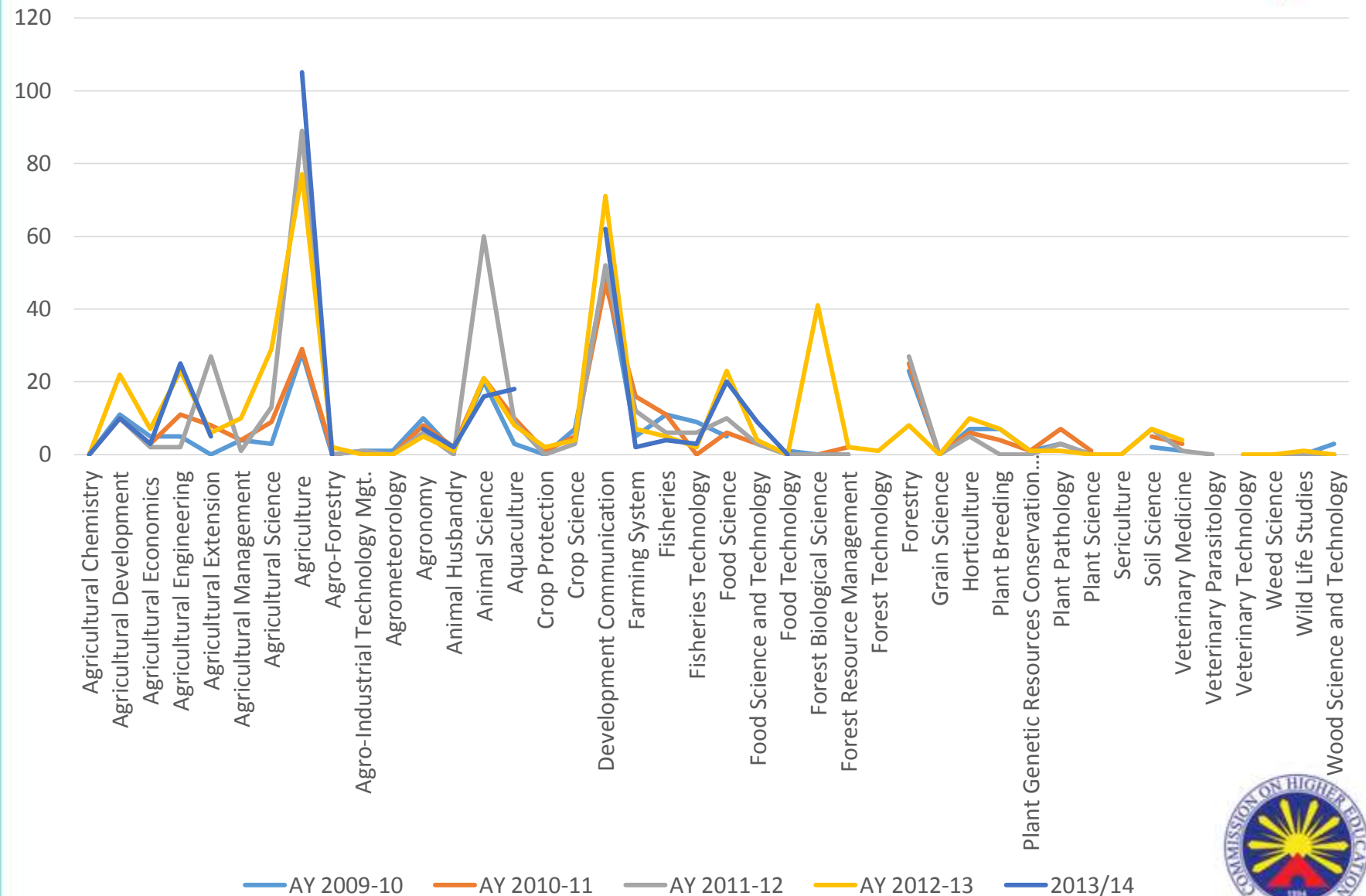
HIGHER EDUCATION STATISTICS ON PHILIPPINE AGRI-FISHERIES



Number of Graduates in Agriculture Master's Programs (5-year trend)



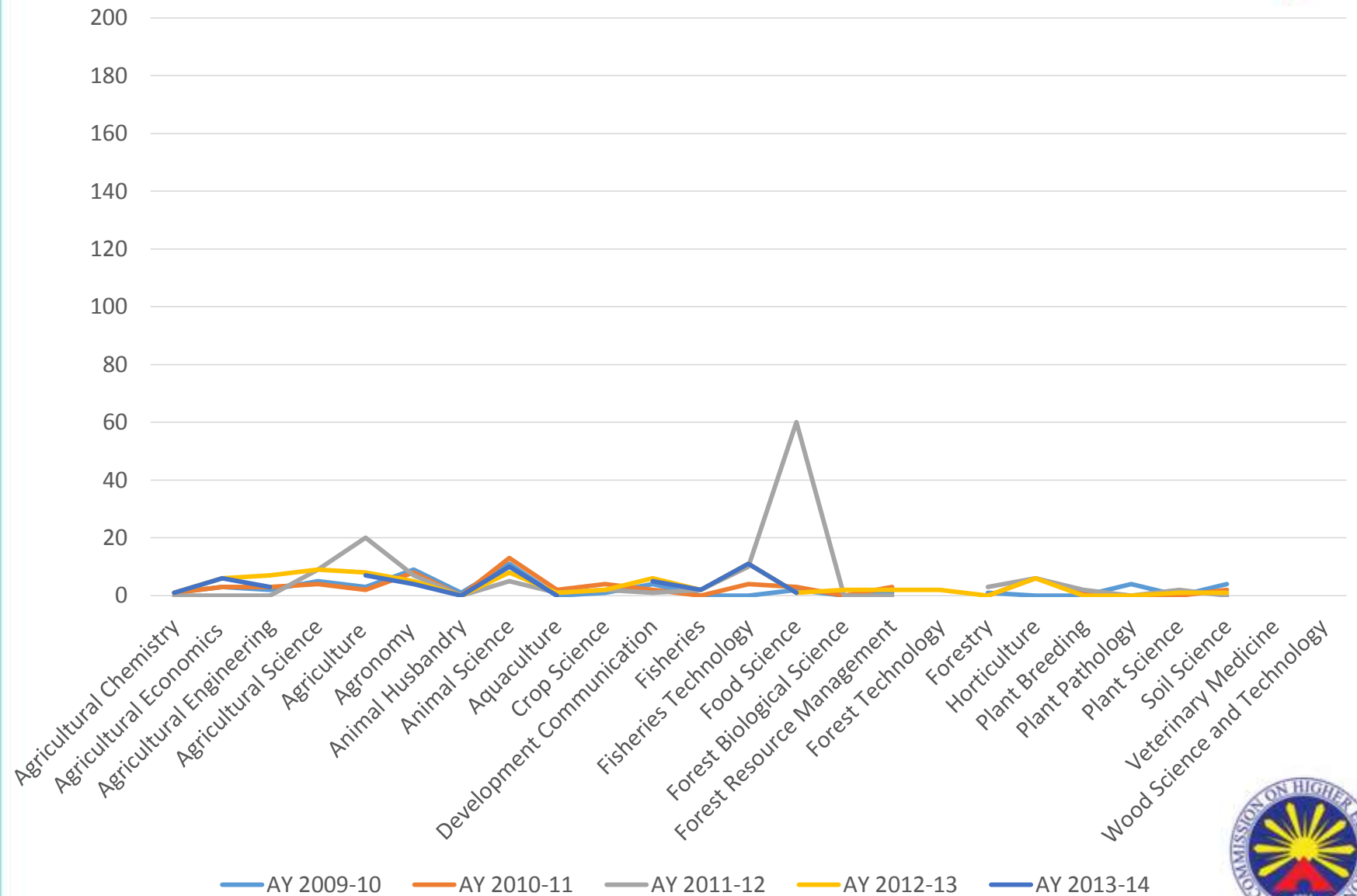
HIGHER EDUCATION STATISTICS
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Number of Graduates in Agriculture Doctoral Programs (5-year trend)



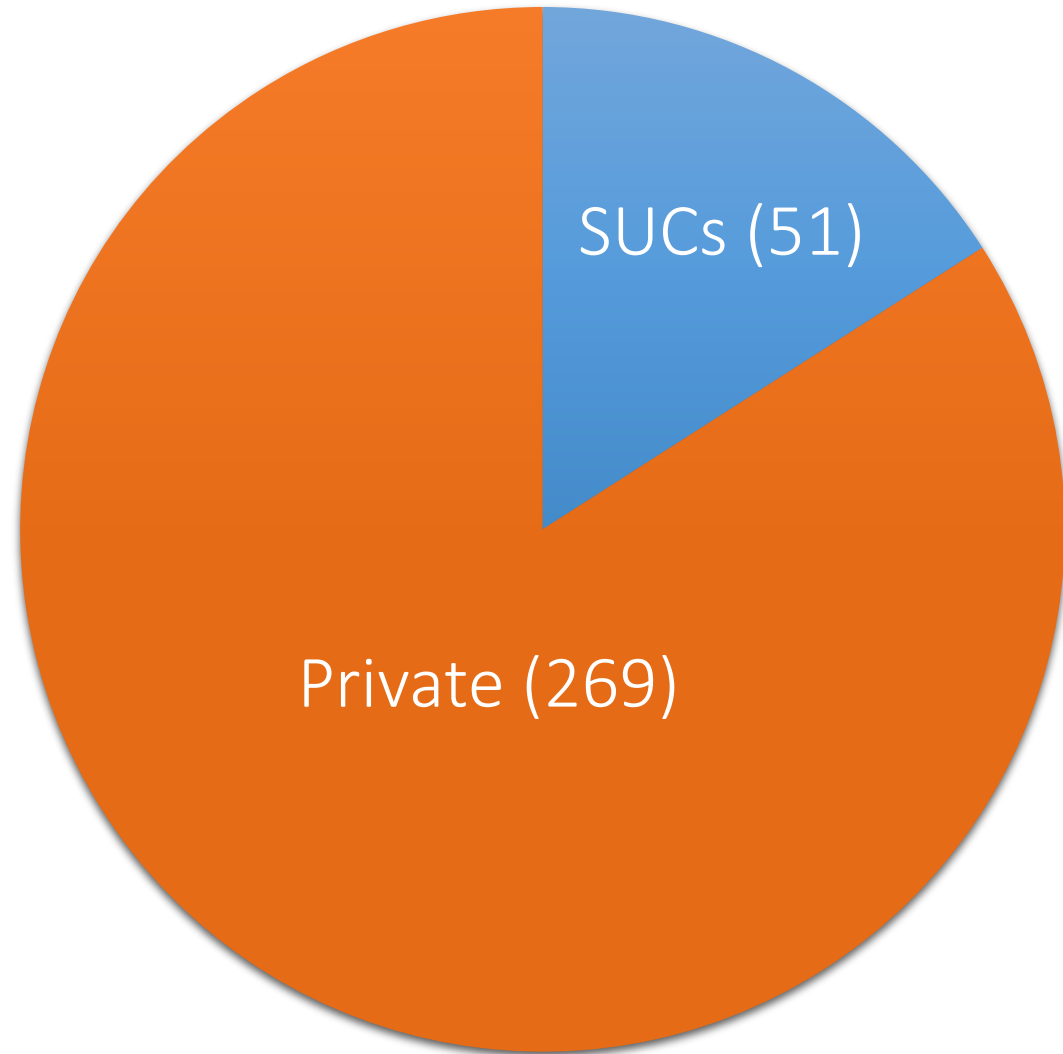
HIGHER EDUCATION STATISTICS ON PHILIPPINE AGRI-FISHERIES



Number of HEIs Offering Agri-Fisheries Programs by Sector, AY 2014-15

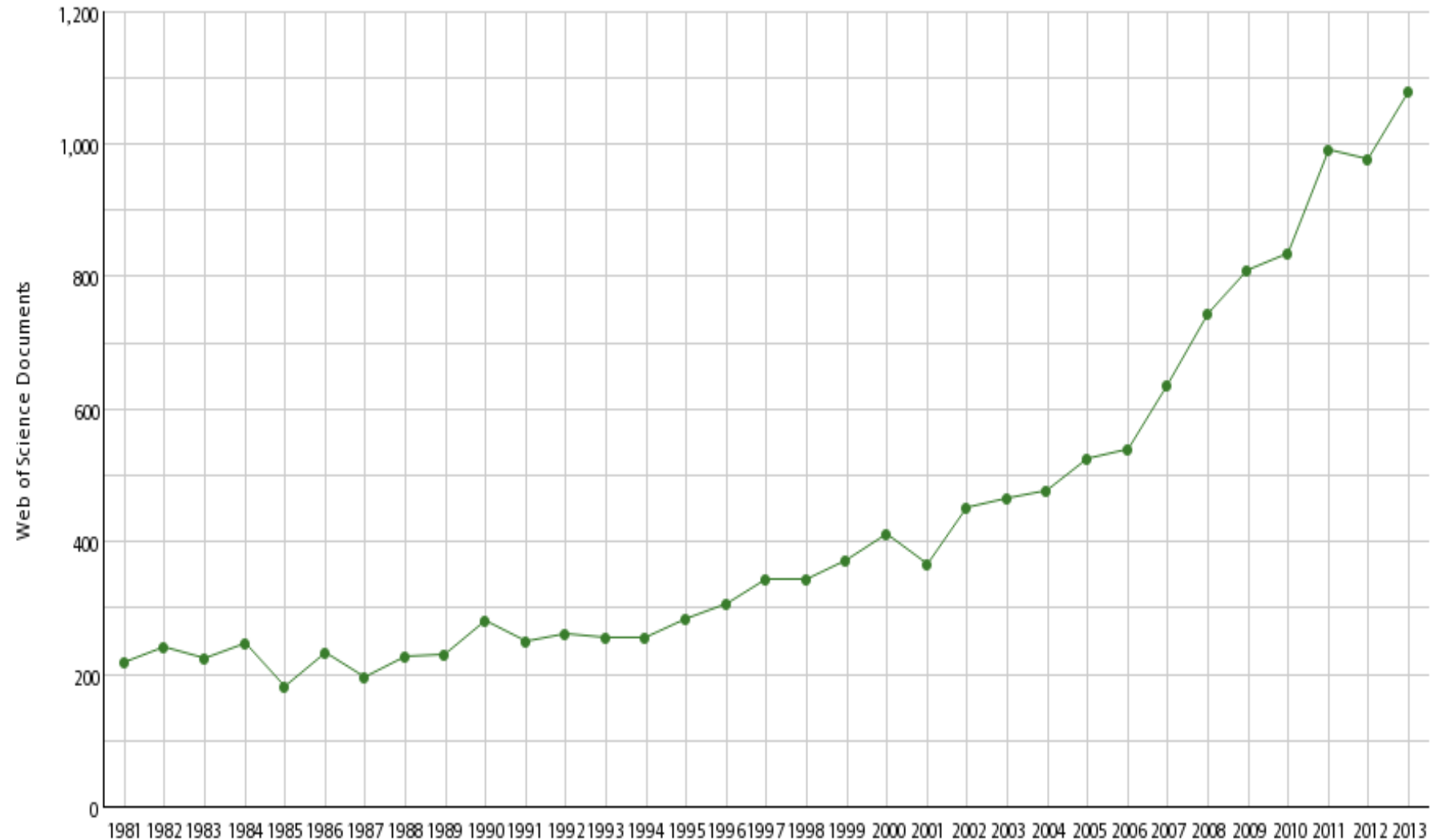


HIGHER EDUCATION STATISTICS
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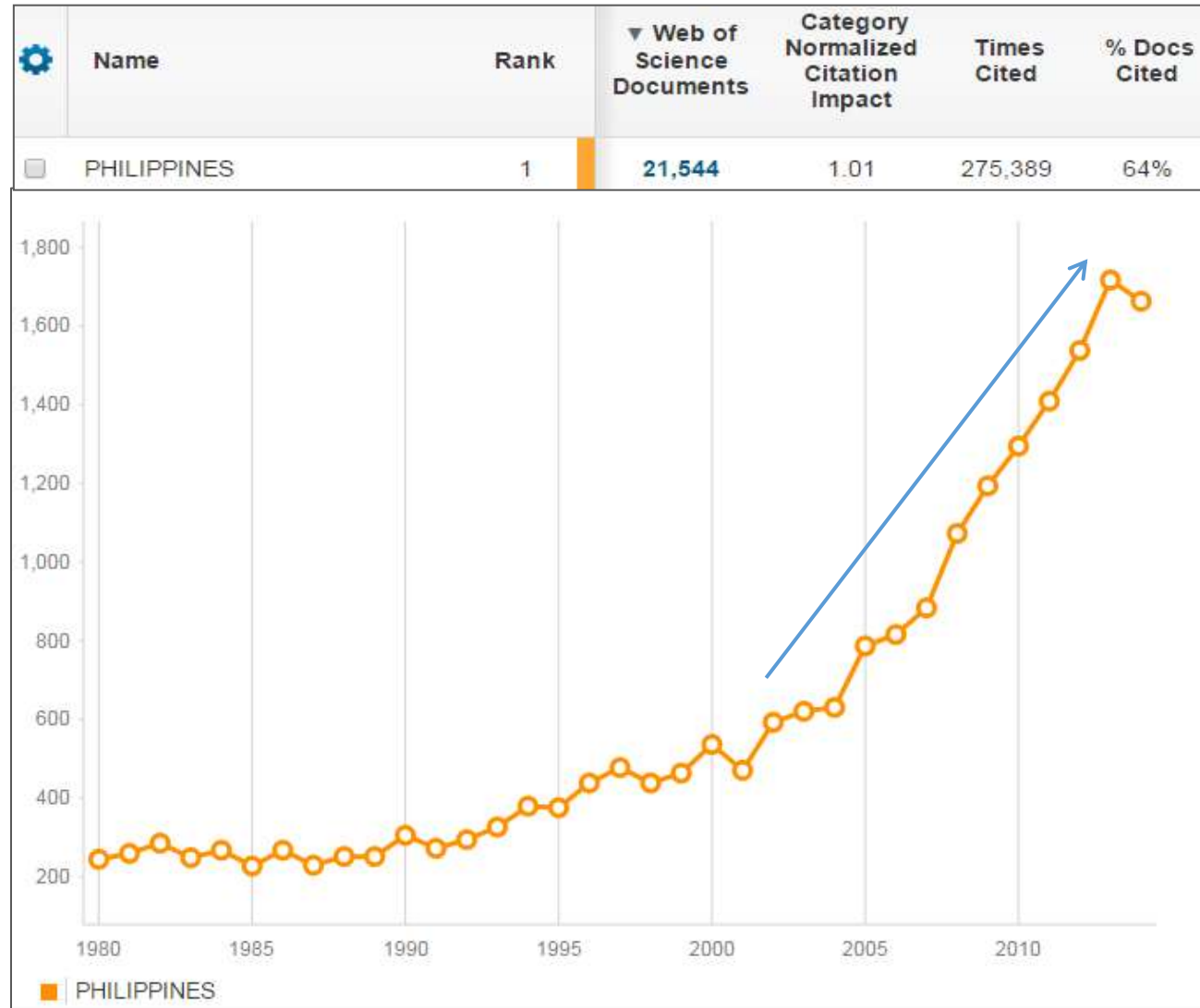


Research Output – Philippines

Web of Science Documents 1981-2013

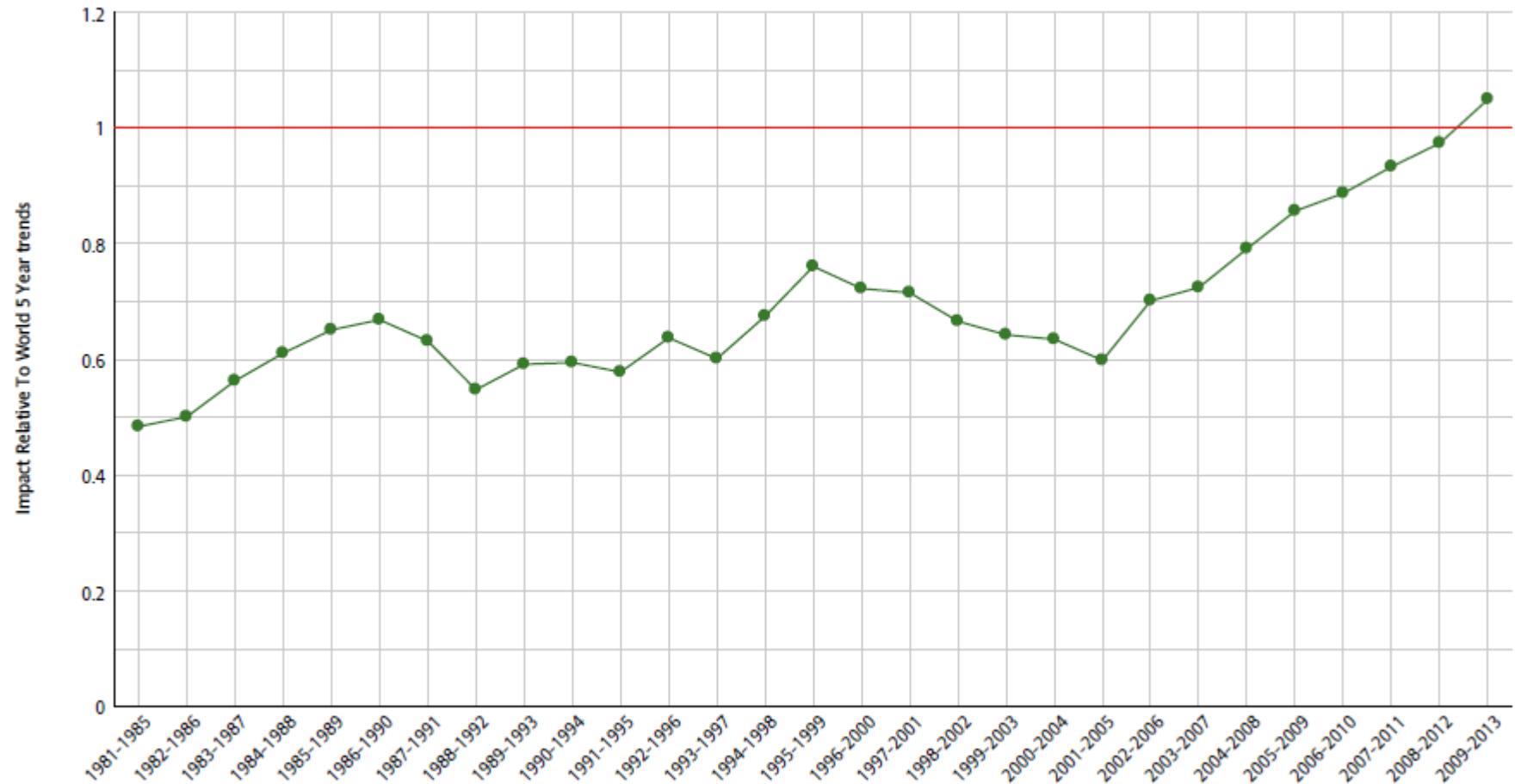


Overall Publication Output (1980 – 2014)

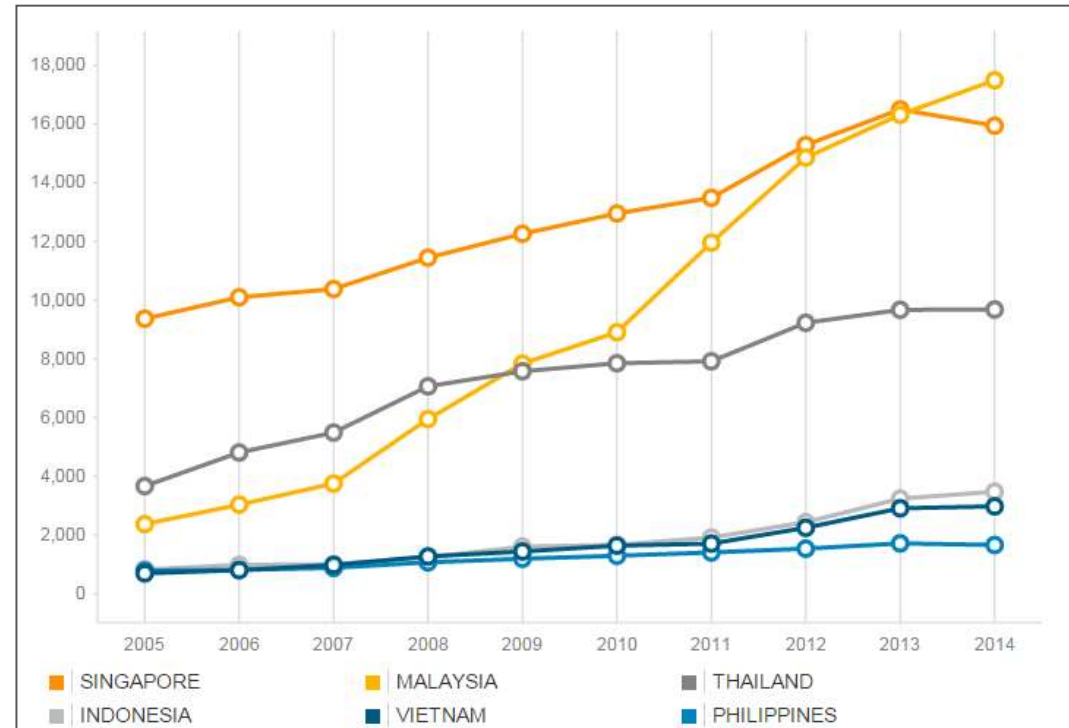


Research Impact – Philippines

Impact Relative To World 5 Year trends



Countries Comparison – Publication Output (2005 – 2014)

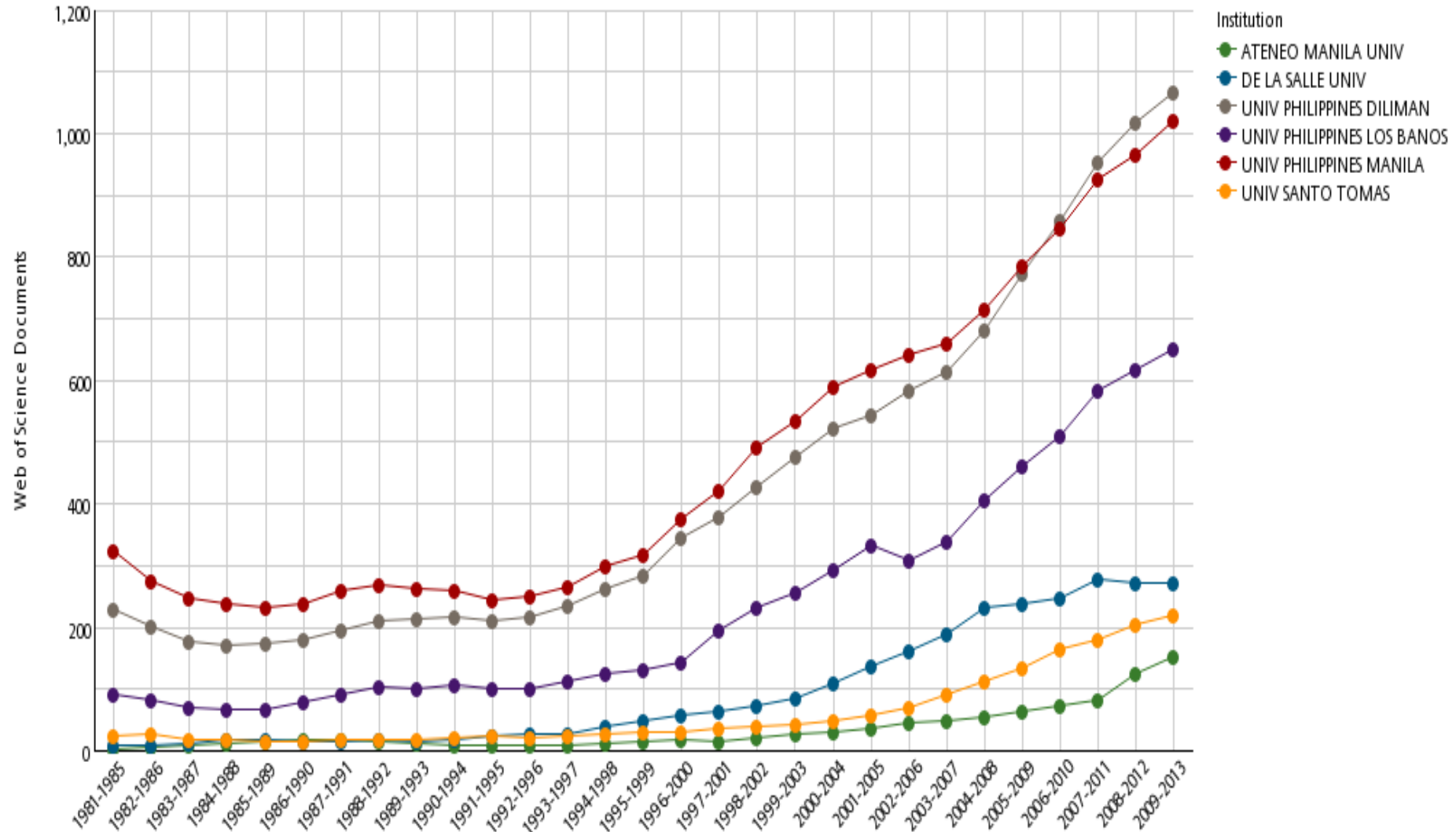


Name	Rank	Web of Science Documents	Category Normalized Citation Impact	Times Cited	% Industry Collaborations
SINGAPORE	1	127,687	1.36	1,503,270	1.93%
MALAYSIA	2	92,465	0.83	386,829	0.6%
THAILAND	3	72,953	0.94	553,986	1.39%
INDONESIA	4	18,407	0.86	112,220	0.93%
VIETNAM	5	16,689	0.92	115,919	0.77%
PHILIPPINES	6	12,376	1.03	105,354	2.54%



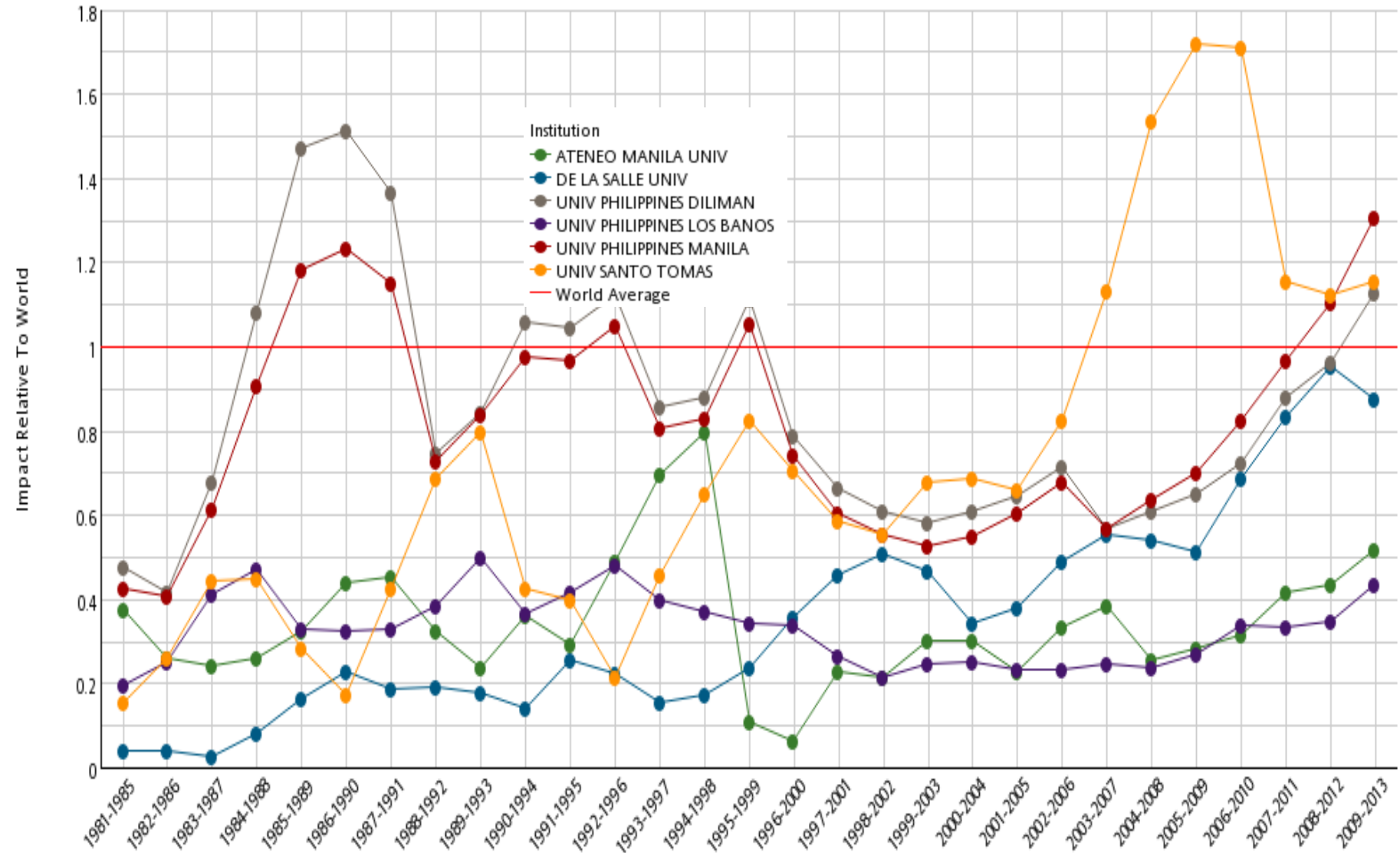
PH Universities: Trend of Output

Web of Science Documents 5 Year Trends

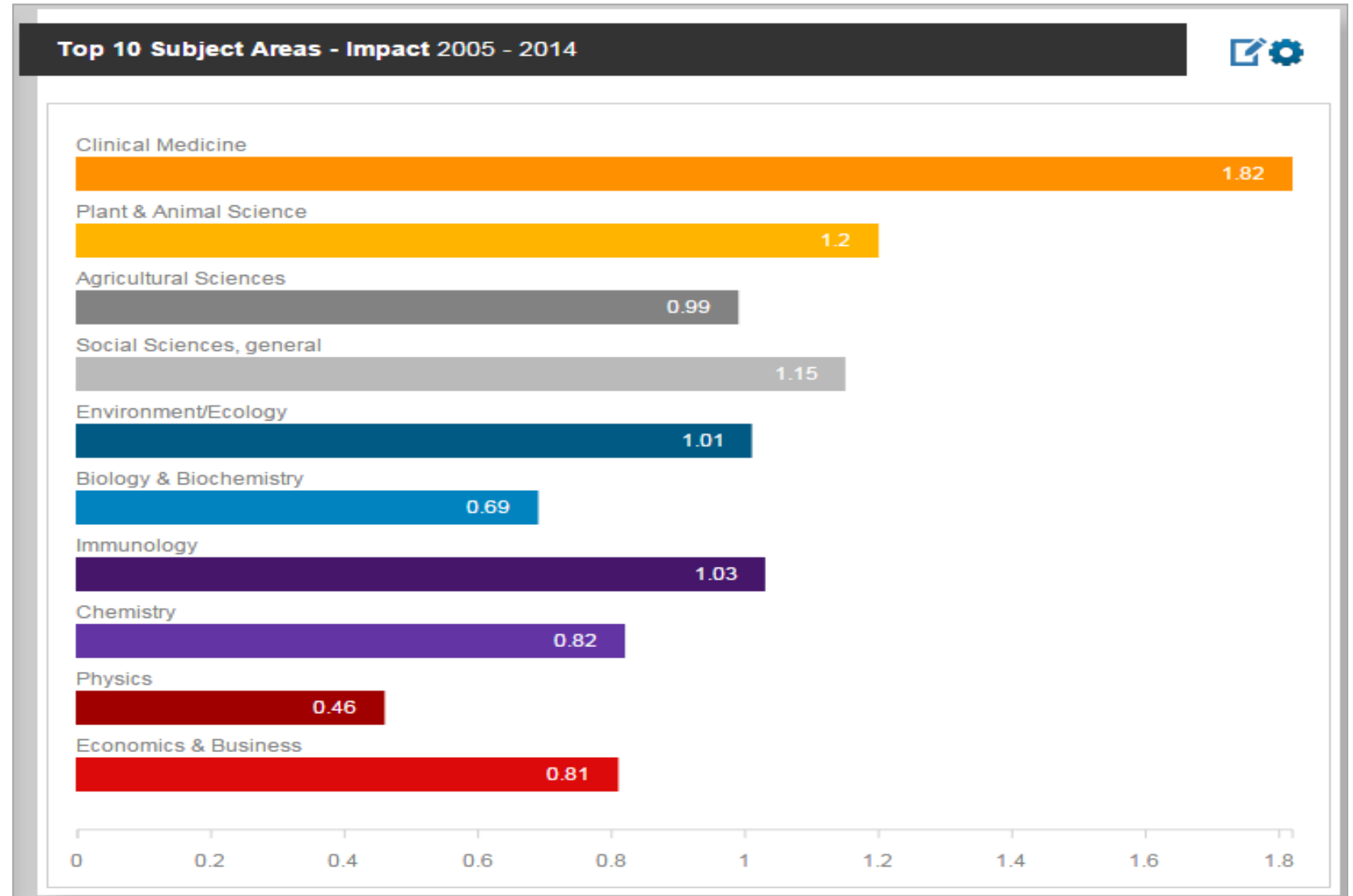


PH Universities: Trend of Impact

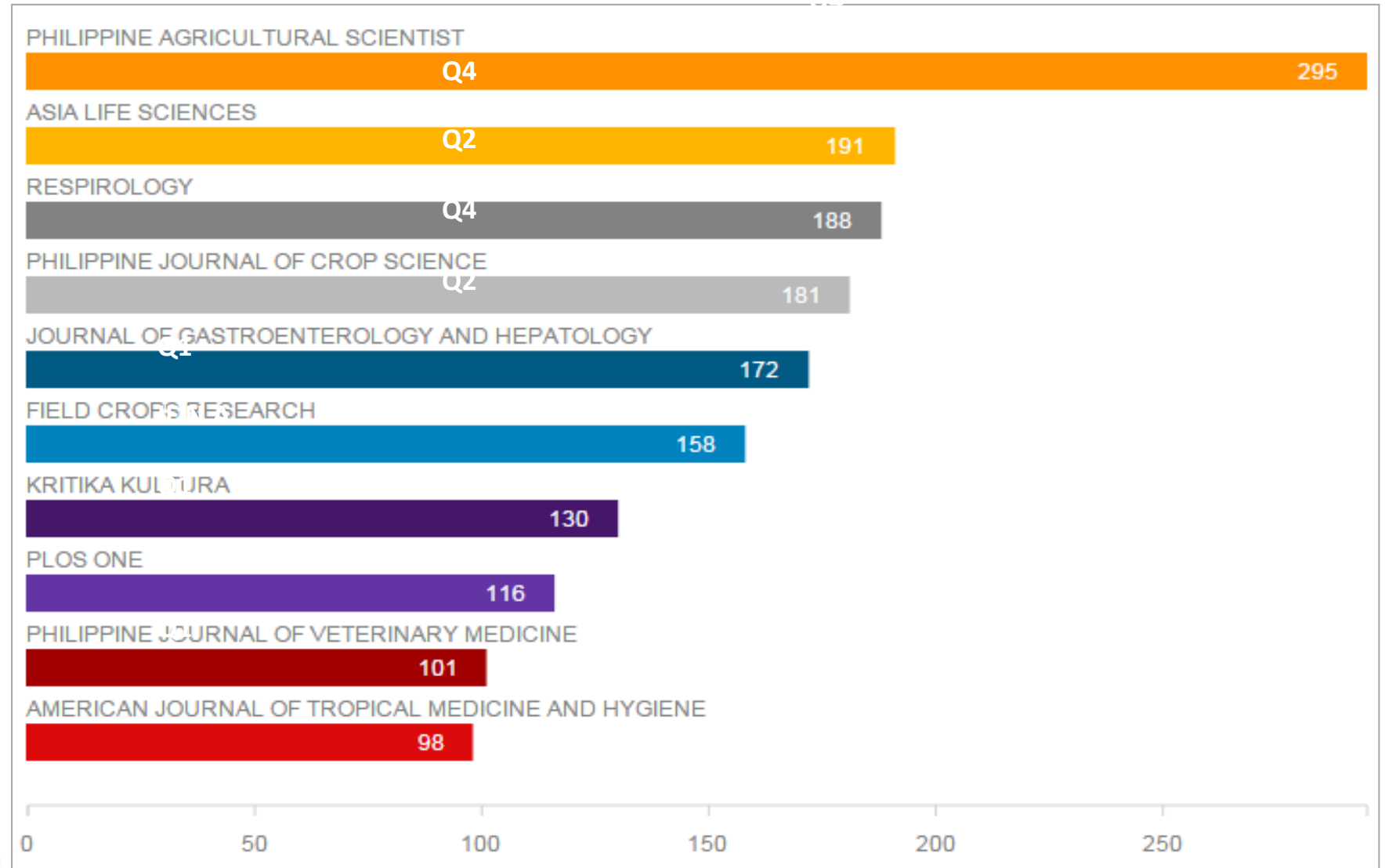
Impact Relative To World 5 Year Trends



Top 10 Subject Areas – Impact (2005 – 2014)



Philippine's Researchers Most Published Journals (2005 – 2014)

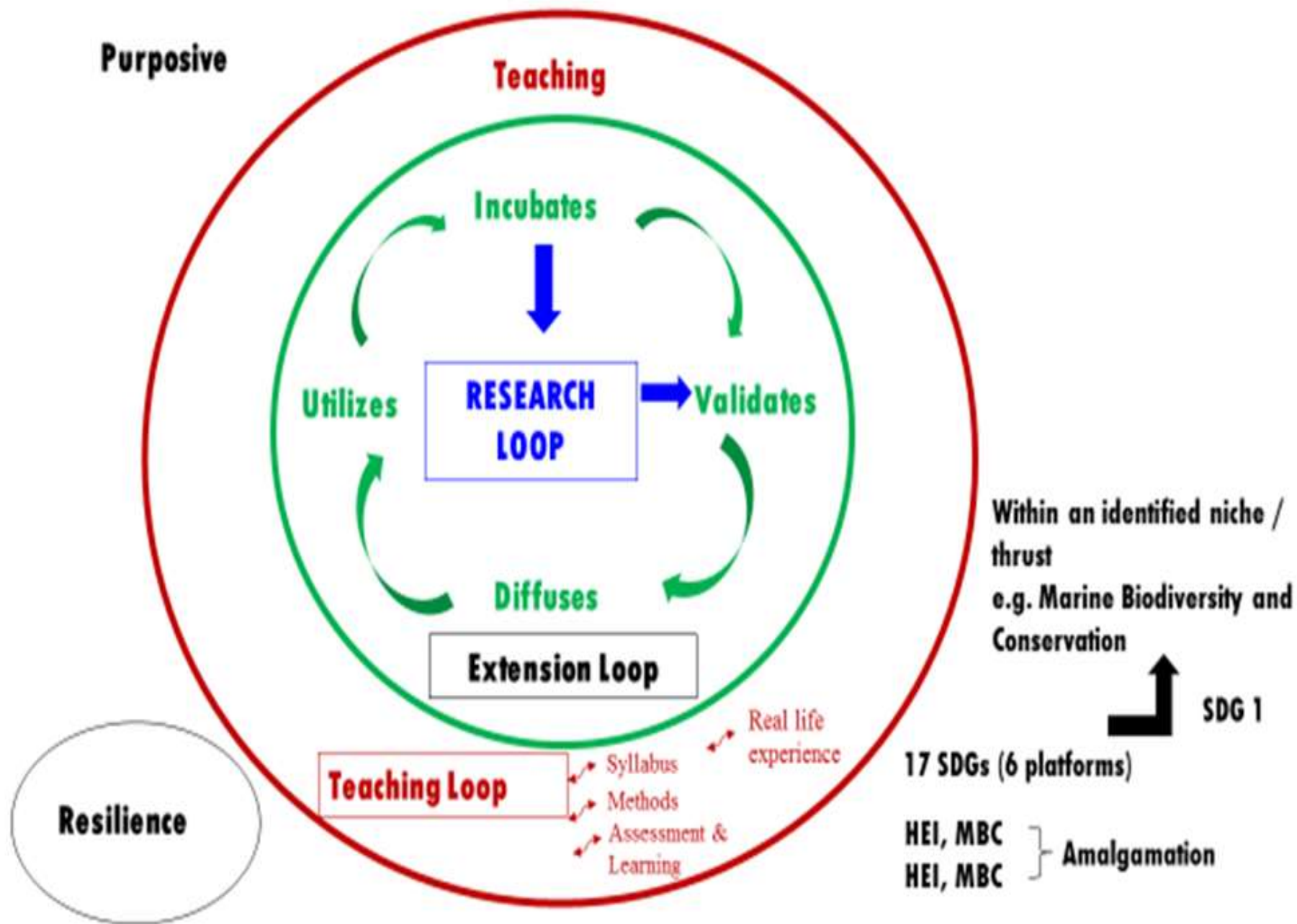


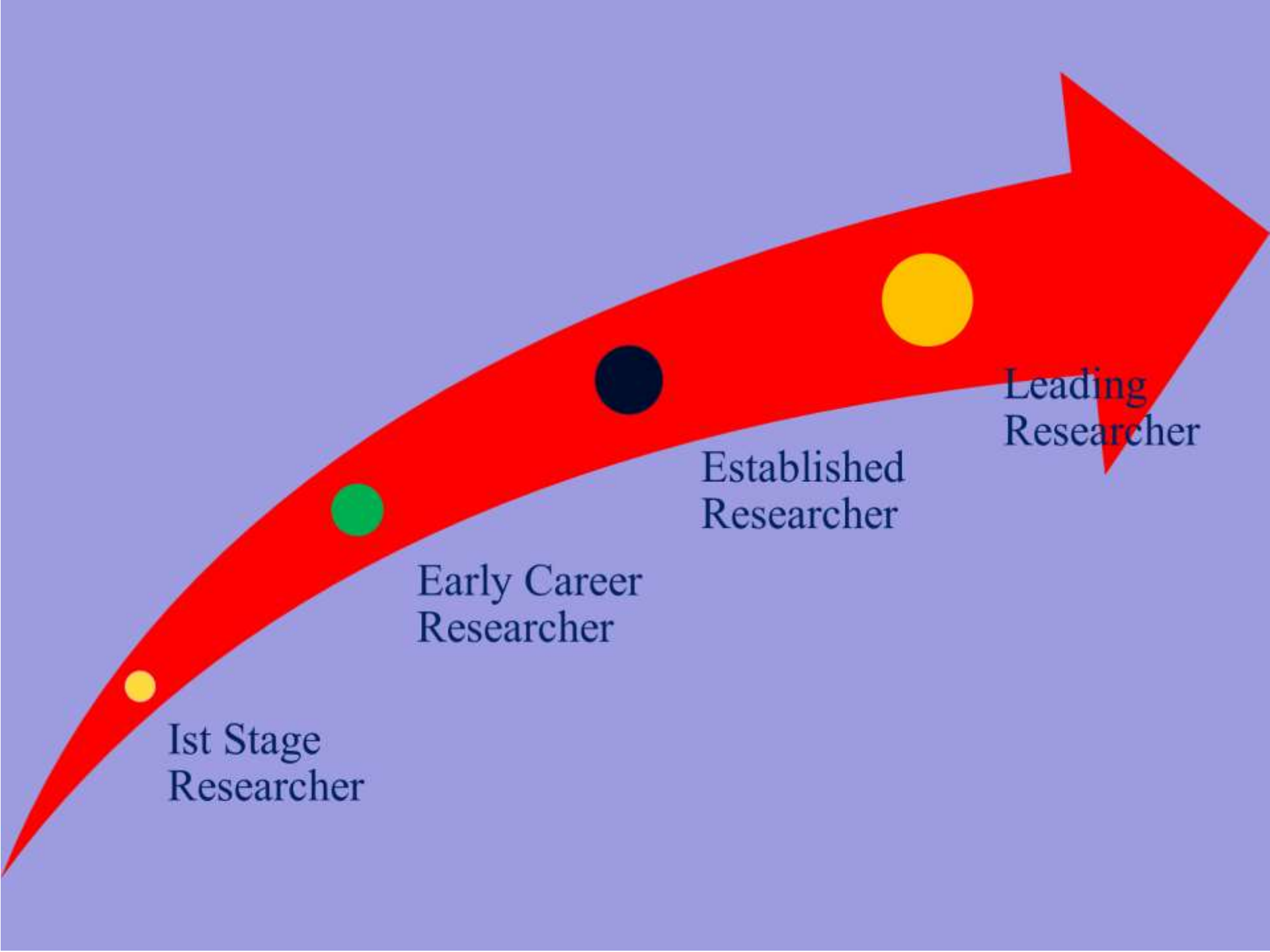
Taking Stock: Opportunities

Ecosystem



Purposive





Ist Stage
Researcher

Early Career
Researcher

Established
Researcher

Leading
Researcher

Key thoughts

- Extension is not a one-time event or activity
- Extension is not a “feel good” program
- Extension cannot win them all: Individual decisions must be respected, studied for what they are—why people think, feel and act the way they do
- Extension is dynamic



Purposive and
Multidisciplinary Research
and Innovation, and
Extension Program

RELEVANCE

1 NO POVERTY

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

16 PEACE AND JUSTICE STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

THE GLOBAL GOALS
For Sustainable Development

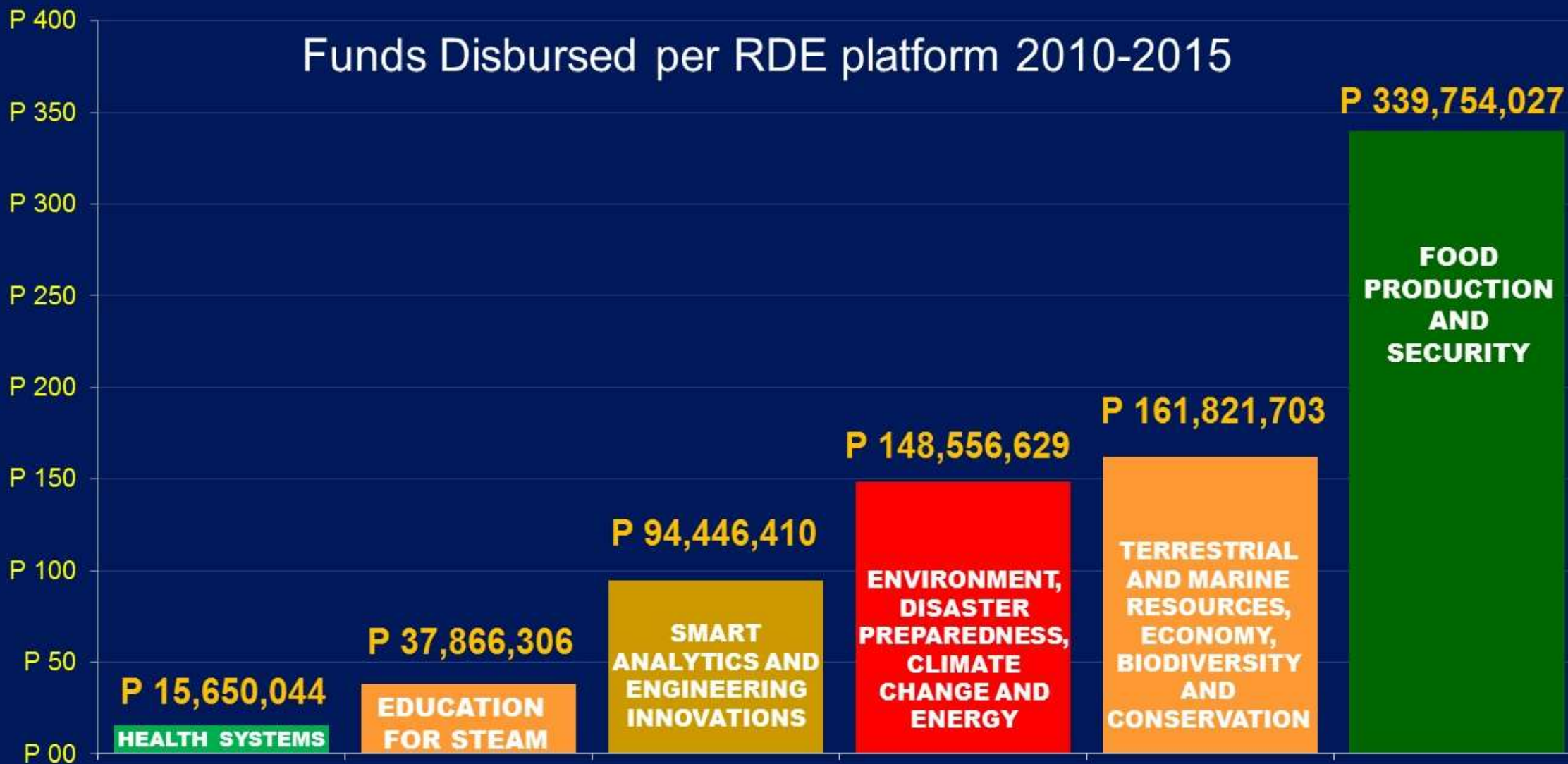


HIGHER EDUCATION
ON PHILIPPINE A



Million

Funds Disbursed per RDE platform 2010-2015



ENHANCING FOOD SECURITY THROUGH SYNERGISTIC CLIMATE CHANGE ADAPTATION PROGRAM IN BIODIVERSITY AND AGRICULTURE

CHED-UPLB PHERNet Program

Presented by:
Amparo M. Wagan

Program Leader
Maria Victoria O. Espaldon



Hosting with DOST the 1ST APEC High-Level Policy Dialogue on Science and Technology in Higher Education, August 13-14, 2015

Science and Technology expert mobility
Cross-border education
Inter-university collaboration





Thank you.

