

# **STRENGTHENING S&T HUMAN RESOURCES IN THE PHILIPPINES THROUGH DOST-SEI CAPACITY BUILDING PROGRAMS**

**By:**

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# **SEI GOAL:**

**To produce a critical mass of Science and Technology (S & T) human resources towards inclusive national development.**



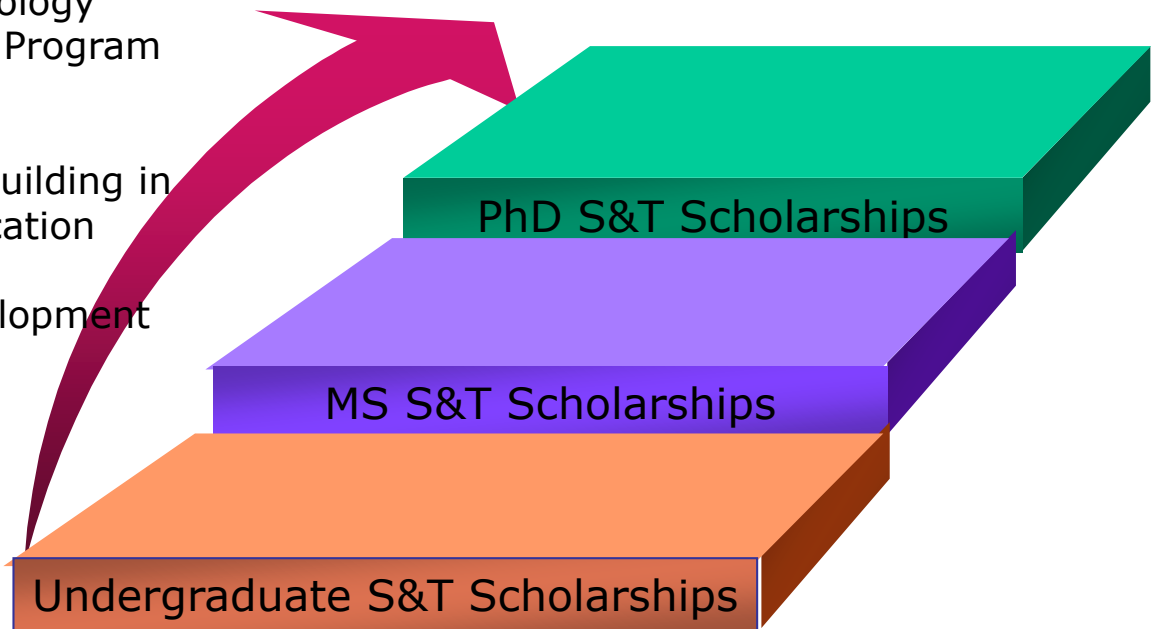
# SEI PROGRAMS:

1. Administers scholarships in S & T from the undergraduate to graduate levels
2. Conducts science promotion activities (e.g. science camps, science fairs, robotics competitions, etc.) to encourage young people to love science and pursue STEM careers; conducts researches on S&T Human Resources
3. Develops learning resources and conducts capacity-building programs for STEM teachers



# S&T Scholarship Programs

- ❑ Accelerated Science and Technology Human Resource Development Program (ASTHRDP)
- ❑ Science Education: Capacity Building in Science and Mathematics Education
- ❑ Engineering Research for Development and Technology (ERDT)
- ❖ DOST-SEI Merit Scholarship Program
- ❖ RA 7687 Scholarship Program
- ❖ RA 10612 Scholarship with Teaching



**To accelerate the production of S&T human resources to needed propel sustainable economic development.**



# ASTHRDP-National Science Consortium



**Ateneo de Manila University**



**University of the Philippines-  
Los Baños**



**Central Luzon State University**



**University of the Philippines-  
Manila**



**De La Salle University**



**University of the Philippines-  
Visayas**



**Mindanao State University-  
Iligan Institute of Technology**



**University of Santo Tomas**



**University of the Philippines-  
Diliman**



**Visayas State University**



**University of San Carlos**



# ERDT Consortium Universities



Ateneo de Manila University



Mapua Institute of Technology



Central Luzon State University



University of the Philippines – Diliman



De La Salle University



University of the Philippines – Los Baños



Mindanao State University-Iligan Institute of Technology



University of San Carlos





# Science and Mathematics Education Consortium Universities



## Increase in the number of scholars supported

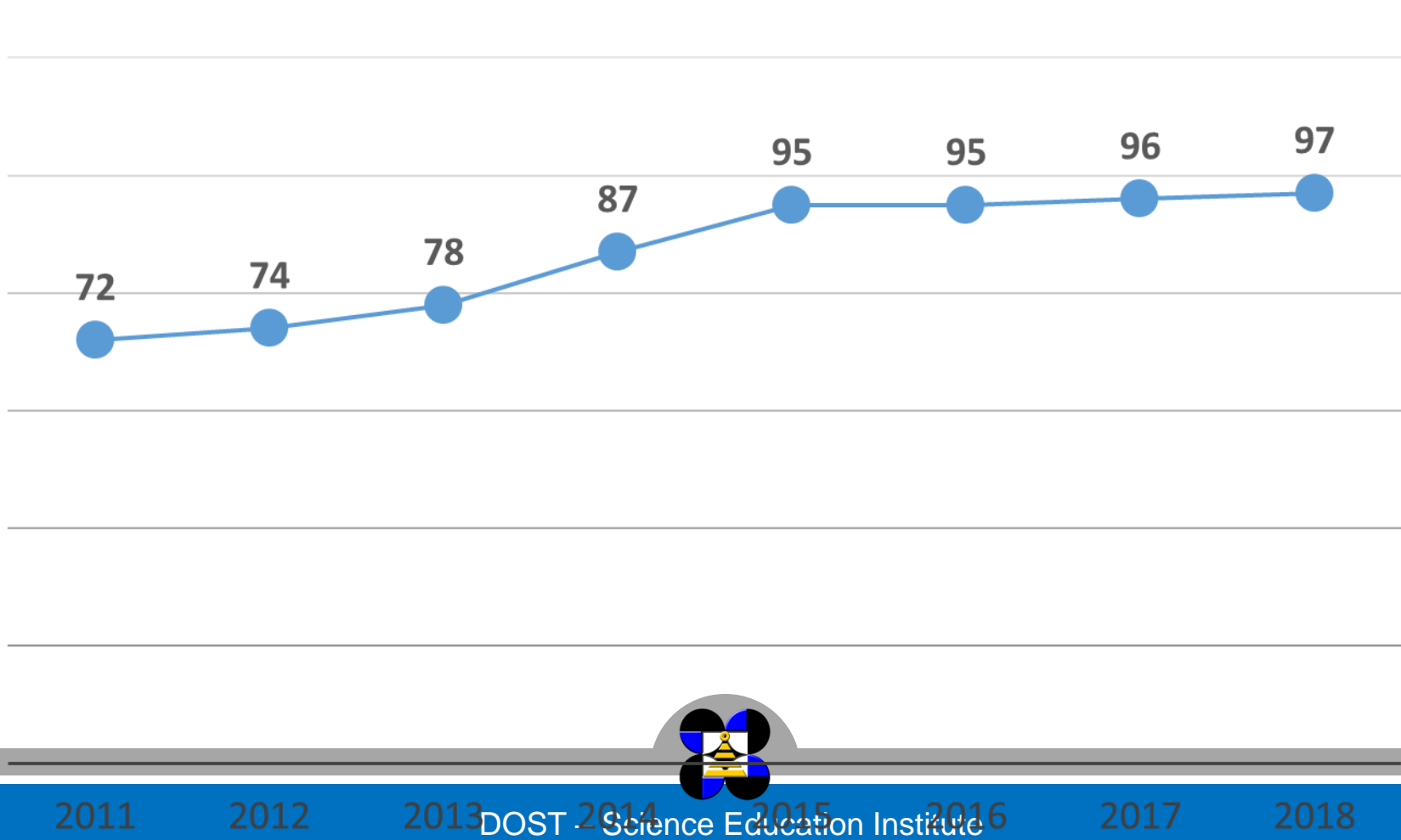
<b>Number of Scholars Supported/ to be Supported</b>	<b>2018 Actual</b>	<b>2019 NEP</b>	<b>2020 Target</b>
Undergraduate Level	23,531	26,831	31,360
Masters Program	3,632	4,206	4,264
Doctoral Program	1,270	1,985	1,927
<b>Total</b>	<b>28,433</b>	<b>33,022</b>	<b>37,551</b>



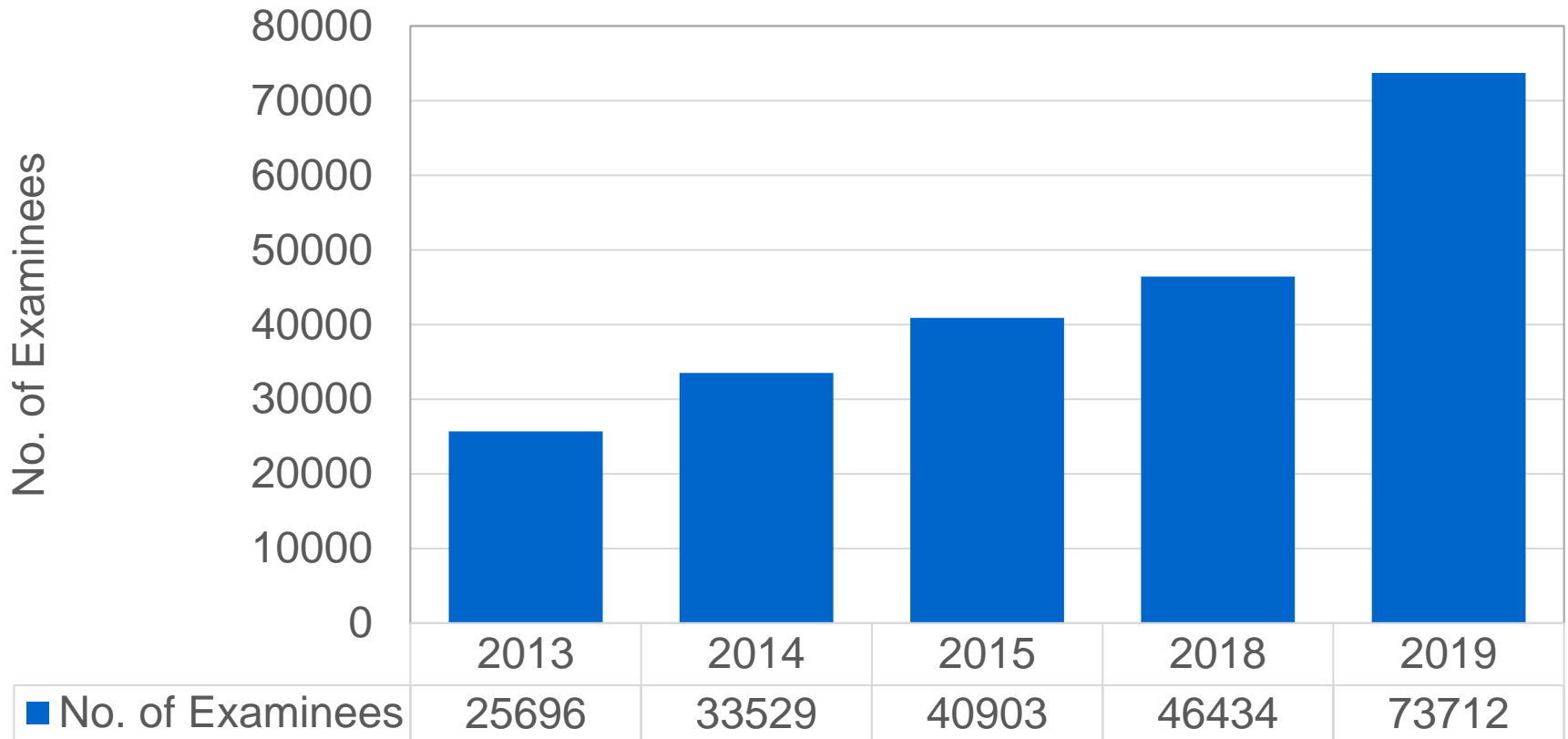


# BIG NUMBERS: Increase in Congressional Districts and Municipalities Served

Percentage of Municipalities Served



# Increase in the Number of DOST-SEI Undergraduate S&T Scholarship Examinees: 2013-2019



*\*Qualifying examinations were not conducted in 2016 and 2017 since there were no incoming First Year college students due to K to 12*

## Number of Slots for the Undergraduate Scholarship:

Year of Award*	No. of Slots
2014	3,500
2015	3,500
2018	8,000
<b>2019</b>	<b>10,000</b>
<i>* There was no awardees in 2016-2017 due to the effect of K to12 Program</i>	

Target Announcement date: March 31, 2019

# Implementation of Foreign Scholarship Programs

DOST-Newton Fund PhD  
Scholarship

02

01

DOST-UTP

MECO-TECO

03

04

Scholarship Offerings  
for ASEAN Researchers

Foreign Graduate  
Scholarship Program in  
Priority Fields of Study

06

Graduate Research and  
Education  
Assistantship for  
Technology (GREAT)  
Program

Faculty Development  
Post-Graduate  
Scholarships

07





Canada  
CANADA



United States  
of America



Brazil  
BRAZIL



United Kingdom



Netherlands



France



Spain



Hungary



Italy



Germany



Czech Republic



Denmark



Sweden



Russia  
RUSSIA



South Korea



Japan



Hongkong



Taiwan



Laos



Malaysia



Myanmar



Vietnam



Cambodia



Singapore



Australia



New Zealand

Antarctica

# List of Expanded Programs

## Undergraduate Scholarships

- Grant for Talented Students in Municipalities without DOST-SEI Scholars
- DOST-SEI Bangon Marawi Program in Science and Technology Human Resource Development
- Bringing Education in Science and Technology for Indigenous People (BEST for IP)





# SPECIAL PROGRAMS:

## Bangon Marawi Project



DOST-SEI Bangon Marawi Program in STHRD  
Signing of Memorandum of Agreement (MOA)  
January 26, 2018

# 248 scholars

# List of Expanded Programs

## Foreign Scholarships in Specialized and Emerging Fields in Science and Technology

- Scholarship for Foreign Graduate Studies under the Space Technology and Applications, Mastery, Innovation, and Advancement (STAMINA4Space)
- Developing Capabilities in Space Science and Technology
- Graduate Scholarship at University of Alberta in Canada
- Capacity Building for S&T personnel in Biomedical Devices Innovation and Research
- Collaboration with James Cook University (JCU) of the Commonwealth of Australia
- Collaboration with University Teknologi Petronas
- PhilFrance DOST Fellowship Programme
- DOST-ACIAR Scholarships





# Increase in Scholarship Financial Assistance



## Undergraduate Level

Scholarship Privileges	2013	2018
Tuition and other school fees	16,000	40,000
Stipend	Phy, Min, Geo: 5K/month OD: 4K/month	7K/month
Book Allowance	5,000	10,000
PE/MS Allowance for first year only	500	1,000
Transportation Allowance (average rate)	1,000	1,000
Group Insurance	500	500
Financial Assistance During Summer	12,000	18,000





# Increase in Scholarship Financial Assistance

## Graduate Level

Scholarship Privileges	2013	2018
<b>Tuition and other school fees</b>	60,000	60,000
<b>Stipend</b>	MS: 17k/month PhD: 25k/month	MS: 25k/month PhD: 33k/month
<b>Book Allowance</b>	10,000	20,000
<b>Transportation Allowance (average rate)</b>	10,000	10,000
<b>Group Insurance</b>	500	1,800
<b>Thesis/Dissertation</b>	50,000/90,000	50,000/100,000



# ENTITLEMENTS OF THE GRADUATE SCHOLAR

		MS(₱)	PhD(₱)
Tuition & other school fees		Actual	
Stipend		25,000 /mo.	33,000 /mo.
Book Allowance		10,000/AY	
Transportation Allowance*		Actual	
Group Insurance		1,793/yr.	
Thesis/ Dissertation	Dry	30,000	60,000
	Wet	50,000	100,000
Research Grant		200,000	475,000

*\*One (1) actual economy class round trip fare per Academic Year; given only to those who will study outside their home province*



# Student Research Support Fund (SRSF)

Components	Amount	
	MS	PhD
1. Research Grant	P89,000	P253,000
2. Dissemination Grant	P75,000	P150,000
3. Mentor's Fee	P36,000	P72,000

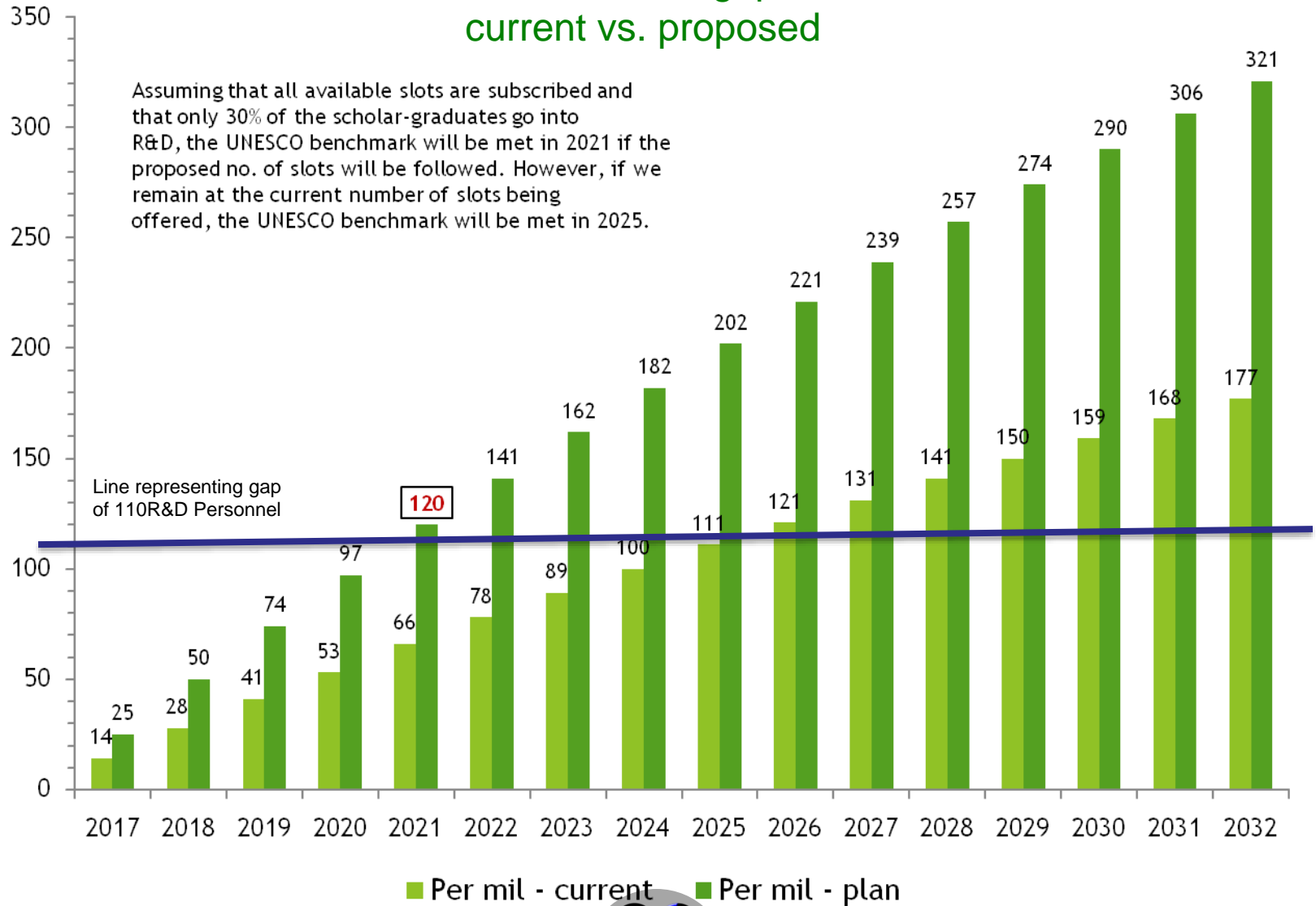
# Estimated Number of Required BS, MS and PhD Graduates of STEM Working in R&D

<b>UNESCO Benchmark</b>	<b>380 R&amp;D personnel per million population</b>
<b>Philippine Data</b> (Based on 2013 DOST R&D Survey)	<b>270 R&amp;D personnel per million population (26,495 total headcount)</b>
<b>GAP</b>	<b>110 R&amp;D personnel per million population</b>
<b>Total number of R&amp;D personnel required to meet benchmark in 5 years (2022)</b>	<b>46,462* STEM personnel working in R&amp;D (headcount)</b>
<b>Additional number of R&amp;D personnel required to meet benchmark in 5 years (2022)</b>	<b>16,652 STEM personnel working in R&amp;D (headcount)</b>

Assuming 10% attrition, 3,663 STEM graduates should be added to the R&D pool every year

\* Based on 2010 census and 1.6% population growth

# Comparison in the number of years needed to meet UNESCO benchmark gap current vs. proposed

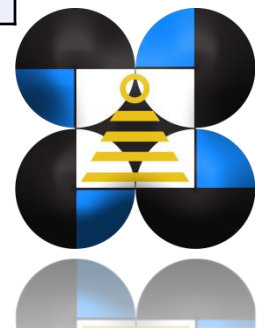


NOTE: Slots (30% of the figures in the previous slide) were converted to per million population for easier comparison with UNESCO figure

# DOST Graduate Scholars Career Incentive Program (CIP)

A scheme to address the administration's call to strengthen the country's S&T capability and to a certain extent avert unemployment of DOST scholar-graduates.

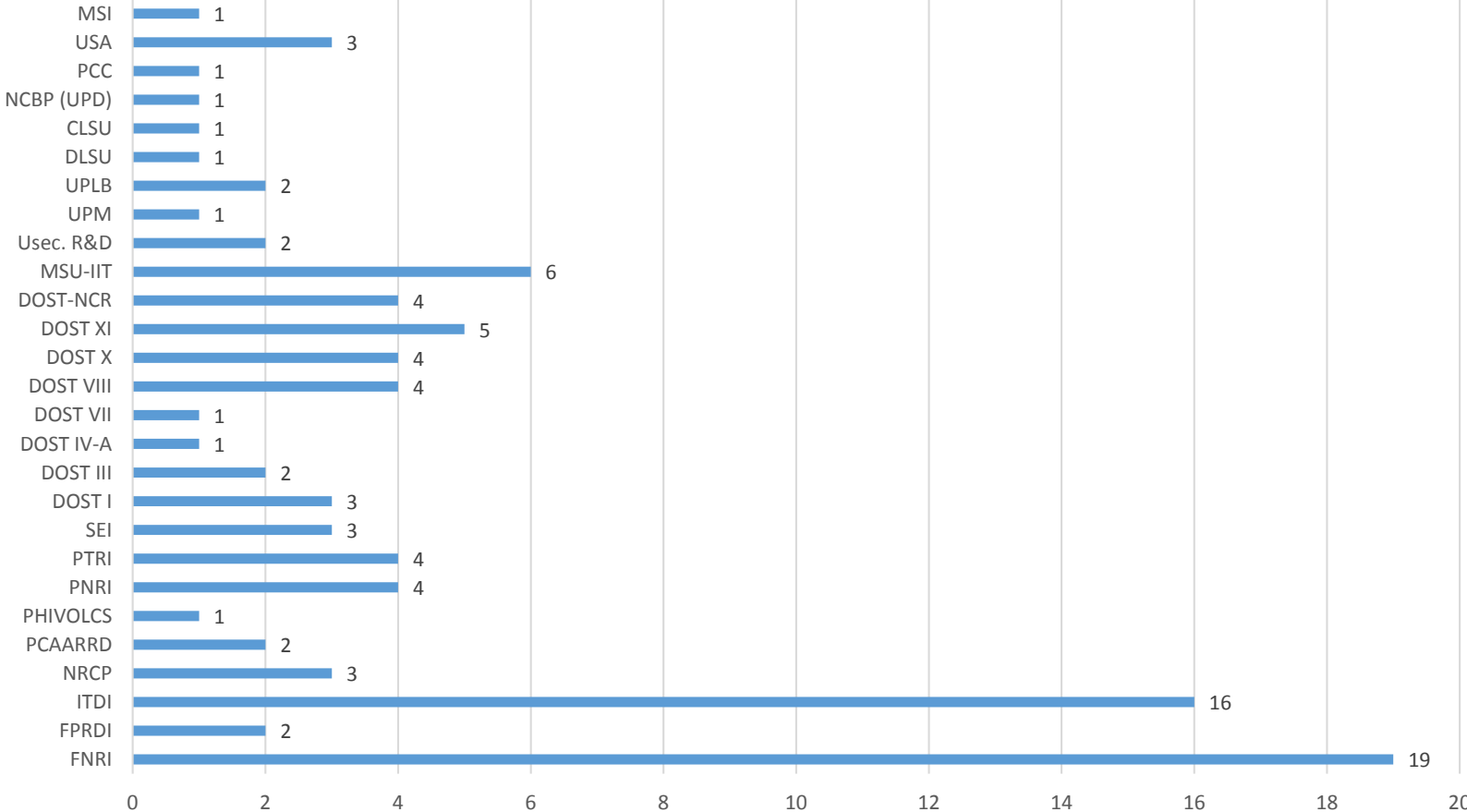
Researcher	Position	Rate
MS Graduate	Senior SRS	P50,518.80
PHD Graduate	Supervising SRS	P70,460.40



# Career Incentive Program

as of 30 September 2018

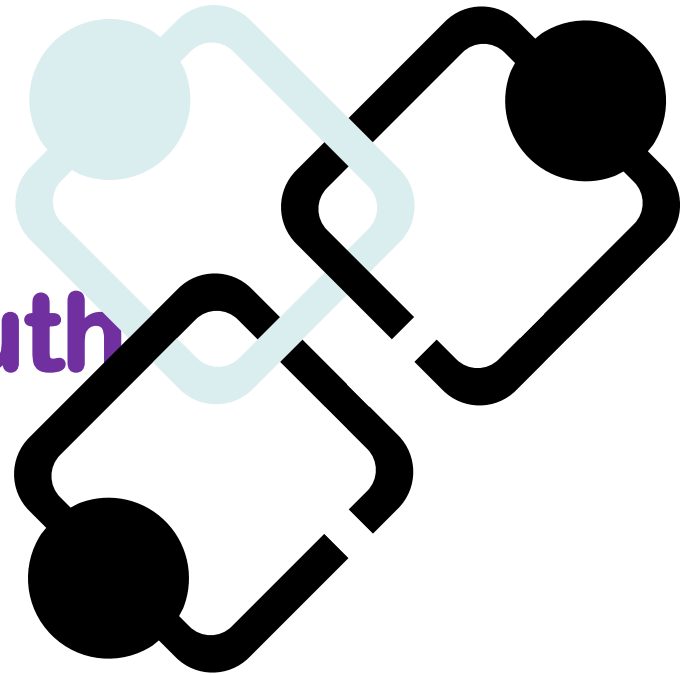
No. of CIP Researchers



**TOTAL = 97**

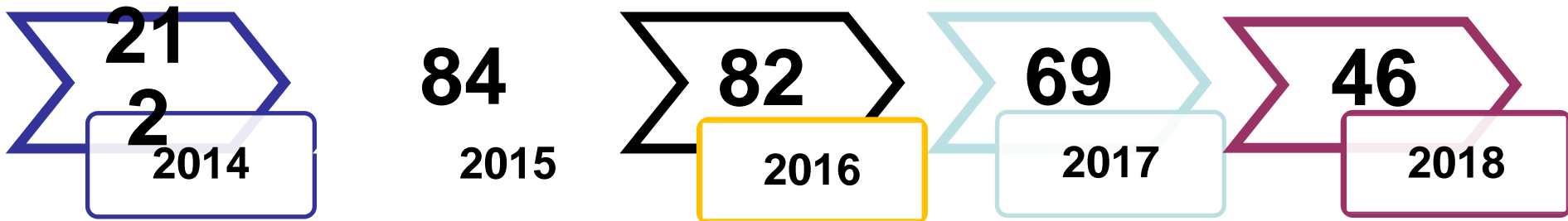


**Purposive S&T  
Promotions and Youth  
Programs**

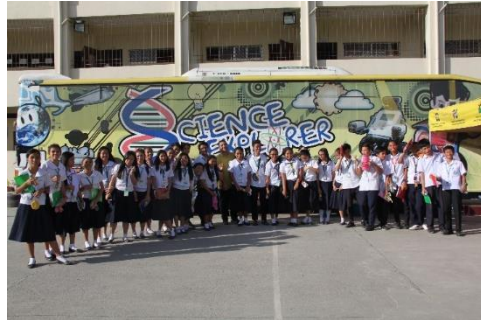


# Push4Science

Number of Municipalities without Scholars



# Science Explorer





# Science Camp



April 16 – 24, 2018  
Region VII: Siquijor, Central Visayas with 60 participants



# Local and International S&M Competitions



## Indie-Siyensya

Imake.Wemake in partnership with Acer Philippines



## Water Rocket



## Can Satellite



## International Mathematical Olympiad

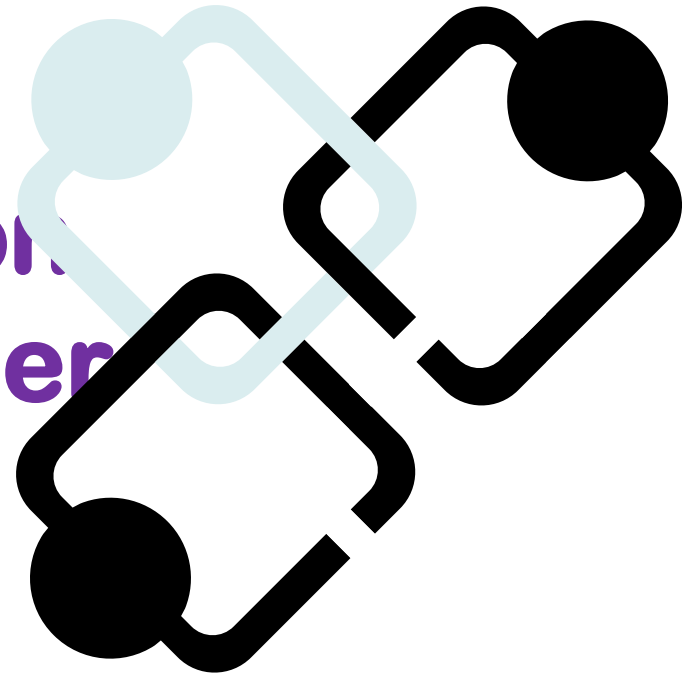


## Philippine Mathematical Olympiad

**CONGRATULATIONS!**  
**58th International Mathematical Olympiad**

Kyle Patrick Dulay	Silver Medalist
Albert John Patupat	Silver Medalist
Farrell Eidrian Wu	Silver Medalist
Sean Anderson Ty	Bronze Medalist
Shaquille Wyan Que	Bronze Medalist
Clyde Wesley Ang	Bronze Medalist

# Implementation of STEM Teacher Trainings





# Science Teacher Academy for the Regions (STAR)



STAR: Language Strategies in Teaching Science and Mathematics held on July 17-19, 2018 in NCR

STAR: Teaching Mathematics Through Problem-Solving held on March 14-16, 2018 in Region 2

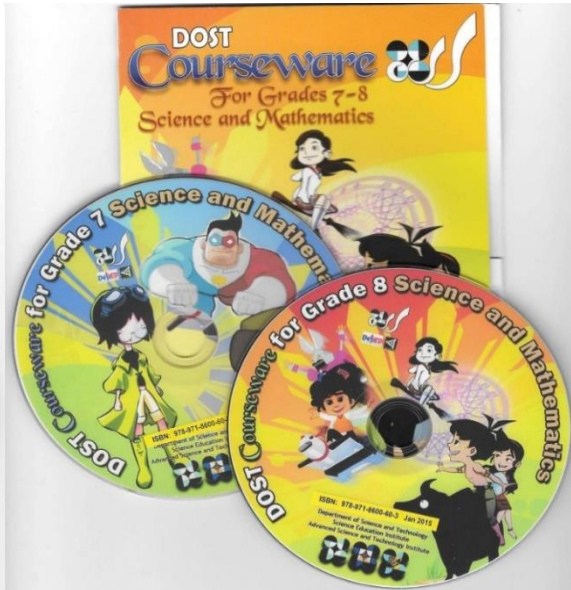
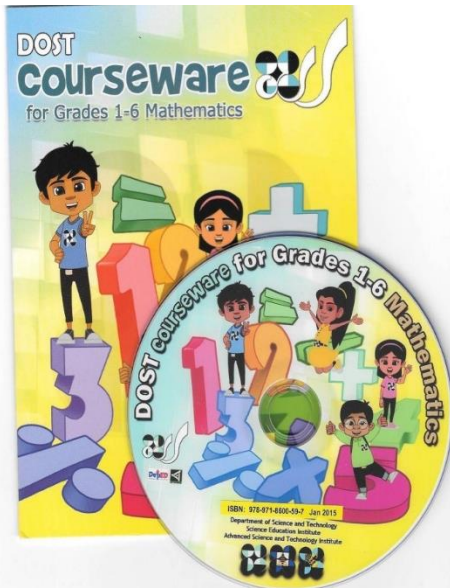


# WIDER REACH: STAR Member-Universities

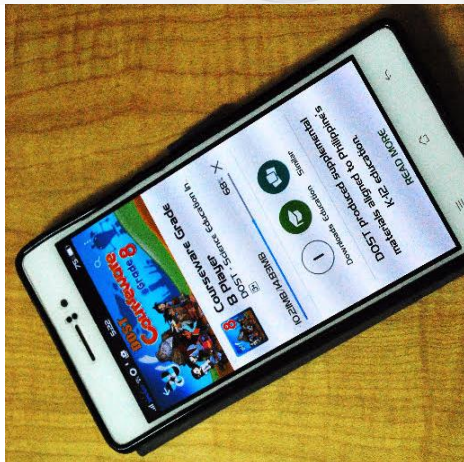
Universities	Region
1. Mariano Marcos State University	Region I
2. Bicol University	Region V
3. Central Luzon State University	Region III
4. Philippine Normal University	NCR
5. West Visayas State University	Region VI
6. Mindanao State University – Iligan Institute of Technology	Region X
7. St. Louis University	CAR
8. Saint Mary's University	Region II
9. Batangas State University	Region IV-A
10. Palawan State University	Region IV-B
11. Cebu Normal University	Region VII
12. Leyte Normal University	Region VIII
13. Western Mindanao State Univ.	Region IX
14. University of Southeastern Philippines	Region XI
15. University of Southern Mindanao	Region XII
16. Caraga State University	Region Caraga



# INNOVATIONS: DOST Courseware and Mobile Applications



**DOST-SEI and Smart bring DOST Courseware to remote schools**



# INNOVATIONS: 21<sup>st</sup> CENTURY MODEL CLASSROOM



## Five-Recipient Schools of the project “Effectiveness of 21<sup>st</sup> Century Learning Environment Model as a Support System to Teaching and Learning of Science and Mathematics in DepEd, Lipa City, Batangas

1. Pinagtongulan Integrated NHS
2. Bolbok Integrated NHS
3. San Celestino Integrated NHS
4. Inosloban-Marawoy NHS
5. Lipa City Integrated National Science

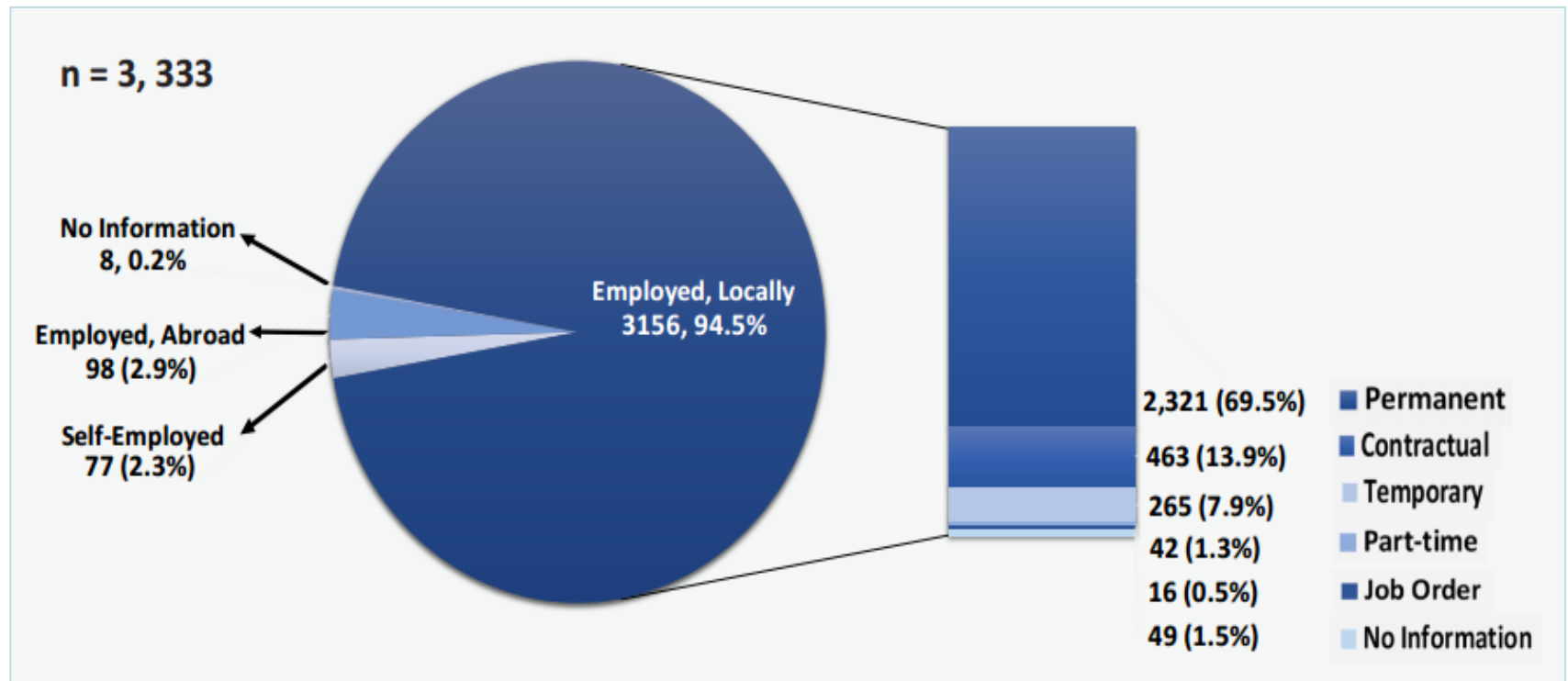
SEI to:

- Ensure compliance to required standards
- Check readiness of the learning environment
- Assist in the preparation, functionality testing of equipment/technologies and installation of educational software

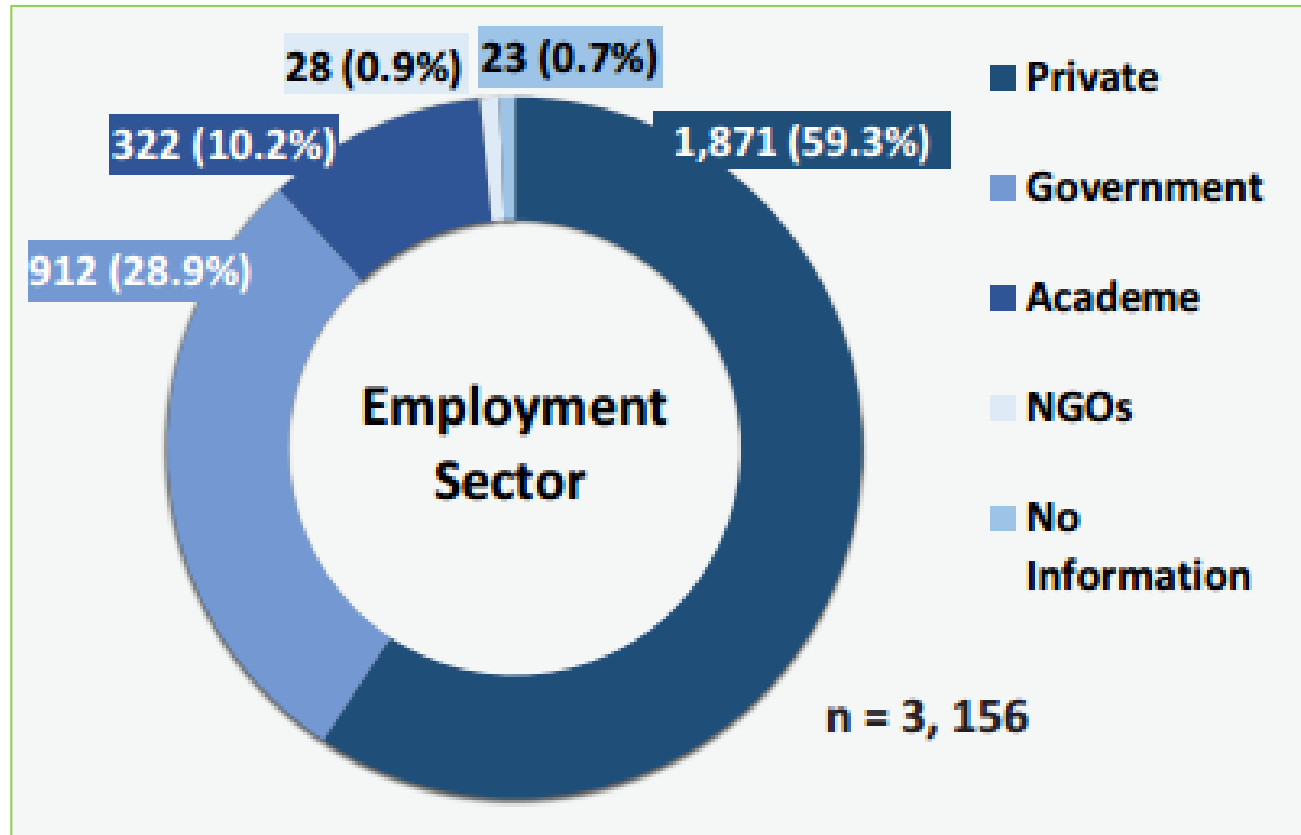


Lipa City Integrated National Science High School using DOST Courseware and their 21st Century Classroom

# Scholars Tracked by Employment Location and Employment Type

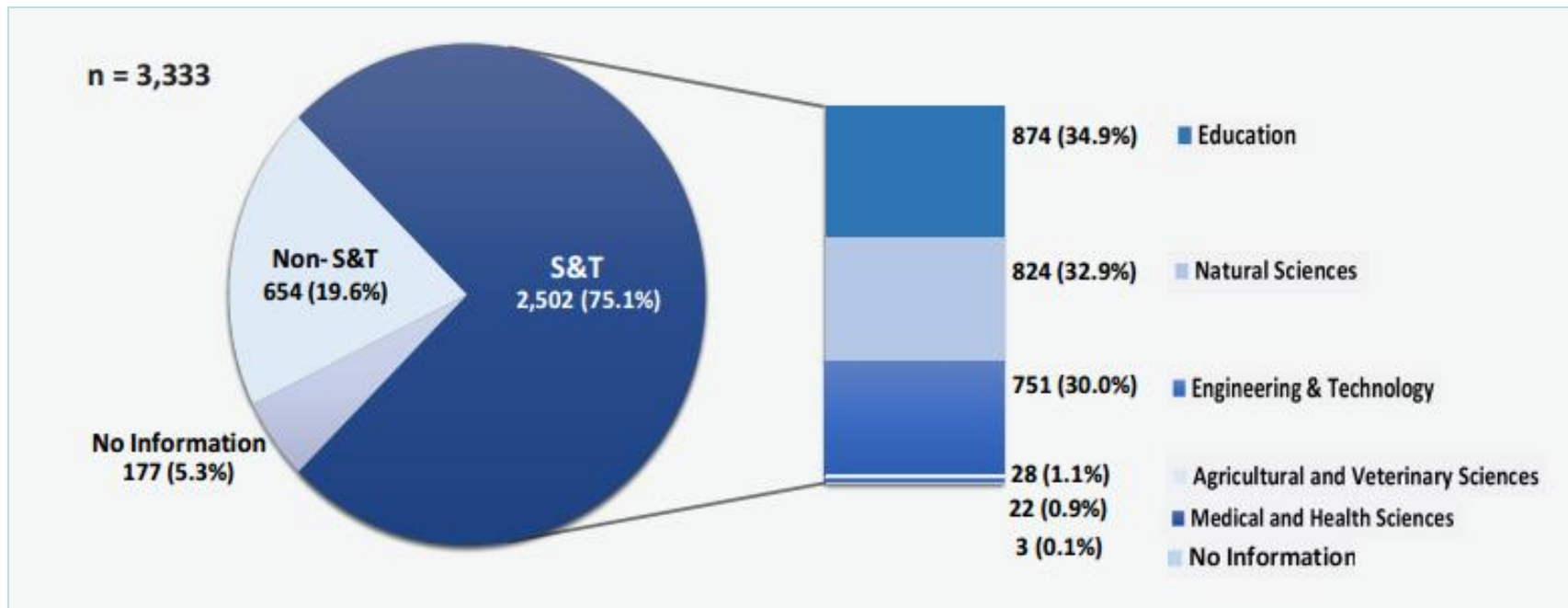


# Scholars Tracked by Employment Sector (Locally)





# Scholars Tracked by Employment in S&T Field



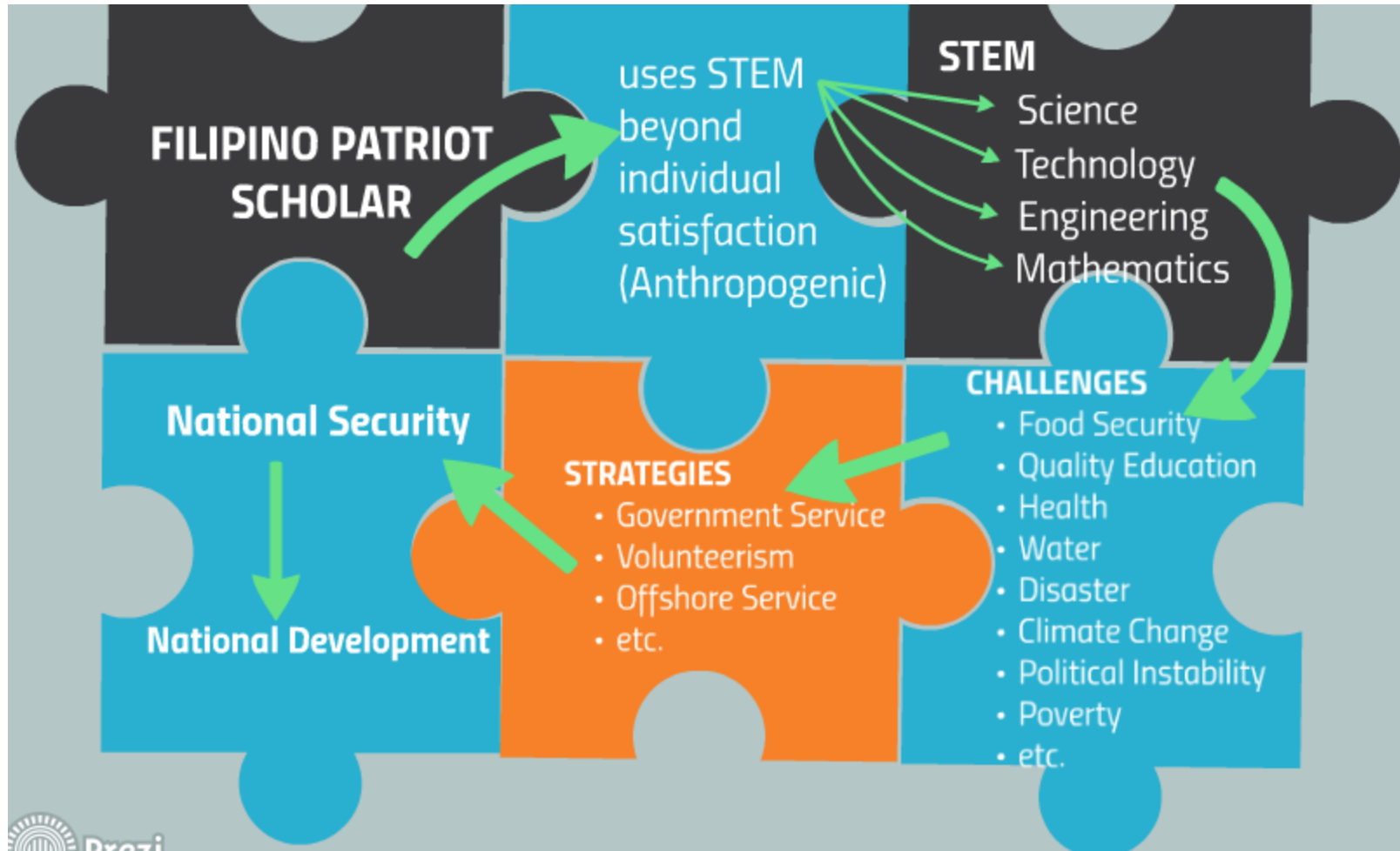
# Filipino Patriot Scholars' Program



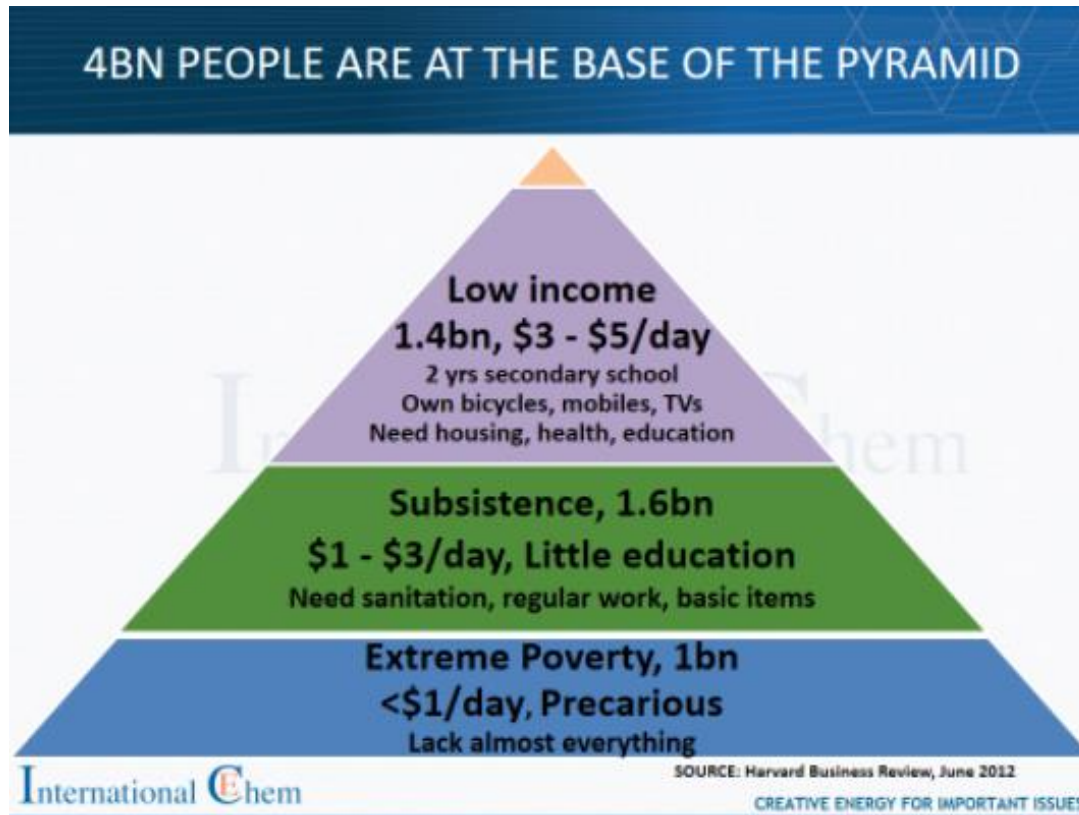
Filipino Patriot Scholar Program: 2-Day Scholars' Formation in Region VII held at Golden Prince Hotel, Cebu City on February 16-17, 2018

Filipino Patriot Scholar Program: 2-Day Scholars' Formation in Region II held at Andrew Campus, Cagayan State University on June 22-23, 2018 with 207 DOST scholar-participants.

# Why the DOST-SEI Scholarship Program:



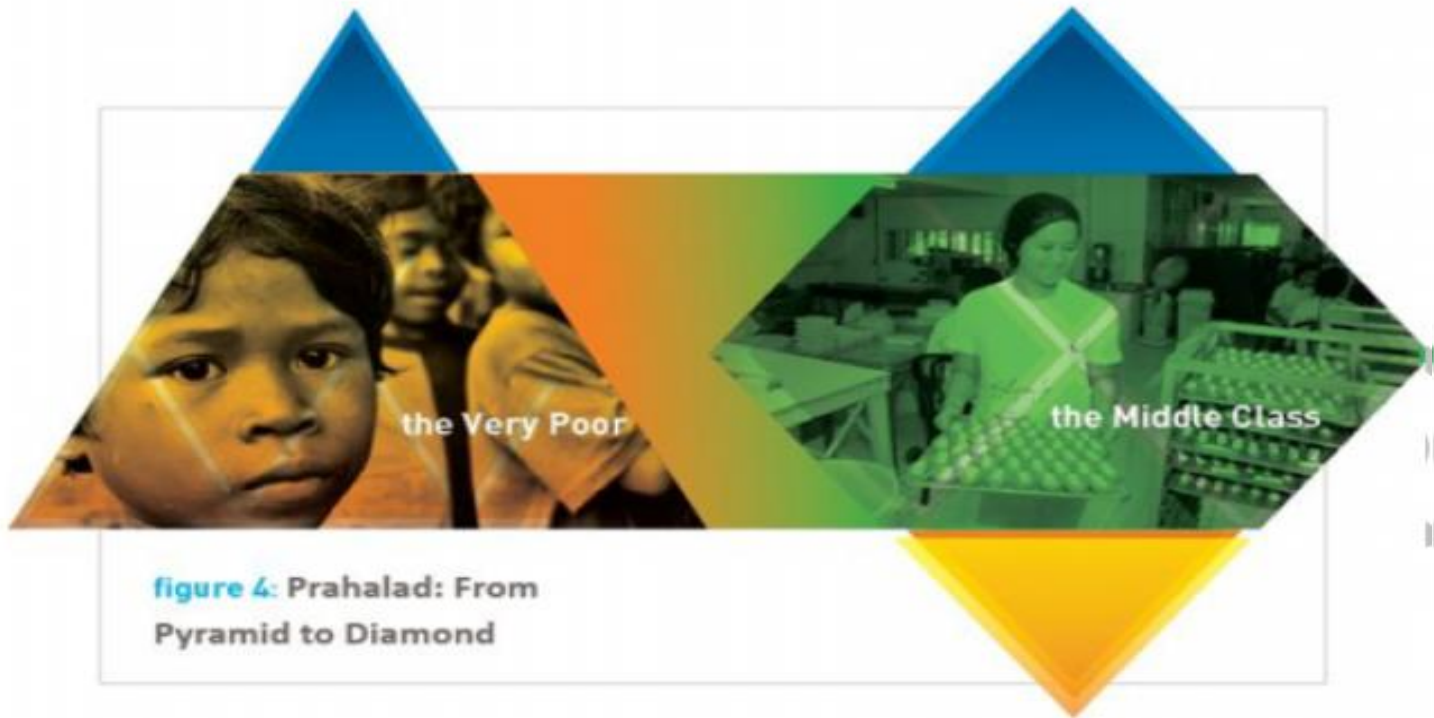
# The 4B@BOP

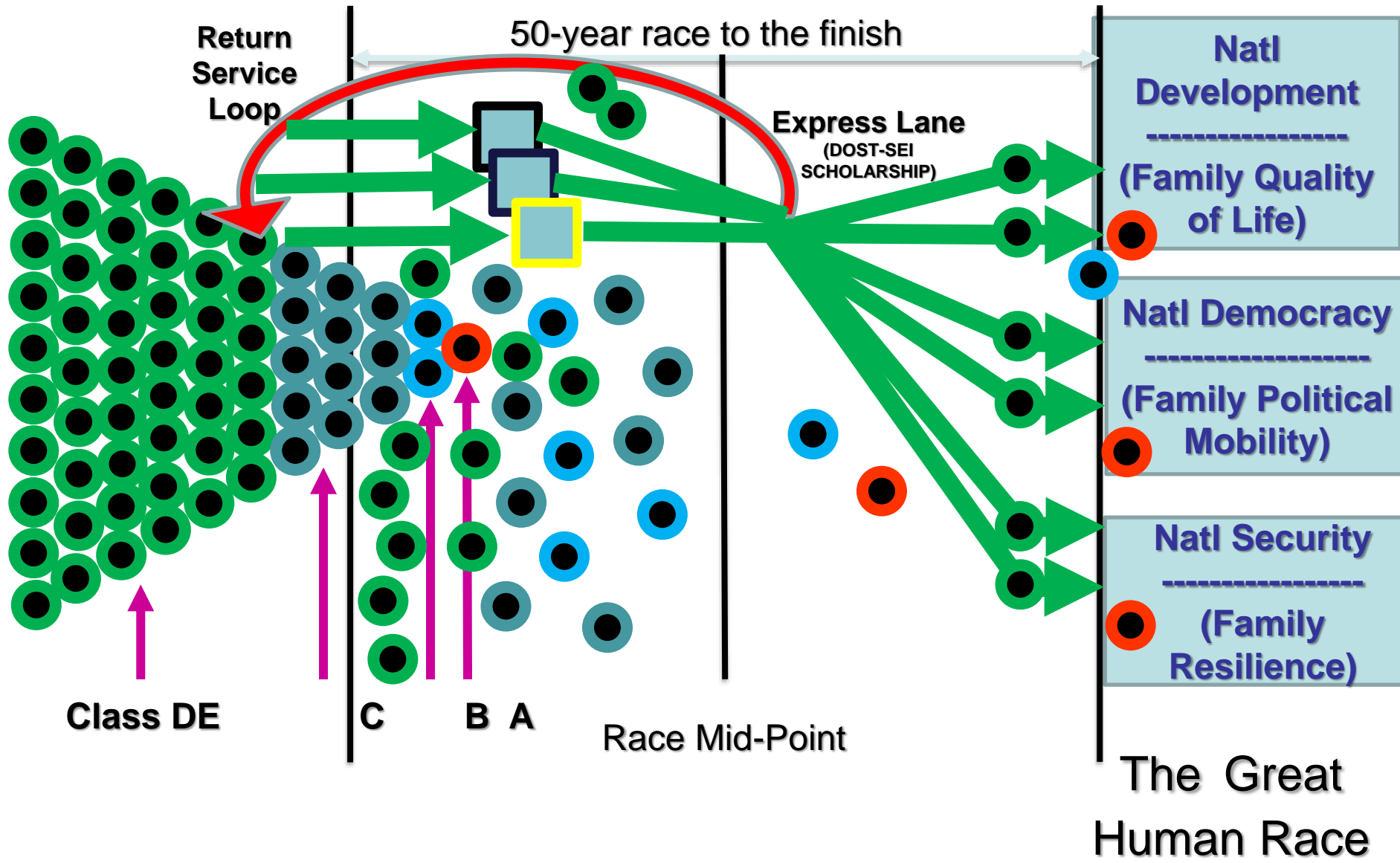




# From Pyramid to Diamond

Figure 4: Prahalad: From Pyramid to Diamond





# Schedule of Application

PARTICULARS	2019 JUNIOR LEVEL SCIENCE SCHOLARSHIPS	2020 UNDERGRADUATE S&T SCHOLARSHIPS
1. Schedule		
1.1 Start of Application Period	March 18, 2019 (Monday)	June 3, 2019 (Monday)
1.2 Deadline for Filing of Application Form	April 26, 2019 (Friday)	September 6, 2019 (Friday)
1.3 Examination Date	June 2, 2019 (Sunday)	October 20, 2019 (Sunday)
1.4 Submission of Certification as a regular 3rd year college student for SY 2019-2020*	July – August 2019	

\*Requirement for identified potential qualifiers. Awarding of the scholarships will be dependent on their compliance to this requirement.

Thank you...

