

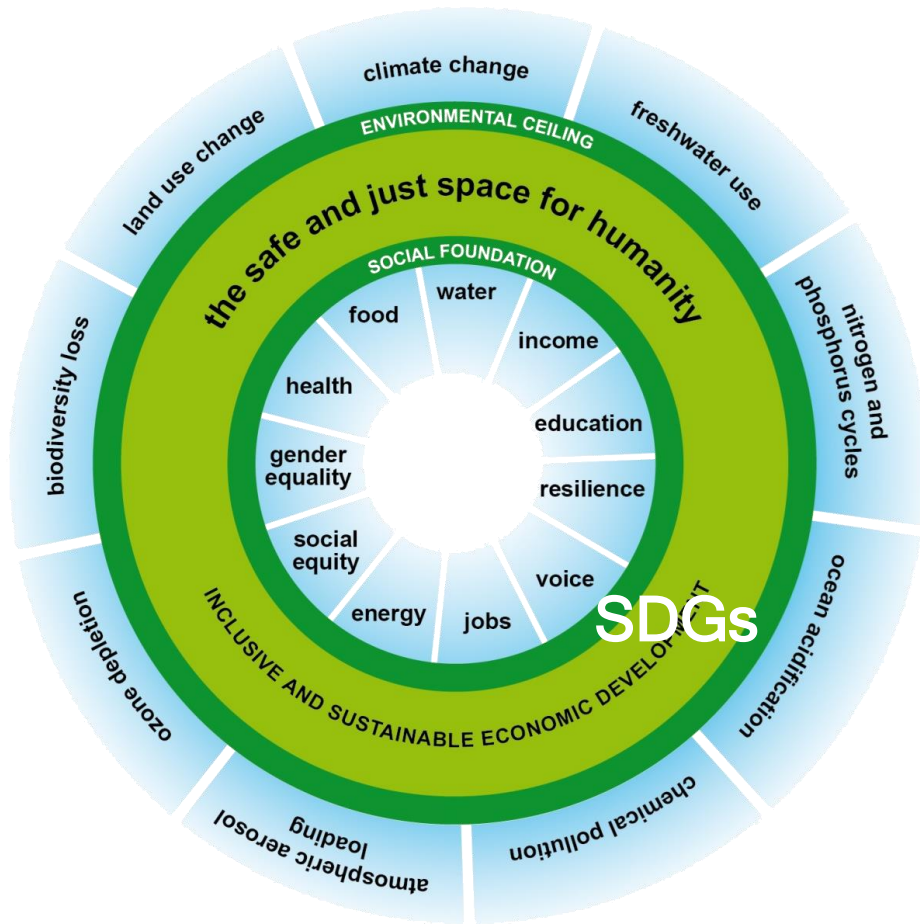
Local and Regional Implementation of SDGs - Penn State and Hiroshima

Dr. Paul Shrivastava
Chief Sustainability Officer
Director, Sustainability Institute & Professor of Management
The Pennsylvania State University
paul@psu.edu

Outline

- Challenges of a Full, Fast & Furious World
- Solution = Sustainability and SDGs
- Collaborative Implementation - Sustainable Penn State

Full, Fast, Furious World



WORLD POPULATION 2.2B , kids @5.2B, now 7B -> 10B in 2050

DOUBLING of Global Economy

INDEBTING Future Gens: Debt \$233 Tr, GDP \$80 Tr

INEQUALITY - 0.7% own 46% wealth, 1.6 Bil in poverty

ACCELERATING Earth Impacts - Climate, Diversity, Water

TECHNOLOGY EXPLOSION - AI, Robots, SynthBio, IoT

ANTHROPOCENE - Humans Drive Nature Boundaries

ASPIRATIONS - Safe & Just Space



PennState

The 'doughnut', Kate Raworth, 2012

futurearth

Good News - 2015-16 Watershed Global Consensus



UN Agenda 2030
Sustainable Development Goals
+
Paris Climate Accord COP21



Solution = Sustainable Development Goals or Global Goals



PennState

Not Environment alone - Interdependent, Tradeoffs Synergies



GOAL 1: End poverty in all its forms everywhere



GOAL 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture



GOAL 3: Ensure healthy lives and promote well-being for all at all ages



GOAL 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



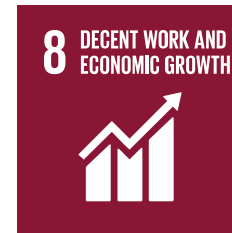
GOAL 5: Achieve gender equality and empower all women and girls



GOAL 6: Ensure availability and sustainable management of water and sanitation for all



GOAL 7: Ensure access to affordable, reliable, sustainable and modern energy for all



GOAL 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all



GOAL 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



GOAL 10: Reduce inequality within and among countries



GOAL 11: Make cities and human settlements inclusive, safe, resilient and sustainable



GOAL 12: Ensure sustainable consumption and production patterns



GOAL 13: Take urgent action to combat climate change and its impacts



GOAL 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development



GOAL 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



GOAL 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels



GOAL 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development



PennState

Localizing and Focusing SDGs for Impact

- SDGs are Global, Cover all of life
- But implementation needs to be local & focused
- Local for Penn State Univ
 - 13 Colleges, 23 Camp
 - Pennsylvania
- Focal Goals 7 and 13



How is Pennsylvania doing on SDGs

FIGURE 2: US State SDG Index and Dashboard

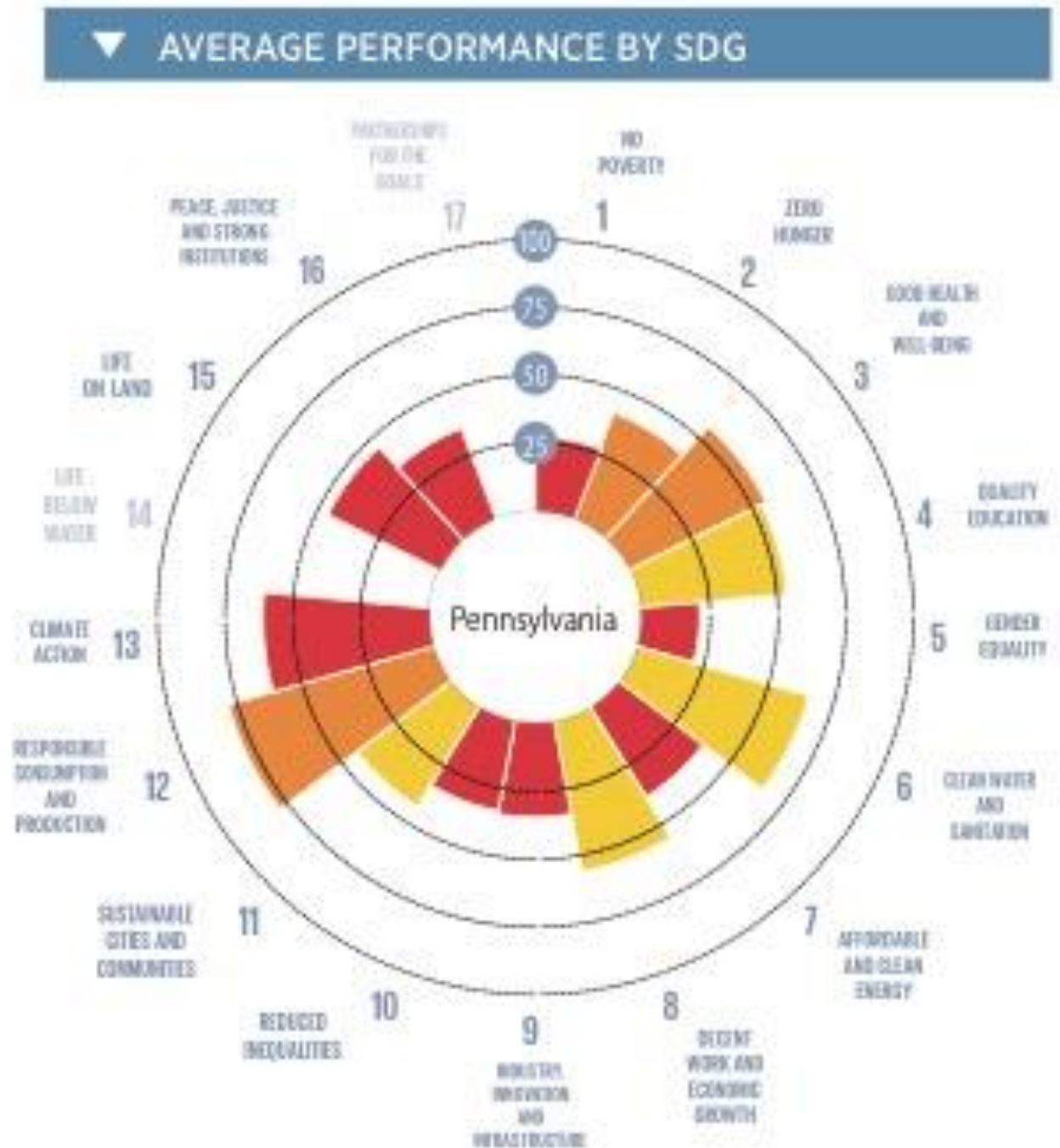
Rank	State	Score	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16
1	Massachusetts	61.0															
2	Washington	59.8															
3	Vermont	59.4															
4	Minnesota	58.6															
5	Oregon	58.3															
6	California	55.6															
7	Maine	55.4															
8	Maryland	55.1															
9	New Hampshire	54.9															
10	Connecticut	54.8															
11	New York	54.7															
12	Rhode Island	54.4															
13	Hawaii	54.2															
14	New Jersey	52.7															
15	Colorado	52.2															
16	Wisconsin	52.2															
17	Iowa	51.2															
18	Idaho	50.6															
19	Nebraska	50.1															
20	Utah	49.6															
21	Virginia	49.4															
22	Illinois	49.2															
23	South Dakota	48.1															
24	Montana	47.9															
25	Michigan	47.2															
26	Delaware	46.6															
27	Kansas	46.1															
28	North Dakota	46.1															
29	Arizona	45.9															
30	Pennsylvania	45.1															
31	Nevada	44.4															

Ranked 30 of 50



PA SDG Track to 2030

- PA is Not on track to achieve ANY of the 17 SDG
- Even Goal 6 Water and Goal 7 Energy which are in surplus, not achievable



Penn State University – By the Numbers

- **Founded** in 1855, sole land-grant institution, largest public university in PA
- **Employees:** 26,742 full-time employees, including 6,424 full-time faculty
- **Students:** Approximately 97,494 annual enrollment
- **Alumni:** More than 645,000 living alumni
- **Annual Budget:** \$6.5 Billion
- **Research Expenditures:** \$915 million in 2018, \$524 mil from federal gov
- **Economic impacts:** Generates \$2 Bil annually in new tech, jobs, taxes, etc.
- **Locations:** State College, PA + 23 locations across PA +
- **Global Footprint:** Europe, China, Africa, Latin America

Sustainability @ PSU for Pennsylvania

- Lots happening (1000 Fac, staff, students involved) ---> SYSTEMIC
- How – Each Unit **OWNS** and organically develops, SI facilitates
 - 6 Colleges established S-Council (Smeal Business, CoEng, CoAA, CoHHD, CoNursing, CoMed)
 - 5 Campuses with S Councils/Coordinators (Altoona, Behrend, Brandivine, Mont Alto, New Kensington)
- Living Labs – Living Filter, 2.5MW Solar, 33 Reinvention projects
- Student Autonomy – Student Farm, Athletics Ambassadors, THON
- Research – PSIEE, Climate-IPCC Authors, 2019 Drawdown Conf, Env Mesonet
- Operations – 100MW Solar PPA – 1st Utility Scale Solar in PA

Foci for Sustainability @ PSU in 2018-2020

- Sustainable Solutions Development for SDGs
- In that Context, focus on Goals 6, 7, 13 – Water, Energy, Climate Action
- Encourage Transdisciplinary Solutions work
- Sustainable Solutions Development Network - USA
- Initiating Climate Action Conversations
- Transdisciplinarity Capacity in R1

How is PSU Doing on Sustainability – Strategic + STARS

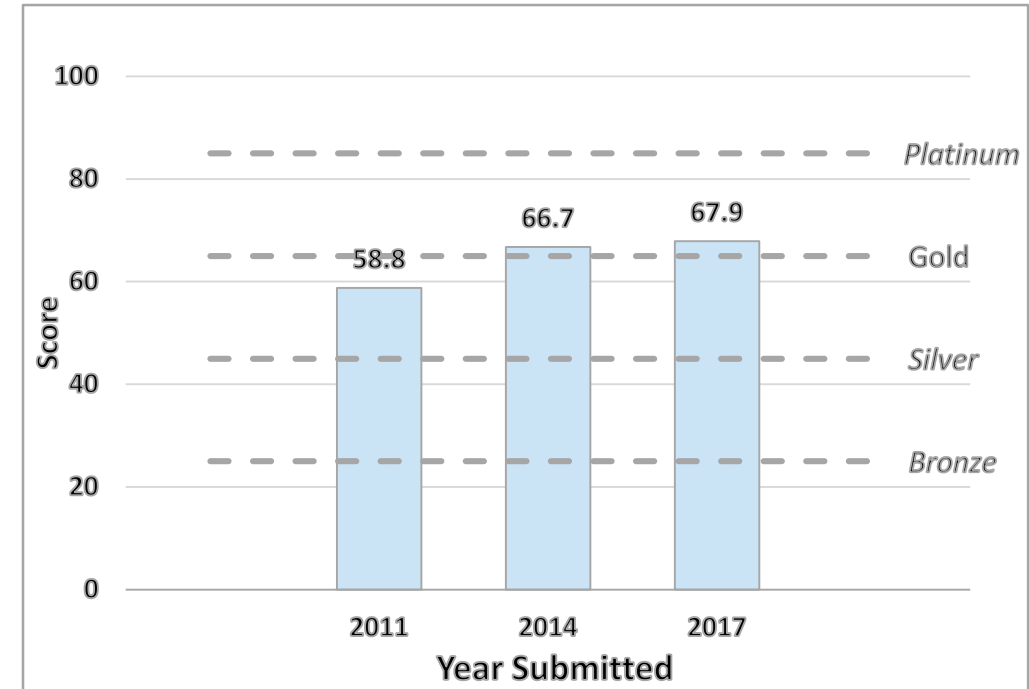
PSU Strategic Themes

- Stewarding Our Planet's Resources
- Enhancing Health/Well-being
- Driving Digital Innovation
- Transforming Education
- Advancing Arts & Humanities

Energy University
Land Grant Mission

STARS Assessment Report

- AASHE 360⁰ Assessment 69 topics
- Penn State ranks 4th among the Big Ten
- Doing OK, can do MUCH MORE



Visioning Sustainability @ PSU - as a Function Across Level

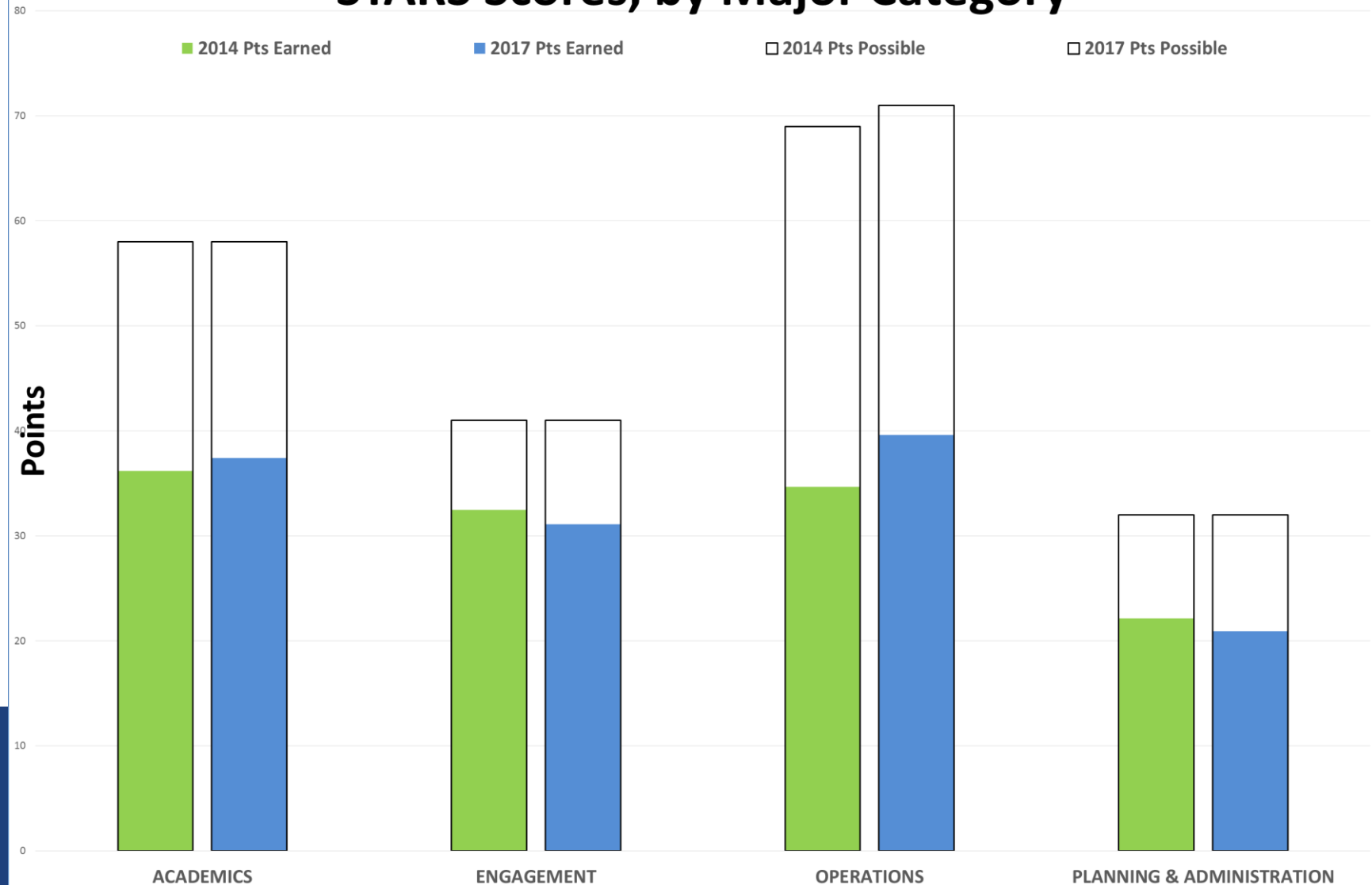
Sustainability Across All Levels

1. Faculty, Employees, Students, Community
2. 13 Colleges, 24 CWCs, + Admin Units
3. BOT and Stakeholders, Media
4. Local, State, Regional, National, Global

Work Areas

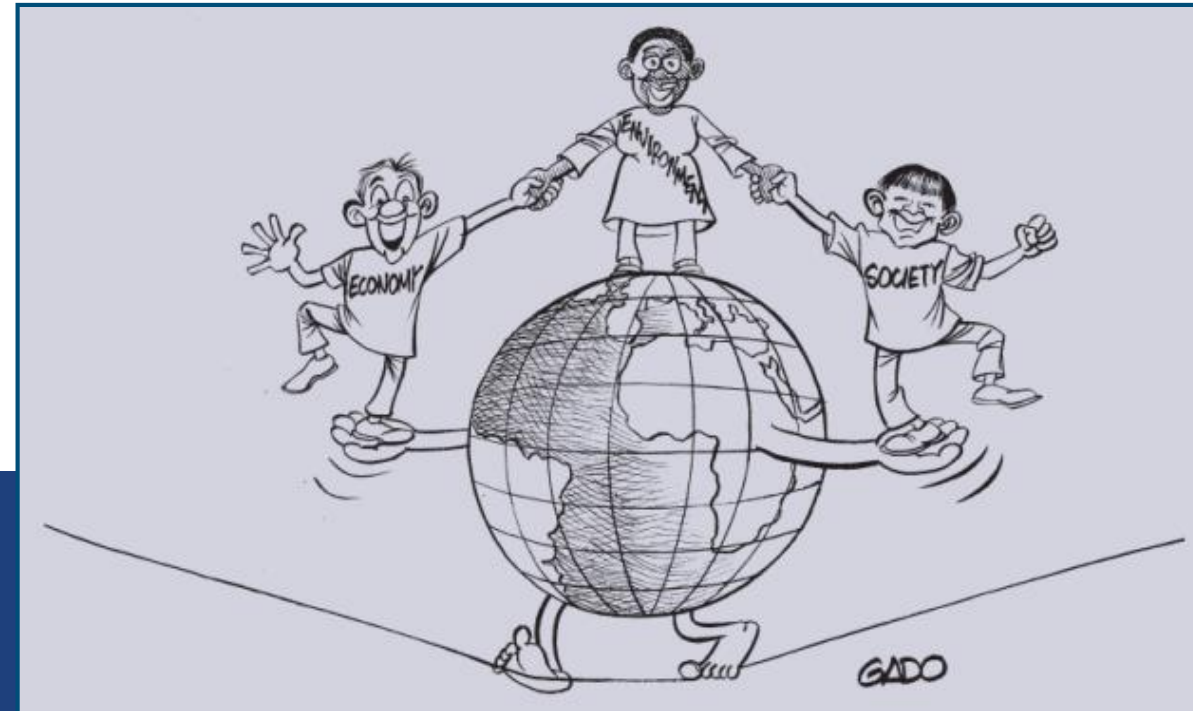
- Work Area 1.** Curriculum and Teaching
- Work Area 2.** Student Life & Co-Curricular
- Work Area 3.** Solutions Research
- Work Area 4:** Finance and Business –Admin
- Work Area 5:** Community Outreach

STARS Scores, by Major Category



Partnerships – PERC + SDSN-USA + Supply chain + Govt

- PERC – Pennsylvania Env Resources Consortium 30 Univ
- SDSN-USA launched Dec 4 Columbia Earth Institute, 80 Universities, 5 Major Cities, NGOs & **PSU CoFounder**
- Supply Chain Sust Partners – Pepsico, Ford, Nestle
- Local and Government Agencies Partnering
 - Sust Communities Collaborative
 - Governor Green Gov Council



University Based Networks Model of SDG Implementation

- Universities have knowledge resources, social legitimacy and trust, financial stability, partners
- Universities as Living Laboratories
- Universities can drive local and regional SDG Implementation
- Thru
 - local and regional partnerships, collaborations
 - General SDG Framework for inclusiveness, & Foc SDGs for impact
- Integrate into existing systems and structures
- Incremental systemic changes



Focal SDG for PSU – Water, Energy and Climate – SDG 6, 7 & 13

- **URGENCY** – IPCC 1.5C, USGCRP Report, SOCCR2, Club of Rome CEP
- PSU as “Energy University” leads in Energy Climate research
 - Operational Energy/Carbon Efficiency GHG Tier 1 KPI
 - FWE Sust Experience Center
 - Carbon Drawdown Partnership - Scier Conference
- PA Green Government Council 2019



Focal SDG for Hiroshima – SDG 16 Peace and Justice

- Hiroshima - worldwide symbol of Peace
- SDG Preconditions – Peace, Nonviolence, Rights & Governance
- Hiroshima Focal SDG #16: Peace, justice, institutions
- Divided & violent world – #16 most needed but ignored
- Peace & Nonviolence are key to many SDGs
 - Food –150 billion animal/fish/birds killed for food
 - Water –6000 yrs Water Conflict Chronology Plnst
 - Economy – Global arms \$1.73 - 2.76 trillion in 2015
- Hiroshima Experience within Japanese Culture, & Eastern spirituality can lead SDG #16



Hope : Hiroshima can Lead path to peace & non violence in life, in systems, in the world