Mapping Sustainability Science – Initiatives at RELX group

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Outline

• Defining & how to measure Sustainability Science

• 3 examples
  - Sustainability science in Asia
  - Disaster Science, a recent mapping
  - Global Gender Report, soon to be launched!

• Summary
Defining Sustainability Science

“Meeting fundamental human needs while preserving Earth’s life support systems will require an accelerated transition toward sustainability. A new field of sustainability science is emerging that seeks to understand the fundamental character of interactions between nature and society and to encourage those interactions along more sustainable trajectories. Such an integrated, place-based science will require new research strategies and institutional innovations to enable them especially in developing countries still separated by deepening divides from mainstream science. Sustainability science needs to be widely discussed in the scientific community, reconnected to the political agenda for sustainable development, and become a major focus for research.”

Clark et. al. Science 27 April 2001

“We facilitate the exchange of information that drives forward science and better health; reduces risk and fraud for industry, governments and civil society; promotes the rule of law and justice; and fosters communities across diverse sectors. These unique contributions map to the United Nations Sustainable Development Goals (SDGs), which aim to protect the planet and improve the lives of the world’s most vulnerable. [...] We know we can do more and in the year ahead, for the first time, we will set objectives for each of our unique contributions, and share our longer-term vision, including creation of a new SDG Resource Centre to aid scientific communities and the public.”
• Programs 2016 - 2018

➢ **Health**: A new global health program focus on information technologies and organizations directly engaged in clinical care. Partnerships: AMREF, Doctors without Borders, Nurse Faculty Program.

➢ **Diversity in STM**: Partnerships to advance women in science and underserved youth; Supporting interventions in the STM pipeline. Partnerships: Portia, OWSD, Gender InSITE, Scidev, Imperial College, IMC Weekend School, New York Academy of Science.

➢ **Research in Developing Countries**: Building stronger research ecosystems in developing countries. Partnerships: TWAS, Librarians without Borders, Research without Borders.

➢ **Piloting a Tech for Development Program**: Focus on tech oriented awards in our health, diversity and research program areas.
Sustainability Science in Asia

Elsevier and SciDev.net, launch event in NY (Sep. 2015) - Today zooming in on Asia
Mapping the 17 SDGs on 6 essential elements

For further info or contact: A.karlsson@elsevier.com
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Methodology – Iterative search with Expert Feedback

- Bibliometrics
  Obtain the first set of keywords: fingerprints of the references of the relevant reports
  
  Field experts provide feedbacks based on keywords and sample articles
  
  Refine the list of keywords based on the feedbacks

- Interviews of experts in the field to give context and commentary on the findings

What are the common keywords for the themes?

- **Dignity**
  - development
  - poverty
  - impact
  - economics
  - food
  - energy
  - water
  - health
  - education

- **People**
  - humans
  - migration
  - housing
  - employment
  - health
  - education
  - poverty

- **Prosperity**
  - sustainable development
  - industry
  - pollution
  - energy
  - efficiency
  - poverty

- **Planet**
  - climate change
  - data
  - emissions
  - temperature

- **Justice**
  - rights
  - democracy
  - violence
  - rights
  - justice

- **Partnership**
  - cooperation
  - development
  - participation

Source: Elsevier Analytics, based on Scopus
Who are the global leaders?

Figure 1.1 — Total number of publications, per country for top 1.5 most prolific countries in sustainability science, per year for the period 2009-2013.

Source: Elsevier Scopus

Who is leading in the Asia Pacific Region?

Source: Elsevier Scopus
**Sustainability Science grows fast in Asia**

<table>
<thead>
<tr>
<th>Country</th>
<th>CAGR of Publication Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHN</td>
<td>20.9%</td>
</tr>
<tr>
<td>AUS</td>
<td>13.3%</td>
</tr>
<tr>
<td>IND</td>
<td>18.2%</td>
</tr>
<tr>
<td>JPN</td>
<td>7.4%</td>
</tr>
<tr>
<td>KOR</td>
<td>18.9%</td>
</tr>
<tr>
<td>TWN</td>
<td>16.0%</td>
</tr>
<tr>
<td>NZL</td>
<td>10.3%</td>
</tr>
<tr>
<td>MYS</td>
<td>29.7%</td>
</tr>
<tr>
<td>THA</td>
<td>11.2%</td>
</tr>
<tr>
<td>SGP</td>
<td>16.2%</td>
</tr>
<tr>
<td>IDN</td>
<td>20.5%</td>
</tr>
</tbody>
</table>

World average CAGR in sustainability science = 7.6%

Source: Elsevier Scopus

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**Disaster Science**

- an infographic mapping

Empowering Knowledge
Natural Disasters are a Global Phenomena

Top 10 Number of reported disasters by country

Data source: UNISDR infographic 2015 disasters in numbers

THE SCIENCE OF DISASTER SCIENCE

Disaster Science: Top Global Countries by Research Output

Disaster Science: Top Asian Countries by Research Output

Globally, research is largely concentrated in the United States and China.

Infographics made in collaboration with APRU

Association of Pacific Rim Universities
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Mapping research per disaster area and country

https://www.elsevier.com/research-intelligence/campaigns/disastersci

Gender in the Global Research Landscape
- stay tuned for our global report

Empowering Knowledge
Report | background

![Sustainable Development Goals](https://www.elsevier.com/research-intelligence/research-initiatives/sustainability-2015)


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How are we able to report on the gender of authors?

![Scopus](https://www.elsevier.com/research-intelligence/research-initiatives/gender-2015)

- [genderize.io](https://genderize.io)
- [NamSor](https://www.namsor.com)
- [Social Media](https://www.social-media.com)

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Coming soon

Sign up for updates: https://www.elsevier.com/promo/research-intelligence/global-gender?URL=Direct

Final comments

- Mapping sustainability science support policy making

- Sustainability science grows fast in Asia

- Partnerships to use our knowledge to support the SDGs
  - science advisory council established
  - a resource center to be launched
  - Elsevier Foundation programs
  - actively seeking new collaborations

Feel free to further contact:
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