Akhil Bhartiya Shiksha Samagam

Session 9 : NEP 2020 Research and Development Background and Expected Outcomes

Prof. K.K. Pant, Director, IIT Roorkee

Skill

- Lack of selling and contracting Skills

- Lack of Quality Faculty

- Too much focus on Basic Research, not enough on Applied Research

- Lack of interdisciplinary research and collaboration with Industries

- How to strengthen Research fabric in HEIs

Intellectual Property and Infrastructure

- Outdated Curriculum and Pedagogy

- Lack of knowledge on Patenting

- Knowledge Transfer issues

- High dependency on grants

Balanced understanding of theoretical concepts and real-world challenges and perspective towards bigger picture of end application need to be addressed through NEP 2020.

Enabling Innovation and Entrepreneurship in Campus

- Fostering Innovation and Entrepreneurship

- IIT Roorkee has created a robust ecosystem by implementing the Faculty Entrepreneurship Policy

- In order to support the faculty to boost the readiness level of their innovations, HEIs need to have a Technology Readiness Level Booster scheme to support them and to increase the potential to commercialise their technologies and increase the feasibility in the market

- Applying traditional Indian Knowledge Systems with scientific validation to modern technologies and creating products for societal benefit

- Enabling Women's participation in STEM and facilitating inclusivity

NEP places strong emphasis on:

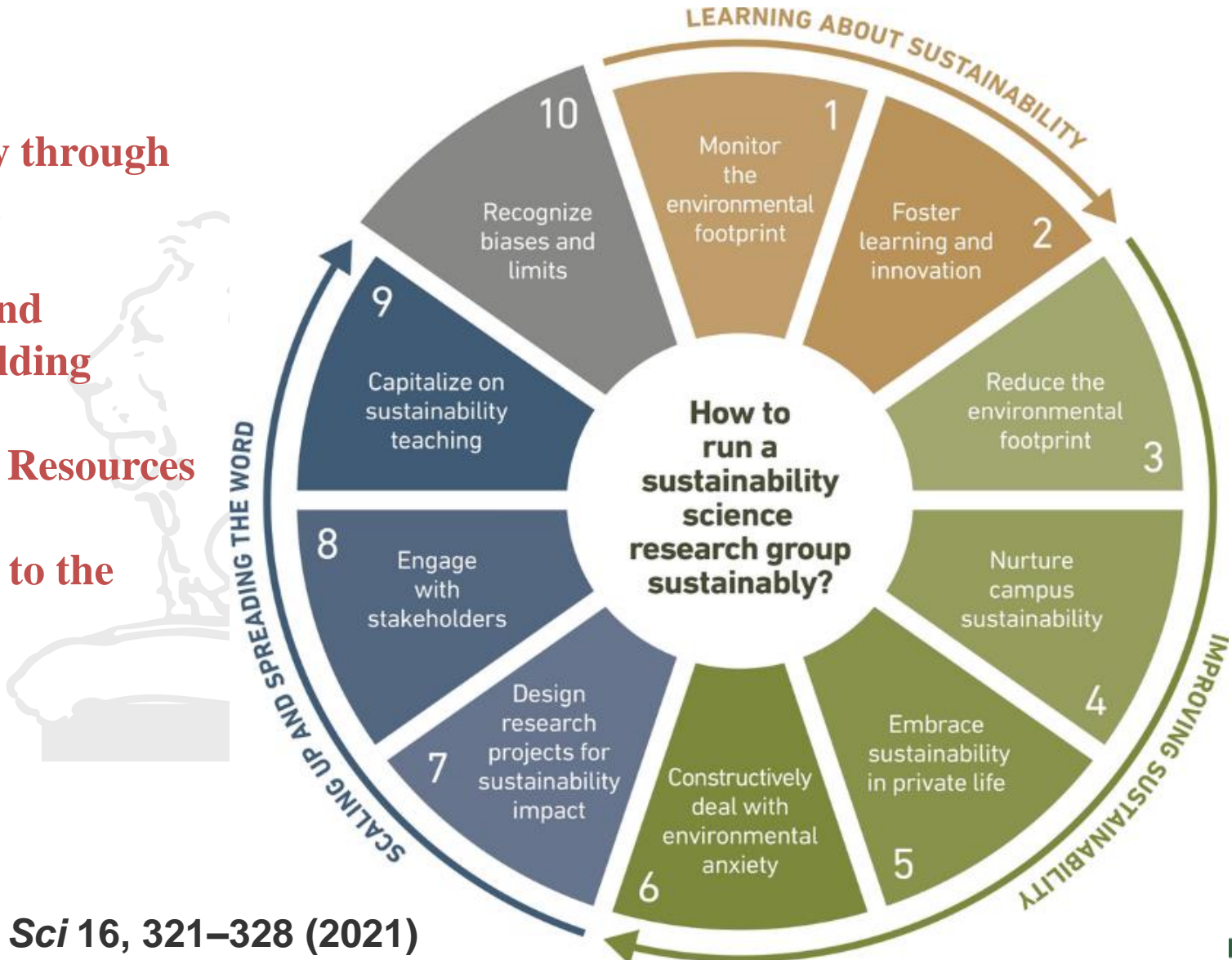**Multidisciplinary and Interdisciplinary research**

Find innovative solutions to complex problems

HEIs carries multidisciplinary research and innovative solutions to complex problems through Specialised Centres like:

- **International Centre of Excellence**

- **Industry Academia - Centre of Excellence**

- **Research on Data Science & Artificial Intelligence**

- **Centre for Sustainable Energy, Centre of Excellence in Disaster Mitigation & Management (CoEDMM) etc.**

- **Embedding Sustainability through collaboration**

- **Knowledge and Capacity Building**

- **Utilization of Resources**

- **Contribution to the Society**

Sustain Sci **16, 321–328 (2021)**

Understanding the Research and Ethics

1. Honesty

2. Objectivity

3. Integrity

4. Carefulness

5. Openness

6. Transparency

7. Accountability

8. Intellectual Property

9. Confidentiality

10. Responsible Publication

11. Responsible Mentoring

12. Respect for Colleagues

13. Social Responsibility

14. Non-Discrimination

15. Competence

16. Legality

17. Animal Care

18. Human Subjects Protection

Research Ecosystem

External research and funding grants secured

Research focused on: **renewable energy, food, sustainability water resources management, smart infrastructure, and data science, among others.**

Faculty Initiation Grant for new faculty – early career researchers.

Research Facilities like: PARAM GANGA

•Sharing of Research facilities via ISTEM.

Multidisciplinary research; Faculty Initiation Grant; Matching Grant scheme; Dedicated IPR

Industry Academia Collaboration

Reached out to 500+industries under TechSarthi	**140+ International MoUs**	**Work Assistantship for students with Ansys, Deloitte, Siemens etc.**

Some Initiatives taken @IITR to collaborate with MSMEs

TechSarthi initiative

IIT Roorkee has reached out to about 500+ industries (Vocal for Local and Global)

IIT Roorkee supports MSMEs in the region to provide solutions to their technological needs and support them in achieving their growth from local to global.

Work Assistantship for students is also a part of IIT Roorkee's collaborations with corporates

Building up a very strong industry-academia ecosystem wherein research leads to technology transfer

Envisioned Outcomes

Collaborations: National and International & Support to Researchers

Digitization to enable knowledge and resource sharing

Resource sharing and Knowledge sharing among all HEIs.
Building up a knowledge bank

Support to research and forming clusters
Diversity and Equity /Women participation in STEM

Establish strong industry connect and enable digital connect cutting across industry-academia &
Patents

Thank You