

# G7 Environment

Universities for Sustainable Development



**G7** 2017  
ITALIA



MINISTERO DELL'AMBIENTE  
E DELLA TUTELA DEL TERRITORIO E DEL MARE

# Session 1: Teaching and Research for Sustainable Development

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**How are Universities rethinking the courses and curricula, teaching, and research programs, to address the agenda of Environmental Sustainability?**

**In which courses and how Sustainable Development principles and practices should be taught ? Which disciplines should be mobilized?**

**How can Universities green the internal management (sustainable management, green public/private procurement,...)?**

## **Main sources of empirical evidence**

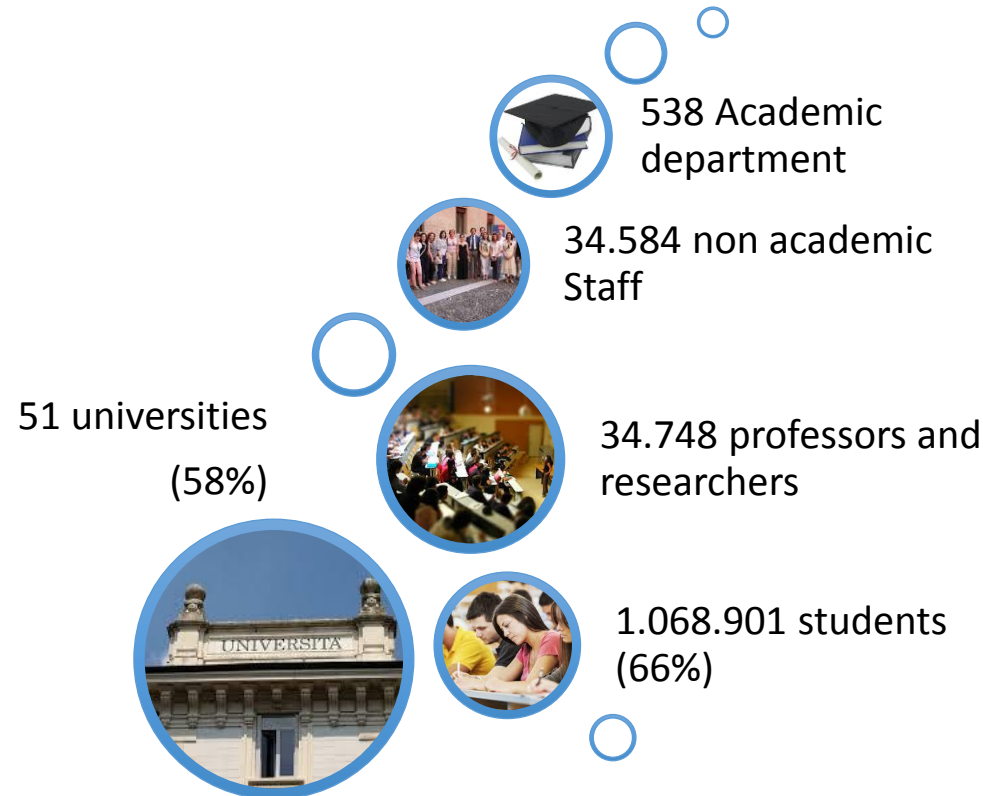
The Italian University Network for Sustainable Development (*RUS – Rete delle Università per lo Sviluppo Sostenibile*)

GreenMetric World University Ranking



# Italian University Network for Sustainable Development (RUS)

- Spreading sustainability culture and good practices both inside and outside the Universities
- Improve the environmental, ethical, social and economic impacts of actions undertaken by network members
- Contributing to the achievement of SDGs - Sustainable Development Goals
- Strengthen the recognition and value of the Italian experience at international level



**Questionnaire** (response rates of 40 out of 51 universities - 78%)

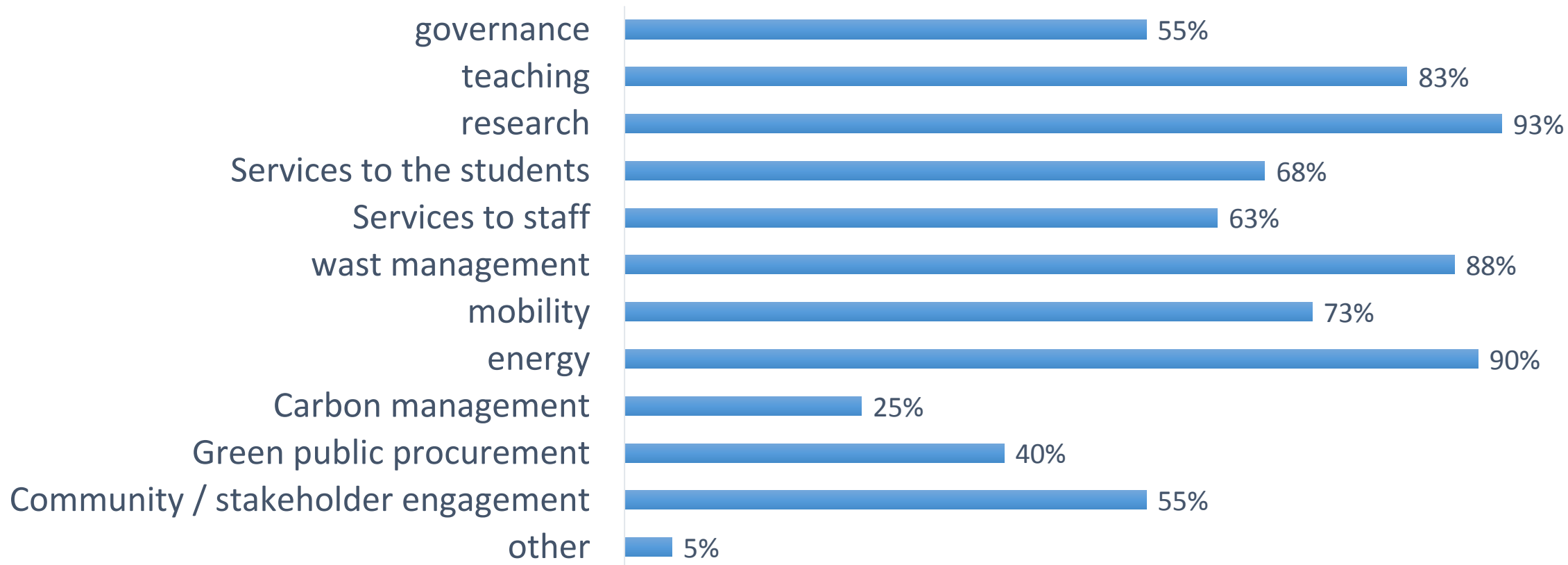
30% of the universities responded that there is an explicit call for sustainability in the University Statute

Sustainability has been included in the University's strategic plan for 72.50%

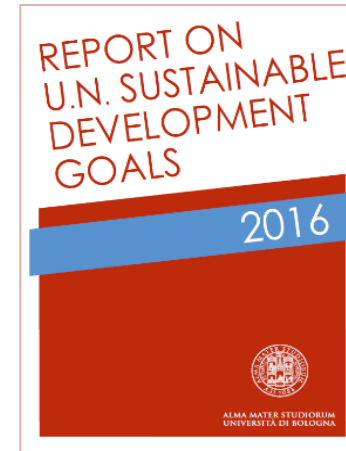
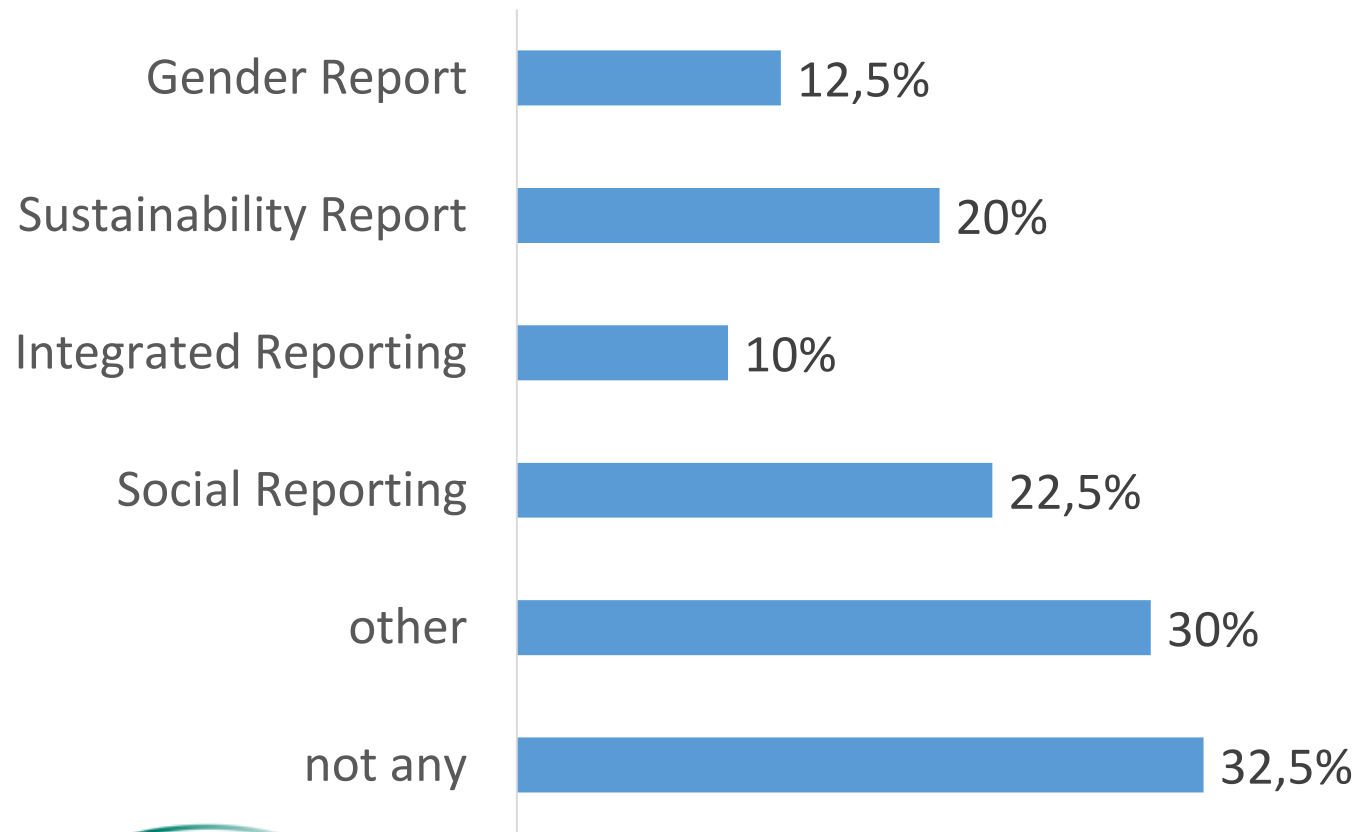
There is a Deputy Rector to sustainability issues in 67.5% of cases



# Which areas of environmental sustainability are the universities engaged in?



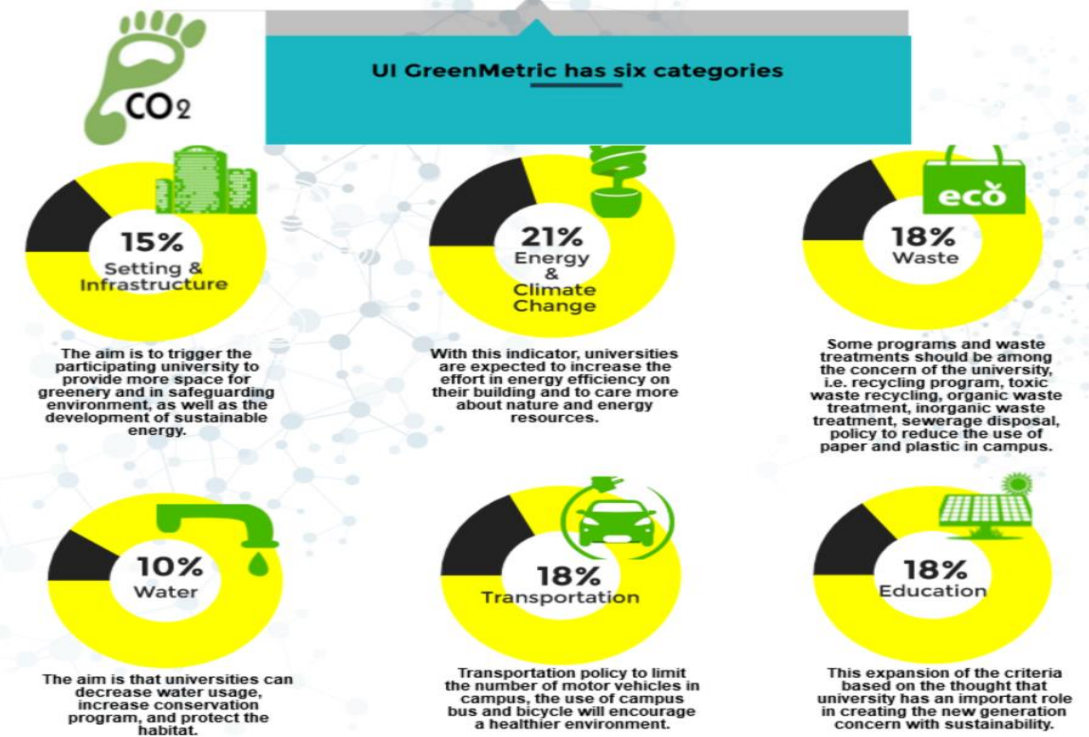
# Accountability and reporting



# GreenMetric World University Ranking - In 2016, 516 universities around the world ...



## Criteria & Indicator



Number of courses related to environment and sustainability offered (% on Total number of courses offered)

Total research funds dedicated to environmental and sustainability research (in US Dollars on Total research funds)

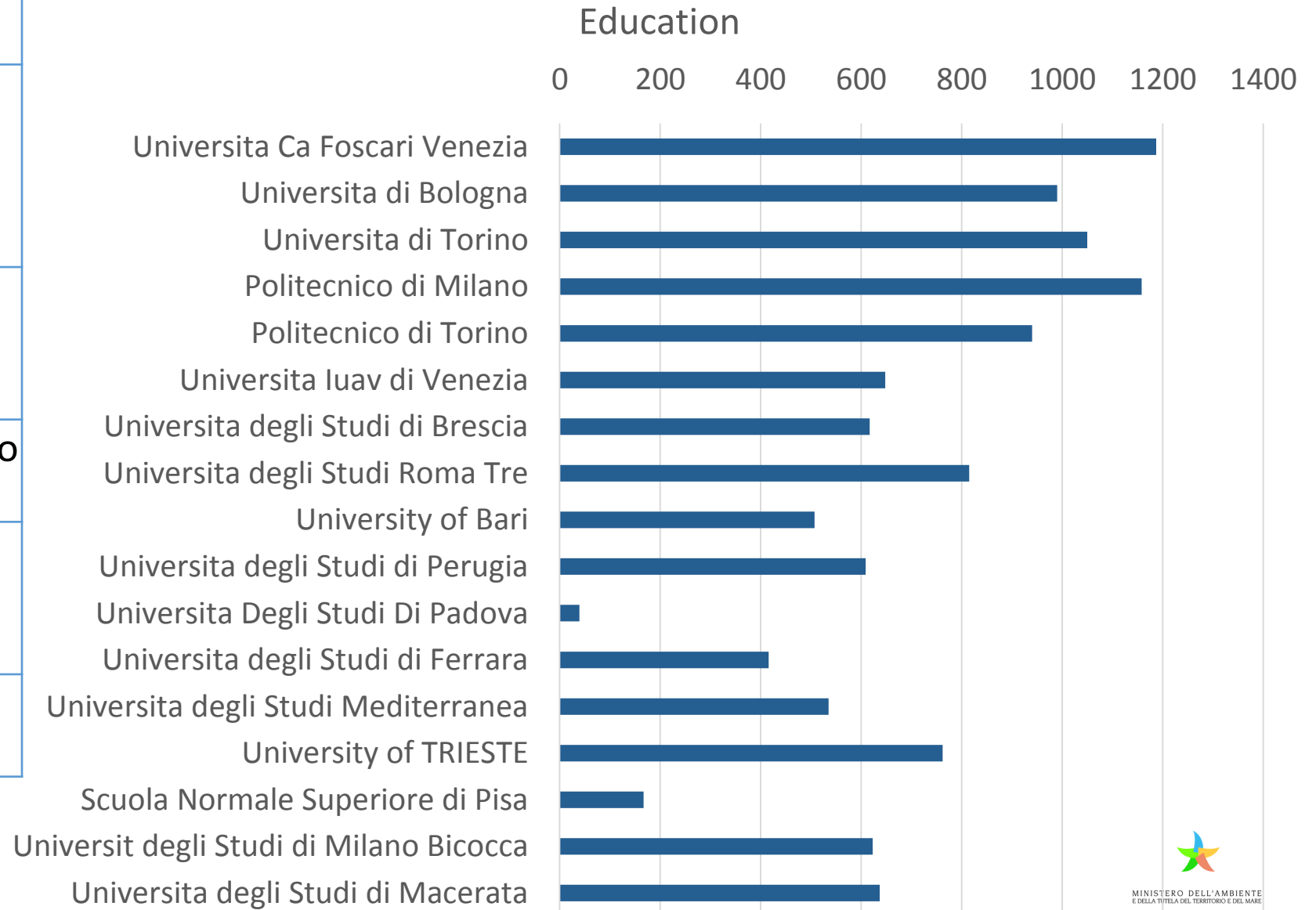
Number of scholarly publications on environment and sustainability published

Number of scholarly events related to environment and sustainability

Number of student organizations related to environment and sustainability

Existence of a university-run sustainability website

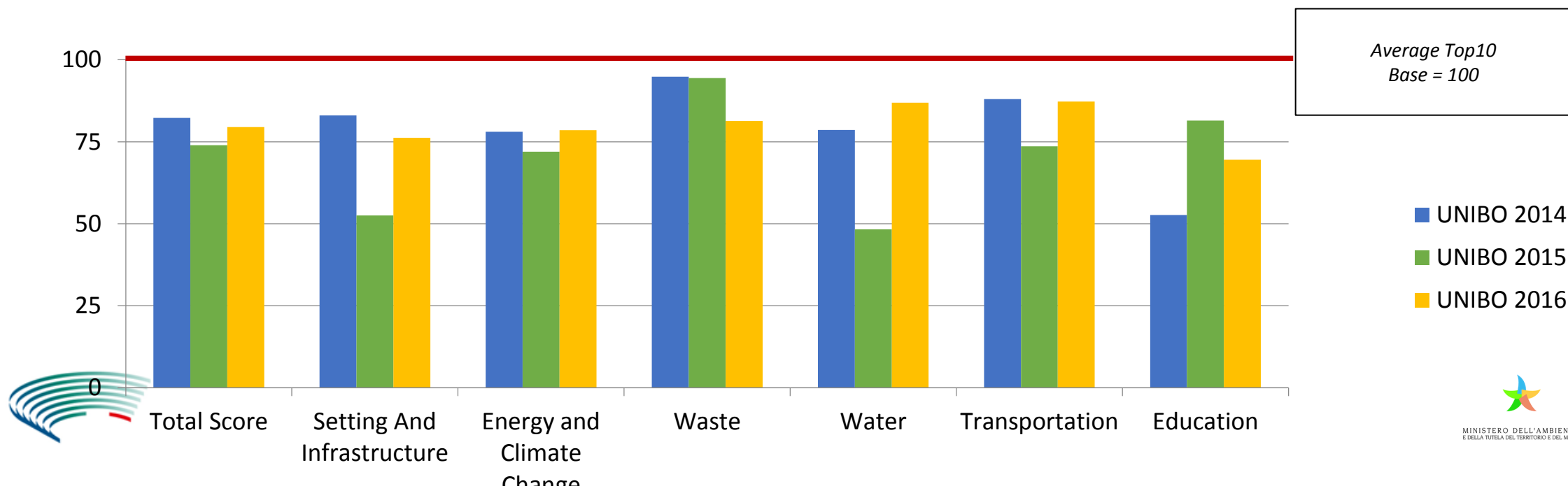
# Key Performance Indicators (KPIs) for Education (18%)





# Is the performance gap a virtuous incentive for improvement strategies?

GreenMetric – Punteggio univ. Italiane con numeri base (Top10 = 100)								
University	Ranking	Total Score	Setting And Infrastructure	Energy and Climate Change	Waste	Water	Transportation	Education
			15%	21%	18%	10%	18%	18%
<b>Top 10 in Ranking GM 2016 (average)</b>	-	100	100	100	100	100	100	100
<b>GM 2016 (Average score of all Univ.)</b>	-	59	72	60	59	48	64	49
<b>Universita Ca Foscari Venezia</b>	64	80	56	93	64	78	108	83
<b>Universita di Bologna</b>	71	80	76	78	81	87	87	70



## Some caveats on environmental rankings

As Green Metric is a volunteer survey by universities, and sees each year a fairly high share of participating academics, with a clear trend towards increasing the number of adherents

The Green Metric survey is still in an experimental phase: changes to the survey questionnaire make the comparisons and scoring changes with previous editions very insignificant.

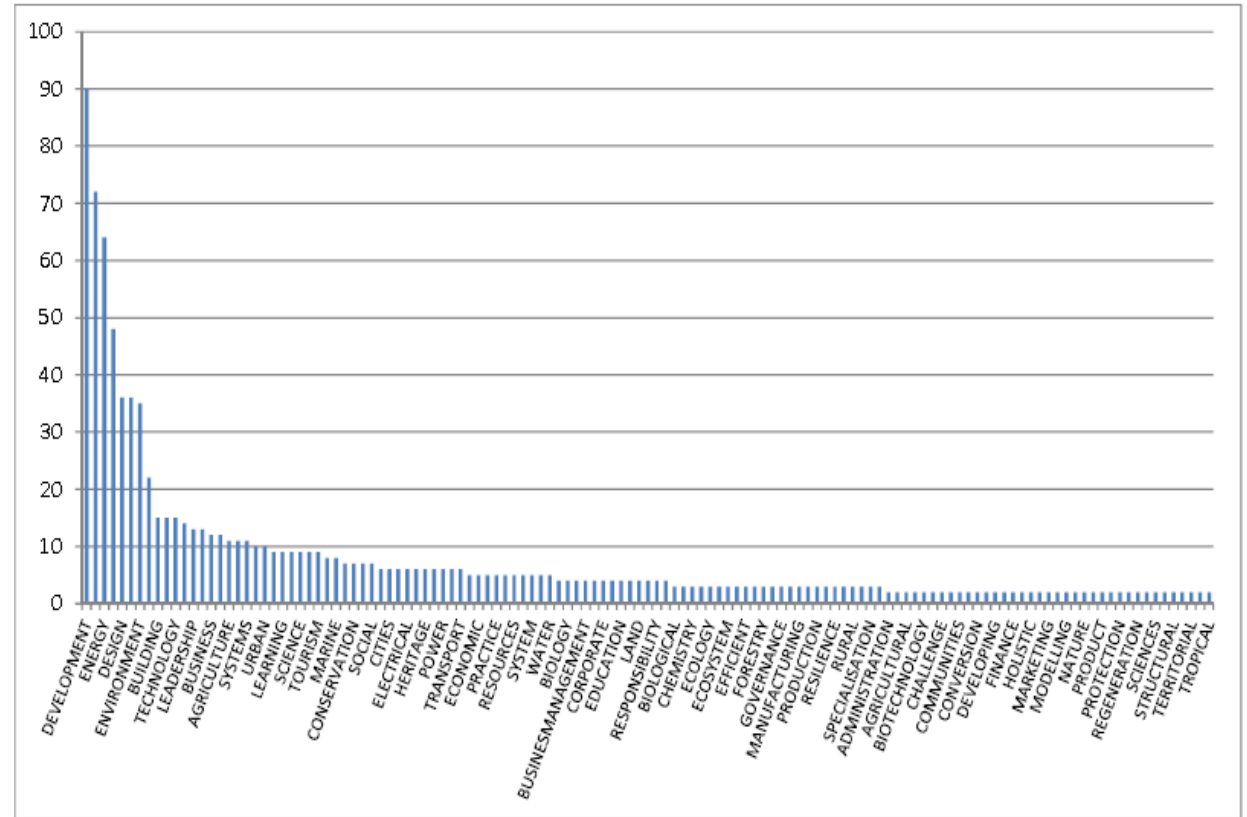
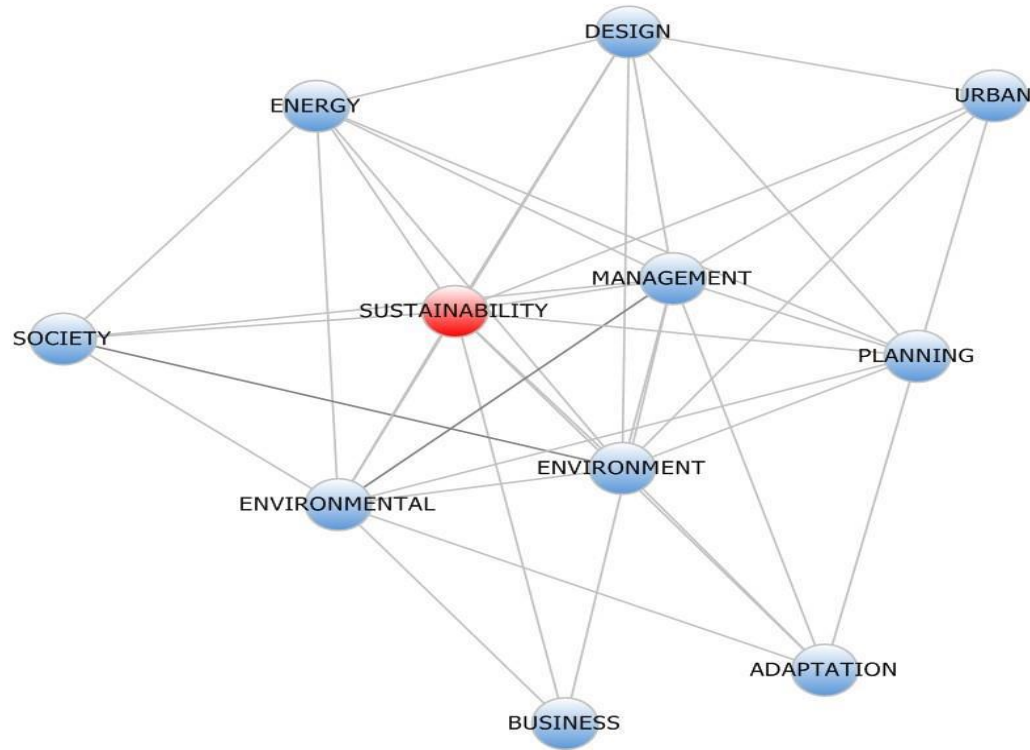
The geographical location (rural, urban, sub-urban, city center, high rise building) and the university's mission (eg focus on science, technology and agriculture) are really relevant in positioning analysis

The simple title of the course, lack of unique and shared criteria to define clearly what are the courses with a focus on environmental sustainability

We must also consider possible errors in the classification of publications and above all it is important not only how many publications, but also their quality and comparability



# In which courses and how Sustainable Development principles and practices should be taught ?



↗Ladest (Laboratory of socio-geographical research, University of Siena)

An analysis of the most recurring terms in the 515 course titles shows the general topics (e.g. development, design, food, climate, etc.) addressed by the courses.

The University of Pisa collected data on courses offered by international universities advertised in two of the most relevant career platforms (Prospects and Masterstudies) and in the HESD repository by IAU, filtered by the keywords “sustainability” and “sustainable development”.

# In which courses and how Sustainable Development principles and practices should be taught ? Which disciplines should be mobilized?

As stressed by UNESCO: “For education to be transformative in support of the new sustainable development agenda, ‘education as usual’ will not suffice. Learning should foster thinking that is relational, integrative, empathetic, anticipatory and systemic” (2016a, p. 34)

Sustainable Development engages universities in a quest for new approaches in teaching/learning processes:

- Teacher-student relationship; Competencies; Interdisciplinarity; Resources; Evaluation; Classroom dynamics; Class work; Massive Open Online Courses (MOOCs)
- Designing teaching and learning in an interactive, learner-centred way that enables exploratory, action-oriented and transformative learning, **inspiring learners to act for sustainability**
- **Promoting core competencies**, such as critical and systemic thinking, collaborative decision making, and taking responsibility for present and future generations
- **Empowering people to be “global citizen”** to become proactive contributors to creating a more just, tolerant, inclusive, secure and sustainable world.



## Conclusions and discussion

Harmonization of environmental management systems (from reactive to systemic)

Knowledge sharing of good practices and joint development of projects on emissions reduction, energy efficiency, mobility, waste management, university circular economy

Raise on student and staff communities to promote sustainable behaviors and lifestyles that catalyze relevant actions for the entire hosting urban community (eg mobility, housing, urban regeneration ...)

Development of indicators and metrics suitable for monitoring the environmental performance of the universities, in order to facilitate benchmarking activities and engagement on targets for reducing environmental impacts

Enhancing the transdisciplinary educational dimension of university programs, also using new pedagogical approaches and creating innovative engaging initiatives (eg, service learning)

