



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



Groupe interacadémique
pour le développement



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Circles of sustainability to promote a dynamic and sustainable governance model in the face of climate change

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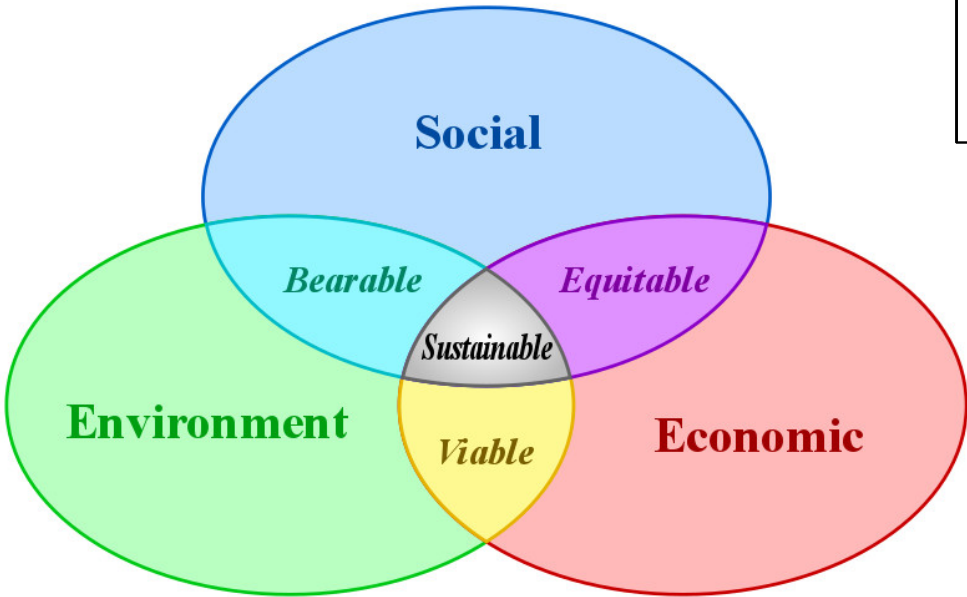
Presentation available at <https://www.albertomontanari.it>

A forward looking view on sustainability

The three pillars of sustainability and their intersection.

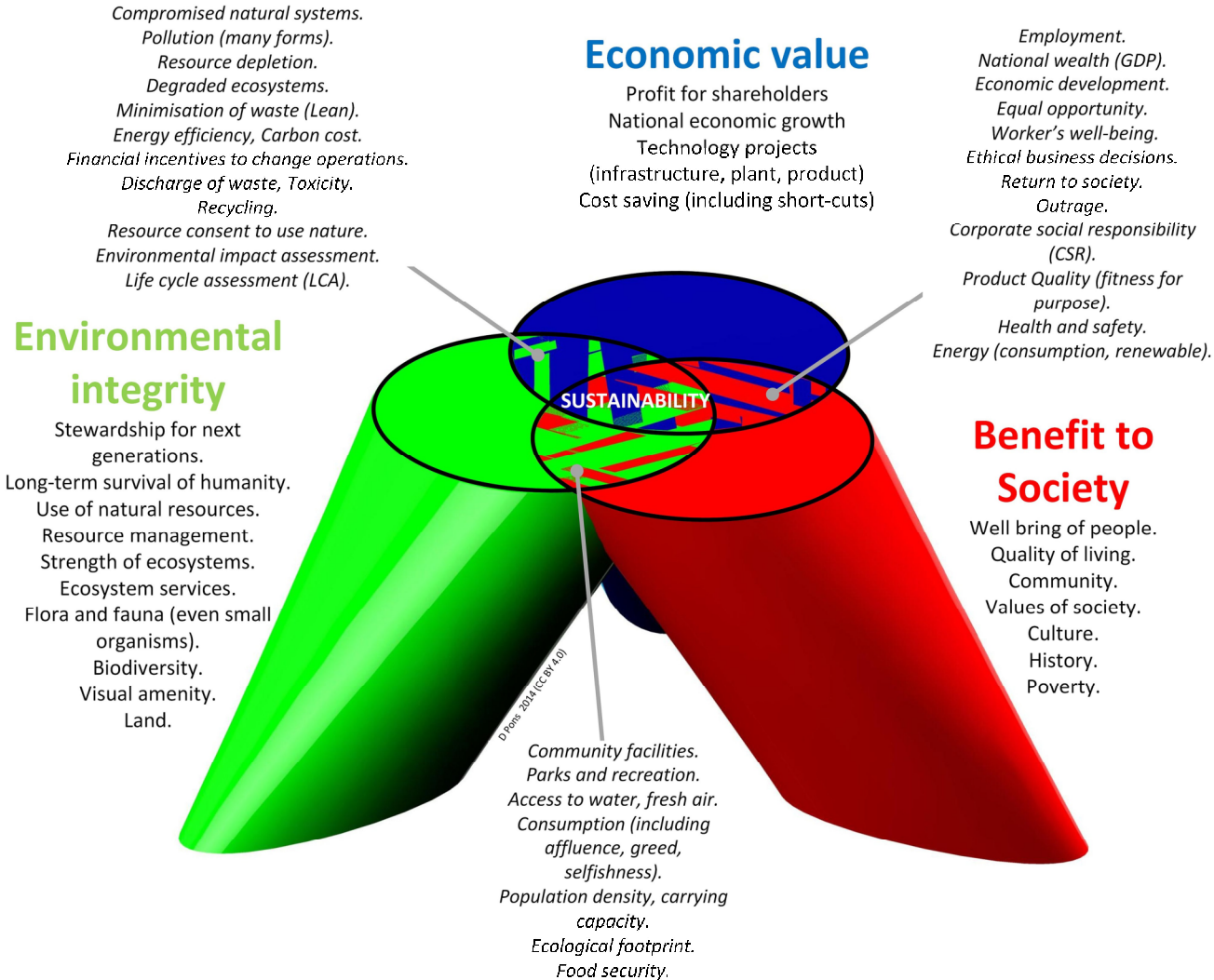
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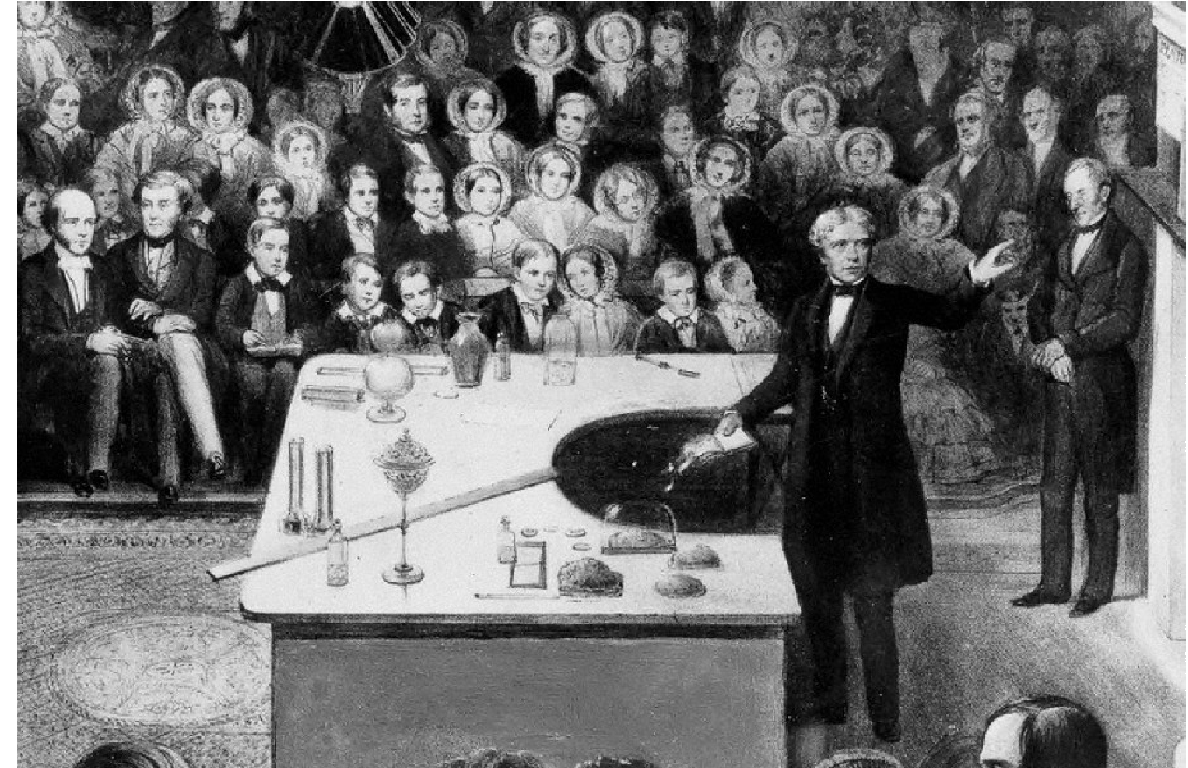
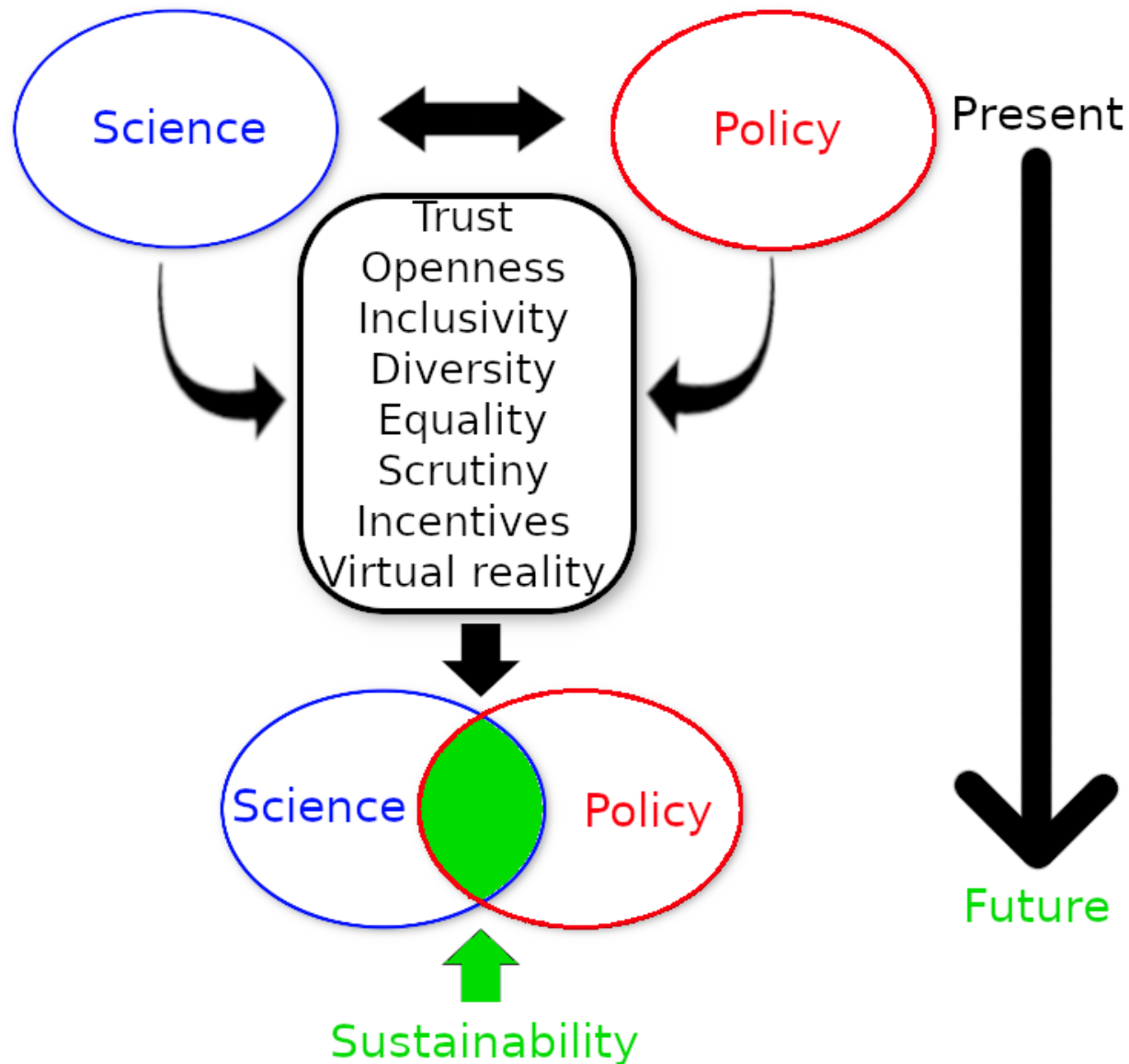


Sustainability requires a compromise between competing human aspirations.

Key question: how to reach the compromise?



Establishing a productive dialogue between scientists and policy makers. A well known challenge



Michael Faraday giving a Christmas Lecture at the Royal Institution (circa 1855). By Alexander Blaikley (1816 - 1903), Public domain, via Wikimedia Commons



Transdisciplinarity, Openness, Diversity and Inclusivity

- Multidisciplinarity, interdisciplinarity, transdisciplinarity!
- Open data, open software, open science!
- New disciplines and data without boundaries are the key to sustainability.
- Diversity of interpretations, objectivity of science, considering and challenging scientific advice are essential ingredients.
- “Accountability in a democracy depends on elected decision-makers not just taking advice, but examining, questioning and challenging it before making their own decisions.” [1]

[1] House of Commons, Health and Social Care, and Science and Technology Committees, Coronavirus: lessons learned to date, Sixth Report of the Health and Social Care Committee and Third Report of the Science and Technology Committee of Session 2021–22, <https://t.co/2bAeVN4xqw?amp=1>



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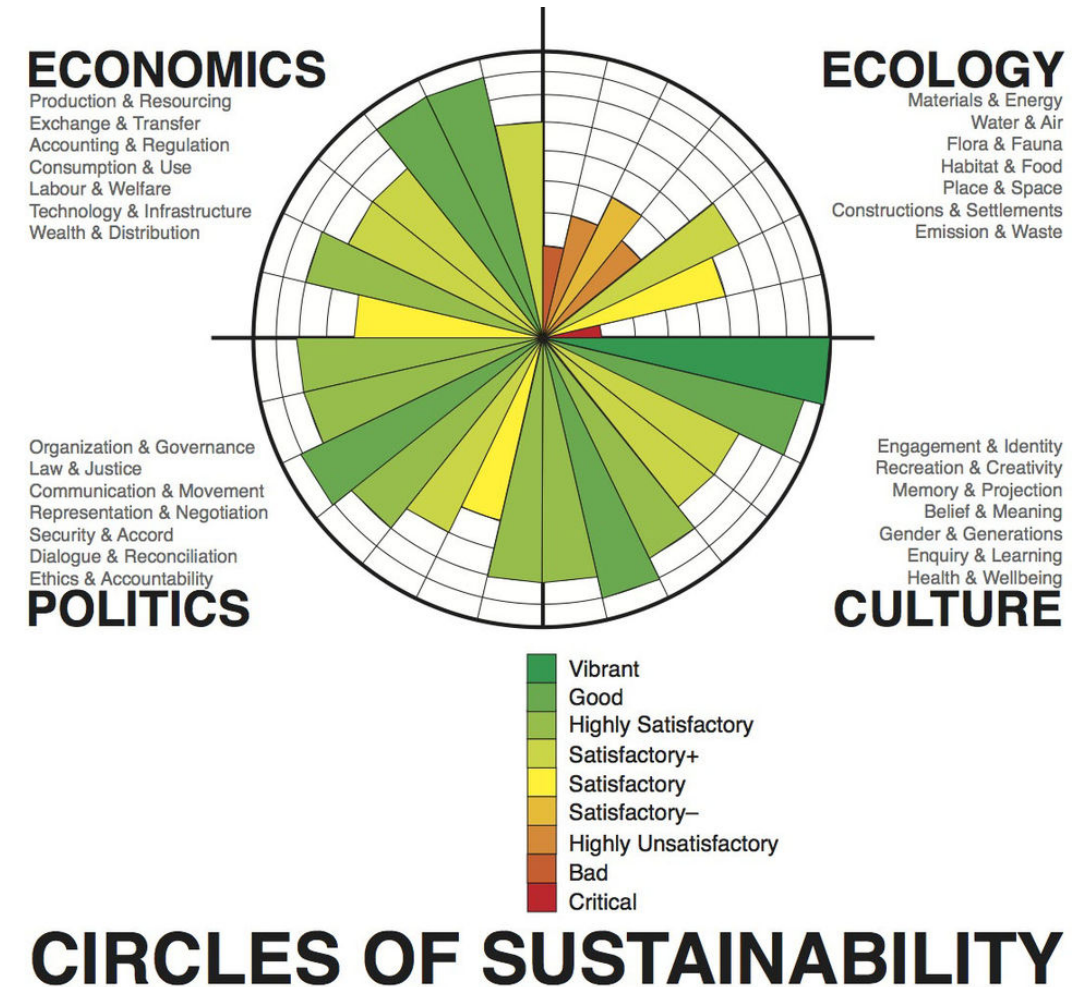


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Circles of sustainability [2]

- United Nations proposed in 2008 the use of an approach based on “engaged theory”.
- “Circles of sustainability” is a method for managing projects aiming at a socially sustainable outcome.
- The circular figure is divided into four sectors: ecology, economics, politics and culture.
- Each of these four sectors is divided into seven subsectors.
- The sustainability of each of the 28 subsectors is evaluated over a scale of 9 marks, ranging from “critical sustainability” to “vibrant sustainability”.

[1] James, P. (2014). Urban sustainability in theory and practice: circles of sustainability. Routledge.

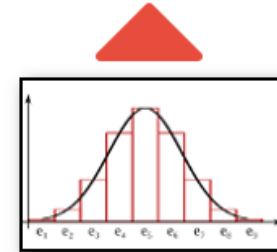


Technical design: “Bottom-up” approach [3]

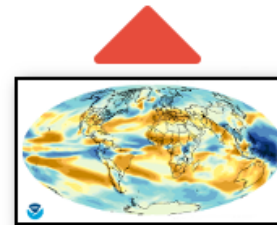
1. Risk assessment in the current conditions.
2. Design of adaptation procedures to cope with the actual risk.
3. Resilience assessment of the designed solutions with respect to technical scenario of future climate and other types of information.
4. Identification of resilient and no-regret solutions.

Bottom-Up approach

No-regret and resilient solutions



Additional information for assessing future risk



Technical scenarios of future climate for resilience assessment



Design of solutions



Risk assessment in current conditions



Conclusions

- Current time offers unprecedented opportunities. We are entering into a new period of global communication and cooperation. To be inclusive is possible.
- Open data, open science and open education are essential ingredients.
- Academies and research institution should recognise knowledge transfer and dialogue with stakeholders.
- Sustainability requires a constructive, positive and solution oriented approaches.



Thank you.

