School of Engineering

Project Management & Engineering Practice
(GENG 5505)

Assoc Prof Cosimo Faiello

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Project Management & Engineering Practice (GENG5505)

An introduction to sustainability applied to projects & project management

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Project management: An adaptable body of knowledge (Ch 1)

(Week 1a) - Lecture one 23rd July, 2024

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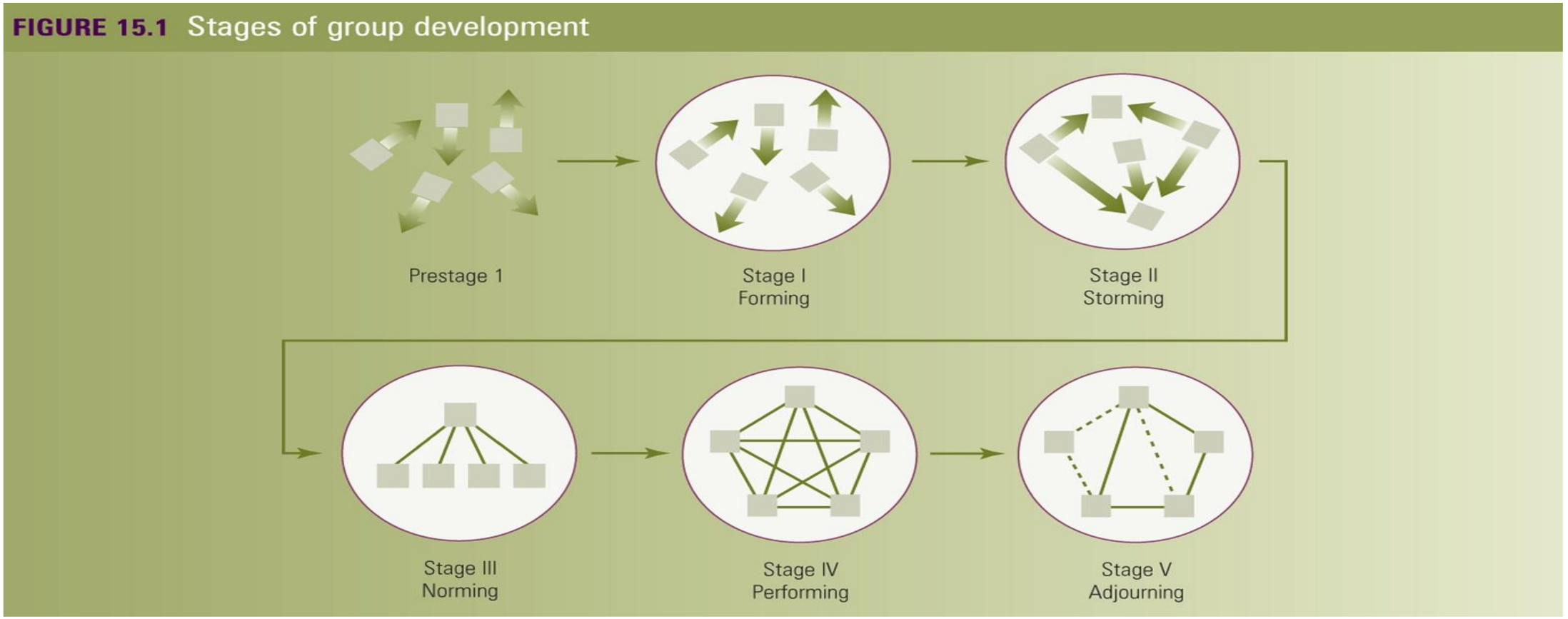
Stages of group/team development



Robbins et al., 2009

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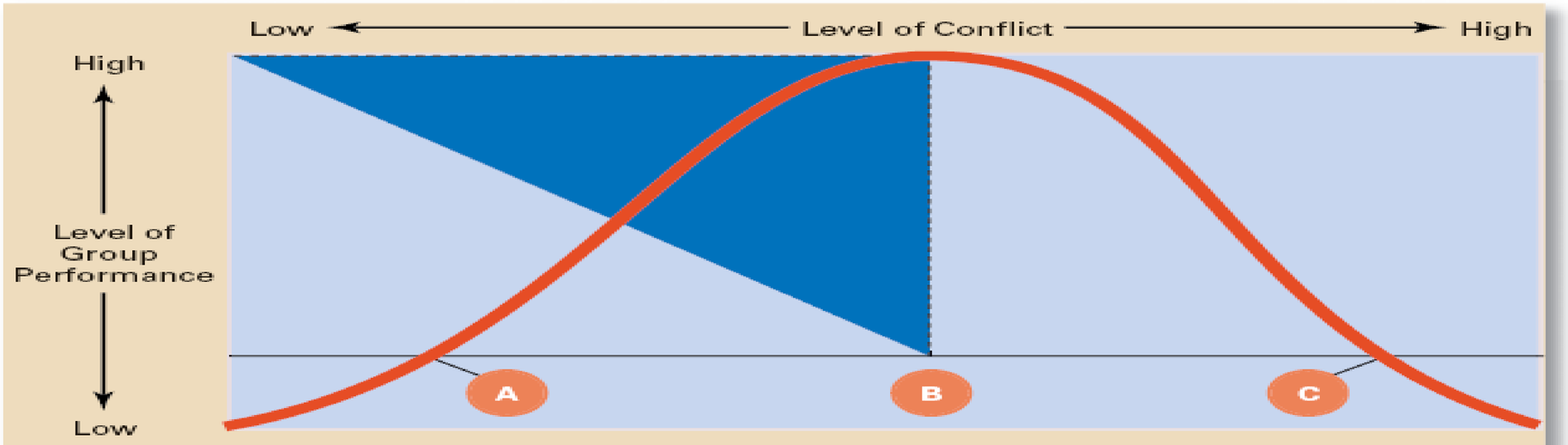
Conflict & group/team performance



Situation	A	B	C
Level of Conflict	Low or none	Optimal	High
Type of Conflict	Dysfunctional	Functional	Dysfunctional
Group's Internal Characteristics	Apathetic Stagnant Unresponsive to Change Lack of New Ideas	Viable Self-Critical Innovative	Disruptive Chaotic Uncooperative
Level of Group Performance	Low	High	Low

Robbins et al., 2009

Placing Project Management in Perspective: Some definitions

Project Management Body of Knowledge (PMBOK)

- "…an inclusive word that describes the sum of knowledge within the profession of project management and includes knowledge of proven, traditional practices which are widely applied, as well as knowledge of innovative and advanced practices…" (PMBOK, 2012)

- Formulated approximately 30 years ago, and updated regularly by the PMI (Project Management Institute of America)

- Neither comprehensive not all-inclusive, a body of knowledge which has become an international mark of project management best practice – the global standard for the industry

A definition of project & project management (PMBOK, 2012)

Project: “is a temporary endeavour undertaken to create a unique product, service or result”.

Project management: is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Project management is accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and closing.

Project management competencies (PMBOK, 2012 & Hartley, 2018)

1. Project stakeholder management
2. Project scope management
3. Project time management
4. Project cost management
5. Project quality management
6. Project human resource management
7. Project communications management
8. Project risk management
9. Project procurement management
10. Project integration management

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Definition of project & project management (Hartley, 2018)

➢Project: “A collection of activities and tasks designed to achieve a specific but temporary goal of the organization, with specific performance or quality requirements, all the while subject to time and cost constraints”

➢Project management: “refers to the management of project activities that lead to the successful completion and output of a project”. How?

❖Through applying the key management principles – planning, organizing, leading and controlling

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Defining project & project management continues….

(Hartley, 2018)

- A scheduled solution to a problem, opportunity, business need;
- Creating a unique product or service through a temporary endeavour;
- The project manager is responsible and continually under pressure to accomplish the best possible project results

But, what are the potential consequences?

Causes

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Causes continues...

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Causes continues…

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Causes continues…

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Causes continues…

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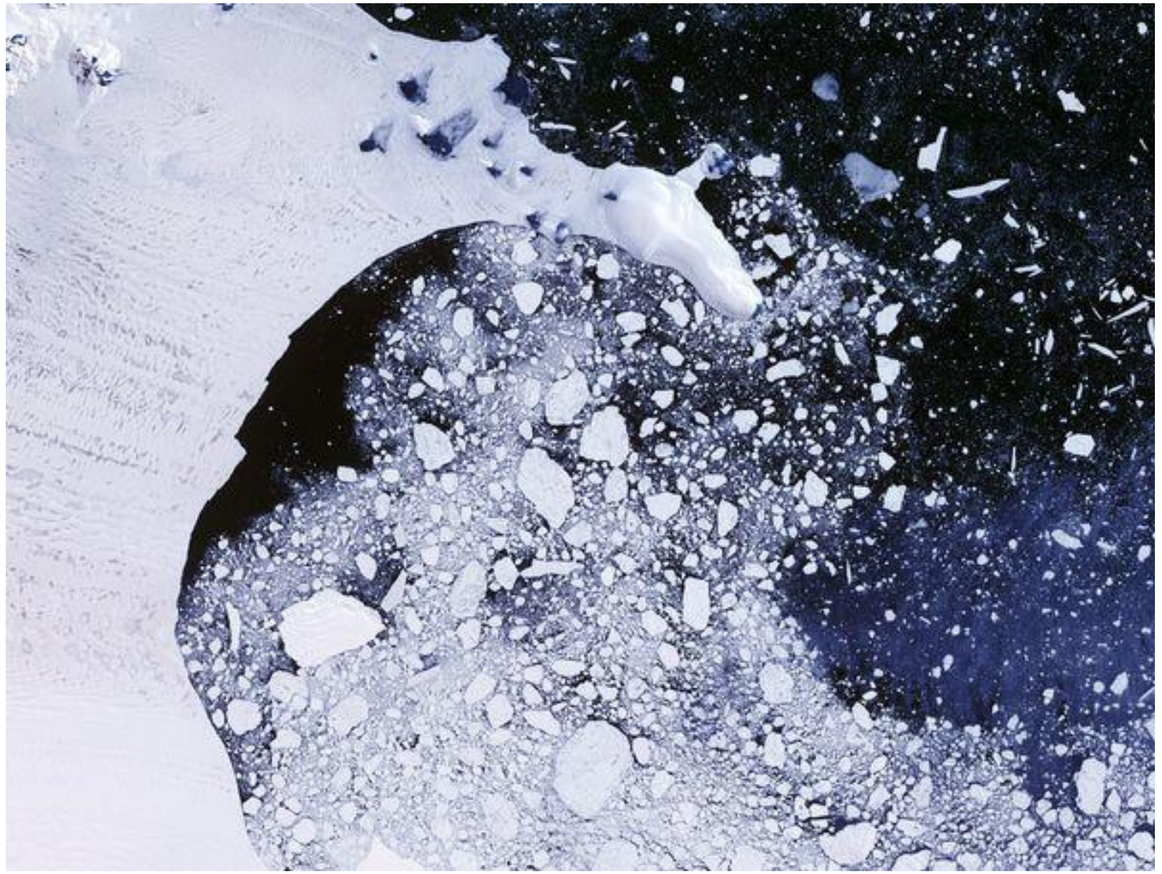
Effects



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Effects continues…..

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Effects continues.....

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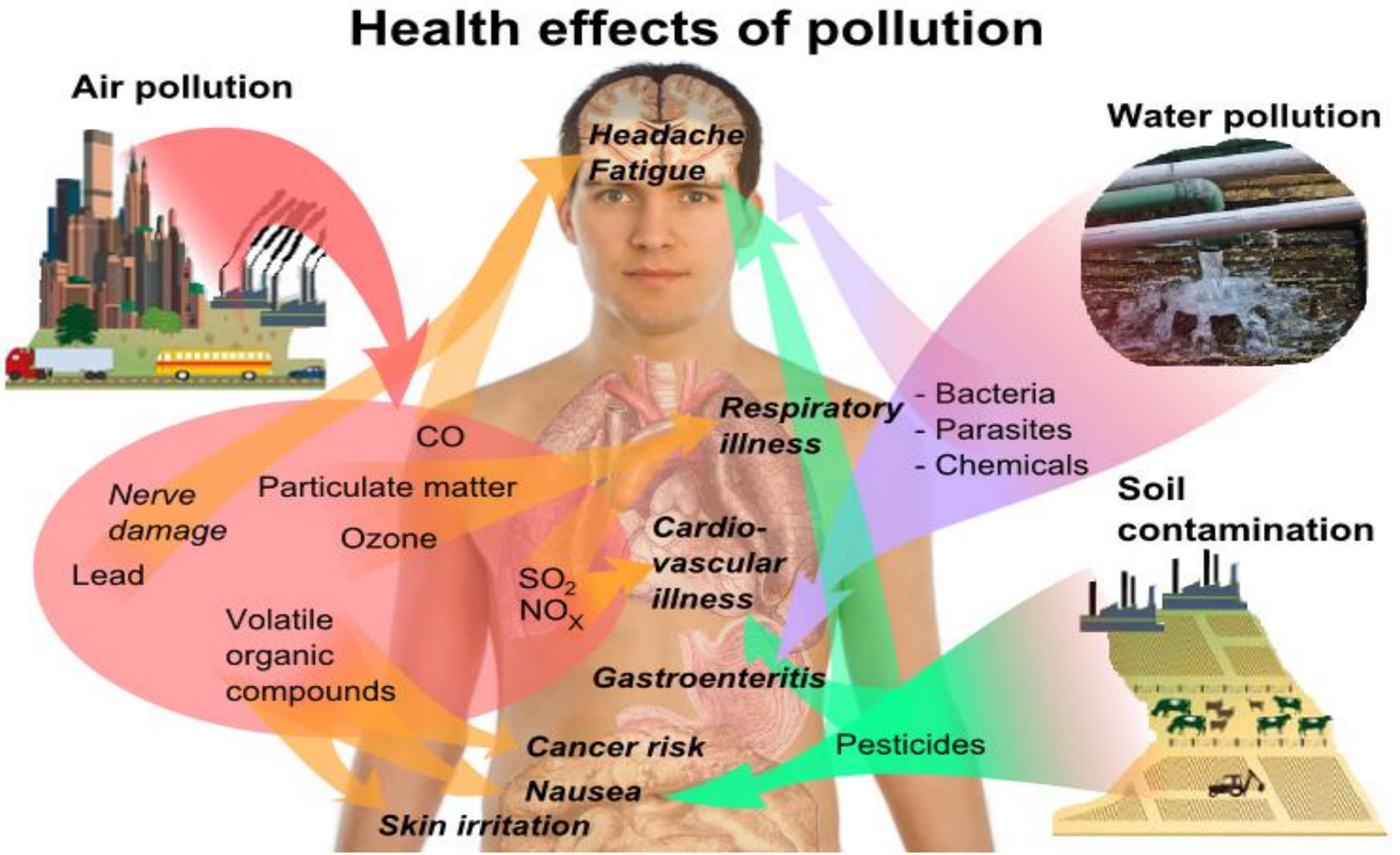
Effects continues...



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So, for how long can the current reality be sustained?

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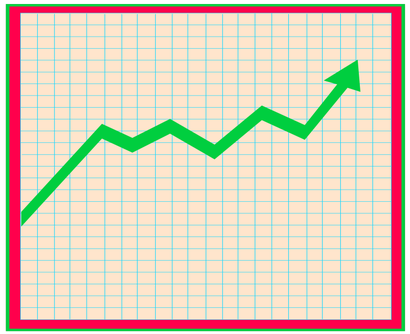
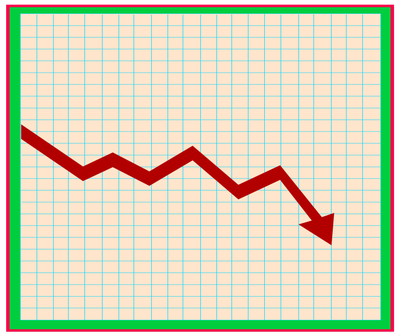
Setting the background for a Sustainable “project & project management” approach

Some key facts

- World oil supplies could be exhausted in 30 years or less
- Many other mineral resources within the next century
- And much more -i.e. water, air, land resources etc. being impacted upon daily



Consumption



Resources

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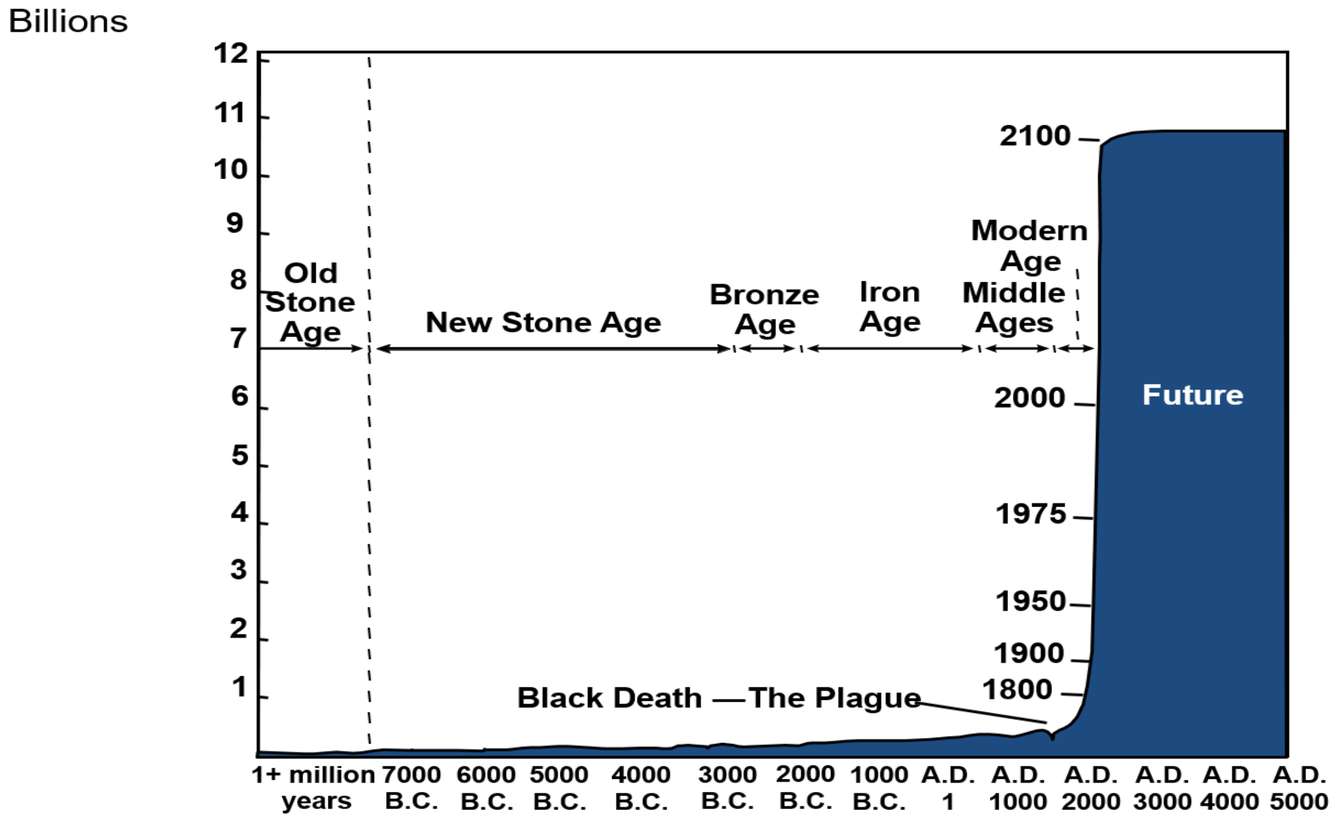
World Population Growth through history



Source: **Population Reference Bureau; and United Nations**, *World Population Projections to 2100* (1998).

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The current reality

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Defining sustainability

Robbins et al., 2009

- ‘Meeting the needs of people today without compromising the ability of future generations to meet their own needs’

- A company’s ability to achieve its business goals & increase long-term shareholder value by integrating economic, environmental & social opportunities into its business strategies = Triple Bottom Line (TBL) approach

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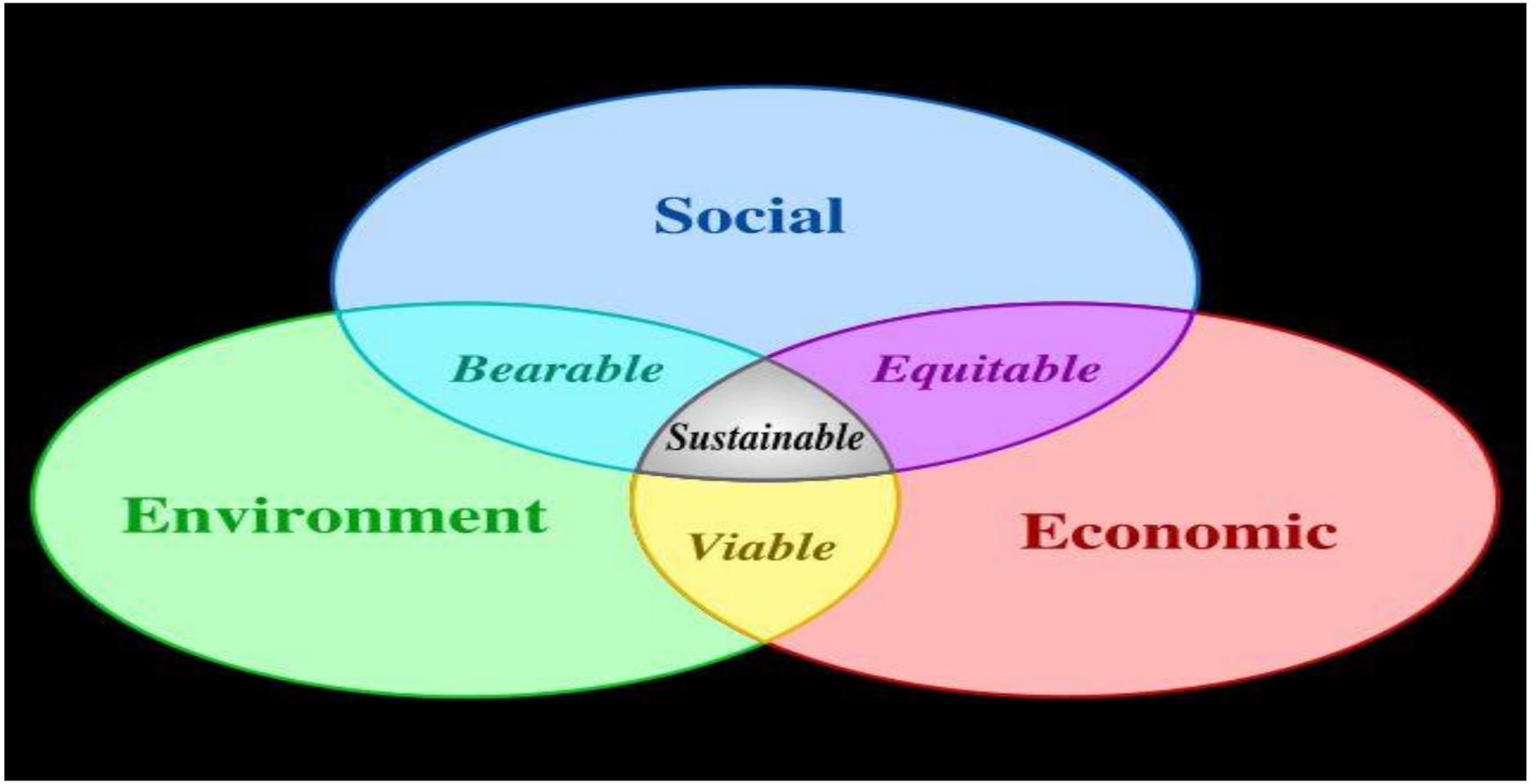
Balanced relationships



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Sustainable business/management views

Robbins et al, 2009

- The sustainable enterprise is an organic, mutually emergent system that is connected economically, environmentally, & socially to the world

- The long-term financial interests of a company are not ‘mutually exclusive’ with acting fairly in the interests of stakeholders (other than shareholders)

Views in line with TBL

Possible indicators for measuring sustainability

(Labuschagne et al, 2005)

- Economic sustainability – i.e. financial health, economic performance, return on investment (ROI), return on assets (ROA), etc.

- Environmental sustainability – i.e. mineral & energy resources, air, water & land resources, etc.

- Social sustainability – i.e. internal HR, external population, stakeholder participation, etc.

Indicators in line with TBL

Virtual and sustainable

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Real and sustainable

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Readings week 1

•Labuschagne C. and Brent A, 2005, Sustainable project life cycle management: The need to integrate life cycles in the manufacturing sector, *International Journal of Project Management*, pp 159 – 168

•Van Nes N. and Cramer J., 2005, Influencing product lifetime through product design, Business strategy and the Environment, *Business Strategy*, pp 286 -299

•Mont O. and Bleischwitz R., 2007, Sustainable consumption and resources management in the light of life cycle thinking, *European Environment*, pp 59 – 76

•Garrett P.& Rønde K., 2013, Life cycle assessment of wind power: comprehensive results from a state-of-the-art approach, International Journal of Life Cycle Assessment, 18:37-48