PM101
Lecture 15
Sustainability in projects

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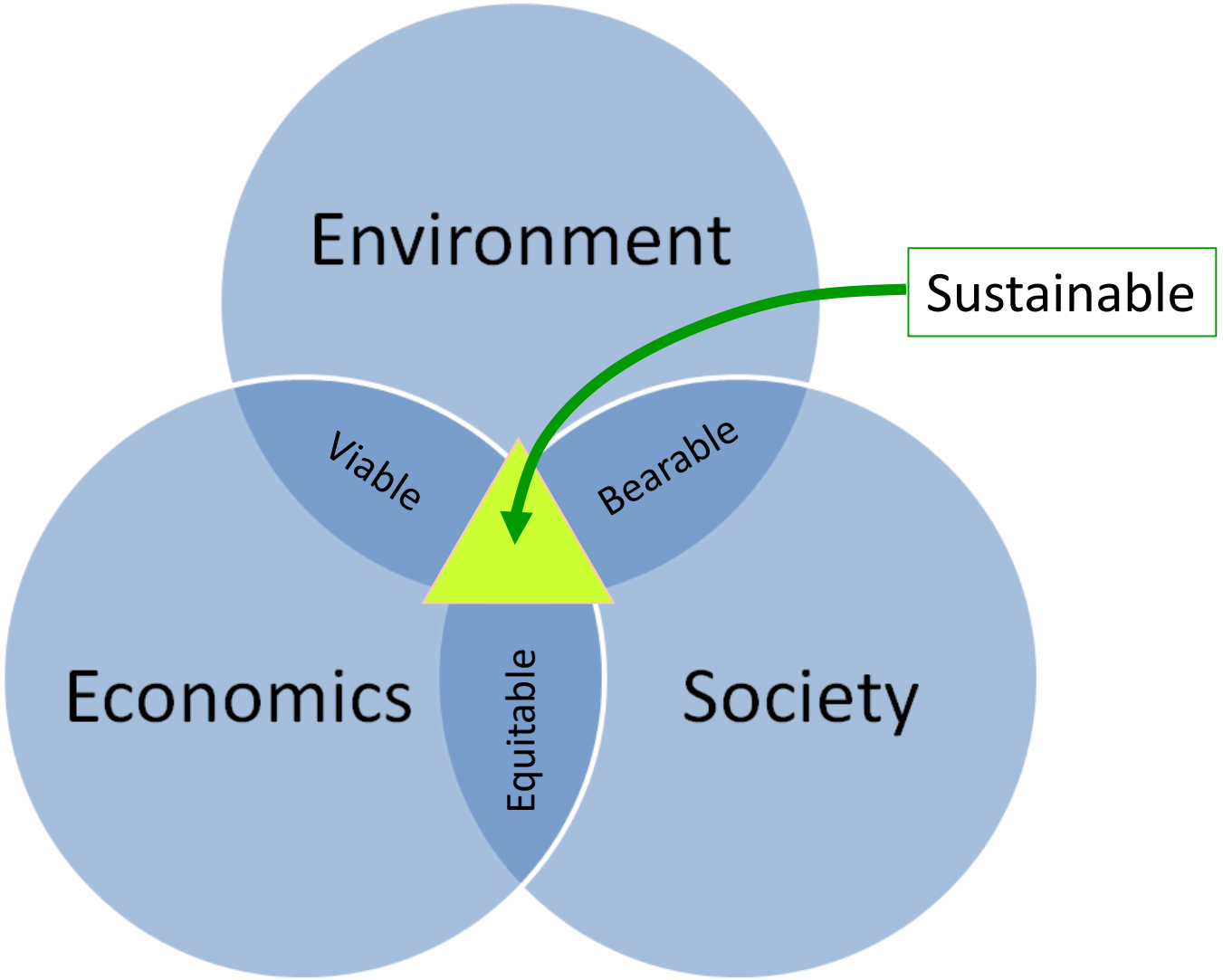
A sustainability model



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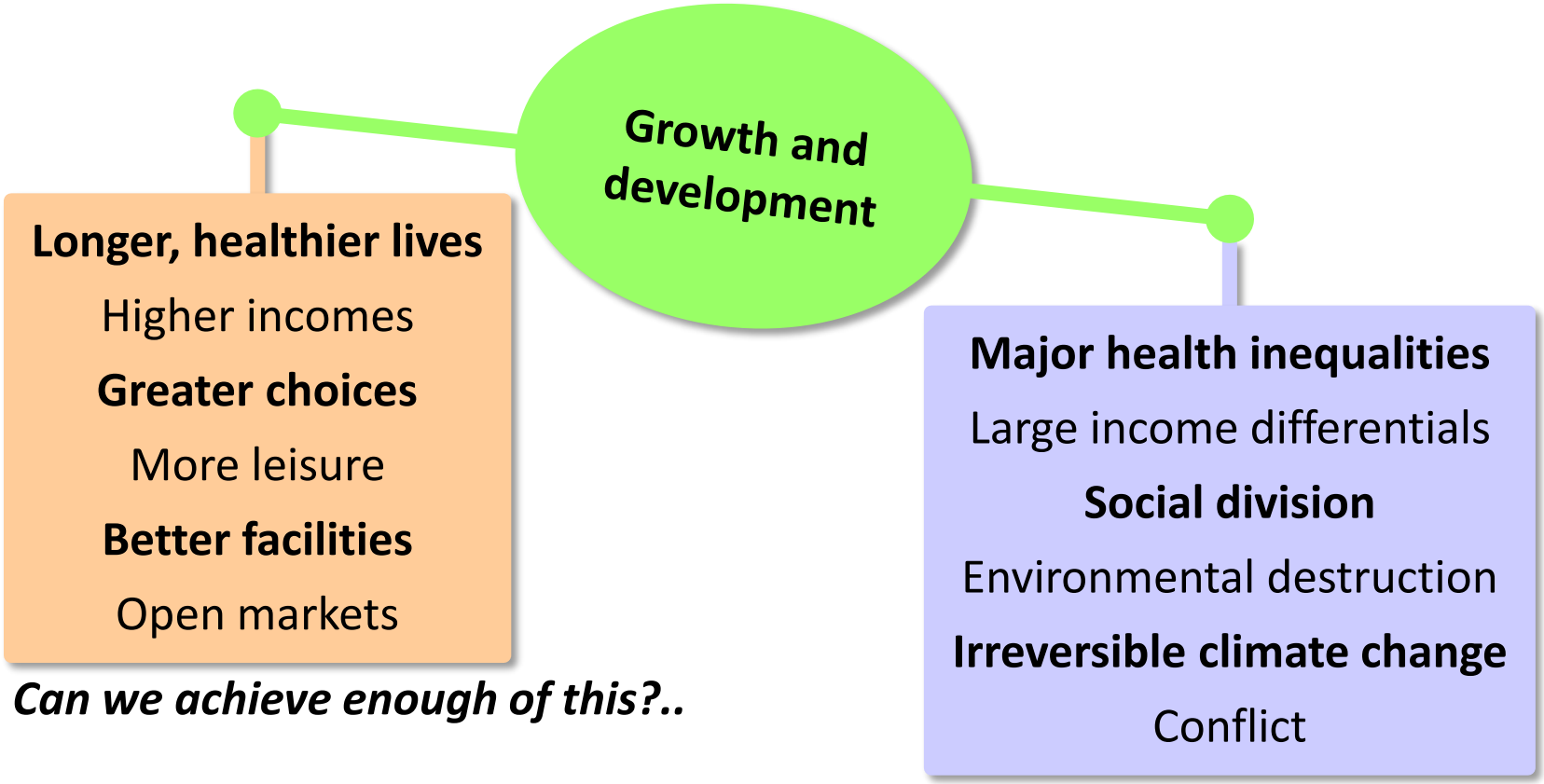
The balancing act



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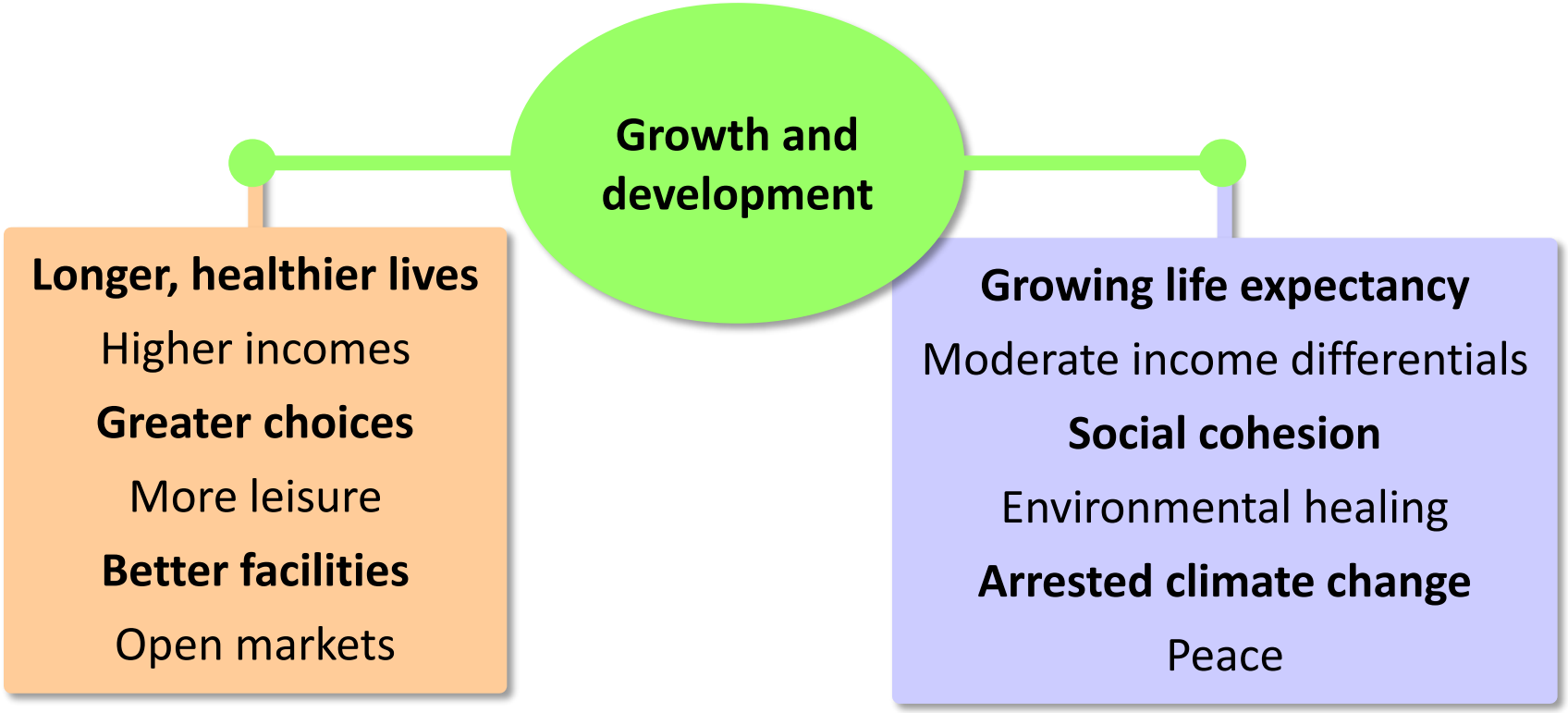
Is this what ‘sustainability’ means?



What we do, we can carry on doing indefinitely.

Improvement is focussed on sustainability as well as effectiveness and efficiency.

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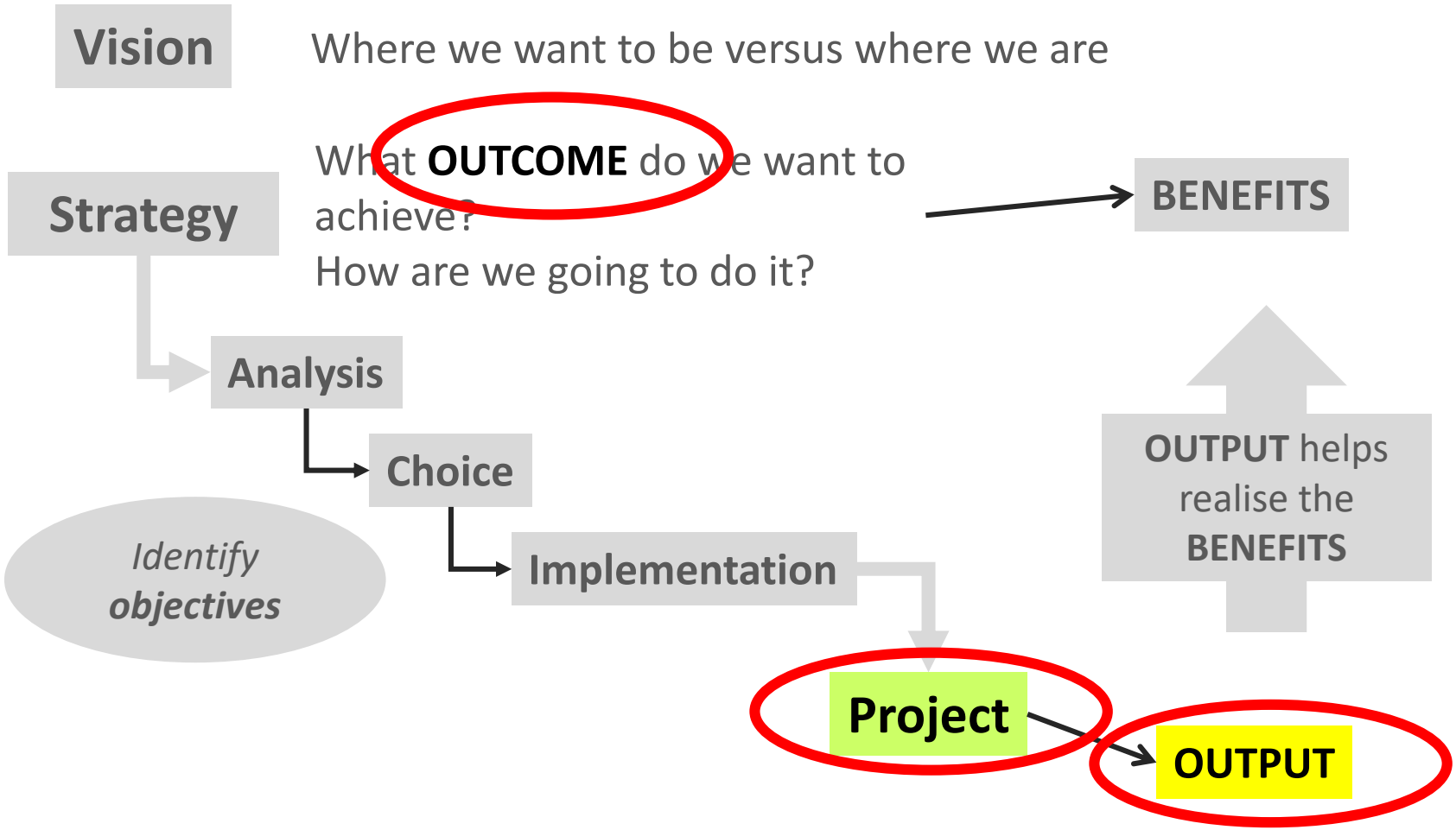
Three things to focus on



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Sustainability in projects

A sustainable **Project**

producing

a sustainable **OUTPUT**

that enables

a sustainable **OUTCOME**

This requires different ways of approaching and managing projects

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The three R's

REDUCE
Improve efficiency from this…

…via this….

…to this

RE-USE
From this…

…to this

RECYCLE
Extract value from this…

…for this

Prof J. Watson, *Engineering sustainability*, 2012 Joseph Black Lecture, Bath University, 30 May 12; Wall Street Journal, 23 Oct 12. Photos: PickPix; Dmitri G, Creative Commons Attribution-Share Alike 3.0 Unported; Nicole Berra from Pexels; Public domain

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The three R's plus

REFURBISH
From this…

…to this

REPURPOSE
From cargo…

…to bedrooms

REJECT
Why have this…

…when this works just as well?

Prof J. Watson, *Engineering sustainability*, 2012 Joseph Black Lecture, Bath University, 30 May 12; Wall Street Journal, 23 Oct 12. Photos: Gtrain Photos, Creative Commons, Attribution-ShareAlike 2.0 Generic (CC BY-SA 2.0); citytransportinfo Public Domain; Chanaka at Pexels

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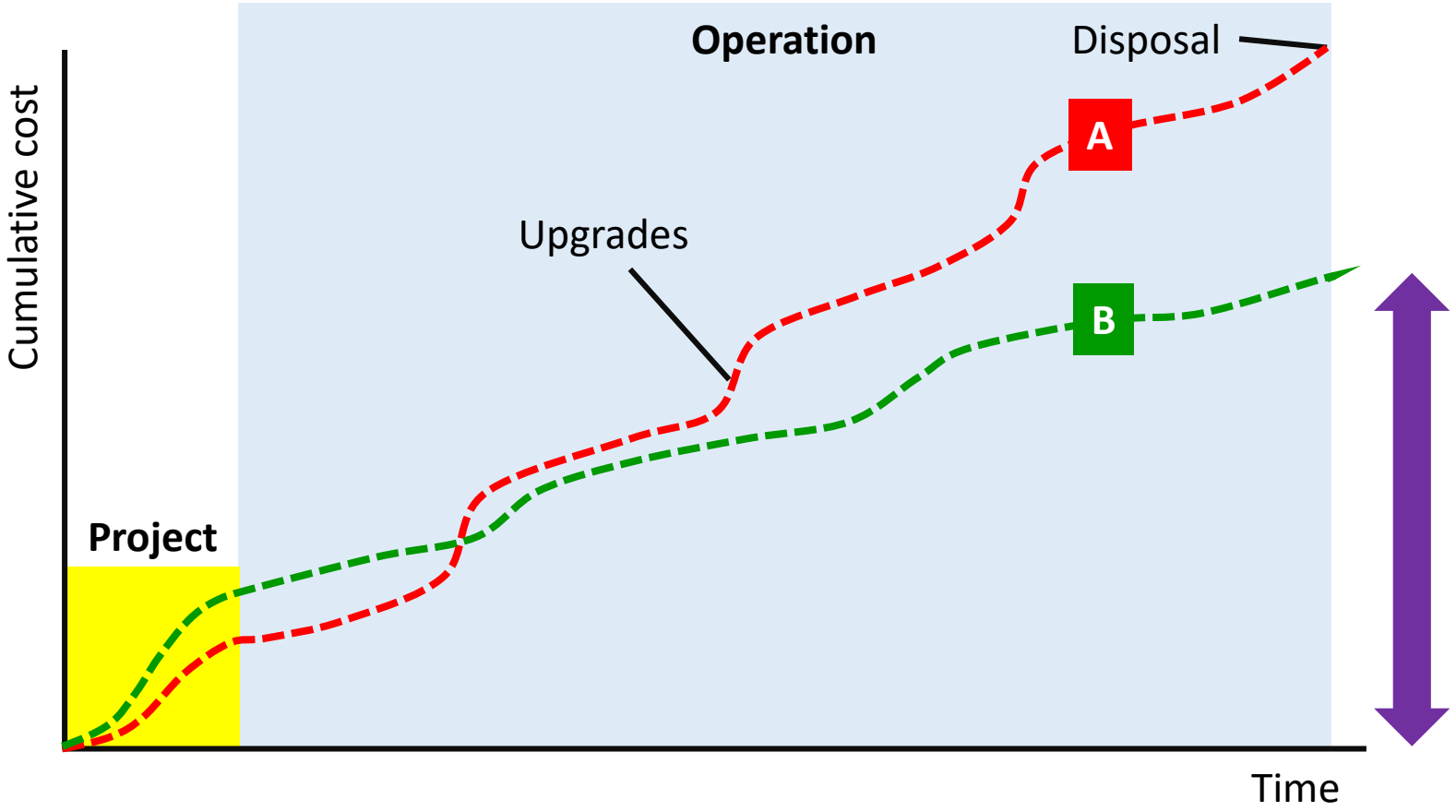
Taking a life cycle approach



B costs more to develop than **A** but has much lower operating costs, needs fewer upgrades and is cheaper to dispose of. Its **Life Cycle Cost** is about 30% less, although it costs 30% more to buy.

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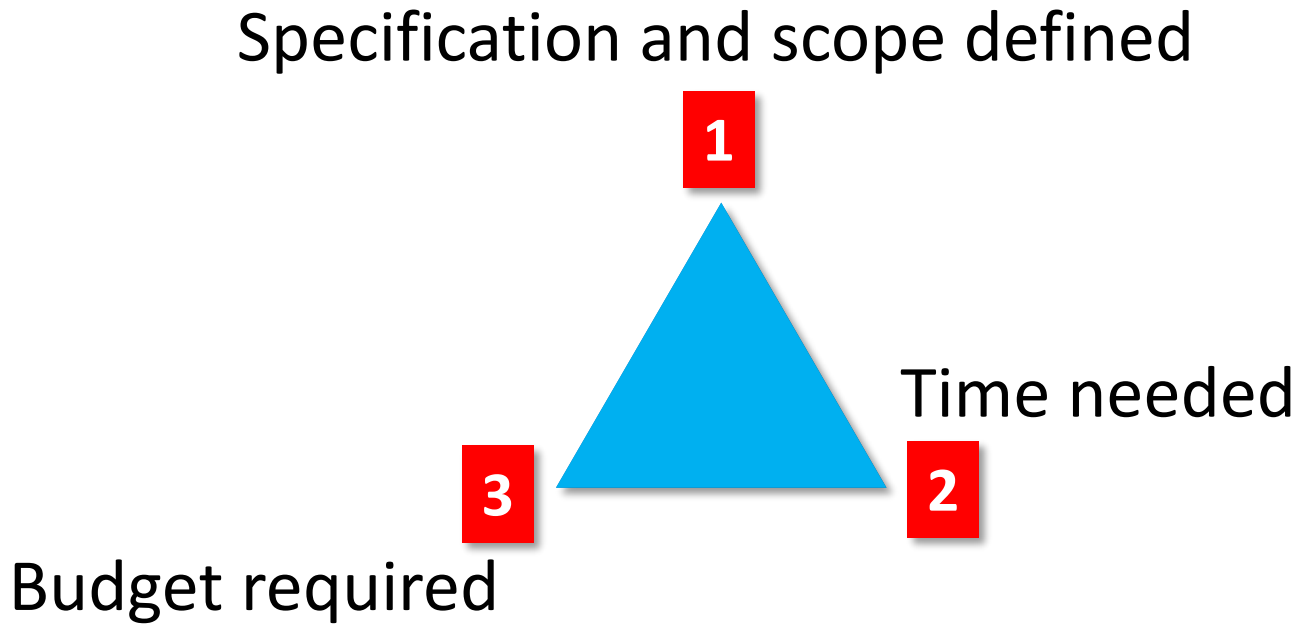
The traditional planning sequence



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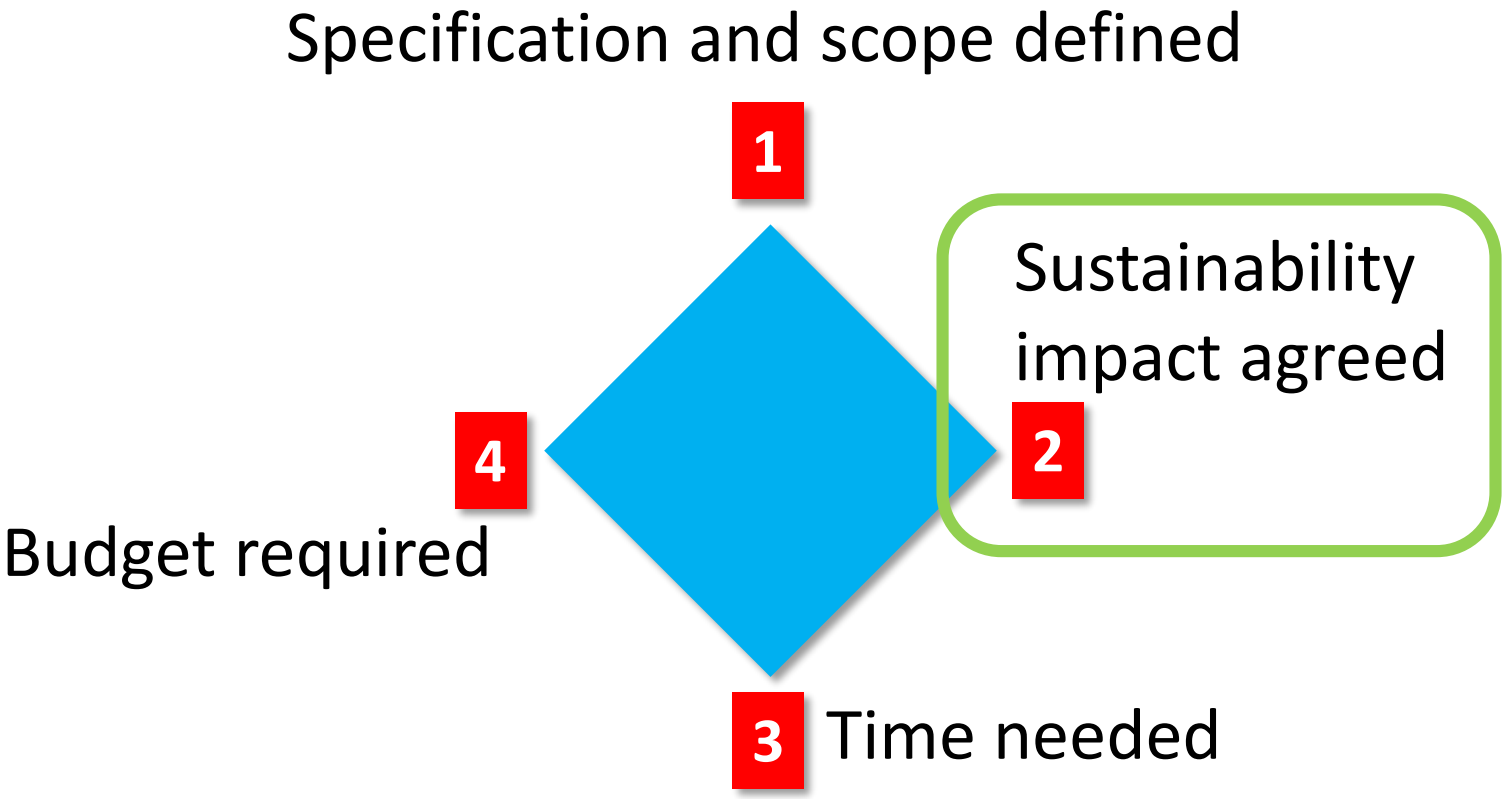
The sustainable planning sequence



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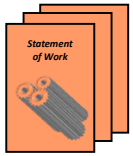
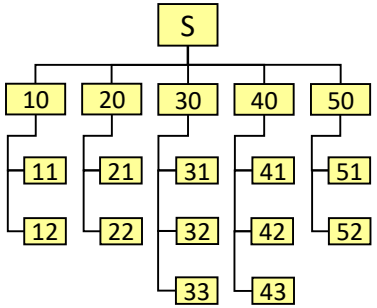
The project planning process

Business case, project brief, specifications etc.

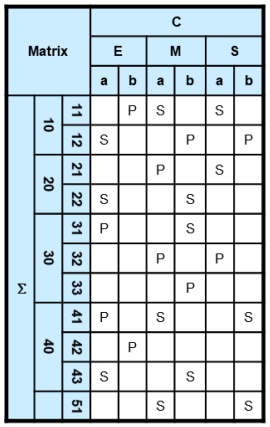


WHAT?



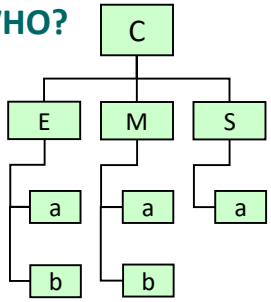
Work breakdown structure

WHO DOES WHAT?

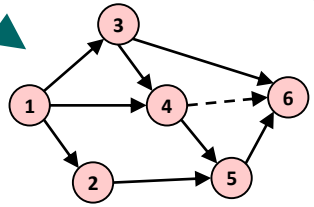


Responsibility matrix

WHO?

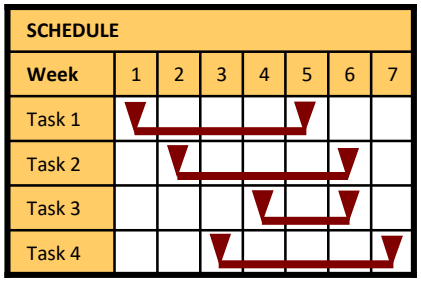


Organisation



Task network

WHEN?



Work schedule

Cost database

HOW MUCH?

Staffing and cost estimates

Project plan

Sustainability is considered at every step

Morris, P. (1997). *The management of projects.* London: Thomas Telford, p262

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Sustainability considerations in project design

Regulations: local and national legislation

Energy use: manufacturing, transportation, travel

Material use: sourcing, manufacturing, water consumption

Neighbours: locality, partners, customers

Waste: rejects, re-work, packaging

Disposal: refurbishment and re-use, recycling, material recovery

Noise and light: interference with others' lives

Land use: plot size relative to purpose; brownfield

Emissions: pollution, leakage

Think: Outcome - Output - Project

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Sustainable project management

Old style	New style	Sustainable style
Focus on the Triple Constraint	**Focus on achieving the business result**	**Focus on a sustainable business result**
Plan at the start and do not deviate from the plan	Re-plan in response to the project environment	Plan and re-plan in response to the wider world environment
Stay rigid and focused on the initial plan	**Be flexible, changing and adaptive**	**Anticipate environmental pressures and issues**
Use resources efficiently	Use resources effectively	Use resources effectively and responsibly
Preach project standards	**Preach business results**	**Preach sustainability**
The project is processes and resources	The project is an organisation with a goal	The project is a mechanism to achieve sustainable change

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Total sustainability management

TOTAL SUSTAINABILITY

- **Everyone is involved**
- Focus on customer needs and priorities
- **Everything is part of a process which aids sustainability**
- Continuous process improvement

Sustainability can be FREE

- Lower energy use and pollution over time
- **Less waste**
- Smart design means light weight
- **Smart sourcing means less transport**
- More efficient processes

Higher sustainability at lower cost

Sustainability **WINS BUSINESS**

Based on *The Manufacturing Industry Handbook*, CSC, 1996

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Challenges to being sustainable

- **Controversy over what is sustainable – e.g. Biomass**
- Irresponsible protest groups – e.g. GM crops
- **NIMBY**
- Sacrificing our standard of living
- **What people will do versus what they say they will do – e.g. the price of organic food**
- Sustainability may cost jobs

Corporate behaviour

- 'Greenwashing'
- Being 100% sustainable is impossible
- Supporting bad science
- Supporting the side that fits their own agenda

Financial Times, 10 May 12, p14; Management Today, Mar 07, p27. Photos: Ethan Wilkinson from Pexels; Christopher Barnette, Creative Commons, Attribution-NonCommercial 2.0 Generic (CC BY-NC 2.0)

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Sustainability: core ideas

The goal is to achieve a balance between environmental, social and economic interests that is sustainable indefinitely.

Achieving that whilst improving our lives is very difficult.

The aim is to conduct any project in a sustainable manner, that produces a sustainable output which in turn enables a sustainable outcome.

This involves re-evaluating how projects solve problems, including more imaginative ways to utilise resources and taking a life cycle view of the output.

Sustainability should be a consideration in every aspect of planning and managing a project, including the style of project management.

There must be a continuous effort to improve project sustainability performance.

Sustainability is not universally accepted, especially where key stakeholders find themselves having to make trade offs or sacrifices.

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