Sustainability is a basic economic notion

The purpose of income calculations in practical affairs is to give people an indication of **the amount which they can consume without impoverishing themselves**.

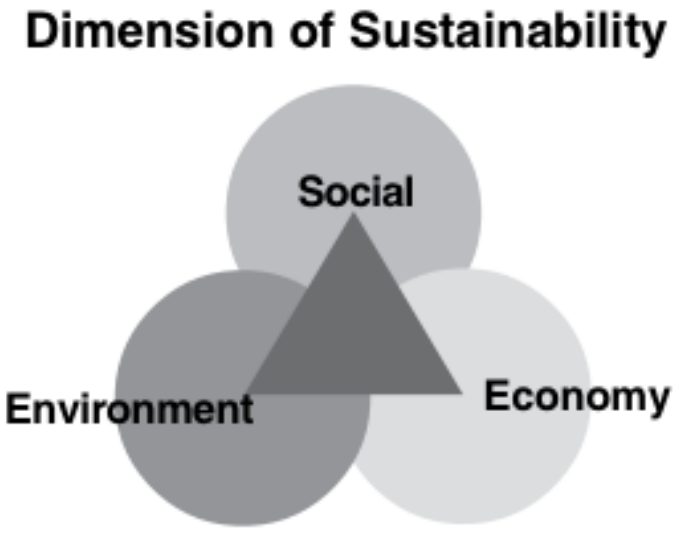
Remembering that the **practical purpose of income** is to serve as a guide for prudent conduct, I think it is fairly clear that this is what the central meaning must be.

(Hicks, 1939,172, Chapter 14).

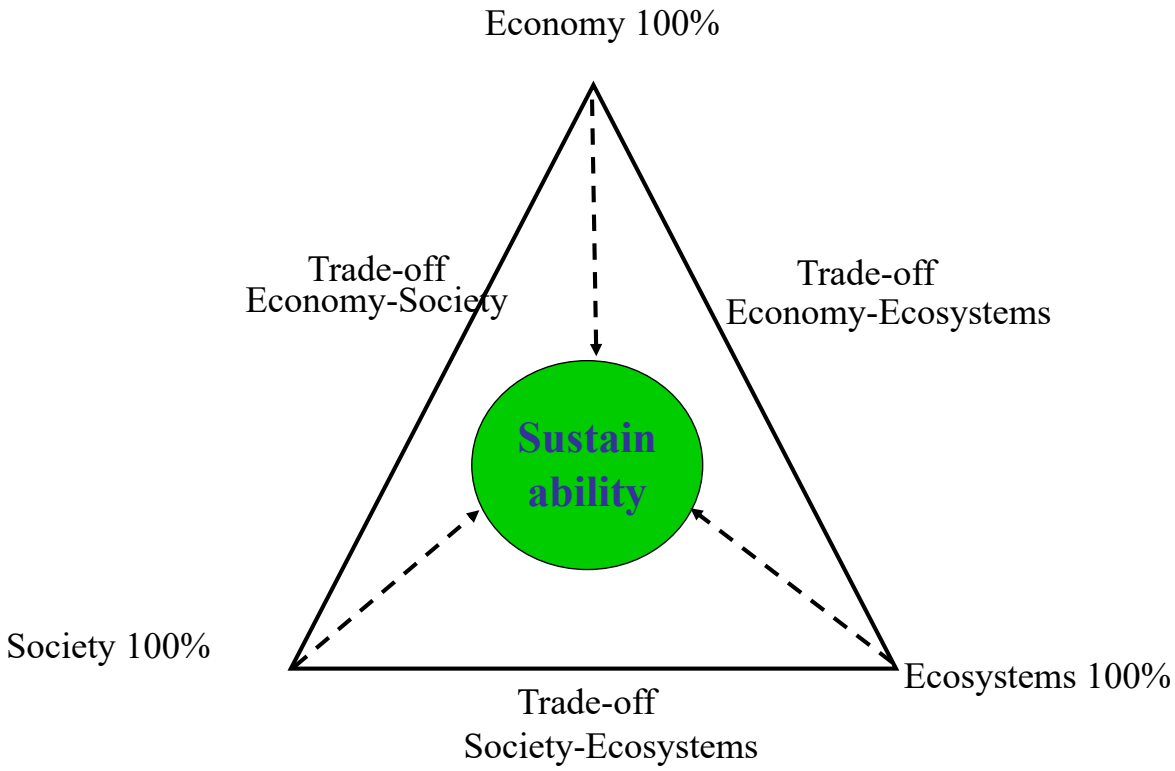
real income as the maximum that *could* be spent on consumption while leaving real wealth intact (Meade and Stone 1941, 219).

WEALTH?

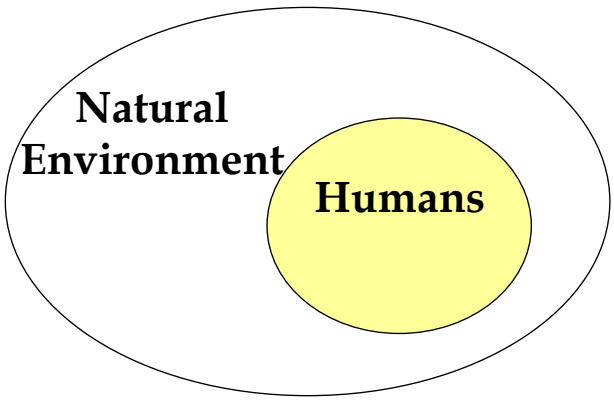
What has to be sustained??



Standard representation of SustDev

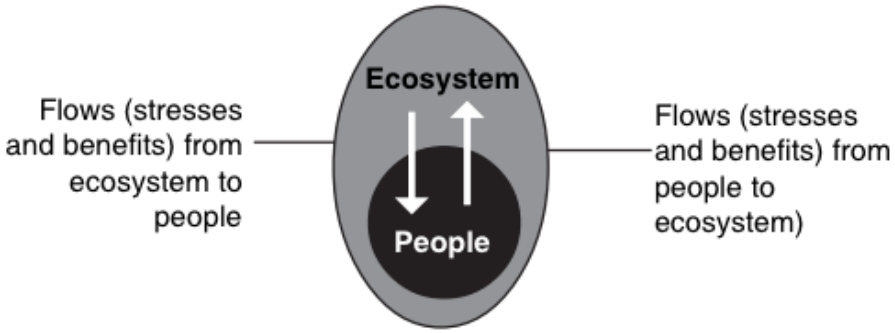


The *egg model*



sustainable development = human well-being + ecosystem well-being

The Egg of Sustainability



IUCN's egg of sustainability (Source: IDRC 1997)

Critical issues …

environmental problems are **global** in nature and hence **common interest of all nations**

game theory

alleviating current poverty carries the risk of creating future poverty

one reason for intergenerational conflict: discounting

Intergenerational conflicts from using only economics

Valuation (e.g. a project) and Cost-Benefit analysis

First step: understanding effects

Second step: assigning monetary values

Suppose we have the following estimates for two projects

t	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*
A	-20	0	0	0	0	+8	+9	+10
B	-20	+6	+6	+6	+6	+6	-3	-3

a) **N**et **P**resent **V**alue

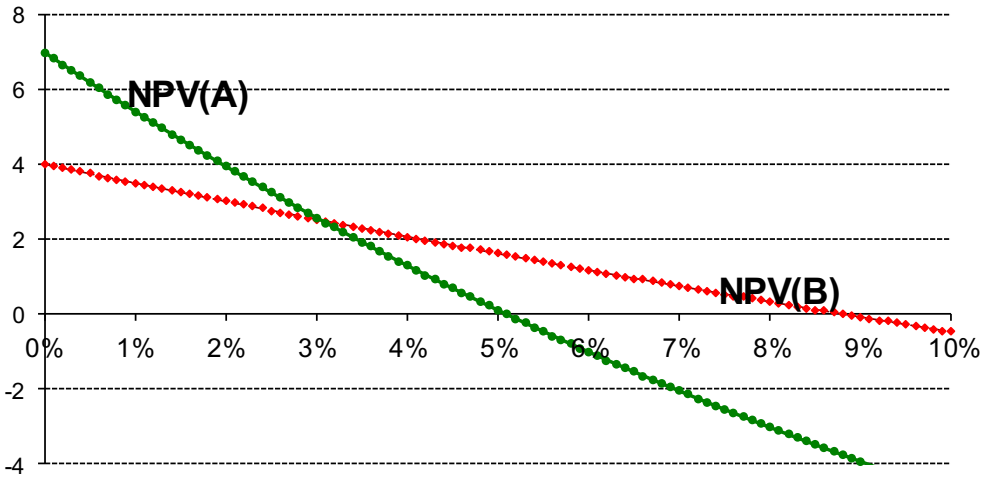
Divide each value by the discount factor, $(1+i)^t$

Sum all discounted values

HOWEVER NPV depends on discount rate …

Which discount rate?

NPV of the two projects …



For low discount rates (3%) A is better.
Benefits of A are far in time

INTERNAL RETURN RATE: rate such that NPV=0
IRR(A)=5% IRR(B)=8,8%

WHY using a discount rate???

a) Opportunity cost of the capital

b) Time preference

- pure (impatience)
- risk of death
- Economic growth: new generations are richer (?!?): hence marginal utility decreases …

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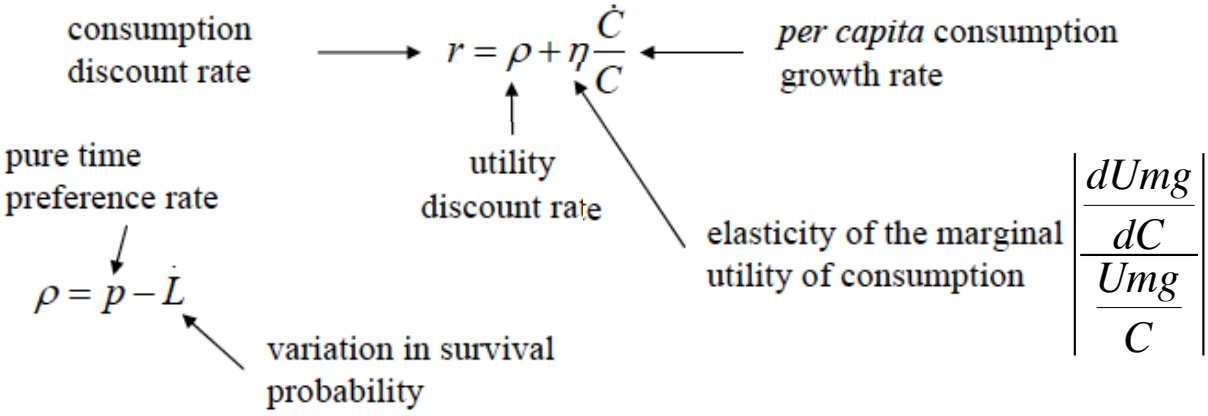
- pure (impatience)
- risk of death
- economic growth: new generations are richer (?!?)
  →marginal utility decreases …



Turner *et al.* (1994), pp. 102-106.

SHALL WE USE discount rate in public policy?