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Applying Sustainability at the Enterprise Level

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What do we mean by Sustainable Development?

- Development where future generations will be at least as well off as ourselves. (Risks of decline in welfare must be minimised)
- Practically it has been interpreted to mean that the assets we pass on to future generations must not decline: (P): Physical Capital, (H): Human Capital, (N): Natural Capital and (S): Social Capital.
- But it also means that development be equitable, within and across generations.

Are We Proceeding Along A Path of SD?

- Weak sustainability ⟹ W = P+H+N+S must not decline over time
- For most developed countries this condition has been met, based on available data. E.g. Spain in 2000 per capita wealth was as follows (US$):

Sub Soil	Timber	NTFP	PA	Crop	Pasture	Total (N)
50	81	105	360	2,806	971	4,373

Physical Capital	Intangible and Human	Total
39,531	217,300	261,205

- And Increase over 1999 was 13.7%.

Are We Proceeding Along A Path of SD?

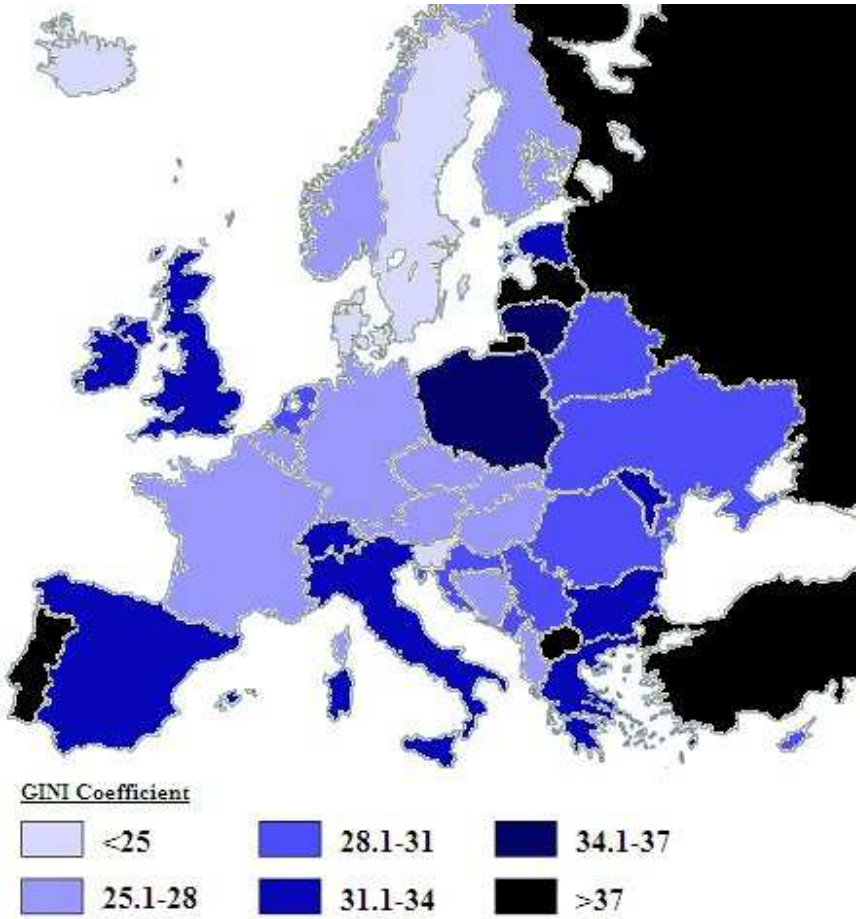
- But according to strong sustainability we need natural capital (N) not to be declining over time.
- Unfortunately this is not true even in many developed countries.
- Areas where N is declining with possible serious consequences are:
  - Loss of fisheries (estimate is that, unchecked, a collapse of fish stocks is possible by 2048).
  - Concentrations of greenhouse gases (GHGs). (without controls global temperatures by 2100 could be 1.1 to 6.4 degrees C higher).
  - Losses of land productivity in developing countries
  - Unsustainable use of freshwater in some countries/regions.
  - Loss of biodiversity (species, degradation of ecosystems) globally.

Are We Proceeding Along A Path of SD?

- What about equality?
  - There is evidence supporting convergence between developed countries and some fast developing countries (e.g. BRICS, between Member States of the EU).
  - But more widely we do not have convergence (especially for Sub-Saharan Africa)
  - Within countries inequality has been increasing generally since 1990s, although Spain has seen some reduction. (See next slides)

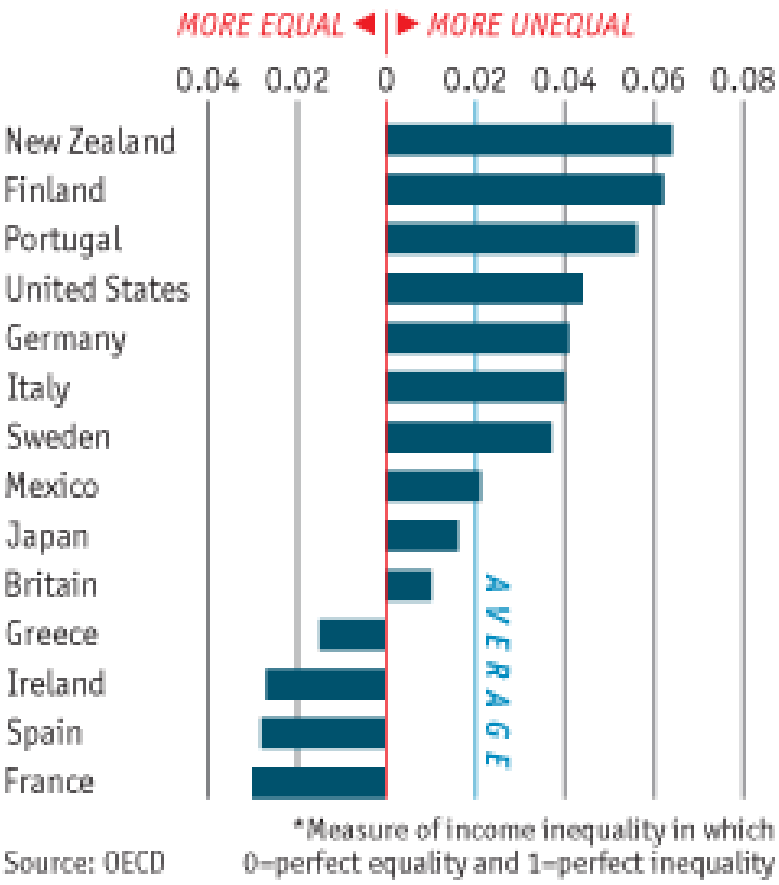
Are We Proceeding Along A Path of SD?

http://en.wikipedia.org/wiki/List_of_countries_by_income_equality



Inequality in OECD Countries

- Spain's income inequality declined by 0.03 between 1985 and 2005. Its Gini coefficient is 0.32 and is 16th highest out of 30 countries.
- Inequality is also about unequal life chances. Life expectancy for example, between richest and poorest districts in the UK is 13 years, and a similar difference exists in other countries.



HOW CAN WE IMPROVE OUR PERFORMANCE TOWARDS SUSTAINABILITY?

- Set the prices to reflect social costs
- Set targets for key indicators where sustainability implies a physical limit
- Use measures of welfare that reflect sustainability goals better
- Get enterprises to adopt sustainability as a corporate goal.

Set the Prices Right

- A key for sustainable development is to ensure that prices reflect social costs.
- Social Cost = Private Cost + External Cost
- Hence we need to measure the external costs of goods and services and to reflect them in the social costs that people pay.
- In policy terms this is reflected in the Polluter Pays Principle (PPP). Companies must pay for the pollution they create

Set the Prices Right: Social Costs

- An Example of External Costs from Electricity Generation. (Euro Cents/kWh)
- Numbers will vary by location and external costs are uncertain.

Fuel	Private	External	Total
Lignite IGCC	3.0	2.4	5.4
Natural Gas CC	4.8	1.4	6.2
Hydro < 100MW	7.9	0.04	8.0
Wind Onshore	6.1	0.1	6.2

Source:CASES

How Do We Get Prices to Reflect Social Costs?

- Impose charges on polluters (PPP)
- Give subsidies to those with lower external costs (make relative prices reflect social costs).
- Impose direct controls to reduce external costs (more costly method but sometimes necessary)
- In general charges are more effective. They have lower welfare costs of raising revenue and less prone to misuse. Also less problems of unfair competition.

Targets where sustainability implies a limit

- External costs are an important tool for sustainable development and can be used for air pollution, water, waste.
- But they cannot be used in all cases. An important one where we need a target is climate change. Measuring external costs is highly uncertain.
- So we set a limit: e.g. Stabilize at 550ppm by 2100. Implies 50% global reduction in GHGs by 2050.

Other Areas Where Indicators and Limits Are Useful

- Land use (new land for buildings, roads).
- Rates of recycling for waste
- For GHGs:
  - Rates of energy from renewable sources
  - Share of transport from renewable sources
- Water use to meet sustainable criteria
- Building standards for safety in case of natural accidents
- Forest/fishery exploitation to meet sustainability criteria

Problems/conflicts with pursuing sustainable targets

- PPP and a policy of pursuing sustainability targets can imply higher prices and can hurt the poor.
- For example, the target for reducing CO_2 emissions globally by 50% by 2050 will imply an increase in energy prices. Price per ton CO_2 will rise to €91 by 2030 and €346 by 2050. This will affect energy prices.
- But note, €400 ton CO2 = €0.8 liter gasoline.

Problems/conflicts with pursuing sustainable targets

- So we have to be concerned about impacts of sustainability policies set for environmental objectives on social objectives.
- We need:
  - Targeted energy subsidies for poor households when prices rise for environmental reasons.
  - Introduce measures to mitigate possible employment effects of sustainability policies.
  - Introduce measures to mitigate possible impacts on secondary markets (e.g. Effects of biofuel production on price of grains and food)

A Corporate Culture of Sustainability

- The ideas of sustainability are permeating corporate thinking.
- Many firms now report ‘triple bottom line’: profit, impacts on environment and society.
- They are starting to adopt life cycle assessment methods to determine production processes.
- And some are using the concepts of “four capitals”.

Examples of Corporate Initiatives that Encompass Sustainability

- UN Global Compact – 3000 companies
- UN Principles of Responsible Investment -- $10 trillion in assets
- Carbon disclosure project $41 trillion in assets
- Equator principles – used by Banks worldwide.
- Social Investment forum -- $2.3 trillion in assets
- Instituto Ethos – member companies total 37% of Brazil's economy.
- Enhanced Analytics Initiative -- $2.5 trillion in assets, UK.

The Triple Bottom Line: Example of Accounts from BASF

Economic	2006	2005	% Change
Sales	52,610	42, 745	23.1
Income of operations before amortization €Mn.	9,723	8,233	18.1
Net Income €Mn.	3,215	3,007	6.9
Earnings per Share €	6.37	5.73	11.2
Return on Assets %	17.5	17.7	-
R&D Expenses €Mn.	1,277	1.064	20

Environmental	2006	2005	% Change
Operating costs for environmental facilities €Mn.	657	623	5.5
Investments in environmental protection €Mn.	116	78	48.7
Emissions of Air Pollutants Th. MT	49.1	50.9	-3.5
Emissions of GHGs (CO2 eq.) Mn. MT	25.0	24.8	0.9
Water Emissions of Organic Substances Th. MT	22.9	44.2	-25.9
Water Emissions of Nitrogen Th. MT	6.0	9.9	-31.9
Water Emissions of Heavy Metals Th. MT.	35.0	45.0	-22.2
Transportation Accidents per 100,000 shipments	0.45	0.47	-4.3
Nº of Environmental and Safety Audits	90	63	8.4

The Triple Bottom Line: Example of Accounts from BASF

Social	2006	2005	% Change
Employees as of December 31st	95,247	80,945	17.7
Nº of Trainees	2,290	2,390	-2.1
Personnel Costs € Mn.	6,210	5,574	11.4
Donations and Sponsoring € Mn.	67.2	56.9	18.3
Lost Time Accidents per million working hours	1.67	1.78	-6.2
Occupational Diseases per million working hours	0.3	0.4	-25.0
Nº of occupational and health protection audits	28	31	-9.7

Examples of Firms Using Enhanced Accounting

- Global Reporting Initiative, Amsterdam, NL
- Innovest Strategic Value Advisors, International, Toronto
- Domini Social Investments, USA
- Vigeo, France
- Sustainable Asset Management, Zurich
- Calvert Group, USA
- Swiss Reinsurance, Zurich
- Generation Investment Management, UK
- EcoSecurities, Brasil & UK
- ASRIA, Hong Kong
- Friends Provident, London
- Triodos Bank, NL and UK
- Rabobank, International, NL

The “Capitals” Approach at the Corporate Level

- Some firms have developed indicators of sustainability based on human, social and environmental capital.
- They publish and track their progress in terms of these indicators.
- An example is the water sector where such an approach has been developed. (Wessex Water in the UK)

Wessex Water

- Identifies not the normal 4 kinds of capital but five:
  1. *Customers and Communities (S)*
  2. *Environment (E)*
  3. *Employees (S)*
  4. *Infrastructure (P)*
  5. *Finance (P?)*

Wessex Water: The Five Capitals

Wessex Water: The Five Capitals

- Each of the five capitals is divided into a number of sustainability themes, each of which is represented by one or more sustainability indicators that measure performance
- E.g. The customers and communities capital is divided into the following themes:
  - Drinking water: (quality compliance, water consumption, household metering)
  - Performance impacts (supply interruptions, sewage flooding)
  - Customers, community and affordability (customer service, community investment and affordability
- Performance is judged on the basis of indicators via data collection through surveys and carrying out studies specific to each indicator

Sustainability Indicators for 2010-11

CUSTOMERS AND COMMUNITY		
SIM (Service Incentive Mechanism) customer satisfaction score	*	89%
Customers who rated our service as either good or very good	✔	98%
Drinking water compliance with quality standards	✔	99.98%
Security of supply index score	✔	100
Properties at risk of low water pressure	✔	173
Properties experiencing unplanned interruptions lasting more than 12 hours	~	61
Water supply restrictions	✔	0
Properties at risk from a 1 in 10 year sewage flooding event	✔	56
Percentage of properties internally flooded by sewage	✔	0.01%

ENVIRONMENT		
Compliance with abstraction licences	✔	100%
Population served by compliant sewage treatment works	✔	100%
Number of pollution incidents	✔	85
Bathing water compliance with mandatory standards	✔	100%
SSSIs in recovering and favourable condition	~	86%
Sludge recycled to farmland	✔	100%
Amount of self generated renewable electricity produced	✔	44GWh
Greenhouse gas emissions (gross, Defra definition)	✔	162Kt

Sustainability Indicators for 2010-11

EMPLOYEES		
Employee turnover	✔	8.4%
Improvement and efficiency saving suggestions received from staff through Eureka!	✔	113
Major/fatal accidents (rate per 1,000 employees)	✔	2

INFRASTRUCTURE		
Total leakage from supply network (million litres per day – Ml/d)	✔	71
Intermittent discharges from the sewerage network achieving satisfactory condition	✔	95.4%
Sewer collapses per 1,000km (621 miles)	✔	13.9

FINANCE	
Turnover	£444.9m
Debt to regulatory asset base ratio (%)	64
Cash interest cover ratio	4.8

Performance review based on the last five years:

✔ stable or improving trend ~ variable trend ✗ deteriorating trend ✱ new measure

Main Highlights for 2010-11

- Topped Ofwat's new league table for overall customer satisfaction
- Delivered all customer demands for water without restriction
- Cut leakage and met their new leakage target despite the major increase in bursts caused by the very cold winters this year and last
- Beat their water efficiency target
- Been the first water company in the country to publish information that shows when storm overflows affecting bathing waters have been in use, through a new facility on their website
- Increased renewable energy production to 44GWh per year providing 17% of their total demand
- Received the Green Apple Award for their partners' programme, which supports environmental organisations in their region.

Life Cycle Approaches

- Look at impacts from all stages of production: from “the cradle to the grave”.
- The assessments are used to determine the choice of production methods.
- Widely adopted as part of a sustainability approach: examples range from food and homes products (Unilever) to telecom. (Nokia).

Unilever & LCA

‘Understanding lifecycle impacts is crucial to delivering our new target of reducing our overall environmental impacts across our value chain while doubling the size of our business’

Product Analyser

Measured the impact of over 1600 products using LCA and created a product analyser on sustainable living website, where consumers can view the data behind the plan

http://www.sustainable-living.unilever.com/

How Unilever use LCA?

LCA one of a number of techniques they use to help them understand their environmental impacts. They use LCA in three ways:

- ***Product innovation*** - *to compare new & existing products and to measure the differences in their respective environmental profiles. This guides product developers & informs consumers of the environmental performance of their products.*
- ***Product category analysis*** - *on product categories or portfolios to help raise environmental awareness and to identify improvement opportunities.*
- ***Strategic studies*** - *to help them to understand their environmental impacts & the potential impact of their annual business activities scaled against their contribution to the world economy.*

Nokia & LCA

‘Our product creation is guided by life cycle thinking. It helps us continuously improve the environmental aspects of our products and processes in each phase of the product life cycle, from raw material acquisition till the end of life of the product’

http://ncomprod.nokia.com/environment/devices-and-services/creating-our-products/life-cycle-thinking

- Use LCA for calculating environmental impact, energy usage and greenhouse gas emissions of products and processes.
- By identifying largest sources of emissions and energy use over the lifecycle, they have been able to take action in minimising the environmental impact of their mobile devices.

NOKIA
Connecting People

Low Carbon Targets: Marks and Spencer

- On 15 January 2007, M&S launched an initiative to increase the environmental sustainability of the business within 5 years and expected to cost £200 million
- The commitment is that by 2012 it will:
  - Become carbon neutral
  - Send no waste to landfill
  - Extend sustainable sourcing (LCA)
  - Help improve the lives of people in their supply chain
  - Help customers and employees live a healthier life-style

Conclusions

- Sustainability is a new paradigm that affects all levels of activity.
- The idea of maintaining and enhancing capital is a central theme that can help track progress toward sustainability.
- Key aspects for the corporate sector come both from regulation and self governance.

Conclusions

- In terms of regulations companies must be made to observe the polluter pay principle as mush as possible.
- This can be best done by making prices reflect social costs, which in turn implies the use of charges, subsidies or standards.
- In general charges are the best instrument but sometimes there is a role for subsidies.

Conclusions

- Incentives that the state can place that affect enterprises include:
  - Carbon taxes and/or carbon emissions rights
  - Rules that allow habitat banking
  - Subsidies for green projects that create jobs (but the cost assessment has to be carefully done)
  - Biofuel targets
  - Solar power subsidies
  - Employment regulations that ensure good working conditions

Conclusions

- But in addition to regulations, the corporate sector has to change how it monitors its progress and what indicators it responds to.
- The development of triple bottom line reporting and the use of a capitals based accounting approach both help in this regard.
- At the end of the day, however, it is the targets for these indicators that the companies set that are key!

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Thank You!

Gràcies!

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