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Natural Capital and Protected Areas

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What is Natural Capital?

Why Natural Capital?

What mechanisms are available?

Case example

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What is Natural Capital?

Natural Capital is the extension of the economic notion of capital (manufactured means of production) to goods and services relating to the natural environment.

*Natural capital is thus the **stocks** of natural ecosystems that yields **flows** of valuable ecosystem goods or services*

*"Natural Capital **is not** about 'Selling Mother Nature'*

*Natural Capital **is not** some simple-minded cost-benefit-based stewardship model for the whole Earth*

*Natural Capital **is** about preventing the economic invisibility of Nature from leading to bad policies & trade-offs*

*Natural Capital **is** about recognizing, demonstrating, capturing and rewarding the benefits that ecosystems and biodiversity provide to society in general and to poor people in particular"*

Pavan Sukhdev, 2013, pers. comm

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Why Natural Capital?

"By 2050 agricultural production will grow by about 60%, with increasing wealth projected to boost annual demand for meat products by 76%"

FAO, 2012

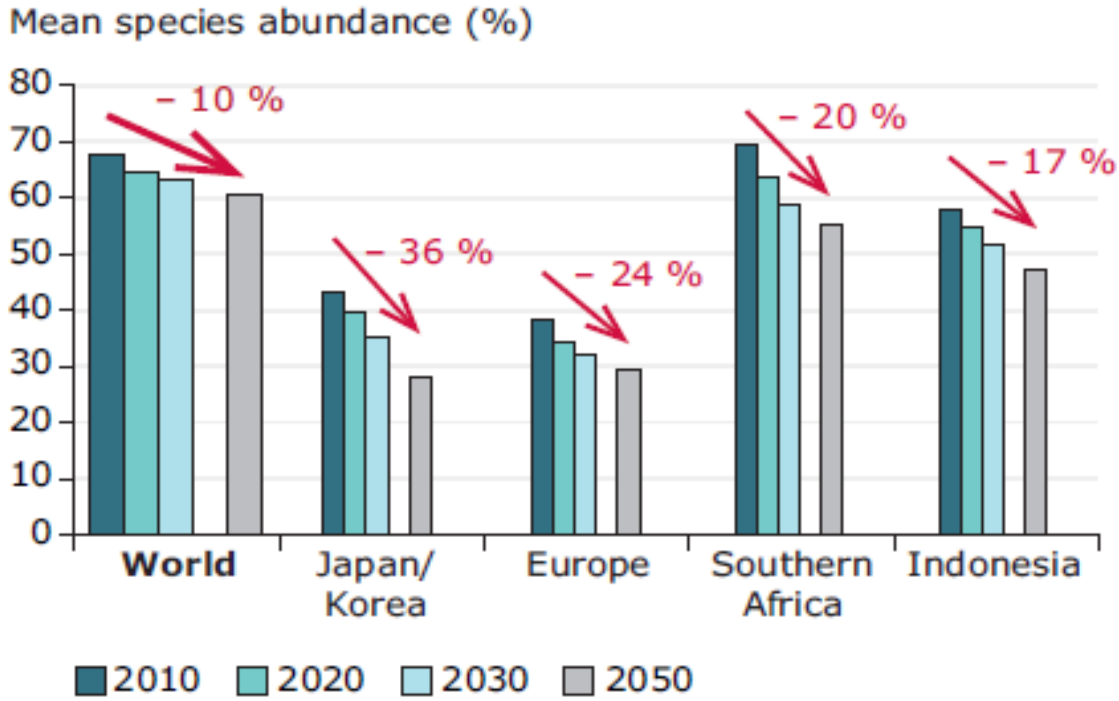
"This necessitates a short term increase in the global food crop area of about one million km^2 "

OECD, 2012

"Mean species abundance is projected to decline further to around 60% of the level that potential natural vegetation could support by 2050"

OECD, 2013

Figure 8.3 **Terrestrial mean species abundance, globally and for selected world regions, 2010–2050**



Note: 'Mean species abundance' is a measure of how close an ecosystem is to its natural state. It is defined as the mean abundance of original species in an area relative to the abundance in an undisturbed situation. A rating of 100 % implies that the biodiversity matches that in the natural situation. An MSA of 0 % means that there are no original species remaining in the ecosystem.

In this figure, 'Europe' refers to the EU-27 plus Iceland, Liechtenstein, Norway, and Switzerland.

Source: OECD, 2012 (output from IMAGE model).

Why is this happening?

The critical decisions affecting ecosystems are made by finance ministries and chief finance officers, often to maximise financial capital.

The current economic system is based on understanding financial flows and largely ignores natural capital asset value and asset performance

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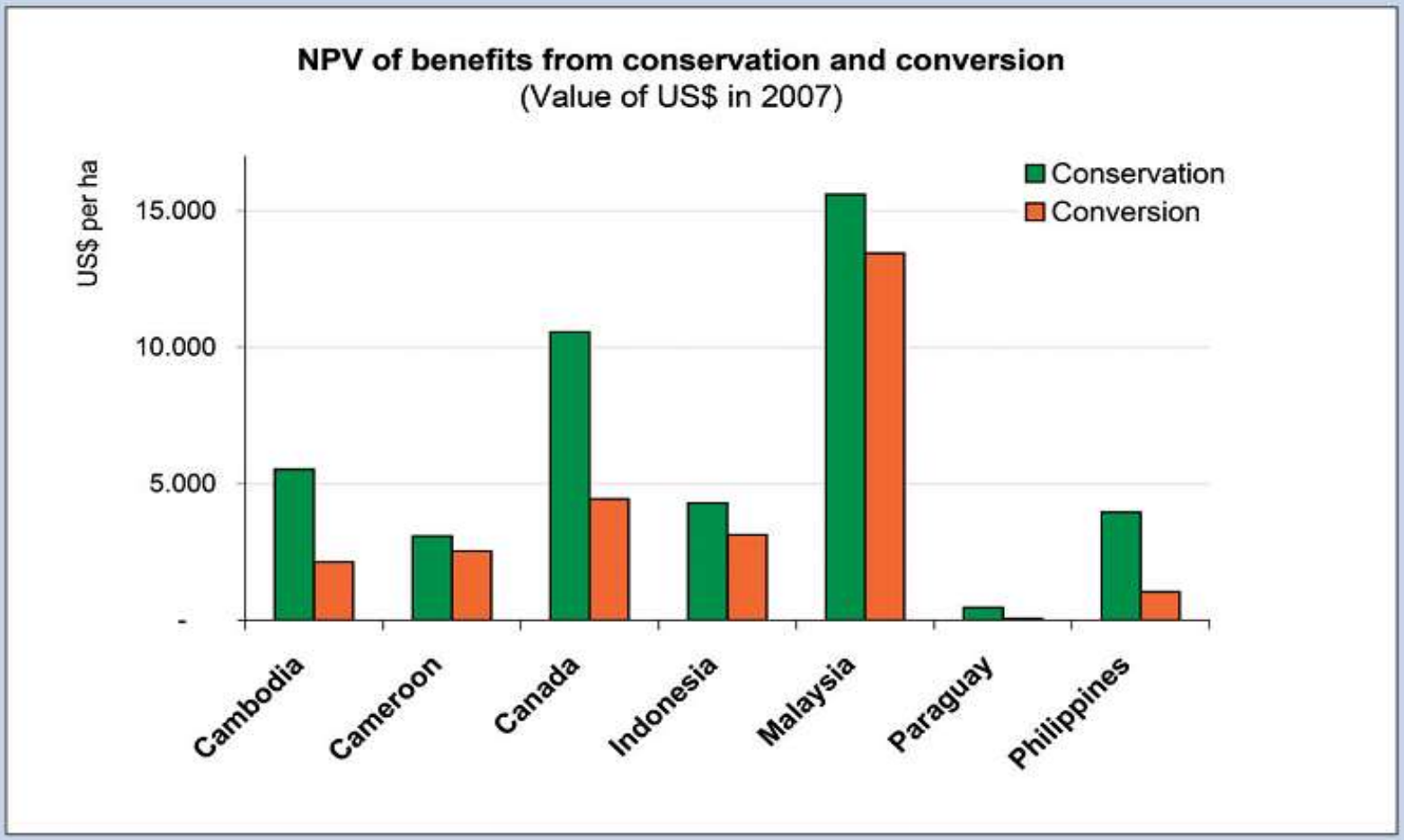
Monoculturalism doesn't pay

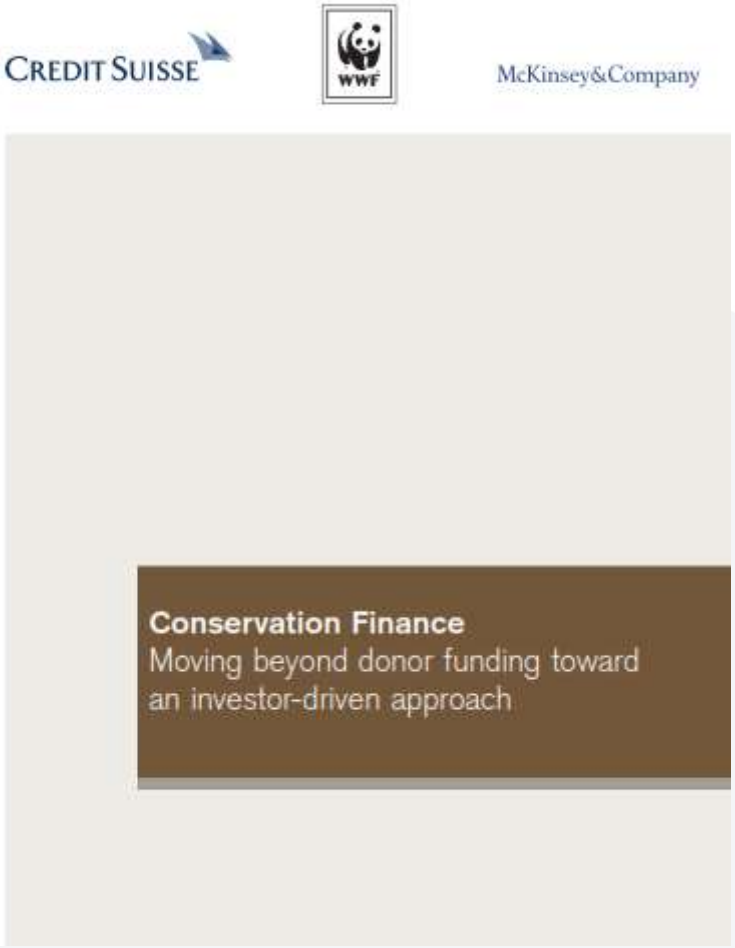
Figure 2: Total benefits of conservation compared to benefits from conversion for seven case studies in different countries



Sources: Bann (1997), Yaron (2001), van Vuuren and Roy (1993), van Beukering et al. (2003), Kumari (1994), Naidoo and Ricketts (2006), and White et al. (2000), as reviewed by Balmford et al. (2002), Papageorgiou (2008) and Trivedi et al. (2008). 'Conservation' includes sustainable production of market goods and services including timber, fish, non-timber forest products, and tourism. 'Conversion' refers to replacement of the natural ecosystem with a system dedicated to agriculture, aquaculture, or timber production.

TEEB, 2010

What's the funding gap?



To meet global demand for conservation funding, investable cashflows need to be 20-30 times higher than they are today. $200-300 billion a year

To unlock this level of private investment we need to develop measurable and verifiable products which provide conservation and financial returns

Conclusions from IUCN World Parks Congress

Only 1/4th PAs achieving effective management of biodiversity

Very little management of outcomes for nature. Monitoring, where present is about process and 'box ticking'

Coverage of PAs is weak. Birdlife study found that only 1/5th of key areas for nature are covered by PAs with 1/3rd lacking any protection at all.

What mechanisms are available?

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1. Established - largely public funded

- Designation of protected areas
- Laws for protection of endangered species
- Regulation for water quality & abstraction
- Subsidy for sustainable land use
- Green public procurement
- Education, outreach and training – behaviour

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2. Established - mix of funding

- Land purchase for conservation objectives
- Certification e.g. FSC, Fairtrade etc.
- Landscape scale collaborations
- Green taxation and fiscal reform e.g. landfill tax
- Carbon markets

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3. Emerging mechanisms

- Area-based natural capital valuations and ecosystem services mapping e.g. MAES
- Subsidy reform?
- Payments for ecosystem services
- Green bonds / impact-based payments
- Biodiversity offsetting
- Investors and lenders policy change based on Natural Capital risk exposure
- Corporate natural capital accounting and disclosure e.g. Natural Capital Protocol

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Environmental Externalities Measuring & Disclosing : PUMA

	Water use	GHGs	Land use	Air pollution	Waste	TOTAL	
	€ million	€ million	€ million	€ million	€ million	€ million	% of total
	33%	32%	26%	7%	2%	100%	
TOTAL	47	47	37	11	3	**145**	100%
PUMA operations	<1	7	<1	1	<1	**8**	6%
Tier 1	1	9	<1	1	2	**13**	9%
Tier 2	4	7	<1	2	1	**14**	10%
Tier 3	17	7	<1	3	<1	**27**	19%
Tier 4	25	17	37	4	<1	**83**	57%
EMEA	4	8	1	1	<1	**14**	10%
Americas	2	10	20	3	<1	**35**	24%
Asia/Pacific	41	29	16	7	3	**96**	66%
Footwear	25	28	34	7	2	**96**	66%
Apparel	18	14	3	3	1	**39**	27%
Accessories	4	5	<1	1	<1	**10**	7%

Source: PPR /PUMA Press Release, 16th Nov 2011


CONVENTIONAL PUMA T-SHIRT
GHG € 1.79
AIR € 1.00
WATER € 0.33
LAND USE € 0.20
WASTE € 0.10
TOTAL COST 3.42
BIODEGRADABLE PUMA INCYCLE T-SHIRT
GHG € 1.20
AIR € 0.70
WATER € 0.34
LAND USE € 0.06
WASTE € 0.06
TOTAL COST 2.36

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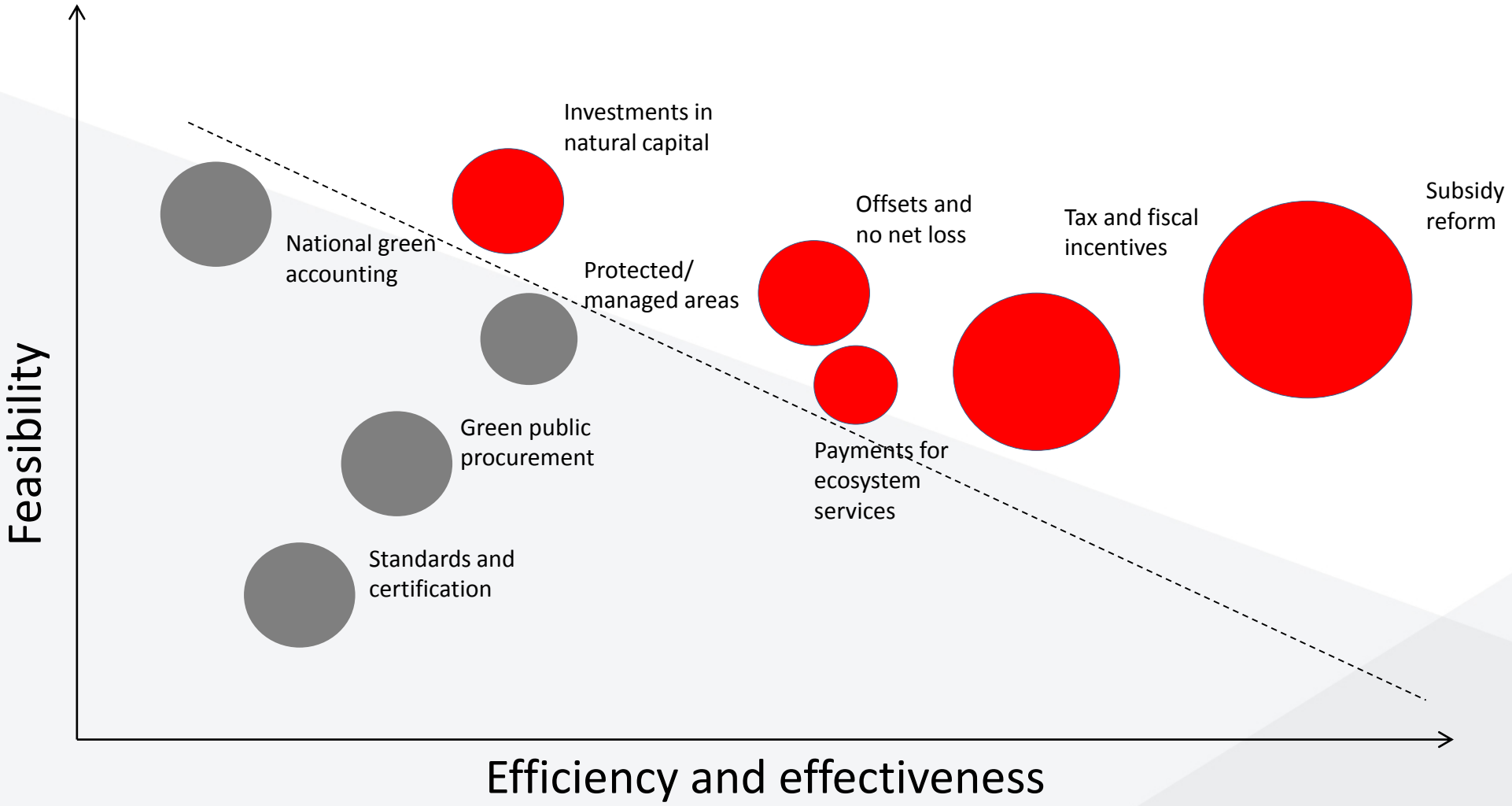
Public policy priorities?
Five best options to leverage business



wbcsd ecosystems

WBCSD/OECD 2012

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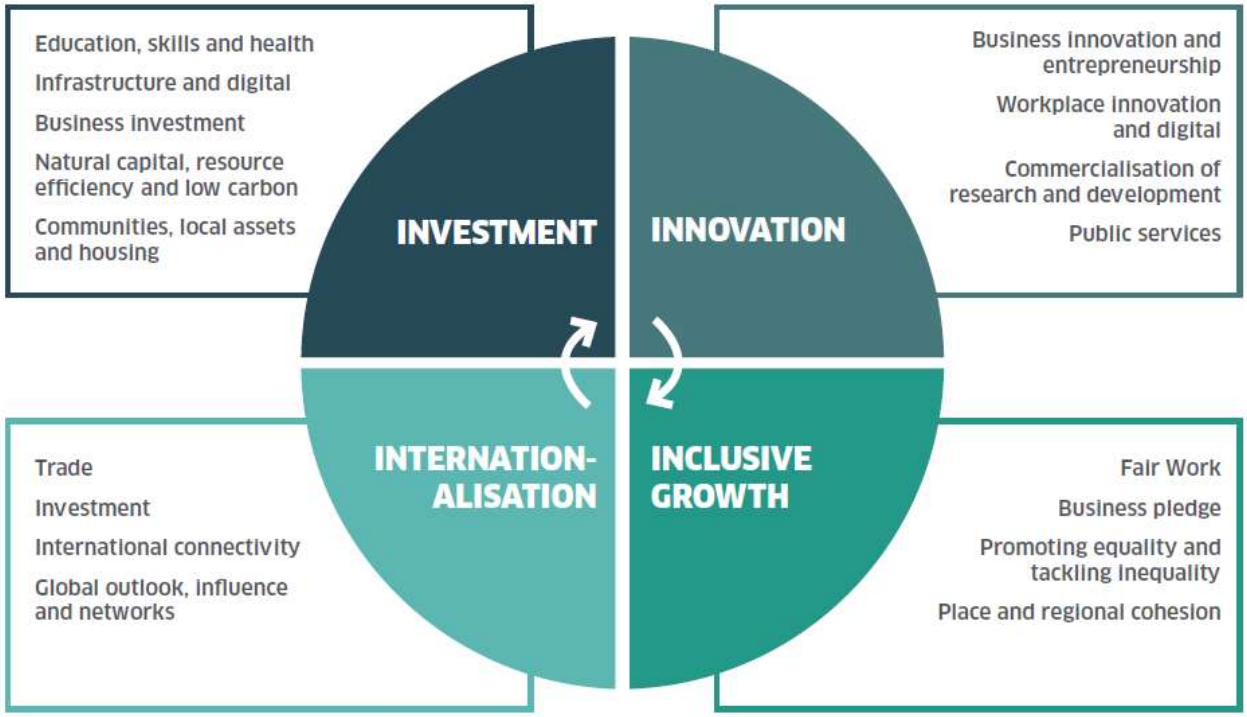
Government Economic Strategy

Figure E.2: Four priorities



Natural capital, resource efficiency and low carbon

Communities across Scotland benefit from the goods and services that our natural environment provides, including food, renewable energy, water purification, flood mitigation and places for recreation, education and inspiration.

Protecting and enhancing this stock of natural capital, which includes our air, land water, soil and biodiversity and geological resources is fundamental to a healthy and resilient economy. It also supports sectors such as agriculture, forestry, fisheries, tourism and renewables.

Case example

PEATLANDCODE

Department for Environment Food & Rural Affairs

IUCN UK Committee

Peatland Programme

BIRMINGHAM CITY University

Sustainable Uplands
Learning to manage future change

relu
Rural Economy and Land Use Programme

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Payments for Ecosystem Services

- ✓ A *voluntary* transaction where:
- ✓ A *well-defined* ecosystem service (or land use likely to secure that service)
- ✓ Is being "bought" by a (minimum one) ecosystem service *buyer*
- ✓ From a (minimum one) ecosystem service *provider*
- ✓ If and only if the ecosystem service provider secures provision (*conditionality*)
- ✓ Clear, verifiable, measurable
- ✓ Not yet monetisable, but could be in future

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How much will it cost?

The Costs:	
Capital cost to restore the peat bog, depending on degree of damage.	£257-£400 per hectare
Cost of monitoring over a 30 year contract	£126 per hectare
Management costs over the 30 years	£180 per hectare
Total cost for a 100 hectare site	**£56,300-£70,600**
A £72,435 Corporate Social Responsibility (CSR) restoration project would be equivalent to paying £7.50 per tonne CO_2-eq (including a 25% carbon buffer). NB for some projects the costs may be higher – up to £15 per tonne CO2-eq.	
The Benefits:	
Expected Greenhouse Gas emission reduction benefits depending on type of restoration and state of damaged peatland.	3.9-4.2 tonnes of CO_2-equivalent per hectare per year,
Total Greenhouse Gas emission reductions for a 100 hectare site, over 30 years.	**11,700-12,600 tonnes of CO_2** (equivalent to a year's CO_2 emissions of over 7000 average family cars)
If this CSR investment were turned into an asset, the investment would break even by the end of the contract, with a projected carbon market value of £7.50 per tonne between 2020-2030. Further returns on investment would be possible under higher market values.	

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Case study

NATURAL ENVIRONMENT RESEARCH COUNCIL

Knowledge Transfer Network
Environmental Sustainability

UPSTREAM THINKING
A South West Water Initiative

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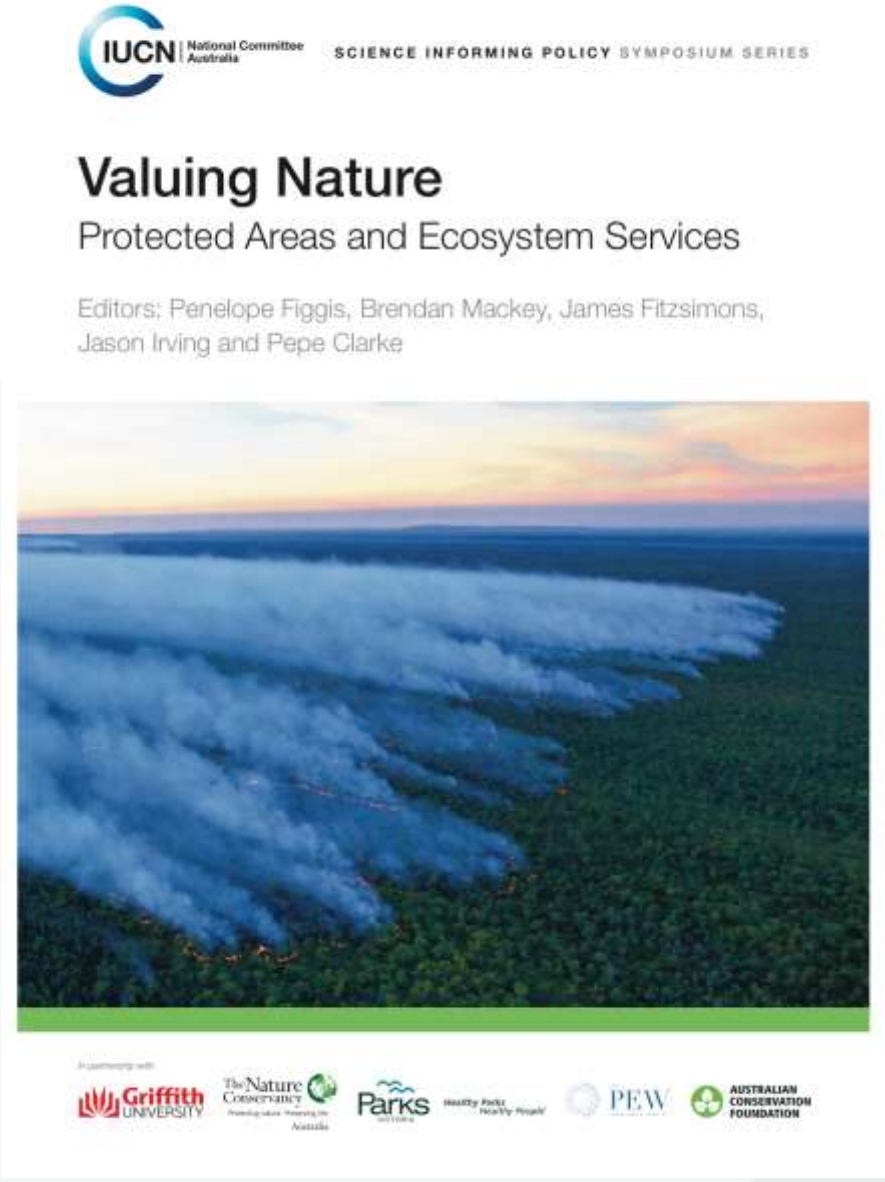
Case study

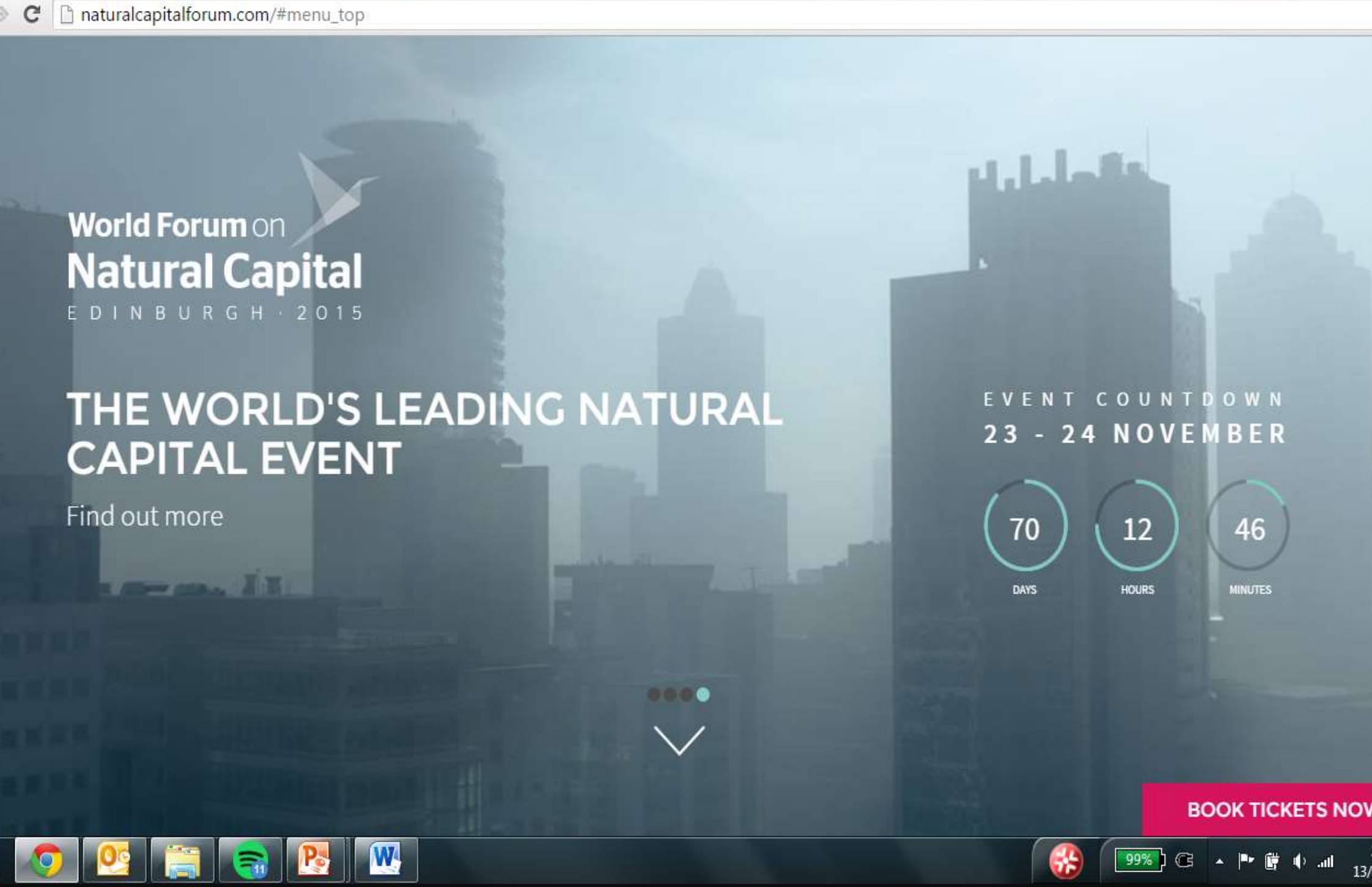
"As a business that depends on peatlands for drinking water, we believe that restoring and maintaining peatlands in good condition can save the company and our customers money, whilst protecting the climate and wildlife.

Our Upstream Thinking programme is already improving drinking water quality and reducing water treatment costs by improving land management on the moors. The Peatland Code offers us an opportunity for this work to be recognised nationally, and work with others to realise the benefits of healthy peatlands for the climate and wildlife."

Lewis Jones, South West Water


IUCN National Committee Australia
SCIENCE INFORMING POLICY SYMPOSIUM SERIES
Valuing Nature
Protected Areas and Ecosystem Services
Editors: Penelope Figgis, Brendan Mackey, James Fitzsimons, Jason Irving and Pepe Clarke
Griffith UNIVERSITY
The Nature Conservancy
Parks
PEW
AUSTRALIAN CONSERVATION FOUNDATION

- Massive funding gap in excess of $100 billion for PAs globally
- Budgets from national & sub-national governments declining
- Protected area natural capital stocks and ecosystem service flow valuations a critical first step
- Creation of measurable and verifiable packages which give investors confidence they will create conservation impact
- Monetisable ecosystem services still controversial and in early stage development
- Need strong regulation and ethical frameworks to ensure positive outcomes for PAs and for nature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