VALUING NATURE

The Business Impact School and Business Engagement under the Valuing Nature Programme

Guy Duke, Business Champion

Aim of the School, programme

- To develop a Valuing Nature research community with a broader understanding of how research on valuing nature can be translated in to private sector decision-making and innovation.
- Speakers drawn from VNP Business Interest Group and other relevant businesses & business initiatives at forefront of innovation related to valuing nature.
- Opportunity to interact – Q&A, breaks, meals
- Hands-on session
- Field trip

Importance of the impact agenda

- Increasing emphasis on research impact, and the research-innovation-commercialisation continuum.
- Critical to research careers and funding
- Impact evaluated in applications for funding – UK, EU…
- Impact also a consideration in UK higher education funding.
- Ability to deliver impact a key skill sought by universities when appointing researchers.

Valuing nature & business impact

- Valuing nature agenda increasingly of interest to business
- Failure to value nature can present risks, valuing nature can present opportunities to business – RoI, reputation…
- VNP active in Business Engagement through:
  - Business Interest Group
  - Promoting business engagement in VN-funded projects
  - Business Impact Schools – London, Edinburgh
  - Other activities planned – round-tables, business impact brokering, business impact in Global Challenges research, business impact conference…

VALUING NATURE PROGRAMME

Valuing Nature Programme Report No. 3

Identifying Priorities for the Health & Wellbeing Funding Call:
Pathways to Impact with Business

May 2015

Features of a good proposal likely to deliver business impact

- 1+ business partners in proposal
- Secondments to business
- Research objectives/activities designed with business, to deliver business impact (co-creation)
- Research extends through innovation towards market application
- Skills in team to present business case for uptake of research outcomes
- Synergies with business R&D
- Funding and/or in-kind support from business

Building in business impact

- Research design stage
  - Which businesses benefit, how
  - How are business decisions made
  - Agree mutual expectation of outcomes
- Project implementation stage
  - Secondments, mentors
  - Embedding value of nature in decision-making
- Communication & dissemination
  - Business-friendly language
  - Make data available to business

Natural hazards & extreme weather events

Examples of business risks and opportunities:

- Temperature extremes and impact on water supply (link to toxins)
- Work on rainscapes (prevent surface water entering sewage systems)
- Business risks of water catchment management for enhanced H&W outcomes, e.g. soft vs hard (concrete) solutions

Human exposure to pathogens and natural aquatic toxins

Examples of business risks and opportunities:

- Algal blooms in reservoirs
- Natural marine toxins in aquaculture, marine fisheries
- Insurance risks related to human exposure to pathogens

Urban ecosystems

Examples of business risks and opportunities:

- Connecting blue and green corridors for flood control
- Delivery of multiple benefits from green space
- Urban landscape management to optimize H&W outcomes

VALUING NATURE

Valuing nature research and analysis for the Ecosystem Markets Task Force – translating research for business impact

Guy Duke, Business Champion

Living With Environmental Change

VALUING NATURE NETWORK
Bridging disciplines and building relevance

UEA University of East Anglia

NATURAL ENVIRONMENT RESEARCH COUNCIL

defra Department for Environment Food and Rural Affairs

ecosystemmarkets TASK FORCE

OPPORTUNITIES FOR UK BUSINESS THAT VALUE AND/OR PROTECT NATURE'S SERVICES

Guy Duke, Principal Investigator

GHK eftec Imperial College London URS

THE ECOSYSTEM MARKETS TASK FORCE

- **Natural Environment White Paper – commitment to establish business-led Ecosystem Markets Task Force**
  - *"to review the opportunities for UK business from expanding green goods, services, products, investment vehicles and markets which value and protect nature's services."*

- **EMTF reported March 2013, via Green Economy Council, to**
  - **Secretary of State for Business, Innovation and Skills**
  - **SoS for Energy and Climate Change**
  - **SoS for Environment Food and Rural Affairs**

THE ECOSYSTEM MARKETS TASK FORCE

- **CHAIR – Ian Cheshire,** Group CEO, Kingfisher plc.
- **MEMBERS**
  - ***Kim Buckland***, Co-Founder, Liz Earle
  - ***Vivienne Cox***, Chair, Climate Change Capital
  - ***Jack Frost***, Director, Johnson Matthey Fuel Cells
  - ***David Hill***, Chairman, Environment Bank
  - ***Russ Houlden***, Chief Finance Officer, United Utilities
  - ***Mike Wright***, Executive Director, Jaguar Land Rover
  - ***Martin Roberts***, Programme Director, Cambridge Natural Capital Leaders Platform
  - ***Amanda Sourry***, Chairman, Unilever UK and Ireland
  - ***Peter Young***, Strategy Director, SKM Enviros and Chairman, Aldersgate Group

THE VNN SCOPING STUDY - OBJECTIVES

1. Review the evidence available in the UK National Ecosystem Assessment
2. Establish the potential for business opportunities based on nature's services
3. Identify actions to enable relevant markets
4. Identify priorities for further EMTF work

THE STUDY TEAM

Guy Duke – PRINCIPAL INVESTIGATOR	Independent	Ecosystem services markets, policy, research & knowledge exchange
Matt Rayment	GHK	Environmental economics
Mavourneen Pieterse	GHK	Environmental economics
Ian Dickie	eftec	Environmental economics
Kerry ten Kate	Independent	Offsetting
Tony Juniper	Independent	Corporate sustainability
Mohammad Rafiq	Independent	Certification
Steve Smith	URS	Payment for ecosystem services
Nick Voulvoulis	Imperial College London	Environmental technologies

GHK eftec Imperial College London URS

GHK

THE SCOPING STUDY - METHOD

1. Development of a conceptual framework (CF)
2. Application of CF for analysis of National Ecosystem Assessment (NEA)
3. Innovative thinking in study team to identify business opportunities, related enabling actions, further work
4. Stakeholder consultation, based on Discussion Paper - workshop, peer review

NEA ANALYSIS

1. Drivers of change
2. State and trend of habitats
3. Status and trends in ecosystem services
4. Changes in ecosystem service values
5. Responses

- **Long-list of opportunities**

TYPES OF BUSINESS OPPORTUNITY

1. Product markets
2. Offsetting
3. Payment for ecosystem services
4. Environmental technologies
5. Markets for cultural services
6. Financial and legal services
7. Ecosystems knowledge economy
8. Corporate ecosystem initiatives

CATALOGUE OF PROPOSALS (Annex 1)

- 40 ideas – building on long-list
- Several ideas per ‘type’
- For each:
    i. Brief description
    ii. Sector relevance
    iii. Potential size of market
    iv. Potential benefits for ecosystems
    v. Enabling actions
    vi. Further research
- Synergies between various opportunities

ANALYSIS OF MARKET POTENTIAL

- Ability to tackle risk faced by business
- Potential demand
- Scalability and transferability of good practice
- Feasibility of overcoming any barriers
- Strength of underpinning evidence
- Potential role for SMEs
- Short-term payback potential
- Job creation potential
- Long-term potential for competitive UK advantage

‘MOST PROMISING’ OPPORTUNITIES

- 12 ‘most promising’, as ranked by study team
- For each, suggestions for further EMTF and other research
- Balance between those that may be taken forward by business alone, and those requiring policy/regulatory action
- NB: other promising ideas listed in the report

‘MOST PROMISING’ OPPORTUNITIES

Rank	Opportunity
1=	Biodiversity offsets including through conservation banking
1=	Peatland carbon code (& woodland carbon code)
3	Woodland enhancement through larger market for woodfuel
4	Developing the UK ecosystems knowledge economy
5	Layered PES – PPP for the natural environment
6	Carbon sequestration as an ‘allowable solution

‘MOST PROMISING’ OPPORTUNITIES

Rank	Opportunity
7	Expanding the reach and value of sustainability certification
8	Optimizing the benefits of sustainable tourism
9=	Global centre of excellence for ES certification
9=	Water reuse technologies
11	Reducing risks for insurers through investment in GI
12	Developing environmental bonds as vehicles for investments in nature

PHASE 2 RESEARCH & ANALYSIS

- EMTF identified/agreed ‘diamonds in the mud’ based on considerations including:
  - **Credible short-/medium-term market opportunity, payback potential**
  - **Potential contribution to jobs & growth**
  - **Potential contribution to UK competitive advantage**
  - **Potential benefit to nature**
  - **Multi-sector &/or multi-scale (SME/corporate) business opportunity**
  - **Limited barriers, more-or-less ready to go**
  - **Potential for EMTF to add value**
  - **Potential synergies between those to take forward**
- EMTF commissioned further work on ‘diamonds’ with a view to developing robust EMTF recommendations, including relevant ‘buy-in’

Opportunity 1: Biodiversity Offsetting

Size of opportunity:

- **Market scale**: c.6500 ha pa development impact to offset > demand for 6-10,000 ha pa offset sites > £90-470 m/yr (= 0.1-0.8% value of new-build construction) cf £400 m pa agri-environment spend; EU market £ multi-bn; significant export market.
- **Distribution of costs and benefits**: costs accrue largely to landowner selling land for development; benefits to businesses delivering offsets (largely rural SMEs)
- **Benefit to nature**: delivers over 20 yr restoration/creation & long-term management of 108,000-338,000 ha habitat (cf 1m ha SSSI) – would revolutionize conservation in UK
- **Liquidity**: Mandatory > ↑demand > ↑ supply > ↑liquidity; more liquid if permit trading beyond local level; need to build supply in advance; potential to aggregate/pool offsets for greater benefit to nature.

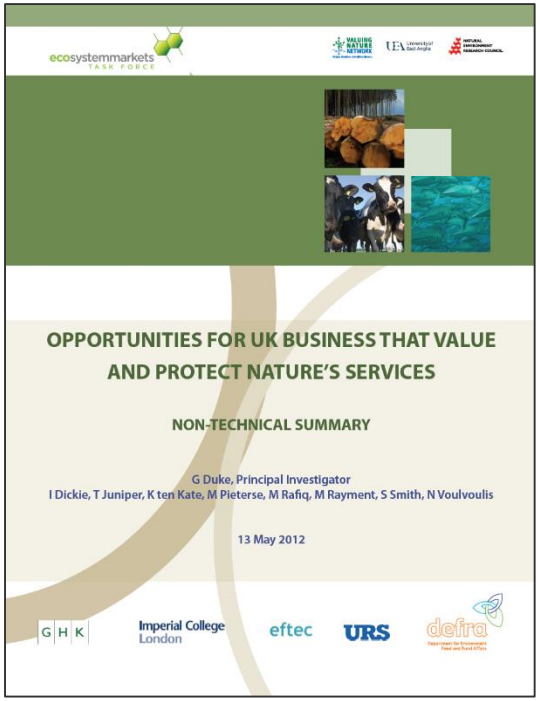
Opportunity 1: Biodiversity Offsetting

Ease of implementation:

- **Conducive context**: Policy & fiscal imperative, current policy window; strong potential demand, no shortage on supply side; data and methods available; main barrier is political (stress can free up planning system, boost growth)
- **Benefits to developer**: streamlined permitting; reduced uncertainties; more sites released for development; discharged l/t environmental liabilities; gain in NDA; reputational gain
- **Scalable**; innovators/brokers emerging; good practice is transferable; potential for public leverage of private activity

Opportunity 1: Biodiversity Offsetting

- **Risks**
  - Risks of **perverse impacts** on nature – apply principles/best practice
  - **Offset 'blight'** – unlikely but need checks and controls
  - **Impact on land values**: ↓ price paid for developable land ; supply side land values less volatile in more flexible, liquid market (v. limited local supply < ↑ land prices)
  - **Conflict with food production**? – a non-starter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NON-TECHNICAL SUMMARY
G Duke, Principal Investigator
I Dickie, T Juniper, K ten Kate, M Pieterse, M Rafiq, M Rayment, S Smith, N Voulvoulis
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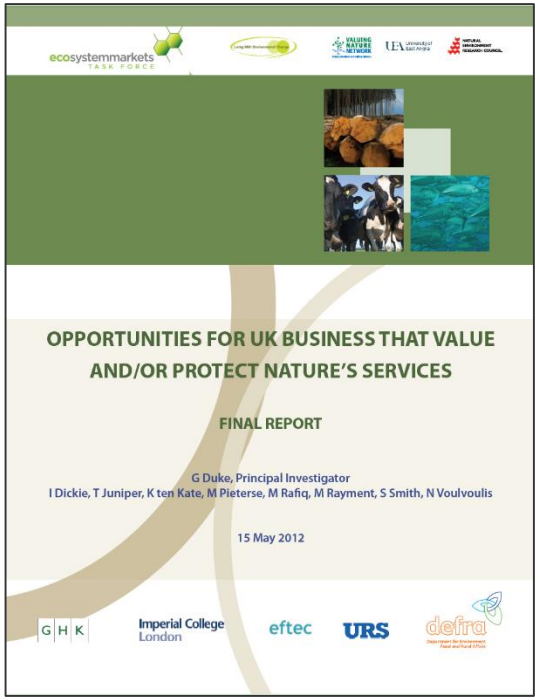
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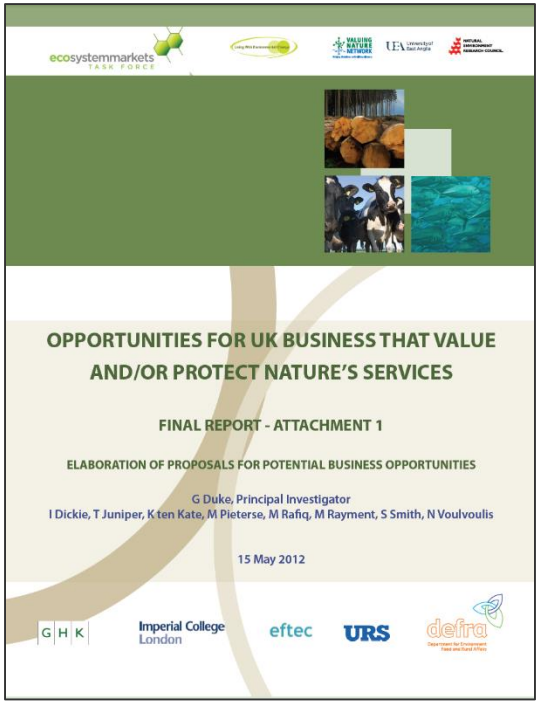
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FINAL REPORT - ATTACHMENT 1
ELABORATION OF PROPOSALS FOR POTENTIAL BUSINESS OPPORTUNITIES
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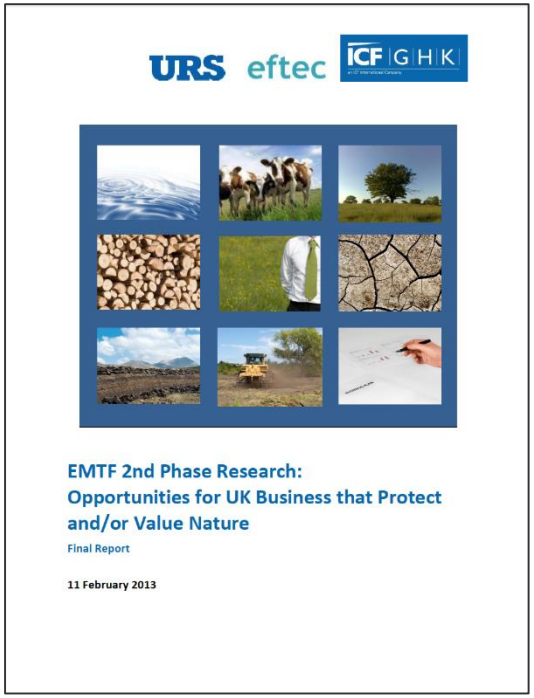
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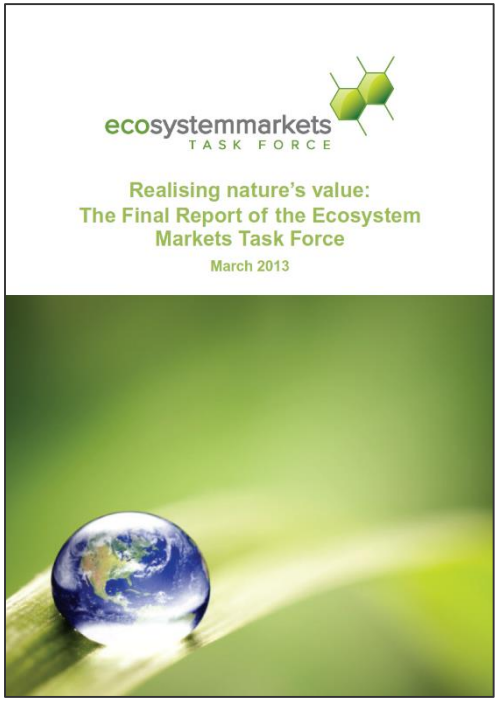
EMTF 2nd Phase Research:
Opportunities for UK Business that Protect and/or Value Nature
Final Report
11 February 2013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TASK FORCE
Realising nature's value:
The Final Report of the Ecosystem Markets Task Force
March 2013

EMTF FINAL REPORT

Ecosystem Markets Task Force. (2013). *Realising Nature's Value: The Final Report of the Ecosystem Markets Task Force*.
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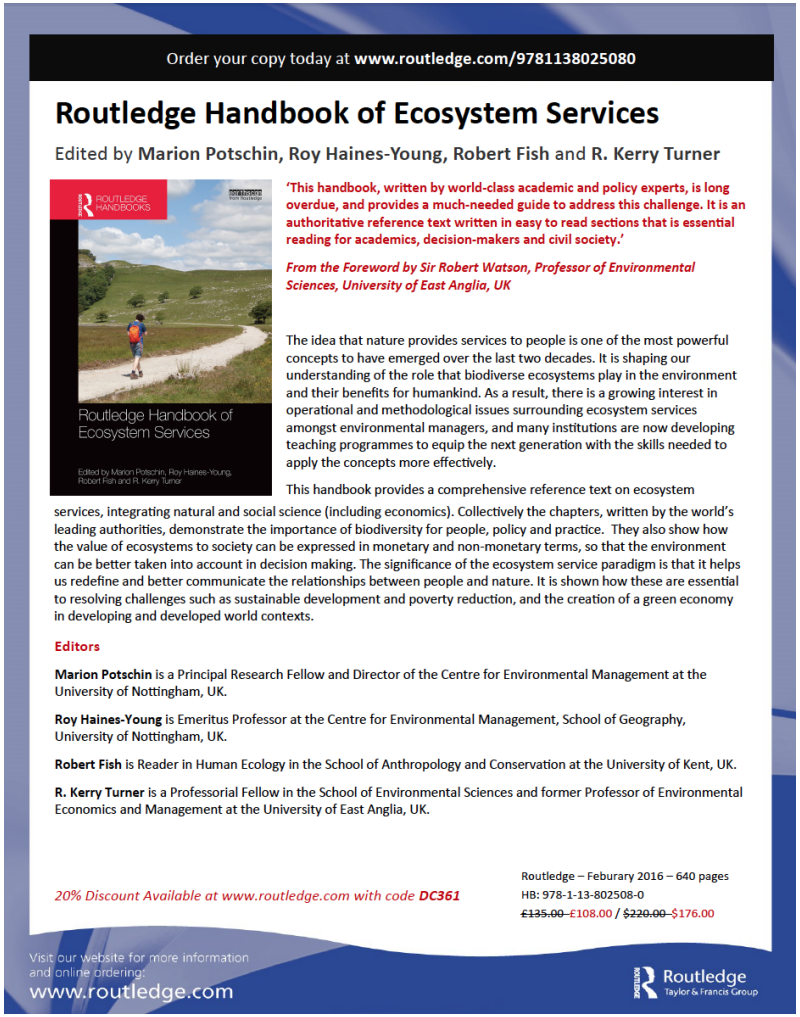

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Routledge Handbook of Ecosystem Services

Edited by **Marion Potschin, Roy Haines-Young, Robert Fish** and **R. Kerry Turner**

'This handbook, written by world-class academic and policy experts, is long overdue, and provides a much-needed guide to address this challenge. It is an authoritative reference text written in easy to read sections that is essential reading for academics, decision-makers and civil society.'

From the Foreword by Sir Robert Watson, Professor of Environmental Sciences, University of East Anglia, UK

The idea that nature provides services to people is one of the most powerful concepts to have emerged over the last two decades. It is shaping our understanding of the role that biodiverse ecosystems play in the environment and their benefits for humankind. As a result, there is a growing interest in operational and methodological issues surrounding ecosystem services amongst environmental managers, and many institutions are now developing teaching programmes to equip the next generation with the skills needed to apply the concepts more effectively.

This handbook provides a comprehensive reference text on ecosystem services, integrating natural and social science (including economics). Collectively the chapters, written by the world's leading authorities, demonstrate the importance of biodiversity for people, policy and practice. They also show how the value of ecosystems to society can be expressed in monetary and non-monetary terms, so that the environment can be better taken into account in decision making. The significance of the ecosystem service paradigm is that it helps us redefine and better communicate the relationships between people and nature. It is shown how these are essential to resolving challenges such as sustainable development and poverty reduction, and the creation of a green economy in developing and developed world contexts.

Editors

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ECOSYSTEM SERVICES AND THE GREENING OF BUSINESS

Guy Duke

Introduction – business impacts and dependencies on natural capital and ecosystem services

Businesses are linked to natural capital and ecosystem services through impacts and dependencies. All businesses have an impact on natural capital and ecosystem services, either directly (e.g. through consumption of biotic products, or clearance or conversion or disturbance of natural ecosystems) or indirectly (e.g. through energy use, which contributes to climate change, which, in turn, affects ecosystems). Conversely, all businesses are dependent, either directly (e.g. for raw materials) or indirectly (e.g. for clean water, or an attractive living environment for their employees), on ecosystem services (Figure 43.1).

For example agricultural businesses depend on numerous species and ecosystem services, including genetic diversity, pollination, freshwater supplies and nutrient cycling. They impact natural capital and ecosystem services by clearance and conversion of land, through soil and water pollution and through greenhouse gas emissions. Forestry businesses depend on ecosystem services, including freshwater supply, climate regulation and nutrient cycling, and have an impact on natural capital and ecosystem services through commercial logging. Mining and quarrying can lead to large-scale destruction of habitats and have indirect impacts through road-building and pollution. The oil and gas industries depend on supplies of freshwater, and have impacts through upstream operations (drilling, construction, etc.) and downstream combustion and greenhouse gas emissions. The personal care and cosmetics industry depends on numerous natural ingredients. The water supply and sanitation sector is highly dependent on a range of ecosystem services for sustainable and cost efficient operations. The transport industry has large impacts on natural capital and ecosystem services. Many tourism businesses depend on ecosystem services, including the amenity value of natural areas. Many manufacturing industries depend on a range of ecosystem services, and impact through supply of raw materials, footprint of facilities and pollution from production processes (TEEB, 2012).

Natural capital accounting

One of the main ways in which businesses are engaging with the concepts of natural capital and ecosystem services is through natural capital accounting (NCA; see also Houdet et al.,

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