



UNIVERSITY OF  
CAMBRIDGE

Department of Land Economy

# The value of nature and the nature of value: revisiting the principles

Ian Hodge

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VALUING NATURE

# The value of nature and the nature of value: revisiting the principles

1. Some initial disclaimers
2. The valuation conundrum
  - Total Economic Value
  - Is price a value?
3. The value of known unknowns
  - The process of valuation
  - Fundamental principles
  - Contextual framings
4. The value of unknown unknowns
  - Ecology and ignorance
  - Resilience as an objective
5. Approaches to decisions
  - Arguments for and against
  - 'is some number better than no number?'
  - Ways forward



# 1. A disclaimer: paddling in deep waters

- Increasing acceptance of monetary valuation of environment, and wish for more?
  - “At present we cannot robustly value everything we wish to in economic terms, wildlife being a particular challenge.” (25 Year Plan, p.135)
- But little attention to underpinning principles and assumptions
- Limited aim: to expose complexity implicit in valuations



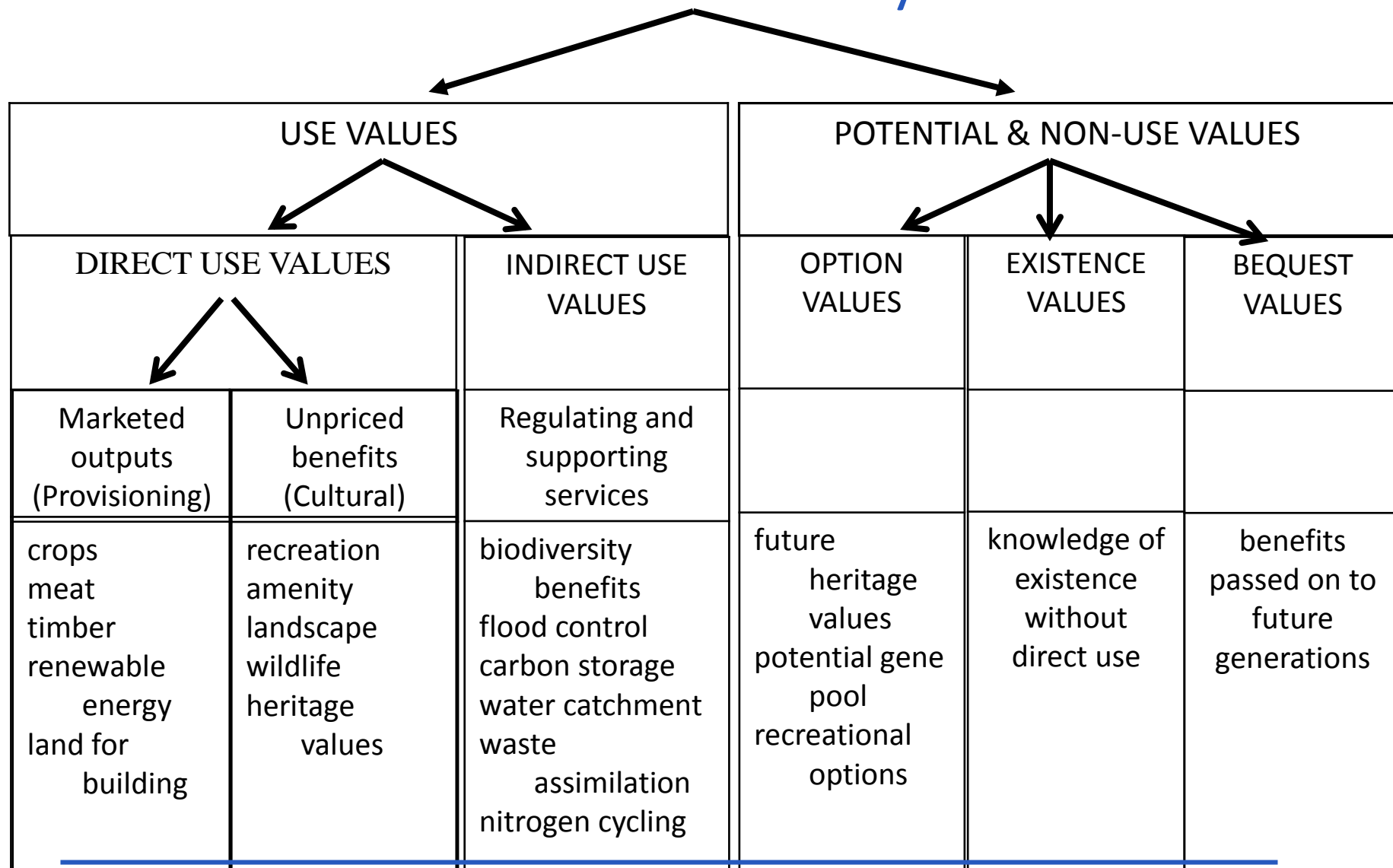


## 2. The valuation conundrum: Impossible but unavoidable?

- Choices necessarily imply valuations
- E.g. destroy sacred site to build road – road brings greater ‘benefit’
- Is it better to make the valuation explicit?
- Should values use the same metric to enable comparison?
- What are the values to be considered?
- Does price indicate value?



# Total Economic Value of Ecosystem Services





# What is the value of daffodil habitat?





# Is a market price a value?



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# 3. The value of known unknowns

- The process of non-market valuation

Two aspects:

- Alternative conceptions of value
- What are the contexts within which we frame valuation questions?



# The process of valuation

- Identifying the value in question and counterfactual.
- Identifying all those who are potentially affected by that value
- Deriving evidence about intensity of individual preferences from (a sample of) those affected and well informed.
- Measuring in commensurable units of value: money (representing what someone would forego to attain the good in question)
- Aggregating across all those affected, based on some weighting.



# Looking for evidence: Monetary Valuation Methods

DEMAND CURVE APPROACHES		NON-DEMAND CURVE APPROACHES
<i>EXPRESSED PREFERENCE</i>	<i>REVEALED PREFERENCE</i>	



# Alternative conceptions of value

Three approaches:

- Consequentialism : Things have value because they lead to something good
- Deontological argument: Human actions may be right irrespective of their consequences
- Intrinsic value: Value of something in and of itself independent of humans



# Consequentialist argument

- Whether an act is morally right depends only on its *consequences*.
- Things have value because they lead to something good (esp. human welfare) (instrumental value)
- Basis of welfare economics and cost-benefit analysis.
- E.g. The value of an irrigation reservoir is represented by the increased value of agricultural production
- E.g. The value of nature is based on the pleasure we get from it.



# Deontological argument

- An act is judged on whether it is right or wrong, irrespective of its consequences.
- Rightness is based moral norms.
- E.g. murder is wrong
- E.g. we have a duty to protect species, regardless of the assessed benefits or costs.





# Intrinsic value

- Value of something in and of itself or for its own sake (may be associated with either consequentialism or deontological ethics)
- Attributes value to non-human things independent of human experience (non-anthropocentric)
  - To sentient beings, living beings, aggregations of life
- Challenging definition and analytical implications
- E.g. Aldo Leopold's Land ethic



# Contextual framings of valuation

- The market analogy
- Property rights assumptions
- The distribution of income
- Individual or collective judgement
- Consumer or citizen
- Ethical or religious associations
- Cultural context



# The market analogy

- In a market we can discover preference through repeated experiences by trial and error
  - Not possible for non-market, public goods (Bruni and Sugden, 2007)
- Market framing may be rejected in principle as a decision-making framework (Sandel 2012/3)





# Property rights assumptions

- Framing question makes assumption about rights and duties associated with the value
  - Willingness to pay for a good
    - What is someone willing to forego in order to gain a benefit?
    - Assumes we do not have rights
  - Willingness to accept compensation for a loss or bad
    - What compensation would make someone indifferent to whether do or don't bear cost?
    - Assumes have rights



# Distribution of income weights influence on results

- WTP depends on distribution of income – ability to pay
- £1 is more valuable to someone on a lower income
- E.g. if WTP to preserve habitat for migrating birds amongst high income people exceeds WTP by low income people for access to land for food production – is this the ‘right’ thing to do?



# Individual or collective provision

- Public goods are provided collectively but valuation methods seek values individually
    - ‘lone ranger’ model of valuation (Sen, 2000)
  - What is assumed about other peoples’ behaviour?
    - My contribution is sufficient to achieve outcome
- Or
- I will contribute only if other people’s contributions are assured, but
  - If other contributions are assured, I can free-ride





# Acting as 'consumer' or 'citizen'?

- Different preferences when acting as consumer and citizen
- Valuation methods assume 'consumer', but policies adopted for citizens
- Sagoff (1988) 'category mistake'
- E.g. (We) vote to keep Antarctica empty but (I) choose to visit?



# Cultural or sacred associations

- Links with historical events, development on site of significant historic events
- Sacred assets, sites or norms
- E.g. Aboriginal understanding of human relationship with land



## 4. The value of unknown unknowns

- Valuation assumes we know what we want to value
- In practice – ignorance
  - Conservation faces unknown threats
    - Invasive species
    - Processes of climate change
    - Unknown thresholds
  - Outcomes of interventions are uncertain
    - Restoration of water quality in a lake
  - And may have unexpected consequences
  - Biodiversity maintains unknown supporting services that may be lost with ecosystem decline
  - ‘Efficiency’ may drive out redundancy and reduce resilience



# The impossibility of valuation in complex systems?

- If ecological processes and outcomes are incompletely understood
- The counterfactual is unknown
- We cannot know the additionality caused by an intervention
- We cannot value the intervention



# Resilience as an alternative objective

- Resilience:
  - “the capacity of a system to absorb disturbance and re-organize while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks” (Folke, 2006)
- The aim of resilience management is not to maximise (short-term) economic gain but to achieve sustainable long term production
- Value lies in the capacity of the system to absorb shocks while maintaining essential functions.
- A different approach to valuation?





# 5. Arguments for and against monetary valuations?

For

- Choices necessarily imply valuations anyway
  - Decision to proceed implies benefit > cost
- Hard numbers persuade politicians
  - Most don't interrogate assumptions and methods
- Even if 'wrong' gives an indication of importance

Against

- Discriminates against unvalued aspects
- Buries unidentified assumptions in valuation process
- Accepts income distribution for weighting preferences
- Data and methodology may be weak
  - Most don't interrogate assumptions and methods



# ‘Is some number better than no number?’

- Do we think of nature in terms of the benefits we get from it?
- Is a market framing appropriate?
- Are there plausible methods for deriving economic values for nature?
  - Different components of value of nature?
- Do ‘decision-makers’ respond more to valuation than to reasoned argument?
- Do monetary valuations omit or distort arguments too much to be helpful?

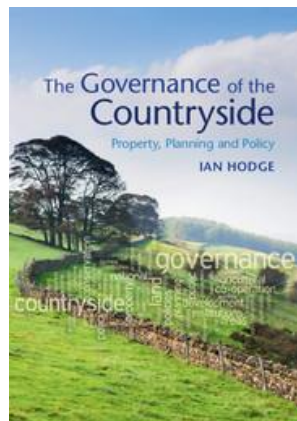


# Ways forward

- Assembling varieties of evidence
  - Including plausible valuations alongside other evidence and recognising potential ignorance
- Sensitivity to alternative framings
  - E.g. IPBES 'natures contribution to people' (Diaz et al. 2018)
- Pluralism in methods
  - quantitative and deliberative
- Institutional settings
  - locating decisions with those most affected coupled with incentives to promote social goals



Ian Hodge  
idh3@cam.ac.uk



Cambridge University Press  
2016

## Envisioning a British Ecosystem Services Policy

### Policy Brief on an alternative approach to rural land policy after Brexit

David Gawith and Ian Hodge  
Department of Land Economy  
University of Cambridge

May 2017

#### Key Points

- Brexit creates a unique opportunity to improve agricultural policy. Policy must have a clear vision of a new direction from the outset.
- An ecosystem approach to rural land policy can address many of the problems the CAP and demonstrate substantial public benefits.
- The fundamental objective of a British Ecosystem Services Policy (BESP) would be to secure the long term social value delivered from ecosystems in the UK.
- Under a BESP, subsidies to farmers would be selectively reduced, and environmental goods and services would be purchased directly from those best placed to provide them.
- At a national level, a BESP would provide a strategic approach and oversight for the procurement of ecosystem services.
- A BESP would encourage the establishment of Payment for Ecosystem Services (PES) schemes.
- A BESP would establish national procurement funds to purchase ecosystem services that are not amenable to PES schemes.
- At a local level, a BESP would create governance structures to support local priorities and co-ordinate the delivery of ecosystem services.
- Funding would be allocated on a competitive basis and available to a wide range of stakeholders.
- Development of a BESP would require considerable political, technical, and bureaucratic resources, however the benefits of a BESP would likely substantially outweigh its costs over time.
- Some farmers would lose from the removal of direct subsidies, however a BESP would also provide opportunities for diversification and ease entry into the sector.

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Policy brief: “Envisioning a  
British Ecosystem Services  
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