



HAL
open science

Deliberative and Non Monetary Valuation of Ecosystem Services

Jasper Kenter

► **To cite this version:**

Jasper Kenter. Deliberative and Non Monetary Valuation of Ecosystem Services. Les services écosystémiques dans les espaces agricoles. Paroles de chercheur(e)s, pp.127-138, 2020, <10.15454/nwq9-zk60_book_ch14>. <hal-02503327>

HAL Id: hal-02503327

<https://hal.science/hal-02503327v1>

Submitted on 20 Apr 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons CC BY-NC-ND 4.0 - Attribution - Non-commercial use - No Derivative Works - International License

14



Deliberative and Non Monetary Valuation of Ecosystem Services

Jasper Kenter

Senior Lecturer (Associate Professor), Department of Environment and Geography, University of York

I will be talking about deliberative, participatory and non monetary approaches to valuing ecosystem services. One of the case studies that I will be showing will also particularly demonstrate how you can apply this kind of approach in developing countries. To underpin this presentation, I will first talk about the assumptions behind neoclassical environmental economic valuation. In contrast, ecological economics, as it has developed over the last few decades, departs from these principles in various ways. I will look briefly at the critiques around conventional economic approaches. This is mainly from the perspective of the ontology of values. Values cannot just be said to be individual, they result from shared social processes that are inter-subjective. Then I will illustrate how a shared, social values based approach to valuation can be applied in practise, with two case studies. One is around the valuation of rainforest ecosystem services in the Solomon Islands. The second is from the United Kingdom (UK), focusing on a payments for ecosystem services scheme for peatland ecosystem services and how valuation can inform that in a deliberative way.

Valuation from a neoclassical perspective

Let us start then with some assumptions of neoclassical economics. I am sure many of you know the key fundamental principle of what economics is about from this perspective: to consider an efficient allocation of goods. How does the environment come in? Many ecosystem services are externalities. They are not being considered in conventional markets or conventional economic decision making. That leads then to market failure, so markets are unable to efficiently allocate goods in a way that is desirable to society. From this perspective, the aim of environmental valuation is to internalise these externalities and improve economic decision making.

What then is the environmental economic approach to understanding how we could establish the value to society of any given policy? We look systematically at different benefits and costs that are associated with that policy. They are associated with different winners and losers, and we look at how that is established at any given period of time. We look at including different components of environmental value, expressed by the framework of **total economic value** (TEV). TEV includes:

- › direct use values,
- › indirect use values that we might derive, from regulating ecosystem services in particular.
- › option value for maintaining goods for possible use in the future.

- › and also non use value, which includes existence, bequest and altruistic value.
 - » Existence value is the value of simply knowing that something will continue to exist independent of any other benefit to us.
 - » Bequest value means that we value the knowledge that ecosystems are there for the benefit of future generations.
 - » Altruistic refers to the value of knowing that other people might benefit from environmental goods.

Neoclassical environmental economics has various **assumptions** about these values. They are considered to be individual and purely self interested. Even these altruistic, existence and bequest values are considered to be something that solely relates to oneself: they are expressed as my preferences, and I benefit by having these preferences fulfilled. I am trying to maximise satisfaction across different preferences to maximise benefits, or utility, to me, in a rational way. There is an assumption that I always have all the information I need to establish those preferences. At any given time, we could ask people about their preferences or people may make a market transaction, and in these cases we assume that these preferences and underlying values are fully informed.

However, when we look at contingent valuation or choice experiment studies, where we ask people about their values through stated preferences, typically in the form of their willingness to pay (WTP), the reality is different. We find in terms of people's motives in **empirical reality** that there is a component of self regarding values based on utility, but there is also genuine altruism rather than the notion of caring about others for our own sakes. There are motivations that have nothing to do with utilitarian preferences, such as people's or nature's rights. Associated with that is our sense of duty to perform a particular action or to take something into account. There are also virtue based motivations and narrative-based values (see e.g. Forster, 1997; O'Neill *et al.*, 2008). These are different types of ethical principles that can underpin values and that are fundamentally different from utility. People might also express certain values as political gestures. For example, I have done a lot of work with users of the sea, such as divers and sea anglers. Anglers in the UK are very concerned about marine protected areas (MPAs). These anglers love the sea and love the places they visit, and they are often very strongly in favour of conserving those places. However, when we ask them, 'How much would you be willing to pay for an MPA to be established?', many of them protest against that and state they are not willing to pay anything. This is because they

are concerned that these MPAs will lead to them being excluded. This is even though their exclusion of recreational users is not on the table, but they worry about it. Their WTP does not reflect their utility for conservation but rather an emotional response to a political concern.

Key issues around values in valuation

So far I have two related challenges to valuation: the difficulty with WTP as a catch-all indicator, and that economic va-

luation methods capture a diversity of normative expressions. As an example, take this story told by a diver. There is no mention of ethics or normative categories, but you can see that there is an ingrained sense of value in this statement. Fundamentally, there is a connection between this person and the place that he is visiting. The place has a profound impact on him in a way that opens up a sense of value. There are strong values that have to do with our emotional connection to places, the way that these places contribute to our identity, *et cetera*. These are the kinds of values that are not captured by economic values and are also not captured by any of the other conventional ethical categories. We are talking about issues like connectedness and spiritual and aesthetic experience but also exploration and adventure. You can say that these experiences contribute to people's utility that is captured by stated preferences and market behaviour, but that is not how people relate to them themselves – they don't see these ecosystems and places as being subject to trade-off to maximise one's individual, self-regarding utility. Instead, they see them as self-evidently valuable, regardless, and often despite people's self-regarding preferences.

There are also other issues around the neoclassical approach to valuation and appraisal of policies (for an overview see Parks and Gowdy, 2013 and Kenter *et al.*, 2015). There are questions of power, equity and long term sustainability. There are questions of the inter subjectivity of values: values are not necessarily individual but they arise through a social process, and so they may be different depending on the social context. There are cognitive issues. There is an assumption there that we have fully informed preferences, but in many cases, this is not the case, such as when we are talking about complex goods and uncertainty. We are often talking about a lack of familiarity with ecosystem services, biodiversity and other environmental goods.

I ticked all of these [values] and more, I added religious which is strange really as I am an atheist. I was in one place and visibility opened up and it was like a cathedral, with jewel anemones lighting up everywhere. I felt like I was in the presence of God, if there is such a thing. I was crying when I came out of the water.

A diver, in Kenter et al., 2016a

Then there are aggregation issues. As we discussed, in conventional economic appraisal we are somehow having to aggregate benefits and costs across different winners and losers. This is not as straightforward as it seems. Usually, in neoclassical cost benefit analysis, benefits and costs are simply added up, but the consequence of this is that people who have a lot of money to gain or lose will count more than people who do not. If you have a higher income or you have higher wealth, you have a higher willingness to pay than if you have less. So by simply adding up, we privilege the powerful, or at least the rich. There is an ethical and political issue there, which is not usually recognised by economists. They pretend that they are value neutral, but in reality, they make implicit ethical and political choices (Hockley, 2014).

But applying some kind of weights to make them count the same is also not necessarily the way forward. Take, for example, a mining project. Some people might have to be removed from their land for a new mine, or they will lose some access to their resources and ecosystem services they depend on. Who is to say that the losers be counted the same as the winners? Should we consider that in this case, the rights of losers mean that their values should be counted more? Is it at all possible to calculate a level of just compensation that would mean an efficient outcome could be achieved? Or are efficiency and justice fundamentally at odds here? How do power-relations come into play in terms of setting the terms?

Meta-values are the explicit or implicit values that underpin the rules and approaches on how we treat different values, aggregate them and resolve conflicts between them (Kenter *et al.*, 2016b, 2019).

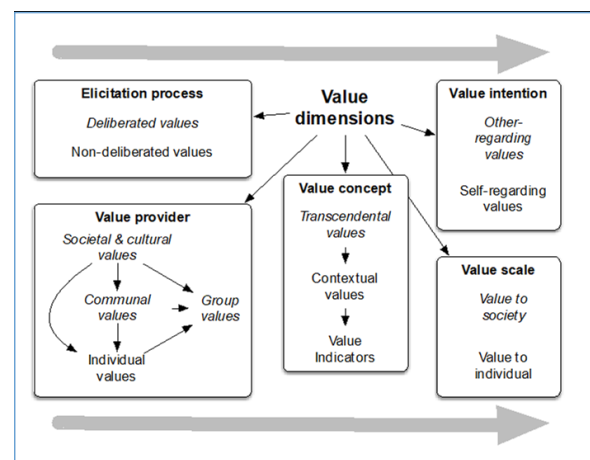
Questions around power and justice are not generally considered in cost-benefit analysis, but the meta-values underpinning an analysis will prejudice a particular course of action more so than another, and usually it is the course of action that favours those with vested economic interests. So what is the alternative? What would be an ethically or politically appropriate way to aggregate values, what should be our meta-values? There is no single objective answer. It is a subjective question and, in a sense, it sums up fundamental questions behind every democratic debate.

In a relatively simple situation, where you do a cost-benefit analysis, these issues might not be so relevant and the question of conventional economic efficiency may be most important. In those cases, cost-benefit analysis might be quite appropriate. However, when we are dealing with complex or contested issues, there might be many different interests that need to be weighed against each

other, then we reach the limits of neoclassical cost-benefit analysis approaches. We need a form of deliberative democracy to address some of these issues.

Value concepts and dimensions

Before I talk more about deliberation, I want to go back to our understanding of values (figure 1). In the second phase of the UK National Ecosystem Assessment (UK NEA), we identified three main concepts of values: transcendental values, contextual values and value indicators (see Kenter *et al.*, 2014, 2015). **Transcendental values** are principles and life goals, things that guide us regardless of the context, such as honesty, power, tradition, harmony with the environment, justice, enjoyment, wealth, security – a very broad range. These values are generally not considered in economics, but they are the main types of values that are discussed in sociology and social psychology. These transcendental values are applied by people to a particular context, and that helps to inform their **contextual values**, which are opinions of the importance or worth of something in particular. These can then be measured through **value indicators** such as WTP, but we could also use non monetary measures or qualitative indicators.



*Figure 1. Shared and social values framework: the five dimensions and seven main types of shared and social values. Bold titles indicate non-mutually exclusive dimensions of value. Emerging from the dimensions, we can differentiate between types of values that might be termed shared, social, or shared social values (italicised) and other types of values. For example, provider is a dimension that indicates who might provide values in a valuation setting; societies, cultures, communities and ad-hoc groups provide societal, cultural, communal and group values, which are all types of shared or social values. Individuals also provide values, but these are not termed shared or social, unless they can be classified as such on a dimension other than that of value-provider. Grey arrows signify that the type of elicitation process and value provider strongly influence what value types are articulated along the concept, intention and scale dimensions. (Kenter *et al.*, 2015)*

Besides value concept, there are other dimensions of values that we considered in UK NEA. There is the elicitation process: are values deliberated or non deliberated? Next, who is providing the values? Conventional economic valuation would look at individual values, but there are also types of shared values that we might want to consider: the values that people express as communities, geographical communities but also communities of practise; and the societal and cultural values that underpin them. Finally, there are ad hoc group values that can be expressed collectively by a group through a shared social process, for example by consensus or a vote. Another dimension is value scale. Do values relate just to individuals, for example individual WTP, or are they a value to society, such as social WTP? For example, we might think society should invest € 1 million in an environmental project rather than investing it somewhere else. Finally, there is the dimension of value intention: are values about others or are they self-regarding?

More recently, we extended the UK NEA dimensions to consider lenses of values. Value lenses are the ways values are conceived along the dimensions discussed above. Underpinning these value lenses lie epistemic and procedural lenses particular to the knowledge tradition through which values are considered. These lenses can again be expressed in relation to different dimensions, such as normativity, constructedness, and power and justice. By better understanding these different lenses, we can better navigate and bridge different perspectives and approaches to assessing values (Kenter *et al.*, 2019; Raymond *et al.*, 2019).

Shared values and individuals

Ideas about good, right and desirable operate at a societal and cultural level and they shape our institutions, our politics, the way we organise society. It is generally accepted that our individual values are heavily influenced by societal values. At the same time, they are also interpreted through our own individual experience, our own history, our own way of looking at things, which is unique to us. But if individuals represent their culture to some degree, why would you need to specifically elicit shared values? Why do we need to elicit values in a way that is not focused on the individual, but that looks at the group values that people establish collectively?

Value formation

As I mentioned earlier, conventionally, valuation only asks about people's contextual values and indicators, not transcendental values, as they are assumed to underpin them anyway. But when

transcendental values are not explicit, they may not be fully translated into contextual values, especially when we are talking about goods that people are unfamiliar with. **People still need to form their values**, and that is not just a process of getting information and then thinking things through; value deliberation also involves considering one's transcendental values, which is ultimately important in life. We apply that question then to particular contexts and that is what forms contextual values more fully. The way we frame questions about values thus will influence how people's values are formed. If we only provide people with information and ask them about their utility, then values will be relatively narrow. The values elicited might not be fully formed with regard to people's underlying, shared, transcendental values. If we want to have a proper, robust valuation process, in order for people to fully form their values about goods that are complex or that they are unfamiliar with, then they need to fully deliberate their transcendental values and how to apply them to a specific context, highlighting the need for a deliberative democratic value formation process.

Monetary valuation

In relation to monetary valuation, we find two different approaches to deliberation in the literature (table 1): Deliberated Preferences (DP), where deliberation is primarily focused on information; and Deliberative Democratic Monetary Valuation (DDMV), where transcendental values and information are debated. If we look at empirical deliberative monetary valuation studies, there is a spectrum between these two archetypal approaches, though most studies sit more at the DP pole. In DP, values are still conceived of as individual, utilitarian preferences. In contrast, DDMV is about eliciting group values to collectively establish what participants consider to be the common good. There is also more emphasis on complexity and uncertainty rather than just the question of familiarity. There is more emphasis on value plurality and values are aggregated through deliberation and negotiation rather than aggregation of individual utilities. There are three ways in which people might express their monetary values through these kinds of methods. Individual WTP is most common: how much would you be willing to pay for this or that change? A second value indicator is a **fair price**: what would be a fair price to ask members of a particular group, community or society to pay for such an improvement? Thirdly, there is social WTP: how much should society pay for this as opposed to that? DP studies tend to use individual WTP, DDMV leans more towards fair prices and social WTP.

	Deliberated preferences (DP)	Deliberated democratic monetary valuation (DDMV)
Conception of deliberation s	Informing preferences through group discussion	Deliberating on plural values to consider public good
Issues the approach addresses	Familiarity Weak value plurality	Complexity and uncertainty Strong value plurality Value aggregation
Means of establishing value to society	Aggregation of individual utility	Deliberation and negotiation
Value concept focus	Contextual & indicators	Transcendental, contextual & indicators
Value provider	Individual in group setting	Group
Rationality assumptions	Instrumental	Communicative
Conception of representativeness	Statistical	Statistical or political
Scale of value and value indicators used	Value to individual (individual WTP or fair price)	Value to individual (fair price); Value to society (deliberated social WTP)

Table 1. Deliberative monetary valuation (Kenter, 2017).

Case study: Solomon Islands

I will give two examples of fair price studies in the Solomon Islands, and the UK. The Solomon Islands (figure 2), North East of Australia, has an incredible bio cultural diversity. It is a hotspot for endemic species, while culturally there are 74 languages spoken among less than 1 million people. It is one of the most biologically and culturally diverse places on earth.

85% of the population lives on subsistence farming and land is mostly controlled through customary systems. This means that people's access to land is not managed through government or private ownership. It is based on clan ownership, with different people within a clan or extended family having different rights. Logging, cash crops and mining and associated increasing western influence on culture are causing rapid change in both environment and society.

The area where I worked is called Kahua, on Makira Island, where I was working with a bridging organisation called the Kahua Association. About 5,000 people lived in Kahua in 2009, but this will have substantially increased now. It is a very isolated place, there are no roads. There is no centralised electricity, though gradually there are more solar panels. People earn less than USD 1 a day (Kenter et al., 2011), but there is a traditional subsistence affluence. It is quite a rich environment that the rainforest produces. Their traditional cropping has historically been very productive and people did not feel deprived. However, there is population

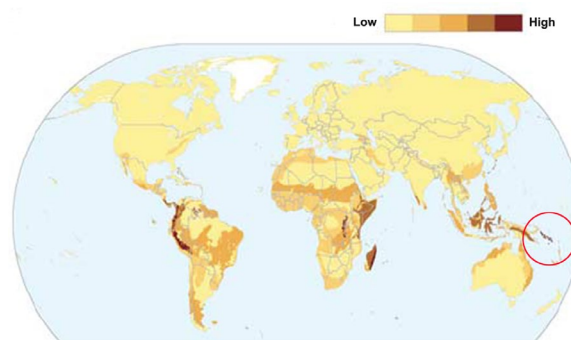


Figure 2. Location of the Solomon Islands on a map of species endemism (adapted from Lamoreux et al., 2006).

growth and increasing environmental impact, both because of population growth and the way that people manage the environment. This is eroding subsistence affluence, because there are increasing pressures on the environment and increasing issues regarding access to ecosystem services.

Participatory action research

My colleague Ioan Fazey and I worked there for some time. We initially looked at perceptions of change, in 2007 (Fazey et al., 2011). In 2009, we then did a substantial amount of field work looking at trade-offs between forest ecosystems and cash crops (Kenter et al., 2011). In 2012, we looked at potential conflicts between mining and conservation (Kenter and Fazey, 2015; Raymond and Kenter, 2016). Through this action research, we ran 162

focus groups in total across these three research programmes, training 22 local research assistants. They worked as our eyes and ears, and as they facilitated these focus groups this allowed us to overcome language and cultural barriers.

What is an action-research methodology? There are a number of principles here that I would like to highlight. People should be empowered to analyse their own reality, so we do not come in there and tell them how things work or what way to think. People can determine that for themselves and we facilitate that rather than acting as experts. We are learning to be very experiential, so we are working a lot with local materials and doing hands on work. We are also working and doing things in groups rather than on an individual basis. This matches customary decision making, where decisions are all made on a group deliberated.

2009: Forest ES evaluation

In the 2009 study, we looked at tradeoffs between cash crops and subsistence, incorporating deliberation in two ways. We integrated deliberation into the monetary valuation itself, so people deliberated on what their values were and voted on what the group should set as a fair price to pay. Then there were a number of targeted deliberative exercises; we conducted two rounds of valuation with these deliberative exercises or interventions sitting in between. We wanted to see if the interventions changed how people valued these ecosystem services. About 500 people, 10% of the population, participated in one of the workshops.

Choice experiments

We used a deliberative choice experiment, with a straightforward design. We looked at three environmental attributes (table 2). The first, Gue, is a rattan vine. People use this for traditional basket weaving and most importantly for building traditional houses. We also looked at water quality and thirdly, cash crops versus food gardens. The choice experiment allowed us to evaluate how people traded these off against each other and against

the monetary cost, framed as a contribution by individual households to a community fund, of different combinations versus a business as usual scenario where gue, water quality and subsistence gardens would degrade and cash crops increase. People had a substantial preference in the first round of deliberative valuation for maintaining and improving ecosystem services through some kind of conservation scenario. They felt it was more important to maintain subsistence gardens than having a massive increase in cash cropping at the cost of subsistence. Total WTP added up to about one third of people's income, so it was very substantial.

We then had a range of deliberations more broadly around the impacts of cash crops on culture and environmental impacts, followed by a second choice experiment with the same design. Following these discussions, there was a refusal to trade off ecosystem services against the cost attribute altogether. In other words, ecosystem services were seen as priceless, with participants consistently choosing the environmentally most positive alternative without regard for the cost, with many people expressing that they were willing to pay their entire income towards maintaining gue, water quality and subsistence gardens if necessary.

Deliberative learning

What explains this? People in the deliberative interventions discussed their more deeply held values, focusing on transcendental values that bound together as a society, what people called Kahua values. Core Kahua values include mutual care, sharing, and collective discussion and permission before any decision is made or important action is undertaken. These important cultural principles were seen as under threat through an increase in cash cropping.

Cash cropping led to more of an individual business focused approach rather than the customary collective approach, in terms of the way people prepare land for their gardens, clear it and then harvest. It is all a collective affair, providing both a cultural identity function and a social safety net. However, in cash cropping, things turn out diffe-

	Baseline	Improvement	
Gue (Calamus sp)	4 hr walk	15 min walk	US \$11
Water quality	High 3 months yr ⁻¹	High all year	US \$33
Gardens	One food garden	Three food gardens	US \$29
	Three cocoa gardens	One cocoa garden	
Total			US \$73

Table 2. Fair prices for gue, water quality and gardens resulting from the first round of the choice experiment (adapted from Kenter et al., 2011). Modal income: US \$220. All figures per household per annum

rently. Individuals might go and clear an area of land. Then they plant cash crops, then harvest them, but then one of their cousins, a brother, uncle, might come and say, 'Look, give me part of the harvest. Give me part of the profit, because I also have rights to this land. It is our land and it is customary land'. But, then the first person might say, 'No, you have not put any effort into it'. Thus, there arises a land rights conflict and this then gets mediated by one of the chiefs. Typically, this is resolved in a way where the land is split up, so rights get divided up. This is thus leading to a gradual, informal privatisation of land. That then has a serious cultural backlash in that people started to work and live in a more and more individualistic way, eroding the traditional social fabric. Participants considered these dynamics as very negative, and leading to various further undesirable effects, such as jealousy between households, because some people are more successful in their new businesses than others or would get hold of better land. Another area of learning was around how people impacted on the environment through cash cropping and how that then affected other ecosystem services. For example, clearing more areas of forest combined with overharvesting makes it much more difficult to access traditional wild medicinal species and building materials.

1. Recognition of deeper held shared values
2. Clarification of the use value of non-marketed goods
3. Appreciation of non-use value of goods
4. Increased awareness of consequences of actions and ability to change behaviour
5. Increased and more sophisticated understanding of social-ecological linkages

Table 3. Key impacts of the deliberations.

From values to decisions: change of development focus

These findings have implications for decision making in that so far, development in the Solomon Islands has for a good part focused on generating income through being more effective and efficient in terms of commercial agriculture. This has had various benefits. For example, people are more able to afford school fees, because they have a higher monetary income. But at the same time, this has resulted in a **loss of ecosystem services with major implications on social and cultural capi-**

tal. These are the kinds of externalities that have not sufficiently been taken into account regarding the way that development policies have operated so far.

Deliberation on shared values has built local capacity in various ways, by dozens of people being trained as local facilitators to facilitate those kinds of deliberation processes, through hundreds of people participating in the deliberations themselves, and through Kahua Association officials working closely with researchers. Thus there was learning at multiple levels, leading to much more of a capacity to analyse broader implications of developments, including environmental and cultural consequences (table 3). This has led to an appetite for other forms of development that are more benign in terms of maintaining social and cultural cohesion. For example, across the Solomon Islands there are increasingly examples of community conservation agreements, established collectively, and with collective benefits such as scholarship funds and healthcare facilities.

Case study: Peak District, UK

I will now turn to the second case study, where my colleague Mark Reed and I worked in the Peak District National Park in England, around nature conservation, flood risk management and a multifunctional approach to landscape management for a range of different ecosystem services provided by peatlands. A series of stakeholder workshops, involving land owners, tenants, managers, conservationists and policy makers was held over the course of 2014, starting off by looking at uses of the landscape and ecosystem functions, then linking functions to ecosystem services and services to management options. In a final workshop, we looked at valuing those services, in the context of the potential for establishing a payments for ecosystem services (PES) scheme.

However, rather than just focusing on questions of economic efficiency and addressing market failures, our primary focus was on social acceptability. We wanted to see if we could integrate shared values of the community into a potential scheme in order for it to be more sustainable by anchoring it more within the community. Objectives thus included building trust among stakeholders, assessing values to feed into a PES scheme and finding agreement with regard to different management options.

Deliberative Democratic Monetary Valuation

The final workshop was designed to implement a DDMV exercise. We started talking about the background of PES. What is it? What would a scheme look like? What is the relation with existing agri-

environment schemes? We continued with a transcendental values compass, and storytelling, where participants deliberated transcendental values and communal values of place in relation to the Dark Peak, which was the area of the Peak District that we focused on. We deliberated the relationship between evidence on how different management options would affect ecosystem services. Then ultimately, we moved towards establishing fair

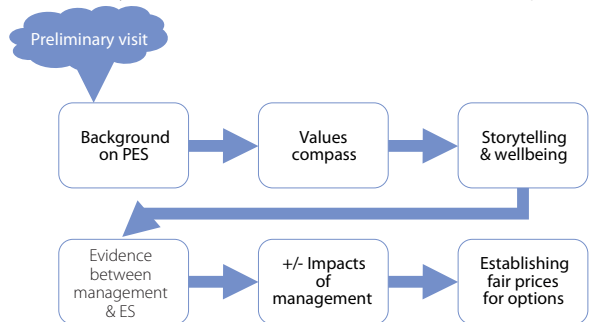


Figure 3. Final workshop outline.

prices (figure 3).

A key point of contention that arose early on and continued to be an important topic of discussion was heather burning. Burning of peatlands is a traditional management tool that many local landowners are attached to historically. An important purpose of burning is to create a mosaic landscape that maximises populations of grouse (figure 4), a ground-nesting bird which is shot in game sports, which provides a significant economic activity in many rural upland areas in the UK. However, there are different views on the evidence in terms of how burning affects biodiversity and impacts on ecosystem services such as water quality regulation. Another question was what degree of grazing can still take place in areas covered by a PES scheme.



Figure 4. A grouse.

Values compass, well-being values and storytelling

In a transcendental values compass people were asked to consider how important different principles and life goals were to them, building on the values structure work by Shalom Schwartz (1999). People first looked at how important different values were to them as individuals and then looked at them as a group, in terms of which were most important to them as a community (figure 5). Secondly, people considered the relative importance of different place-based values (figure 6), building on a pre-defined list of well-being dimensions from Kenter *et al.* (2014).

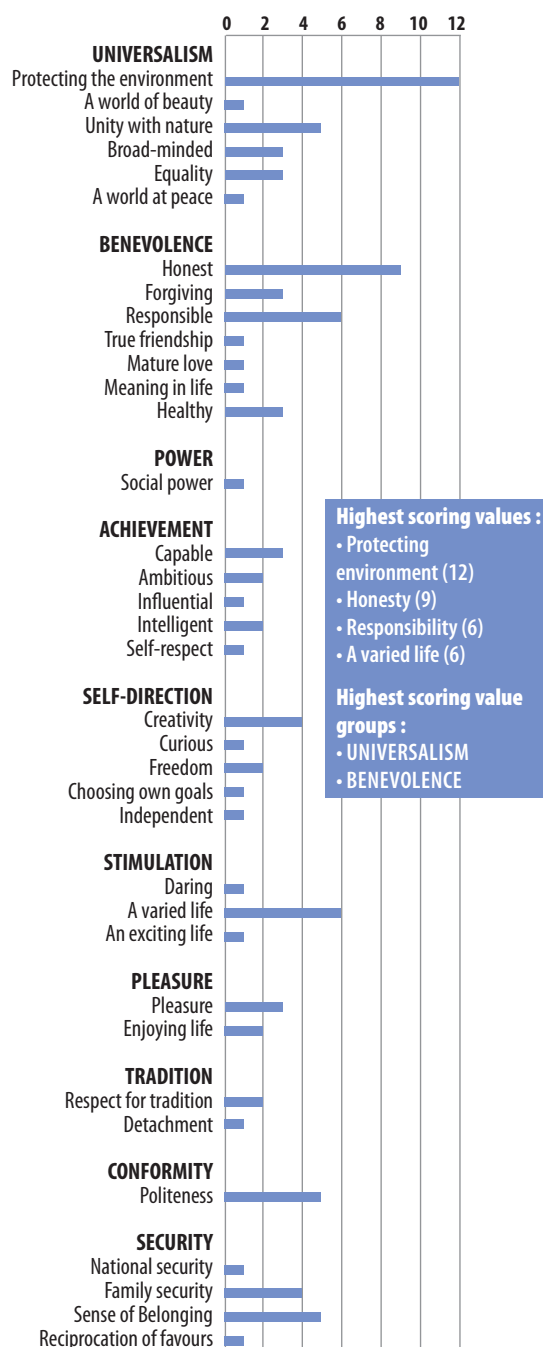


Figure 5. Importance of different principles and life goals. Numbers indicate how many participants selected the value. Participants could each select five.

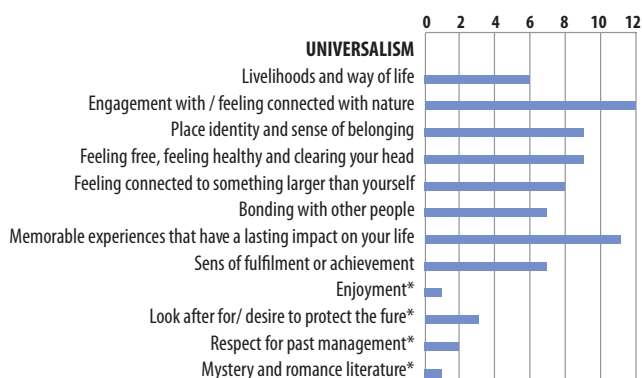


Figure 6. Places-based well-being values from the peatlands. Numbers indicate how many participants marked the value. Participants could mark any value relevant to them. Starred (*) values were added to the list by individual participants

“Guilty’ is not on values compass sheet, but it’s a feeling when one finds a special place but not wanting to share it with other moorland visitors.”

“All the time never tiring of the sound of the curlew.”

“I felt free and had an impression of my own insignificance.”

“During a walk on the Moscar Estate when I was about 8 years old, my sister, then 7, sank up to her shoulders in a green boggy bit after being told by my mother to avoid it! And then in the next generation, my own daughter did exactly the same thing, which could have had serious consequences and had a lasting impact on me. . . .”

“This story involves having a view of moorlands from both sides: my grandfather on one side was involved in the struggle for rights to roam on moorlands, while my grandfather on the other side was an upland farmer. And now my own work involves managing moorland and the balance between this and enjoying moorlands for recreation.”

In the storytelling that followed, there was a whole range of different themes that reflect those different ways that we connect to the landscape and to others, emotionally, culturally and in terms of our identity. I have given some examples of quotes.

Management options

People thereafter discussed four management options, including gully blocking with burning, gully blocking without burning, revegetating bare peat and footpath restoration. They looked at the impacts on how these management of options would affect different types of ecosystem services (table 4): the social effect and implications for community values, and economic and environmental effects. People emphasised local services, such as water quality, and biodiversity. There was little mention of climate benefits, even though carbon sequestration was seen from a policy perspective as central to peatland restoration. There was considerable consideration of knock-on effects on community.

	Effect [showing number of times prioritized]	Who’s Affected?
Social effects and community values	<ul style="list-style-type: none"> Improved water quality [12] Improved aesthetics [1] Increased risks involved with public access (due to boggy ground) [1] Improved water storage [1] Increased wildfire risk [1] Increased carbon storage [1] 	<ul style="list-style-type: none"> Everyone
Economic effects	<ul style="list-style-type: none"> Reduced water treatment costs [9] Reduced wildfires (compared to no gully blocking), although potential increase in wildfires compared to gully blocking where burning is allowed [5] Grouse numbers (and knock-on effects) [1] Possible benefits in drought years [1] 	<ul style="list-style-type: none"> Landowners and managers Everyone
Environmental effects	<ul style="list-style-type: none"> Raise water table [15] Increase blanket bog species (plants, animals and invertebrates) [2] Potential increase in biomass and therefore wildfire risk Potential decrease in grouse numbers 	<ul style="list-style-type: none"> Water companies and users of water Nature conservation

Table 4. Impacts of management options on different types of ecosystem services

Establishing a fair price

Finally, people were asked to deliberate on what would be a fair price to pay landowners to put each of these management options in place (figure 7). We did not suggest or prescribe what they should consider when discussing this but left this entirely to participants. The things that they considered included a range of conventional economic considerations: direct costs, opportunity costs (compensation for both landowners, but also those indirectly affected), other indirect costs and benefits and producer surplus (profit margin). In their deliberations, people were able to negotiate an appropriate price for restoration options and an appropriate price for a no burn premium. Questions of fairness came in when considering what would be a fair profit for landowners and compensation of those indirectly negatively affected by a potential decrease in grouse shooting in the area. Where burning might be reduced or stopped, that would have a knock on effect on the community, for local hotels and restaurants, people who go out as guides, etc.; and participants felt they should be fairly compensated. As such, questions of equity and how much winners and losers should be counted when aggregating benefits and costs were explicitly discussed in addition to more conventional economic considerations.

Deliberation

Deliberation played an important role. People were able to reflect their shared transcendental values and sense of place back to the group. This was despite coming from very different interests and backgrounds that often clashed in the past. Conservation interests and traditional landowner interests had different views on what the scientific evidence was saying around issues like burning, and this was and is a contentious issue. Nonetheless, they were able to work together, and this was enhanced by people starting to realise that they had a shared sense of place. Some of their transcendental values were shared between them and they could all talk about some of the same kinds of experiences in the landscape. Thus, even though views and evidence on burning differed, participants were still willing to negotiate. Both groups made concessions. Landowners conceded that not burning could be an option if it was limited to particular areas of land and was not just a blanket option for all the options in the PES scheme. However, conservationists conceded that the PES scheme would not have to completely rule out burning. Compromises were made on both sides, arising from the reality of the political situation. However, people also gained trust to work with each other and ultimately understood that they wanted some

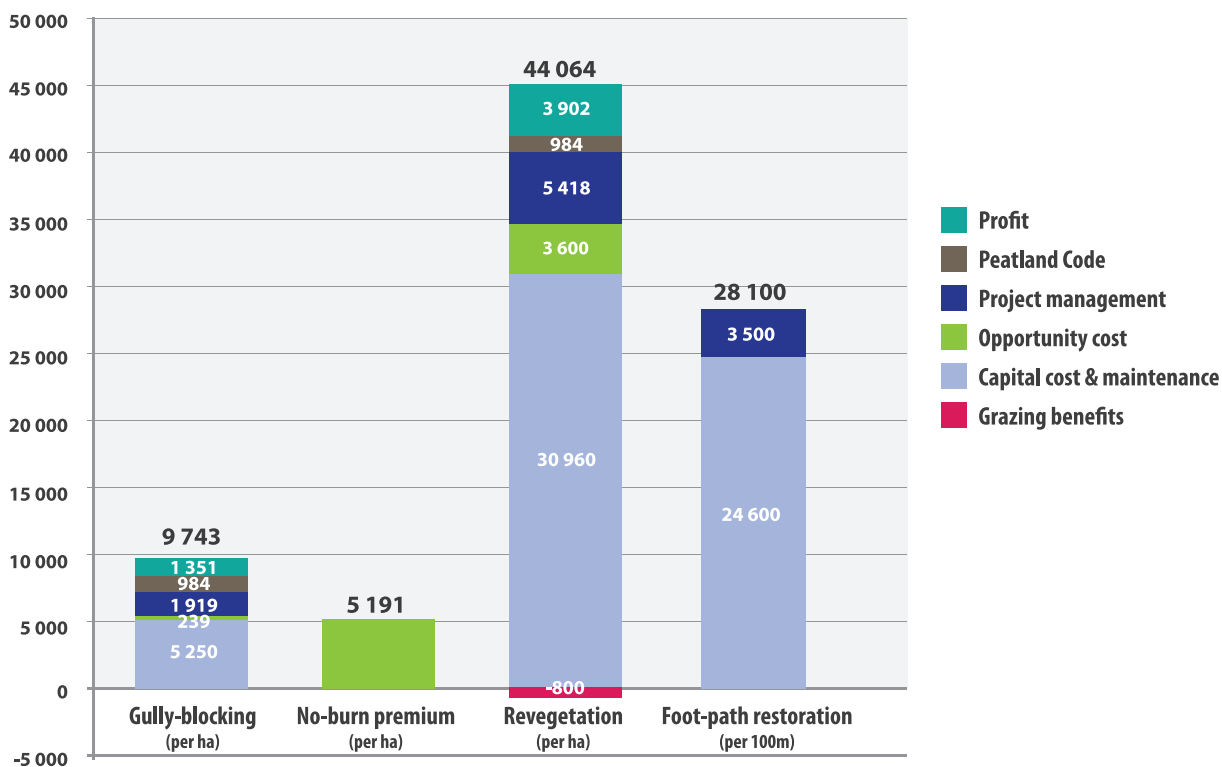


Figure 7. Fair prices for the management options in British pounds, decomposed into components established by participants. Totals are constituted over a 30 year period.

of the same things for the area in a broader sense. Thus, the deliberative valuation approach did not just establish what would be the way forward in an economic sense, but also anchored the potential PES scheme in the community, and the deliberation allowed people to overcome some prior conflict. Consequently, almost everyone wanted to take the PES scheme further, though they also felt there needed to be a lot more opportunities to feed in and consider things in more detail (table 5).

85%	agreed that deliberation had increased their knowledge and helped them learn from others' perspectives
17%	felt they had been able to give useful input into the PES process
93%	Appreciation of non-use value of goods
+++	More time needed to go through details

Table 5. Feedback from participants..



© Alewhey

Conclusion

In conclusion, if we look at both case studies, participants discussed a mix of traditional economic considerations, such as tradeoffs, opportunity costs, etc., but in their deliberations, shared transcendental values also played an important role. They helped people to form contextual values in a different way than they would have done if they had not been deliberated. The deliberations enabled social learning between participants and allowed participants to anchor fair prices and express values in a much more pluralistic way than in conventional environmental economic valuation approaches, including the way values linked to traditional culture in the Solomon Islands and the importance of sense of place to people in the Dark Peak. An important factor in enabling this was the combination of open deliberation with targeted exercises, specifically focused on learning and eliciting and bringing out formerly implicit transcendental values. Thus, well-designed deliberation provides an important means for tackling complex environmental issues.

There are several important challenges that I have not had time to go into in any detail. A first question is around inclusivity: who is sitting around the table and who is not? A second is: how are power dynamics dealt with between these people? What are the key factors that influence outcomes of deliberation? Certainly, there are disadvantages of deliberation that need to be mitigated in the way processes are designed, and we have published a range of publications in special issues of the journals *Ecosystem Services* and *Sustainability Science* which discuss these issues in more detail (Kenter, 2016; Kenter *et al.*, 2016a, 2016b, 2016c, 2019; Orchard-Webb *et al.*, 2016).

To access these and ongoing research, also see <http://www.sharedvaluesresearch.org>.

Références bibliographiques

- Fazey, I., Pettorelli, N., Kenter, J.O., Wagatora, D., Schuett, D. (2011) Maladaptive trajectories of change in Makira, Solomon Islands. *Global Environmental Change* 21, 1275–1289. <http://doi.org/10.1016/j.gloenvcha.2011.07.006>
- Forster, J. (Ed.) (1997) *Valuing Nature?* Routledge, New York.
- Hockley, N. (2014) Cost-benefit analysis: a decision-support tool or a venue for contesting ecosystem knowledge? *Environ Plann C* 32, 283–300. <http://doi.org/10.1068/c1384j>
- Kenter, J.O., Hyde, T., Christie, M., Fazey, I. (2011) The importance of deliberation in valuing ecosystem services in developing countries—Evidence from the Solomon Islands. *Global Environmental Change* 21, 505–521. <http://doi.org/10.1016/j.gloenvcha.2011.01.001>
- Kenter, J.O., Reed, M.S., Irvine, K.N., O'Brien, L., Brady, E., Bryce, R., Christie, M., Church, A., Cooper, N., Davies, A., Hockley, N., Fazey, I., Jobstvogt, N., Molloy, C., Orchard-Webb, J., Ravenscroft, N., Ryan, M., Watson, V. (2014) UK National Ecosystem Assessment follow-on phase. Work Package Report 6: Shared, plural and cultural values of ecosystems. UNEP-WCMC, Cambridge. <http://doi.org/10.13140/RG.2.1.1275.6565>
- Kenter, J.O., O'Brien, L., Hockley, N., Ravenscroft, N., Fazey, I., Irvine, K.N., Reed, M.S., Christie, M., Brady, E., Bryce, R., Church, A., Cooper, N., Davies, A., Evely, A., Everard, M., Fish, R., Fisher, J.A., Jobstvogt, N., Molloy, C., Orchard-Webb, J., Ranger, S., Ryan, M., Watson, V., Williams, S. (2015) What are shared and social values of ecosystems? *Ecological Economics* 111, 86–99. <http://doi.org/10.1016/j.ecolecon.2015.01.006>
- Kenter, J.O., Fazey, I. (2015a) Conservation, Culture, Kids and Cash Crops in the Solomon Islands, in: Redpath, S.M., Guitierrez, R.J., Wood, K.A., Young, J.C. (Eds.), *Conflicts in Conservation Navigating Towards Solutions*. Cambridge, pp. 76–79.
- Kenter, J.O. (2016) Editorial: Shared, plural and cultural values. *Ecosystem Services* 21, 175–183. <http://doi.org/10.1016/j.ecoser.2016.10.010>
- Kenter, J.O., Jobstvogt, N., Watson, V., Irvine, K.N., Christie, M., Bryce, R. (2016a) The impact of information, value-deliberation and groupbased decision-making on values for ecosystem services: Integrating deliberative monetary valuation and storytelling. *Ecosystem Services* 21, 270–290. <http://doi.org/10.1016/j.ecoser.2016.06.006>
- Kenter, J.O., Bryce, R., Christie, M., Cooper, N., Hockley, N., Irvine, K.N., Fazey, I., O'Brien, L., Orchard-Webb, J., Ravenscroft, N., Raymond, C.M., Reed, M.S., Tett, P., Watson, V. (2016b) Shared values and deliberative valuation: Future directions. *Ecosystem Services* 21, 358–371. <https://doi.org/10.1016/j.ecoser.2016.10.006>
- Kenter, J.O., Reed, M.S., Fazey, I. (2016c) The Deliberative Value Formation model. *Ecosystem Services* 21, 194–207. <http://doi.org/10.1016/j.ecoser.2016.09.015>
- Kenter, J.O. (2017) *Deliberative Monetary Valuation*, in: Spash, C.L. (Ed.), *Routledge Handbook of Ecological Economics: Nature and Society*. Abingdon. https://www.researchgate.net/publication/282868523_Deliberative_Monetary_Valuation
- Kenter, J.O., Raymond, C.M., Van Riper, C.J., Azzopardi, E., Brear, M.R., Calcagni, F., Christie, I., Christie, M., Fordham, A., Gould, R.K., Ives, C.D., Hejnowicz, A.P., Gunton, R., Horcea-Milcu, A.-I., Kendal, D., Kronenberg, J., Massenber, J.R., O'Connor, S., Ravenscroft, N., Rawluk, A., Raymond, I.J., Rodríguez-Morales, J., et al. (2019) Loving the mess: navigating diversity and conflict in social values for sustainability. *Sustainability Science* 14, 1439–1461. <https://doi.org/10.1007/s11625-019-00726-4>
- Lamoreux, J.F., Morrison, J.C., Ricketts, T.H., Olson, D.M., Dinerstein, E., McKnight, M.W., Shugart, H.H. (2006) Global tests of biodiversity concordance and the importance of endemism. *Nature* 440, 212–214. <https://doi.org/10.1038/Nature04291>
- O'Neill, J., Holland, A., Light, A. (2008) *Environmental values*. Routledge, Abingdon.
- Orchard-Webb, J., Kenter, J.O., Bryce, R., Church, A. (2016) Deliberative Democratic Monetary Valuation to implement the Ecosystem Approach. *Ecosystem Services* 21, 308–318. <http://doi.org/10.1016/j.ecoser.2016.09.005>
- Parks, S., Gowdy, J. (2013) What have economists learned about valuing nature? A review essay. *Ecosystem Services* 3, e1–e10. <http://doi.org/10.1016/j.ecoser.2012.12.002>
- Raymond, C.M., Kenter, J.O. (2016) Transcendental values and the valuation and management of ecosystem services. *Ecosystem Services* 21, 241–257. <http://doi.org/10.1016/j.ecoser.2016.07.018>
- Raymond, C.M., Kenter, J.O., Van Riper, C.J., Rawluk, A., Kendal, D. (2019) Editorial overview: theoretical traditions in social values for sustainability. *Sustainability Science* 14, 1173–1185. <http://doi.org/10.1007/s11625-019-00723-7>
- Schwartz, S. (1999) A theory of cultural values and some implications for work. *Applied Psychology: an International Review* 14, 23–47. <http://doi.org/10.1111/j.1464-0597.1999.tb00047.x>