UNDERSTANDING AND MONITORING THE EFFECTS OF ENVIRONMENTAL INTERVENTIONS ON WELLBEING

LEARNING FROM OTHER PERSPECTIVES AND FROM EXPERIENCE

Valuing Nature Network Workshop Report

17th – 18th September 2012

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This work was supported by the Natural Environment Research Council through the Valuing Nature Network [grant number NE/I015086/1].

Hosted by the Grantham Research Institute, London School of Economics, UK

Report available from www.iccs.org.uk/wellbeing

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1 INTRODUCTION

1.1 THE PROJECT

This workshop is part of a twelve month project funded by the Natural Environment Research Council (NERC) through the Valuing Nature Network (VNN), entitled "*Capturing differentiated experience of change to ensure pro-poor ecosystem service interventions are fit for purpose*". The project is one of several that together are building a network and developing a science agenda around valuing nature to improve decision-making for the environment. The interdisciplinary project team includes ecologists, economists, anthropologists, social scientists, and conservation practitioners from Imperial College London, the Zoological Society of London (ZSL), University College London, the London School of Economics, the Wildlife Conservation Society (WCS), and FARM Africa.

The project aims to contribute to the 'individual and shared wellbeing values' component of the VNN conceptual framework for understanding valuation of ecosystem services (Fig. 1).

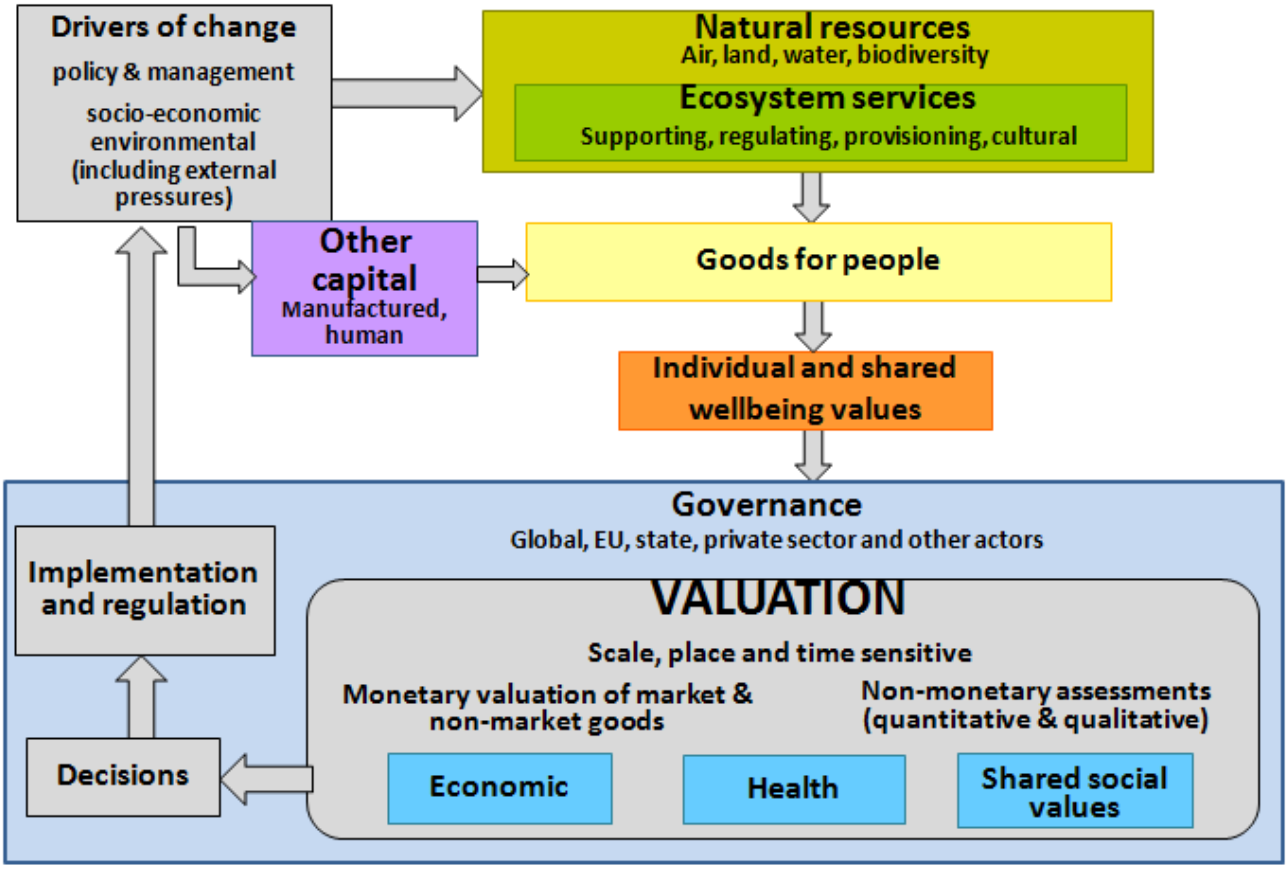

FIGURE 1 Valuing Nature Network conceptual framework (available from www.valuing-nature.net).

Changes in ecosystem services affect human wellbeing. Policy makers want to design interventions that do not have detrimental impacts on the most vulnerable groups of people. However, anticipated and actual outcomes can differ considerably; we need to understand wellbeing and how to measure it so that the impacts of these decisions can be assessed. This

project aims to explore the potential for developing conceptual and practical tools to capture differentiated experiences of change, in order to combat elite capture of benefits and ensure the poor are at the forefront of decisions.

With a focus on developing countries and citizen science approaches we can understand how to develop definitions, measurements, and methods for communicating changes in ecological attributes, wellbeing, and behaviour. A research agenda will ensure project discoveries are implemented and the resulting programme can be integrated into wider ecosystem research.

1.2 AIM OF THE WORKSHOP

Other disciplines have progressed much further than conservation in measuring wellbeing. This two day workshop included researchers and practitioners from across the globe, providing an opportunity to understand different perspectives on wellbeing and how to monitor it, including examples of initiatives already underway. Discussion focussed on how to incorporate these ideas into a framework for monitoring the effects of environmental interventions on wellbeing that accounts for heterogeneity and change over time, and how to use all this information to improve interventions.

This report summarises the ideas presented and discussed during the workshop, including recommendations for a future research agenda. A list of workshop participants and the workshop schedule are included in the Appendices, and the PowerPoint slides from each talk are available online.

2 WHAT IS WELLBEING?

This section summarises the talks by Matthew Agarwala and Allister McGregor and discussion surrounding them. Wellbeing is a social concept that drives people's choices and behaviours. It is experienced with others.

2.1 THE THREE DIMENSIONS OF WELLBEING

Wellbeing can be considered in three dimensions as identified by the Wellbeing in Developing Countries (WeD) ESRC research group (www.welldev.org.uk):

1. When your needs are met
2. When you can act meaningfully to pursue your goals
3. When you are able to enjoy a satisfactory quality of life.

The WeD research was designed to understand why poverty persists.

2.2 A RELATIONAL AND SOCIAL CONCEPT

Wellbeing combines objective, relational, and subjective aspects; what you have, what you can do with what you have, and how you feel about what you have and what you can do. The objective and subjective components are constructed through our social relationships with others. For example, even if you have a codified right you need to be able to exercise that right in relation to other people. Comparison of your situation with that of others will affect the subjective aspect of wellbeing. Participation in society, and identification and engagement with your culture are themselves components of wellbeing, and also mechanisms by which other aspects of wellbeing are experienced.

To understand wellbeing we must look at the multidimensional aspects of social, economic, and political sustainability, and therefore interdisciplinarity is essential. Society, culture, and ways of life might not be static, so temporal variation needs to be considered.

2.3 INTERNAL & EXTERNAL VALIDITY

When monitoring wellbeing, the audience for whom the measures are intended will affect whether to seek internal or external validity. Internal validity focuses on the local impact of wellbeing and will be of interest to local stakeholders. It is context-specific, providing a highly nuanced, deep understanding of the situation, including subjective and cultural components. However, it is not conducive to comparison between situations. External validity places greater focus on comparison and generalisation between cases, providing objective and standardised measures often of interest to governments and NGOs. An externally validated approach is likely to miss much of the detail captured by locally-focused approaches.

2.4 DIFFERENTIATED EXPERIENCES

Individuals within the same society will experience wellbeing differently depending on their situation. The challenge is to ensure the perceptions of the poorest people are included. Many initiatives are only able to record the perceptions of those who are wealthier. 'The poor' are not a homogenous group; wellbeing studies need to capture other characteristics and identities, such as those associated with age and gender.

This approach can reveal hidden processes. Daw et al. (2011) report on a Tanzanian octopus fishery exploited only by women due to its low livelihood value. Opening the fishery to international markets and global prices increased its value, so men could get a higher return from octopus fishing than from other livelihoods. This resulted in the women being pushed out of the fishery; the men gained a livelihood but the women lost theirs. Consequently there was no clear net increase in wellbeing, though there were differential increases and decreases.

2.5 APPLICATIONS

Wellbeing has already been incorporated into several applications, particularly in development, including the Human Development Index (Sen & ul Haq 1990), the Millennium Development Goals (UN 2002), the Millennium Ecosystem Assessment (MEA 2005), the WeD framework mentioned above (McGregor 2006) and the Stiglitz report (2009).

Common components of these approaches are autonomy, agency and freedom to act; material wealth; physical and mental health; and relationships, culture and status.

To measure wellbeing and provide a baseline before an intervention, it is necessary to have a definition from which to work, and a metric of measurement. The broader the definition of wellbeing, the more likely it may be to detect unexpected outcomes that the monitoring was not designed to consider.

3 HOW DOES WELLBEING RELATE TO CONSERVATION?

This section summarises the talk by David Wilkie, and discussion surrounding it**.**

3.1 RESOURCE EXTRACTION

Natural resources are used to create wealth. Natural capital is the biggest contributor to national wealth in developing countries. Activities associated with natural resource extraction are not just a livelihood but a way of life, with a corresponding identity. This identity can be flexible, e.g. some hunters might identify themselves as such even if they only hunt once per week.

Conservation interventions seek to induce or force changes in human behaviour, by altering the options or incentives faced by a resource user. The outcomes of an intervention must be accepted in order for the intervention to be successful, otherwise:

Wellbeing losses + threats to a way of life + perceptions of injustice = conservation policy failure

Acceptance is best achieved when the intervention is participatory.

3.2 ACCESS TO ENVIRONMENTAL INFRASTRUCTURE

The poorest households often rely most directly on ecosystem services. Access to environmental infrastructure (e.g. clean water) affects wellbeing and can be altered by conservation interventions, particularly changes in land use.

3.3 RELATIONSHIPS AND SUSTAINABILITY

Relationships that people have in different spheres can influence their direct relationship with ecological processes. For example, a fisher who has no desire for their child to follow in their footsteps may be more likely to overfish a resource, because they have no motivation to conserve it for the future. Indeed, they may prefer if it were not available in the future. This perception must be reconciled with others who do wish to conserve the resource. As societies and cultures change, so will people's interactions with ecosystem services.

Individuals alone cannot solve coordination problems, e.g. open access resources. To solve these problems institutions and effective local governance are needed, which are dependent on local relationships and power structures. Sustainability is about how to live well together.

3.4 IMPACT OF DIFFERENT TYPES OF ENVIRONMENTAL INTERVENTION

Environmental interventions can have myriad impacts on wellbeing, considered on a range of scales: short-term, long-term, catastrophic; permanent, temporary; planned, unplanned; and affecting the individual or a group. Results include changes in land use and designation, crop growth and yield, disease exposure, income and employment opportunities, travel systems and access to healthcare and education.

3.5 CONSERVATIONISTS' MOTIVATIONS

There are five main reasons why conservationists wish to understand wellbeing:

1. For legitimacy: motivated by donors, governments and other stakeholders.
2. Instrumental: to show that interventions can and do work, to encourage future funding.
3. Ethical responsibility: to ensure interventions are not damaging to the poor.
4. Hypothesis testing: whether interventions are good for people's wellbeing and whether people's wellbeing is good for conservation.
5. General understanding: of motivations and behaviours.

3.6 IMPROVING WELLBEING AS A MEANS TO ACHIEVE AN IMPROVED CONSERVATION OUTCOME

Improving wellbeing as a means to achieve an improved conservation outcome is one of two ways in which wellbeing contributes to conservation (Fig. 2).

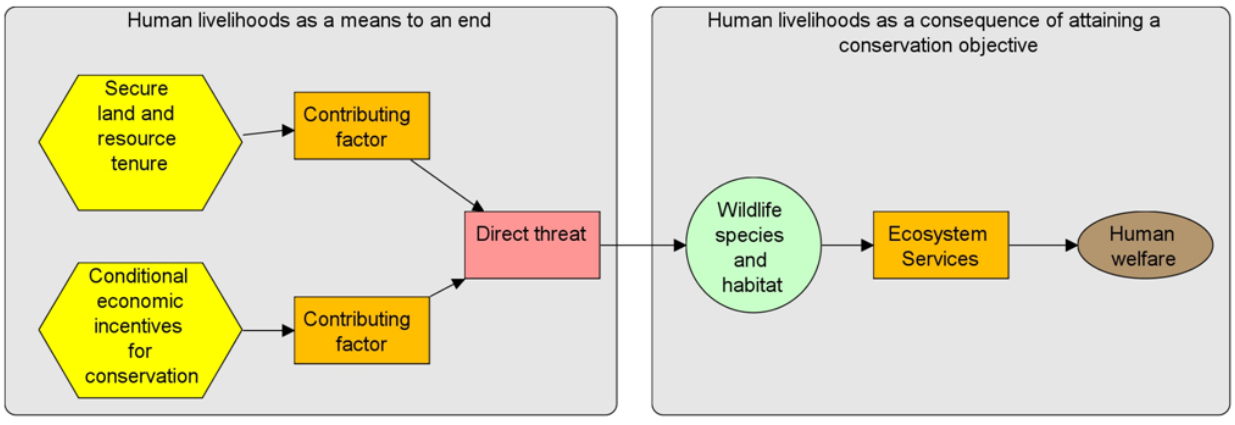

FIGURE 2 The two ways in which wellbeing contributes to conservation (© David Wilkie).

It is the most common current focus for conservation organisations. Aspects of wellbeing can be direct threats affecting a conservation target. This 'means to an end' approach can inform policy and intervention development and implementation, helping to identify the best strategy and conditions where it can be replicated. It requires local knowledge, involvement, and implementation.

3.7 IMPROVED WELLBEING RESULTING FROM A CONSERVATION INTERVENTION

The conservation of species and habitats can result in increased ecosystem services, which can have a positive impact on wellbeing. Understanding this approach can inform evaluation of policies and interventions, to ensure conservation does not make people poorer. However, there is a need for a counterfactual, i.e. to know what would have happened in the absence of the programme.

3.8 UNDERSTANDING NEGOTIATION

Conservation organisations have recently developed 'human rights principles' to guide their conservation projects. Changes in access to services can be equally as important as changes in provision. Some ideas (e.g. growth) will always dominate and have more power in negotiations.

4 DIFFERENT PERSPECTIVES

This section summarises the talks by Maggie Redshaw and Kirk Hamilton, and the discussion surrounding them. Human development and conservation objectives are often diametrically opposed. The aims of development are to change people's aspirations as well as their material resources. An individual's priorities are often expressed as those things to which they do not have access e.g. clean water is listed as a priority only by those who do not possess it; those who do possess it tend to regard it as a given.

4.1.1 REPRODUCTIVE HEALTH

For a large part of adult life, pregnancy and fertility have a marked impact on identity and how a person perceives themselves, and hence are critical for overall wellbeing and the way in which a person interacts with their environment. There may be substantial social, psychological and economic consequences from illegal abortions, the deaths of women associated with childbirth and the deaths of babies in the perinatal period, which affect the wellbeing of individuals, their families and communities. There are marked differences in women's experience and perceptions of reproductive health even within countries.

Environmental change can affect the organisation, constituents, location, and providers of healthcare, and therefore outcomes and wellbeing, e.g. impact on transport availability (from flooding or costs of transport) or a woman's ability to pay for the care. Access to available healthcare and uptake in resource poor settings is often dependent on proximity to care and transport availability, which may be affected by conservation interventions.

Much of the research in reproductive health in higher income countries utilises a clinical trials methodology, though increasingly these are being used in middle and lower income country

settings. Nevertheless much of the data on health and wellbeing in relation to the poor has been collected using qualitative methods, most commonly interviews, with relatively small numbers of individuals. Synthesis of findings arising from the different methods is difficult and at times problematic.

Reproductive health affects one's view of self, satisfaction with the present, hopes for the future, being healthy, and the nature of long- and short-term goals. The wellbeing of women and families is affected by individual and family resources and how these are prioritised.

4.1.2 MICRO TO MACRO

Concentrating on wellbeing at a household level gives direct evidence of environmental impact on human wellbeing. A case study of households in Tanzania found that using destructive gear in an artisanal fishery led to welfare improvements. Food-insecure households were the most likely to use destructive gear and providing access to credit increased destructive gear use. Alternative income-generating activities helped to improve welfare and also to decrease use of destructive gear, so should be used in combination with penalising the use of destructive gear. This example illustrates that reforms in one market will not necessarily solve the problems in another, and may even lead to a downward spiral of poverty.

Is it possible to scale up from the household to society level? Macro indicators such as GDP provide society-level measures but miss nuances. GDP can be increased in the short-term by decreasing natural capital, though eventually GDP will fall. One of the few indicators measured empirically shows that saving today (e.g. rents from natural resources) does lead to increased social welfare in future.

5 MONITORING WELLBEING IN CONSERVATION

Monitoring of wellbeing is dependent on who is measuring it and their understanding of the concept. Several approaches are generalised across situations, some of which are described below. Other methods are developed for specific situations, as demonstrated by the case studies discussed in section 5.2.

5.1 COMMON APPROACHES

5.1.1 BASIC NECESSITIES SURVEY (BNS)

Poverty is defined by local perceptions. A BNS is a democratic way of defining poverty. Focus groups held with local people determine which assets and services are considered a necessity. After list compilation, each household is asked whether they own or have access to each asset, and whether or not they deem it a necessity. The community price of the asset is recorded.

A BNS is modifiable to each context, providing information about the relative wealth of each household and how they perceive this wealth in relation to the community as a whole.

5.1.2 BASKET OF ASSETS

Following a BNS, the community price of assets can be used to derive the value of a basket of assets. This will differentiate those below or at the poverty line. It provides a method for comparing between situations.

5.1.3 HOUSEHOLD SURVEY OF CHILDREN'S DISABILITIES

Household surveys of children's disabilities are used worldwide in development studies. They focus on what a child is able to do with any disabilities they have, as a measure of wellbeing.

5.1.4 ADJECTIVE LISTS & WORRIES AND CONCERNS LISTS

Adjective checklists are sets of words provided to participants, who then select items to describe themselves, their life and experiences. Worries and concerns lists enable an individual's or a group's primary concerns to be identified, which can then be compared between groups or over time. Both types of checklists can be derived directly from qualitative research with the groups involved.

5.2 CASE STUDIES

5.2.1 UNDERSTANDING ECONOMIC DISPLACEMENT IN GABON

This case study was contributed by David Wilkie. The Gabonese government created 13 national parks to cover 10% of the country's land, achieved with no physical displacement of people (by focussing on areas of high biodiversity and low human population density). However, there were concerns that economic displacement may occur due to laws governing, for example, hunting in the parks and access to other resources.

Park and control villages were identified following participatory resource mapping, which identified villages with previous or ongoing claims to park resources. Village-level information collected included distance to park border, travel time to market town and healthcare, land cover within a 5 km radius and the local village price of a standard basket of consumer goods. Household level data included education, short-term health, income, consumption, wealth, and self-assessments of wellbeing.

Although useful, the data were time-consuming to collect; short-term health measures (height, level of fat) required local scientists to undergo ten months of training. Consumption was measured by recall surveys of everything that passed over a household threshold during a 48 hour period. The price of goods provided another proxy for distance to market.

There were very few systematic differences between control and park villages – differences observed were due to exceptional circumstances such as a control village being employed on a logging concession.

5.2.2 ASSESSING IMPACT OF CONSERVATION INTERVENTIONS IN CAMBODIA

This case study was contributed by Tom Clements. The Northern Plains landscape in Cambodia was the last area of the country to gain peace. When national parks were declared it was not known where people lived. Consequently the demarcated boundaries included several human settlements. The protected areas (PAs) lacked formal management until 2005. Law enforcement

is weak; PAs are better understood in the context of forest reserves. One livelihood strategy is the tapping of resin trees, which can earn a household $100 - $340 per year.

WCS run three payments for ecosystem services (PES) programmes within the area: direct payments for nest protection of endangered birds, agri-environment payments (economic incentives to follow certain land-use rules), and community based eco-tourism. Evaluation of the PES programmes asked whether the payments increased conservation, and what their impact on wellbeing was. They focussed on park, border and control villages (most studies look at park and control) using matching techniques at the village and household level. The BNS was used to measure household poverty, and the study looked at agricultural productivity and food security, access to services, and a household profile.

Compared to increasing national rates of deforestation, deforestation in payment villages has remained low. Park villages appear poorer than border villages, probably due to better access to schools and markets rather than the impact of the park itself.

The study followed the same households over time and disaggregated results by livelihood. Inside the park, resin-tappers were better off than non resin-tappers, whereas the opposite was true for villages outside the park. Resin trees outside PAs are not protected and were being cut down, whereas those inside the park were safe. People outside the park are diversifying their livelihoods, perhaps in response to less secure land tenure. Households inside PAs but without access to natural resources, e.g. new households without resin trees, increased in wealth more slowly than other households, which suggests an emerging poverty trap.

Higher-paying PES programmes (ecotourism and agri-environment) had access constraints. People had to take higher risks in committing to the programme, which only wealthier people could do. Those involved in higher-paying programmes increased in wealth more quickly than others in the village, potentially creating a widening gap between programme participants and others.

5.2.3 WELLBEING IN CAMBODIA'S PROTECTED AREAS

This case study was contributed by Suon Seng. The Ministry of Agriculture and the Ministry of Environment of Cambodia were previously led by two different parties under a coalition government. Now it is under one party but the focus has shifted from conservation toward economic development. The government views natural resource conservation in the context of poverty reduction. Their two main priorities are poverty reduction and sustainable livelihoods.

Community level projects benefit the community, while national level interventions tend to benefit the elite. Because conservation comes from a national level, it is often perceived as not giving benefits to a community. Wellbeing is not yet commonly discussed in Cambodia.

For conservation programmes to succeed there must be either extensive local participation or strict government enforcement. As the law enforcement is not strong, the focus must be on local communities.

It may be assumed that the wellbeing of those living inside PAs is reduced because they know they are not allowed to do certain things. This may not have an impact if there are sufficient

policies that allow freedoms and opportunities for a level of wellbeing acceptable enough to ignore any limitations. In order to test this hypothesis, a definition of wellbeing is required.

The Center for Development Oriented Research in Agriculture and Livelihood Systems (CENTDOR) and WCS created an in-country research team which considered if and why their views of wellbeing might be different from those of local people living in a PA. There were huge variations even within the small project team. Different indicators of wellbeing fell into three main groups: basic needs, livelihood security, and livelihood prosperity.

A framework was developed to consider wellbeing; those used internationally were too complex for the purpose. They recognised that if you have a right, you also have an associated responsibility, and tried to understand this in the context of natural resources.

A two-day workshop was conducted with local people to investigate their ideas about wellbeing, using preliminary activities to stimulate discussion (to facilitate people to talk about their own views rather than agree with those voiced). A certain amount of homogeneity in the idea of wellbeing was assumed for people from a particular livelihood zone. From this, questions were developed for household surveys and village surveys – questions were piloted during the full investigation due to the cultural lack of importance ascribed to 'tests'. Data collectors spent considerable time ensuring respondents fully understood wellbeing as a concept. Objective and subjective data were collected at household and village level.

5.2.4 Locally led socioeconomic monitoring in Guyana

This case study was contributed by Ben Palmer Fry. Guyana is a culturally diverse country with very high literacy rates. The Makushi people live in an area of forest-savannah transition. Their main livelihood is fishing, with some timber extraction. Although their local language is disappearing, traditional activities are still very popular.

The Norwegian government has funded many carbon sequestration and forest protection projects in Guyana. Monitoring and reporting could provide information on the results of their interventions and could also provide some communities, who own their own land and thus can choose to opt in or out of the Norwegian programmes, with the necessary information for decision making.

A locally led socioeconomic monitoring scheme, where most employees are Makushi, is currently in the process of being established. Following lengthy negotiations with the government, the procedure began with village councils nominating two representatives from each of 16 villages, to be trained to help design monitoring schemes for their community and to then collect data. Monitors put forward by councils are likely to be more able, and so may represent a certain perception within the community.

This project management team has regular workshops and in between these undertakes visits to villages to ensure communication with communities regarding progress of the scheme. Information, including on social issues such as wellbeing, will be collected by village monitors on ruggedised smartphones, using Google software. The balance desired between internal and external validity will shape how the information system looks.

The questionnaire used to measure wellbeing was developed in collaboration with foreign researchers (to provide guidance on external validity). Two questionnaires were trialled: one compiled by an external researcher (BPF) using questionnaires applied worldwide, adapted to the Makushi context, and the other developed by the Makushi women's research group from components they expected to impact good or bad wellbeing. The resulting questionnaire combines objective, subjective and Makushi relevant questions. Internally valid questions cover community relationship, faith and beliefs, income and assets, culture, community safety and stability, and household and family. External points cover emotional wellbeing, health, and education, and were adopted because although the women's group had not originally included these aspects, on consideration they felt them to be important.

Although there are no immediate plans for use of the data – it is an information system not an intervention – the scheme is underway on the premise that if communities have more information they will be better informed to make decisions in the future. It could also be used to evaluate some conservation initiatives already underway, with the information verified by satellite data or by rotating monitors between villages. The scheme continues to be developed.

5.2.5 PASTORALISTS' WELLBEING IN TANZANIA

This case study was contributed by Makko Sinandei. A pastoralist's context of wellbeing is based on land and natural resources, livestock, culture, and belief (which provides hope).

Pastoralists in Tanzania live in a complicated land-use matrix which has much potential for conflict. Pastoralism is seen by some as one step on the transition from hunter-gatherer to agriculturalist, rather than a livelihood in its own right. Consequently, policy makers do not understand, or do not take into account, aspects of pastoralism such as mobility – an important strategy to adapt to climate change. The resulting lack of consideration for pastoralism in legislation results in the marginalisation of pastoralists.

Local leaders do not have the information they need regarding international laws and rights in order to lead their communities. Similarly they feel they do not have adequate support from the government regarding strategies they are trying to implement locally. Laws sometimes overlap or contradict. Additional research could inform policy and help to harmonise conflicting legislation, and engagement of local pastoralists in policy would be beneficial.

Wildlife in the area is dependent on the pastoralists as they have *de facto* ownership of the land. Local institutions are strong. However, local conservation projects currently do not link indigenous and modern knowledge. The current biggest consideration for pastoralists is that of secure land tenure; many groups that have been evicted and subsequently returned to their land are uncertain whether they will be evicted again. Resource management and land tenure need improving and are the most important components affecting pastoralist wellbeing.

6 WHAT CHALLENGES HAVE BEEN HIGHLIGHTED?

This section is based on the discussions in break-out groups considering why wellbeing is so difficult to measure. It may be because of the subjective and ever-changing aspirations that drive and shape wellbeing. For example, conservation interventions have sometimes protected groups from land-grabbing by governments but now conservation restricts their aspirations for the future.

Shocks (such as natural disasters, market collapse or land taken suddenly for conservation) have a great effect on poor families in developing countries and their wellbeing. Time spent in poverty following a shock is measured in generations rather than years. The VNN framework should consider shocks and their impacts.

6.1 SHIFTING BASELINES

Wellbeing is a moving goal and a shifting concept. This makes it difficult to set a baseline against which to measure an intervention. The concept of wellbeing in the years following an intervention may be different to that at the start. How can we measure on one scale something which is always changing?

It may be easier to target interventions for increased wellbeing in communities so they focus strongly on a few specific needs. As goals and aspirations become more complex, so too may the targeting.

It can be difficult to attribute changes in wellbeing to conservation interventions since other important events, interventions and changes (and interactions between these and the conservation intervention) may happen as time passes. A complex system perspective might therefore be useful.

6.2 DIFFERENT TYPES OF DATA

What should we be measuring and how should it be measured? Also, how can we incorporate participatory data? Subjective wellbeing must be assessed in a locally appropriate context, e.g. 'If you left your machete outside your house how likely is it to be there in the morning?'. The difficulty then arises in feeding this subjective information through to broader contexts.

When evaluating the impact of interventions it will be important to consider what counts as evidence. Although qualitative surveys are already widely used, to what extent can we quantify wellbeing?

6.3 FINDING CONTROLS

A counterfactual or control is needed in order to assess impact. Finding reasonably comparable situations is difficult. It will often not be ethical or possible to implement experimental controls. The comparisons that are made will give different pictures of the same situation; which is the most meaningful? The current situation in which a person finds themselves will influence how they are able to experience future situations.

From an evaluator's point of view, choosing a community hundreds of kilometres away may provide the best statistical control, but for the community themselves, their point of comparison

is likely to be within their community or those close by. Which level of comparison is the most appropriate? Do statistically significant comparisons have a place in wellbeing studies?

6.4 THE LEVELS AT WHICH WELLBEING CAN BE CONSIDERED

Scale is important; analysis must be sensitive to this. Wherever there is a change, there will be some people who are better placed to take advantage of it. Should we consider marginal values? How can we transfer knowledge between scales?

6.4.1 INDIVIDUAL VERSUS COMMUNITY

Wellbeing must be assessed at an individual level, because only an individual can tell you how they feel, but this is often taken to represent the views of all household members. An individual interview may detect cultural ideals rather than reality; it may be very different to consider individual and household wellbeing. Community-level responses provide context to the household level, e.g. if members of a household think something is a basic necessity, how does that compare with its price in the community or the distance that you must go to access it.

6.4.2 GOVERNMENT VERSUS LOCAL

Economic development occurs at national and sub-national scales. General aspirations may be common across communities. How can we reconcile this at the scale of policy so that it benefits local people?

There are different levels of power to consider. Governments have hugely different ideas as to what constitutes wellbeing than do local communities. The way a government acts might not be in the national interest but only to benefit a few.

6.4.3 GEOGRAPHIC

How do distributional aspects affect wellbeing? Although wealth is not constrained by political boundaries, natural resource assets are owned by governments rather than people so there is some sense in using this spatial approach. Wealth from natural resources is not adequately captured by governments in resource-rich countries through taxation.

There is currently a lot of focus on PAs and their impact on wellbeing; should there be more attention paid to the interactions of people and wildlife outside PAs and how this relates to wellbeing?

6.4.4 TIMESCALES

There will be a time lag from implementation of an intervention to a change in wellbeing. A single snapshot will not provide information about causal links in wellbeing; monitoring over time is necessary. How should we prioritise wellbeing over time? Should discounting be used?

Resource use can vary with seasons, and livelihoods themselves are complex and dynamic. Cohort studies are often used in other disciplines and are very long-term. The same households could be followed over time to get a better picture of wellbeing. However, the questions you want to ask in the future might not be the same as those you are asking now, especially due to the shifting nature of the aspirations contributing to the concept of wellbeing.

7 THE WAY FORWARD

This section summarises the discussions which took place in break-out groups and the plenary session which formed the final part of the workshop. Can we offer new insights to the debate because we are coming from the different perspective of conservation? Wellbeing is changing the way that we do conservation and development, and we should proceed with care.

7.1 DEFINING WELLBEING

To define wellbeing in a locally relevant way it is essential to understand the context and be immersed within the local culture. Perhaps asking how we can define wellbeing is the wrong question. We need to find ways of facilitating local people to self-define what is important to them.

If outsiders define wellbeing as something which local people did not consider previously, it might change the local context. Some ideas will not translate easily into other cultures, and wellbeing may be a useful concept to think about but difficult to operationalize.

All aspects of wellbeing should be considered in surveys, with attention given to differences in gender and life stage, because this can have a great impact on aspirations and experiences. Some interventions, e.g. relocating communities to construct a dam, can completely destroy a society, so the goals and aspirations from the pre-intervention survey will no longer be relevant to their experience of wellbeing.

7.2 CONSIDERING ILLBEING

The context in which interventions are taking place may be unpleasant. It is fashionable to consider positive wellbeing but it is necessary to give people the chance to be critical and to express negative views. The way questions are phrased will affect the answers they elicit.

Collecting data regarding illbeing (e.g. mortality or morbidity) can be difficult, but it should specifically be considered and measured. We need to consider how interventions are likely to impinge on wellbeing and illbeing in the future.

7.3 A CONCEPTUAL FRAMEWORK

A framework would allow generalisation of information across cases, promoting translation from micro to macro level to inform policy. If we could combine all of the empirical indicators and provide a model, it may give insights into novel situations. It would need to be multi-dimensional. How can we identify all of the relevant drivers?

The framework would need to be generalised for application everywhere, or perhaps there could be separate sub-frameworks for different livelihoods, for example. It may generate hints about which aspects might be important for wellbeing in a particular culture, providing a starting point for developing culture-specific questions.

The danger of such a framework would be blanket implementation without consideration of local contexts. This can be avoided through use of a conceptual framework which encompasses a toolbox of research methods. Too much standardisation will lose local nuances. It can be difficult to apply standard methods cross-culturally, and they frequently require modification of

terminology and revalidation. Internationally-developed frameworks can be too complex for local application. It may be necessary to work on a case by case basis, where case studies could help to identify commonalities between situations.

A framework will be most useful if it refers to which aspects of wellbeing will be addressed and how, rather than theoretical or conceptual positioning. A structured tool that helps people to understand what they want could be helpful. It will need to combine conceptual, quantitative, and qualitative information. One solution will not fit all situations due to the cultural contexts.

It may be useful to provide a decision tree to aid practitioners in selecting appropriate methods for measuring wellbeing. This would help field staff who may be concerned about the ever-increasing amounts of data they are required to collect. It would collate approaches already being used to help practitioners learn of places where certain methods were useful and where they were found to not work.

7.4 THREE USES OF WELLBEING

There are three uses of wellbeing:

1. Normative: what should development deliver and where do bottom-up context-specific solutions meet top-down generalisable ideas.
2. Methodological: framework for building a grounded contextual idea of wellbeing.
3. Diagnostic: how you can look at wellbeing factors to understand key limitations and possibilities; what can be achieved and what are the issues.

It may be necessary to keep a distinction between these uses.

7.5 WHAT METRICS?

Some tools engage people more meaningfully than others. We need to highlight the social science approach and balance this with quantifiable metrics. Quality of life metrics can be particularly useful as a reference point for monitoring over time. Different metrics can be presented for different people. Multiple measures will capture interactions.

7.6 USING THE DATA TYPE MOST SUITED TO OUR PURPOSE

The questions being asked will affect how wellbeing is measured. Data should be gathered for the required purpose only. Gathering data will be easier in a local context and will become more challenging as there is a move to generalise. Different measures will be appropriate in different situations. A key question is: *What do I want to know about and can it be objectively quantified?* This will highlight the purpose and nature of the data required.

There should not be a division between objective and subjective data. Subjective data should be purposefully collected rather than only acknowledged, so that both types of data can be interpreted in light of each other. Quantitative data indicate how much there is of something while qualitative data describe what it is like, e.g. 'we both have one hectare of land, but mine is irrigated and of better soil quality'. It is essential to capture both aspects.

The four types of data can be considered within a matrix: an item of data may fall in to any of the squares (Fig. 3).

	Objective	*Subjective*
Quantitative		
Qualitative		

FIGURE 3 The matrix representing the relationship between four types of data. A piece of data may be classified in any square.

If you explore sufficient subjective data across different times and places you will start to see patterns.

It can be useful to set the boundaries for conceptual frameworks or studies of wellbeing within limits (e.g. a PA) to look at specific considerations. Current issues can narrow the breadth of a wellbeing discussion, depending on how threatened an individual's wellbeing is and the pressures they are facing.

7.7 INTERNAL OR EXTERNAL VALIDITY?

All stakeholders want something different. How should wellbeing metrics and approaches be prioritised for use? The approach taken will depend on the audience; metrics can be given for the objective, subjective, or relational aspects of wellbeing. How can we translate between internal and external validity?

It is important to have a strong qualitative understanding of livelihoods as well as possible or perceived impacts before designing quantitative assessments. There may be a significant difference between local perceptions of the intervention and the absolute benefits provided. Understanding a community adds context and informs question choice for assessment surveys.

Donors are pushing for external validity, to show success. Externally valid results should be compared with local people's own assessments of changes in livelihoods and the cause of those changes. Macro indicators may not translate to real local change, so local micro indicators may be better value and longer lived. If wellbeing is entirely subjective then is macro assessment possible?

Psychological approaches to wellbeing can be validated by comparing old and new measures and conducting face-to-face interviews to check how the approach works. Some measures are not perfect but if they are a good enough proxy (a necessary simplification) they should be accepted.

7.8 CHANGING PRIORITIES

Which is most important to consider: what we do, or how we do it? Perhaps the problem thus far has been a misdiagnosis of problems rather than a lack of knowledge and information; we need to change the way we approach conservation in order to address this issue.

7.8.1 FUNDING

Committing seriously to pursuing this examination of wellbeing as the way forward will require a large investment. Some of this must go towards changing the opinions of governments and donors regarding funding priorities.

Donor fatigue is a big problem for PES schemes – ideally private groups of people looking for long-term benefits are required. It is challenging to obtain money for impact evaluation rather than action, and because evaluation must be independent it cannot be funded by those who have undertaken the intervention. Donors are not keen to fund preparatory work involving consultations with local people in order to determine the direction in which research or action should proceed, and to provide important baselines. Funding timescales are not long enough to detect real changes in wellbeing.

7.8.2 RESEARCH

Researchers are often pressured to provide quantitative data, so qualitative data are obtained as a side interest and added back into the project afterwards. This does not help the disconnect between quantitative and qualitative data. Are practitioners being let down by conservation academics who should be providing a service of independent impact evaluation? Independent sources of funding are not readily available.

Systematic reviews have been used in some disciplines and are qualitatively focused, but their use is limited because analysis is constrained to case studies fitting a certain set of criteria.

7.8.3 ACTION

Conservationists need to put the same amount of energy into addressing global resource demand as they do to local demands. Do we need to reconcile these two levels?

Conservation organisations need to invest more in establishing baselines and understanding local communities, and also the nuances of their perceptions of wellbeing, before implementing interventions. This highlights the potential problem of raising expectations in a community; how much can really be delivered?

The scope and duration of available funding should be considered during project design: can you really expect to improve wellbeing with your intervention, or should you aim to only consider it, or try to not harm or reduce wellbeing?

The scale of an intervention will have a bearing upon who can benefit from it and how it can improve wellbeing.

7.9 HOW CAN WE USE MONITORING OF WELLBEING TO IMPROVE INTERVENTIONS?

The contribution of local people to the process of monitoring wellbeing can help develop locally relevant tools that are psychometrically valid. The key question here is do we want to *measure* wellbeing or *understand* wellbeing, or both?

7.9.1 IDENTIFYING OPTIMAL CONSERVATION STRATEGIES

Wellbeing can be used to help understand how people will react to interventions and to identify the best strategy. Multiple strategies may avoid capture of all benefits by one group of people. Different people are in a position to benefit from different enterprises, and this diversification can also buffer against market shocks. If consulted, communities can help to select the most appropriate of several strategies or rank them in a cost-benefit analysis for wellbeing.

7.9.2 UNDERSTANDING BEHAVIOUR

Conservation interventions can cause local conflicts such as those over land rights due to land grabbing by international organisations, as is currently occurring in the Tana River area in Kenya.

Wellbeing drives behaviour. Models that predict behaviour allow us to identify anomalies in a situation, utilise this for interventions, and create more sophisticated incentives.

Perhaps there is no need to have detailed information about behaviour change; if wellbeing is understood then interventions can be based on conditional incentives relating to aspirations on the assumption that this will lead to behaviour change. This risks unintended consequences of interventions.

7.9.3 TOWARDS MORE APPROPRIATE INCENTIVES

To design successful interventions in the future there is a need to build evidence of success so far. Historically most conservation incentives have been unsuccessful, usually through a combination of (a) the incentive not being sufficiently high and (b) outsiders implementing the intervention and having little concept of how it is perceived within local culture. Understanding wellbeing can help improve incentives and ensure that illbeing is not a result of increased conservation.

How do we design incentives to affect behaviour? Incentives should change over time as aspirations change and as different threats to wellbeing change in intensity. Programmes need to have short, quick feedback loops as well as adaptive responses to keep up with this change; otherwise the motivation to participate will dissipate. This feedback needs to be participatory and built into the intervention.

Wellbeing can be used to check if an intervention is moving the situation in the right direction. Should there be a focus on additionality and marginal values rather than on moving people to a certain level of wellbeing and then forgetting about them?

7.9.4 EVALUATING IMPACT

Often people have not considered the impact that their interventions may have, and there is little critical evaluation. Because large amounts of money have been spent on unsuccessful conservation and development initiatives, it may be informative to use wellbeing to understand why they have not worked. Impacts might be best evaluated via quantifiable metrics combined with subjective accounts and stories to provide context.

7.10 HEARING LOCAL VOICES

More effort must be made to listen to local voices, particularly from marginalised groups e.g. women, young men, and children. A cohesive local structure will facilitate the promotion of local voices, depending on the dominant structures in place. Local voices become increasingly lost as the scale increases from household to government. Electronic media may help local people to have more of a voice.

By focusing on what local people are saying rather than simply working through an extensive list of hundreds of variables, we will be able to gain a better understanding of wellbeing.

8 CONCLUDING REMARKS

Although this workshop has not been able to improve on the WeD framework for wellbeing, we should work hard to expand it and apply it. Illbeing needs to be a much larger consideration. There are many existing tools for measuring the effects of environmental interventions, and a key challenge is to bring these together and adapt them for use in specific contexts.

Obtaining a baseline for wellbeing and then monitoring over time is essential. We need to know the time periods suitable for assessing wellbeing and impacts.

Notwithstanding the various environmental motivations for understanding wellbeing, two major reasons for considering and examining wellbeing may be to hear local voices (in diversity and unity), and to use wellbeing as an expression for local voices to find systems of negotiation.

Using a combination of social science and econometric perspectives we need to start focusing on the 'how' of measuring wellbeing rather than the 'what'.

9 APPENDICES

9.1 WORKSHOP AGENDA

WORKSHOP AGENDA – DAY 1

10:00 – 11:30 Overview

- E.J. Milner-Gulland (Imperial College London): Aims for the workshop and the VNN project.
- J. Allister McGregor (Institute of Development Studies): What is 'wellbeing'?
- Matthew Agarwala (London School of Economics): Wellbeing and ecosystem services: exploring interdependencies.
- Discussion

11:45 – 12:45 Wellbeing in Conservation and Development Evaluation

- David Wilkie (Wildlife Conservation Society): The use of wellbeing in conservation.
- Tom Clements (Wildlife Conservation Society): Exploring the impacts of protected area and PES policies on local livelihoods in the northern plains of Cambodia.
- Discussion

13:45 – 14:45 Break-out Groups

15:00 – 16:00 Different Perspectives on Wellbeing

- Maggie Redshaw (National Perinatal Epidemiology Unit, University of Oxford): Wellbeing in reproductive health.
- Kirk Hamilton (World Bank): The environment and human wellbeing – micro to macro.
- Discussion

WORKSHOP AGENDA – DAY 2

09:30 – 11:30 Developing Tools for Gathering Local Perspectives on Wellbeing

- Ben Palmer Fry (Imperial College London): Wellbeing in Guyana: a Makushi perspective.
- Suon Seng (CENTDOR Cambodia): Understanding and monitoring the effects of environmental interventions on wellbeing: observations from Cambodia.
- Makko Sinandei (Pastoralist Women's Council, Tanzania): Pastoralists' wellbeing and conservation.
- Discussion

11:45 – 15:30 Workshop Session – The Way Forward (lunch 12:45 – 13:45)

Examining Gough and McGregor's key questions in the context of environmental interventions:

- What are the resources people can command?
- What can they achieve with these resources?
- What is the meaning people give to the goals they achieve?
- How do we monitor the effects of environmental interventions on each of these elements, with a particular focus on heterogeneity and changes over time?
- How can we use this monitoring to improve interventions?
- What can we add to the framework?

15:30 – 16:00 Plenary Summary

- Katherine Homewood (University College London)

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