**Exploring ‘islandness’ and the impacts of nature conservation through the lens of wellbeing.**

**Authors:** Sarah Coulthard, Louisa Evans, Rachel Turner, David Mills, Simon Foale, Kirsten Abernerthy, Christina Hicks and Iris Monnereau.

**Summary**

Motivated by growing concern as to the many threats that islands face, subsequent calls for more extensive island nature-conservation, and recent discussion in the conservation literature about the potential for wellbeing as a useful approach to understand how conservation affects people’s lives, this paper reviews the literature to explore how islands and wellbeing relate, and how conservation might impact that relationship. We apply a three-dimensional concept of *social wellbeing* to structure the discussion and illustrate the importance of understanding island-wellbeing interactions in the context of material, relational, and subjective dimensions, using examples from the literature. We posit that islands and their shared characteristics of ‘islandness’ provide a useful setting in which to apply social wellbeing as a generalizable framework, which is particularly adept at illuminating the relevance of social relationships and subjective perceptions in island life, aspects which are often marginalized in more economically-focussed conservation impact assessments. The paper then explores in more depth the influences of island nature conservation on social wellbeing and sustainability outcomes using two case studies from the global north (UK islands) and global south (the Solomon Islands). We conclude that conservation approaches that engage with all three dimensions of wellbeing seem to be associated with success.

**Introduction**

The world’s islands are increasingly recognized as providing a wide range of important benefits to human society. Islands host a diversity of indigenous and distinct cultures, identities and languages, which form part of a valued heritage (Depraetere 2008), with many islanders deriving a significant part of their wellbeing directly, or indirectly, from a wealth of natural resources (CBD 2016). Globally, island habitats host more than half of the world’s marine biodiversity and 20% of all bird, reptile and plant species (UNEP 2014). These rich ecosystems provide a foundation for food security, livelihoods and industry – for example, biodiversity-based tourism and fisheries account for over half of the GDP of the economies of Small Island Developing States ‘SIDS’ (CBD 2016).

Recognition of the importance of islands has, in recent years, been catalysed by global concern as to the many threats that face islands and their inhabitants. A combination of sensitive endemic ecology and intense human use and dependency tend to magnify aspects of island vulnerability (Baldacchino and Berttram 2009). For example, many islands experience high levels of species extinction (64% of all recorded extinctions in recent history happened on islands, CBD 2014), whilst climate change and ocean acidification pose a growing threat to loss of life and property from sea-level rise and extreme weather, and the loss of wave-attenuating habitat, such as coral reefs and mangroves (UNEP 2014a).

In the SIDS literature, it is often highlighted that islands share similar sustainability challenges, many of which are exacerbated by specific island characteristics including smallness, isolation, susceptibility to natural disasters, and vulnerability to external shocks (Guillotreau et al. 2012; Nurse et al. 2014). Many islands experience historical peripheralization and economic marginalization, out-migration and community decline and loss, where sustaining a viable island society becomes a challenge (Kennedy 2006), whereas other islanders can also demonstrate strong attachment to place and way of life. This has been witnessed in disputes over island displacements, such as in the campaigns led by some former Chagos island inhabitants to return to the islands 40 years post-displacement (Jeffery 2013), or where potential island ‘climate refugees’ argue their desires to remain in their homelands (McNamara et al 2009). The South Pacific archipelago of Vanuatu is an example of the contradictory and diverse nature of the island-wellbeing relationship; the islands are renowned for storm surge incursion and human displacement, prompting the United National Environment Programme (UNEP) to label their inhabitants as the world’s first climate refugees (Ballu et al 2011) and yet, for several years, Vanuatu also boasted the world’s highest levels of self-reported happiness (Abdallah et al 2012).

The relationship between islands and human wellbeing is therefore clearly complex, not easily generalizable, and heavily influenced by ecological, social, historical and political context. Furthermore, people’s perceptions can often explain the very different interpretations of island living, with common divisions between mainlander perceptions, and the views of islanders themselves, the former often harbouring a more negative and marginalizing connotation (McCall 1994). Recognition of this is perhaps reflected in the fact that SIDS have recently been referred to as ‘large ocean states’ (UN-OHRLLS, UNESCO, and UN-DOALOS, 2014) rather than ‘small island states’.

 Given these observations, any exploration about how islands, and conservation activities within them, affect peoples’ lives requires a sufficiently broad conceptual framework which can capture some of this context-specificity and complexity, but in a way that can also encourage aspects of comparability and cross-learning between islands. This paper uses a concept of social wellbeingto explore the interplay between islands, wellbeing and the impact of nature conservation. Wellbeing provides a holistic and multi-dimensional framing of human life, and therefore can serve as a powerful tool capable of capturing a wide range of social impacts, including those stemming from conservation activities (Coulthard 2012, Milner-Gulland et al 2014).

A social wellbeing framework (Gough and McGregor 2007) structures wellbeing analysis around three closely related dimensions: a material dimension which emphasizes the objective resources a person has access to; a relational dimension which considers how social relationships influence what people can (or cannot) do; and a subjective dimension which takes into account a person’s level of satisfaction with the quality of life they achieve. As such, it broadens attention from a traditional focus on tangible material conservation impacts, such as changes in employment, finance, or health, into a broader range of considerations including the relational (social relationships such as family and community relations, conflict, and cohesion), and the subjective (how people think and feel about their experiences of island life and conservation within it). As Coulthard et al (2011) argue, it is crucial to understand how conservation interacts with all aspects of living, in order to comprehend the synergies and trade-offs that exist between people and their environment (see also Woodhouse et al 2015). An overly narrow framework can miss many important connections. For example, a conservation project that has successfully provided income and jobs (material wellbeing) could also stimulate conflict between beneficiaries and non-beneficiaries leading to erosion of relationships and cohesion, aspects of social wellbeing that are particularly important in islands (Foale 2001, West 2006). Likewise, a project that has little impact in terms of tangible material gains may still be valued by local people who perceive other contributions, such as a sense of security and sustainability benefits for future generations (subjective wellbeing gain), which can be enhanced for the endemic species or unique habitats that characterise some islands (Pieraccini and Cardwell 2016). Understanding a fuller range of conservation impacts through a multi-dimensional wellbeing framework could, arguably, provide important evidence to support decision-making at both community and management levels (Agarwala et al 2014, Howe et al 2014).

As has been recognized within the conservation literature, there is a need to move beyond narrow (often monetized) approaches to assessing the impacts of conservation (Ban et al 2013, Igoe and Brockington 2016), and conceptual arguments have been made that wellbeing could be useful in conservation research by offering a broader lens with which to explore how conservation efforts affect society as well as nature (Milner-Gulland et al 2014). This paper advances this conceptual debate and starts to unpack details of howwellbeing could be applied, using the context of island conservation and published examples in the literature. A recognized challenge is the need to build up conservation case studies which can speak to a wellbeing framing, so as to draw out generalizable aspects (Milner-Gulland et al 2014). This paper is a contribution from the perspective of islands – which often share characteristics, captured in the term ‘islandness’, which transcends local context (Conkling 2007), thus providing a useful setting for a more generalizable approach to wellbeing assessment.

The paper starts with a brief overview of current wellbeing debate and relevant frameworks and describes the three-dimensional (3D) Social Wellbeing framework, which explores wellbeing through material, relational and subjective dimensions. We apply and adapt this framework to an islands context (see Fig. 1) to first explore how islands and wellbeing relate, drawing from a range of published island research which speaks to these three wellbeing dimensions. Whilst many aspects of the island-wellbeing relationship could be applied to other non-island contexts, we draw attention to particular characteristics common to many islands, to illuminate the relevance of the three dimensions of wellbeing to island life. We then turn to the question of how conservation can influence the island-wellbeing relationship, drawing from two contrasting case studies: (i) the Solomon Islands archipelago, and (ii) offshore islands of the United Kingdom, selected due to the availability of knowledge on specific conservation interventions in relation to wellbeing, and to enable discussion in the context of the global north and south. Our contribution is timely, since it is embedded in the growing global concern as to the vulnerability of island life, and a prioritisation of island-conservation, but also seeks a more holistic understanding that avoids defining island life in terms of these threats alone.

**Application of a wellbeing framework to an islands context**

In recent decades, there has been a flurry of research to conceptualise and operationalise the study of wellbeing. This has been stimulated in particular by two events: first, the centrality of wellbeing in the Millennium Ecosystem Assessment (MA 2005), which encouraged environmental scholars to better articulate how ecosystems translate into human wellbeing and second, recognition of the potential for wellbeing to serve as a more meaningful measure of social progress, in the face of growing criticism of economic measures (Stiglitz et al 2009). The result has been a plethora of different frameworks and approaches to measure wellbeing, spanning several academic disciplines and policy arenas (Alkire 2002, Coulthard 2011, White and Blackmore 2015).

As McGregor et al (2015) point out, there is emerging consensus across wellbeing frameworks: first, on the importance of measuring wellbeing through multiple domains, rather than single indicators; second, that measures should include both objective data (for example, life expectancy) alongside subjective data (for example, satisfaction with life) in order to provide a more complete view of how people are doing, and how people subjectively think and feel about their achievements. Furthermore, they argue that the various lists or ‘domains’ promoted across different frameworks can roughly be organized to fit into three overarching dimensions – which form the basis of the ‘3D’ framework (Gough and McGregor 2007) in which three perspectives are taken into account: material, relational, and subjective wellbeing.

The appeal of exploring these broad dimensions of wellbeing in the context of islands is that it provides three clear and relatively simple platforms in which to unpack the island-wellbeing relationship (allowing that the three dimensions also overlap). Figure 1 illustrates the three dimensions of the social wellbeing framework, noting aspects of wellbeing under each dimension that our review of the literature suggests are highly relevant for island settings. In addition, we argue that wellbeing in islands is structured by an important temporal context, which brings the dynamism of islands to the fore, including historical change, shocks, trends and vulnerabilities, and also a common sense of ‘islandness’ which transcends local context (Conkling 2007) and aids comparability across diverse settings.

**Figure 1: Conceptual framework for the study of wellbeing and island conservation (adapted from White 2010 to illustrate its applicability to an islands context)**

****The following text provides a brief synthesis of existing literature to showcase how islands relate to wellbeing in material, relational and subjective terms. The case studies which follow address how conservation influences these existing island-wellbeing relationships.

*Islands and material wellbeing*

Material wellbeing is perhaps the most familiar dimension to development and conservation approaches, with its focus on the tangible assets that people have (or are denied), such as education, health care, income and work, natural resources, and sanitation. The historical underpinning of island life has been a rich environment, which supports predominantly agricultural, forest, fisheries and, increasingly, tourism and heritage-based livelihoods. Beyond this, natural resources contribute a significant proportion of island GDP through exports, and are also important for island food security (Connell 2013). The environmental richness of islands is however bounded by issues of scale, limitation, and isolation (Kerr 2005) which, exacerbated by other aspects of fragility such as endemism or threats by invasive species, limits natural resource availability and increase likelihood of over-exploitation (UNEP 2014). Connell (2013) argues that pressures on land, including forest loss and ‘coastal squeeze’, are being equally matched by pressures in the marine environment.

Island economic development is similarly recognised to be constrained by small size (Briguglio 1995, McGillivray et al, 2010). Economies of scale are absent, skills-bases often small, while remoteness and fragmentation (particularly of archipelagic states) render costs of providing basic services (e.g. transport, communication, energy, health, education) as exceptionally high (Connell, 2013). Economic and export diversity is frequently low, and while connection to international markets brings vital foreign income, power and information, asymmetries in trade arrangements are commonplace, leading to sub-optimal wellbeing outcomes (PANG 2016).

As a result of limited economic development, islands, and in particular small island states, generally have a high dependency on subsistence agriculture, fisheries and wild harvest for food security of the local population (UNEP 2014). In many island states, food production is growing at a rate slower than population increase, with a growing dependency on more expensive food imports and store items, which has implications for nutrition, especially among the urban poor (Connell 2013). Small Island dependency on agriculture, fisheries, and wild harvest is changing however, with SIDS now diversifying their economy, especially through investment in the tourism sector (Connell 2013). As Kerr (2005) points out, of the 31 countries in the world with ≥20% of their GDP generated by tourism, 27 are island states.

*Islands and relational wellbeing*

The inclusion of a relational dimension in the 3D wellbeing framework focusses attention on the critical, but often underplayed, role that social relationships play in facilitating, or hindering, wellbeing and the dynamics of power and social structure. Our exploration of relational wellbeing in an islands context first gives emphasis to culture and identity – the bonds that connect people through shared values, beliefs, or common activities, and which fundamentally determine what people can and cannot do, and how they feel about the lives they live. Rich cultures and a strong island identity are central attributes of islandness (Pitt 1980), often accompanied by distinct language, and framed by a dynamic heritage and history. A recent analysis of islander identity in two small-islands off the coast of Ireland distinguishes between a ‘historical’ and a ‘contemporary’ islander identity, the former shaped by shared hardship and self-sufficiency necessitated by island remoteness, and the latter founded on more positive perceptions of isolation, sense of belonging, culture and tradition (Burholt et al 2013). These layered identities can also underpin tensions between ‘island’ and ‘mainland’ allegiances (Bainton 2009). Debates in the Shetland Islands during the 2015 Scottish referendum for independence offer a good example. Whilst Scotland as a nation was debating the pros and cons of leaving the UK, the debate in Shetland, which has a strong Nordic heritage, was more often tuned towards scope for islander independence and forms of self-governance (Guardian 2014).

An islander identity permeates across individual and community levels, and can lead to a strong sense of community as people are bonded by a shared sense of place and isolation that ‘generates a unique sense of difference from other populations’ (Anderson 2003:48, as cited in Hay 2006:22). Being ‘close-knit’ is a typical characteristic of isolated communities (Schilling-Estes 2002). Geographic isolation does not however, translate into a general characteristic of island life – with many arguing that islanders can be much more interconnected and aware of global others than non-islanders (Hay 2006). Social connections within, but also between islands, which is captured by the idea of ‘connectedness’, stresses the importance of mobility and social networks, often operating over significant distances across island clusters. As Weisler et al (2016) demonstrate in the context of the Pacific, many trade patterns between islands have operated for millennia and over distances of 1000s of kilometres, attesting to the complexity and durability of social relations amongst island networks. Kerr (2005) also highlights the dynamics of community by noting that large numbers of islanders may only inhabit the island for part of the year, or part of their lives.

Whilst a strong sense of community is often seen as central to island living, this does not automatically translate into social cohesion – where society works inclusively to improve the wellbeing of all its members (OECD 2011). Identity is both internally and externally defined: ‘to be part of a group is to be *not* part of another group’ (Pitt 1985:1054), and shifting patterns of wealth and growth can pose risks to cohesion through disparate benefits and inequalities (OECD 2011). The pursuit of wellbeing can be hindered by social division and conflict, and is often exacerbated by development processes. A good example is Hawaii, often heralded as an island of tolerance and equality, where ethnic tensions are rising through unequal access to resources (Okamura 2008). Modernization and fast-changing social and cultural trends, whilst contributing to wellbeing for some, also have scope to break down social cohesion, and remind us that social relationships, and their influence over wellbeing, are dynamic and ever-changing, perhaps especially so in an island context.

*Islands and subjective wellbeing*

A subjective dimension of wellbeing enables the assessment of wellbeing to take into consideration people’s own experiences and subjective reflections about their lives. The subjective dimension is placed at the apex of the 3D triangle to reinforce the inter-connectedness between dimensions, and that each dimension of wellbeing is ultimately framed by people’s own perceptions and values, which are grounded in social context and culture (White 2010). This is especially important given the tendency of many island realities to be narrated by ‘mainlanders’, who may hold very different and disconnected perspectives.

It has been argued that ‘islandness’ is linked to several aspects of quality of life, including life satisfaction (Podgorelec et al 2015), sense of place and belonging (Petrosillo et al 2013), connectedness with nature (Nisbett et al 2011) and perceptions of social capital (Randall, 2014). A recent study in three small islands in Croatia, found life satisfaction to be underpinned by common social values (such as islander solidarity), a sense of security (maintained by such values and informal mechanisms of social control), and that both islanders and in-migrants positively valued the island way of life (Podgorelec et al 2015).

On the other hand, islands can also be seen as points of departure whereby the sea does not act as a barrier but as the beginning of a journey (Connell, 2013). This view emphasizes the mobility of island populations with experience of long-term and circular migration (Byron 1999) and the rapid development of tourism which affects island populations. This can contribute to differences between the lifestyle of islanders and mainland populations and can change place perceptions of local populations. Furthermore, the Podgorelec et al (2015) study warns against generalising life satisfaction within the island population; despite providing a valued way of living, the Croatian islands in their study have experienced extensive outmigration, especially of young people, accompanied by population aging, a phenomena also witnessed among the islands of Ireland (Royle 2007). As Nunn (2003) comments, the perception of islands as small, often driven by perspectives of continental populations, can shape young peoples’ perceptions of their own island nations as unimportant, and have consequences for self-esteem and desires to migrate to larger countries. Amoamo (2013) contends that this view contributes to ‘geographical erasure’ serving to minimise island importance and even render them ‘invisible’, with consequences for how people perceive their quality of life in a global context.

*Temporal context and islandness*

The island-wellbeing framework is bounded by a temporal context and sense of ‘islandness’. Throughout history, islands have been coveted for their many purposes including cash crop production and resource extraction (Nunn 2004), which has often resulted in complex and dynamic histories and politics. Many islands face challenges of sustaining growing populations with limited resources (Reenberg et al. 2008); for example, in the South Pacific, colonisation underpinned a transition from food surpluses to deficits as land was converted for cash crops by a land owning elite (Barnett and Campbell 2010). These historical changes that are often driven by markets, demography, and technology have resulted in fundamental and dramatic changes to many island ecosystems which, once they have occurred, are particularly difficult to reverse (Hicks et al 2016).

Political ties to former colonial powers continue to direct the flow of people and money to and from islands, and foreign aid and remittances are important elements of island economies (Gillis 2014). The histories of islands can also have important implications for conservation and underpin many environmental impacts experienced by islands including species introduction (rats being especially problematic) (Nunn 2004), whilst many remote island territories have been exploited as politically neutral places in which to dispose of waste (e.g. Marshall Islands) or conduct nuclear tests (e.g. Micronesia) (Malm 2007).

Whilst diversity and local context is important to recognise in any study of island life – ‘islandness’ is a characteristic common to many islands. As is argued by Conkling (2007:192): ‘Islanders across different archipelagos share many of the characteristics imposed by the boundedness and isolation of island life. If the characteristics of islanders resonate through time and across space, then certain island qualities must transcend local culture’. As such, the concept of islandness provides a useful framing in which to explore wellbeing-island attributes which can hold relevance at a more generalizable level of analysis, and is therefore included in our adaptation of the wellbeing framework.

**How does conservation affect wellbeing dynamics in island communities?**

Here, the Solomon Islands and the UK Islands are taken as pertinent case studies to critically reflect on the ways in which specific conservation activities interact with social wellbeing. Table 1 outlines key aspects of context and material, relational and subjective wellbeing in the two cases, with the following sections focusing specifically on predominant conservation approaches in the two cases.

**Table 1: A summary of the dimensions of wellbeing that are highlighted in the literature in two different island contexts: Solomon Islands and UK offshore islands.**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Solomon Islands** | **UK offshore islands** |
| Temporal context | History | Colonialism; ‘Black-birding’ | Concentration or fragmentation of land tenure |
| Trends | High population growth, sea level rise  | Emigration, growth in tourism, financial and energy industries |
| Shocks | Earthquakes and tsunamis | Economic volatility in key industries |
| Vulnerability | Dispersed and remote archipelago |  |
| Material | Environment | Extremely high biodiversity, rich timber assets, multi-species fisheries | Relatively pristine ecosystems, iconic species, rugged landscapes.  |
| Infrastructure | Health and education service delivery is very poor given remoteness, fragmentation. | Scarcity of land, housing pressure, above average housing and commodity prices, relatively high levels of deprivation relating to income, employment, education, health and crime than other part of the UK (British Household Panel Survey) |
| Economic | Natural resources, gold, fragmented, high transport costs | Agriculture, tourism, seasonal employment, lack of employment for young people. |
| Dependency | Extremely high dependence on ecosystems for subsistence and income; and on foreign aid | Economic dependence on land and, increasingly, on biodiversity for nature-based tourism, high cultural dependence on fisheries and natural resources |
| Social | Culture & Identity | Diversity of ethnic groups, languages, culture;  | Strong cultural heritage and island identity further emphasised by influx of tourists interested in cultural heritage. For some, a sense of being an ‘ethnic’ minority |
| Community | Strong sense of community and reciprocal obligations to Wantoks | Strong social cohesion in UK islands expected to contribute to high subjective wellbeing |
| Connectedness | Links to migrant workers and diaspora living in Honiara, Fiji, NZ, Australia | Links to mainland, and in some cases islanders have a stronger global identity than inhabitants of the mainland. |
| Conflict | High levels of conflict among ethnic-island groups underpinned by tenure disputes | History of land disputes, conflict over locus of power and decision-making between mainland and islands. |
| Social Institutions | 87% of land under customary tenure, traditional leadership | Greater levels of social regulation in island communities linked to negative subjective wellbeing  |
| Subjective | Attachment to place | Assumed to be very high, but little research specifically on these subjective dimensions. | Very high attachment to place, islands seen as highly desirable places to live for retirees and as ‘playgrounds of the wealthy’ which increases prices and alters island demographics. Islands also seen as having limited opportunities by young people |
| Life satisfaction |  | Higher levels of life satisfaction and subjective wellbeing than expected after controlling for material deprivation. |
| Values | Connectedness to nature enshrined in customary institutions such as taboo areas, taboo species – eroding over time as communities aspire for western forms of development | Research mixed over whether island inhabitants or tourists placed a higher value on nature (willingness to pay). |
| Conservation implications | Approaches | Hybrid models of community-based conservation and natural resource management, Locally managed marine areas incorporating periodically harvested areas as modified notion of MPAs, taboo species, gear and species prohibitions. | Focus of conservation on species and habitat protection. Implementation of various forms of EU and UK legislation, including protected areas which essentially serve to reduce rather than prohibit impacts. No-take rules rare except to protect particular environmental ‘features’. |
|  | Outcomes | Limited evidence that material wellbeing (provisioning ecosystem services) is consistently improved.Socially motivated harvesting decisions can enhance material and cultural wellbeing at critical times when most needed, but can also create and exacerbate conflict.New forms of conservation beginning to change value systems around gender, voice and participation.Benefits for biodiversity conservation are not widely evidenced. | Literature reveals little disruption to existing extractive practices suggesting limited impacts on material wellbeing. Conservation appears focused on protecting cultural ecosystem services and material wellbeing in tourism and heritage sectors.Social and subjective wellbeing most influenced by the way that conservation decisions are made, and perceptions of insider / outsider control.  |

*A Solomon Islands case study*

Solomon Islands is a double-stranded archipelago of 990 islands in the south-western Pacific that has attracted extensive western scientific and conservation interest due to extremely high marine and terrestrial biodiversity. Solomon Islanders are historically and still heavily dependent upon natural resources with a majority of the growing population directly engaging in small-scale agriculture and with exceptionally high nutritional dependence on seafood (Anderson et al, 2013). There are few sources for cash income, other than producing and marketing agricultural commodities including crops and fruit, coconut, cocoa, timber, fish and marine products. Rainforests and commodified reef products such as trochus shells, beche-de-mer, pearl oysters, and live fish have provided quick-cash incomes for many coastal people without the need for external capital inputs, while also proving attractive for large-scale extraction by international interests. Since the 1990s, high dependency of material wellbeing on natural resources has raised international alarm at the rate of degradation of marine and terrestrial ecosystems. The discourse among international conservation agencies in Solomon Islands is one of ubiquitous ecological crisis, exacerbated in recent times by climate change (Barnett and Campbell 2010).

Crisis narratives and conflicting interests over natural resources and the distribution of wellbeing benefits in Solomon Islands have precipitated a myriad of conservation initiatives employing tools such as protected areas, species protection (e.g., turtles) and resource management tools (e.g., fishing gear prohibitions) (Cinner and Aswani 2007). Importantly, all conservation initiatives in Solomon Islands are mediated through a strong customary tenure system (a property regime which allocates ownership to indigenous peoples) that is enshrined in the national constitution and natural resources legislation. Most land (87%) and inshore seas are governed by customary tenure (Govan et al. 2009) and the *Wantok* system, a loosely culturally based code of reciprocal obligations based on shared kinship, language and place, remains influential in processes of leadership, decision-making and distribution of resources.

The centrality of customary institutions; which themselves are founded on relationships (relational wellbeing) between resource users; means that conservation agencies negotiate directly with the local resource owners, who have power in defining the nature of these relationships. Negotiations over such complex customary arrangements can trigger internal dispute but can also illuminate highly competent and powerful institutions for dealing with ‘outside’ agents, through strengthened local culture. Anthropologist Hviding (2003: 533) makes clear that it is important not to assume that Solomon Islanders are by any necessity victims of one-sided pressure from global forces of political economy, nor are they “willing and eager participants in biodiversity rescue operations…”.

Hybrid models of community conservation and natural resource management (CBRM) have emerged from these interactions. These consider customary tenure boundaries, traditional knowledge and governance institutions, but are modified to incorporate contemporary conservation, scientific and resource management tools (Foale et al. 2011). Marine protected areas, for instance, are re-configured as locally managed marine areas (LMMAs), avoiding specific references to ‘protection’, and ‘no-take’ (Govan et al. 2009) thereby better aligning with traditional ‘taboo’ systems of periodic harvest (Foale et al 2011). These hybrid approaches aim to be sensitive to place, values and identity, and existing social institutions (Hviding 2003, Foale et al 2011), and therefore directly consider aspects of relational wellbeing – and the nature of relationships between conservation actors and resource users - in their approach to resource governance.

There is however mixed evidence about the effectiveness of hybrid systems in delivering material wellbeing by enhancing sustainable provision of natural resources. For example, in marine systems, evidence suggests that periodically harvested closures can support higher catches for a limited time when opened to fishing, particularly for sessile invertebrate species. However, these short-term benefits do not necessarily compensate for the opportunity cost of the closure, and there is little evidence of spill-over or long-term sustainability benefits (Cohen and Alexander 2013). Researchers and communities have both argued that the emphasis on ‘information sharing’ by conservation organisations, rather than on lasting economic benefits for associated communities, can limit the effectiveness, attraction and durability of conservation initiatives (Keppel et al. 2012), illustrating that interpretations of which aspects of wellbeing matter most, can differ among stakeholders (Palmer Fry et al 2017).

Interestingly, the reviewed literature suggests that customary tenure systems and associated rules are socially rather than ecologically motivated (see also Jentoft 2004). Protected areas are opened in response to social need, including paying respects, feasts, health needs and schooling (see review by Cohen and Steenburgen 2015). This can provide important material and relational wellbeing, including subsistence, income and community cohesion at critical times. However, customary institutions are often employed to reaffirm or assert power relationships and claims on resources, particularly resources with high exchange value (Foale et al. 2011). Spatial closure decisions under hybrid management have, in some cases, further delineated what were vague, flexible or contested boundaries. Thus community-based resource management (CBRM) has sometimes disproportionately strengthened the rights of particular groups (such as chiefs and their families) and thereby precipitated or reinforced negative relational wellbeing in terms of community splits and conflicts (Cohen and Steenbergen 2015).

In response, CBRM approaches have evolved towards egalitarian representation (e.g. women and men have the same voice as chiefs) and a focus on ‘community’ over position, tribe or clan (i.e. land-holding groups and residents of a village correspondingly). This approach aims to ensure more evenly distributed material and relational wellbeing is derived from CBRM and it is now mainstreamed among government and NGO practitioners (Weeretunge et al. 2012). However, it requires a fundamental shift in the norms, beliefs and power relations in communities, and *‘*run[s] counter to indigenous notions of hierarchy, leadership, land tenure and kinship structure’ (Hviding, 2003: 541). It is not clear whether these changes in values around community-level decision-making are imposed by external agents or generated predominantly within communities, either to achieve desired change or in response to wider influences. Nevertheless, there are examples of broad integration of conservation objectives with wellbeing priorities that are meaningful at the community level. For instance, Guadalcanal village self-initiated and implemented a reef closure that has been in place, and widely supported by the community, since 2008. Key to this success was matching community aspirations of wellbeing (an example of subjective wellbeing); through increased economic development and high social cohesion with outside organisations’ environmental protection values. The traditional leadership also enabled and empowered the youth (traditionally marginalised) to lead the CBRM process (Abernethy et al. 2014). Indeed, this process was able to achieve its expected wellbeing gains through innovations in governance, and forming alliances with outside organisations.

*A UK islands case-study*

To examine the linkages between conservation and wellbeing on islands in a high-income context we focus on the small islands and British Crown dependencies that make up 8% of the United Kingdom’s land area. These islands are renowned for their natural beauty and are of conservation interest because of their role as critical habitats for marine mammals, endemic animals and rare birds. The economies of these islands are concentrated on a small number of sectors with agriculture and nature-based tourism being important industries. For example, Scotland’s archipelago has a reputation for ruggedness and isolation, and supports a tourism industry sustained by ‘cold tourists’ (Baldaccino 2006) who seek sustainable experiences away from mass consumption, and are attracted by the islands’ cultural and natural heritage. The literature suggests that the impact of natural resource extraction appears relatively minor on these islands, and instead, conservation is motivated by biodiversity and cultural preservation .

Conservation on UK islands is underpinned by both European and national legislation, including the most recent UK Marine and Coastal Access Act 2009, which aims to establish a network of MPAs around the UK comprising European protected areas and marine conservation zones (MCZs). In the UK, MCZs are spatially designated before the specific rules of use are outlined. In practice, the new legislation tends not to establish no-take zones but protects key habitat ‘features’ from destructive gears (e.g., bottom-towed gear) and otherwise continues to allow many existing practices suggesting minimal decline in material wellbeing for resource users.

A comparative study by Pieraccini and Cardwell (2016), however, demonstrates the important impacts of this conservation tool on subjective wellbeing. The authors contrast islanders’ responses to recent marine protected area policy in the Isles of Scilly off Cornwall and the Isle of Barra in the Scottish Outer Hebrides. The Isles of Scilly, a relatively pristine biodiversity hotspot which include a high number of Nationally Important Marine Feature (NIMF) species (Hiscock and Breckels, 2007), designated eleven new MCZs in 2013. Pieraccini and Cardwell (2016) argue that compared to other experiences in the UK the designation of MCZs in the Isles of Scilly was unique. It was bottom-up, underpinned by high levels of consensus among island stakeholders, a sense of empowerment and ownership of the process, and supported by a relatively strong scientific basis enhanced through tourist diving surveys.

By contrast, the similarly sized community of the Isle of Barra strongly contested the designation of a candidate Special Area of Conservation under the EU Habitats Directive for over 13 years (2000-2013) to the extent that they attempted to employ the UN Declaration on the Rights of Indigenous Peoples to query the legality of the designation. Pieraccini and Cardwell (2016) attribute islanders’ resistance to conservation legislation in the Isle of Barra to a perception that it was imposed by outsiders and to a history of conflict over land-based conservation. Past experience of terrestrial protected areas, which created additional bureaucracy and delays for crofters seeking government support for land management, now plays into antagonism against outsiders wanting to impose further seemingly unnecessary marine conservation; this is given that environments are perceived to be relatively pristine.

In other Scottish Islands, conservation initiatives have been more readily accepted through integration with crofting heritage. Community initiatives supporting the practice of crofting have potential to promote occupational diversity and cultural heritage, but also to contribute to maintaining natural heritage and biodiversity through low intensity agriculture (Mackenzie 2010). Mackenzie (2010) argues that new community land ownership movements are closely tied to claims of sustainable stewardship and land management, in contrast to more external conceptions of nature preservation. More participatory and culturally sensitive approaches to conservation planning that better account for people’s values, sense of place and occupational attachments - elements of subjective wellbeing - appear to result in better outcomes for social wellbeing and longer term sustainability.

**Conclusion**

Our framework and case-study discussion illuminates how a holistic interpretation of the wellbeing-island relationship can inform understanding about how different forms of conservation interact and influence wellbeing outcomes. Islands represent a useful microcosm in which to explore wellbeing impacts of conservation because the challenges and vulnerabilities they face are more acute and have comparable elements. Our two case studies demonstrate, in contrasting contexts, how conservation can be interpreted with a wellbeing lens, and suggest that conservation presents different threats and opportunities. In Solomon islands, material wellbeing including food and nutritional security, income (for education and healthcare) and housing (mangroves & forest timber) derived from direct extraction or the selling of extraction rights to companies stands to gain or lose from conservation. In the medium to long-term, outcomes depend on how successful conservation actions are at preserving or enhancing supply of services, but more immediately on how access to natural resources is altered. This potential re-distribution of resources by conservation in turn impacts on relational wellbeing by affecting social cohesion, the durability of customary institutions, and access to resources and places for cultural practices (e.g., feasts, traditional shell money for paying bride price, sacred sites). State-supported customary institutions very much shape the model of conservation implemented in Solomon Islands. Conservation objectives are pursued through hybrid models such as CBRM or LMMAs. These approaches aspire to promote community decision-making and are considerate of social and cultural priorities, which can in one sense preserve the valued aspects of material, relational and subjective wellbeing derived from natural ecosystems, for instance the opening of a closed marine area when school fees are due. On the other hand, the approach can exacerbate local-level inequalities that can exist within customary institutions or contemporary community structures, and concentrate wellbeing benefits to more powerful individuals, tribes or groups. Moreover, these hybrid models may also be limited in their ability to counter the powerful interests and abundant resources of extractive corporations that are arguably more of a threat to the environment, or deliver meaningful development and material wellbeing improvements to communities to meet basic needs and contemporary development aspirations. Thus, while processes of conservation implementation may appear to be complementary to diverse wellbeing outcomes, the substantive outcomes of conservation action are falling short of local to international expectations.

In the UK’s small islands, given a different set of dependencies, conservation impacts occur through other pathways. The effects of conservation on material wellbeing (food and income) derived directly from resource extraction are mostly limited to regulation of agriculture. In some islands, terrestrial conservation and land management have proved highly controversial and even where real impacts on material wellbeing are arguably minimal, adverse effects on subjective wellbeing and perceptions of conservation process are significant. Instead, the impacts of conservation on material wellbeing (income, employment and housing) occur primarily through its implications for nature-based tourism and property development. The literature points to the mutual material benefits of conservation for biodiversity, cultural heritage and the tourism sector, but highlights how rapid tourism decline and limited property development opportunities pose huge challenges for island communities and underpin a discourse of deprivation. In particular, aspects of relational wellbeing, including cohesion, culture and identity, are impacted by out-migration forced through a lack of jobs and housing, especially for young people. The subjective wellbeing of islanders that stay and those that leave is also affected, although positive feelings of place-attachment and identity can remain strong even for those who live and work elsewhere (sometimes termed rootedness – Gustafson 2001). The politics of conservation implementation also have implications for relational and subjective wellbeing. In these island contexts, policy implementation processes are highly sensitive to social identity - us and them, insiders and outsiders – and perceptions of control and autonomy, all of which can positively or negatively influence responses to marine conservation, as evident in the contrasting reactions in the Scilly Isles and Isle of Barra.

Conservation approaches that engage with all three dimensions of wellbeing seem to be associated with success. We argue therefore that a social wellbeing lens can be useful in enabling a holistic interpretation of how islands and wellbeing connect, and the role of conservation in influencing wellbeing and sustainability outcomes. The case studies reveal how important material, relational and subjective aspects of wellbeing are to islanders, and, indeed, how intertwined and mutually impacted they are, positively and negatively, by drivers of change, including conservation interventions. A social wellbeing framework explicitly gives equal importance to all three dimensions, and argues that all must be considered in relation to each other to provide an adequate assessment of wellbeing (McGregor et al 2009). This is supportive of a growing literature which calls for multi-dimensional assessments which use both objective and subjective criteria to understand how people and their environment relate (see Howe 2014).

**References**

Abernethy, K.E., et al (2014). Two steps forward, two steps back: The role of innovation in transforming towards community-based marine resource management in Solomon Islands. *Global Environmental Change* **28**: 309-321.

Abdallah, S., Michaelson, J., Shah, S., Stoll, L., and Marks, N. (2012). *The Happy Planet Index report* 2012. New Economics Foundation [www document] http://www.neweconomics.org/publications/entry/happy-planet-index-2012-report

Agarwala, M., Atkinson, G., Palmer Fry, B., Homewood, K., Mourato, S., Rowcliffe, J.M., Wallace, G, Milner-Gulland, E.J. (2014). Assessing the Relationship Between Human Well-being and Ecosystem Services: A Review of Frameworks. *Conservation and Society* **12**.4: 437.

Alkire, S (2002). Dimensions of human development. *World development* **30**.2:181-205.

Amoamo, M. (2013). Empire and Erasure: A Case Study of Pitcairn Island. *Island*

*Studies Journal* **8**: 233–254.

Andersen, A.B., Thilsted, S.H and Schwarz, A.M (2013). *Food and nutrition security in Solomon Islands.* Working Paper: AAS-2013-06. Penang, Malaysia, CGIAR Research Program on Aquatic Agricultural Systems**:** 16.

Baldacchino, G. (2006). Warm versus cold water island tourism: a review of policy implications. *Island Studies Journal* **1** (2): 183-200.

Baldacchino, G. and Berttram G. (2009). The Beak of the Finch: Insights into the Economic Development of Small Economies. *The Round Table* **98** (401): 141–160

Bainton, N.A. (2009). Keeping the Network out of View: Mining, Distinctions and Exclusion in Melanesia. *Oceania* **79**: 18-33.

Ballu, V. et al (2011). Comparing the role of absolute sea-level rise and vertical tectonic motions in coastal flooding, Torres Islands (Vanuatu). *PNAS* **108**.32: 13019-13022.

Ban, N.C., Mills, M., Tam, J., Hicks, C.C., Klain, S., Stoeckl, N., Bottrill, M.C., Levine, J., Pressey, R.L., Satterfield, T. and Chan, K. (2013). A social–ecological approach to conservation planning: embedding social considerations. *Frontiers in Ecology and the Environment* **11**.4: 194-202.

Barnett, J., and Campbell, J. (2010). *Climate Change and Small Island States: Power, Knowledge, and the South Pacific.* Earthscan Climate, Routledge, New York/London.

Briguglio, L. (1995). Small island developing states and their economic vulnerabilities. *World Development* **23**(9), 1615–1632.

Burholt V, Scharf, T and Walsh,K. (2013). Imagery and imaginary of islander identity: Older people and migration in Irish small-island communities. *Journal of Rural Studies* **31**:1-12

Byron, M (1999). The Caribbean‐born population in 1990s Britain: Who will return? *Journal of Ethnic and Migration Studies* **25**.2: 285-301.

CBD (2016). *Convention on Biological Diversity* [www document] <https://www.cbd.int/island/whymatters.shtml>

Cinner, J.E. and Aswani, S (2007). Integrating customary management into marine conservation. *Biological Conservation* **140** (3): 201-216.

Cohen, P.J and Steenbergen,D.J (2015). Social dimensions of local fisheries co-management in the Coral Triangle. *Environmental Conservation* **42**.03: 278-288.

Cohen, P.J. and Alexander, T.J. (2013). Catch Rates, Composition and Fish Size

from Reefs Managed with Periodically-Harvested Closures. *Plos One.* **8** (9): e73383

Conkling, P. (2007). On Islanders and Islandness. *Geographical Review*, **97**(2), 191

201.

Connell, J. (2013). *Islands at Risk?: Environments, Economies and Contemporary*

*Change.* Edward Elgar Publishing.

Coulthard, S., Johnson, D and McGregor.J.A (2011). Poverty, Sustainability and Human Wellbeing: A Social Wellbeing Approach to the Global Fisheries Crisis. *Global Environmental Change* **21**:453–463

Coulthard, S. (2012) What does the debate around social wellbeing have to offer sustainable fisheries? *Current Opinion in Environmental Sustainability* **4**(3): 358-363.

Depraetere, C. (2008). The challenge of Nissology – A global outlook on the world of archipelago Part 2: The global and scientific vocation of Nissology. *Islands Studies Journal* **3** (1):17-36.

Foale, S.J. (2001). Where's our development? Landowner aspirations and environmentalist agendas in Western Solomon Islands.  *The Asia Pacific Journal of Anthropology* **2** (2):44-67.

Foale, S., Cohen, P., Januchowski‐Hartley, S., Wenger, A. and Macintyre, M., (2011). Tenure and taboos: origins and implications for fisheries in the Pacific. *Fish and Fisheries*, **12**(4): 357-369.

Gillis, J.R. (2014). Not continents in miniature: islands as ecotones. *Island Studies Journal* **9** (1): 155-166

Gough, I and McGregor. J.A (Eds) (2007). *Wellbeing in developing countries: From theory to research*. Cambridge University Press.

Govan, H (2009). Achieving the potential of locally managed marine areas in the South Pacific. *SPC Traditional Marine Resource Management and Knowledge Information Bulletin* **25**:16-25.

Govan, H. (2009). *Status and Potential of Locally-managed Marine Areas in the South Pacific: Meeting Nature Conservation and Sustainable Livelihood Targets Through Wide-spread Implementation of LMMAs:* World Fish Study Report. (2009): 95. [www document]

<https://www.academia.edu/3011404/Status_and_potential_of_locally-managed_marine_areas_in_the_South_Pacific_meeting_nature_conservation_and_sustainable_livelihood_targets_through_wide-spread_implementation_of_LMMAs>

Guardian Newspaper (2014) Shetland may reconsider its place in Scotland after yes vote, says minister. Article by Esther Addley 17th Sept 2014. [www document] <http://www.theguardian.com/politics/2014/sep/17/shetland-may-reconsider-place-scotland-yes-vote-alistair-carmichael>

Guillotreau, P, Campling, L and Robinson, J (2012). Vulnerability of small island fishery economies to climate and institutional changes. *Current Opinion in Environmental Sustainability***4**.3: 287-291.

Gustafson, P. (2001) Roots and routes: Exploring the relationship between place attachment and mobility. *Environment and Behavior* **33**(5): 667–686

Hay, P. (2006). A phenomenology of islands. *Island Studies Journal* **1**:19-42

Hicks, C.C., Crowder, L.B., Graham, N.A., Kittinger, J.N. and Cornu, E.L. (2016). Social drivers forewarn of marine regime shifts. *Frontiers in Ecology and the Environment* **14**.5: 252-260.

Hiscock, K Breckels, M (2007). *Marine biodiversity hotspots in the UK: their identification and protection.* WWF-UK 2007.

Hau'ofa, E. (1994). Our Sea of Islands. *The Contemporary Pacific* **6**(1): 147-161.

Howe, C., Suich, H., Vira, B. and Mace, G.M. (2014). Creating win-wins from trade-offs? Ecosystem services for human well-being: A meta-analysis of ecosystem service trade-offs and synergies in the real world. *Global Environmental Change* **28**: 263-275.

Hviding, E (2003) Contested rainforests, NGOs, and projects of desire in Solomon Islands. *International Social Science Journal* **55**.178: 539-554.

Igoe, J., and Brockington. D. (2016). Neoliberal Conservation: A Brief Introduction. In Haenn, N., Wilk,R.R. and Harnish, A. (2016) *The Environment in Anthropology: A Reader in Ecology, Culture, and Sustainable Living*: p.324.

Jeffery, L. (2013). We are the true guardians of the environment: human-environment relations and debates about the future of the Chagos Archipelago. *Journal of the Royal Anthropological Institute* **19** (2):300-318.

Jentoft S (2004). Institutions in fisheries: what they are, what they do, and how they change. *Marine Policy*: **28**(2):137–49.

Keppel, G., Morrison, C., Watling, D., Tuiwawa, M.V. and Rounds, I.A. (2012). Conservation in tropical Pacific Island countries: why most current approaches are failing. *Conservation Letters***5**.4: 256-265.

Kennedy, J.C (2006). *Island Voices: Fisheries and Community Survival in Northern Norway.* Eburon Delft.

Kerr, S.A (2005). What is small island sustainable development about?. *Ocean & Coastal Management* **48**.7:503-524.

Mackenzie, F. (2010). A common claim: Community land ownership in the Outer Hebrides, Scotland. *International Journal of the Commons* **4**.1

Malm, T. (2007). No island is an “island”: Some perspectives on Human Ecology and Development in Oceania, in: Hornborg, F., Crumley, C.L. (Eds.), *The World and the Earth System: Global Socioenvironmental Change and Sustainability since the Neolitic.* Left Coast Press, Walnut Creek, pp. 268 – 279.

McCall, G (1994). Nissology: A proposal for consideration. *Journal of The Pacific Society* **63**:93-106.

McGillivray, M, Wim, N. and Santos-Paulino, A.U (2010). Vulnerability, trade, financial flows and state failure in small island developing states. *The Journal of Development Studies* **46**.5:815-827.

McGregor, J.A., Camfield, L and Woodcock, A. (2009). Needs, wants and goals: Wellbeing, quality of life and public policy. *Applied research in Quality of Life* **4**.2: 135-154.

McGregor, J A, Coulthard, S and Camfield,L. (2015) *Measuring what Matters – The Role of Wellbeing Methods in Development Policy and Practice.* Project note for the Overseas Development Institute. [www document]

http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9688.pdf

McNamara, K E and C Gibson (2009). We do not want to leave our land: Pacific ambassadors at the United Nations resist the category of ‘climate refugees. *Geoforum* **40**.3: 475-483.

MA 2005. *Ecosystems and human well-being.* Millennium Ecosystem Assessment. Washington, DC (2005).

Milner-Gulland E.J., McGregor, J.A., Agarwala, M., Atkinson, G., Bevan, P., Clements, T., Daw, T., Homewood, K., Kumpel, N., Lewis, J. and Mourato, S. (2014) Accounting for the Impact of Conservation on Human Well‐Being. *Conservation Biology* **28**.5: 1160-1166.

Mountz, A (2015) Political geography II Islands and archipelagos. *Progress in Human Geography* **39**.5: 636-646.

Nisbet, E.K, Zelenski,J.M. and Murphy, S.A (2011). Happiness is in our nature: Exploring nature relatedness as a contributor to subjective well-being. *Journal of Happiness Studies* **12**.2: 303-322.

Nunn, P.D., (2004). Through a mist on the ocean: Human understanding of island environments. *Tijdschr. voor Econ. en Soc. Geogr.* **95:** 311–325.

Nurse, L.A., McLean, R.F., Agard,J. (2014) *Small islands. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects.* Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. V.R. Barros, C.B. Field, D.J. Dokken (Eds). Cambridge University Press, Cambridge, pp. 1613-1654.

OECD (2011), Social Cohesion and Development, in Perspectives on Global Development 2012: Social Cohesion in a Shifting World, OECD Publishing, Paris.[web document] DOI: <http://dx.doi.org/10.1787/persp_glob_dev-2012-6-en>

Okamura, J. Y. (2008). .*Ethnicity and Inequality in Hawai'i.* Philadelphia: Temple University Press, 2008. [www document] https://muse.jhu.edu/

Fry, B.P., Agarwala, M., Atkinson, G., Clements, T., Homewood, K., Mourato, S., Rowcliffe, J.M., Wallace, G. and Milner-Gulland, E.J. (2017). Monitoring Local Wellbeing in Environmental Interventions: A Consideration of Practical Trade-Offs. *Oryx* **51***:* 1-9.

PANG (2016). Pacific Network on Globalisation. *Defending Pacific Ways of Life: A Peoples Social Impact Assessment of PACER-Plus.* Suva, Pacific Network on Globalization (PANG)

Petrosillo, I., Costanza, R., Aretano, R., Zaccarelli, N. and Zurlini, G., (2013). The use of subjective indicators to assess how natural and social capital support residents’ quality of life in a small volcanic island. *Ecological Indicators* **24:** 609-620.

Pieraccini, M., and Cardwell, E (2016). Divergent perceptions of new marine protected areas: Comparing legal consciousness in Scilly and Barra, UK. *Ocean & Coastal Management* **119**: 21-29.

Pitt D. (1980). Sociology, islands and boundaries. *World Development* **8**(12):1051–9.

Podgorelec, S,. Gregurović, M,. Bogadi, S.K. (2015) Satisfaction with the quality of life on Croatian small islands: Zlarin, Kaprije and Žirje. *Island Studies Journal* **10** (1):91-110

Randall, J.E., Kitchen, P., Muhajarine, N., Newbold, B., Williams, A. and Wilson, K., (2014). Immigrants, islandness and perceptions of quality-of-life on Prince Edward Island, Canada. *Island Studies Journal* **9**.2: 343.

Reenberg, A., Birch-Thomsen, T., Mertz, O., Fog, B. and Christiansen, S., (2008). Adaptation of human coping strategies in a small island society in the SW pacific - 50 years of change in the coupled human - environment system on Bellona, Solomon Islands. *Hum. Ecol*. **36**: 807–819.

Royle, S.A. (2007). Islands off the Irish coast and the “bridging effect”. In G. Baldacchino (Ed.), *Bridging islands: The impact of fixed links* (pp. 207-222). Charlottetown PE: Acorn Press

Schilling‐Estes, N (2002). On the nature of isolated and post‐isolated dialects: Innovation, variation and differentiation. *Journal of sociolinguistics* **6**.1: 64-85.

Stiglitz, J., Sen, A. K and Fitoussi, J.P (2009). *The measurement of economic performance and social progress revisited: reflections and overview*. [Web document] https://hal-sciencespo.archives-ouvertes.fr/hal-01069384/

UNEP (2014a). *GEO Small Island Developing States Outlook. United Nations Environment Programme,* Nairobi, Kenya.

UNEP (2014b) Statement of the Executive Secretary for the Convention on Biological Diversity Braulio Ferreira de Souza Dias, on the occasion of World Environment Day 5 June 2014 [Web document]

<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=2790&ArticleID=10874&l=en>

UN-OHRLLS, UNESCO, UN-DOALOS (2014) Report of the Expert Group Meeting on the Significance of Marine Science and Technology for SIDS: the Transfer of Marine Technology Transfer to SIDS to Support Sustainable Development, May 14–17, 2014. New York, 22 pp. [web document] http://www.env.gov.sc/images/suppdoc/EGM.report.recommendations.fin.pdf

Weeratunge, N. (2012). Transforming aquatic agricultural systems towards gender equality: a five country review. Working Paper: AAS-2012-21. ICLARM-World Fish. [Web document] http://pubs.iclarm.net/resource\_centre/WF\_3348.pdf

Weisler, M.I., Bolhar, R., Ma, J., St Pierre, E., Sheppard, P., Walter, R.K., Feng, Y., Zhao, J.X. and Kirch, P.V. (2016). Cook Island artifact geochemistry demonstrates spatial and temporal extent of pre-European interarchipelago voyaging in East Polynesia. *PNAS* **113**(29): 8150-8155.

West, P. (2006). *Conservation Is Our Government Now: The Politics of Ecology in Papua New Guinea*. Durham and London: Duke University Press

White, S.C (2010). Analysing wellbeing: a framework for development practice. *Development in Practice* **20**.2: 158-172.

White, S. C. and Blackmore, C., 2015. *Cultures of Wellbeing: Method, Place, Policy.* Palgrave Macmillan.

Woodhouse, E., Homewood, K.M., Beauchamp, E., Clements, T., McCabe, J.T., Wilkie, D. and Milner-Gulland, E.J. (2015). Guiding principles for evaluating the impacts of conservation interventions on human well-being. *Phil. Trans. R. Soc. B* **370**.1681.