CAMBRIDGE

Cambridge University Press
978-1-107-07833-8 — The Give and Take of Sustainability
Edited by Michelle Hegmon
Excerpt
More Information

1

Introduction

Multiple Perspectives on Tradeoffs

MICHELLE HEGMON

> Sustainable development "meets the needs of the present without compromising the ability of future generations to meet their own needs"
>
> (World Commission on Environment and Development [aka Brundtland Commission] 1987:8)

> Sustainability is defined "by the joint objectives of meeting human needs while preserving life support systems and reducing hunger and poverty" and sustainable development involves "the reconciliation of society's development goals with its environmental limits over the long term"
>
> (National Research Council 1999:21, 22).

> The three grand challenges of the 21st century are "freedom from want, freedom from fear, and the freedom of future generations to sustain their lives on this planet"
>
> (United Nations Secretary-General Kofi Annan in his Millennium Report to the UN General Assembly 2000).

Implicit in these eloquent words is a sense of tension among the goals: Some of the needs of the present are met most efficiently with non-renewable resources such as fossil fuels that will not be available for future generations and that are contributing to what may be irreversible climate change. Living within environmental limits may be good for the long term, but it prevents some people from meeting their needs today. Subsequent work recognized these tensions and tried to untangle these multiple goals, recognizing that they involve different scales, actors, institutions, and targets (e.g., Martens 2006; Parris and Kates 2003). Even more recently, it

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE
Cambridge University Press
978-1-107-07833-8 — The Give and Take of Sustainability
Edited by Michelle Hegmon
Excerpt
More Information

is recognized that hard choices and tradeoffs are often necessary, because it is not always possible to alleviate poverty and preserve the environment simultaneously (e.g., Campbell et al. 2010; McShane et al. 2011; Turner et al. 2003). As a result, there is a growing concern with understanding tradeoffs, conceptually and in practice. This volume is designed to address that need.

A brief story illustrates: At a recent conference in Taiwan, Margaret Nelson (the lead author of Chapter 8) presented a paper entitled "Sustainability, Resilience and Policy" based on her archaeological research about vulnerability tradeoffs (see Nelson et al. 2010, 2013). In the ensuing discussion, one of the national research directors, who was developing national policy regarding sustainability for Taiwan, told her that he thought he had solutions (such as recycling) to various problems, but her talk helped him to realize that his "solutions" also had consequences and he needed to reevaluate parts of his strategy. The point is not that recycling is bad – it is usually better than dumping trash in a landfill – but rather that it also has costs. Recycling is often energy intensive, may involve poor labor conditions, and can encourage wasteful behavior such as the continued use of small plastic bottles of water. The director was able to make more carefully considered plans because Nelson's talk led him to consider the tradeoffs of his sustainability solutions.

We hope that this volume will inspire people like that open-minded director to become more cognizant of tradeoffs and think broadly about their implications. Some tradeoffs have clear or immediate losses and benefits that are identified by vocal opposing stakeholders. In other cases, the tradeoffs may not be obvious, either because losses are incurred in the future, or because they are borne by the dispossessed. A major goal of this volume is to bring awareness to these less obvious tradeoffs.

To this end, in April of 2014, a group of anthropologists (both ethnographers who work with living peoples and archaeologists who study the past) came together at the Amerind Foundation in Dragoon, Arizona, to talk about the tradeoffs we observed in our research, a conference supported by the Global Institute of Sustainability at Arizona State University. We were joined by Ann Kinzig, an ecologist and sustainability expert, who is a co-author of a key article that argues for the importance of recognizing tradeoffs (McShane et al. 2011). As that article shows, there is an intense discussion of tradeoffs in the growing field of sustainability science. In contrast, although the concept of tradeoffs is found throughout anthropology, the word itself is rarely used. It seemed clear that the fields could inform one another. Anthropology could provide more perspective and

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE
Cambridge University Press
978-1-107-07833-8 — The Give and Take of Sustainability
Edited by Michelle Hegmon
Excerpt
More Information

awareness to sustainability's concern with tradeoffs, and the concept of tradeoffs could sharpen anthropological analyses and provide new perspectives.

The overarching goal of this work is to create a broad awareness of tradeoffs. Together, we worked toward two sets of more specific goals. (1) In our considerations of tradeoffs, we sought to maintain focus on the human costs and human experience, in part linking this work to ongoing efforts to develop an approach known as the Archaeology of the Human Experience (Hegmon 2016a). In particular, it is important to understand who experiences the advantages and disadvantages of a particular policy or action. If the losses are borne disproportionately by some – often those already disadvantaged – that should be viewed as a serious tradeoff. For example, in Chapter 10, Brewington shows how long-term ecological resilience on the Faroe Islands was achieved by disenfranchising a large proportion of the population, and in Chapter 9 Grier and Angelbeck illustrate how unequal resource ownership contributed to the sustainability of those resources among the Coast Salish. (2) Individually and especially in combination, the chapters are organized to provide a broad multi-scalar perspective on tradeoffs. The deep time perspective of archaeology, the detailed understanding of particular situations provided by both ethnography and computer modeling, and the comparative tradition in anthropology as a whole all allow us to understand how tradeoffs sometimes cross time and space and social group. For example, Spielmann and Aggarwal (Chapter 11) use insights from the archaeology of small-scale societies to gain insights into issues facing farmers in India today. Specifically, archaeological examples demonstrate the effectiveness of household-level storage, which in turn allows them to explore the tradeoffs incurred by national-level storage. Logan (Chapter 5) also links past and present with a long-term archaeological and historical study of foodways in Ghana. She explores the short- and long-term tradeoffs involved in the adoption of new and potentially highly productive crops, a perspective that helps her explain both the relatively slow rate of adoption and the difficulties farmers face in today's market-based economy.

Definition

Tradeoffs involve "a giving up of one thing in return for another" (Merriam-Webster Dictionary 1984:1250). At one level, tradeoffs are omnipresent simply because resources are finite and multi-tasking is literally impossible; doing one thing precludes doing another. This broad definition

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-1-107-07833-8 — The Give and Take of Sustainability
Edited by Michelle Hegmon
Excerpt
More Information

is given focus in statements that emphasize costs or sacrifices vs. benefits or desirable objectives (italics mine):

> *Hard choices* . . . are faced when there are trade-offs . . . between different interests and priorities . . . between long-term and short-term time horizons . . . and between *benefits* at one spatial scale and *costs* at another (McShane et al. 2011:968).

> In trade-off situations it is impossible to achieve two or more *desirable objectives* simultaneously (Hahn et al. 2010:219).

> Tradeoffs involve "compromise situations when a *sacrifice* is made in one area to obtain *benefits* in another" (Byggeth and Hochschorner 2006:1420 cited by Hahn et al. 2010:220).

The concept of tradeoffs is a central concern of what has come to be called the "Robustness-Vulnerability Framework" (Anderies 2006; Anderies et al. 2004; Anderies et al. 2007; Carpenter et al. 2001; Janssen et al. 2007; Nelson et al. 2010). This view, which is linked to resilience thinking and derived from engineering, emphasizes that a strategy or construction can be robust only to certain kinds of shocks, and that robustness in one realm incurs vulnerabilities in others. The goal is to understand how these tradeoffs work in order to minimize vulnerabilities that are likely to be realized and those that have particularly severe consequences. Some of the chapters in this volume (Chapter 2 by Freeman et al., Chapter 3 by BurnSilver et al., and Chapter 8 by Nelson et al.) explicitly draw on this framework. And all of the chapters are concerned with understanding tradeoffs that are truly difficult. These also include those in which different actors have different needs that cannot be met simultaneously. Often gains and losses are separated across time or space or social groups, and those who experience losses (whether a disadvantaged group today or people of the future) have minimal or no representation.

In contrast, in a win-win situation two or more objectives can be gained simultaneously. In sustainability, there is a great deal of debate (reviewed in the next section) about whether and how win-wins can be achieved. In general, as is shown in the analyses in Chapter 2 by Freeman and colleagues, win-wins are possible in some cases, depending on (1) the empirical setting and (2) the scope of what is considered. The first point is perhaps obvious: there is no need to make hard choices about resources in abundant settings. The latter point is key to our awareness of tradeoffs. If the scope is narrowly defined to include only two or very few objectives,

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE
Cambridge University Press
978-1-107-07833-8 — The Give and Take of Sustainability
Edited by Michelle Hegmon
Excerpt
More Information

then it might be possible to satisfy all simultaneously and achieve a win-win. But if the scope is broadened, it reveals that there are always costs or tradeoffs in some realm – time spent, things not done, or resources utilized. A narrow scope that focuses on a few neatly specified objectives is easier to analyze, but the broader view, which recognizes that there are always tradeoffs somewhere, expands understandings and might point to important tradeoffs that would otherwise be missed. Throughout the volume authors draw on both the narrower and broader perspectives, as appropriate. Two examples illustrate:

Chapter 2, by Freeman and colleagues, explains the essence of tradeoffs with a mathematical model of corn and agave farmers that is the basis of two experiments; each utilizes the narrower view of tradeoffs, considering two neatly specified objectives in a particular empirical setting. For example, their Experiment 1 shows that when rainfall is very abundant it is possible to both maintain balanced reciprocity and minimize the farmers' exposure to famine; thus there is a win-win with respect to these two variables. However, they call this scenario a "qualified win-win" because in order to achieve these two objectives not all farmers can have their preferred level of maize consumption. Thus, the broader view reveals a tradeoff, and the question becomes whether the tradeoff is difficult at some level. The answer depends in part on one's perspective, an issue considered in the penultimate section.

The second example should be generally familiar to anyone who has seen the 1974 film *Chinatown*. In the early twentieth century, Los Angeles engineered an aqueduct that diverted water from the Owens Valley to a reservoir that supplies the city. The Owens Valley was transformed from a productive agricultural area to an unhealthy dustbowl and many people lost their livelihoods. Los Angeles kept some water in Owens Lake in an attempt to reduce the dust, and recently the city agreed to control the dust through other means. As described by Little (2015:7, emphasis mine), the city is using "enormous bulldozers to dig deep furrows that capture and retain loose dust. The agreement promises clean air for Owens Valley and allows Los Angeles to save 3 billion gallons of water annually—*a classic win-win*." It is a win for California's water and a win for residents of Owens Valley who want less dust. However, a broader view recognizes that there are tradeoffs at other levels, such as the energy cost for the bulldozers and the implication that difficult situations can be resolved with technofixes. A broader historical view also considers how this difficult situation came to be, including the tremendous losses suffered by Owens Valley residents and landscapes when the water was originally diverted. The point is that

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE
Cambridge University Press
978-1-107-07833-8 — The Give and Take of Sustainability
Edited by Michelle Hegmon
Excerpt
More Information

whether a situation is considered a tradeoff or a win-win (or something else) depends on what is included and who is defining the outcomes. This case in particular shows that both narrow and broad perspectives contribute insights: Like recycling, the bulldozers provide a solution at some levels, but there is always something more to consider.

The Importance (and Difficulty) of Recognizing Tradeoffs

Both the difficulty and the importance of recognizing tradeoffs is illustrated by a brief history of what came to be called integrated conservation and development programs (ICDPs; Brandon and Wells 1992), which emerged primarily in the last decades of the twentieth century. At their core was the belief that alleviating poverty and protecting the environment (mostly in the developing world) should go hand-in-hand, a perspective underlying the quotes that open this chapter. A brief history of this approach is provided by Adams et al. (2004). The union of these two goals was an important part of the 1992 Earth Summit at Rio de Janeiro and of the Millennium Development Goals of 2000. Among the many resulting development programs were the commercial gathering of non-timber products in forests and ecotourism around parks. Both kinds of initiatives involved local people deriving income from natural resources in ways that would inspire those people to protect their environment. Thus, the dual goals of conservation and poverty reduction were tightly linked (Christensen 2004:34).

This paradigm is strongly win-win, and it led to a very optimistic view of what good programs could achieve. For example, Gibson (2006) argues that sustainability should find solutions that involve "multiple reinforcing gains." He also dismissed solutions that involve compromises as undesirable and says "trade-offs are acceptable only as a last resort when all the other options have been found to be worse" (2006:172). This view assumes that well-designed programs will be able to alleviate poverty and preserve the environment simultaneously (with the implication that if a program cannot do both, the failure lies with the program).

The difficulty, of course, is that this paradigm created unreasonable – though appealing and easily marketable – expectations. A "deadly combination of wishful thinking, quickly contrived policy poultices, and … poor information … induced policy professionals to declare that in tropical settings biodiversity conservation is de facto compatible with sustainable economic development" (Redford and Sanderson 1992:38). It also led to what is described as a "vicious cycle of optimism and disenchantment"

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE
Cambridge University Press
978-1-107-07833-8 — The Give and Take of Sustainability
Edited by Michelle Hegmon
Excerpt
More Information

(McShane et al. 2011:967), in which planners who refused to acknowledge or report failures could not understand why the expectations were so often unmet. As these quotes suggest, much was at stake and the argument was often heated. The work of Kent Redford is one of many examples (described by Christensen 2004). Redford had studied the commercial gathering of forest products in Amazonia, and reported his findings in an essay entitled "The Ecologically Noble Savage" (1991), which questioned the ICDP win-win paradigm. He argued that indigenous people using modern hunting technologies have a strong negative impact on forest ecology. The people have been terribly wronged, their rights to land should be recognized, but they should not be "faulted for failing to live up to Western expectations of the noble savage." Redford was vilified as a result, even to the point of receiving hate-mail.

Eventually, the same points were made with data from many case studies and less controversy. W. M. Adams had been an early skeptic of "sustainable development" (2008 [1st edition in 1990]), and in 2004 he led a paper that concluded "success with integrated strategies is elusive" (Adams et al. 2004:1146). That paper also developed a typology aimed at better understanding the relationship between poverty alleviation and conservation. A special feature of *Ecology and Society* was devoted to assessing the numerous ICDPs in the Malinau District of Indonesia, where a majority of people live in poverty (Campbell et al. 2010). Authors recognized some cases where conservation was improved and poverty alleviated, but they also noted many failures. Importantly, they argued that one reason for the failures was refusal to acknowledge tradeoffs: "Fundamental to success is the recognition of the significant trade-offs that occur between conservation and development goals." (2010:1). Ferraro and Hanauer showed that even the protected areas in Costa Rica, often seen as successful integrated programs with win-wins results, saw tradeoffs between deforestation and poverty alleviation (2011). Drawing on a comparative study of many projects, McShane and colleagues (2011) argued for the importance of acknowledging conservation-development tradeoffs and developed a set of principles for analyzing them.

The win-win paradigm that promised to alleviate poverty and promote conservation was full of heady optimism. But, as the people who were involved describe, it initially created unrealistic expectations and a myopia that could not see failures, with the result that the failures could not be addressed or understood. The tradeoffs approach may appear less optimistic, at least rhetorically, but its realism offers promise. In essence, what it says is that even the best programs with the best intentions often result in

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE
Cambridge University Press
978-1-107-07833-8 — The Give and Take of Sustainability
Edited by Michelle Hegmon
Excerpt
More Information

tradeoffs. We need to be aware of those tradeoffs to understand and manage them, and work to minimize their impact; and a great deal of current ecological research is working to do just that (e.g., Adams et al. 2014; Kareiva et al. 2007). For example, a study of mangrove forests found that there are strategies that both increase peoples' income through shrimping and protect the forests (McNally et al. 2011). This work was strengthened by the authors' explicit consideration of tradeoffs and their long-term view on how they can be alleviated. Win-win outcomes are sometimes possible, but they are more likely if potential difficulties are acknowledged and dealt with rather than ignored.

These kinds of ideas have also become part of sustainability thinking more generally, including the very concept of sustainability. The issues are articulated in the four key questions raised by Allen et al. (2003:36) and articulated by Tainter (2014):

(1) Sustain what?
(2) Sustain it for whom?
(3) Sustain it for how long?
(4) Sustain it at what cost?

These questions, and contemplation of their answers, implicate tradeoffs. Do we want to sustain our way of life? Make changes such as reducing poverty and inequality? Help endangered species recover? All of these benefits incur costs – there are always tradeoffs.

Most of the authors in this volume came to the conference at the Amerind with this realist perspective: There are often, or perhaps always, tradeoffs. Our collective goal is to advance research to create awareness of potential tradeoffs so they can be understood and thus better managed or possibly mitigated. We leave the debate about whether and how ICDPs should be changed to the many experts in that field, and instead work to create a broader multi-dimensional perspective on tradeoffs.

The Power of Words

Words matter. According to *The Concise Oxford Dictionary of Literary Terms*, the word "discourse" denotes "any coherent body of statements that produces a self-confirming account of reality by defining an object of attention and generating concepts with which to analyze it" (Baldick 1990:59). Or, as Brosius (1999:278) says in a review of anthropology and environmentalism, "environmental discourses are manifestly constitutive of reality (or, rather, of a multiplicity of realities)." Adams (2008) makes

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE
Cambridge University Press
978-1-107-07833-8 — The Give and Take of Sustainability
Edited by Michelle Hegmon
Excerpt
More Information

similar points regarding the idea of "sustainable development" (see also Crush 1995). Hornborg even suggests that serious problems and looming disaster are being ideologically disarmed by "the rhetoric on 'sustainability' and 'resilience'" (2009:239). And in his concluding Chapter 12, Hornborg questions the discourse implied by the economic calculus of "costs" and "benefits" and of the very concept of tradeoffs, which he suggests provides functionalist justification for injustice and inequality. Discourse has long been a key issue in political ecology (e.g., Escobar 1996), an approach that focuses on issues of power and control over resources as a means of understanding relations between nature and society. Talk about tradeoffs can be a powerful discourse, and those who control that discourse – whether policy makers or academics – focus our attention on some things and exclude others. There are at least three interrelated issues.

First, tradeoffs are often seen from analysts' omniscient perspective that assumes society is an integrated whole. There are losses, yes, but there are also gains, so the term connotes a sense of balance. But from the perspective of those involved in the tradeoff, on one side of the balance, there may be nothing but loss. The people removed from a newly created park don't see a tradeoff; they see their homes destroyed. Anthropology's recent concern with the ethnographer's "gaze" and how that differs from indigenous perspectives (see Clifford and Marcus 1986) may be helpful in navigating between perspectives.

Second, while a focused view on tradeoffs among a small number of realms is useful analytically, it necessarily excludes other realms. Much of the work regarding ICDPs discussed in the previous section concerns the conflicting goals of well-defined stakeholders, who are sometimes defined as "anyone affected by a particular World Bank project" (Brosius and Russell 2003:40). A broader perspective considers other less vocal classes of people, including those more distant in time or space.

Finally, the focus on a tradeoff "situation" provides a useful analytical focus but may exclude the structural forces that created the situation. An understanding of multiple scales – a basic tenet of political ecology and one emphasized here – shows how larger historical or global economic forces create or contribute to what is seen as a particular or local tradeoff situation.

These difficulties do not lead us to reject the concept of tradeoffs, but rather to use it carefully. The broad definition of tradeoffs brings awareness to tradeoffs beyond the interests of vocal stakeholders, and beyond the immediate time and place. This is the multi-dimensional perspective advocated by many researchers (e.g., Schoon et al. 2011) and explored in the next two sections that focus on tradeoffs over time, and then on those

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE
Cambridge University Press
978-1-107-07833-8 — The Give and Take of Sustainability
Edited by Michelle Hegmon
Excerpt
More Information

that cross space and social group. These in turn lead to consideration of how what we call tradeoffs are actually experienced and perceived, and thus how an understanding of tradeoffs might help us to make better decisions.

The Temporal Dimension

I'm spending my children's inheritance!

This RV bumper sticker gets across a concept also known as "discounting the future." Possible losses (to be experienced in the future) are traded off for value experienced in the present. This is one characteristic of a poverty trap – the present value of a dollar always outweighs its future value because food or medicine or clothing are needed immediately, and saving for the future is an impossible luxury; this issue in agricultural decision making is explored in Bartlett (2013). For example, the Indian farmers described by Spielmann and Aggarwal (Chapter 11) are forced by circumstances to sell food at low prices (in order to get much-needed cash for other expenses) and then to buy food later at higher prices. In other situations, the future is simply not valued as much as the present, as may be the case when people are rewarded only for short-term profits. Sustainability is essentially the opposite; it is about *counting* the future. Sustainability recognizes that the way we currently meet the needs of (some people in) the present may compromise the ability of future generations to meet their own needs. The goal is to reduce this all-encompassing tradeoff, to figure out ways of meeting both present and future needs. However, as the earlier section on recognizing tradeoffs made clear, many of the strategies designed to meet that goal themselves lead to tradeoffs. And that's just the part we see. Even good plans and strategies have unanticipated consequences, cascading effects, and downstream consequences.

Perspectives on tradeoffs developed in the field of evolutionary biology, which has a long history of studying tradeoffs (Garland 2014), provide some insights into temporal processes. There is no question that evolution involves tradeoffs; the focus is on how the tradeoffs can be understood, including implications for both ecosystems and human health. Two examples introduce issues of concern in this volume.

The first involves immune systems and their effects, at two temporal scales. Over the course of evolution, and in many areas of the world today, humans faced many risks from parasites and infectious diseases. Studies of vertebrates (including humans) show that immunological defenses

© in this web service Cambridge University Press www.cambridge.org