Abstract: International discourses that inform environmental management policies rely too heavily on universalized narratives of environmental degradation. These narratives often situate subsistence communities and their livelihood practices as causal agents in scenarios of environmental degradation. Because they lack context, these narratives are flawed; they are built upon socially constructed ideas of nature and degradation that originate from a Western understanding of “good” and “bad” nature. These narratives are also dangerous, because as normative agents they facilitate, justify and moralize top-down, interventionary environmental management practices that often exclude local stakeholders from both the physical lands they rely on, as well as from the process of deciding how these lands will be managed. In some contexts, these conventional narratives of environmental degradation are applicable, but in others they reproduce colonial patterns of land appropriation, justified by the superiority of western knowledge. For environmental management policies and practices to be truly sustainable, they must also be equitable and privilege local understandings of nature and degradation.

Introduction

The health of the environment and welfare of subsistence communities often intersect in discourses of international development and resource management. Subsistence communities rely heavily on local ecosystems for their livelihoods, and it is widely accepted that degradation of these environments can further marginalize these communities (Robbins 76-77). In turn, the additional socio-economic marginalization these communities experience often forces them to exploit their environments even more, which increases the rate of degradation and results in a self-perpetuating cycle of increasing poverty and degradation (Robbins 77). This relationship is the reason that these two features – the health of the environment and welfare of marginalized people – so often collide in international discourse. Policy that informs sustainable environmental management must consider the reliance of marginalized people on their environments, while development aid aimed at addressing poverty and improving socio-economic wellbeing must consider the health of the environment.

Although this relationship appears simple, its practical application is anything but. Institutions like the World Bank, environmental NGOs, and various branches of the United Nations, as well as governments are concerned with environmental issues, and are aware of their complexities, but their management strategies are often founded on flawed narratives. For the purposes of this paper,
narratives can be understood as “stories of apparently incontrovertible logic, which provide scripts and justifications for development action” (Fairhead and Leach 1023). These narratives often limit the ability of organizations to address specific environmental issues because they decontextualize our understanding of human-environment relations. This paper seeks to explore these conventional narratives through the lens of political ecology and to introduce counter narratives that complicate, and sometimes contradict, universalized understandings of the relationship between environmental degradation and marginalized communities. Ultimately, the purpose of such an exploration is to emphasize that context and local knowledge are crucial for developing understandings of human-environment relations, especially when such understandings inform policies for effective sustainable development and environmental management.

**Conventional Environmental Discourse**

Three themes pervade international narratives of environmental degradation: environmental degradation is increasing through direct and indirect human impacts; the costs of this degradation are borne primarily by poor, subsistence communities; and intervention is necessary in order to prevent further, irreversible changes, and to improve the resiliency and welfare of the world’s poor communities. The pervasiveness of these themes becomes apparent when examining the language employed by international development and environmental protection organizations.

The United Nations Environmental Programme (UNEP), for example, lists unsustainable resource use and ecosystem degradation from human impacts, such as agriculture, as primary causes of biodiversity loss (UNEP). Similarly, the World Wildlife Fund (WWF) lists agricultural practices among the five most environmentally damaging human activities. In fact, they claim that agriculture is the “largest driver of habitat and biodiversity loss [in] the world” (“Agriculture”). These impacts are driven by an increasing demand for agricultural products, which in turn has increased the scale and rate of land clearing. According to the WWF, lands converted to agriculture are stripped of natural vegetation, which exposes their soils to the erosive forces of rain and wind, and divests them of their fertility (“Agriculture”). These landscapes become degraded and unproductive with continued use, and are eventually abandoned to become part of the 12 million hectares of farmland lost to desertification every year (WWF, “Agriculture”).

This discourse – “a specific set of representations and practices” that naturalizes and universalizes a particular “view of the world” (“Discourse” 166-167) – is echoed in the Millennium Ecosystem Assessment, which claims that human induced ecosystem change has been greater in the past 50 years than at any other time in human history (World Resources Institute 1-3). Driving these changes are swiftly increasing demands for “food, fresh water, timber, fiber, and fuel” (1-3). According to the World Resources Institute (WRI), the effects of environmental degradation are primarily endured by the poor, and in many cases are the “principle factor causing poverty and social conflict” (1-3). Of particular concern are dryland ecosystems, which have relatively low rates of precipitation and high rates of evaporation. These landscapes encompass 41 percent of the Earth’s land surface, and are home to about one third of the human population (13). They are also representative of so-called “marginal” ecosystems, with low productivity and low resiliency to disturbance (13). These areas are also home to some of the poorest and most vulnerable (to the effects of environmental degradation) people on Earth (13).

These discourses of environmental manage-
ment often rely on conventional narratives that typically attribute environmental degradation to human “ignorance, selfishness, and overpopulation” (Robbins 90), and suggest that the “conversion of natural habitats into agricultural... landscapes” virtually assures an eventual transition into degraded land (Dobson, Bradshaw and Baker 515). The Food and Agriculture Organization of the United Nations (FAO) recognizes how urgently effective conservation and sustainability strategies are needed to restructure and improve agricultural practices and socio-economic conditions in marginalized communities (FAO, “Biodiversity”). Like the FAO, the United Nations Development Programme (UNDP) has a mandate to provide resources to facilitate capacity building in developing countries (UNDP). These resources can be knowledge-based, to inform improved environmental policies and national rural development strategies, and can also help to secure funding for related projects (FAO, “About the FAO”; UNDP).

The discourse employed by these organizations is founded upon a particular understanding of environmental degradation and human-environmental relations. In doing so, it has created a justification and a moral imperative for addressing environmental degradation and the welfare of marginalized peoples from the top down, as if these peoples were both responsible for, and incapable of, addressing the issue themselves. There is nothing inherently wrong with seeking to protect the environment and improve the lives of marginalized people. Scientific understandings of ecology and environmental processes are developed enough that we should take their claims of degradation very seriously. However, any broadly universal understanding will always represent a simplification of reality. This becomes problematic when decisions informed by abstract and decontextualized narratives are deployed into a variable and highly contextualized world.

What’s in a Word? - Defining “Marginal” and “Degradation”

In Political Ecology: A Critical Introduction, Paul Robbins describes the conventional understandings of the terms “marginal” and “degraded” in the context of environmental assessment. Marginal environments are understood as those having limited productivity, heightened sensitivity to perturbation, and little resiliency (76-77). People that occupy marginal lands are in turn generally categorized as politically and socio-economically marginal, since it is presumed they would inhabit less marginal lands had they the choice (77).

A “degraded” environment describes an end state, the result of losses in ecosystem productivity that lead to an “injured” landscape. The causes of degradation are generally attributed to human impacts, for example through agriculture and land-use change, though natural variability is a compounding factor (91-97). Describing what productivity is “lost” is slightly more complicated. Robbins describes productivity-loss according to four categories: loss in natural productivity, understood as a decrease in “soil nutrients, increasing levels of [soil] salinity, and loss of surface biomass” (92); loss of biodiversity, referring to a decrease in the structure and diversity of an ecosystem’s species matrix; usefulness, a normative measure, as it relies on subjective appraisals of what is considered useful, with the “what” ranging from financial returns on crop yields, to collective community benefits; and shifting risk ecology, which looks at whether environmental changes have put the ecosystem or local communities at greater risk of disturbance and disaster. Measures of usefulness are often captured in historical records, such as accounts of annual crop yields, and the prevalence of these records may be why its use as a measure of environmental change is so pervasive in formal management policy (94-96). Other definitions of degradation read essentially the same. For instance, the Millennium Ecosystem Assessment
Report defines degradation as a decrease in ecosystem services, which can be broadly defined as losses in natural productivity (WRI).

What’s in a Word II - (Re)defining “Marginal” and “Degradation”

“It has been said that there are three versions of every story, your version, my version, and the truth” (Barry 42). “Wherever we look” says Peter Barry, “we see language constituting the world… not just reflecting it” (42). These phrases hint at a more complex understanding of words and language, and stem from three proposals made by Swiss linguist Ferdinand de Saussure (1857-1913): First, the meaning of a word is an arbitrary, social construction, and depends on convention for its maintenance. Second, these meanings are relational, and are defined by the suite of related words within which they exist. Third, the words, language, and meanings they convey do not reflect reality, they create it (Barry 40-43). With this in mind I want to explore and unpack the words “marginal” and “degraded,” whose meanings are rarely questioned in conventional environmental discourse. By using this more critical perspective, we can begin to treat these words as representations of very specific ideas, rather than as descriptors of reality. To do so, we must begin by interrogating their definitions.

The Oxford English Dictionary defines marginal lands as “barely worth developing”, and possessing a condition which approaches a limit “beyond which something ceases to be possible or desirable”. These definitions incite questions: for what and for whom are marginal lands barely worth developing? What ceases to be possible and for whom is this activity desirable? Naturally, the answers to these questions depend on whom you are speaking with. An interrogation of the term “degradation” offers similar insights. Particularly interesting is the previously mentioned quality of “usefulness” as a measure of degradation. As Robbins notes, what is deemed “useful” is both subjective and normative (94-96). Similar patterns emerge when questioning definitions of “natural productivity”. A loss of surface biomass is a common measure of degradation, but may favour species with greater biomass, such as trees, over those with less, such as grasses. Decreases in soil nutrients, another important measure of degradation, also biases against particular species, as some favour nutrient-rich soils, while others favour nutrient-poor ones.

The object of these analyses is to emphasize that conventional notions of what constitutes a “marginal” or “degraded” environment are constructed from a conceptual position located within the western imagination that ranks states of nature in very specific ways. Ask someone from the global north how they imagine a “marginal” landscape and the people that live there, and they will probably describe something akin to a desert: a brown wasteland inhabited by poor (brown) people. But other cultures with other understandings exist, and these do not necessarily conceptualize nature in the same fashion. Interrogating the meanings of words like “marginal” and “degraded” and unpacking the assumptions underlying their conventional imaginings draws into question their use as justification for top-down environmental management policies that fail to consider other, local environmental imaginings.

Critical analyses that deconstruct conventional narratives to unravel their origins and the assumptions underlying them can be a fascinating platform from which to begin constructing counter narratives. The following case studies provide insight into the influence and effects of global power networks on local livelihoods. However, as important as it is to consider these counter perspectives, we must avoid adopting a blanket-cynicism towards conventional environmental narratives, as we risk discarding well-intentioned and often well-informed efforts to address issues of real con-
cern, such as species extinction and poverty. Critical understandings should inform and question conventional narratives, but not dismiss them. In the case studies that follow, I aim to destabilize both conventional and counter narratives of degradation by illustrating contexts in which top-down intervention strategies informed by conventional narratives have improved environmental conditions and local livelihoods, and instances in which such approaches have led to the expropriation of land from the local community, resulting in disruption of local livelihoods.

Case Study I: China’s Loess Plateau

The following case study is one instance where a top-down environmental management program informed by conventional narratives of degradation successfully improved environmental conditions and the lives of local communities. The Loess Plateau is a 620,000 km² region in the northwestern region of China, and is home to over 100 million people (World Bank, “Restoring China’s Loess Plateau”). This region is regarded as the “cradle of Chinese civilization”, and has been actively cultivated for over 6000 years (ERSEC 9; Wang et al. 676). It is named for the large deposits of loess soil that were deposited between 2.4 and 1.7 million years ago (ERSEC 4). The region is characterized by cold, dry winters, and hot, humid summers. Rainfall, when it occurs, is often heavy (ERSEC 9).

Historical analyses suggest the plateau was once covered by forest, but hundreds of years of cumulative human impacts: unsustainable agriculture, deforestation, and overgrazing; have significantly changed the landscape (ERSEC 286). When the People’s Republic of China was formed in 1949, just 6.1 percent of the entire plateau remained vegetated (ERSEC 169). Today the Loess Plateau is the site of one of the most extreme cases of soil erosion on Earth, losing approximately 3720 t/km² of soil annually. (ERSEC 5; 50). By conventional understandings, the Loess Plateau is extremely degraded, and this degradation has been linked to the effects that local practices of slope farming, deforestation and overgrazing have wrought on the landscape (World Bank, “Restoring China’s Loess Plateau”).

Extreme levels of soil erosion impact local environments and communities in several ways. Agricultural productivity is adversely affected when soil organic matter and nutrients are lost through erosion (ERSEC 126). The deposition of sediment in waterways increases the frequency and severity of flooding (ERSEC 126). With no vegetation to protect the soil and retain water, droughts and dust storms have become more common (Wang et al. 675). The effects of these impacts on the Loess Plateau are felt further away as well. The Yellow River, which drains the Plateau, carries much of the sediment with it, depositing it downstream and increasing the risk of flooding in these communities (ERSEC 126).

But parts of the Loess Plateau have also been the site of some remarkable changes. In 1994, the World Bank partnered with the Chinese government to form the Loess Plateau Watershed Rehabilitation Project on 15,600 km² of land (World Bank, “Loess Plateau Watershed”). The primary goal of this project was to increase agricultural production and farmer incomes, with a secondary goal of decreasing soil erosion and sedimentation in the Yellow River (World Bank, “Loess Plateau Watershed”). These objectives were approached in three ways. First, sustainable agricultural practices were introduced. These practices, based on terracing and the use of existing level farmland, replaced historically damaging slope-farming practices. Second, slopes were re-vegetated with trees, shrubs and grasses, to provide communities with fuel, timber, and animal fodder. In addition to this, grazing on sensitive sites was discouraged. Third, sediment retention dams were constructed to decrease the amount of sediment erosion.
originating from slopes and gullies (World Bank, “Loess Plateau Watershed”).

The results of this project were quite positive. The livelihoods of 2.5 million people were improved through the introduction of sustainable agricultural practices (World Bank, “Loess Plateau Watershed”). Natural resources were protected through changes in agricultural, grazing, and harvesting practices (World Bank, “Loess Plateau Watershed”). These, along with re-vegetation efforts, doubled vegetative land cover while waterway sedimentation was reduced by over 100 million tons per year due to re-vegetation and small dam networks. Furthermore, flood risk was reduced and water availability was increased (World Bank, “Restoring China’s Loess Plateau.”). Terraces improved crop production, and allowed for greater crop diversity, which led to increased employment rates and a doubling of farmers’ incomes. Food security was improved through better water-use management and terracing practices that improved the productivity and reliability of farmlands. Terracing and sediment control also opened new areas to agricultural production (The World Bank, “Restoring China’s Loess Plateau.”).

The World Bank Project was a success by nearly every measure and has been replicated throughout China to the benefit of nearly 20 million people (World Bank, “Restoring China’s Loess Plateau”). However, other analyses offer more critical perspectives. The belief that the Loess Plateau was historically blanketed in forest establishes an environmental “base-line”, and the loss of this forest is claimed as evidence of degradation. However, one analysis questions whether the region was in fact “blanketed in forest”, and thus calls into question how “degraded” the region actually was (Houyuan, Dongsheng and Zhengtang). Another questions the sustainability of afforestation, suggesting that the increased vegetative cover may actually reduce available soil water (Jiao et al.). Others voice concerns over impacts the project may have on the availability of water to those further down the Yellow River, a vast area of irrigated agricultural production that is already approaching the limits of available water supplies (McVicar et al.). Local voices of dissent are strangely absent, but this should not suggest that they do not exist, given the Chinese government’s history of suppressing voices of criticism.

Case Study II: Counter Narratives

Unfortunately, less positive examples of external interventions, justified by universalized narratives of “degradation,” are much easier to come by. If one general lesson can be extracted from the following examples, it is that the issues that arise in these cases are mostly the result of misunderstandings brought about by the application of decontextualized environmental narratives into context-specific local realities.

A classic example in which a conventional narrative of degradation diverges strongly from a local environmental history is found in the work of James Fairhead and Mellissa Leach, who during the 1990s described how narratives of forest degradation in Guinea were founded on conventional tropes that linked migration, overpopulation, and land-use change with environmental “degradation”, and specifically with the loss of forest cover (Fairhead and Leach 1023). Their work centered around two locations: Kissidougou, a region in the south west of Guinea, and the Ziama forest reserve, located along the country’s southern edge (1023). In both case studies a “degradation narrative” was constructed from a spectrum of assumptions and “false forest histories” (1023). These narratives incorrectly assumed an environmental baseline in which present day pockets of forest were presumed to be remnants of a historical forest that once blanketed the landscape (1032). Also written into this narrative was the assumption that the immigration of the savanna-dwelling Mandinka people, and displace-
ment of the “forest-dwelling” Kissi and Toma, had triggered environmental degradation through a combination of overpopulation and the introduction of unsustainable agricultural techniques (1023; 1032). The solution to this perceived degradation was forest conservation through the exclusion of local people, and the removal of local environmental controls (1032-1033). In reality, they argue, these narratives of “degradation” were patently false. Forest cover was actually increasing due to local livelihood practices, and the history of forest cover in the region was found to be more imaginary than real (1026-1029; 1030-1031). The overpopulation narrative was also found to be false, as the assumption of linear growth ignored historical fluctuations in population as a result of periods of abundance and periods of conflict (1030-1032). The top-down management policies put in place had only served to disrupt the livelihoods of people, and by restricting their ability to conduct the traditional livelihood practices that produced their environments in the first place, the top-down approach also reproduced old colonial tropes of western superiority.

In his work on Rajasthan, India, Paul Robbins describes two contrasting views of nature. The first, held by a state forester, is excited and proud of the growing success of a project to increase forest cover in this dryland ecosystem (107-108). His efforts, part of a government mandate to increase forest cover, are intended to reverse a long history of “abuse and neglect” (107-108). The second view is that of a local herdsman. His view of the landscape contrasts sharply with that of the forester. Rather than seeing a regenerating landscape, he views the afforestation as a “hazard and a blemish” that has introduced trees of “no value” (108). The trees, he argues, crowd out desirable grasses and livestock forage, and threaten his livelihood (108). In his view the spread of forest cover is not environmental restoration, it is not even a forest, it is “banjar, [a] degraded wasteland…an English landscape” (108). This example illustrates just how dramatically interpretations of the same environment can differ, and emphasizes the idea that “natural” categories are social constructions, rather than pre-existing states of nature. It also hints at the potential impact of top-down environmental management on local communities, as the future of the herdsman’s lifestyle in the changing environment he calls home becomes unclear.

Conventional narratives that ascribe the cause of desertification to overgrazing and overexploitation through agriculture have similarly been questioned. Diana K. Davis artfully describes the French-Colonial origins of such narratives in North Africa (“Desert Wastes” 359-360). There, (mis)understandings of local environmental histories, born of French misinterpretations of Roman writings that described the region as the bread-basket of Rome, led French colonial officers to believe that the Maghreb had been degraded through pastoral practices from an imagined previously fertile and forested state (“Desert Wastes” 361-370). In fact, more recent historical environmental analyses suggest that the region was never completely forested, and was in fact well adapted to local pastoral practices (“Desert Wastes” 374). This narrative was used to justify expropriation of land, changes in land tenure, and the criminalization of traditional practices (“Desert Wastes” 374-379). I would argue that this imperialist trend of appropriating local control of environments is not simply a feature of the past, but rather, it persists to this day as a result of the flaws in contemporary environmental management policies that are built from decontextualized conventional degradation narratives. In a separate piece, Davis illustrates how these persistent narratives continue to justify arguments that blame pastoralists for “degradation”, and further marginalize their ways of life (“Indigenous Knowledge” 509).

(Re)Contextualizing Narratives

The intention of this exploration was to un-
settle and complicate conventional and counter narratives that infuse international discourses of environmental management and sustainable development. The Loess Plateau Rehabilitation Project was chosen to emphasize that measurable improvements to ecosystems and local livelihoods can indeed be achieved through externally informed environmental management strategies. However, as the counter narrative case studies demonstrate, an awareness of the assumptions that constitute conventional environmental narratives must not be brushed aside. These examples suggest that a universalist model of environmental management is not only unrealistic, but also potentially harmful to local communities. Marginalized populations in “degraded” environments need access to international resources, but conventional management strategies and the national policies they affect must be informed by indigenous knowledge(s) if they are to be environmentally and socially sustainable.

Acknowledgments: I would like to thank my editor, Sarah Hansen, for all of her hard work and input. This paper would not be what it is today without her help. I would also like to thank the people that led me to undertake this project. Rosemary Collard and Jessica Dempsey, who taught an incredible course that was my first introduction to political ecology, and the work of Paul Robbins, James Fairhead and Mellissa Leach. Additionally, Dr. Loch Brown, whose class this paper was originally written for, not only gave me the opportunity to further explore this field, but also gave me a tremendous amount of support and encouragement in writing this paper.


