



More Than Just the Marshes:

A political ecology approach to analyzing restoration and environmental management efforts in the Iraqi Marshes

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Abstract: The southern marshes of Iraq have experienced extreme environmental change over the past 30 years. Beginning with a period of rapid desiccation during the Gulf War, the marshes were completely destroyed, resulting in extreme biodiversity loss and the displacement of thousands of the indigenous Mada'an Marsh Arab people. Restoration and development projects by international aid organizations and foreign nations have resulted in a reflooding of the wetland environment, however ongoing socio-political and climate problems continue to make the region vulnerable to future disaster. In this paper I will explore restoration and development efforts in the Iraqi southern marshes, and evaluate their success for preventing future problems of environmental disaster. By incorporating theories of political ecology and transitional and transformational adaptation, I will evaluate the effectiveness of marshland restoration in preventing future vulnerability based on how, and to what extent, the policy addresses socio-political problems, such as upstream damming projects, livelihood destruction, and federal government control of indigenous land.

Keywords: Iraq, marsh arabs, restoration, adaptation, political ecology, transformation, climate change, wetlands

1. Introduction

Numerous wetland restoration projects have occurred in the Mesopotamian Marshes of Iraq following the environmental dessemation that occurred as an act of violence during the Gulf War. While policy surrounding marshland restoration was critical for providing immediate relief to the Marsh Arab communities suffering from livelihood loss and displacement, many of the policy efforts enacted by outside aid agencies aim to restore the wetland environment only to its previous state. Even as the region receives increased attention as a newly listed UNESCO World Heritage Site, it is important to consider if the restoration policy is truly allowing for the Iraqi Marsh

Arabs to rejoin their communities after an immense period of livelihood loss. Furthermore, restoration policy that does not deliberately work to prevent future climate and socio-political disaster will only allow an instance like the Gulf War dessication to occur again. By grounding this analysis of wetland restoration in theories from political ecology and climate change adaptation, we can identify shortcomings and failure. By first exploring ideas from political ecology and adaptation theory, I will then ask the question: should the restoration efforts that occurred in the southern marshes of Iraq be viewed as successful, or do they only appear resilient, without truly working to address the socio-political root causes of the climate disaster?

2. Background Literature

A Framework for Political Ecology:

The complex and multi-dimensional nature of the marshland desiccation demands response policy that addresses the environmental, social, and political consequences of the disaster. In chapter 1 of *Political Ecology: A Critical Introduction*, Paul Robins (2011) emphasizes the importance of political ecology theory for understanding human-environment interactions" (Robbins 2011, 14). The definitions of political ecology most critical for this case study are those provided by Watts (2000) and Stott and Sullivan (2000). Watts defines political ecology as a field that works to "understand the complex relations between nature and society through a careful analysis of what one might call the forms of access and control over resources and their implications for environmental health and sustainable livelihoods" (Robbins 2011, 16, and Watts 2000). The emphasis here on the relationship between access and control and sustainable livelihoods draws attention to the inherently political nature of restoration and land use. Furthermore, Stott and Sullivan's definition includes the idea that political ecology works to consider the "political circumstances that forced people into activities which caused environmental degradation in the absence of alternative possibilities" (Robins pg 16, Stott and Sullivan 2000). This idea is useful for considering the way that blame for environmental degradation can often be placed on local individuals that engage in the livelihoods viewed as degrading or maladaptive, without considering the political forces and restraints that prohibit any long term adaptation from occurring.

By considering the broad range of ideas that fall under the umbrella of political ecology, Robins argues that all of the various definitions are important for creating an alternative to "apolitical" ecology and policy: work that fails to consider the interconnected relationship between politics and the environment (Robbins 2011). The problematic nature of apolitical development work is also present in the political ecology theory of Raymond Bryant, who argues that sustainable development literature often fails to address socio-political factors (Bryant 1991). Bryant writes that this apolitical attempt at sustainable development is often driven by the fact that

government and business elite can either gain or maintain power from processes that are environmentally harmful, therefore governments are less inclined to implement policy that would lead to a shift in social dynamics (Bryant 1991). The theory provided by Bryant poses important questions that are necessary for critiquing development plans, such as who formulates the development strategies and what are their interests? How are these plans contradicted by rigid political structures? How might environmental rhetoric be utilized in vague and misleading ways? (Bryant 1991) Bryant concludes his article "Putting Politics First: The Political Ecology of Sustainable Development" by emphasizing that radical social change is an essential prerequisite for truly sustainable development, therefore any development plans that fail to address socio-political problems are missing a crucial element for success (Bryant 1991). The call for radical social change, however, is far easier said than done.

A socio-nature approach to adaptation:

Political ecology theory has been fundamental in reframing the ways that adaptation planning is developed and evaluated. A socio-nature approach to adaptation, proposed by Andrea J. Nightingale in her case study analysis of Nepali climate development, demands a centering of adaptation policy around problems of society-nature and power (Nightingale 2011). This socio-nature approach views climate policy as developing within already highly politicized networks, in contrast to apolitical means of adaptation that separate social change from natural (environmental) change (Nightingale 2011). Creating distinctions between social problems and environmental problems are unhelpful, and ultimately will lead to failed attempts of meaningful climate policy. Nightingale's critique of apolitical Nepali climate policy through a socio-nature lense is a successful example of how political ecology theory can illuminate shortcomings in adaptation planning, by centering policy around questions of power and trajections of socio-political change (Nightingale 2011). Her analysis of the NAPA and LAPA climate policy plans concludes that despite a general emphasis on social inclusion and support of vulnerable populations, the apolitical framing of the documents fail to address Nepal's contentious and fragile political state, or consider how socio-political problems will lead to a delay or complete failure of implementation.

The resilience-transition-transformation framework:

Just as Robins, Bryant, and Nightingale articulate the need to center political factors in successful sustainable development, Mark Pelling poses similar themes in his analysis of adaptation and its categorization as working to attain either resilience, transition, or transformation. Climate change adaptation that works to build resilience consists of policy that does not challenge or question "underlying assumptions of power asymmetries in society" (Pelling 2011). Resilience efforts work to achieve stability but nothing further than that, whereas transition policy may work to challenge or

restructure some existing political structures. To an ever further extent, adaptation and policy falls into the transformation framework when it includes the creation of new rights, and a completely restructured political state (regime shift). Additionally, oftentimes adaptation at the resilience level is much quicker to implement than work at the transition or transformation level, which can appear more attractive to outside aid agencies who have less time or resources to put towards a problem (Pelling 2010). Adaptation that is categorized as resilience is still important and necessary--especially in instances where urgency is needed and local people need support in their coping efforts. However, disaster response that stops after an environment appears to be restored to a state of normalcy does not allow the community to be prepared for future instances of climate disaster. Pelling's categories of adaptation within a resilience-transition-transformation framework builds on the comparison of a political and political development discussed previously. By defining transformational adaptation as adaptive acts that target reform of the dominant political structures as a "primary goal" we can draw parallels between this definition, and Nightingale's sociopolitical emphasis on addressing political problems in climate policy (Pelling 2011, Nightingale 2011).

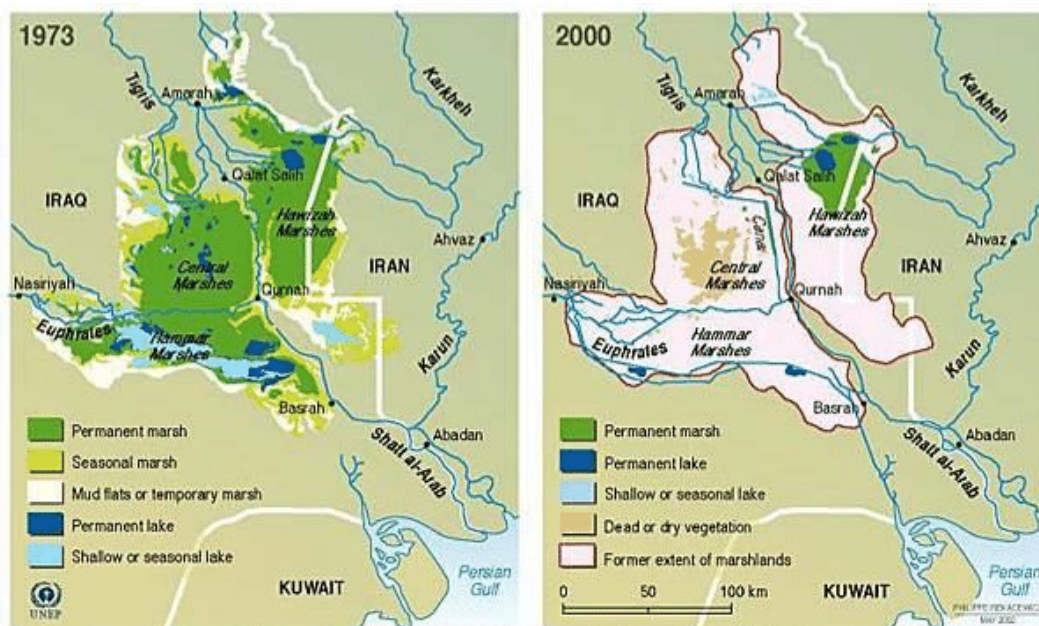
With an increasing focus on sustainable development in climate change research and policy implementation, it is important to remember the long scale over which meaningful adaptation planning is implemented. In considering the resilience-transition-transformation framework for adaptation that Pelling contributes to adaptation theory, political ecologist Thomas Bassett (2012) provides important questions of adaptation processes and the time period for which transformation can be achieved. This is done by considering what the process for transformative change looks like, and what do we categorize as transformative change? (Bassett 2012). Additionally, what does it mean to re-order society and achieve a regime change, two factors that Pelling states is the necessary foundation for transformative adaptation? By incorporating theories of political ecology into adaptation, vulnerability analysis and climate planning, the nuances of transformational adaptation can be better understood.

3. Geographic Context

The geographic extent of this study is the southern marsh environment of Iraq, which spans across the nation's eastern border into Iran as well. The wetland environment is controlled by upstream river flow from the Tigris and Euphrates rivers, both of which flow through Turkey and Syria before emptying into Iraq. The marshes are a significant cultural landmark for the local indigenous groups and the greater Middle Eastern community as well, as they are known by many to be the inspiration for the Bible's "Garden of Eden" (UNEP 2007).

In addition to being a biodiversity hotspot, home to a long list of species, the region is also home to the Mada'an Indigenous Group, also known as the Iraqi Marsh Arabs.

This cultural group has occupied the region for centuries, engaging in unique livelihood traditions such as reed gathering and water buffalo herding. The region has largely been unstudied prior to the draining in the Gulf War, however detailed ethnographic studies by S.M. Salim in his publication *Marsh Dwellers of the Euphrates Delta* are useful in studying the cultural and socio-economic practices of the Marsh Arabs prior to the dessication. Following the large-scale desiccation, however, the population of the Marshes decreased from 500,000 people to 20,000, leaving individuals as internationally displaced persons and environmental refugees (Fawzi 2016). A more recent geographic concern for the region is the development of large hydropower damming projects on the Tigris and Euphrates river upstream in Syria and Turkey, which are limiting the flow of water into the Marshlands as well as altering the salinity needed to sustain reed farming and the care of water buffalo (Fawzi 2016).



1. 1 The map above illustrates the extent of the southern marshes of Iraq prior to and following the draining events of the 1990s. Map from UNEP 2003 Report.

4. Materials and Methods

It is important to distinguish that the methods for analyzing restoration and development policy are not to determine its effectiveness in restoring water levels or providing immediate relief to the marsh environment. There were a variety of influential and necessary aid efforts that provided clean water and sanitation assistance, as well as physical work that helped to reflood the wetlands. Like all climate disasters, these supportive aid efforts are necessary for short term coping mechanisms, however they must be coupled with development and management plans that prevent future instances of destruction. In this analysis, the restoration and development efforts will be

assessed based on their ability to prevent future instances of climate and political vulnerability, by considering how these proposed policies and responses address (or fail to address) socio-political problems that drive regional vulnerability for the members of the Marsh communities.

I analyzed a series of aid and restoration reports, beginning with a 2001 UN aid response, and ending with the Iraqi Government's proposal to UNESCO for the consideration of the marshes as a World Heritage Site in 2014. The goal of these methods were to assess restoration and development policy from a broad range of actors, (Iraqi Government, international aid organizations, foreign nations). Additionally, I chose reports that spanned the largest temporal window possible, to develop an understanding of how environmental action in the marshes has changed since the dessication, and at what time various actors have been supportive in restoration, management, or policy.

The bulk of my analysis focused on work being conducted by the United Nations Environmental Program, because the reports were publicly available, and the restoration plan provided a phased approach to increased environmental protection in the marshes. Development projects were successful in helping to build long term adaptation success and protect against future regional vulnerability if they (1) provided solutions that addressed the livelihood needs of the Iraqi Marsh Arabs explicitly, (2) proposed solutions to mitigate the downstream effects of the hydropower damming projects of Turkey and Syria, or (3) worked to create outcomes that would dismantle the socio-political structures that allowed for the rapid downstream desiccation in the first place. These are clearly large goals with a variety of factors at play, therefore some proposed solutions were considered potential attempts at successful policy that could be meaningful with more time and resources. Adaptation is a long term process, and therefore, the necessary steps to achieve structural transformation are blurred and malleable (Bassett 2012).

In addition to restoration and management efforts I incorporated the use of qualitative research by Al-Mudaffar Fawzi et al. (2016) and two documentaries that interviewed Marsh Arabs, in order to understand how these policies may impact the local communities, and any gaps that may exist between the policy implications and reality. A variety of shortcomings exist within this research framework, resulting from the geographic remoteness of the Iraqi marshes, a language barrier between the Mada'an indigenous group, and the political strictness Iraq has on individuals entering the marshes.

5. Results and Discussion

UNEP:

The United Nations Environmental Program released a series of documents that focused on conflict assessment, clean up, and restoration projects to be implemented between 2003 and 2009. The UNEP report was not explicitly focused on the marsh region, however, and many of the outlined policies also addressed problems of municipal waste, oil pipeline spillage, and vandalism in other parts of the nation (UNEP 2007).

There are, however, ways in which the UNEP document successfully identifies development needs that would help mitigate vulnerability in the marsh region. The first instance of this can be found in section 9.2, titled “Iran-Iraq Dialogue on the Mesopotamian Marshlands” (UNEP 2007). The section identifies the “ecologically interdependent” nature of the marshlands, instead of focusing on the marshland environment within the federal bounds of Iraq. The need for collaborative marsh restoration efforts resulted in a 2005 conference centered around restoration of the Mesopotamian Marshlands, where representatives from regional governments, the United Nations, and the World Bank provided input (UNEP 2007, 40).

While the UNEP policy almost allows for transformative, socio-political adaptation needs by addressing the transboundary nature of the southern marshes and opening important political dialogue, the majority of other policy efforts do not fall into this same category. Figure 2 illustrates the outlined components of the UNEP Marshland restoration project, spanning phases I through III over a three year time period.

Figure 2: Iraqi Marshlands Project Phases and Supported Activities

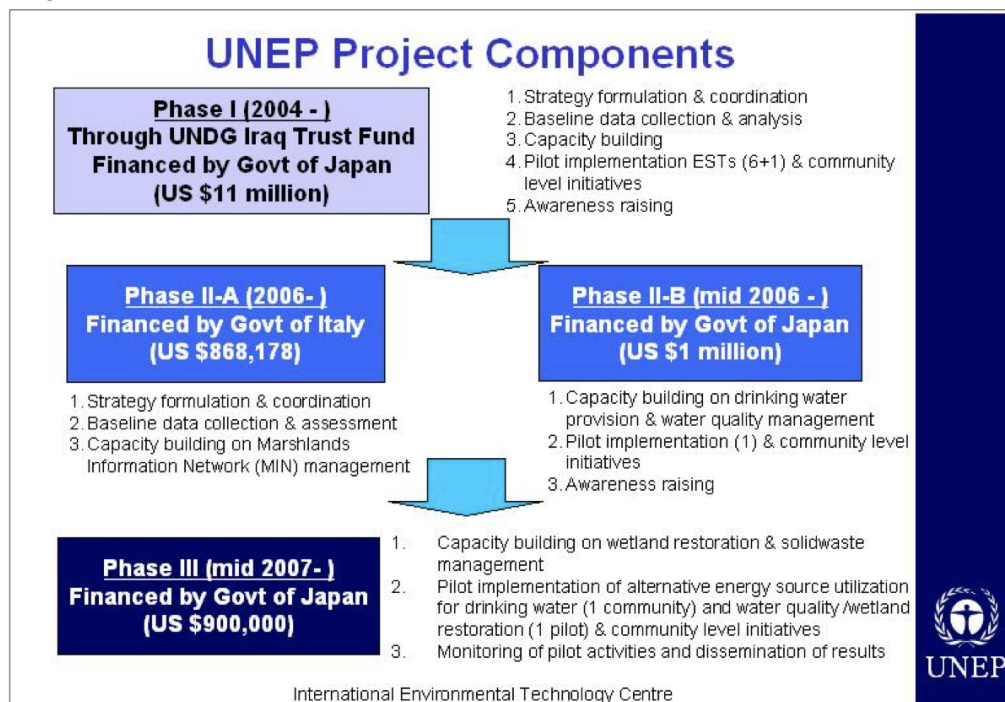


Figure 2: UNEP Project components. Source: UNEP Report (2007)

Table 1: Analysis of Phase I-III Project Components for Long Term Adaptation

	Addresses socio-political problems?	Notes:
Strategy formulation and coordination (P1,P2)	No	
Baseline data collection and analysis (P1, P2)	No	
Capacity Building (P1)	Possibility	Limited information about how capacity building is defined in this context. Most of the examples focused on training programs that introduce Iraqi people to the technology that helps with water management.
Pilot implementation ESTs and community level initiatives (P1,P2)	Possibility	Community level initiatives may help to consider the needs of the Mada'an people, however, the report does not mention the use of participatory approaches or bottom up efforts for adaptation.
Awareness raising (P1,P2)	No	The figure mentions awareness raising, however the report fails to expand on what this component means.
(Capacity building for) Marshlands Information Network (MIN) Management (P2)	No	
(Capacity building on) drinking water provision and water quality management (P2)	No	
(Capacity building on) wetland restoration and solid waste management (P3)	No	

Pilot Implementation of alternative energy source utilization (P3)	Possibility	Little information was provided on how and what alternative energy sources would be utilized in this pilot implementation. A transition to clean energy sources may help contribute to long term adaptation success, however this cannot be considered successful until questions of access, power, and resources are identified.
Monitoring of pilot activities and dissemination of results (P3)	No	

By analyzing the UNEP project components it is evident that the programs in place will not address the social and political problems facing the Marsh Arab people, contribute to the restoration of cultural tradition and livelihoods, or mitigate future problems of climate change. None of the plans addressed the fragile state of water rights, or any efforts to consider the cultural values of the Mada'an people. This report also highlights one of the largest political problems preventing adequate adaptation change: the fact that many of the actors from international development efforts are unable to travel to the marshes to implement the policies, and instead, must pass on resources to representatives in Iraq, prohibiting a direct flow of knowledge and instruction (UNEP 2007).

The emphasis on capacity building (in regards to wetland restoration, water management, etc) as a dominant project component is not a successful approach to achieving long term adaptation for the local communities in the Marshes, because it focuses efforts on teaching new technology and provides trainings to people in Iraqi positions of power (local, regional, and federal). Instead, successful transformative adaptation needs to expand to include efforts for restoring the lost livelihoods of the Mada'an communities, such as reed farming and water buffalo hunting, that are central to the well being and identities of these people.

UNESCO World Heritage Site Proposal:

The Iraqi Government and the UNESCO Organization have both produced various documents that highlight environmental policy and conservation management plans for the newly developed world heritage site in the southern marshes. These documents are useful in understanding efforts being made by Iraq's national government, as well as how well established international conservation groups approach conservation efforts for the region. For the southern marshes to be considered a UNESCO World Heritage site the Iraqi Government first had to produce an environmental management plan and formal site proposal to UNESCO,

which warranted a response from the organization, and an outline of the acceptance or denial of the site based on UNESCO's framework for new site selection.

Within the extensive environmental management plan, produced in January 2014 by the Ministry of Environment, the report provides physical, biological, climate, and historical information on the Marshlands, with the overall intention of conveying to UNESCO why the site deserves this level of recognition (Al-Lami 2014). Despite the series of major environmental management themes outlined in this report, the government's conception of environmental management and future actions are focused on regional conservation efforts in order to increase and sustain tourism. Table 2 outlines the seven thematic headlines that encompass the document's environmental management goals, and whether the outlined thematic headlines would help support sustainable, long term adaptation.

Table 2: Analyzing the 7 thematic headlines within a political ecology framework:

	Addresses socio-political problems?	Notes:
Legal and institutional framework	No	Although this theme links problems of politics, power, and representation with environmental management, it is focused on staffing new political positions and solidifying a management structure. This theme does not consider the ways that these positions construct accessibility to resources or jobs, or how these roles will build on previous socio-political dynamics in the region.
Facilities, infrastructure, and services	No	Focused on developing new structures to bring in tourism to the region
Conservation, maintenance, and monitoring	No	Monitoring of environmental problems through environmental management systems.
Documentation and Research	Possibility	Stating a need for documentation and research is broad and poorly defined. It is possible that by defining new priority areas for research there could be an emphasis placed on the effects of upstream damming, or livelihood

		restoration.
Visitation and interpretation	No	Focused strictly on bringing in new visitors and developing tourism infrastructure.
Public awareness and community participation	No	Although this theme outlines the importance of involving local teachers and community members in tourism activities, this focuses on using the locals to promote tourism, instead of using environmental management plans to support and consider the desire of the indigenous groups. In some instances the concept of community participation can be used to indicate participatory mapping or policy development, however in this instance it is strictly defined by the government's desire to expand tourism efforts through the production and spread of local culture.
Investments, marketing and funding	No	Strictly focused on the development of new business plans and site promotion.

The outlined goals of the Iraqi government's environmental management plan is not sufficient in helping to protect against long term climate vulnerability. This is in large part due to the apolitical nature of the document, which fails to adequately address the social and political factors that contribute to vulnerability. The apolitical nature of this management plan is not surprising, however, as it exemplifies Bryant's theory that governments or big corporations will favor apolitical policy that does not challenge socio-political dynamics, and instead allows the maintenance of governmental control (Bryant 1999).

Within the apolitical nature of the document, it is important to identify a few key areas where the potential for transformative adaptation could be achieved by expanding the ideas to further address regional social and political problems. Within the conservation, maintenance, and monitoring section, the brief mention of "risk preparedness measures" as an area of focus could be expanded to consider socio-political factors of risk such as the effect of upstream hydropower development, however it is more likely that this theme is currently focused on short term, natural hazard type risk (Al-Lami 2014, 92). Additionally, the document does provide a short summary of the socio-economic conditions for the communities within the Marshlands which could be meaningful in linking problems of poverty and access to climate vulnerability, however this information strictly exists as background context for the report. The

management plan briefly states that “some focused socio-economic surveys will be conducted to secure information” however, this is never further expanded on (Al-Lami 2014, 115).

UNESCO Response:

Despite apolitical planning and response by the UNEP and the Iraqi Government, the UNESCO response to the environmental management plan, and their framework for assessing the potential for site approval, exemplifies a political ecology approach to development put into practice. Following the 2014 proposal, the UNESCO Organization denied the site for approval. This denial, as outlined in a 2015 summary of the review process, resulted from a failure to follow through on implementing many of the environmental management steps, and the government’s failure to address upstream threats to water flow. In addition to a general failure to implement the outlined environmental management goals, UNESCO also identified a serious problem of power, in that government authorities have the right to change land tenure without permission from indigenous people (report 2016 pg 6). Because this power dynamic could lead to significant problems of risk and conflict in the future, UNESCO identified the need for Iraq to review the management plans to include plans for supporting traditional ecological knowledge, and true community engagement (report 2016). Additionally, Section 4.5, titled “Threats” identifies the dangers of Turkish hydropower development, as well as a new weir along the Iraq-Iran border--both of which restrict water flow into the marshes (report 2016.)

UNESCO’s analysis of the environmental management report concluded that the “integrity, protection, and management of the property do not meet the operational guidelines” needed to become a world heritage site (World Heritage Nomination 2015, 116). While UNESCO did allow for the Iraq marshes to be named a world heritage site in 2016, this status is highly contingent on the ability of the nation to address socio-political threats, consider the needs of the local people, and properly carry out the intended environmental management plans (World Heritage Nomination 2015). By constantly threatening the removal of the Southern Marshes off the list of World Heritage Sites, UNESCO is able to push the government to address important threats that would have otherwise gone unaddressed. UNESCO’s critical lens for site selection is a successful form of streamlining socio-political threats into the world of climate change policy and adaptation planning. This lens should be used as a framework by other aid agencies and conservation groups who can influence governmental policy decisions in similar ways.

Gaps between policy and implementation:

Because environmental policy plans produced by the Iraqi Government were created with the goal of receiving UNESCO recognition, there could easily be a disconnect between the proposed policy, and the reality of implementation. The use of supplemental information in the form of interviews and qualitative research is necessary for bridging the gap between written

policy and the implementation of these plans. This is especially important in the case of the Iraqi marshlands, due to the strictness of the Iraqi borders that prevented many aid organizations from engaging in in-person management and restoration efforts, and the disconnect between the Iraqi government and the needs of the local Mada'an people. Interviews with the local people is especially important as regional tourism efforts increase, in order to get a realistic understanding of how local people have been either negatively or positively impacted by a rapid push for tourism. In a brief documentary titled "Meet the Last of the Singing Marsh Arabs," (2011) one Mada'an individual recounts his experiences coping with disaster and livelihood change in his home community. His words convey the lack of successful environmental restoration, a perspective that would otherwise go unnoticed in the UNEP and UNESCO reports. He expresses that his "dignity is burning away" with the increase in local tourism (Swaid 2011). With the development of the UNESCO world heritage site, he has become "a remnant from a distant past, turned into an exotic attraction for tourists" (Swaid 2011).

In a second documentary, "Iraqi Marsh Arabs face the effect of climate change" the local people expressed similar sentiment, stating that the dams on the river and recent drought periods have caused the salinity levels to rise to levels that prohibit the survival of their water buffalo, ultimately prohibiting the continuation of local livelihood activity. Local environmentalist Mahdi Alasadi reported no lack of socio-environmental improvement following the establishment of the marshes as a UNESCO site, and that the Iraqi Government is focused on increasing tourism, without considering the needs of the Mada'an people (Al Jazeera 2019).

Similarly, research efforts by Al-Mudaffar Fawzi et al. on Marsh women and their livelihoods reflect a lack of socio-cultural restoration in regional adaptation efforts. Prior to the desiccation of the marshes Mada'an women reported that they had engaged in a variety of economic activities outside of the domestic sphere, especially reed gathering, caring for water buffalo, and selling fish and dairy at local markets (Fawzi 2016). Even after more than a decade of restoration efforts and regional aid programs, the interviewees reported a lack of ability to engage in the traditional activities that had dominated their livelihoods prior to the dessication (Fawzi 2016). Instead of participating in the regional socio-economic systems, the Mada'an women interviewed reported that they now sit at home, and participate in "domestic" activity (cooking, cleaning, raising children) (Fawzi 2016). This research, as well as the sentiments expressed by interviewees in the documentaries, reflect a failure to improve the lives of the Mada'an indigenous groups, as the country is more focused on tourism efforts instead of livelihood preservation. Overwhelming sentiment of frustration and sadness conveys the need for adaptation goals that sustain the needs of indigenous groups, instead of the tourism desires of international travelers.

6. Conclusions

The Marsh Arabs documentary makes a powerful yet unsurprising statement: “Climate change and broken government promises are the biggest threats to [the Mada’an peoples’] lives” (Al Jazeera 2019). A socio-nature and political ecology approach to development rewrites this narrative, to instead say that these are not two separate threats, rather one large interconnected problem. As Iraq continues to develop environmental policy and climate change adaptation plans, policy makers and international governing bodies must emphasize the need to create adaptation plans that address a region’s unique socio-political challenges.

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