Community Participation in Protected Areas in Iran, Afghanistan, and India

by

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Abstract

Community participation has become an essential part of protected area (PA) management worldwide. This thesis contributes suggestions for improving conservation effectiveness and efficiency by boosting responsible local community participation in PA management. I studied Sabzkouh PA in Iran, Shah Foladi PA in Afghanistan, and Bhitarkanika National Park and Wildlife Sanctuary in India to examine: (1) what factors affect community participation in PAs in developing countries? (2) what roles can state governments and Non-Governmental Organizations (NGOs) play to support community participation? (3) how can application of equity criteria improve PA management? My studies, conducted between 2009 and 2018, combined document reviews with personal observations, participatory rural appraisal workshops, and open-ended interviews with local community members, state government staff, NGO representatives, and researchers. The result is a suite of recommendations and cautions for conservation practitioners seeking to improve PA management through collaborations with local communities. Respecting local communities' knowledge, norms, and livelihoods surfaced as important components for building relationships and trust between the local communities and the state governments. Building trust and capacities is contingent on satisfying essential community needs and on transparent, fair, and collaborative PA management planning and implementation. Community based natural resources management projects can share the benefits and reduce the burdens of conservation for the communities while building the capacity of local communities to participate in PA management. Senses of equity and justice arise from deliberate collaboration and information sharing between the state government and local communities. Promoting shared governance, including the use of multi-stakeholder management committees, is an apt tool for decision-making that represents the full range of local community constituents, interests, and preferences. National and international NGOs can facilitate relationships between the state and local communities, provide funding, and fill gaps in management and technical capacities. Community participation in PA management and governance is a process that requires ongoing dialogue and trust among the stakeholders.

Keywords: Protected areas; community participation; co-management; community-based natural resource management; equity; Iran; India; Afghanistan

To my parents

And to all the special and beautiful souls I met through my amazing PhD journey in Canada, Iran, Afghanistan, and India.

برای پدر و مادر عزیزم

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List of Acronyms

BCA	Bhitarkanika Conservation Area
CBD	Convention on Biological Diversity
CBNRM	Community-Based Natural Resources Management
CDC	Community Development Council
COP	Conference of the Parties
DOE	Department of Environment
Eco-DRR	Ecosystem-based disaster risk reduction
FAO	Food and Agriculture Organization
FRWO	Forests, Ranges and Watersheds Organization
GLPCA	Green List of Protected and Conserved Areas
IUCN	International Union for Conservation of Nature
MAIL	Ministry of Agriculture, Irrigation and Livestock
MoEFCC	Ministry of Environment and Forests and Climate Change
MRRD	Ministry of Rural Rehabilitation and Development
NAOI	Nomads Affairs Organization of Iran
NEPA	National Environmnetal Protection Agency
NFRPs	Non-Fodder Rangeland Products
NGO	Non-Governmental Organization
NTFPs	Non-Timber Forest Products
PA	Protected Area
PCCF	Principal Chief Conservator of Forest (Wildlife) & Chief Wildlife Warden
SFPA	Shah Foladi Protected Area
SHA FPAC	Shah Foladi Protected Area Committee
SQCC	Spring Qoroq Conservation Committee
UNEP	United Nations Environment Programme
UNDP/GEF/SGP	United Nations Development Programme/Global Environment Facility/ Small Grants Programme

Glossary

Aichi Targets	In 2010, the tenth meeting of the CBD's *Conference of the Parties* (COP10), held in Aichi, Japan, adopted 20 Biodiversity Targets for the 2011-2020 period—the Aichi targets (CBD, 2010).
Armed Conflict	A contested incompatibility that concerns government or territory or both where the use of armed force between two parties results in at least 25 battle-related deaths (Gleditsch et al., 2002, pp. 618–619).
Gram Panchayat	The traditional local system for self governance in India where each gram panchayat represents 5-10 villages. Their structure includes elected community members from member villages and a *sarpanch* as its elected head. Each *gram panchayat* has a secretary that is appointed by the state government and memberships from the state institutions (Sarma & Chakravarty, 2018).
Gram Sabha	The elected committee in each village in Odisha province in India which represents the village in the regional decision-making
Il	The nomadic confederation (*il* in Farsi) is the traditional tribal structure by which bands of nomadic herders, (also called nomadic pastoralists), organize and create a community in Iran (Wellington & Whittlesey, 1932, p. 378).
Loya Jirga	The traditional Afghan convening of elders to settle disputes
Pallie Sabha	The tribal community decision-making structure in each village in Odisha province in India that includes all the village members over 18 years old.
Qoroq	*Qoroq* refers to both the local restricted area and the local system of prohibition and management of use in Iran (Daumoon, 2015).
Stakeholder	Persons or groups who may have an interest (stake) in the outcome of a project, are likely to be able to influence the project, and/or who are potentially impacted by the project, whether positively or negatively. Examples of stakeholders are local communities, national or local government, leaders, members of the private sector, and NGOs (IUCN, 2019, p.2).

Preface

> *After a 35-hour flight to New Delhi, a 24-hour train ride to Bhubaneshwar, a 4-hour drive to Kendrapara, a 10-minute boat ride and an hour on the back of a motor bike, I arrived at the Bengal Bay in Bhitarkanika National Park to meet with "the people". They share their habitat with the three iconic Indian crocodiles. The Indian government is proud of the successful crocodile rehabilitation programs. Yet, the communities have to withstand crocodile attacks, work as migrant workers in other parts of India, and periodically escape the cyclones to save their lives. Staring at the rising ocean, a 40-year-old man tells me how they had to move their village three times in his lifetime. Surprised by the complexity of this condition, I wonder: who benefits from conservation?*

This excerpt from my journal, dated June 3, 2013, provides the context for my interest in community participation in conservation. I grew up in Tehran, a mega-city with very limited access to nature. My life changed when I started studying forest ecology and management in Iran. Travelling across Iran and its diverse ecosystems allowed me to learn from different cultural and ethnic groups about their traditional ways of taking care of their lands. Inspired by hearing all the challenges of resource management, I worked for the United Nations Development Programme as a participatory project designer (2001–2007) and helped the local communities and non-governmental organizations (NGOs) to design projects to improve local communities' lives (livelihoods and living conditions) while protecting the environment. My training as an ecologist and several years of working with the local communities in rural areas, as well as my passion for social justice, affect my perspective on resource management research.

Data gathering for this research took me to Afghanistan, India, and my home country, Iran. My data gathering in Afghanistan was under special circumstances as I worked for the United Nations Environment Programme (UNEP) in Afghanistan in 2009–2010 and spent nine weeks in Bamyan. As an Iranian woman affiliated with UNEP, a western organization, I had both advantages and limitations in my relationships with community members and state government staff. I speak two languages that are useful in Afghanistan, Farsi and Dari, and I was familiar with the sensitivities of the Afghan culture. This made it easier for people to ask me questions and engendered mutual trust. I had the too-rare privilege of being able to talk to many women and learn their

perspectives about the environment, international partners, and protected area management. They shared details of their lives and livelihoods seldom accessible to men and that most men would be unlikely to discuss, especially with other men. I learned parallel histories of different development projects in the villages, stories that brought forward factors seldom mentioned by men. I also got to go inside the houses, cook with women, and observe life outside of public and semi-public meetings, contexts which often oblige participants to represent specific positions. This special access gave me insights that fell outside the scope of the dissertation. I intend to publish those separately. The fact that many people in Bamyan had lived in Iran as refugees often gave us something else in common and further facilitated discussions and empathies. However, some people had experienced very difficult and challenging times in Iran as undocumented refugees. These people were more reserved, and it took longer to build trust.

I like to think that, in all three countries, the people struggling on the ground with thorny questions about how to create and sustain protected areas (PAs) knew I was there to help them take care of their lands so the lands could take care of them.

I have included photographs to introduce the unique condition in each case study. All the digital photographs were captured or created by me (the author), except where noted. I have blurred the faces of those who did not consent to the publication of their image.

Chapter 1. Introduction

1.1. The *Fines and Fences* paradigm in protected areas management

The idea and practice of partitioning landscapes and setting some areas aside as game refuges, sacred precincts, and buffers between human-dominated and less human-dominated ecosystems has existed for centuries, and possibly millennia (Lopoukhine et al., 2012). Modern protected areas (PAs) established prior to the 1970s were typically founded in pursuit of the goal of protecting nature by separating humans from other species and separating people from areas habitually used and occupied (Hutton et al., 2005, p.342). These initial PAs were typically designed and managed by state governments using top-down approaches that excluded most local communities from management decision-making and penalized unauthorized entries and uses of PAs (Keiter, 2013, p.262). This approach, which dominated the conservation narrative for most of the 20th century, has been called the *fines and fences* or *fortress* conservation paradigm (Wells & Brandon, 1992; Heinen et al., 2019).

Perhaps needless to say, the fines and fences paradigm has encountered practical and conceptual challenges. Many PAs have failed to adapt to social, cultural, and political issues in conservation (Brockington, 2002; Andrade & Rhodes, 2012; Wolsink, 2018). Globally, about one-third of the land formally designated as protected has been and is being degraded despite its legal status (Jones et al., 2018). The fines and fences approach to PAs alters land-use rights (Agrawal & Ostrom, 2001; Jim & Xu, 2002; Wolsink, 2018). Communities are frequently forbidden from extracting natural resources important to their livelihoods (Borrini-Feyerabend, 2002; Sikor et al., 2017). In some cases, resident groups have been uprooted from their traditional lands with little consultation and inadequate compensation (Jim & Xu, 2002; Anthony, 2007; De Pourcq et al., 2015).

Relationships between state governments and local communities affect the success of PA management. Excluding local communities from PAs and criminalizing local communities' land-use practices engenders hostility toward conservation (Jim & Xu 2002; Fu et al., 2004; Anthony, 2007; Pullin et al., 2013; Heinen et al., 2019). In places with high human populations and limited alternative sources of livelihood, this results in

negative impacts on PAs (Ghimire & Pimbert, 1997; Wells & McShane, 2004). Application of the fines and fences paradigm can also reduce local communities' commitments to traditional stewardship responsibilities for natural resources (Peters, 1998; Foale & Manele, 2004; Haenn, 2005; De Pourcq et al., 2015). When local communities are excluded from PA management and their needs and aspirations are not respected, enforcing conservation policies becomes more difficult (Aswani & Weiant, 2004; Andrade & Rhodes, 2012). A century of the fines and fences paradigm is proving command and control conservation to be of doubtful viability on socio-economic grounds and practically difficult to implement in places with high human populations and limited government capacities (Holling & Meffe, 1996; Brockington, 2002; Wilshusen et al., 2002; Wolsink, 2018).

Especially in developing countries, state governments rarely have the monitoring and enforcement capacity to control large areas of land without local support (McNeely, 2001; Andrade & Rhodes, 2012; Balata & Williams, 2020). Establishment of PAs provides developing countries with opportunities to access funding sources and international expertise for PA management through the International Union for Conservation of Nature (IUCN), United Nations (UN) agencies, and international non-governmental organizations (NGOs). Besides international prestige, the establishment of PAs also brings opportunities to advertise for ecotourism and receive funds for conservation and development projects (Carraro & Siniscalco, 1998; Alvarado-Quesada & Weikard, 2017). For these reasons, many developing countries create PAs without having the capacity to enforce conservation rules. The result is so-called *paper parks*, where PAs exist more in legal documents than on the ground (Stolton & Dudley, 1999; Ostrom & Nagendra, 2006). Poorly trained personnel, insufficient financial resources, and inexecutable management plans are indicators of paper parks and of ineffective PA management (McNeely, 2001). The history of state-governed PAs in developing countries shows that successful long-term conservation is unlikely without participation of local stakeholders (Wells & McShane, 2004; Borrini-Feyerabend et al., 2013; Collen et al., 2016).

1.2. Community participation in international PA management partnerships

Since the 1970s, many agreements between states and international partners have provided for local community participation in PA management. Participation of local communities in PAs was considered a key element in the concept of biosphere reserves, developed in the 1970s by UNESCO's Man and the Biosphere Programme (Hannah, 1992). Beginning with the United Nations (UN) Conference on the Human Environment in Stockholm 1972, and especially since the UN Conference on Environment and Development at Rio de Janeiro in 1992, international and national approaches to environmental conservation and PA management have sought to harmonize social needs with development agendas (Borrini-Feyerabend, et al., 2004a; Gurung, 2010). Cultural values of PAs and community participation are now considered integral elements in conservation policy, planning, and practice (Wilson, 2003; Borrini-Feyerabend et al., 2013).

The Third and Fourth World Congresses on National Parks and Protected Areas in 1982 and 1992 raised the need for a community management approach to PAs (McNeely, 1992; Kemf, 1993; McNeely & Miller, 1984; Gurung, 2010). The Durban Action Plan of the Fifth World Parks Congress (WPC) in 2003 emphasized the connection between dispossession and resulting poverty linked to cultural and subsistence losses for the people living in and around PAs (MacKay & Caruso, 2004). A Qashqai nomad from Iran addressed the world leaders in the Durban WPC and defended the rights of Indigenous peoples, signaling a major shift in discourse and expanding recognition of local communities' rights in conservation (Borrini-Feyerabend et al., 2004a).

The Durban WPC also dedicated an entire stream of discussion to the concept of governance diversity to support the rights of local communities and Indigenous peoples in PAs (Borrini-Feyerabend, et al., 2013; Dudley, 2008). IUCN guidelines define governance as "the interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens and other stakeholders have their say" (IUCN, n.d., n.p.). Updating this definition led to defining mandates for diversifying PA governance and sharing power between state governments and local communities in PAs.

In 2001, IUCN responded to the proliferation of PAs and the diversification of institutional arrangements for PA management by identifying four governance types: state, shared, private, and governance by Indigenous peoples and local communities (Borrini-Feyerabend et al., 2013). In 2008 IUCN updated its guidelines to recognize and promote the diversification of governance and to underscore the cultural values of PAs (Dudley, 2008). Based on these IUCN updates, PAs are "a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley, 2008, p.8). IUCN categorizes PAs on the basis of governance[1] authority and management objectives (see Section 1.5) (Table 1.1). The IUCN recognizes that PA management goals range from *strict nature reserve* (category I) to *sustainable use of natural resources* (category VI). Th IUCN categorization of PA governance and management on a spectrum from federally managed wilderness areas to locally managed working landscapes enables useful comparisons of conservation goals, policies, and practices (Dudley, 2008). IUCN defines stakeholders as "persons or groups who may have an interest ("stake") in the outcome of a project, are able to influence the project, and/or who are potentially impacted by the project, whether positively or negatively" (IUCN, 2019, p.2). Local communities, state government, leaders, private sector, and NGOs are all considered stakeholders in this definition.

[1] In public policy, governance is defined as "a social function centered on efforts to steer or guide the actions of human groups—from small, local associations to international society—toward the achievement of desired ends and away from outcomes regarded as undesirable" (Young, 2013, p. 3). This definition of governance encompasses both *management* and *governance* as presented in IUCN documents. In this thesis I follow IUCN (IUCN, n.d., n.p.) in distinguishing between "management," meaning actions to achieve given objectives, and "governance," the more general term for the exercise of power, authority, and responsibility (Also see Borrini-Feyerabend et al., 2013, p.11).

Table 1.1. The IUCN Protected Area Matrix.

Governance Authority (and sub-types) / Management categories	A. State governance			B. Shared governance			C. Private			D. Indigenous / local governance	
	Federal or national ministry or agency	Subnational ministry or agency	Delegated management (e.g., to NGO)	Transbounary	Collaborative	Joint (partitioned)	Individual landowners	Non-profit organizations	For profit organizations	Indigenous nations	Local communities
I a. Strict Nature Reserve											
Ib. Wilderness Area											
II. National Park											
III. Nature Monument											
IV. Habitat/Species Management											
V. Protected Landscape/Seascape											
VI. PA with Sustainable Use of Natural Resources											

Source: after Dudley, 2008.

The success of conservation interventions may be evaluated on the basis of conservation benefit, equity, or economic return, the three components of triple bottom line conservation outcomes (Halpern et al., 2013). Each one of the IUCN's PA management categories defines a different set of conservation goals. As a result, success in each PA category is defined differently. However, conservation of nature with associated ecosystem services and cultural values is defined as the ultimate goal for PA management (Dudley, 2008). Community support is widely recognized as integral to successful PA management across many IUCN categories (Borrini-Feyerabend et al., 2004a; Duffy et al., 2016; Griffiths et al., 2020).

Since the late 1990s, the inclusion of equity in development discourse has moved the conservation narrative toward including human well-being and equity in PA management (Lopoukhine et al., 2012). The 2004 Programme of Work on PAs (PoWPA) under the Convention on Biological Diversity (CBD) made equitable governance and management a requirement for establishing and managing PAs (Secretariat of CBD,

2004; Gurung, 2010). PoWPA goal 2.1 promotes equity and benefit-sharing (Secretariat of CBD, 2004, p.15). Goal 2.2 calls for enhanced involvement of indigenous and local communities and relevant stakeholders in PA management. The overall PoWPA objective is full and effective participation by indigenous and local communities in “full respect of their rights” and as consistent with national law and applicable international obligations (Secretariat of CBD, 2004, p.16).

In 2010, the tenth meeting of the CBD Conference of the Parties (COP10), held in Aichi, Japan, adopted 20 Biodiversity Targets for the 2011–2020 period, *the Aichi targets* (CBD, 2010). Strategic goal E in the Aichi targets requires parties to enhance implementation through participatory planning, knowledge management, and capacity building (CBD, 2010, p.1). Aichi target 11 directs parties to effectively and equitably conserve at least 17 per cent of terrestrial ecosystems and inland waters by 2020. Further to the general emphasis on fair governance and management of PAs, Aichi target 18 requires full integration of traditional knowledge and practices of indigenous and local communities for conservation and sustainable use of biodiversity. In effect, the Aichi targets mandate full and effective participation of indigenous and local communities in PA management at all relevant levels by 2020 (CBD, 2010, p.1).

The World Park Congress has also advocated for state governments to enhance PA management, adopt rights-based approaches, and address the equitable management dimension of Aichi Target 11 (International Institute for Sustainable Development, 2014). To promote effective, equitable, and successful PAs, the IUCN introduced the Green List of Protected and Conserved Areas (GLPCA) program in 2016 (IUCN, 2016, p.3). The GLPCA global standard has four components: good governance, sound design and planning, effective management, and successful conservation outcomes (IUCN, 2016). Community participation and equitable governance are strongly embedded in these standards (Franks & Small, 2018).

1.3. Improving PA management through community participation in developing countries

Participatory PA initiatives often follow two underlying goals (Diamond et al., 2004). The first goal is to improve the efficiency and effectiveness of PA management interventions, resulting in changes that are sustainable and approved by most PA stakeholders. By increasing stakeholder interests in conservation, the financial and personnel resources needed for enforcement and other management interventions decreases and the effectiveness of the PA in conserving biodiversity increases. This approach uses participation as a means for more efficient and effective implementation of biodiversity conservation policies (Diamond et al, 2004; Paulson et al., 2012). The second goal is to boost equity and empowerment of suppressed groups. In this approach, participation is the means through which to facilitate social change to the advantage of both marginalized groups and associated PAs (Diamond et al, 2004; Cleaver, 1999; Cleaver, 2004; Paulson et al., 2012). These two goals are often mixed and are not easily distinguished from each other in PA management (Mannigel, 2008).

Community participation is applied in two main ways in PA management (Mannigel, 2008; Cleaver, 2004). First, community participation is sought through integrated conservation and development projects. These projects usually seek to compensate local communities affected by the resource access restrictions, loss of income, and other hardships caused by the establishment of the PAs (McNeely, 2001; Wells & McShane, 2004). Second, participatory management of PAs can happen through PA councils or negotiated agreements with local stakeholders (Mannigel, 2008). This approach re-introduces more rights for local stakeholders and includes them more deeply in PA management and governance (Colchester, 2003; Méndez-López et al., 2015; Franks, 2016). Recognizing customary rights and traditional knowledge, harmonizing national and international laws with customary laws, and coordinating PA policies with other land-use plans all help to promote effective community participation and equitable PA management (Franks et al., 2018). Each PA exists in its own unique socio-economic and ecological context. Deciding on the type of participation for improving management of each PA and the appropriate methodology for participation are enduring challenges for resource managers.

Changes in international policies often have large impacts on PA management in developing countries. When new international guidance is issued, such as for increased community participation, funding often becomes available to support applications of the new policy (Williams, 2004; Rahnema, 2010). For example, the state government may define projects through the mandates of the United Nations Development Programme's Global Environment Facilities (UNDP/GEF) for biodiversity conservation to include traditional ecological knowledge. UNDP/GEF/Small Grants Programme (UNDP/GEF/SGP) might then provide funding for NGOs to support alternative livelihood options for the local communities in PAs. However, UNDP/GEF agendas and methods are not necessarily suitable for all national or local PA management. Rigidly replicated implementation strategies often run contrary to community values, interests, and priorities for resource management. Nonetheless, internationally funded projects remain key incentives to change PA management in many developing countries (Williams, 2004; Borrini-Feyerabend et al., 2004b; Kapoor, 2008; Mawdsley, 2017).

Particular attention should be given to improving conservation and community participation in the state-governed PAs that were established before the emergence of international guidance and governance-management typologies promoting local participation. Many PAs declared before about 1990 are among the most scenic, recreationally important, or ecologically diverse areas in each country (Borrini-Feyerabend et al., 2013). Virtually every PA in the world has a unique suite of ecological, socio-economic, and political characteristics affecting its management and the interactions among stakeholders. As the developmental history of the conservation paradigm shows, there is no single set of best practice panaceas in biodiversity conservation (Ostrom, 2007). In-depth assessment of PA management in the dynamic complexity of local-national-international relationships is required to develop conservation policy and practice tailored to local contexts and available to guide similar efforts elsewhere. This is especially true in developing countries, where IUCN tools can promote community participation and qualitative case study analyses can reveal distinctive opportunities for local, national, and international cooperation (Baxter & Jack, 2008; Franks, 2016).

1.4. Dissertation research goals

This thesis contributes suggestions for improving conservation effectiveness and efficiency by boosting responsible local community participation in PA management. My academic training as a forest ecologist and my work designing community-driven conservation projects through United Nations Development Programme's Global Environment Facility (UNDP/GEF) laid the foundation for my continuing commitment to the integration of research and local capacity building. As an environmental advocate and manager of an environmental NGO in Iran, I have learned the importance of resource management collaborations among state governments, local communities, researchers, and industry stakeholders. My perspective in this dissertation combines academic and local community knowledge with personal interests in the full application of international policies for conservation. My goal in preparing this dissertation has been to offer recommendations and cautions for conservation practitioners seeking to improve PA management through collaborations with local communities.

In pursuit of this goal I examined three case studies to identify factors that tend to enhance or impede community participation, equitable governance, and sound PA conservation in existing and new PAs in developing countries. I investigated the relationship and the interplay between state-based and local institutions in PA management and governance in local contexts. In the next three chapters, I address three main questions: (1) What factors affect community participation in PA management in developing countries, where there is often limited central government capacity and intense pressure from local communities on natural resources? (2) What roles can state governments, international partners, and national NGOs play to support community participation in PA management? (3) How can application of equity criteria improve PA management? I investigated these questions from 2009 to 2018 by collecting and analyzing data relating to distinct PAs in India, Iran, and Afghanistan.

My initial plan was an in-depth study of community participation and impacts of PA establishment in Shah Foladi PA, Afghanistan. I worked for the United Nations Environment Programme (UNEP) in 2009 and 2010. As the environmental education and outreach expert, part of my job was to design the environmental education and awareness raising strategy and action plan for Shah Foladi PA. This included nine weeks of fieldwork in Bamyan province. I interviewed local community members, learned

about their relationships with the land, their perceptions of conservation, and their expectations from the PA. My plans to return to Afghanistan to continue my research in SFPA were thwarted in 2013 due to security concerns. In the winter of 2012, criminal activities in Bamyan increased. A local bus was attacked and twelve people, including 6 students were decapitated. Due to these conditions, Afghan officials rejected my application to continue research in the region.

To cultivate other options and data sets complementary to the initial results of my work in Bamyan, I travelled to India in 2013 to work on the impacts of off-grid electricity projects on local communities. The trip was sponsored by Simon Fraser University in order to identify opportunities for student exchange and scientific collaborations with The Energy and Resources Institute (TERI) in India. I took advantage of my presence in the region to study the Bhitarkanika National Park and Wildlife Sanctuary. I gathered data on relationships between the local communities and the state government in terms of effects on PA management. Later in 2013, I returned to my home country, Iran, to resume collaborations with Daumoon, an NGO I founded in 2000. I worked with the local communities in Sabzkouh PA to gather data about relationships between local communities and the state government in relation to the management of the Sabzkouh PA. Between 2010 and 2018, I also followed up on the establishment of Shah Foladi PA in Afghanistan. I interviewed international and national experts through electronic communication tools and analyzed reports to learn about developments and dynamics at the Shah Foladi PA.

The three case studies enable investigation of key aspects of community participation in PAs. The identification of similarities and differences among the case studies (Table 1.2) enables and guides analyses of diverse and often complex relationships among regional histories and political dynamics, the original rationales for PA establishment, and still-unfolding experiments in local-national-international cooperation. It also reveals the most important factors affecting community participation in PA management. I have sought in this dissertation to use my analyses to lay out the most important data and themes as a foundation for anticipated future analyses, comparisons, and policy and practice recommendations.

Table 1.2. Some important attributes of the three PA case studies.

PA / Attributes	Sabzkouh, Iran	Shah Foladi, Afghanistan	Bhitarkanika, India
Ecosystem	Mountainous rangelands	Mountainous rangelands	Mangrove forest
IUCN Level	VI- PA with sustainable use of natural resources	V- Protected Landscape	II- National Park and IV- Habitat/Species management area
Biodiversity Conservation	Mixed results	Decreased pressure on natural resources	Increased crocodile population
Impacts of PA management on the local community	Community continues unauthorized land-uses Community has initiated conservation planning	Capacity-building initiatives have improved community participation in PA management and ecosystem rehabilitation	Community struggles with limited livelihood options Community members have to work as migrant workers Crocodile attacks on humans and livestock have increased

Although the selection of Sabzkouh PA, Shah Foladi PA, and Bhitarkanika National Park and Wildlife Sanctuary as case studies was not directed by a comprehensive prior research design, the three PAs share characteristics that make them suitable for investigating the factors required for community participation in state-governed PAs (Table 1.3). These three PAs are state-governed, located in developing countries, influenced by international partners, and have the historical and ongoing presence of local communities affecting resource management. Additionally, in all three case studies, both the state governments and the local communities have incentives to collaborate in PA management; these prospective benefits can be motivators for substantive changes in PA management and governance (Pinkerton, 1993). For state governments in particular, specific incentives for collaboration with the local communities are a pre-requisite for initiating participatory processes (Mannigel, 2008).

Table 1.3. Case study commonalities that emerged as analytic foci.

PA Characteristics	Rationale for focus
State-governed	Possibility of systemic reforms to national or regional policies or practices.
Located in developing countries	PA management is disproportionately affected by changes in international development agendas, especially funding from the UN and NGOs to improve community participation (Williams, 2004).
Presence of local communities	Local communities generally maintain cultural and economic connections to PAs, and management can and does affect customary access, use, and management rights and practices (Borrini-Feyerabend, 2002).
Communities have incentives to participate in conservation	To participate in conservation, communities must see opportunities to advance or reclaim their rights or interests via collaboration with state agencies and international partners (Pinkerton, 1993).
State governments have incentives to engage local communities	To engage with local communities, state governments must see local communities as potential assets in pursuit of conservation goals or international partnerships (Mannigel, 2008).
Presence of international partners	International partners such as UN agencies and NGOs often prioritize support for projects that feature community participation.
Presence of community-oriented NGOs	NGOs see incentives for state-local collaborations and advocate for solutions to PA management that include both conservation and local community benefits (Pinkerton, 1989, p. 27; Pinkerton, 1993).

Each case study provides a distinctive piece of a puzzle that helped me investigate various aspects of how human populations in and around state-governed PAs influence the success of conservation plans. Each of these case studies includes complicated overlaps among political, ecological, and cultural contingencies, yet each includes lessons for PA planners and managers. My study of Sabzkouh PA in Iran (Chapter 2) addresses a struggle on the part of a state government to enforce conservation in the context of local community members pursuing various unauthorized land uses. Conflicts between state government organizations and the local community have sparked numerous initiatives to improve conservation and have highlighted the opportunity for collaboration and potential for co-management. In the absence of clear direction from the state government, the local community has filled management voids by forming a seasonally restricted grazing access area. My data reveal local community and state government interests in pursuing a co-management arrangement for that special management zone. Application of a co-management framework in the case of Sabzkouh, helped me identify factors that favor and impede co-management.

Community participation is considered a key element for managing Shah Foladi PA in post-conflict Afghanistan (Chapter 3). My Afghan case study examines the factors

that contributed to community capacities to participate in Shah Foladi PA management. Community-based natural resources management (CBNRM) was a primary tool used by international aid agencies for building the capacity of local communities to participate in and support management of this newly created PA. In an application of IUCN's global standards for PA management and governance, UNEP helped to design SFPA management plans, to train the Afghan government officials, and to boost the collaborative capacities of local communities. My analysis of methods employed by international partners to build relationships with the local communities, sheds light on how global policies for conservation translate into local policy and practice.

Bhitarkanika National Park and Wildlife Sanctuary in India (Chapter 4) is a state-governed PA that has an impressive record of biodiversity conservation. Substantial increases in threatened crocodile populations since 1973 have been complemented and supported by meaningful restrictions on land alteration and human community expansion. On the other hand, increased crocodile populations appear to be implicated in the growing frequency of crocodile attacks on humans and livestock. Limited livelihood options in the villages surrounding the PA contribute to the exodus of community members to work as migrant workers in other parts of India. Because the PA also protects the mangroves that shelter communities from annual cyclones and flooding, most community members continue to support PA conservation priorities despite these negative impacts. On the basis of data gathering completed in partnership with a local NGO, the Bhitarkanika case study applies Zafra-Calvo et al.'s (2017) framework to assess community perceptions regarding equity in PA management. Use of the Zafra-Calvo et al. (2017) framework also enables comparisons of community perceptions of equity between Bhitarkanika and Sabzkouh. The comparisons add dimension and substance to calls for more equitable PA governance as a foundation for broadly sustainable regional economies and ecologies.

The similarities and differences among the case studies make it possible to draw conclusions that address the research questions and center on: (1) the identification of factors for improving community participation in PAs in developing countries, (2) the definition of roles for international partners and national NGOs in PA management, and (3) the mechanisms most likely to improve community participation in PAs. Following the presentation of the three case studies in the next three chapters I use the concluding

chapter (Chapter 5) to compare the results of the three analyses and to revisit and discuss the research questions.

1.5. Terminology

Resource management is a multi-disciplinary field with a diverse lexicon. In some cases, the same terms are used differently and different terms are used to refer to the same thing. Explanation of how a few essential terms are used in this research is required.

1.5.1. Non-Timber Forest Products vs. Non-Fodder Rangeland Products

The Centre for International Forestry Research (CIFOR) defines the term non-timber forest products (NTFP) to refer to any product or service other than timber that is produced in forests and grasslands (CIFOR, n.d.). The term NTFP has been widely used in research on local economies and resource management, as NTFPs are known to contribute to providing alternative livelihoods for local communities (FAO, 1999). However, this term is not precisely applicable in rangeland management, where the primary management objective and harvestable resource is usually fodder, a non-timber product. I follow Talamouci and Pardini (1999, p.38) in referring to rangeland foods, fuels, minerals, medicines, and other materials for different industries as non-fodder rangeland products (NFRPs).

1.5.2. Conflicts vs. Armed conflicts

Conflicts in PAs refers to manifestaitons of the competing values, interests, or preferences of state governments, local communities, NGOs, and international partners. My references to armed conflict in Shah Foladi PA refers to the violence defined by the Uppsala Conflict Data Project as “a contested incompatibility that concerns government or territory or both where the use of armed force between two parties results in at least 25 battle-related deaths” (Gleditsch et al., 2002, pp. 618–619).

1.5.3. Governance vs. Management

Management relates to “the means and actions” to achieve given objectives while governance focuses on “who holds power, authority, and responsibility” (Borrini-Feyerabend et al., 2013, p.11).

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Chapter 2. From Open Access to Co-Managed Conservation in the Sabzkouh Protected Area, Iran

Abstract

Environmental conservation in developing countries often founders due to lack of requisite capacities within and coordination among community-based and state-based institutions. In accord with emerging international guidelines for the management of protected areas, creative plans and actions are required to address persistent conflicts grounded in differences between the state-based and community-based management institutions. I examine governance and management arrangements in the Sabzkouh Protected Area, Iran, to identify characteristics favoring and impeding co-management. I identify five impediments to co-management. First, village councils lack requisite capacity to integrate the needs of pastoral nomads with national resource management objectives. Second, overlapping state agency jurisdictions and discrepancies between funding allocations and levels of agency responsibilities confuse and undermine PA conservation. Third, limited equipment and supplies, unclear mandates for gun usage, and uncertainties about judicial system support for conservation hinder enforcement by state wardens. Fourth, despite *de facto* community roles in conservation, communities do not have *de jure* rights to participate in decision-making. Fifth, community-based and state-based institutions do not cooperate effectively to improve conservation and sustainable resource use. The analysis of my local data in light of the co-management literature, especially Pinkerton's (2009) characteristics for effective partnerships, produced six recommended reforms to improve conservation policy and practice in Sabzkouh. First, the local leadership should integrate the needs of nomadic herders into co-management arrangements. Second, collaboration between state government agencies is required to optimize the use of scarce funds, personnel, and equipment for conservation and enforcement. Third, policies and practices that discourage wardens and judges from addressing conservation as part of conflict resolution require revisions. Fourth, the state government should promote local institutions that contribute to conservation and invite co-management. Fifth, a multi-stakeholder co-management committee should be institutionalized to monitor and enforce land-use rights and duties. Finally, the state government and local community should collaborate for data gathering, conflict resolution, and related management innovations. The goal of these

recommendations is to foster co-management characterized by active participation of key stakeholders and local capacity building to contribute in institutional development.

2.1. Challenges facing state-governed PAs

> *On November 3, 2016 the government of Iran demolished several houses built without permits inside the Sabzkouh Protected Area (Mehr News, 2016; Young Journalists Club, 2016). Shortly after this incident, on November 12, two government wardens were shot by poachers inside the PA (Iran Environment and Wildlife Watch, 2016).*

Protected areas (PAs) around the world stimulate conflicts between local communities and state-based conservation agencies (West et al., 2004; Wolsink, 2018; De Pourcq et al., 2019). Conflicts are especially prominent in regions undergoing transitions from traditional, community-based resource management to state-based PA management. In most parts of the world, local communities have a long history of resource management and conservation practices (Borrini Feyerabend, 2004; West et al., 2006; Duffy et al., 2016). However, their abilities and knowledge relating to resource management have been undermined and overlooked by state-based conservation efforts (Orlove, 2002; Colchester, 2003; West et al., 2006; Peters, 2009; Borrini-Feyerabend et al., 2013). Where states declare PAs without community endorsement, the potential for conflict is even higher (De Pourcq et al., 2015; Wolsink, 2018). State-governed PAs create rules that affect resource user access, withdrawal, and management rights (Agrawal & Ostrom, 2001; Wilshusen et al., 2002; Wolsink, 2018). Despite the attractive rigor and seamlessness of many top-down conservation plans, imposition of state-based institutions seldom means the end of local resource use and management (Orlove, 2002; West et al., 2006; De Pourcq et al., 2019). As the state-based PA management rules emerge and expand, communities find alternative ways to meet their resource needs. Successful conservation ultimately depends on complementarity between the state-based and community-based institutions (Berkes, 2004; Lele et al., 2010; De Pourcq et al., 2015).

State-governed PAs have faced common challenges, especially in developing countries. Faulty PA design, loose and inconsistent enforcement, changes in budget allocations, corruption, local intransigence, and lack of alternative livelihoods for people with limited asccess to PA resources are among the reasons state-based conservation so often falls short of grand expectations (Agrawal & Gibson, 1999; Hayes, 2006). State conservation practices may lead to environmental degradation by weakening community-based land-use institutions and by decreasing the sense of stewardship of land and resources (Agrawal & Gibson, 1999; Barret et al., 2001; Borrini-Feyerabend, 2002; Sikor et al., 2017). Contexts that feature limited state capacity to limit access or enforce rules, diminishing stewardship ethics, and increasing competition to extract resources in excess of replenishment rates too often spiral into the tragedy of the commons (Agrawal & Gibson, 1999; Sikor et al., 2017). Extensive experiments with state-governed PA management show that local community participation can improve the effectiveness of conservation practices (Ribot et al., 2006; Larson, 2008; Griffiths et al., 2020). Progress is possible through the inclusion of local communities in PA planning, implementing, benefit sharing, and evaluating processes (Brosius et al., 1998; Berkes et al., 2000; Wells & McShane, 2004; Hayes & Ostrom, 2005; Kiwango et al., 2018).

2.1.1. IUCN's PA management categories and governance types

Modern PAs are typically managed by the state governments for the conservation of natural, ecological, and cultural values (United Nations Environmental Programme-World Conservation Monitoring Centre [UNEP-WCMC], 2004; Borrini-Feyerabend et al., 2013). Lack of recognition for collaborative and community-based governance in early international guidelines has contributed to low participation by local communities and low equity for the local stakeholders in PA management (Berkes, 2010; Borrini-Feyerabend et al., 2013). Persistent challenges of state-managed PAs, changes in the international development discourse, and global efforts to improve conservation capacities and equity led the International Union for Conservation of Nature (IUCN) to re-evaluate and revise recommended PA governance structures (Turner & Hulme, 1997; Cundill et al., 2013; De Pourque et al., 2019). In 2001, IUCN recognized four PA governance types based on who holds authority and responsibility for the PA (Borrini-Feyerabend, 2002). These governance types include state-governance, shared governance, private governance,

and governance by the Indigenous People and local communities. Shared-governance includes various collaborative management arrangements such as state-private and local management, joint management, and transboundary management. This category can include a diversity of PA governance arrangements for each specific PA (Borrini-Feyerabend et al., 2013).

As noted in Section 1.2 (see Table 1.1) (IUCN) classifies PAs on a continuum of management objectives ranging from *strict nature reserves* that exist only to protect biodiversity and geological features (category I) to *sustainable use of natural resources,* which allows for sustainable and non-industrial natural resource use according to local values and preferences (category VI) (Dudley, 2008). Inclusion of local communities in conservation is an explicit management goal for category VI reserves (Dudley, 2008).

2.1.2. Reforming governance of PAs created prior to 2001

Despite the promises entailed in the recognition of diverse governance types, much work remains to improve the management of state-governed PAs established before 2001. The search for more effective governance requires looking beyond single agency state-based management toward public–private–civil society partnerships and co-management possibilities (Pierre & Peters, 2000; Kooiman, 2003; Williams & Tai, 2016). IUCN recommends governance assessment and revisions to enhance equitable benefit sharing and participatory management for the PAs established before 2001 (Borrini-Feyerabend et al., 2013).

Development of additional case studies for PAs struggling to meet international standards, to operate within the confines of national government bureaucracies, and to satisfy local needs for ecosystem services is an important step for improving community participation in PAs. IUCN specifically encourages the development of appropriate forms of governance suitable for category VI PAs (Dudley, 2008). Based on the IUCN guidelines, appropriate governance for the category VI includes a diverse stakeholder group, which demands “careful institutional arrangements” and considering “innovative governance” that includes local community and the state government (Dudley, 2008, p.23).

Analyses of specific PAs are required to identify recommended governance and management options grounded in deep understanding of the often-complex relationships between state governments and local communities (Borrini-Feyerabend et al., 2013). In this chapter, I analyze and make recommendations for resource management in Sabzkouh (also, “Sabzkuh”, “Sabzkooh”), a level VI state-governed IUCN PA in Iran. In Sabzkouh PA, the state government has not been able to control unauthorized resource uses and enforce conservation because of administrative, design, and cultural barriers (Mojtahedi, 2009). Such issues are very common in PA management in developing countries (Borrini-Feyerabend et al., 2004; West et al., 2006). My participation in community-based resource management projects in the Sabzkouh PA since 2011, together with local community and state government interests in exploring new governance arrangements, encouraged me to pursue this analysis. Sabzkouh PA deserves special attention as it is the first-ever Iranian experiment for state government-community partnership in PA management. After describing the Sabzkouh PA and some of its challenges, I provide initial assessments of conservation and collaboration that helped me to refine the research questions and select analytic frameworks. The chapter concludes with presentation and discussion of results and conclusions.

2.2. The Sabzkouh PA

Sabzkouh PA, ratified in 1990, is located in the Zagros Mountain Range in the Iranian province of Chahar Mahal and Bakhtiari (Majnoonian, 2002) (Fig. 2.1). It was recognized as a UNESCO site for the Man and the Biosphere Programme in 2015. Its classification as an IUCN category VI PA means it is designated for “sustainable use in synergy with nature conservation” (Dudley, 2008, p.35). Category VI PAs are designated to manage lands and activities in ways that do not produce substantial impacts on the ecosystems (Dudley, 2008). The Iranian government splits PA management between the Department of Environment (DOE), which is responsible for planning and administering all PAs, and the government’s Forests, Range, and Watershed Management Organization (FRWO), which is responsible for administering and enforcing rangeland management laws and plans, including the livestock grazing lands which cover most of Sabzkouh’s area (Mojtahedi, 2009).

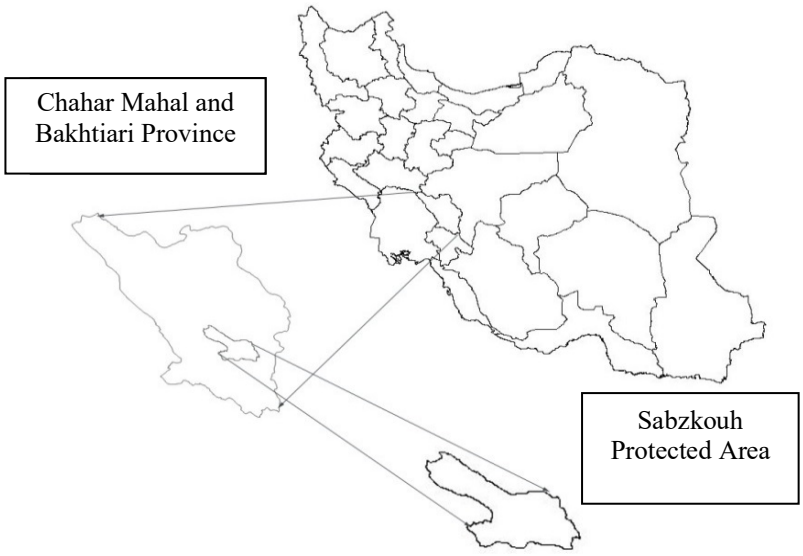

Figure 2.1. Location of Sabzkouh PA within Iran's Chahar Mahal and Bakhtiari Province (after Mojtahedi, 2009).

The Sabzkouh PA includes important portions of the traditional summering rangelands of the Bakhtiari nomadic confederation, one of Iran's largest nomadic groups. Nomadic pastoralists have been migrating through most of Iran since they first domesticated livestock approximately 10,000 years ago in the Zagros Mountains (Zeder & Hess, 2000). The nomadic confederation (*il* in Farsi) is the traditional tribal structure by which bands of nomadic herders organize and distinguish their communities (Wellington & Whittlesey, 1932, p. 378). *Il* nomads move livestock to wherever grass and forage is available within their territories, the boundaries of which are constantly shifting in response to complex negotiations (Blench, 2001). The Bakhtiari *il* used the rangelands inside the Sabzkouh PA during spring and summer (Mojtahedi, 2009). Prior to Iran's 1963 nationalization of forests and rangelands and attempted usurpation by the national government of the leadership of the *khans* (*il* headmen), the Bakhtiari and other *ils* employed range and water resource management practices that had apparently sustained the people and herds for millennia (UNESCO, 1959). The state government's ongoing efforts to centralize resource management, to participate in UN-sponsored protected area programs, and to reform land ownership policies have all impinged on the

sovereignty of *ils* (Razmkhah, 2017). Figure 2.2 shows the livestock in the rangelands of Sabzkouh in mid-summer.

Figure 2.2. Livestock in the rangelands of Sabzkouh in mid-summer (June 15, 2015).
Note: Seasonal plant coverage is especially sparse due to high grazing intensity.

In an effort to minimize the traditional authority and armed power of the *il*s (nomadic confederations) and the *khans* (*il's* headmen), the Iranian state government intervened in *il*-based governance and resource management (Farvar, 2003; Abrahamian, 2009). The Pahlavi kingdom (1925–1979) imposed sedentism mandates and sought to replace *khans* with village councils.[2] The second Pahlavi king's 1963 land reforms included redistributing *khan*-controlled land and livestock among community members while asserting national ownership and control of shared-use pastures and forests. Since 1963, village councils have struggled to extend village-focused governance to nomadic pastoralism and *il* tribalism. Village councils have not been

[2] In anthropological discourse, *sedentism* refers to a lifestyle that involves remaining in one place indefinitely, in contrast to nomadic or seasonal residence (Hirst, 2017).

successful in filling the complex roles of *khans* in managing resources (Farvar, 2003). The power of village councils is limited to within the boundaries of village territories. They cannot directly address issues like migration, which includes seasonal rangelands and migratory routes. Nomads must deal with separate village councils for summering grounds and wintering grounds. For all these reasons, and because village councils seldom communicate with one another, herders face challenges in planning and implementing migrations, and in obtaining reciprocal respect for their rights to graze and villagers' rights to use local territories (author's interviews, local community members, Sabzkouh: May 2014). State-driven debilitation of powerful *khans* and sedentism mandates weakened *il* structures (Razmkhah, 2017).

Grazing patterns have been affected by the power struggles. The seasonal migration schedule was traditionally determined by the *khan* and a council of elders. Scheduling decisions were based on the condition of rangelands in both summering and wintering grounds (Karimi, 1978). For example, the council attempted to ensure that livestock arrived at summer rangelands only after the plants were ready, usually not before the 50th day of spring (approximately May 10). Based on traditional knowledge, the first 50 days of spring in summering ground is the time that annual plants in the region require to produce seeds and ensure their survival for the next year (Mojtahedi, 2009).

Since about 2000, state government regulations have dictated the end of nomads' wintering ground herding on March 26 and have permitted summer herding in the Sabzkouh beginning on May 1. However, global warming trends, causing shorter winters and dryer summers, have enabled and encouraged herders to enter Sabzkouh earlier in the spring to have access to reliable water sources and fresh fodder. Land alterations in the migratory routes have prompted nomads to use trucks for moving between the summering and wintering grounds, shortening the travel time and further increasing the duration of residence in summer rangelands. Herders' early arrival interrupts the growth and seed production cycles of rangelands plants. Because the state lacks sufficient capacity to enforce the timing of migration, and because the *il's* accountability function is not in place, each individual herder decides the time of migration based on the condition of rangelands in their wintering ground and personal preferences (Mojtahedi, 2009; Daumoon, 2015). The longer duration of grazing on

Sabzkouh rangelands has further increased pressures on natural resources and tensions among users and regulators (Mojtahedi, 2009; Daumoon, 2015).

In addition to the challenges of seasonal migration, increases in unemployment and inflation have boosted pressures on Sabzkhouh rangelands. Both the number of livestock and the number of harvesters of non-fodder rangeland products (NFRPs) now exceed the carrying capacity of rangelands (Mojtahedi, 2009). Because of high inflation, the limits set by the rangeland management plans estblished by FRWO have generally not enabled pastoral nomads to live well by grazing alone. As a consequence, most nomadic herders exceed their authorized number of livestock. This results in overgrazing and unauthorized land-use alterations (Daumoon, 2015).

NFRP herbs and fruits have cultural, medicinal, and nutritional values for Bakhtiaries, as well as cash value in extra-regional markets. Because the NFRP harvest remains open to people from local communities and across Iran, market demands have resulted in a further *tragedy of the commons* scenario. Most of the harvest of NFRPs is done by women. Due to cultural norms that limit social interactions between the genders, it is difficult for the state's male wardens to approach and stop the local women. Additionally, because most of the NFRPs are not *at risk* in the national classification system, government agents have few legal or managerial means for controlling harvests (Soofi et al., 2013).

Additional unauthorized land uses and alterations complicate management in the Sabzkouh PA. Orchards, the construction of houses to replace tents, unauthorized fish-farms, cutting trees for coal production, and tree poaching are all serious issues. DOE and FRWO have been unable to curb and prevent many unauthorized resource extraction and land uses in Sabzkhouh (Mojtahedi, 2009). Ongoing conflicts between central and local authorities, coupled with failures of state-based conservation due to shortages of financial and human resources, have contributed to significant rangeland degradation in Sabzkouh since the early 2000s (Varjavand Naseri, 2011).

In the following sections, I use the frameworks and theories of co-management to describe and shed light on the current status of the arrangement between the local community and the state government. I then suggest ways to improve collaboration between the local community and the state government. Applying a co-management

lens to grazing at Sabzkouh reveals opportunities for developing relationships and establishing locally appropriate and broadly accepted management (Schlager & Ostrom, 1992; Agrawal, 2002; Borrini-Feyerabend & Hill, 2015).

2.2.1. Co-management in Sabzkouh

In 2012, a local community member in the Sabzkouh area developed an initiative that offers a potential model for addressing this challenging situation. The early migration to the summering ground and excessive early season NFRP harvest made it clear that a mechanism was needed to control the spring entry into Sabzkouh's rangelands. In the absence of *il* (nomadic confederation) and *khan* (*il* headman) authority, and without precedence for village councils to influence resource management beyond settlement borders, the traditional migration schedule was being ignored by many herders. Sinazadeh, an elder from Absharan Oliya village with herding rights in Sabzkouh, made arrangements to prevent access to a section of Sabzkouh (called the spring *qoroq* in Farsi) to the first 50 days of spring (roughly between March 21 and May 10). The term spring *qoroq* refers to both the restricted area and the system of prohibition and management of use (Daumoon, 2015). The spring *qoroq* area is 400 hectares. Community wardens hired by Sinazadeh prevented herders and other outsiders from introducing livestock to spring *qoroq* rangelands before May 10, thus honoring both customary and state government conservation policies. Sinazadeh collected money from all the local herders who had herding permits in the spring *qoroq* area to pay the two community wardens' salaries. The support for this arrangement expanded in 2013, as three more elders joined the initiative, collecting funds from their constituents to hire two additional wardens to monitor and enforce the spring *qoroq*. The elders also invited representatives from DOE and FRWO and non-governmental organizations (NGOs) to the spring *qoroq* coordination meeting, held annually in early March (Daumoon, 2015).

In this chapter, I use the term *community* to refer to the Bakhtiari people with customary herding rights in Sabzkouh's spring *qoroq.* I refer to them as *community* to acknowledge that, despite residing in different villages in Sabzkouh, they belong to the traditional structure of the *il* and share similar resource management interests and challenges. Members of the community may reside in a village inside the spring *qoroq* area or only have herding permits inside it. There are also Bakhtiaries and people of other ethnicities who do not have herding rights in spring *qoroq* but traditionally harvest

NFRPs from its rangelands. Because they are not parties to the current grazing arrangement, I have not included this group in the term *community*.

Restricting access to the spring *qoroq* area in the first 50 days of spring, while essential to sustainable rangeland management, has caused other problems. April 2 is *Nature Day* (Sizdah Be-dar) in Persian culture and is widely celebrated with family picnics. Sabzkouh is among the favored picnic sites in the Chahar Mahal and Bakhtiari province, and families come from many directions for this annual tradition. Unlike the state wardens, the community wardens do not have legal rights to exclude outsiders. This lack of legal authority causes clashes between the community wardens and outsiders on *Sizdah Be-dar* every year. Visiting picnickers want to be able to travel wherever they please, sometimes degrading rangelands, disturbing herds, and otherwise provoking conflicts. Additionally, there are recurring concerns among local community members about transparency and nepotism in management of the spring *qoroq*. These issues are prominent topics in the annual management coordination meetings held among the community (people with herding permits in spring *qoroq*) and FRWO and DOE officials in early March since 2013. Despite the legal shortcomings and challenges related to implementation, the community and the state government still value organizing and continuing the spring *qoroq* arrangement.

2.2.2. Defining co-management for Sabzkouh

Co-management, as a general term, refers to power sharing between state agencies and local communities in natural resources management (Pinkerton, 1989; Castro & Nielson, 2001; Berkes et al., 2007). Co-management may include various degrees of power-sharing and different partnership arrangements between state government's centralized management and community management (Pomeroy & Berkes, 1997; Armitage et al., 2008). Figure 2.3 shows that co-management arrangements can fall on a spectrum between state government's centralized management and community self-governance and self-management. A less developed co-management arrangement may involve simply informing the local community, while a more developed co-management may lead to community control and self-governance (Pomeroy et al., 2004; Kearney et al., 2007). The co-management process emphasizes negotiation, problem solving, shared information, and collaboration in learning, planning, and acting (Berkes, 2009; Williams & Tai, 2016).

The collaboration between the state government and local community in Sabzkouh's spring *qoroq* is not formally recognized as a co-management arrangement, but government recognition is not a prerequisite for co-management (Pinkerton, 2003; Carlson & Berkes, 2005). Therefore, the collaborative arrangement in Sabzkouh's spring *qoroq* falls in the spectrum of co-management (Kearney at al., 2007; Armitage et al., 2008). The community's collaboration with the state government in restricting seasonal access to the spring *qoroq*, support customary laws as well as state regulations. The co-management arrangement in spring *qoroq* can be categorized as the *joint action* level according to Pomeroy and Berkes (1997, p. 466) classification.

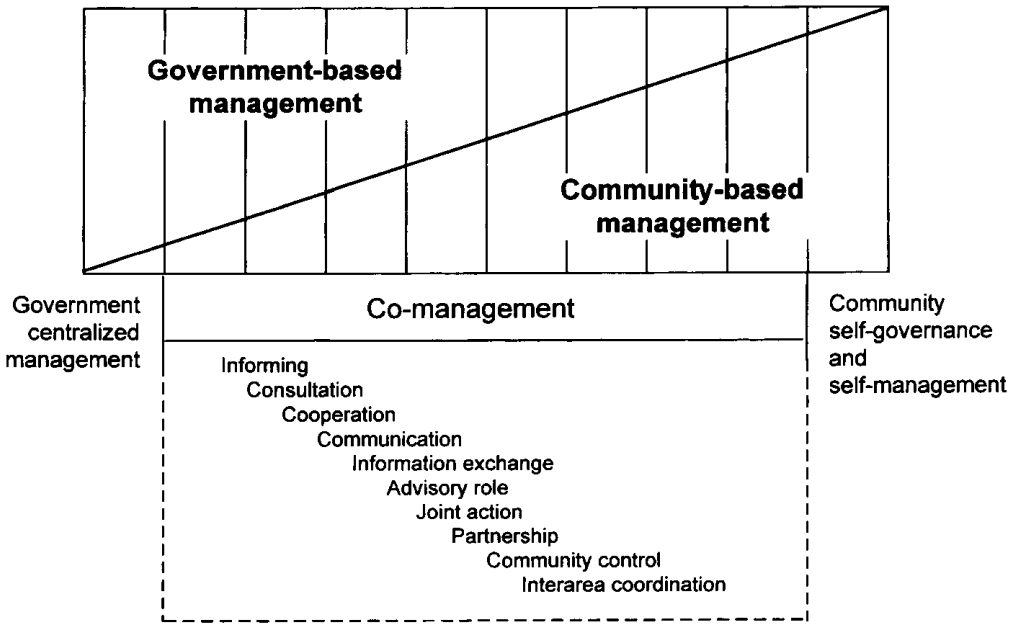

Figure 2.3. A hierarchy of co-management arrangements (Pomeroy & Berkes, 1997, p.466). Used with permission.

Establishing a co-management arrangement is a process that involves partners at different levels of power "agreeing to certain rules and how to implement them in a particular time frame" (Rocha & Pinkerton, 2015, p.6). Pinkerton (1992) conceptualizes this process as containing five main steps: (1) adopting a negotiating posture, (2) conducting negotiations, (3) producing an agreement, (4) fully implementing the agreement, and (5) institutionalizing procedures. Co-management is a process of mutual adaptation between government policies and local institutions.

2.2.3. Improving co-management in Sabzkouh: Research goals and questions

The informal collaboration between the state government agencies and the local community in Sabzkouh provides an opportunity for expanding and enhancing co-management. Understanding aspects of a resource management system in order to transition from poorly functioning, state-governed PA management to shared-governance based on a functioning partnership is challenging (Borrini-Feyerabend et al., 2004). Co-management studies examine distribution of power and responsibilities among state governments, local communities, and other partners (Berkes, 2009; Pomeroy et al., 2011; Williams & Tai, 2016). Shared governance in the form of co-management has been shown to be a viable alternative to centralized governance approaches in PAs (Pomeroy et al., 2001; Stevenson &Tissot, 2014; De Pourcq et al., 2015; Williams & Tai, 2016; Fedreheim & Blanco, 2017).

Most co-management studies fall within the larger field of common pool resource (CPR) analyses (Agrawal, 2000; Ostrom, 2002; Williams & Tai, 2016). Meta-analyses based on evaluations and assessments of empirical studies have improved our understanding of the characteristics affecting collective action in communities and their ability to self-organize and govern local resources and collaborate with the state governments (Ostrom, 2002; Basurto et al., 2013). The complexity of resource management systems often overwhelms researchers (Williams & Tai, 2016). Co-management frameworks draw attention to characteristics relevant for each specific case study and make the analysis more manageable (Agrawal, 2003; Berkes, 2010; Williams & Tai, 2016). Co-management frameworks identify the contexts, process, and characteristics that influence co-management outcomes, either positively or negatively (Schlager & Ostrom, 1992; Lane, 2001; Pomeroy, et al., 2001; Pomeroy et al., 2004; Gutiérrez et al., 2011; Cinner et al., 2012; Stevenson & Tissot, 2014; Williams & Tai, 2016). The application of co-management frameworks in specific case studies provides a holistic picture of the resource management system, identifies characteristics impeding and contributing to effective management, enables comparisons with other co-management cases, and highlights leverage points for nudging conditions towards broadly beneficial and acceptable arrangements (Pomeroy et al., 2011; Rocha & Pinkerton, 2015).

The list of favorable conditions for co-management is long and expanding (Pomeroy et al., 2011). There is no single arrangement under which co-management thrives. However, the greater the occurrence of favorable conditions in a particular case, the greater the chances for successful co-management (Pomeroy & Berkes, 1997; Pomeroy et al., 2004; Pomeroy, 2011). The challenge to researchers is to identify the characteristics relevant to co-management for each case and understand the shared goals that define and guide co-management arrangements (Williams & Tai, 2016). The goals of co-management include increasing levels of participation and power-sharing, providing socio-economic benefits to local communities, building multi-level and multi-scale governance institutions, and maintaining self-organization to foster resilient co-management (Pinkerton, 1989; Pinkerton, 2003; Pomeroy et al., 2004; Williams & Tai, 2016).

Initial discussions with community representatives, state agency staff, and other researchers working on and around Sabzkouh identified two main types of issues for management. First, there are substantial challenges for creating effective collaborations among the stakeholders for establishing the co-management arrangement. Second, there are shortfalls in the local community institutions for attending to the needs of nomadic herding. These challenges to co-management for Sabzkouh are also opportunities to experiment with collaborative problem solving and community self-organization. These issues also guided me to the following more specific research questions:

1. What is the status of development of the co-management arrangement? What are the rights and responsibilities of the local community and of the state government?

2. What co-management outcomes are the Sabzkouh stakeholders looking for?

3. What characteristics of resource management in Sabzkouh negatively or positively affect the establishment of co-management?

4. What roles should each stakeholder group play to establish a well-functioning co-management arrangement, an effective partnership, and improved self-organization capacity of the local community?

2.3. Methods

I applied Pinkerton's co-management framework (Pinkerton & John, 2008; Rocha & Pinkerton, 2015) and the characteristics of effective partnerships (Pinkerton, 1989; Pinkerton, 1993; Pinkerton, 2009) to Sabzkouh's spring *qoroq*. I used Pinkerton's framework to assess the resource management system and to identify conditions impeding and favoring co-management. I then used the criteria for effective partnerships and co-management literature to specify recommendations to improve co-management arrangements. This section expands on the application of the frameworks and methods applied for data gathering in Sabzkouh.

2.3.1. Data collection

I used a case study approach to investigate the Sabzkouh PA. Qualitative case study methods were used to analyse the components of the resource management system and to describe co-management arrangements (Yin, 2003; Baxter & Jack, 2008). The primary data for analysis came from open-ended interviews, participatory rural appraisal (PRA) workshops, and document reviews I conducted between 2011 and 2015. I augumented these data with further document reviews and interviews in 2016 and 2017. Table 2.1 shows the methods I used for data gathering from different stakeholder groups.

Table 2.1. Stakeholder groups and methods for data collection.

Stakeholder groups	Data gathering methods and tallies
Local community	• 8 PRA workshops with 72 participants from local communities • 54 open ended interviews with local community members from different socio-economic groups and genders
State government officials	• DOE: open ended interviews with three state wardens in Sabzkouh and the head of DOE in Shahr-e-Kurd • FRWO: open ended interviews with three field sfaff, the head of FRWO in Kiar, three staff of the FRWO in Shahr-e-Kurd
Researchers	• Open ended interview with Mehdi Mojtahedi (Master's thesis in Sabzkouh in 2009) and Hossein Varjavand Naseri (Master's thesis in Sabzkouh in 2011)
Local Businesses	• Interviewed two staff of the rafting company in Sabzkouh and a shop keeper in Naghan who purchases wild plants from the community members

Participatory rural appraisal (PRA) is a family of methods for data gathering that enable local people to express their knowledge of life and conditions (Chambers, 1994). In PRA workshops, the researcher acts as a facilitator by “handing the stick to the local community” and giving them the leading role to share information about their condition and problems (Mukherjee & Chambers, 2004, p.1803). PRA often uses visual means of data gathering, such as participatory mapping for designing development and conservation projects (Karimpour et al., 2015).

I used PRA workshops for data gathering from the local community groups in Sabzkouh. The 8 PRA workshops provided forums for local people to share their opinions about the opportunities and challenges for participation in Sabzkhouh’s management. Groups of 8–12 people attended each workshop, which were held in tents or seasonal houses in Sabzkouh. The workshops touched on issues related to management of the spring *qoroq*. Through participatory mapping of the spring *qoroq* and migratory routes, the community shared challenges for maintaining their livelihoods, the history of Sabzkouh management, and aspects of the community’s relationship with the state government. Participants identified problems in management of spring *qoroq* and offered solutions.

I was introduced to an initial group of local community interviewees by researchers who had previously worked in Sabzkouh. I chose the first interviewees from different socio-economic groups and asked them to introduce other knowledgeable interviewees (Etikan et al., 2016). I made sure to interview at least two people from each village with customary rights in Sabzkouh’s spring *qoroq* and people from all the socio-economic groups (Krichherr & Charles, 2018). Interview questions investigated the person’s opinions about resource management, their expectations regarding the spring *qoroq* arrangement, and their values linked to the spring *qoroq*. In the interviews, I also explored the community’s relationship with the state government, the factors threatening the environment in Sabzkouh, and the solutions they envision for addressing these threats. I also investigated how the community members identified themselves and what they considered to constitute leadership. Figures 2.4 and 2.5 show some of the interviews with the local community members.

I also engaged representatives of the state government in discussions. I interviewed three DOE wardens in Sabzkouh, three FRWO field staff, the head of FRWO in Kiar (the regional office in charge of spring *qoroq* area), the head of DOE for

Sabzkouh, the head of DOE in Shahr-e-Kurd (Chahar Mahal and Bakhtiari's capital), and three FRWO staff members in Shahr-e-Kurd. I asked the state government interviewees to identify the challenges and threats that they see affecting resource management in Sabzkouh, and to provide solutions to address these problems. Other questions asked about their understanding of the rights of the local community, the incentives for government collaboration with the local community, and the level of collaboration they want in Sabzkouh's management. Interviews with the FRWO and DOE experts provided insights into their preferences and helped me to identify challenges faced for building partnerships and collaboration among the state government organizations.

Figure 2.4. Interviewing local community members in Sabzkouh (June 18, 2015).
Note: The interview is inside an unauthorized house within Sabzkouh PA.

Figure 2.5. Interviewing local community members in Sabzkouh (June 19, 2015).

I complemented my background data collection by consulting local scholars. I interviewed Mehdi Mojtahedi and Hossein Varjavand Naseri, who conducted their master's theses in Sabzkouh PA (Mojtahedi, 2009; Varjavand Naseri, 2011). I interviewed two staff of the tourism company that organizes rafting tours in Sabzkouh, to assess opportunities for collaboration between the local community and the tourism businesses. I also interviewed a local shopkeeper in Naghan (the closest town to the spring *qoroq*), who purchases NFRPs from gatherers and sells them to outside markets. Figure 2.6 shows wild shallots harvested from the rangelands and coal produced from the forest in front of a shop in Naghan. Figure 2.7 shows an interview with a local shop keeper in the village of Rahim Abad.

Figure 2.6. Wild shallots and coal for sale in the Naghan town (June 15, 2015).

Figure 2.7. Interviewing a local shop keeper in Rahim Abad (Rahim Abad, May. 4, 2015).

Document reviews provided background knowledge and foreground data about the ecosystem, the institutional arrangements, and history of resource management. Table 2.2 shows the documents and reports that informed the background data. When

coupled with interview data, these documents reveal the historical development, current functions, and opportunities to improve institutional arrangements.

Table 2.2. Main documents and reports that informed data.

Source of background data	List of resources
State government (DOE and FRWO)	• DOE's PA conservation plan (Majnoonian, 2002) • FRWO's unpublished rangeland management plans for the spring *goroq* (FRWO, 1984)
NGO reports	Reports and publications by Daumoon NGO (Soofi et al., 2013; Daumoon, 2015): • Socio-economic report, • Vegetation report, • Alternative livelihood assessment report. UNDP's publications and plans for work in Sabzkouh (UNDP, 2004)
Academic reports	M.Sc. thesis: Mehdi Mojtahedi (2009) M.Sc. thesis: Hossein Varjavand Naseri (2011)

Despite my Iranian identity and language skills, my outsider status as non-Bhaktiari created some challenges. Local people are seldom completely forthcoming with outsiders and likely kept some information from me. In addition, my data gathering was finished in 2017, and this research does not account for recent developments, including DOE providing formal outfits for community wardens.

2.3.2. Pinkerton's co-management framework

I followed previous scholars in using a co-management framework to direct my data collection, to ensure that the compiled data address all essential issues, and to organize the case study description and initial analysis. Agrawal (2002) synthesized hundreds of case studies to create a comprehensive co-management framework to identify and categorize the characteristics contributing to successful outcomes for co-management. Pinkerton built on Agrawal's (2002) framework to assess *completeness* of co-management (Pinkerton, 2003; Pinkerton & John, 2008; Rocha & Pinkerton, 2015). Pinkerton defines the term *complete co-management* as an ideal situation in which all management activities, from data collection to policy making, involve cooperation (Pinkerton, 2003; E. Pinkerton, personal communication, March 19, 2019). In complete co-management, decision-making power is shared among the stakeholders and all the

parties acknowledge the legitimacy of each other and have strong incentives to participate in management and share the benefits and challenges (Schlager & Ostrom, 1992; Pinkerton, 2003).

Similar to other CPR scholars, Pinkerton uses a co-management framework to evaluate conditions of the community, the natural resources, the government agency, and the institutional arrangements (Pinkerton et al., 2014; Rocha & Pinkerton, 2015). As used here and in most other co-management literature, institutional arrangements refers to the structure of rights, duties, and power to organize activities, make decisions, and produce outcomes (Ostrom, 1992). In addition to delineating favorable characteristics for co-management, Pinkerton's co-management framework also includes descriptions to provide full pictures of case studies. This balance between full coverage and detailed study of important attributes made Pinkerton's framework an appropriate tool for my effort to understand Sabzkouh's spring *qoroq* in relation to co-management. Pinkerton and John (2008) apply the same framework to characterize the resource management system in Kyuquot and Checleseht First Nations' territories in British Columbia. Bouevitch (2016) also uses Pinkerton's co-management framework to examine how characteristics of the community, resource, state agency, and institutional arrangements affect an emerging partnership between Parks Canada and Hul'qumi'num communities in Gulf Islands National Park Reserve.

Pinkerton's framework lists characteristics affecting co-management success and characteristics that deserve examination in case studies (Pinkerton & Weinstein, 1995; Pinkerton & John, 2008; Pinkerton et al., 2014; Rocha & Pinkerton, 2015; E. Pinkerton, personal communication, March 19, 2019). Table 2.3 lists characteristics regarding the nature of the community, of the resource, of the state government agency, and of the institutional arrangements. Because of overlaps between descriptive characteristics and characteristics that affect co-management success, I list them together in the table as favourable conditions and discuss them in the section that follows. The nature of institutional arrangements includes conditions related to historical development, and these are referenced under *historical context* (see row 1 in Table 2.3) because they provide the background for applying the rest of the framework.

In terms of the nature of the resource, the framework prompts questions regarding the natural resources involved, their inter-relationships, and the characteristics

of the resource that lend themselves to local management. Scarce, visible, highly valuable, non-spoilable, and mobile resources upon which a community depends provide incentives for co-management (Agrawal, 2002; Pinkerton & John, 2008). Clear boundaries and small size of the resource are also characteristics of the resource that support local management by fostering incentives for rule enforcement (Agrawal, 2002; Pinkerton & John, 2008). Perceived resource scarcity also supports co-management because it can provide incentives for participating in resource management if the resource is valuable to the community (Wade, 1986; Ostrom, 2009; Oldekop, et al., 2012). Additionally, if the resource has high cultural salience, meaning if it has significant cultural values, people have more incentives to manage it sustainably (Pinkerton & John, 2008). Boundary clarity is favorable to local management: if the boundary around the resource is clear and defendable from unlicensed outsiders, the rules are more easily enforceable (Agrawal, 2002). It is more difficult to manage species that have extensive migrations or movements (Agrawal, 2002). Therefore, lack of mobility is favorable for local management. High spoilabilty of a resource makes it favorable for community management because unauthorized harvesters have a harder time storing the resource without detection for a sufficient amount of time to use or market the resource (Pinkerton & John, 2008). Small size of the territory that encompasses the resource is favorable to local management because it makes it is easier to enforce effective rules for access and harvest (Agrawal, 2002; Pinkerton, 1989).

Even communities grounded in shared history and ethnicity are not homogenous (Ostrom, 1990). They are often diverse social mosaics partitioned by origin, race, class, occupation, education, gender, political ideology, and visions of the landscape and desired futures (Walker & Fortmann, 2003; Gupte, 2003; Walker & Hurley, 2010). Failure to adequately assess the politics associated with community diversity, can impede co-management (Ostrom, 1990). In terms of the nature of the community, the framework requires a description of the community's population and demographics, as well as community groups involved in co-management. The framework also prompts questions about the significance or meaning of management activity to the community and the community's vision or goals for co-management (Pinkerton & John, 2008). Existance of engaged local leadership also facilitates establishment of co-management (Agrawal, 2003; Pinkerton & John, 2008; Williams & Tai, 2016). The community's level of engagement in local projects and level of self-efficacy, defined as the belief that they can

understand and influence political affairs, also facilitate co-management (Bandura, 1982; Helliwell, 2006). Social cohesion, which stems from successful past experiences, trust, and shared norms, also enables and sustains co-management (Baland & Platteau, 1996; Rocha & Pinkerton, 2015). Living in close proximity to the resources further facilitates cooperation and rule enforcement for controlling resource access and use (Baland & Platteau, 1996, p. 343–345).

The nature of the community (community of place, community of interest, or both) can also affect a community's commitment to conservation and co-management (Walker & Hurley, 2004). A community of place includes those who are "tied together by living within a jurisdiction" and are affected by its land-use policies (Walker & Hurley, 2004, p.738). A community of interest is a "harmonious collective with shared values, norms, and priorities" (Walker & Hurley, 2004, p.738). A community of place is usually more committed and interested in co-management because they have fewer options to live, or make their living, elsewhere (Pinkerton, 2009). Place-based groups with clearly defined membership which exclude outsiders either from membership and/or from access to territory or local stocks are more successful in enforcing co-management (Pinkerton, 2003). The small geographic spread of the community and living close to the resource also makes local management easier (Baland & Platteau, 1996).

In terms of the nature of the government agency, the level of governance (local, regional, country/provincial/state), and the scale and size of the bureaucracy are important characteristics (Pinkerton, 2003). Co-management operates most favourably where the size of the government bureaucracy is small and its mandate is regional or local because smaller bureaucracies are more attuned to local management contexts (Pinkerton, 1989; Noble, 2000). The number of government agencies involved in co-management, the stature of those agencies, and the policies that support or inhibit community engagement with state parties affect establishment of co-management (Pinkerton & Weinstein, 1995).

Another important characteristic is the state government agency's ability to adjust to local management needs (Pinkerton & Weinstein, 1995). The existence of leadership that supports collaboration with the local communities in the state government can advance co-management (Pinkerton, 1989; Sessin-Dilascio et al., 2015). The existence of networks of partners working on topics related to resource management, such as

research institutes and national and international NGOs, also favors co-management (Pinkerton, 1992). Co-management operates best where external support, such as non-government scientists and credible partner organizations, can be recruited (Pinkerton, 1989, p. 27). Such intellectual linkages with local-level actors can challenge governments to apply new values, such as equity, that support local priorities (Pinkerton, 1993; Williams & Tai, 2016).

Long-term historical developments and immediate issues that give rise to co-management arrangements often contribute to fuller understanding (Schlager & Ostrom, 1992; Natcher et al., 2005; Murray & King, 2012). The focus, scope, and geographical scale of the co-management arrangement and the stakeholders involved in its development are also important (Pinkerton & Weinstein, 1995; Agrawal, 2003).

The distribution of operational, collective choice, and constitutional rights between the state government and the local community should also be examined. Operational rights are related to day to day activities and include the right to access and withdrawal (Schlager & Ostrom, 1992). Right to access refers to prerogatives to enter a defined physical property; right to withdrawal means the prerogative to remove resource *products* (Schlager & Ostrom, 1992, p. 250). Collective choice property rights include rights to manage, exclude, and alienate. The right to manage is “to regulate internal patterns and transform the resource by making improvements” (Agrawal & Ostrom, 2001, p. 489). The right to exclude is “to determine who will have the right of withdrawal and how that right might be transferred” (Agrawal & Ostrom, 2001, p. 489). The right to alienate is to “sell or lease withdrawal, management and exclusion rights” (Agrawal & Ostrom, 2001, p. 489). Constitutional rules stipulate the highest order of rights, framing the conditions for governance including who can make decisions on access and use of the resource, and who can benefit from the resources (Kiser & Ostrom, 1982, p. 209; Carlsson & Berkes, 2005, p. 69). If the state government supports community engagement and recognizes the community’s right to some level of self-governance, it is more likely that co-management will succeed (Pinkerton & John, 2008).

Expectations regarding co-management outcomes on the part of the local community and the state government may emphasize either *processes*—like new human relationships, more trust, better and frequent communications, active collaboration, creation of new values, understandings, and meanings—or *substance*.

Substantive outcomes often take the form of agreements to share information and take action regarding resource monitoring and enforcement. Understanding the desired co-management outcomes provides an overview of the extent and depth expected for the co-management arrangement (Pinkerton & Weinstein, 1995; Pinkerton & John, 2008).

Table 2.3. Conditions that affect co-management in Pinkerton framework.

Components of resource management system	Conditions identified to affect co-management
Nature of the institutional arrangements/ Historical context	• Long-term historical developments that enable and spark co-management • Immediate issues that prompt co-management • Principal focus of co-management (Pinkerton, 2003)
Nature of the resource	• Level of reliance on resource under management • Resource characteristics that encourage local management (Agrawal, 2003): resource size, boundary clarity, mobility, salience, spoilability, scarcity and value
Nature of the community	• Population size, age distribution, diversity of employment • Community's main vision for co-management accomplishment • Significance or meaning of the management activity to the community • The community groups involved in co-management • Leadership, interest in education/training capacity • Social cohesion (Baland & Platteau, 1996; Rocha & Pinkerton, 2015) • Self-efficacy (Bandura, 1982; Helliwell, 2006) • Level of engagement in local projects (Helliwell, 2006) • Level of geographic spread (Baland & Platteau, 1996) • Community of place vs. community of interest (or a blend)? (Walker & Hurley, 2004)
Nature of the state government agency	• Level (municipal, regional district/county, provincial/state, federal) (Pinkerton,1989) • Number of government agencies involved in management • Breadth of agency mandates and size of budget relative to mandate • Existence of statutes and policies that foster community engagement • State government's ability to attune (adjust) to local management needs • Agency siege mentality vs. openness (or situational or temporal variation) • Leadership support for co-management (Sessin-Dilascio et al., 2015; Pinkerton, 1989). • Availability of issue networks and other partners (Pinkerton, 1992)
Nature of institutional arrangements	• Stage of co-management (Pinkerton, 1992) • Distribution of operational, collective choice, and constitutional rights • Vertical vs. Horizontal power of the state • Policies that stipulate engagement and sharing decision-making power • State's recognition of community rights to self-government • Property rights or management rights held by the community (*de jure* or *de facto*) • Nature of the co-mangement outcomes (process vs. substantive outcomes)

2.3.3. Characteristics of effective partnerships

Co-management is a process for building relationships through partnerships that evolve iteratively, solve problems, and involve co-learning (Pinkerton, 2003; Berkes, 2009). Social scientists have assembled a rich body of data which allow us to identify the conditions and situations for successful partnerships in co-management. Pinkerton (2009) identifies six characteristics of partnerships among the stakeholders for complete co-management that can lead to accountability and equity (Pinkerton, 2009) (Table 2.4). Effective co-management partnerships permit common access to data, participatory analysis of data, and timely resolution of conflicts (Pinkerton & John, 2008). Such partnerships also allow for collaboration in making new regulations, in monitoring resources, in enforcing rules, and in assuring that arrangements reward investments in conservation (Pinkerton, 2009). In Pinkerton's analyses, the more these characteristics prevail, the more successful the partnerships are likely to be. The characteristics thus provide one basis for recommendations to improve co-management arrangements in Sabzkouh, including recommendations that go beyond the current development stage of co-management, and to offer guidance for long-term planning.

Table 2.4. Characteristics of effective partnerships for moving toward complete co-management.

Characteristics	Description of partnership functions, dynamics
Partners can access data on the status of resources	Establishing common access to data and data analyses lays basis for trust and scientific and regulatory legitimacy (Pinkerton & John, 2008).
Partners can make regulations governing resource access, use, etc.	Designing appropriate new regulations increases the chances of meeting community's needs (Pinkerton, 2009) and of obtaining community compliance (Rashid et al., 2013).
Partners can monitor and enforce regulations	Sharing the responsibility to monitor resources and enforce regulations optimizes available funds and personnel in managing resources effectively (Oliver, 2004; Pinkerton, 2009).
Partners know that investments in resource improvements result in better yields, conditions	Investing in resource management translates into benefits (primarily in more and higher quality harvests, but also in greater political stature, more satisfying interpersonal relations, and confidence in sustainable livelihoods) for those making the investments (Pinkerton, 2009).
Partners resolve conflicts in a timely manner	Resolving conflict efficiently through informal or formal means increases community trust in the state government and confidence in partnership capacity to address other challenges.
Partners have access to sufficient start-up funds and other resources	Having access to resources required to initiate co-management removes uncertainties and enables early assessment and re-design of co-management arrangements.

Source: Pinkerton, 2009.

2.4. Results: Resource management in Sabzkouh

In this section, I examine management of the spring *qoroq* through the lens of Pinkerton's co-management framework. I use the data I gathered to describe the salient characteristics of the resource, the community, the state government, and the co-management arrangements as of 2017.

2.4.1. Nature of institutional arrangements/ Historical context

As discussed in Section 2.2, the people and lands of Sabzkouh's spring *qoroq* are historically and culturally linked to the Bakhtiari *il*. Before the early 1960s, the *khan* (*il* headman) was traditionally considered the owner of all of the *il's* land and livestock (Brooks, 1983). From the *khan,* power trickled down among lineage heads, including leaders of tribes (*kalantar*), sub-tribes (*kad-khoda*), and clans (*rish-sefid*). Figure 2.8 depicts some segmentary lineages of the Bakhtiari *il.* Lineage heads organized the seasonal migrations, settled internal conflicts, and addressed rangeland management and use issues (Brooks, 1983). In this sense, the *ils* had operational, collective choice, and constitutional rights over their territory. *Il* structure enabled management of the huge territory of the nomadic herding confederation without state-based authority.

Despite the traditional functions of tribal organization in regional economic and environmental management, state governments repeatedly sought to weaken the *ils* (Farvar, 2003). When drilling for oil started in Bakhtiari territory in the mid-1930s, the *khans* developed relationships with British industrialists and profit shares. As *khan* power and influence expanded, state government concerns grew (Oskoui, n.d.). Iran's leader, Reza Shah Pahlavi (r. 1925–1941), attempted to reduce the power of the *khans* by relocating nomads away from their traditional territories (Amanollahi Baharvand, 2003). Reza Shah co-opted tribal leaders, disarmed tribes, imprisoned or executed leaders, and imposed military administration over tribal areas (Garthwaite, 2009).

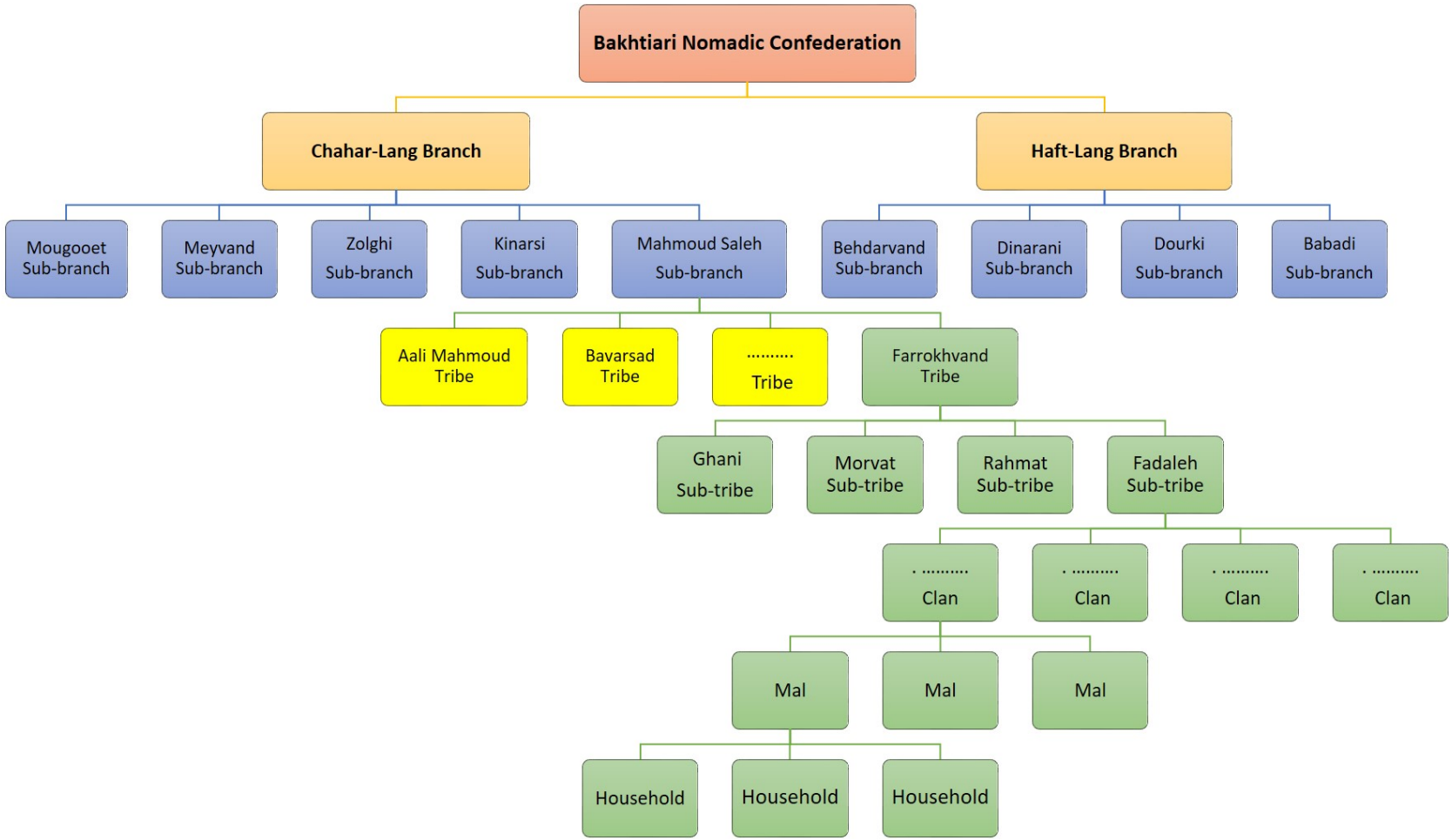

Figure 2.8. Some segmentary lineages of the Bakhtiari *il* (after Karimi, 1978).
Note: This figure shows the traditional organizational structure of Bakhtiari *il*. The *khan* used to have the ultimate power as the head man supported by subordinate leaders of tribes (*kalantar*), sub-tribes (*kad-khoda*), and clans (*rish-sefid*).

The next national leader, Mohammad Reza Shah (r.1941–1977), took a more moderate approach to managing the *ils* but still sought to reduce the power of the Khans. He initiated development programs and introduced secular schools to encourage voluntary sedentism. Land reforms initiated in 1963 redistributed *il* land and livestock to peasants, further weakening the *khans* (Garthwaite, 2009). The last titled *khan* resigned in 1959 (Samsam Bakhtiari, 2006).

Although the Bakhtiari *il* no longer possesses formal or *de jure* authority, many aspects of traditional life linked to *il* organization persist in ways that affect resource management. Bakhtiari *il* still defines individual and family identity. The term *il* is still used to address and describe people who rely on nomadic herding, and who respect lineage elders, and apply traditional knowledge and norms in land use and social relations. Even though the *il* does not exist in its traditional form, the term *il* is still commonly used by the public and the state government to address the people who have ethnic ties to the *il* and/or follow the nomadic lifestyle. In this chapter, I use the term *il* instead of *former il* to signal ongoing commitments to this social structure and term.

In addition to the suppression of the nomadic tribes, Iran's recent history shows efforts to promote village life (Farvar, 2003). Iran has allowed elections of city and village councils since 1907 (Iranian National Parliament, 1979). Village councils make decisions regarding social, economic, and development issues for their respective villages. In the absence of *khans*, village councils in summering and wintering grounds have replaced *il* management structures to some extent. Village councils have taken charge of resolving local conflicts, deciding on resource management issues, and representing community interests to the state government and other villages. On the other hand, the power of village councils is localized and does not extend to migratory routes or nomads' rangelands away from village lands.

The development of state government plans and structures has also created both conflicts and opportunities for collaboration. In 1963, Iran nationalized all forests and rangelands (Shamekhi, 2011). The 1963 Nationalization Act states, in part, "the use of forests and rangelands is only allowed based on management plans" designed by the state government officials (Aghajanloo, 2015, p.31). These management plans determine the number and species of livestock allowed, the opportunities for range improvements, and the need for land rehabilitation based on assessment of ecological

conditions. In effect, the Nationalization Act allocated constitutional rights and collective choice rights to the state government, including rights to manage, exclude, and alienate. Each local herder was assigned a piece of rangeland subject to a regional management plan, which was usually shared with other herders. The livestock allocations for each herder were initially decided on the basis of the number of livestock they traditionally kept. The families of *khans* received access to more land and received larger livestock allocations (author's interviews, local community members, Sabzkouh: May 2014). The rangeland management plans provided community members with operational rights to access and withdraw from pastures.

Rangeland management plans were originally designed by the staff of FRWO based on the assessment of the rangelands between 1970 and 1990 (Mahdavi & Alizadeh, 2001). The original rangeland management plans in Sabzkouh did not consider the condition of wintering grounds or migratory routes. The FRWO experts in offices in the wintering grounds also designed separate rangeland management plans. The rangeland management plans in Sabzkouh were designed in 1990. They were intended to last 15 years, but most or all remain in effect and have not been significantly updated. At the same time, rangeland productivity and other conditions have changed because of global warming, overgrazing, and the rise of NFRP harvesting (UNDP, 2004). Despite the importance of these plans for local communities, community members had no role in their design (Naghizadeh et al., 2012).

Negotiations by members of the parliament elected from rural areas in 2004 led to the passing of a law that gave local community members opportunities to claim ownership of national land. Since the new law was passed, every FRWO office has been receiving land claims based on historical evidence. Locals who possess evidence of traditional ownership of the land prior to nationalization may go to court to gain ownership (author's interview, FRWO expert in Shahr-e-Kurd: June 2014). This change has prompted new types and levels of conflict between individuals, within families, and among communities and the FRWO (Mahdavi & Alizadeh, 2004). A FRWO expert told me there was widespread fraud and false claims from the communities. Receiving false claims from the community, made the FRWO staff very protective of information and limited my access to data related to the rangeland boundaries (author's interview, FRWO expert in Shahr-e-Kurd: June 2014).

Past agricultural development policies also affect conservation enforcement. In 1999, FRWO designed the Tooba plan to encourage farming and gardening. Based on the Tooba plan, communities could claim ownership of barren and degraded rangelands outside of PAs if they made gardens in them (FRWO, n.d.). Although Sabzkouh rangelands did not qualify for the Tooba plan because they would be located within the PA, community members planted farms and orchards hoping to gain ownership if the Tooba plan were to be expanded (author's interview, FRWO expert in Shahr-e-Kurd: June 2014).

2.4.2. Nature of the resources

The main resources in the Sabzkouh PA are fodder for sheep and goats, and NFRPs. Fodder is well suited for local management because it is a non-mobile, highly visible resource (Agrawal, 2002; Pinkerton & John, 2008). Even as high visibility makes monitoring fodder relatively easy, the low visibility of NFRPs (which are mostly roots) makes monitoring harvests difficult. After harvest, NFRPs are more visible and have high value as delicacies. Fresh NFRPs are highly spoilable, a factor favoring conservation enforcement as a basis for co-management. However, local community members might sell the NFRPs fresh or dry according to their interests and the security of their supply. If dried, NFRPs can be stored for months and easily transported and sold in outside markets, which makes it difficult to find the unauthorized harvesters (Agrawal, 2002).

Based on the customary laws, harvest of NFRPs is open to all for personal use, including any visitors (author's interviews, local community members, Sabzkouh: May 2014). The state government does not restrict personal harvest of NFRP plants because they are not considered threatened. However, the harvest of NFRPs for selling in the markets is restricted. Local community members and state government experts estimate that NFRP harvest for selling in the market reaches up to 20 tons for fresh NFRPs per local harvester each season. The number of mass harvesters remains undocumented because many conceal their activities. Mass-harvest has led to a scarcity of NFRP plants locally (author's interview, state wardens, Sabzkouh: June 2015; author's interviews, local community members, Sabzkouh: June 2015).

In traditional times the *il*'s territory had to be large enough to encompass summer and winter rangelands and the migratory routes. Large and complex territory is not

readily amenable to community management. However, the spring *qoroq* area in Sabzkhou is smaller, clearly bounded, and unmistakably pivotal in grazing success because it enables the transition from winter to summer grazing (Figure 2.9). Restricting access to Sabzkouh's spring *qoroq* is relatively easy because it only has two main access roads, and community wardens can be stationed at these entry points. The boundaries between the private lands are also clearly defined (Varjavand Naseri, 2011). Even though boundaries between private and national land are explicitly defined on legal documents, they are seldom marked on the ground. The state government lacks the capacity to maintain border markers, monitor national land use, or enforce management regulations. Land reform policies, such as the Tooba plan and other opportunities to privatize national land, encourage local community members to expand their unauthorized land uses (author's observation, Sabzkouh, 2011–2016).

2.4.3. Nature of the community

I defined the term *community* to refer to the Bakhtiari people with customary herding rights in Sabzkouh's spring *qoroq*. All the community members residents in twelve villages inside and around the spring *qoroq area* (Figure 2.9). These villages are Rahim Abad, Gaav Toot, Bajgiran, Char Tagh, Dorrak, Darreh Eshgh, Absharan Oliya, Absharan Sofla, Darreh Bid, Darreh Yas, Gel Sefid, and Maadan. Only one of these villages (Char Tagh) is located inside the spring *qoroq*. Around 170 herders have permits for a total of around 16,000 livestock inside Sabzkouh's spring *qoroq* (Daumoon, 2015). These nomads typically have a house or camp spot in Sabzkouh and another settlement in a village or city near their wintering ground in the Khuzestan, Fars, or Isfahan provinces of south-central Iran (Mojtahedi, 2009). As Figure 2.9 shows, people with herding rights live in villages in close proximity to the spring *qoroq* area. Living close to the resources facilitates community management.

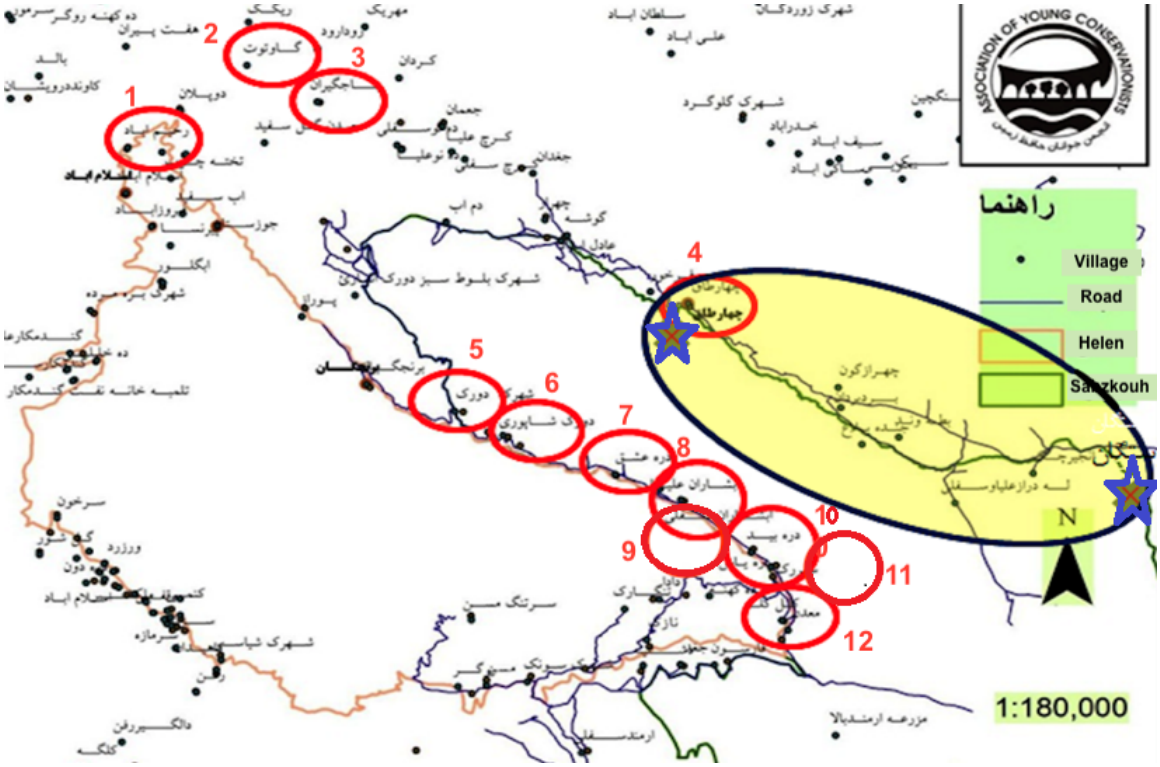

Figure 2.9. Map of spring *qoroq* and villages with customary rights. The yellow oval marks the spring *qoroq* area. The blue stars with red X marks show the spring *qoroq* check points and the red circles show the villages with customary herding rights inside the spring *qoroq* area. These villages include 1. Rahim Abad, 2. Gaav Toot, 3. Bajgiran, 4.Char Tagh, 5.Dorrak, 6.Darreh Eshgh,7. Absharan Oliya, 8.Absharan Sofla, 9.Darreh Bid, 10.Darreh Yas, 11.Gel Sefid, and 12. Maadan (After Daumoon, 2015).

All local community members interviewed in Sabzkouh identify themselves as Bakhtiaries. They share kinship, life experiences, cultural norms, and identity—characteristics which often facilitate trust and social cohesion (Baland & Platteau, 1996). The same characteristics have also been shown to contribute to successful community participation and co-management (Agrawal, 2003; Pinkerton, 1989, p. 28). Local community members mentioned their attachment to Sabzkouh as their home and its spiritual value as a main incentive for agreeing to and supporting the spring *qoroq* arrangement. Sabzkouh's role in providing the main livelihood option for the community was the second most important reason for supporting the spring *qoroq* (Figure 2.10) (author's interviews, local community members, Sabzkouh: June 2015).

> Sabzkouh is our home and our identity. I understand the state government is in charge of Sabzkouh's rangelands now. I was one of the first people to obtain a hunting permit when it was suggested by the government. But if the state government is not doing a good job in conservation of Sabzkouh, we have to step up. I couldn't sit and watch my home getting destroyed and that's why I initiated enforcing the spring *qoroq* (Sinazadeh, Elder in Sabzkouh, July 15, 2014).

In the absence of the *khan*, there is no specific local leader to control the time of migration or the number of livestock using the rangelands. Although elected members of the village councils are often not recognized as leaders, elder descendants of *khans,* and relatives of members of parliament act as leaders (author's observation and interviews, Sabzkouh, 2011–2016). All local interviewees declared respect for *khan* descendants and considered them as leaders. A local community member explained: "[T]oday, there is no *khan* and I decide on many [resource management] issues on my own but I am still a Bakhtiari. It is my pride and I respect my elders and descendants of the *khan"* (Local Man E with 70 permitted livestock, July 8, 2013).

The community in Sabzkouh is both a community of place and a community of interest (Walker & Hurley, 2004). It is a community of place in the sense that the people are tied together by living within Sabzkouh in spring and summer and are affected by PA land-use policies. It is a community of interest because people have shared values, norms, and priorities, including desires for good rains, mild springs, and healthy rangelands. The absence of the *khan* has affected the way *il* members make resource management decisions. Different tribes and sub-tribes of the *il* do not communicate and do not organize migration as a group. However, the *ils* play important roles in maintaining community identities. To enhance the role of *ils* in resource management, an environmental NGO, Cenesta, took the initiative to register the *ils* as formal organizations with the *Company Registration Office* in Iran (Cenesta, 2006). For the Bakhtiary *il,* they registered the organization through one of the sub-branches that does not use Sabzkouh as their summering ground. In 2016, a meeting was organized to introduce the registered *il* to the community in Sabzkouh. Despite showing respect, the community in Sabzkouh did not accept the registered *il* as a representative designated to make decisions on matters related to resource management. Despite identifying themselves as Bakhtiari *il* members, the community preferred to make resource management decisions locally (author's interview, Mehdi Mojtahedi: September 2016).

Figure 2.10. A typical Bakhtiari tent (Sabzkouh, May. 4, 2014).
Note: These tents were traditionally set up in Sabzkouh for the summer months. Some of them are now replaced with unauthorized houses.

Pinkerton's framework prompts the identification of all community subgroups and the description of their shared and distinctive interests to guide inclusive co-management planning. Observations in the field and manual coding of the interview data revealed an apparent link between the number of livestock a community member has permits for (an indicator of their wealth) and the type and level of their unauthorized resource extraction and land alteration activities (Table 2.5). In Table 2.5, the second column shows the unauthorized resource extraction activities most commonly engaged in by each community group. The third column in Table 2.5 shows each community groups' assessment of the causes of natural resources degradation in the spring *qoroq*. Based on my observation and interviews, all the community members engage in some unauthorized resource extraction activity. People with fewer permitted livestock (less than 50) tended to engage in overgrazing and in overharvesting of NFRPs. Community members with 50–100 permitted livestock built unauthorized houses and gardens in remote areas and engaged in over-fishing. On the other hand, the wealthier and more powerful members of the community, people with more than 100 permitted livestock,

built unauthorized houses, fish farms, and orchards in accessible areas by the road (see column 2 in Table 2.5).

When asked to identify causes of natural resources degradation and provide solutions to address the threats, the responses from the three community groups had similarities and differences (see column 3 and 4 in Table 2.5). Because the herders in all the community groups have grazing permits inside the spring *qoroq* area, improving the condition of pastures is a common goal. The individuals I interviewed said that they are willing to subordinate their immediate interests in order to optimize herding access (author's interviews, local community members, Sabzkouh: May 2013–July 2016). All the community groups in Table 2.5 suggested two similar solutions: (1) getting support from the state government for enforcing the spring *qoroq* arrangement; (2) restricting outsiders' harvests of NFRPs. Despite these similarities, when asked to identify causes of natural resources degradation in the spring *qoroq*, people from each community group often blamed the other groups and their unauthorized resource extraction activities and land uses. When asked to provide solutions to address these threats to the natural resources, each community group provided solutions that supported their needs while restricting the unauthorized resource extraction and land uses of other groups. This means if a certain community group is not represented in decision-making, their needs might be dismissed by the other groups. Powerful members of the community, wealthy people, relatives of the late *khan,* or people involved in politics, have access to information and learn about state government plans for funding development. These community members often take advantage of such knowledge, and seldom share the information or profits with other community members. For example, more prominent community members heard about the government support for tourism projects and designed projects that only benefited themselves (author's observation, Sabzkouh: 2011–2016).

Table 2.5. Local community user groups, unauthorized extraction activities they engage in, causes of natural resources degradation they identify, and solutions they suggest.

User group	Unauthorized extraction and land use	Causes of natural degradation identified by user groups	Possible solutions to threats
Herders with less than 50 permitted livestock	• Overgrazing • Overharvesting NFRPs	• Unauthorized fish farms, orchards, gardens, houses • Overharvest of NFRPs by outsiders (non-herders) • Insufficient fodder • Herders entering the spring *qoroq* area early in the season • Community does not have legal rights to enforce the spring *qoroq*	• Community to change customary laws and stop over-harvest of plants for selling in the market • State government action to: ○ Prevent unauthorized fish farms, orchards and houses in the PA ○ Stop the outsiders from harvesting NFRPs until the 90th day of spring ○ Introduce alternative livelihood options ○ Provide more subsidized dry fodder ○ Expand community rights to restrict outsider's access to the spring *qoroq* until the 90th day of spring
Herders with 50-100 permitted livestock	• Creating unauthorized gardens • Building unauthorized houses in areas far from the road • Unauthorized fishing	• Unauthorized fish farms • Overharvest of NFRPs • Insufficient fodder • Herders entering the spring *qoroq* area early in the season • Community does not have sufficient legal rights to enforce the spring *qoroq*	• Community to change customary laws and stop over-harvest of plants for selling in the market • State government action to ○ Expand community rights to restrict outsider's access to the spring *qoroq* until the 90th day of spring ○ Give the community gardening and construction permission ○ Be more firm in conservation enforcement
Herders with more than 100 permitted livestock	• Creating unauthorized gardens • Building unauthorized houses in accessible areas close to the road • Building unauthorized fish farms in accessible areas close to the road	• Overharvest of NFRPs • Unauthorized fishing • Overgrazing • Government's inability to enforce conservation and stop over harvest of NFRPs and fodder • Herders entering the spring *qoroq* area early in the season • Community does not have legal rights to enforce the spring *qoroq*	• Community to change customary laws and stop over-harvest of NFRPs for selling in the market • State government action to ○ Expand community rights to restrict outsider's access to the spring *qoroq* until the 90th day of spring ○ Give the community fish farm permits ○ Be more firm in conservation enforcement

Source: Author interviews and observations

Community members consistently emphasized the importance of the state government's enforcement of conservation policies and suggested more serious fines. All the local community groups in Table 2.5 saw an important role for the state government in the "solutions" and believed that the state government should be more rigorous and consistent in conservation enforcement. A local community member emphasized: "[T]he government needs to be harsher in [conservation] law enforcement. *Bakhtiaries* are afraid of monetary fines and jail. That's the only way to get them comply with the rules" (Local man C with 110 permitted livestock, June 5, 2014).

2.4.4. Nature of the state government agency

The FRWO, a section of the Natural Resources Institute under the Ministry of Jahad-e-Agriculture (Jahad-e-Keshavarzi in Farsi)[3] is responsible for managing all the forests and rangelands in Iran. The spring *qoroq* in Sabzkouh is under the jurisdiction of two regional FRWO offices, one in Kiar and the other in Naghan. The mandates and regulations are decided by the central offices, while regional and field offices execute the plans. FRWO is in charge of managing watersheds, monitoring livestock, and penalizing users if they exceed their herding permit allowance (Government of Iran, 1963). If herd sizes exceed allocation limits, then FRWO notifies herders for two consecutive years. If it happens for a third year, then FRWO has the authority to terminate grazing rights for herd owners (Aghajanloo, 2015). Although many herders exceed allocations, grazing rights have never been terminated in Sabzkouh (author's interview, FRWO national staff in Kiar, May 2015). I observed FRWO officials filling out the same form they had filled out in previous years, noting it was the first time they encountered excess livestock for each herder (author's observation, Sabzkouh: 2011–2016).

FRWO has managed a restricted access area in Sabzkouh, called *forest reserve area*, for over four decades. As a result of successful conservation enforcement, the vegetation in FRWO's reserved area has grown into a lush forest (Soofi et al., 2013). In order to prevent fire hazards, FRWO offered a one-time permit to herders to enter this area with their livestock in 2015. The area has been closed to everyone ever since.

[3] Jahad (or Jihad) in Farsi means holy war. Using the term *Jahad* for the Ministry of Agriculture, symbolizes the importance of agriculture and rural development for the war against poverty and reaching food sovereignty.

DOE is responsible for PA design and management. Management plans are prepared by DOE officials and ratified by the DOE director general. DOE has district offices in three locations within the Sabzkouh PA. Each of these offices employs 3–5 professional wardens. The wardens are required to make daily visits across the PA to enforce the regulations and management plans (Mojtahedi, 2009).

The Nomads Affairs Organization of Iran (NAOI) is a subsection of the Ministry of Jahad-e- Agriculture which provides state services to nomadic herders. The NAOI's responsibilities include: providing temporary campsites on migratory routes, providing subsidized fodder, and providing requirements for changing to a non-mobile life-style (NAOI, n.d.). FRWO and DOE experts did not refer to collaboration with the NAOI.

Based on my interviews with the FRWO and DOE staff, the FRWO has more staff and funding and has had a longer history of managing resources based on management plans. FRWO is widely perceived as doing better enforcement in Sabzkouh, as demonstrated by their success in restricting access to the *forest reserve area*. Inside the PA however, DOE has more responsibilities. Despite having more resources, FRWO seems to refuse to provide support for enforcement of DOE's PA management plans. The FRWO staff have pride in their success. They seem to have frustrations about not being in charge of PA management and not getting enough requests from DOE experts to support conservation. This concern is evident in the following excerpt from the interview with an FRWO staff member in Sabzkouh.

> DOE staff keep emphasizing on having more power in PAs and it's *their* responsibility! Carry on then. We have been able to make sure no one enters the forest reserve for 40 years (FRWO staff in Sabzkouh, July 4, 2015).

Despite the conflicts between the two state government organizations, the leadership at both FRWO and DOE local offices affirmed that they are interested in working with the local community toward co-management. The head of the DOE office in Sabzkouh is eager to practice innovative methods for conservation enforcement through collaboration with the local community. The head of FRWO's local office hoped to negotiate with the local community to exchange a plot of accessible nationalized land for a rangeland area in the periphery of Rahim Abad village with high biodiversity value (author's interviews with FRWO and DOE staff, Sabzkouh: 2014–2016).

The state government struggles to attend to local community needs in Sabzkouh. The NAOI has attempted to address fodder shortage by providing subsidized fodder to the local herders based on the number of their herding permits. However, community members interviewed in my study mentioned that some herders sell the subsidized fodder at a higher price and enter the summering ground earlier in the season. The Ministry of Jahade-e-Agriculture also offers funding for alternative livelihood projects. Nevertheless, the extensive unauthorized land-use alterations and the ongoing conflicts between state government organizations and the local community indicate the inability of the state plans to respond to all the local needs.

Political, financial, cultural, and safety considerations affect the ability of state government officials to enforce conservation. Several local community members have established unauthorized walnut and apple gardens in higher elevation rangelands (Figure 2.11). State wardens cannot visit these areas due to fuel shortages. More powerful community members have built unauthorized fish farms and orchards on the side of the river (Figure 2.12). The state wardens are aware of these unauthorized land-use alterations, but they are not able to respond due to the political power of these community members as discussed below. Local community members have the right to build temporary tents in Sabzkouh during their stay. However, several *il* members have built permanent houses in Sabzkouh instead of temporary tents. The state wardens are aware of this, but they are not able to confront the offenders for fear of social and political backlash. They are especially concerned about prospects for media accusations of “destroying underprivileged nomads’ houses” and stirring any anti-government sentiments (Sabzkouh warden, June 10. 2015). The wardens fear anything that might threaten their jobs.

Figure 2.11. Unauthorized walnut trees in Sabzkouh (Sabzkouh, May 12, 2016).
Note: This area is far from the state wardens' office.

Figure 2.12. Unauthorized fish farm and orchard built on the side of the river in Sabzkouh (June 12, 2015).
Note: This area is accessible by road. Community members alter lands with little fear of legal retribution.

Unauthorized gun ownership by the *il* members also impedes state warden responses to unauthorized land alterations. While government officials in Tehran often deny that gun ownership is a problem, community wardens perceive guns as serious threats, fearing that a *hunting accident* may result if they attempt to enforce management (Sabzkouh warden, June 10. 2015).

Lack of perceived support from the judicial system is another factor limiting state wardens' success in conservation enforcement. Although state wardens are assigned guns for conservation enforcement, there have been several cases where wardens were sent to jail or sentenced to death because of using guns on duty. The rights and responsibilities of the state wardens for using guns on duty are still under debate in Iran. State wardens in Sabzkouh also mention cases in which judges compromised with prosecutors.

> I went through so much trouble to catch one of the locals who had several extra numbers of livestock and was cutting trees illegally. Another time, I caught a family with 800 kg of NFRP plants and reported them. Both times, the locals went to the court and claimed they are poor and innocent and escaped the fines. Ever since then, they do illegal harvest in front of me and tell me to just report them (DOE Warden in Sabzkouh, June 3, 2014).

These uncertainties have limited state wardens' authorities in matters of resource management, especially their ability to stop unauthorized hunters and harvesters (author's observation, Sabzkouh: 2011–2016).

While inside the PA, I encountered several local community members who engaged in unauthorized land-use alterations or were waiting for an opportunity for state wardens to be away to pursue unauthorized resource harvest (Figure 2.13). A local *khan* descendant said "I need a tree to build a porch in my backyard. I am just waiting for one day that FRWO staff are not around to get an oak tree from the forest" (June 5, 2014). FRWO officials confiscate unauthorized harvests of wood and NFRPs if they catch local community members. Figure 2.14 shows confiscated wood at the FRWO office in Kiar.

Figure 2.13. Unauthorized tree poaching in Sabzkouh (June 4 , 2016).

Figure 2.14. Wood at the FRWO office in Kiar confiscated from poachers by state government officials (June 12, 2015).

State government officials' attitudes towards collaboration with the local community. To understand the attitude of agency staff toward collaboration, I asked them to identify the threats to natural resources and provide solutions for improving PA management in Sabzkouh. The FRWO and DFO officials proposed various solutions ranging from full collaboration and delegation of power to the local communities, to moving communities away from the region and hiring more field staff to control unauthorized resource access, harvest, and alteration (Table 2.6). I categorized DOE and FRWO officials based on their ranking in the organizations, because their opinions varied with their rankings in the organizations. Provincial managers are in the FRWO and DOE offices in Chahar Mahal and Bakhtiari's capital (Shahr-e-Kurd); district managers are in the district offices. DOE's wardens and FRWO's field staff work in the field offices. Political complications associated with controlling and stopping unauthorized land alteration and unauthorized house construction inside the PA were among the most challenging issues for the state government staff. The institutional hierarchy seems to contribute to conservation challenges, as some state wardens had experienced punishment for simply mentioning problems to managers from the Tehran office during a visit by UNDP officials in 2013.

District managers and field staff/wardens believe collaboration with the local communities is inevitable for improving conservation. Table 2.6 summarizes interview results by listing perceived threats to resource conservation and perceived solutions on the part of the three personnel levels. The limited success of conservation enforcement, persistent conflicts with the community, and efforts by NGOs to create a dialogue between the state government and community have encouraged this collaborative mentality. The success of the local community in enforcing the spring *qoroq* arrangement has also boosted FROW and DOE interests in collaboration. Defining clear boundaries, raising awareness about environmental laws among judges, providing alternative livelihood options such as tourism and growing mushrooms, raising awareness among the local women, and hiring female wardens are among the solutions mentioned by the state government officials. The state wardens also point out the importance of being able to share the challenges they face in conservation with provincial and district managers.

Table 2.6. Threats and solutions mentioned by three levels of FRWO and DOE government officials.

Management levels	Natural resource threats identified by agency officials	Possible solutions to threats
Provincial office managers	• Judges discount natural resource values • Lack of funds for conservation • High dependence of the community on natural resources	• Raise awareness about resource management challenges among judges • Increase funding from the government or international partners • Reform regulations • Encourage alternative livelihoods
District office managers	• Lack of funds for conservation • Cultural challenges that prevent male state wardens from confronting female violators • Political issues that prevent government enforcement • Inadequate staffing • Insufficient co-operation with other government agencies • Unauthorized land alterations	• Delegate conservation responsibilities to the local community where possible • Collaborate with the community wardens for management of spring *qoroq* • Provide alternative livelihood options • Move people outside the PA • Eliminate policies that undermine boundaries between national and private land
State wardens/ FRWO field staff	• Cultural challenges that prevent male state wardens from confronting female violators • Judges are not aware of impacts to natural resources by offenders • Insufficient funds for fieldwork such as shortage of gas for the wardens' cars • Excessive number of livestock • Unauthorized hunting • Being unaware of the work of other government agencies • Gun ownership by local community • Unclear mandates for using guns by state wardens • Feeling unsafe to point out problems • Fear of losing their job	• Hire female wardens • Raise environmental awareness among local women • Raise judges' awareness about resource management challenges • Provide more funds for fieldwork • Collaborate with other agencies • Promote community gun control • Clarify laws for gun use by state wardens • Create mechanisms for state wardens to report conservation problems to mid- and high- level management • Collaborate with the community wardens for management of spring *qoroq*

Source: author's interviews with the state government staff

Availability of issue networks and other partners. Existence of issue networks that support collaboration holds potential to improve co-management (Pinkerton, 1993; Williams & Tai, 2016). Such issue networks are formed when NGOs, experienced government personnel, state agency leaders, and researchers create dialogues about policy and practice alternatives for resource management (Pinkerton et al., 2014). Research institutes and NGOs (national and international) require permission from the

state government to work with the communities and conduct research in Iran. With this permission in hand, NGOs and researchers have been effective in directing the attention of district and provincial level managers to community-oriented resource management initiatives, adding legitimacy to these initiatives in Sabzkouh. This legitimization often lends credence to community-based initiatives that might not otherwise receive state government consideration. The issue network for community participation in PA management in Sabzkouh includes UN agencies, national environmental NGOs, and researchers.

One example of a community-oriented initiative that has garnered agency attention is the United Nations Development Programme/Global Environment Facility (UNDP/GEF)/ Conservation of Biodiversity in the Central Zagros Landscape Conservation Zone project. That project aimed to “mainstream biodiversity conservation into the agriculture, forestry, rangelands, water, and tourism sectors” (UNDP, 2004, p.2). The project was designed to improve livelihoods and stimulate economic development as complements to efforts to “mainstream biodiversity with the key productive sectors” and to “strengthen the management of PAs” (UNDP, 2004, p.3). The UNDP/GEF project provided funds and technical support for developing participatory visions for resource management and building partnerships among the local communities, state government, and national NGOs.

National NGOs, including Daumoon and Bakhtiari Nature Watch, seek to promote conservation by supporting the local community. These and other national NGOs have acted as facilitators, resulting in improved relations between the local community and DOE and FRWO. Both Daumoon and Bakhtiari Nature Watch have promoted sustainable alternative livelihood options in cooperation with the state government and international organizations. Bakhtiari Nature Watch has held environmental festivals in Sabzkouh to encourage the community to talk about the environment. Daumoon, which has been active in the region since 2006, has established trusting relationships with the local community and the state agencies. Between 2012 and 2015, Daumoon implemented two projects in Sabzkouh (Daumoon, n.d.). The first project boosted local community capacity by initiating community development programs including alternative livelihood projects. The second Daumoon project documented and shared the success stories of rangeland rehabilitation practices pursued by the community members. In addition to these two projects, Daumoon’s educational

workshops and training materials have contributed to raising local environmental awareness.

The private sector occasionally surfaces as a prospective source of investment in conservation. One tourism company organizes rafting, kayaking, and rock-climbing tours in Sabzkouh's spring *qoroq* for middle- and upper-class clients from Tehran, Isfahan, and Shiraz. The company maintains a campsite on the banks of Sabzkouh's major river and brings all its equipment and supplies from the big cities. The tourism company representative claimed the local community was not able to provide food and other client needs. Although he did not indicate any specific interest in working with the community, he mentioned a willingness to purchase groceries locally. Tourism businesses get permits from the state government offices in Tehran and Shahr-e-Kurd, typically without any consultation with local representatives.

2.4.5. Nature of the institutional arrangements

According to Section 45 and Section 53 of the Iranian constitution, the state government is in charge of management of all the natural resources (Shamekhi, 2011). It means the management and governance power is vertically delegated to FRWO and DOE to manage the resources. However, both DOE and FRWO have mandates for community participation (DOE, 1994; FRWO, n.d., n.p.). Sabzkouh's status as a level VI PA in the IUCN categorization system obliges DOE to include community participation in plans to achieve sustainable conservation (Dudley, 2008, p.23). Despite this obligation, the DOE designed the PA management plan without community consultation (Mojtahedi, 2009). FRWO guidelines also value community participation in rangeland management as an important pillar in its activities (FRWO, n.d., n.p.). Section 29, Part b of Iran's Sixth National Development Plan requires participation of the local community in natural resources management and, where possible, delegation of natural resources planning to local communities (Iranian National Parliament, 2016). Nevertheless, public and community participation in FRWO's work comes after initial project design and usually involves little more than defining consultative or contractor roles for the local community (Mahdavi & Alizadeh, 2004; Iranian National Parliament, 2016).

The right to self-government for *ils* is not recognized by the Iranian government (Razmkhah, 2017). State government organizations, including DOE and FRWO, treat

local herders as individual citizens rather than members of the traditional structure of *il* (author's observation, Sabzkouh: 2011–2016). This means cultural power and resource management capacities of *ils* are not considered in the state government's formal resource management plans.

According to the Law of Conservation and Exploitation of Natural Resources, the state government has authority over the rights of Indigenous peoples (Razmkhah, 2017). This means the state government can decide on reallocation of natural resources and changing the use of nationalized land without taking the rights of Indigenous peoples into consideration. Community members residing inside the spring *qoroq* have rights to access and use rangelands and NFRPs. Many residents would also like to be able to exclude unauthorized users and manage the land and resources. The community has the right to practice its customary laws as long as they do not interfere with the national regulations. For example, NFRP harvest stays open to all based on the customary laws, but if the plants are endangered according to national criteria, harvests my be restricted by FRWO officials.

Pinkerton (personal communication, March 19, 2019) identifies state government and community incentives for, and expected outcomes from, co-management as distinct parts of the framework. Different community subgroups in Sabzkouh have different incentives to participate in co-management. However, all the community groups agree on specific outcomes they expect from the co-management arrangement. The community's incentives for cooperation with the state government come from their interest in conserving Sabzkouh's contributions to community sense of identity, spiritual values, and livelihoods. The community is seeking to gain the right to exclude both outsiders and local herders in the first 50 days of spring and to control NFRP harvests. They see a pressing need for alternative livelihood options and want to improve the condition of rangelands to access more fodder.

FRWO and DOE incentives for sharing governance with the community stem from mandates for conservation enforcement. Insufficient funding and staff, as well as cultural and political barriers, make conservation enforcement difficult for Sabzkouh. The state government wants community support for achieving conservation goals through control of unauthorized activities inside the PA. On the other hand, community

participation and meeting the community's needs is an important element for management of Sabzkouh as a level VI PA.

The outcomes expected by the community from co-management in Sabzkouh include both substantive and process outcomes. The original plan for spring *qoroq* was suggested by one elder in 2012, and the community members have been discussing expectations for co-management outcomes at annual spring *qoroq* meetings ever since. As of 2017, the co-management outcomes expected by the community include signing an agreement with the state government to gain *de jure* rights to restrict access to the spring *qoroq* area for the first 50 days of spring. Also, under discussion is community oversight on harvest of the NFRPs, especially during the first 90 days of spring. Community members want the government to provide them with legal authority to monitor the *qoroq* and two cabins at the entry access points to the spring *qoroq* area for the community wardens. They also want formal conservation uniforms for the community wardens. Improving implementation of conservation and rangeland management plans is the state government's expected outcome. The state government's expected substantive outcome is an agreement which includes monitoring tools to improve conservation enforcement. The expected process outcome for the state government officials and the community members may include continuous collaboration for management of the spring *qoroq*.

2.4.6. Section summary

In sections 2.4.1–2.4.5, I described the Sabzkouh case study using Pinkerton's co-management framework. Table 2.7 summarizes conditions favorable and impeding to co-management for the nature of the resouce, nature of the community, nature of the state government, and nature of institutional arangements in management of the spring *qoroq*.

Table 2.7. Comparing Sabzkouh management using the Pinkerton framework.

System components	Conditions favoring co-management	Conditions impeding co-management
Nature of the resource	• High dependence of the community on the resource • High cultural salience • Boundaries are clearly defined • The size of the spring *qoroq* area is small	• Spoilability is high for fresh NFRPs but low for dry NFRPs • Existence of policies, such as Tooba plan, that suggest transfers of national land to private ownership and encourage unauthorized land-uses
Nature of the community	• Social cohesion is high • Local leadership exists • Volunteerism is moderate/high. Community members voluntarily pay for hiring wardens • Self-efficacy is moderate	• Village governance does not address nomadic herding needs and interests • Local leadership unclear for nomads residing in villages • Community sub-groups have competing interests
Nature of the government agency	• Existence of laws that support collaboration • Collaborative mentality among the state government staff • DOE and FRWO officials keen to collaborate with local community, and to plan for co-management • State government has incentives to collaborate with the local community • Issue networks and partnerships are available. National and international NGOs and researchers are active in region	• Discrepancies between funding allocations and levels of responsibilities (DOE has more responsibilities in PAs but less funding than FRWO • Insufficient collaboration between the state government organizations • Unclear mandates related to using guns for conservation enforcement by state wardens • Field staff do not feel safe to share their feedback with provincial and district managers
Nature of institutional arrangements	• DOE and FRWO's policies that stipulate engagement and shared decision-making	• Community self-governance not recognized by the state. The state treats *il* members as individual citizens rather than parts of the traditional *il* structure

2.5. Discussion and recommendations regarding conditions affecting co-management

In this section, I analyse the strengths and shortcomings of the resource management system. I then provide recommendations for local reforms derived from co-management literature and my fieldwork experience. The recommendations primarily address factors impeding co-management relating to the nature of the resource, local community, state government, and institutional arrangements. Table 2.8 concludes this section with a summary of recommendations offered to support the local community and state agencies in moving toward co-management.

2.5.1. Recommendations for optimizing the nature of the resource for co-management

The community's high dependence on resources (fodder and NFRPs) for daily livelihoods supports co-management and encourages the community to take initiatives to pursue conservation (Williams & Tai, 2016). Non-mobility of the resource and high salience are both favorable conditions for co-management (Agrawal, 2003; Pinkerton & John, 2008). Because the spring *qoroq* has clear boundaries, it is well situated for co-management.

Smaller resource management systems are generally better suited for community-based or co-management (Agrawal, 2002; Pinkerton & John, 2008). Therefore, at this point in the development of institutional arrangements I do not recommend co-management of the entire territory of the nomadic herding (summering and wintering grounds and migratory routes). I recommend continuing focus on the spring *qoroq* as a basis for building co-management rules and practices. I also recommend reforming state government policies that are not consistent with conservation-focused co-management, including the Tooba plan and other rules enabling privatization of PA lands. The state government should ensure policies for agricultural development do not lead to natural resource degradation.

2.5.2. Recommendations for developing more effective community participation in co-management

Lack of appropriate local institutions for resource management is impeding co-management. The transition from nomadic life and reliance on traditional *il* authorities to local governance via village councils has been a struggle since 1963. Village councils are not authorized or equipped to address resource management issues related to migration. Dealing with multiple village councils that do not communicate about the timing and logistics of migration does not serve nomadic lifestyle (Farvar, 2003; Daumoon, 2015). The spring *qoroq* requires a regulatory and conflict resolution body for managing issues related to resource management and seasonal migration.

Lack of leadership to advance the local community's resource management needs impedes conservation. Community engagement in co-management often depends on leadership by at least one respected person. Gutiérrez et al. (2011)

examined 130 co-managed fisheries and found strong leadership as the most important attribute contributing to co-management success (see also Williams and Tai, 2016). In my study, Sinazadeh, the elder who in 2012 initiated the new system for regulating the spring *qoroq,* played an important role in establishing the spring *qoroq* arrangement. Other local leaders, including members of the village councils and elders, also contributed. Although Iran's constitution gives power to village councils, these bodies have no authority over remote rangelands, the land within the PA, or the harvests and sales of NFRPs and fodder. This research shows the nomadic communities that reside inside villages located within summering or wintering grounds need mechanisms to enable their representation in resource management. I recommend re-defining a new formal leadership for the nomadic communities in summering and wintering villages. Specific structures and procedures would have to be co-developed through discussions with village councils and state government agencies, but this representation could include elders, members of the village councils, and traditional leaders.

Steps toward co-management are possible because, despite damage to the *il*'s structure and confusion in the local leadership, the community is still able to function in a unified way. Strong social cohesion, rooted in shared kinship, ethnicity, and profound past experiences has kept the community together (Rocha & Pinkerton, 2015; Baland & Platteau, 1996). Gutiérrez et al. (2011) also found social cohesion as an important attribute contributing to co-management success. The evidence for high social cohesion in Sabzkouh is the community's ability to organize the spring *qoroq* arrangement despite ineffectiveness of the village councils. Identifying themselves as *il* members and respecting their Bakhtiari roots as well as their dependence on the resources in spring *qoroq* has given the community the incentive and power to influence local resource management decision-making. Sinazadeh told me that it was easy to initiate conservation of the spring *qoroq* because of the community's dependence on the rangelands and Sabzkouh's spiritual value to the community (Sinazadeh, interview June 4, 2016).

Although all the community members I interviewed pursue unauthorized resource extraction activities, the system still seems to function. One reason is that community members pursue these unauthorized resource extraction activities within social and geographical limits. For example, unauthorized houses, gardens, and fish-farms are built inside the community member's permitted herding area. Each community group pursues

a different unauthorized activity, and the community groups ensure their activities do not seriously compromise herding.

Complete co-management involves prioritization of the collective rights of the community over individual rights (Pinkerton, 2003). Even small local communities are not homogenous, as different sub-groups engage in different activities for resource harvest and pursue different authorized and unauthorized resource extraction and land alteration activities. If one of the community groups is not represented in decision-making, their interests are less likely to be addressed in the co-management arrangements. Case studies show that the poorest and weakest sub-groups often are most detrimentally affected by the establishments and management of PAs, as they have fewer resources and power to affect decision-making (Brockington et al., 2006; Andam & Ferraro, 2010; Oldekop et al., 2016). Rashid et al. (2013) examined achievements and challenges in three PAs in Bangladesh pursuing co-management. Their study showed that elite capture—domination of institutions by powerful community sub-groups—overshadowed the voices of others (Rashid et al., 2013). To avoid elite capture, I recommend including as many community sub-groups as possible in PA decision-making (Borrini-Feyerabend et al., 2013; Fedreheim et al., 2017). Despite differences in their opinions, all the community members I talked with expressed desires to collaborate in resource management in Sabzkouh. They also recognized that involvement in decision-making might oblige them to limit their harvest of NFRPs and fodder to improve conservation.

As co-management matures, it ideally involves multiple horizontal negotiations between the sub-groups having different interests in affected resources (Pinkerton, 2003). Horizontal negotiations are required to understand what each community group wants and how they can function in relation to one another. Giving voice to different socio-economic users in the local resource management institution opens possibilities for reaching equity and resolving local conflicts (Fedreheim et al., 2017). Complete co-management involves cooperative planning, research, education, and monitoring with other user groups, such as NFRP harvesters (Pinkerton, 2009). Groups first negotiate what level of conservation is appropriate and then what overall harvest strategies should be used to balance all needs without compromising conservation mandates (Borrini-Feyerabend & Campese, 2017).

2.5.3. Recommendations for improving collaboration of the state government agencies

In complete co-management the government plays a key role and should act as an engaged partner instead of a delegator (Pinkerton, 2003). The state government, as a provider of technical support and protective legislation can play important roles in co-management (Pomeroy & Berkes, 1997; Chevalier & Buckles, 1999; Viet Thang, 2018). The Iranian government is, of course, the main holder of collective choice and constitutional rights for resource management. The state government's vertical power distribution is a constraint on co-management, because it involves a centralized, distant centre of power, one inherently disconnected from local concerns (Murray & King, 2012). The state government intends to share some of its collective choice rights with the community through the co-management arrangement by giving the right to exclude herders for the first 50 days of spring.

Existence of supportive and well-defined legislation, policies, and rights that partners understand and agree upon is an important aspect of co-management (Pomeroy & Berkes, 1997; Berkes, 2009; Jentoft et al., 2011). These should be well defined among the state government agencies as well as the local community groups (Hunter et al., 2018; Berkes, 2009). Dual agency jurisdiction for resource management in Iran impedes the state government's performance for conservation enforcement in Sabzkouh PA. Bouevitch's (2016) analysis of co-management in Gulf Island National Park Reserve showed that overlapping federal jurisdictions complicate rule enforcement and limit the effectiveness of co-management. The level of responsibilities of state government organizations for management of PAs do not match their budgets in Iran. DOE has more responsibilities and less funding; FRWO has more funding and fewer responsibilities in PAs. Despite the differences, both organizations are concerned with conservation and management of forests and rangelands. FRWO has been able to manage and protect resources in the past as proved by their success in restricting community's access to the *forest reserve* in Sabzkouh.

I recommend DOE collaborates with FRWO, the NAOI, and the local community in order to mobilize enough resources for conservation enforcement. Collaboration in the form of resource management advisory groups for regional and field offices might help both organizations in optimizing their financial and human resources and mobilizing local

expertise and traditional knowledge. Several horizontal negotiations and collaborations are required among the field staff at FRWO and DOE regional and field offices (Oliver, 2004; Pinkerton, 2009). A comprehensive regional goal setting and visioning exercise could serve to harmonize their missions and open opportunities to share resources (Pinkeron, 2003). The NAOI may be able, for example, to provide temporary campsites along migratory routes, thus delaying nomads' pressure to enter Sabzkouh before May 10.

Clarity of legislation and the rights of the state government wardens facilitate conservation enforcement (Pomeroy & Berkes, 1997; Berkes, 2009). Rashid et al.'s (2013) study showed that ambiguity regarding roles and responsibilities of the forest department posed a big challenge for co-management in Bangladesh. The legal rights of DOE wardens to carry firearms has been an enduring challenge for conservation enforcement in Iran. I recommend DOE clarify wardens' responsibilities and right to use force in conservation enforcement. The clarified rules should then be shared with communities around the country (Berkes, 2009; Hunter et al., 2018).

National regulations for conservation and rangeland management require public and community participation. The state agencies' interest in collaboration is favorable to co-management (Pomeroy et al., 2001; Rashid et al., 2013). Sessin-Dilascio et al.'s (2015) assessment of Cordoso Island State Park found that national laws that require participation and continuity in agency leadership help to foster and maintain co-management (Sessin-Dilascio et al., 2015).

The state government's management system should be open to feedback from the field staff to improve PA conservation (Pinkerton, 2009). DOE wardens' concerns about job security overcame their inclinations to raise conservation issues with provincial and regional management. I recommend creating feedback mechanisms that provide opportunities for field staff to safely share their knowledge and concerns with their managers and regional and provincial office leadership.

DOE wardens do not feel supported by the judicial system for conservation enforcement. Raising awareness among the judges and other judicial experts is an important component for improving law enforcement. State government agencies and NGOs should collaborate in this endeavor. I recommend creating means to increase

collaborations between the DOE and judicial system through high-level negotiations, training workshops, and field visits for judges. A fast, functional, and just judicial system is one of the criteria for effective partnerships and a prerequisite in conservation enforcement (Pinkerton, 2009).

The appearance of tourism businesses in Sabzkouh shows the region's potential for providing an alternative livelihood option for the community (Daumoon, 2015). I recommend that the state government prioritize local community members for establishing tourism businesses in the region and create mandates for tourism businesses to hire locals and support the local economy (Dwyer et al., 2004; Atan & Arslanturk, 2012). Suhel and Bashir's (2018) analysis of tourism industry in South Sumatra shows government policies could encourage development of sustainable tourism.

2.5.4. Recommendations for imropving institutional arrangements to support co-management

The state government is in charge of the management of nationalized land in Iran and sets constitutional and collective choice rules (Shamekhi, 2011). However, it has not been successful in enforcement of conservation laws. When unauthorized activities are not controlled, compliance becomes voluntary (Chabwela & Haller, 2010; Sowman et al., 2013). In the case of Sabzkouh, the state government's weakness in enforcement and the lack of *de jure* decision-making power vested in the local community have encouraged overgrazing and over-harvesting of fodder and NFRPs. Even so, high social cohesion has allowed the community to gain *de facto* resource management power.

Co-management rests upon collaboration between the state government organizations and the local community that goes beyond advisory roles and shares power in decision-making (Schlager & Ostrom, 1992; Pinkerton, 2003; De Pourque et al., 2019). In complete co-management, the state government shares operational, collective choice, and constitutional rights with the local community (Pinkerton, 2009). Successful exercise of resource management rights on one level depends on the exercise of rights on other levels (Pinkerton, 2003). For example, an operational right, such as the right to participate in data gathering, can be weak unless accompanied by a

higher-level right to decide under what conditions the operational rights can be exercised and data collection required (Pinkerton & Silver, 2011).

In past collaborations between the Iranian government and the local community, the local community has primarily had advisory or contractor roles. The state government also provides subsidies and alternative livelihood options to compensate the local communities inside and around the PA, soliciting their support for conservation through recognition of the local costs of PAs. With this in mind, the Iranian government uses national oil profits to subsidize services to the local community, providing pesticides, fertilizers, funds for development projects, and supplementary fodder. Because the local community expects these services from the state government, it does not perceive government support for alternative livelihoods as a benefit from the PA (author's observation, Sabzkouh: 2011-2016). Participation in decision-making, however, gives the community a sense of power and increases their interest in conservation (Pinkerton & John, 2008). In Andrade and Rhode's (2012) meta-analysis of 55 case studies from developing countries, local community participation in the PA decision-making process was identified as the only variable that significantly increased compliance with PA polices (Andrade & Rhodes, 2012). Similarly, Arias et al.'s (2015) study of 12 marine protected areas in Costa Rica showed that higher levels of community involvement in decision-making increases compliance with conservation plans. In the case of the spring *qoroq*, the local community wants the right to exclude in order to control access to fodder and harvest of NFRPs.

A summary of the suggested recommendations for the state agencies and the local community is presented in Table 2.8 based on my analysis of the nature of the resource, the community, the government, and the institutional arrangements. I expand my analysis of the nature of the institutional arrangements in the next section.

Table 2.8. Recommendations for state government and local community.

Parties	Recommendations
State government agencies	• Focus on the spring *qoroq* area for co-management arrangement • DOE to collaborate with FRWO, NAOI, and the local communities to mobilize enough resources for conservation enforcement • Clarify legislation regarding use of guns by DOE wardens • Create a feedback mechanism that provides opportunities for wardens to share their concerns with regional and provincial managers • Improve collaboration between DOE and judicial system through high level negotiations with the judges and organizing training workshops • Prioritize local community members for establishing tourism businesses in the region • Share decision-making power with the local community where possible • Recognize local institutions that promote conservation and enable legal bases for co-management.
Local community	• Re-define local leadership for the nomadic communities in summering and wintering villages • Include representation of all socio-economic sub-groups in co-management decision-making

2.5.4.1. Steps achieved and ways toward co-management

In Sabzkouh, both the state government and the local community have clear visions and goals for the co-management arrangement and have had on-going informal negotiations in the annual spring *qoroq* coordination meetings since 2012. The local community's goal is getting rights to restrict outsider's access in the first 50 days of spring, receiving formal outfits, and building guard cabins for the community wardens. The community hopes to gain more decision-making power in the future to affect decisions regarding land use. The state government's goal is to improve conservation enforcement. There has not been any signed agreement between the state government and local community. However, because the spring *qoroq* arrangement happens every year, increasing institutionalization is likely (Pinkerton, 1992; Rocha & Pinkerton, 2015).

Because *de facto* management rights are less secure than *de jure* rights, co-management will be limited until the local community obtains formal *collective choice* rights (Schlager & Ostrom, 1992, p. 254). For co-management of the Sabzkouh PA, the most important collective choice rights would be the right to exclude for the first 50 days of spring. Signing formal agreements, defining a vision for co-management, and conducting clear negotiations between the state government and local communities are required to implement co-management (Borrini-Feyerabend et al., 2013; Rocha &

Pinkerton, 2015). I recommend the state government and community define a conservation committee and define the terms and responsibilities for co-management of the spring *qoroq* area.

2.5.4.2. Formation of a conservation committee

Formation of a multi-stakeholder conservation committee for the spring *qoroq* could guide the negotiations and build capacity for co-management (Borrini-Feyerabend et al., 2004). International conservation policies advise establishment of committees to enlist and ensure community representation (Secretariat of Convention on Biological Diversity [CBD], 2010). The Conference of the Parties, 2011 (COP11) at CBD emphasized that countries should "renew efforts to establish multi-sectoral committees that include representatives of Indigenous peoples and local communities in support of the Program of Work for Protected Areas (PoWPA) and continue to conduct assessment of the governance of protected areas, to improve the management of protected area systems" (Borrini-Feyerabend et al., 2013, p. xv). The committee structure provides the consistency required to share decision-making and continue negotiations among the partners (Rashid et al., 2013). In Sessin-Dilascio et al.'s (2015) assessment, the participatory advisory council of the Cordoso Island State Park in Brazil played the central role in negotiating co-management arrangements.

Co-management in PAs calls on partners to redefine conservation, using the local communities' values (Pinkerton, 2003; Schlager & Ostrom, 1992). Establishing a shared vision and defining the long-term conservation goals that advance PA-specific conservation mandates require support and participation of all stakeholders. Multi-sectoral processes must formally feed into decision-making. If this does not occur then they may be viewed as irrelevant by policy makers and other interested parties (Fraser et al., 2006, p.114).

The annual spring *qoroq* meeting, held in early March, invites DOE and FRWO representatives as well as some local community members. This annual meeting could expand into a multi-stakeholder committee to manage the spring *qoroq* in Sabzkouh. I use the literature and criteria for effective partnerships (Pinkerton, 2009) to provide recommendations for possible expansions of this committee to support moving towards a complete co-management arrangement. This Spring Qoroq Conservation Committee (SQCC) could expand to include government agencies (DOE, FRWO, and NAOI), local

community representatives from different socio-economic groups, and NGOs. Each stakeholder group could play a unique role in the co-management arrangement (Rashid et al., 2013). Different state government agencies have access to different expertise and funding sources and their collaboration can provide more support for co-management. DOE, FRWO, and NAOI also have different legal rights and responsibilities regarding management of the spring *qoroq.* For this reason, their collaboration can eliminate legal challenges to the establishment of co-management.

The SQCC should be empowered to make decisions about management of the spring *qoroq*, collaborations between the community and state government wardens, data gathering on the status of the resources, setting and enforcing regulations, monitoring the continuity and performance of the regulations, and resolving conflicts related to management (Pinkerton, 2009; Agrawal, 2003). Defining these functions supports complete co-management by involving the community in everything from data gathering to regulation making (Pinkerton, 1989; Pinkerton, 2003; Pinkerton & John, 2008).

An effective partnership requires common access among partners and managers to data on the status of resources (Pinkerton, 2009). For example, collaborative data gathering and sharing regarding the Kyuquot fishery in British Columbia boosted scientific and regulatory legitimacy (Pinkerton & John, 2008). This legitimacy forged community trust because community members were willing to forfeit immediate fishing opportunities to protect the future abundance of the stock (Pinkerton & John, 2008). The other lesson from the Kyuquot case is how traditional knowledge can complement the scientific data by providing insights into local resource conditions and historical changes (Pinkerton & John, 2008; Pinkerton, 2009).

Collaboration in making new regulations is another important aspect of establishing co-management (Pinkerton, 2009). Community participation in rule-making increases community compliance with conservation regulations (Andrade & Rhodes, 2012; Arias et al., 2015; Sessin-Dilascio et al., 2015). The DOE, FRWO, and the local community should define the types and levels of grazing and NFRP harvests in spring *qoroq* based on the local condition of the NFRP plants.

Collective enforcement of the regulations and collaborative monitoring of regulations by government and community partners are important for establishing an effective partnership (Pinkerton, 2009). State and community wardens should collaborate to enforce and monitor formal and customary conservation regulations. The roles and responsibilities for the local community and state wardens should be defined through negotiations in SQCC (Schlager & Ostrom, 1992). Collaboration of the state and community wardens and national NGOs can improve this monitoring system.

The SQCC should create a conflict resolution committee to resolve minor issues between the state government and local community members (Pinkerton, 2009; Pomeroy, et al., 2001). Arbitration and resolution of conflicts are imperative when conflicts arise over co-management and institutional arrangements. To encourage following the rules, a mechanism for discussing and resolving conflicts and infractions should be defined (De Porcq et al., 2015). Conflict management should be conducted at the local level where solutions can be found quickly.

NGOs share recommended policies and practices from around the globe and provide additional funding for conservation projects (Edwards, 1999; Raustiala, 2002; Tallberg et al., 2018). Reports from Belize show that engaged NGOs can support co-management by providing opportunities for research collaborations, funding, and capacity building (Williams & Tai, 2016; Walker & Walker, 2009). National NGOs can support SQCC to conduct comprehensive socio-economic and ecological studies and collaborate to raise awareness and build the capacity of the local community to pursue sustainable harvest of NFRPs. International NGOs, in this case UNDP, can facilitate co-management by identifying policy models and management practices that protect local community rights and by providing agencies with financial and practical resources, as well as political support for enforcing conservation.

The SQCC should make arrangements with the tourism businesses to utilize their potential to improve local livelihood (Mitchel & Ashley, 2006; Rogerson, 2011; Suhel & Bashir, 2018). These arrangements may include expanding accommodation options for tours to the communities and purchasing food locally to support the local economy (Dwyer et al., 2004; Atan & Arslanturk, 2012; Kumar & Hussain, 2014). Research in Caribbean resorts found that the purchase of melons for just one locally owned resort in Jamaica injected an extra US$7,200 per month into the local economy,

keeping 70 local farming families above the poverty line (Lengefeld & Stewart, 2004). Research on safari lodges in Zambia similarly found that 60% of food supplies were sourced within Zambia, providing support for local farmers and herders (Rogerson, 2011).

Effective partnerships also reward investments in the sustainability of common pool resources (Pinkerton, 2009). In Sabzkouh, where community groups and members pursue unauthorized resource extraction activities to improve exclusive access and use, such investments are rare. Policy options that create restrictions for the community livelihoods must ensure to compensate affected community groups. For example, if new policies limit NFRP harvest, alternative livelihood options such as priority hiring in tourism projects should be offered to those most affected. Feeling compensated for sacrifices made for conservation, encourages community collaboration (Bennett & Dearden, 2014). Meanwhile, co-management negotiations can minimize especially harmful unauthorized land alterations, such as building houses and fish farms (De Pourqc et al., 2015; Tuan et al., 2017).

2.6. Conclusion

There are seldom easy solutions to conservation problems rooted in historical, political, and ecological change. In an effort to reveal the intricacies of a co-management arrangement and “to move beyond panaceas” (Ostrom, 2007, p.15181), I have drawn a realistic picture of a resource management system in a complex and contentious context. The example of Sabzkouh illustrates a state-governed PA where, despite shortages of money and staff, state agencies attempt to enforce laws. Historical inattention to the local contextual factors on the part of the state government impinged on the traditional local institution of the *il*. Without the means to fill the resultant gaps in management and enforcement, unregulated resource extractions and land alterations have threatened the ecosystem and enabled a tragedy of the commons. Despite state laws that exclude local communities from management, local leaders have taken it upon themselves to establish a spring *qoroq* arrangement in keeping with both formal and traditional conservation laws. Analysis of Sabzkouh’s spring *qoroq* identified characteristics impeding and favoring co-management. An effective co-management arrangement can lead to strengthening local institutions and improve conservation management.

Drawing information from open-ended interviews, PRA workshops, document reviews, and direct observation, combined with deep analysis of the case study, revealed underlying issues affecting establishment of co-management. The seemingly dissolved *il,* which remains unrecognized by the state government, still plays important roles in anchoring the local community's identity and structuring resource management. High social cohesion, community dependence on PA resources, and spiritual values of Sabzkouh for the community, have contributed to the establishment and initial success of the spring *qoroq* arrangement. My research showed formal leadership for the nomadic communities should go beyond the village councils and include elders, traditional leaders, and members of the village councils.

Both the community and the state government have strong incentives to collaborate and pursue co-management. DOE and FRWO should collaborate together and with the local community to mobilize enough resources to improve conservation enforcement and control unauthorized resource extraction and land-use alterations (Oliver, 2004; Pinkerton, 2009). Besides having incentives to collaborate with the local community, national laws also encourage and even have mandates requiring collaborations with the local communities for resource management. The positive attitude of local state government experts about collaboration also supports co-management. All different community groups could benefit from the co-management arrangement and should be willing to support it. However, different groups pursue different resource extraction activities. Therefore, it is important to include all these groups in decision-making to ensure the co-management arrangement protects everyone's interest.

The existence of issue networks and the presence of NGOs have supported co-management in Sabzkouh (Pinkerton, 1992). NGOs have provided financial and technical support to the state government and advocated for increased community participation. They have also supported the local economy and the community's sustainable practices for resource management through participatory projects.

The local community's collaboration with the state government in the spring *qoroq* is a form of incomplete co-management. Informal co-management arrangements have more flexibility to experiment with conservation approaches that are appropriate for the local social and ecological context (Augustine & Dearden, 2014, p.311). Therefore,

informal arrangements are favorable at the first stages of establishment of co-management. The incipient partnership to address the spring *qoroc* has the potential to become a more complete co-management arrangement by building relationships, sharing capacity, and making formal rules (Pinkerton, 1989, p. 11). However, for co-management to continue, the rights of the local community should be negotiated and formalized as *de jure* rights (Schlager & Ostrom, 1992).

I suggest two specific means to formalize the co-management arrangement (Pinkerton, 1992). The first is preparation of a legal agreement between the local community and the state government, and the second is expanding the current spring *qoroq* committee to include representation from all stakeholder groups. To attain complete co-management, the community should collaborate in all functions of resource management including data gathering and analysis, rulemaking, monitoring, and enforcement. A conflict resolution body should form within the SQCC and the judges should also get updated about challenges of natural resources management to improve the conflict resolution process. Activities of businesses should be regulated to ensure sharing benefits with the local community. The committee should create monitoring and enforcement roles for the community and the state governments and facilitation roles for NGOs.

A holistic, coherent, and participatory plan is required for managing the rangeland in wintering and summering grounds as one system. In the absence of the *khan* and with lack of connection between the segments of the *il,* there has not been a specific structure to determine and coordinate the terms and timing of seasonal migration based on the condition of rangelands. The state government is uniquely positioned to address this challenge because it functions from the capital with offices in the different provinces with wintering and summering grounds. A national collaboration between the state government organizations, specifically FRWO offices in different provinces, and local communities is likely required to improve the rangeland management system based on the nomads' distinctive needs.

Co-management is a continuous process of deliberation and negotiation, knowledge generation, networking, and power sharing (Carlsson & Berkes, 2005). The partners might re-assess and define new goals and regulations for the co-management arrangement based on new national and international policies and local needs. Further

assessment of progress of the co-managemnet arrangement can reveal how relationships between the partners change over time.

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Chapter 3. Planning for Local Community Participation in Protected Area Management in Post-Conflict Afghanistan

Abstract

Armed conflicts often entail adverse environmental effects and violations of protected area (PA) ecosystems and management regimes. Post-conflict environmental planning tends to focus on institutional development and capacity-building programs for state-based institutions. When conflicts recur, however, state institutions are often debilitated, and local community institutions fill crucial gaps in PA management. I examined the establishment of Shah Foladi PA in post-conflict Afghanistan during the period from 2009 to 2018. I made direct observations, conducted consultant interviews, and reviewed data from government and non-government agency reports. I studied community-based natural resource management projects to understand the factors affecting the success of local community capacity building, especially in terms of project planning, execution, and administration. My assessment resulted in six recommendations regarding community participation in post-conflict PA management. First, building trust and capacities is contingent on satisfying essential community needs and on transparent, fair, and collaborative planning and implementation. Second, conservation should integrate the provisioning of basic livelihoods with the raising of environmental awareness. Third, because post-conflict institutional development is a multi-stage process, affected communities should be given responsibilities in proportion to their capabilities at each stage, as well as incentives to increase these capacities. Fourth, building diverse partnerships around a primary leadership organization reduces uncertainty. Fifth, the continuation of international technical and funding assistance following de-militarization enables continued community participation in PA management. Finally, state government participation in multi-stakeholder PA management committees can allocate decision-making power to communities and discourage the formation of a ‘shadow’ government. Management plans for PAs in conflict-prone regions should include local community capacity building wherever possible.

3.1. Armed conflicts, natural resources, and protected areas

Armed conflicts inflict intensive and far-reaching impacts on natural resources and on state- and community-based environmental management systems (Machlis & Hanson, 2008; Jensen & Lonergan, 2012). The Uppsala Conflict Data Project (Gleditsch et al., 2002) defines armed conflict as “a contested incompatibility that concerns government or territory or both where the use of armed force between two parties results in at least 25 battle-related deaths” (Gleditsch et al., 2002, pp. 618–619). Armed conflicts tend to self-propagate and to cause environmental as well as social harms (Bruch et al., 2011). Armed conflicts affect the environment directly and also affect local institutions, communities, and their relations with the environment (Bruch et al., 2011; Jensen & Lonergan, 2012). Direct impacts are almost invariably adverse, and include habitat loss from land alterations and herbicides, wildlife mortality from landmines, resource extraction in support of military operations (especially opportunistic poaching), and direct targeting of conservation and justice advocates (Dudley et al., 2002; de Merode et al., 2007). Indirect effects include pest outbreaks resulting from ecological disturbance and increased exploitation of wild plants and animals by displaced peoples (Dudley et al., 2002; McNeely, 2003; United Nations Environment Programme [UNEP], 2009b). In the five decades after World War II the world witnessed 152 armed conflicts, including 127 civil wars in 71 countries (Fearson & Laitin, 2003). As of 2020, no end is in sight.

Relationships between armed conflicts and natural resources are situationally contingent, but some generalizations are possible. Climate is a threat multiplier for conflict (Parsons, 2009). Population growth and rapid industrialization in developing countries tend to increase tensions over sources of energy, water, minerals, forest products, fisheries, and arable lands (Lujala, 2010). Natural resource degradation can prolong and exacerbate armed conflict (Bruch et al., 2011). Resource wealth, defined as an abundance of natural and human resources, increases the likelihood, duration, and causalities of armed conflicts (Ross, 2004; Bruch et al., 2011). However, resource wealth does not always exacerbate armed conflict. Some primary resources—such as oil, minerals, and lootable contraband, such as diamonds and antiquities—can stimulate and increase the intensity, duration, and spatial extent of armed conflict. On the other hand, agricultural commodities and renewable natural resources can improve people’s

livelihoods, discourage conflicts, and have little or no effects on the frequency or intensity of armed conflicts (Ross, 2004; Lujala, 2010).

Armed conflicts amplify and diversify the litany of peacetime threats to protected areas (PAs) (Glew & Hudson, 2007). The increase in illegal exploitation in PAs during both conflict and its aftermath results from a breakdown or reprioritization of state government capacities, particularly reductions in conservation and enforcement personnel in PAs (Glew & Hudson, 2007; Bruch et al., 2011; Suarez et al., 2018). PAs suffer adverse effects both before and after armed conflict (Glew & Hudson, 2007). Active state PA management often decreases in anticipation of armed conflicts (Lanjouw, 2001; Plumptre, 2003). As armed conflict becomes more likely, conservation and resource management funding from in-country and international sources may be reduced, redirected, or suspended due to shifting priorities or as part of sanctions. Similarly, post-conflict funding is frequently directed toward humanitarian and infrastructure repair projects rather than natural resources management (Wabbes-Candotti, 2000; Beevers, 2012; Nino & Devia, 2015). In some cases, unauthorized uses of PAs increase during and after the end of armed conflict, including during the peace negotiations (Bruch et al., 2011). Reports of increased illegal exploitation and adverse environmental impacts in the Democratic Republic of Congo continued during peace negotiations. In Rwanda, unauthorized resource use persisted long after the genocide ended (Glew & Hudson, 2007). Further, new waves of violence and lawlessness are especially likely following armed conflicts, enabling unauthorized resource extraction in PAs by disrupting state governance (Glew & Hudson, 2007).

Supporting community-based institutions and local community participation in conservation is an important way to ensure continued PA management in the absence of effective state-based conservation during and after armed conflict (UNEP, 2003). Because the probability of armed conflict reoccurrence increases once it begins, frequent disruption in state-governance is expected in PAs in post-conflict regions. If the communities are involved in conservation, they are more likely to act as custodians of the PA at the time of armed conflict (Jaspars & O' Callaghan, 2010). Post-conflict settings provide opportunities to design resilient PA management institutions that are not solely dependent on the state government.

Post-conflict development, the “phase of recuperation, peace-building and reconstruction following a conflict” (Women’s Refugee Commission, 1989, p.3), aims to mitigate the lingering effects of conflict and diminish the likelihood of conflict reoccurrence (Call & Cousens, 2008). Positive peace, defined as sustainable social, political, economic, and military stability, can be achieved through institutional development and capacity building with the participation of governments, local communities, and international partners (including non-governmental organizations [NGOs], donor governments, and United Nations agencies) (Call & Cousens, 2008). Post-conflict planning to improve the status and management of renewable natural resources and agricultural activities can help in both recovery and the avoidance of future armed conflicts (Ross, 2004). Post-conflict planners consider the environment a cross-cutting issue in all development projects, meaning that all social and economic sectors rely on environmental health. Institutional development and capacity building in the environment sector are important contributors to positive peace (UNEP, 2003). Assistance plans developed by international aid agencies, as well as various socio-economic, political and ecological factors, can contribute to institutional success or failure and determine the capacity of people and environments to withstand and recover from armed conflict (Rondinelli, 2004; Bowling & Zaidi, 2005; Bowling & Zaidi, 2011).

3.1.1. Why it is important to study PAs in post-conflict settings

Because of the importance of international parties in post-conflict recovery, newly established post-conflict institutions, such as PAs, provide exceptional contexts for understanding and improving how international policies are executed on the ground. International policies for PA management and governance have changed since the initial creation of formal PAs, and many of these changes have implications in post-conflict settings (Chape et al., 2008; Kanderian et al., 2011). The first modern PAs were designed and managed by state-governments using a top-down approach that excluded most local communities from conservation and penalized unauthorized uses of the PA (Berkes at al., 2000; Heinen et al., 2019). Community exclusion resulted in hostile attitudes toward state-based conservation (Fu et al., 2004; Anthony, 2007; Wolsink, 2018) and jeopardized conservation policies by creating conflicts between state PA managers and local communities (Lane, 2001; Sikor, 2017). In places with large human populations and limited alternative sources of livelihood, these tensions negatively

impact PAs because of limited state government capacities to enforce conservation (Ghimire & Pimbert, 1997; Wells & McShane, 2004). Since the late 1990s, state governments have attempted to control these negative impacts by involving communities in PA planning, operation, and monitoring (Agrawal & Gibson, 1999; Borrini-Feyerabend, 1996; Collen et al., 2016). The recognition of a range of PA governance types by the International Union for Conservation of Nature (IUCN) in the early 2000s further emphasized the role of local communities in conservation. IUCN's policies define four governance types: management by state government, co-management, private management, and community conserved areas (Borrini-Feyerabend et al., 2013). The IUCN's conservation categories set global policies for most state governed PAs (Dudley, 2008).

International partners can function to bridge PA management gaps following conflicts (Hammill, 2005; Tallberg et al., 2018). PA management in post-conflict settings requires adaptation of international policies and plans to suit state-based and community-based institutions and interests. International organizations play twin roles in PA management in post-conflict settings by setting the general policies for conservation and facilitating projects to implement these policies (Dwyer et al., 2017). For example, UNEP has taken a hands-on approach for building the capacity of local community and state government institutions in Afghanistan since 2001. This role is distinct from UNEP's usual mandate, which emphasizes international cooperation and general policy guidance for environmental management (United Nations [UN] General Assembly, 1972).

International consensus is emerging for post-conflict settings that community participation should be pursued as an essential element of conservation from the beginning of PA planning. Trust-building is a prerequisite to community participation, especially for communities that have suffered from armed conflict (Beunen & de Vries, 2011; Bruch et al., 2011; Cooke et al., 2011). Newly established PAs in post-conflict settings provide academically and practically significant contexts for understanding and improving community participation in state-governed conservation and trust among the local communities, international partners, and state-based organizations.

As used in this chapter, *capacity* is the ability of people to function effectively to influence the conditions of their communities (Eade, 1997, pp.1–3). Based on lessons

learned from World Bank experience in capacity building for local governance, Edralin (1997) concluded that capacity building should aim to “create a sense of ownership and empowerment” (Edralin, 1997, p. 127). Edralin also identified the dedicated participation of NGOs and local beneficiaries as additional factors for improving the success of capacity building (Edralin, 1997, p. 132). Effective capacity building typically includes identifying existing skills in a community and developing the community’s potential to identify and meet their own and other people’s needs (Charity Commission, 2000; Craig, 2007; Simmons et al., 2011). Capacity building is essential to post-conflict recovery (Bruch et al., 2011; Barakat, 2004). International partners tend to focus on capacity-building programs for state-based institutions (Barakat, 2004). However, capacity building goes beyond public administration and also relates to “rural development work with local communities” that implies a “long-term investment” in people and their organizations (Eade, 1997, pp.1–3). Considering the importance of local institutions in PA management, capacity building for both state-based and local institutions is essential (UNEP, 2003). Understanding the processes for establishing and maintaining post-conflict PAs provides a unique opportunity to identify factors that contribute to effective capacity-building programs for community-based institutions.

3.1.2. The Afghanistan case study: Research questions

Afghanistan is an apt context for examining the effectiveness of post-conflict environmental management programs for building the capacity of local institutions and facilitating community participation. More than 80 percent of Afghan livelihoods are directly dependent on natural resources, especially through farming and herding (UNEP, 2003, p. 15). As a result, community-based institutions have historically played significant roles in resource management (UNEP, 2003). The country’s long history of armed conflict has affected the environment and the community- and state-based institutions for environmental management since at least the 1980s (UNEP, 2003; UNEP, 2008). High dependency on natural resources has made the environmental impacts of armed conflict the second-ranking consequence of conflict in Afghanistan, second only to loss of human life (Formoli, 1995, p. 66). UNEP’s post-conflict environmental assessment identified mismanagement of natural resources brought about by the collapse of national and local institutions as the main cause of environmental degradation in Afghanistan (UNEP, 2003).

State-based conservation institutions are new to Afghanistan. Afghanistan's first National Park, Band-i-Amir, was ratified in 2009. Shah Foladi, ratified in 2015, is Afghanistan's second PA. As a post-conflict conservation site managed by the Afghan government and the United Nations Environmental Programme (UNEP), Shah Foladi PA (SFPA) is an IUCN level V model PA featuring both state-based and community-based natural resources management (CBNRM) policies (UNEP, 2010a). CBNRM is the main method suggested in Afghanistan's Agriculture Strategy for building the capacity of local institutions (Afghanistan's Ministry of Agriculture, Irrigation and Livestock [MAIL], 2007, pp.45–46). Only since 2009 have local communities faced conservation mandates from the state. As a result, the impacts of previous state management practices on local institutions are minimal and traceable. There is a limited history of collaboration in resource management between the state government and local communities (Johnson, 2017). In general, this means that CBNRM is contingent on new capacities to enable participation in collaborations with state-based and international agencies (UNEP, 2008).

In this chapter I examine the process of community participation and the effectiveness of international assistance for building the capacity of local institutions in SFPA. I address the following four primary research questions: How effective were the CBNRM projects for building local communities' capacity to contribute in PA management? What factors contribute to effective capacity building for community-based institutions? How can community participation in state-based conservation build trust between the community, international agencies, and state-based institutions? How are global policies for conservation operationalized through local community collaborations? The integrated use of data from personal experience, interviews, and documentary studies enables examination of aspects of community-based institutional capacity-building in SFPA from initial planning for SFPA in 2009 through 2018.

In the next section, I review general policies for post-conflict institutional development in Afghanistan. I then examine post-conflict institutional development plans for Afghanistan's environment sector to understand the context for SFPA establishment and early management. These reviews provide the basis for identifying some challenges international partners face in operating at the state-community interface in Afghanistan.

3.1.3. Post-conflict institutional development in Afghanistan

Post-conflict development in Afghanistan has included common approaches used in post-conflict recovery elsewhere (Rondinelli, 2004; Johnson, 2017). Post-conflict planning generally focus either on promoting self-governance or relying on international partners. The first approach encourages self-reliant governance in the absence of a strong, coordinated international presence. The second approach, often administered by external agencies, involves the amelioration of wartime damages and reconstruction of physical infrastructure (Rondinelli, 2004). In Afghanistan, international partners used a mix of the two approaches, prioritizing positive peace while building both national administrative capacity and physical infrastructure. The approach has given nation-building functions to "Afghans themselves with international donors performing only supporting roles" (Montgomery & Rondinelli, 2004, p.5). Goals have centered on preparing Afghan authorities to take over construction and development activities as international partners depart (Barakat & Chard, 2004; Rondinelli, 2004). The commitment to reconstruction as a long-term recovery and development process has entailed economic, social, and psychological readjustments (Barakat & Hoffman, 1995). In Afghanistan, reconstruction has sought to integrate: "restoration of the physical infrastructure and essential state functions and services; institution building to improve the efficiency and effectiveness of existing institutions; the structural reform of the political, social, economic and security sectors guided by the principles of hope, healing and reconciliation" (Barakat & Hoffman, 1995, as cited in Barakat, 2004, p.9).

3.1.4. Post-conflict institutional development in Afghanistan's environment sector

In the wake of turmoil and conflict, post-conflict conditions can give rise to innovative institutions (Ghani & Lockhart, 2008; Bruch et al., 2011). Since 2001, the environment sector in Afghanistan has become larger, more experienced, and more sophisticated (UNEP, 2003; UNEP, 2007; Bowling & Zaidi, 2011). Post-conflict development in the environment sector has been pursued simultaneously for state-based and community-based institutions, each of which merit brief descriptions.

State-based institutions. Following the establishment of an interim authority at the Bonn international conference (2001), the first Loya Jirga (the traditional Afghan

convening of elders to settle disputes) was held in 2002. It included a mandate for environmental management in the new transitional government (UNEP, 2003; Bowling & Zaidi, 2005). An environment branch was established in the Ministry of Energy and Environment, which developed into the National Environmental Protection Agency (NEPA) in 2005 (Johnson, 2017).

As of 2020, the Afghan government has two key agencies to implement environmental policies and programs: NEPA and the Ministry of Agriculture, Irrigation, and Livestock (MAIL). Both NEPA and MAIL are centrally coordinated from Kabul, with department offices across Afghanistan's 34 provinces (Kanderian, et. al, 2011). The NEPA Secretariat of Biodiversity, together with MAIL's Directorate of Natural Resources Management, are responsible for creating and implementing management plans for Afghanistan's PAs (UNEP, 2008; Kanderian et al., 2011). For complicated reasons related to political developments since 2005, NEPA and MAIL share PA design and management responsibilities (Johnson, 2017). The Ministry of Rural Rehabilitation and Development (MRRD) also works in villages, primarily through the community development councils (CDCs), to "develop and implement programs promoting responsible social and financial growth in rural areas" (MRRD, n.d., para.1).

Capacity building for state-based organizations in the environment sector has included help from international partners: specialized training workshops, educational materials, opportunities for studying abroad, and collaborations on practical projects (UNEP, 2010b; author's observation: 2009–2010). For example, Afghanistan's National Environmental Protection Agency (NEPA) staff members responsible for raising environmental awareness were provided with educational materials, access to training workshops, and technical support for planning environmental campaigns (author's observation: 2009–2010). International partners have been planning institutional development and capacity-building initiatives—including environmental and PA management programs—based in part on increasing community involvement (Barakat, 2004; Rondinelli, 2004; Government of Afghanistan, 2009; Emadi, 2011). Afghanistan's legislation emphasizes bottom-up planning and local community involvement for resource management (MAIL, 2007). UNEP has played a key role for post-conflict institutional development and capacity-building programs in Afghanistan's environment sector. UNEP's role was more prominent than the roles played by international NGOs.

Community-based institutions. The high dependency of local Afghan communities on natural resources has made local participation a key planning element for international donors and the state government (UNEP, 2003; Government of Afghanistan, 2009). Afghanistan's Agriculture Strategy has established community-based natural resources management (CBNRM) as the guiding principle for improving livelihoods and conserving biodiversity. Table 3.1, which represents data from Afghanistan's Agriculture Strategy, summarizes the overall program for PA management (MAIL, 2007, pp. 45–46). CBNRM projects and policies are based on the assumption that local communities have obvious incentives for sustainable PA use (Western & Wright, 1994; Brosius et al., 1998). In this sense, CBNRM provides a generic referent in Afghanistan for approaches in which state governments share rights and responsibilities with local communities to improve local livelihoods and rehabilitate natural resources (Wijangco, 2012, p.3).

Table 3.1. Goals for the "Management of Protected Areas and Wildlife" from Afghanistan's Agriculture Strategy.

Strategic goal: Manage and protect the natural resource base			
Objectives	**Expected results**	**Indicators**	**Risk**
Program 2: Management of protected areas and wildlife 2.1. Community-based management program 2.2. Biodiversity protection 2.3. Protection of migrating birds 2.4. Rehabilitation and development of dams	• Sustainable food security and livelihoods through conservation of local biodiversity • Protected wildlife	• Biodiversity indicators • Household level food security survey	• Security and political instability • Financial resources

Source: MAIL, 2007, p.46

3.1.5. Challenges for international partners

Plans for community participation may be ineffective in promoting resource management goals due to disconnections between international partners and local values and norms (Western & Wright, 1994; Barakat, 2004; Berrebi & Thelen, 2011). Previous studies have addressed challenges related to CBNRM in Afghanistan, as summarized in the following sections.

Limited presence of the international partners. Restricted presence of the international partners in Afghanistan during the Mujahedin and Taliban periods eroded trust between international partners and Afghan officials and citizens. Western sanctions that targeted Mujahedin and Taliban governments also limited international aid projects that supported local communities. Resultant misunderstandings have affected goal setting and management of international aid funding (Barakat & Chard, 2004; Amin et al., 2011).

Donors' rapid and reactive decision-making. International partners usually have short timeframes for decision-making and project implementation. Many reconstruction decisions in post-conflict settings are made rapidly, reactively, and in response to uncertain and changing political and logistical factors (Rondinelli, 2004; Berrebi & Thelen, 2011). In contrast, effective capacity building for state-based and community-based institutions and participatory projects is time-consuming and generally requires long-term planning and engagement (Barakat & Chard, 2004; Amin et al., 2011).

Changes in political commitment. International partners' commitments to post-conflict programs sometimes shift for political reasons. As the extensive military funding for post-conflict projects diminishes, post-conflict development funding typically shrinks. Reduced funding, followed by less attention to development projects, endangers post-conflict projects, including PA initiatives. Abandoned commitments also jeopardize local community trust toward international partners. Building trust between the international partners, local communities, and the state government is an enduring challenge for working with communities in post-conflict settings (Cramer & Goodland, 2002; Barakat, 2004; Berrebi & Thelen, 2011).

Women's roles. The nature of women's participation in Afghanistan's public life is a challenging issue for international partners (Barakat, 2004). Rural women constitute 85% of the female population of the country (Barakat & Wardell, 2002, pp. 16–18). They often live in *mahram*, seclusion within the family. Nonetheless, the household remains the pivotal institution in Afghan society, and women exercise great power in household operations (Barakat & Wardell, 2002). Their discretion in household settings affords women protection and degrees of freedom, especially in regard to obtaining and consuming food, water, and fuel (Barakat & Chard, 2004). Women hold different traditional knowledge than men and have different environmental needs and impacts. In

PAs, women act as primary harvesters of non-fodder products, especially fuels and medicines. For these reasons, and to affirm mandates for gender equity, women's participation in PA management and other development projects is an important issue in post-conflict planning, policy, and practice (Stiefel, 1999; Barakat, 2004).

Relying on Afghans returning from abroad. A lack of educational opportunities and technical capacities in Afghan society forces international partners to rely on Afghans returning from abroad to facilitate post-conflict planning and program implementation. Despite the high value of these foreign-educated expatriates, they seldom represent typical Afghan viewpoints, interests, and needs. The use of returnees may exacerbate communication and trust gaps between international partners and local communities (Rondinelli, 2004).

Impacts of trauma on local communities. Conflicts often break down social codes and networks (Monnier & Hobfoll, 2000; Bruch et al., 2011). Community members may witness horrific violence or spend time as refugees (Monnier & Hobfoll, 2000; Wardak, 1992; UNEP, 2008). Trauma can affect community relations toward land and reduce interests in long-term planning and conserving natural resources for future generations (Wardak, 1992).

Security. Broader security issues also affect post-conflict planning. Formation of informal power structures by partisan groups, referred to as shadow governments, can threaten state-community negotiations. Shadow governments are severe threats in Afghanistan. The Taliban has attempted to appoint governors for all the provinces (Giutstozzi, 2012; Nijssen, 2011). The failure of sufficient state government capacity to counter such influence gives the Taliban and other insurgents opportunities to extend their influence. A survey of 500 villages compared the consequences of three governance alternatives, including elections to establish village councils, community development councils (CDCs), and formalization of self-governing village councils (Jochem et. al, 2016). The study showed that elections, and to a lesser extent the formalization of CDCs, improve support for democracy, while the formalization of village councils tends to increase community interest in reconciliation with the Taliban (Jochem et. al, 2016). This issue also merits consideration in efforts to build local community capacity in the environment sector (Goodhand & Sedra, 2007).

3.2. Methods and case study background

I used a combination of first-hand observations, meetings with local community groups, interviews with experts, and desk research to collect data and examine the process of establishing the SFPA. I worked for UNEP in Afghanistan for one year (2009–2010), which included two and half months in the SFPA preparing the first draft of the SFPA's public engagement and community participation plan. Fieldwork in the months of August, September, and October in 2009, including interviews with community members in ten villages in Shah Foladi gave me an opportunity to learn about the environment, hear stories of the trauma and resilience of the communities, and understand the magnitude of people's economic and cultural connections to SFPA. Figure 3.1 shows one of the meetings with the local communities in SFPA.

My plans to return to Afghanistan to continue my research in SFPA were thwarted in 2013 due to security concerns. Therefore, I was not able to interview the local community members after the establishment of SFPA. However, teleconferences with the local NGO, Afghan, and international experts provided insights into the local communities' status and dynamics.

Figure 3.1. Meeting with the local community in Shah Foladi (Aug. 5, 2009).

After leaving Afghanistan in 2010 I relied upon professional networks to exchange information with colleagues who worked to establish and manage SFPA through the years. Between 2009 and 2018 I interviewed six UNEP international experts, two state government officials, the director of the local NGO, and one academic who worked in SFPA. I interviewed two of UNEP's international staff twice because of the importance of their insights. I used Skype to conduct open-ended interviews with the UNEP staff and phone calls to interview the Afghan interviewees. The inherently complex and contingent nature of work on post-conflict capacity building contributed to various delays in data gathering. For example, two key experts did not feel ready to talk about SFPA establishment until 2016.

The open-ended interviews allowed me to assess the extent to which the international experts followed the prescribed plans for establishing SFPA, how they initiated and maintained working relationships, and their rationales for some of the consequential choices they made. I also asked about the challenges they faced working in Afghanistan, how post-conflict development plans changed through the years, and how these changes affected PA management and their relationships with the local communities.

My questions for the director of the local NGO (COAM) pertained to the establishment of the organization, the support they received from international partners, how they participated in PA management, and how staff and participant capacities developed through time. I also asked about the ways the communities were involved in different projects and about decision-making for SFPA management. In the interviews with the state government officials, I asked how working in SFPA affected their relationship with the local communities, how they were involved in PA planning and management, and how their capacities were built through the establishment of SFPA. Direct experience, interview data, and background research helped me identify specific processes used to build trust and the capacity of local institutions through CBNRM projects in SFPA. Table 3.2 expands on data gathering methods used for specific research questions.

Table 3.2. Data gathering methods used to address research questions.

Data needs	Methods used
Background on history of resource management and post-conflict plans in Afghanistan	• Direct observation • Reports (UNEP 2003, 2009, 2010,2011,2015; Wijangco, 2012); Afghanistan's Agriculture Strategy (MAIL,2007) • Background literature on Bamyan history
Trust-building between local and international and state-based institutions	• Direct observation • Interviews with the international experts, local NGO leaders, and government staff • Analyses of reports, articles, and background data on how challenges were addressed
Capacity building for local institutions/ CBNRM projects	• Direct observation • Interviews with international experts, NGO partner and government staff and researchers • Analyses of COAM NGO reports and website, international reports (Wijangco, 2012; UNEP, 2010a,2013, 2015), and the UNEP website • Analyses of participation literature to evaluate the methods used in SFPA compared to elsewhere
International plans getting executed on the ground	• Direct observation • Interviews with international experts • Analyses of planning literature to identify changes in the initial international plans and their execution on the ground

Reports and papers by Afghan government agencies, international partners, and scholars provided secondary data sources. Evaluations of CBNRM projects in other parts of Afghanistan (Wijangco, 2012) and research on local governance structures in Afghanistan and other post-conflict scenarios provided insights into general aspects of CBNRM projects. Taken together, the diverse data sources allowed me to identify the factors contributing to capacity-building programs for local communities in post-conflict settings.

3.2.1. Measuring changes in local community capacity to participate in PA management

The CBNRM projects in SFPA are aimed at building community capacity to participate in SFPA management and to improve people's livelihoods and the condition of the environment (Wijangco, 2012). I use three indicators derived from the interviews and literature to examine the impacts of nine years (2009–2018) of CBNRM projects on communities' organizational and administrative capacities to collaborate in SFPA. These indicators include: (1) changes in the level of community participation in CBNRM

projects; (2) changes in individual villager capacities to assist in the administration of CBNRM projects; (3) changes in COAM NGO staff capacities to work with the communities and international partners. These indicators provide an overview of whether and how the CBNRM projects changed the communities' capacities to participate in PA management.

I use changes in the level of community members' participation in CBNRM projects as an indicator of community capacity for participation in PA management. Community participation exists on a spectrum of inclusion in decision-making by those most affected by the proposed intervention (Agrawal, 2001, p. 1624). Table 3.3 presents a tool for describing that spectrum. Agrawal (2001) discusses six types of participation in participatory resource management projects: nominal, passive, consultative, activity-specific, active, and interactive (Agrawal, 2001, p. 1624). The level of community participation increases from nominal participation to interactive (empowering) participation.

Table 3.3. Six escalating levels of CBNRM participation and associated characteristics.

Level	Characteristics
Nominal participation	Being a member of the group involved in the project
Passive participation	Being informed of decisions ex post facto; attending meetings and listening, without speaking
Consultative participation	Being asked for an opinion on specific matters without any guarantee of being well heard or of influencing decisions
Activity-specific participation	Being asked to (or volunteering to) undertake specific tasks
Active participation	Expressing opinions, whether or not solicited, or taking initiatives of other sorts
Interactive (empowering) participation	Having voice and influence in the group's decisions

Note: After Agrawal, 2001, p.1624. Used with permission.

I use Agrawal's (2001) typology of participation (Table 3.3) to analyse changes in the level of community participation in CBNRM projects through the 9 years of the study. I categorize the CBNRM projects based on their timing and then evaluate changes in the level of community participation. I then use changes in local community participation in CBNRM projects over time as an indicator of whether community members have gained organizational and administrative capacities to participate in PA management.

Uncertainties and limitations are inherent in this approach. Increases in the communities' level of participation in CBNRM projects can also result from increases in the trust of funding agencies in local communities' capacity for project design and management. It can also be the result of changes in international development policies that promote sharing decision-making power with local partners. Nevertheless, sustained growth in community participation is only possible if the community has the capacity to take over more responsibilities. This research is not focused on assessing specific capacity-building initiatives. My data enable assessment of changes in community capacity to collaborate with international partners in CBNRM project design, management, and monitoring.

3.2.2. Case study description: The Shah Foladi PA

Situated in Afghanistan's central highlands region in Bamyan (also Bamiyan) province, SFPA represents a typical mountainous ecosystem in Afghanistan (UNEP, 2011; UNEP, 2010a) (Figure 3.2). The Shah Foladi region ranges in elevation from 2800 to 5200 meters above sea level. The area is part of Hindu Kush range in the north slopes of the Koh-e-Baba (also Kuh-i-Baba) mountains and has a mountainous continental climate (UNEP, 2010a; UNEP, 2011). Koh-e-Baba, along with the nearby city of Bamyan, famed for its UNESCO World Cultural Heritage site, the giant Buddhas, is the backbone of the nation's central highlands. Koh-e-Baba's alpine areas and pastures capture and store water to supply several main rivers in Afghanistan, making the Koh-e-Baba the most important watershed in Afghanistan (UNEP, 2015, p.7).

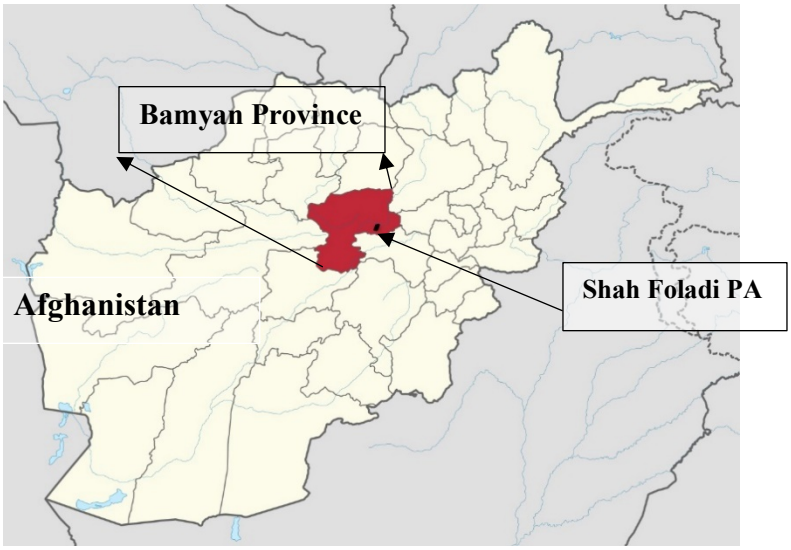

Figure 3.2. Map of Afghanistan with the location of Bamyan Province and Shah Foladi PA (After UNEP, 2010a).

The area of the central highlands is known as *Hazarajat*, the historic homeland of the Hazara ethnic group. There are 18 villages in and adjacent to SFPA, with a combined population of approximately 14,770 people in 2110 Households (UNEP, 2010a). Most of these villages are strategically located along drainages and rivers originating in the Koh-e-Baba and smaller mountains (Figure 3.3). I use the term *communities* in this chapter to refer to the dwellers of the 18 villages in SFPA.

Figure 3.3. Distribution of villages in the Shah Foladi region. The red line shows the PA boundaries and the green mark at the bottom shows Bamyan city (after UNEP, 2010a, p.11).

Local people have been intensively utilizing the Koh-e-Baba for millennia. Current and previous human activity is an important environmental determinant and stressor within SFPA. Land-use includes settlements, irrigated and non-irrigated cultivation, grazing, fodder harvest, shrub harvest for fuel, hunting, and the collection of plants for food and medicine (UNEP, 2010c). Irrigable land, mainly distributed in the drainage bottoms, covers only 2% of the Bamyan province and probably less than 1% of SFPA (Fitzherbert & Ritchie, 2008 in UNEP, 2010a). In areas where the mountain slopes are less rocky, and enough wheat seed is available, the mountainsides are ploughed, and rain-fed lands are cultivated (UNEP 2010a). Figure 3.4 shows Dukani valley, one of the main valleys of the SFPA.

Figure 3.4. View of Shah Foladi from Dukani valley (Shah Foladi PA, Sept.1, 2009).

Non-irrigated rangelands, which account for 1.3 million hectares (92.4%) of Bamyan province, are used for livestock grazing, rainfed agriculture, and harvesting critical plant resources (FAO, 1999). The communities in SFPA depend especially on sheep and goat herding due to the long winters and uncertainties of high-altitude farming. Besides providing food, fuel (from burning dung), hides, and wool, livestock are considered people's wealth and insurance (Alden Wily, 2004).

3.2.2.1. Local governance

There are deeply rooted natural resource management traditions in the SFPA. Table 3.4 shows traditional resource management mechanisms linked to multi-community, village, household, and individual levels (UNEP, 2010a). Traditional resource management mechanisms at the village and multi-community levels are structures that require consideration in SFPA management. The traditional governance body for Shah Foladi communities is the *shura,* a council of local elders and concerned citizens (UNEP, 2010a). Since 2001, community development councils (CDCs) have been instituted in most communities, largely to receive development funds from the Ministry of Rural

Rehabilitation and Development's (MRRD) National Solidarity Program (MRRD, n.d.). CDCs are generally comprised of *shuras* representing several villages.

Table 3.4. Customary arrangements for resource management in Bamyan province.

Decision level	Resources implicated at this level	Management mechanism
Multi-community	Access to water and pastures for grazing, harvest of fuel shrubs	Traditional customary rules to ensure sustainable resource harvest
Village	Access to cultivating rain-fed land, location and amount of shrub harvesting, and protecting areas from shrub harvest or grazing.	*Shura* and community meetings or interested households
Household	Livestock, farmland crops and soil productivity, food and fuel, and distribution of labor to meet household needs	Meeting of household members or the head of the household, including women
Individual	Personal and familial capacities to complete tasks associated with resource management	Decisions made on basis of traditional knowledge and personal conditions and goals

Source: After UNEP, 2010a, p.12.

3.2.2.2. Major threats to ecosystems and local livelihoods

Global climate change, intensive land-use practices, and a growing human population threaten Shah Foldai's fragile mountain ecosystems. Cold winters and the rocky mountainous landscape limit the rain-fed and irrigable agricultural land. Limited access by roads into the mountains, especially through winters, makes the communities more vulnerable to food shortages (UNEP, 2010a). Communities in SFPA recall, during harsh winters of Taliban occupation, that roughly 30 percent of the population starved to death due to shortages of food supplies. These realities underscore the importance of creating access routes and alternative livelihood options for SFPA communities (author's observation: 2009–2010).

Communities in Bamyan have a long history of armed conflict and resultant social impacts (UNEP, 2010a). These conflicts have also affected the ecosystems, the communities' relationships with the land, and resource management (UNEP, 2010a). The population has experienced oppression, marginalization, and political turmoil, as well as displacement and destruction of property. Many community leaders have been

killed or fled for their lives. Pashtoon governments, in place 1880–1919 and 1996–2001, imposed heavy taxes, which increased pressures on local people to obtain cash and on the sources of marketable goods, especially irrigated lands and marginal pastures (UNEP, 2008). The latest traumatic experience happened during the Taliban occupation (1996–2001), when the Taliban attacked Bamyan, slaughtered hundreds of community members, and destroyed the big Buddha (UNEP, 2010b, p. 23). Mass graves in the region remind the communities of this traumatic incident (author's observation: 2009–2010). During the Taliban attack, community members fled to the mountainous areas of Shah Foladi, an experience that increased their attachments to the SFPA. Perhaps needless to say, the rural people of Bamyan are extremely tough and resilient. Despite the fear of having to flee again, they feel a strong sense of belonging and ownership towards SFPA and its natural resources (author's observation: 2009–2010).

3.2.2.3. History of the international presence

Located adjacent to the ancient Silk Road, which connected East and Southeast Asia to Southern Europe, Bamyan city has historically had many international visitors (UNEP, 2010a). Bamyan has attracted and hosted Buddhist pilgrims and free-spirited westerners since the early 1920s (UNEP, 2010a). Although community members are generally comfortable interacting with foreigners, visitation and tourism has not led to significant improvement in regional welfare or living standards. Guesthouses have provided a few jobs for locals, but most of the food sold in these establishments is sourced from out of the province. The communities are generous and accepting, but prior to establishment of SFPA they did not witness a regular international aid presence. Since 2001, several international NGOs have initiated development projects in the region, such as a solar-based lighting system (author's observation: 2009–2010). In my visits to remote villages in SFPA and the surrounding mountains, I encountered evidence of several international NGO projects that failed to meet sustainability tests after their establishment, including training the local community members to maintain and repair the infrastructure. State government officials generally claimed to lack knowledge and records of these projects (author's observation: 2009–2010).

3.3. Results: SFPA establishment

3.3.1. Management plan and conservation zones

Basic planning for the establishment of SFPA started by creating a management plan for SFPA in 2009. UNEP selected the SFPA site because of its ecological and socio-economic significance in Afghanistan. As Bamyan is relatively safe compared to other parts of Afghanistan, safety considerations further reinforced the selection of SFPA as a model PA (author's observation: 2009–2010). Although the UNEP mandate does not involve the establishment of PAs, UNEP's Post-Conflict and Disaster Management branch undertook the Shah Foladi experiment to understand factors and dynamics affecting the success of top-down and bottom-up approaches to environmental management in Afghanistan. The UNEP goal was to create methods to apply in other parts of Afghanistan and in post-conflict settings elsewhere (author's interview: UNEP, December 2017). After initial landscape studies by UNEP expert Jon Coe, the draft management plan for SFPA was developed in collaboration with Afghan partners, including the National Environmental Protection Agency (NEPA) and Ministry of Agriculture, Irrigation and Livestock (MAIL) (author's interview: UNEP, December 2017). The vision for SFPA was to introduce ecologically based planning for development projects (UNEP, 2015). The SFPA management plan included CBNRM, raising awareness about the environment, and livelihood generation as core principles and goals (UNEP, 2009a).

The SFPA management plan is grounded in important geographical delineations. Based on field work and primary assessments of the ecological and socio-economic factors, four management zones and associated management objectives were defined for SFPA (Table 3.5). The high alpine zone is located in the peaks of Koh-e-Baba mountain range. Rangeland zones are in high elevations above the tree line and are used for livestock grazing and collecting herbs and fuelwood by the locals. The villages are located in the buffer zone which includes valley zone and Bamyan river zone. Gateway villages and transport hubs are the villages that are located in special use zones at the border of the buffer zone and rangeland zone. Figure 3.4 shows a sketch of SFPA's four management zones.

Table 3.5. SFPA's four management zones.

Zone	Management objective	Allowed uses
High Elevation Alpine	Protect, restore, sustain, and share	Conservation, ecological restoration, scientific research
Rangeland Areas	Protect and restore the sustainability of traditional and ecological-agricultural systems	Managed use, livestock grazing, farming, fuelwood gathering
Buffer (Bamyan river and valley zones)	Protect and restore the traditional and ecological agricultural systems and use sustainably	Residence, administration, local markets, visitor services
Special Use	Sustain the wellness and livelihood of people and the land	Gateway villages, transport hubs

Source: UNEP, 2015, p.18.

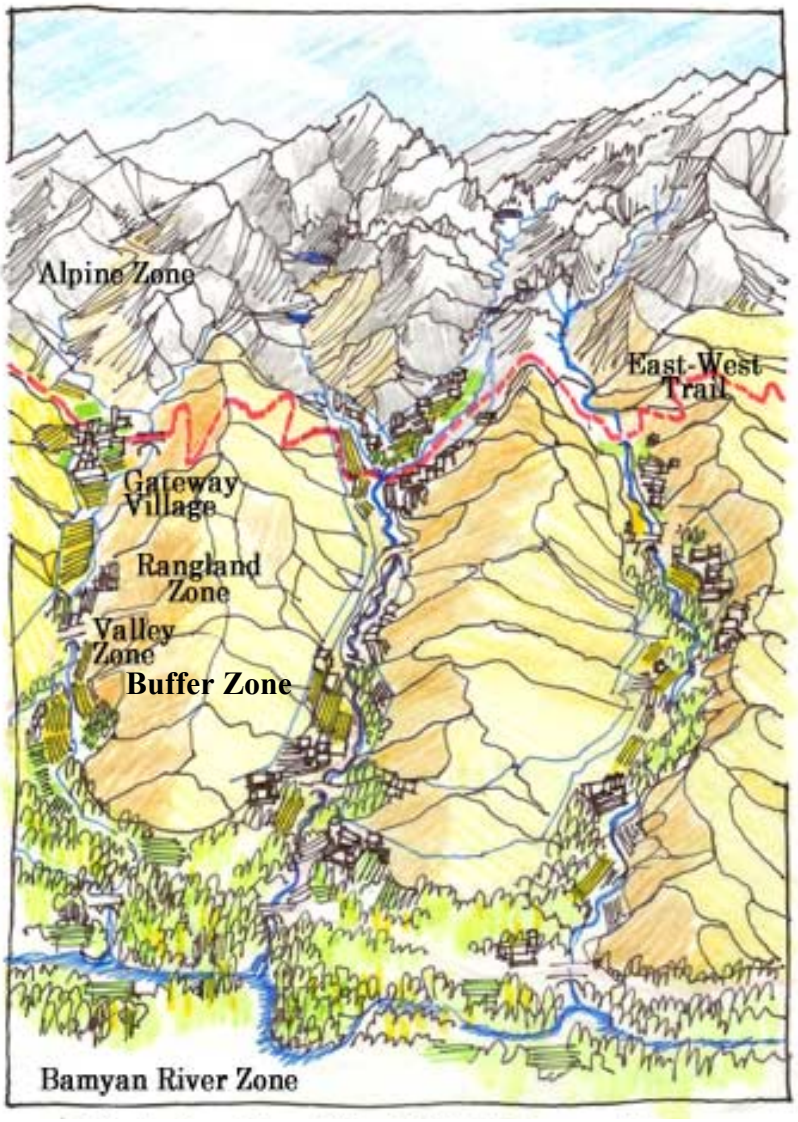

Figure 3.5 View of SPFA and its four management zones (J. Coe, personal communication, December 15, 2016).

Note: The gateway villages are located in line with the red line. Each zone exands horizontally.

3.3.2. The SFPA management committee

In 2010, UNEP formed the Shah Foladi PA Committee (SHAFPAC) to facilitate cooperation among SFPA stakeholders. The SHAFPAC is a strategic, technical, and scientific committee with representatives from the local communities, state government, and international and national NGOs. The committee includes at least one representative from each of the 18 communities located in and adjacent to the PA. The committee also includes one representative from the Provincial Council, one representative from the District Council, one local representative of NEPA and MAIL, the Governor of Bamyan (who serves as the Chair), and the SFPA warden. Representatives from the private sector, local NGO partners, and international partners such as UNEP and the Agha Khan Foundation also join the SHAFPAC meetings as advisors (UNEP, 2010a; author's interview, UNEP, February 2018).

The Provincial Council and District Councils are two mechanisms used by the Afghan government for decision-making (author's interview: Afghan national expert, January 2018). Representatives from the Provincial Council and District Council ensure the decisions for SFPA management do not interfere with provincial administration or development plans. They also provide opportunities for improving PA management through development projects that promote conservation funded by the state government. Under the prevailing administrative arrangement, the MAIL Directorate of Natural Resources Management is in charge of PA management. SHAFPAC decisions are subject to approval by the MAIL (author's interview: UNEP, February 2017). Although SHAFPAC was not active in the first few years of SFPA management, the emergence of the conservation agenda since 2014 has brought SHAFPAC to prominence. In addition to annual meetings among all members, SHAFPAC has six working groups that meet periodically (author's interview: UNEP, February 2018; author's interview: COAM, February 2017).

3.3.3. Building trust with local communities

The effort to address conservation challenges in Afghanistan led UNEP experts to realize that they needed to work closely with local communities. Building trustworthy relationships with the communities and addressing both their immediate and long-term needs emerged as a pre-requisite for starting the conversation about SFPA conservation

(author's interview: UNEP, December 2017). UNEP prioritized the communities' needs over execution of the SFPA management plan:

> When we first started, real emphasis was on the Shah Foladi management plan. But we soon realized there wasn't a big rush to do that. But there was a lot of urgency in helping the people in these high mountain villages and that the plan would never work without their support. And the way to get their support was to help them become more self-sufficient economically and less dependent on natural resource [over-harvesting]. The only way to prevent it was to give them alternative income streams and smarter development ideas. That led directly to community-based action. Then after 3-4 years, we came back to the overall plan (International expert B, Dec. 5, 2017).

Through analysis of all the interview data, I identified four steps that UNEP took in SFPA in order to build relationships with the local communities and encourage them to contribute to PA management. These steps were not designed in advance by UNEP; the experts decided upon them based on their experiences and SFPA conditions. The following section expands on these steps, and where possible uses the experts' own words to explain the rationales behind pivotal decisions.

Initial community contacts. First contact was initiated through knowledgeable individuals trusted within the specific communities. UNEP's contact person and coordinator in Bamyan, Zekria Ahmadi, had worked for other international agencies distributing aid, mainly food, to the remote communities during the Taliban occupation. Zekria had extensive knowledge and professional skills and was known and respected throughout Shah Foladi. He directed the team in visiting the communities, meeting with elders, and identifying pressing development issues. UNEP was able to rely on Zekria's social capital to facilitate communications with the communities. Learning the process of establishing relationships with the community was a part of UNEP's capacity building program for state government personnel, and government experts attended meetings beginning with the planning stages (author's interview: UNEP, December 2017).

Rapid assessments and meetings with community representatives. Rapid assessments were completed for all the 18 villages in SFPA to understand conditions of the environment and in the communities. UNEP experts believed the obvious environmental and economic challenges justified a rapid assessment in the first stages of working with the communities. Limited livelihood options, communities' overall poverty, lack of sewage and garbage disposal systems, and signs of erosion and

rangeland degradation were some of the prominent environmental and economic challenges. UNEP expert B said “[You] don’t need a door-to-door survey and a detailed ecological research to see the natural resources are degraded and the economy is desperate” (Dec. 5, 2017). The visiting experts saw the rapid rural assessment (RRA) as a means for leveraging immediate international investments to address these challenges.

In one or two initial meetings with village elders, UNEP representatives introduced both themselves and state government experts. In collaboration with local residents, the most urgent challenges in the communities were then identified and used to define the first CBNRM projects. The experts were keenly aware that it was necessary to go step-by-step, to build relationships and a pattern of successful collaborations before addressing more sensitive issues, such as gender differences and access to SFPA resources. UNEP expert B said “[You] can come in and have tea with elders and make a good impression, but you are still an outsider and you are still not going to go door to door doing a women survey” (Dec. 5, 2017).

Initial projects. Once the most pressing issues were identified, initial projects were defined to address immediate community needs. These projects aimed to boost local communities’ livelihoods and living conditions by improving water management systems and garbage disposal, training local guides for visitors, providing power for heating, and introducing alternative cooking technologies, like gas ovens for bread baking. UNEP expert B said, “[You] can start working on pressing issues in a matter of few months instead of few years. Once you work with them, you start building trust” (Dec. 5, 2017).

Project progression. After conducting a few development projects that improved local livelihoods, communities placed more trust in the outsiders. After about 2012, experts initiated in-depth surveys and analyses to plan projects that focused more directly on conservation.

> Every time you go in and have a little success, you are more and more trusted. After the 3rd year, you have built enough trust to start doing the in-depth surveys. After you are there 6–8 years, hopefully it will all come together then. It’s all based on trust (International expert B, Dec. 5, 2017).

UNEP, as an international agency with widespread connections and knowledge, offered substantial opportunities to the communities. Various funding agencies

recognized the potential of the SFPA initiative, and new opportunities for development were provided to the communities (author's interview: UNEP, February 2017).

3.4. Results: SFPA management

3.4.1. Highlighting the role of national partners

Capacity-building programs for community-based institutions were developed hand in hand with capacity building for state-based institutions (UNEP, 2009; author's interview: UNEP, February 2017). Staff of the state government agencies received theoretical as well as practical training from international partners in various aspects of resource management and conservation. Because UNEP's conservation plans in SFPA prioritized community participation, community engagement was an important element for building the capacity of state-based institutions in support of SFPA (UNEP, 2009b). The key national partners, including Afghanistan's National Environmental Protection Agency (NEPA) and Ministry of Agriculture, Irrigation and Livestock (MAIL), were involved in designing SFPA, in relationship building, and in negotiating with communities (author's interview: UNEP, December 2017).

As trust expanded, UNEP was able to clarify for community representatives the crucial roles that colleagues from NEPA and MAIL would play in the projects. This helped to earn the trust of these state government agencies, which then further legitimized the importance of building CBNRM partnerships and conservation programs. The trust established through UNEP actions benefited not just its own programs but also those of the national partners (author's interview: UNEP, December 2017).

3.4.2. Understanding local NGO roles in executing the management plan

As a part of its capacity-building program, UNEP supported local environmental advocates in the formation of an environmental NGO, The Conservation Organization for Afghan Mountain Areas (COAM). The UNEP helped build COAM's capacity to apply for international grants and design and implement participatory CBNRM projects. UNEP followed two main protocols for funding CBNRM projects. The first was giving grants to

CDCs and supporting them to execute the projects. The second was supporting COAM to manage the CBNRM projects, which emerged as UNEP's preferred option (author's interview: UNEP, December 2017).

As an independent NGO founded in 2010, COAM formed partnerships and initiated development projects that were not in UNEP's mandate but were needed to support conservation (author's interview: UNEP, December 2017). For example, COAM built partnerships to produce and sell highly efficient gas stoves in the Sya-layak village. These stoves decreased pressure on fuelwood resources within SFPA, improved heating efficiency, and improved air quality within residences. Training COAM staff to take over participatory project design and management was an important aspect of UNEP's plans for building local capacity:

> UNEP's mission is to make themselves unnecessary. The way UNEP is set up and the way funding comes, is the best if the local NGO implements the project. It can be done in 2 ways: Project can be done with a grant to CDC. CDC provides the labor and book-keeping and operate under the advice of UNEP, while NEPA oversees it. Or the grant is given to NGO to organize, hire and train the village people to do the work (International expert B, Dec. 5, 2017).

Members of COAM are committed to working in Shah Foladi. They acknowledge UNEP's role in their training and in providing connections and opportunities for project funding. However, the funding and job opportunities are not the main reasons for COAM involvement. Shah Foladi mountains' significance as a place of refuge during turbulent times, as a watershed, and as the basis for regional identities and livelihoods is central to their commitment to conservation.

> We don't feel UNEP brought us along, but their support certainly helped us and gave us opportunities and training to have access to funding. The protected area status of Shah Foladi certainly opened new doors for funding application. Nevertheless, it is our home. Shah Foladi mountains saved our lives when the Taliban attacked and it holds our children's future (Habiba Amiri, Director of COAM, Nov. 12, 2017).

3.4.3. Supporting women's participation

Women in Bamyan have long had active roles in public life. A former minister of Women's Affairs, Habiba Sarobi, is a Hazara woman who became Bamyan's governor (2005–2013). Habiba Amiri, who serves as the director of COAM, is another active and

powerful Hazara woman in Bamyan. Influential women in the communities are members of the CDC committees, and white-haired (Gis-Sefid) women are highly respected in the region (author's observation: 2009–2010). The existence of powerful women in the society creates role models, identifies educational and career opportunities, and encourages women's participation in diverse social sectors. I met several women in small villages in remote areas of Bamyan who were supported by their families to pursue university education (author's observation: 2009–2010). I also found that some funding agencies prioritize women, specifically less powerful women, as primary beneficiaries of CBNRM projects. For example, the initial CBNRM project in Sya-layak made sure widowed women were the first to receive their modern bread baking ovens, a sustainable, no-cost asset that allowed the widows to sell bread to other community members. These projects provided financial resources for women, boosted their participation, and enhanced their social status.

3.4.4. Raising awareness

The conservation plan for SFPA includes programs for increasing conservation education and awareness in the region. Efforts to raise environmental awareness in Afghanistan focus on finding a common ground with local communities. Because of the importance of religion in Afghan society, UNEP produced a book on environmental concepts in Islam in both local languages, Dari and Pashtu. In collaboration with NEPA, UNEP distributed the book among the religious clerics and invited them to discuss environmental conservation (Figure 3.6) (author's observation: 2009–2010). UNEP and COAM also opened an Eco Conservation Centre in Shah Foladi in 2012. Members of COAM make regular visits to villages and schools to raise awareness about environmental issues and the importance of conservation (UNEP, 2012).

CBNRM projects also contributed to environmental awareness. Observing the impacts of CBNRM projects on improving local communities' livelihoods and living conditions increased communities' support for PA management (author's interview: Afghan national expert, March 2017). The CBNRM projects provided learning-by-doing opportunities essential to raising awareness and increasing community capacity for collaboration in conservation, project management, and administration in general.

Figure 3.6. NEPA staff participate in public engagement training during a discussion with the local cleric about environmental concepts in Islam (Bamyan, Oct. 2009).

3.4.5. Identifying and engaging leaders

Many state government experts, local community members, researchers, and activists have acted as leaders in the establishment and progress of SFPA. UNEP experts emphasized the role these leaders have taken in the SFPA, including raising awareness, lobbying, planning, and project implementation (author's interview: UNEP, February 2018). For example, Prince Mostapha Zaher, head of NEPA, played an important role for advocating environmental issues within the government and between the government and communities. He participated in several awareness raising campaigns and used his fame and power to promote environmental management. Zaher received a Champion of the Earth award from UNEP for inspiration and action in 2010. Habiba Sarobi supported SFPA by demonstrating its significance in Bamyan's development. Religious clerics supported SFPA by emphasizing the importance of environmental conservation as a religious concept. Because of the importance of these individuals in the advancement of environmental curricula in Afghanistan, three of the UNEP experts referred to them as *heroes* rather than leaders (author's interview: UNEP, December 2016–February 2018).

These individuals are a part of Afghanistan's environmental human capital that has the potential to continue supporting SFPA and foster progress and success in the future.

3.4.6. Leveraging global trends in post-conflict environmental planning and development

As the militarized conditions in Afghanistan dissipated (2002–2012), development projects also changed. Following the departure of the North Atlantic Treaty Organization (NATO) troops in 2012, funding linked to the NATO presence dwindled (author's interview: UNEP, January 2018). Experts recall that it took two years for the system to adapt to the change in funding and to the fact that there was no more *sugar money*:

> The first thing that needed to be done in 2012 was to get rid of high expectations and the bad habits that the military, UN and the big NGOs had put in place. It took almost 2 years for people to realize there are no more huge funds anymore. There was no sugar money, there was no bribery, and there were no more payments for terrible projects[4]. It became difficult to get funding. By 2014 people and institutions got to more realistic levels of funding for projects and realistic timelines for delivery. Funding got less but more focused and timelines got longer but the activities more sustainable (International expert A, Jan. 15, 2018).

Despite the administrative changes in 2012, UNEP stayed engaged with community and state government partners in SFPA. As new funding became available through global agreements in 2014, UNEP defined new projects to support the conservation agenda in SFPA. Compared to the pre-2012 post-conflict funding, the international development funding sources after 2014 required CBNRM projects to more closely focus on specific issues and employ longer project timeframes.

Three global agreements impacted the SFPA CBNRM projects: (1) the Global platform for Disaster Risk Reduction (signed in May 2013), also known as the Shendai Framework for Disaster Risk Reduction (2015–2030), which aims for "substantial reduction of disaster risk and losses in lives" (UN Office for Disaster Risk Reduction,

[4] These *terrible projects* refer to several projects done by the international NGOs in post conflict phase, most of which do not lead to any long-term impacts because the communities resume the status quo after the funding is exhausted (Hara & Nielsen, 2003).

2015, p.12); (2) the Climate Agreement in Paris (signed in April 2016), which aims "to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty" (UN, 2015, p. 3); (3) the Sustainable Development Goals (signed in September 2015), which include a set of 17 goals to "end poverty**,** protect the planet and ensure prosperity for all" (UN General Assembly, 2015, p. 3). These global agreements provided new funding for sustainable and community driven environmental projects, including CBNRM initiatives in SFPA. Shah Foladi's small size (18 communities) made it an ideal site for implementing CBNRM projects that emphasized climate change mitigation, disaster risk reduction, and sustainable development goals (author's interview: UNEP, January 2018).

Taking advantage of the global trends and potential funding available to SFPA were crucial elements for continuing capacity-building programs. The continued presence of UNEP after the departure of military forces increased attention towards SFPA. UNEP used its connections to advocate for SFPA and attract funding for CBNRM projects. Many CBNRM projects were designed and implemented in SFPA after 2012. Continuity of CBNRM projects after 2012 extended the general post-conflict recovery phase (author's interview, UNEP: January 2018). The UNEP international experts I talked to agreed that making the transition from abundant development funding tied to the international military presence to the design of realistic projects with less funding and longer timeframes was good for capacity building.

> In a way, the removing of military money, spending a couple of years re-calibrating everything specially expectations and bad habits was a part of the process. Now we are going to move to 2030, to look at development and mountain areas, and find that Shah Foladi protected area is a great laboratory for all of these. It is big enough with less than 20 communities and can portray the way things work (International expert A, Jan. 18, 2018).

Creating partnerships was one of UNEP's methods of attracting more funding for projects in SFPA. UNEP multiplied its effectiveness in addressing climate change preparedness in SFPA by crafting international partnerships. One of these partnerships, the Afghanistan Resilience Consortium (ARC), was formed by a cluster of international aid groups, including Afghanaid, ActionAid, Concern Worldwide, Save the Children, and UNEP. ARC exists to limit the adverse effects of climate change on vulnerable, resource-dependent communities by increasing their resilience (UNEP, n.d.). The ARC consortium also opened new funding through avenues such as the European Union,

Global Environment Facilities (GEF), and UK's Department for International Development (DFID) (author's interview: UNEP, December 2017). UNEP supported ARC partners to design collaborations with communities. The UNEP international expert told me that "ARC's ecologically based projects were more effective when they worked in the communities in which UNEP had already built trust" (author's interview, UNEP: January 2018).

3.5. Results: CBNRM projects in SFPA

Over 50 CBNRM projects were carried out in SFPA and it's adjacent villages by various stakeholders and funded by different agencies between 2009 and 2018. I categorized these CBNRM projects based on goals, links to other development initiatives, and funding streams to track changes in community participation. I compiled information on all the CBNRM projects in SFPA I could identify, and sought to to establish parallel data for each project. Although the data types, sources, and qualities, varied, I was able to compile sufficent data regarding the level of participation for each category of CBNRM project by combining interviews with published and unpublished reports. The following sections present the results of my analysis using a chronological framework to help reveal the benefits from investments in relationship building, as well as the setbacks resulting from national and international political factors.

3.5.1. Initial CBNRM projects (2009–2011)

Initially, three CBNRM projects were carried out in SFPA in Jawkar, Sya-layak, and Qabre-Zaghak villages (Table 3.6). Funded and designed by UNEP experts in collaboration with village councils, the implementation of these projects featured a micro-enterprise approach and intended to restore local ecosystems by improving local livelihoods (UNEP, 2010c). A UNEP expert designed a series of restoration projects based on rapid assessments of potential options for income-generating and environment-rehabilitating interventions not likely to provoke controversy. For example, the proposal for introducing liquid gas stoves in Sya-layak was initiated by a UNEP expert, as was the program of offering loans to women for buying the stoves, and the prioritization of widows. The members of the village council identified the candidates,

while the Ministry of Women and COAM became involved to carry the project beyond its start-up phase (author's observation: 2009–2010).

Table 3.6. Initial CBNRM projects.

Village	CBNRM project description
Jawkar	Initiation of village-level land-use planning and zoning that laid basis for a project to plant trees in a high elevation river corridor to mitigate Jawkar river sediment deposition and improve water queality under one long project
Sya-layak	Pasture and woodland conservation through the introduction of liquid gas ovens for baking bread
Qabre-Zaghak	Management of water resources through creating small catchments in the watershed

Source: After UNEP, 2010c.

Besides the CBNRM projects, numerous non-CBNRM projects with agendas for food sovereignty and livelihood generation were also carried out in Bamyan. Initiatives in the SFPA region also included the creation of farm-schools and training local tour guides. These projects were designed and funded by UNEP and other international partners, such as the Agha Khan Foundation.

3.5.2. COAM NGO projects (2010–2015)

Since 2010, COAM, in partial partnership with local communities, has received funding for various CBNRM projects in SFPA (Table 3.7) (COAM, 2017). Most of COAM's projects were executed in each of the 18 villages in and adjacent to SFPA. Because the funding originated from development and environmental management agencies with various missions and priorities, COAM finalized project designs through community and sponsor consultations. The projects were then implemented by COAM and community members. Most of COAM NGO projects were carried out through the CDCs (author's correspondence: COAM, February 2017).

Table 3.7. COAM projects in SFPA.

Project title	Number of villages involved
Women, environment, and natural resources	18
Securing sustainability through community-based rangeland conservation, environmental education, and livelihood production	18
Beekeeping, education, empowerment, and sustainability (BEES)	25 cooperatives (+50 villages in Yakawlang, and Bamyan center)
Darwin Initiative: Reducing environmental degradation through sustainable fuel interventions	13 (5 valleys)
LANSA: Understanding the drivers of dietary biodiversity	14 (5 valleys)

Source: COAM website and templates, interviews.

3.5.3. Ecosystem-based disaster risk reduction projects (2013–2016)

Ecosystem-based disaster risk reduction (Eco-DRR) is "sustainable management, conservation, and restoration of ecosystems to provide services that reduce disaster risk by mitigating hazards and by increasing livelihood resilience" (IUCN, n.d.). Supported by the European Commission and UNEP, Eco-DRR projects applied an integrated approach to risk reduction by combining engineering and environmental management practices to reduce the risk of disasters in Bamyan. Severe winter conditions, floods, and droughts were identified as principal natural hazards in Bamyan. Eco-DRR projects were implemented in seven villages in the SFPA region to increase the resilience of livelihoods. These projects aimed to revive traditional knowledge and find innovative solutions to increase resilience. The work included stabilizing streambanks and degraded slopes. This was accomplished through tree-planting activities. Six tree nurseries (around 1100 m^2 each) were established (UNEP, 2016). Community members expressed their opinions in the planning phase, volunteered their lands to host nurseries, and contributed to selling and marketing the saplings. COAM also collaborated in the implementation of Eco-DRR projects (author's interview: COAM, February 2017).

3.5.4. Baba Flagship Initiative (2016–2019)

The Flagship Initiatives for Ecology, Landscape, and Development (FIELD) were initiated with the support of the Global Environment Facility (GEF), NEPA, and UNEP.

FIELD aimed to increase the resilience of vulnerable rural communities and build institutional capacity at both local and national levels in order to address climate change risks and support climate change adaptation in Afghanistan (NEPA, 2016). FIELD targeted *flagship* models of ecologically and community-based resource management in five iconic and distinctive landscapes in Afghanistan. Koh-e-Baba Alpine and high rangelands was one of the selected landscapes. The FIELD initiative in Bamyan is commonly called Baba flagship initiative because it is implemented in seven villages in the Baba mountain range (Koh-e-Baba). The purpose of the Baba flagship initiative was to link issues, opportunities, and priorities at five spatial levels: global, national, provincial, district, and local (NEPA, 2016). FIELD projects received general strategies and guidelines but used the decision-making power of local coordinating committees and community representatives.

3.5.5. Impacts of the CBNRM projects in building the capacity of local communities

I consider changes in community participation in CBNRM projects as an indicator of expanding community capacity for collaboration in PA management (Section 3.2.1). The four sets of CBNRM projects implemented in SFPA (Section 3.5.1—3.5.4) attribute various levels of participation based on Agrawal's typology (see Table 3.3, above, and Agrawal, 2001). Table 3.8 summarizes the level of community participation across different sets of CBNRM projects over time.

The initial CBNRM projects in SFPA were defined by the UNEP expert, based on the ecological and socio-economic conditions of the villages. Expert-produced proposals were then shared with the communities to elicit their cooperation in project implementation (UNEP, 2010c). Among the options for types of engagement from Agrawal's hierarchy, the initial CBNRM projects included only passive and consultative participation.

In the COAM projects, unlike the initial CBNRM projects, local residents expressed their opinions regarding specific matters in the phase of project design, such as the location of beehives in the BEES project (Table 3.6). Community members also contributed in project implementation, including through setting up the beehives and harvest and marketing of honey (author's interview, COAM: February 2017). Most of

COAM projects featured consultative and activity-specific participation. In the planning phases of Eco-DRR projects, community members suggested solutions for disaster risk reduction programs. Some of these solutions were chosen by the experts for the final project design. As project implementation unfolded, community members took over more responsibilities for technical issues, such as siting of the nurseries and arranging for the sapling sales. Local communities had activity-specific, often active, participation in Eco-DRR projects. The many similarities between COAM projects and Eco-DRR projects reflect COAM's role in executing Eco-DRR projects.

The Baba flagship initiative considered communities' solutions as an important element for project design (UNEP, 2016). In the execution of the Baba flagship initiative, the communities influenced project design and implementation (NEPA, 2016), further indications that the initiative entailed active and interactive participation. Table 3.8 shows the level of participation based on Agrawal's categories and the number of villages in each cluster of CBNRM projects. As Table 3.8 shows, COAM executed several projects in all the 18 villages in SFPA (also Table 3.7). However, the Eco-DRR projects and Baba flagship initiative had more funding and more robust plans to ensure continuity of the project impacts beyond their start-up phases.

Table 3.8. Changes in SFPA communities' participation in CBNRM projects, 2009–2018.

CBNRM project cluster	Initial CBNRM Projects (2009–2011)	COAM NGO Projects (2010–2015)	Ecosystem-based disaster risk reduction (Eco- DRR) Projects (2013–2016)	Baba Flagship Initiative (2016–2019)
Agrawal level	Passive/Consultative Participation	Consultative/Activity-Specific Participation	Activity-Specific Participation Active Participation	Active and Interactive Participation
Number of villages	3	Most projects happended in all the 18 villages in SFPA	7	7

Community participation in CBNRM projects during this study changed from the passive participation that characterized the initial CBNRM projects, to active and interactive participation in the Baba flagship initiative (Table 3.8). Increases in the level of community participation in CBNRM projects can result from changes in funding

initiatives. However, the communities had limited capacities to collaborate with the state governmnet and international agencies before establishment of SFPA (UNEP, 2003; UNEP, 2010a). For these reasons, the increasing assumption by villagers of important roles in CBNRM projects indicate a growth in the communities' organizational and administrative capacities to participate in PA management. Individual villagers took over diverse responsibilities for project design, book-keeping, and administration, as well as attending SHAFPAC working groups and annual meetings. The increased capacities of individuals to work with the state government and international agencies contributed to building the community capacity as a whole (Charity Commission, 2000; Craig, 2007).

Supporting the formation of the local NGO was another way of building the capacity of local institutions (Charity Commission, 2000; Craig, 2007). Members of the COAM NGO, who are local people, have been involved in several CBNRM projects. Between 2009 and 2018, the COAM NGO staff accumulated the expertise necessary to design and manage participatory projects, to work with the communities, and to collaborate with international partners (author's interview: COAM, February 2017). Supporting the local NGO contributed to training experienced and engaged community members in Bamyan city and the broader SFPA region. Increased community participation in CBNRM projects, development of capacities of individual villagers, and increased capacity of the COAM NGO indicate the community-capacity increased during the nine years of this research.

3.5.6. Project continuity and community ownership

Most of the CBNRM projects, especially those with monetary benefits or those which developed infrastructure or tools, included plans to train the local community for continuity and maintenance of the project results beyond initial phases. Because most of the villages in the SFPA lack communal land, the infrastructure for the projects had to be built on private property. SFPA guidelines require documenting negotiations in writing, in the presence of everyone, and publishing the results on the village notice board to ensure transparency (UNEP, 2015). Open negotiations with the communities, and written agreements for the maintenance and replacement of infrastructure, helped to ensure project continuity. Community members were trained to take over maintenance roles. For example, in a nursery development project, the owner of a nursery agreed to give the first saplings to the other members of the community at a fixed rate for 3–4

years. Once there was no demand from the community, he would have the right to sell saplings to other communities at the market price. The nursery keeper received training for maintaining the nursery (author's interview: UNEP, December 2017).

3.6. Discussion

3.6.1. Factors contributing to effective participation and community capacity

Community participation in SFPA has been achieved through community collaboration in CBNRM projects and membership in SHAFPAC and its working groups. The SHAFPAC is active, the communities have been involved in CBNRM projects, and COAM consistently receives funding for new projects. In this section I analyze the factors that contributed to capacity building for community-based institutions in SFPA. I also expand on how community participation in SFPA contributed to building trust between the community, international agencies, and state-based agencies. The discussion proceeds through six main points concerning factors that appear to have contributed disproportionately to the participation of the local communities in SFPA.

1. Building trust and capacity is contingent on satisfying essential community needs and on transparent, fair, and collaborative planning and implementation. Trust-building between the community and international aid agencies, as an important requirement for community participation, was achieved through a step-by-step process in the SFPA. UNEP started building initial relationships through trusted local individuals, made efforts to understand the social sensitivities of the communities, respect their cultural norms, and attend to communities' livelihood needs (see Section 3.3.3). Baral's (2012) study on factors that increase the trust of local communities toward administrative agencies in Nepal showed that an understanding and respect of local culture positively influences trust-building. Prioritizing community profit and providing alternative livelihood opportunities increased local interest in and support for SFPA. Equitable distribution of conservation benefits increases community trust in conservation (Baral, 2012; Friedman et al., 2018). UNEP's commitment and continuity in working with the local community also supported trust-building. Similarly, efforts to build personal and institutional

relationships within communities, as well as a continued presence and commitment, have been found to be ways to improve the efficiency and effectiveness of small-scale forestry projects in Sweden (Guillen et al., 2015).

Transparency and honesty in sharing conservation goals, while prioritizing community needs, also increases trust toward conservation experts (Pukka, 2018). For example, in early meetings in Shah Foladi, local community members suggested building paved roads and big resorts to attract tourists. However, the experts pointed out that massive infrastructure would mainly benefit outside investors. The recognition of UNEP's priority of profit-making for the communities helped to increased the communities' trust and interest, including support for eco-tourism projects (author's observation: 2009–2010; author's interview, UNEP: December 2017; author's interview: COAM, February 2017). Creating functional collaborations between the communities and state-institutions for CBNRM projects has contributed to trust-building between these stakeholders (Baral, 2012). Burt & Keiru's (2011) study in South Kivu, Democratic Republic of Congo (DRC), also found that capacity building in the contexts of water management projects contributed to building trust among the partners.

Fair distribution of aid is another important factor affecting trust-building among the communities. Studies indicate that to ensure fair distribution of aid, community members from various socio-economic groups, including traditional elders, younger people from non-elite families, and women from various socio-economic groups, should participate in the committee designated for distribution of aid (Beath et al., 2013a; Beath et al., 2013b; Beath et al., 2015). Beath et al.'s (2013a) study of food distribution in 500 Afghan villages in a four year period showed the creation of democratically elected councils can improve governance, but only if institutional responsibilities are clearly defined. Their study indicated that if elected councils work with traditional councils but without clear divisions of responsibilities, corruption can ensue. Elite capture, meaning the domination of institutions by powerful community sub-groups, is an important threat in such scenarios (Beath et al., 2013a). Therefore, combining democratic and traditional structures for aid distribution with a clear division of responsibilities can decrease corruption and elite capture. Community development councils (CDCs) can contribute to ensuring the participation of various community groups if they are elected through anonymous ballots (Beath et. al., 2017). Inclusion of different community groups is particularly important for international partners when they choose a local governance

structure for collaboration with the communities in CBNRM projects. The participatory nature of CBNRM in SFPA, and the prioritization of women and less powerful groups, has contributed to the equitable distribution of aid among the villages (Young & Goldman, 2015, p.26). The inclusive structure of SHAFPAC has also contributed to fair distribution of profits of the CBNRM projects.

2. Conservation should stipulate the provision of basic livelihoods while raising environmental awareness. Conservation management in SFPA includes initiatives to raise awareness and support livelihoods. Linking conservation programs to livelihood generation increases community interest in conservation (Jaspar & O' Callaghan, 2010; Emadi, 2011; Young & Goldman, 2015). Initial development projects, such as establishing farm schools for food production and training local tour guides, led to livelihood generation, which increased the communities' support for SFPA (UNEP, 2012). SFPA had several CBNRM projects that improved the communities' living condition. For example, projects executed under Eco-DRR in SFPA immediately reduced hazards and losses from the annual floods in the Shah Foladi basin. These projects demonstrated the benefits of conservation in day-to-day life and increased trust in conservation and ecosystem rehabilitation programs (author's interview, UNEP, March 2017).

Participatory processes for CBNRM projects aim to facilitate the sharing of mutual knowledge relevant to management and resource conservation (Heras & Tabara, 2015). In this process social learning is required to create common visions, purposes, and understandings (Schusler et al., 2003). In the context of CBNRM, social learning can be understood as learning that "occurs when people engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action" (Schusler et al., 2003). Learning-by-doing processes for raising awareness in SFPA contributed to building a common knowledge base and understanding of conservation initiatives among the stakeholders (see Section 3.4.4). As the community members experimented with various ecosystem rehabilitation projects, they observed the positive impacts of conservation on their livelihood and environment. These positive impacts encouraged community members to continue conservation initiatives beyond the project time-frames (author's interview, UNEP: December 2017; author's interview, Afghan Academic: February 2018). CBNRM projects provided a special opportunity for the community members to *experiment* with environmental

management, meaning they had a chance to get involved in different projects and observe the impacts of different conservation practices on their livelihood and environment. Conventional initiatives to raise awareness, accompanied by experimentation with learning-by-doing, increased local confidence and interest in conservation (author's interview, UNEP: February 2018).

3. Post-conflict institutional development is a multi-stage process, and affected communities should be given responsibilities in proportion to their capabilities at each stage, as well as incentives to increase these capacities. Capacity building is a time-consuming and multi-stage process (Craig, 2007). The organizational and administrative capacity of SFPA's 18 communities was built partly through CBNRM projects. The level of participation increased as the communities were equipped to take on additional roles and responsibilities. Low levels of participation, including passive and consultative engagement, dominated the first stages (Agrawal, 2001). These types of participation provide opportunities for communities to learn CBNRM processes, to experiment with participation, and to regain connections with their land (authors' interview, UNEP: March 2018). Improvements to the local livelihood and environmental conditions encouraged communities to expand their engagement with the projects, and eventually take over more responsibilities.

4. Building diverse international partnerships around a primary leadership organization reduces uncertainty. Post-conflict settings often attract international partners and investments in development and environmental conservation. SFPA has been the subject of such initiatives. UNEP has remained engaged and dedicated to working on SFPA in collaboration with the local community since 2009. The continuity of UNEP team membership and their dedication to local issues and concerns have provided the communities with a sense of stability and increased their trust of UNEP and SFPA management. Guillen et al.'s (2015) study also indicated personalised approach, stability, and commitment as the key parameters for building trustful relationships. UNEP's partnerships with other international agencies, such as ARC, have controlled the confusion of aid distribution and helped to ensure the projects follow ecologically based planning (Berrebi & Thelen, 2011; author's interview, UNEP: December 2017). The partnerships have also attracted more attention and funding from other sources and fostered regular and consistent documentation of the projects. Success has followed

despite the limited capacity of the state government to organize and distribute aid and manage conservation projects (Barakat & Chard, 2004).

5. The continuation of international technical and funding assistance after demilitarization enabled continued community participation in PA management. As international military forces leave a region, funding for development projects becomes more scarce. Because working with communities requires more time than donors plan for post-conflict development, projects are sometimes abandoned or discontinued (Barakat & Chard, 2004; Montgomery & Rondinelli, 2004). Long-term commitments and ongoing support help sustain the continuity of CBNRM projects and establish community resilience in hard-to-reach communities (Steiner, 2016). UNEP continued their work in SFPA following military departure and facilitated funding opportunities through international development agreements to define new CBNRM projects. These projects extended the timeline of UNEP's hands-on presence in SFPA and reinforced community participation in conservation.

The continuity of the CBNRM projects has also increased communities' acceptance of SFPA by promoting equity. Research on local aid distribution and development mechanisms suggests that the continuity of projects leads to more equitable distribution of benefits (Olken, 2010; Beath et al., 2013a). Receiving periodic funding allows for inter-temporal trade among the villages in a PA which leads to distribution of CBNRM profits among different groups in the communities (Olken, 2010).

6. State government presence prevents formation of a *shadow government*. The state government can serve as an important stabilizing influence in environmental conservation projects in Afghanistan to minimize the threat of formation of a shadow government. Because of the Taliban's past cruelty in Bamyan, they have less chance to form a shadow government in the province. The presence of a central government, in addition to the low level of local support for the Taliban, makes the formation of a shadow government difficult. All the same, the state government has been a main partner in capacity-building programs and all development plans, including PA management. NEPA and MAIL's staff were involved through the process of establishment and management of SFPA. UNEP was effective in encouraging these agencies to use the process to train their personnel to lead the next generation of CBNRM projects.

3.6.2. How international policies are executed on the ground

In this section I analyze the lessons learned from SFPA regarding the execution of international policies on the ground. International aid agencies and donor governments design general policies for conservation and community development (Montgomery & Rondinelli, 2004). Aid is a negotiation between unequal partners, where the recipient (weaker partner) has little power to challenge the donor (Barakat & Chard, 2004; Berrebi & Thelen, 2011). The donor can impose conditions implicitly or explicitly for political or economic ends, or even unconsciously through cultural bias. On the other hand, the weaker partner often continues to pursue its own agenda within the donor's agenda and with the donor's resources (Barakat & Chard, 2004, p.18).

The experience of international partners in SFPA demonstrates that adjusting the top-down policies based on local needs assessment is an important component for working with communities (UNEP, 2009b; Anderson et al., 2012). Some of the experts interviewed in this research who worked for international funding agencies emphasized the necessity of modifying top-down policies and updating such policies and plans to accommodate the local communities' needs and viewpoints (International expert B, Dec. 5, 2017; International expert C, Oct. 8, 2017; USAID's head of operations for Afghanistan's central highlands, Sep.6, 2009).

> After 6 years of working with different communities in Afghanistan's central highlands, I realized a big mistake we made for many years. We always came in with planned policies and funding for specific projects without knowing the real needs of the communities. These people are very smart. When they realize funding is available for a specific project, they create needs and write proposals to receive the funding. Once the project ends, we don't see our intended results and most projects are short-term, so follow ups don't happen. The community knows best. We should have asked them [about their needs] first (USAID's head of operations for Afghanistan's central highlands, Sep.6, 2009).

In Afghanistan's environment sector, policies for conservation deriving from international priorities were designed by the IUCN, while UNEP supported the Afghan government for institutional development and capacity building in the environment sector (UNEP, 2009b). UNEP realized that executing policies on the ground required expertise specifically tailored to working with local communities. UNEP responded by adopting a community-based action methodology in the establishment of the SFPA (author's correspondence: UNEP, December 2017). The goal was to gain knowledge about the

local context and test their methodology, thereby equipping the organization to advise and assist state agencies working with the communities.

> UNEP, as the leading global environmental authority, sets the global environmental agenda and is not a major field worker. UNEP's work plan for Afghanistan was primarily based on capacity building for the [state] government. Supporting establishment of NEPA and building the capacity of NEPA and MAIL, as well as supporting preparation of Afghanistan's environmental law were among the UNEP's initial program goals in Afghanistan. However, UNEP soon realized in order to advise the government on community-based process, it was required to expand its experience and work with the community (International expert B, Dec. 5, 2017).

UNEP's community-based action methodology is similar to participatory rural appraisal (PRA) (Chambers, 1994; Binns, 1997). PRA aims to incorporate community knowledge and opinions in the planning and management of development projects, and to build the capacity of local communities through project design and implementation (Chambers, 1994) (also Chapter 2, Methods Section: 2.3.1). UNEP's community-based action methodology also incorporated community knowledge and opinions in the planning and management of CBNRM projects in SFPA.

Mitigating power and knowledge differentials between the international partners and the communities is challenging (Stiefel, 1999; Berrebi & Thelen, 2011). UNEP's consistent and continuous work in SFPA helped reduce knowledge gaps and build trust among the international agencies, the Afghan government, and communities (Baral, 2012; Guillen et al., 2015). Localizing the policies and designing plans based on the communities' needs and conditions contributed to effective program implementation and to building capacity for the state and community institutions in SFPA. Although the community action methodology improved execution of the international plans by localizing them, it still followed a top-down management approach. The main agendas for conservation were still designed by the international partners, while different donor agendas influenced project types and priorities. Nevertheless, localizing the international policies improved equity and effectiveness in aid distribution by giving voice to local communities.

3.6.3. Addressing challenges for working with the local communities in Afghanistan.

Because UNEP was involved in establishing SFPA as a model PA, the organization needed to address general challenges that international partners often face when working in Afghanistan. These challenges include limited presence of international partners, donor's rapid and reactive decision-making, changes in political priorities, women's complicated role in Afghan society, reliance of Afghans returning from abroad, post-conflict trauma, and threat of shadow government formation (see Table 3.9). The results of UNEP efforts to meet these challenges deserve attention because they can be used by other international partners working in post-conflict settings.

As a means to address the limited presence of the international aid agencies, UNEP established support from knowledgeable and trusted individuals in the communities. As a means to address the lack of local familiarity with international aid, UNEP took a step-by-step approach and emphasized trust-building. By taking time to build relationships with the communities and improve the local livelihoods through CBNRM projects, UNEP avoided making rapid and reactive decisions to pursue their conservation agenda. UNEP hired Afghans returning from abroad at the beginning of its work in SFPA. In subsequent stages, these individuals helped build local capacity by hiring Bamyan locals to continue working in Shah Foladi.

Trust-building and the continuous presence of individual UNEP staff advocates for CBNRM projects contributed stability and certainty. Providing opportunities for the communities to experiment with different land management scenarios through CBNRM projects showed the impacts of ecosystem rehabilitation on local livelihoods and increased the communities' interest in long-term planning for resource management (author's interview: COAM NGO, October 2017; author's interview, UNEP: March 2018). These steps helped UNEP address the impacts of trauma on the local communities and increase their interest in long-term planning.

Influential women played an important role in the establishment of SFPA and encouraged women's participation in conservation. Besides, many donors prioritized women's participation as a requirement for funding. Participation of women in CBNRM projects further built their capacity to collaborate in SFPA management. Similarly, Beath et al.'s (2013b) study in 500 Afghan villages showed development projects that

mandated female participation improved women's capacity and increased their mobility and income generation. Burt & Keiru's (2011) study in DRC also indicated empowerment of women as an important factor for effective, efficient, and equitable management of water resources.

Table 3.9. International development challenges and UNEP responses.

Challenge	UNEP response in SFPA programming
Limited presence of international partners in the past	• Establishing support from knowledgeable individuals trusted by the community • Step-by-step trust-building
Donors' rapid and reactive decision-making	• Delayed plans for conservation management until prioritizing trust was established and community livelihoods were secured through CBNRM projects
Changes in political priorities and commitments	• Extended the phase of post-conflict work in SFPA after the 2012 NATO departure by defining CBNRM projects through new funding streams available from international agreements
Women's complicated role in Afghan society	• Encouraged women's participation in CBNRM by defining them as the main beneficiaries and partners • Supported active women in the community
Limited local capacity / Reliance on Afghans returning from abroad	• Relied on expat Afghans at the beginning of work in SFPA • Hired talented local people and trained these individuals for working in the communities • Hired locals since the planning and inception of SFPA and built their capacities to take over more responsibilities as the PA was more established.
Post-conflict trauma on individual and community levels	• Step-by-step trust-building • Continued CBNRM projects for at least a decade • Provided opportunities for the community members to experiment with the land through CBNRM projects, to see the impacts of ecosystem rehabilitation on their livelihoods, and gain interest in long-term planning
Threat of shadow government formation	• Ensured state-government presence at all stages of SFPA establishment and work with the local communities • Formed a multi-stakeholder committee for conservation that included the local communities while involving the state government

UNEP extended its active presence in SFPA beyond the 2012 timeline and NATO departure. Extended presence and support led to continuity of CBNRM projects and opened new doors for additional funding to further improve the local livelihoods. Longer presence also provided the consistency needed for building the capacity of local

institutions. To address the threat of shadow government formation, MAIL and DOE experts were involved in all stages of work with the local communities. Formation of SHAFPAC gave the local communities the opportunity to participate in PA management while ensuring state government's overall presence in SFPA decision-making.

3.7. Conclusion

Post-conflict settings often present intense periods of institutional readjustment, including re-alignments of local, national, and international policies and practices affecting the environment (Bruch at al., 2011). The Shah Foladi case offers insights into a post-conflict institution in which UNEP played a significant role in PA design and management. My assessment of capacity-building initiatives in SFPA offers lessons for PA management in other post-conflict settings. In particular, my results inform the processes of community participation and capacity building in PA management. In UNEP's overall planning for work with the communities, SFPA provides a case study for applying participatory methodology. The Afghan government experts and international partners used the lessons learned from Shah Foladi to develop CBNRM projects in other parts of Afghanistan, including Badakhshan, Balkh, Takhar, Kabul, Daikundi, and Bamyan provinces (author's interview, UNEP: December 2016).

This research showed CBNRM projects between 2009 and 2018 contributed in building the organizational and administrative capacity of the local communities to collaborate in SFPA management. A combination of post-conflict and participatory programs contributed to the establishment of SFPA and capacity building of community-based institutions. UNEP's approach in understanding and attending to local needs prior to pursuing a conservation agenda contributed to building trustworthy relationships with the local communities.

Capacity-building programs in SFPA focused on the design and execution of CBNRM projects. These plans were complemented by access to funding that benefitted of communities and the state government. Continuity of CBNRM projects through establishing international partnerships and support of the local NGO improved capacity-building programs for the local communities. Capacity building was achieved step-by-

step. As the communities' capacity developed throughout the years, they gained more roles and responsibilities in CBNRM projects. Creating partnerships among international organizations helped direct aid and control the uncertainty of aid distribution in post-conflict settings. Creating partnerships also provided more funding and increased the chances of continuity of the CBNRM projects. UNEP's commitment to continue their work in SFPA after the departure of NATO forces provided opportunities to continue CBNRM projects after the initial surge of post-conflict funding disappeared. This commitment helped UNEP extend the often limited timeframes of post-conflict plans and undertake the time-consuming process of capacity building. In addition, continuity of CBNRM projects further contributed to trust-building and gave the communities an opportunity to experiment with the land and experience the benefits of ecosystem rehabilitation for their living conditions and livelihoods. Continuity of CBNRM projects also improved benefit sharing as more villages received funding for CBNRM projects. Experimenting with the environment through CBNRM projects and observing the results of conservation and ecosystem rehabilitation projects on their livelihoods, increased community interest and support for PA management.

The formation of a multi-stakeholder committee, in this case SHAFPAC, was an effective tool for including the local communities in PA decision-making. Formation of SHAFPAC enhanced participation of local communities in conservation without compromising the role of state government partners. This function was especially important in post-conflict Afghanistan because the presence of state government is necessary to minimize the threat of shadow government formation. The necessity of the state's participation in all post-conflict plans affects the available choices for PA governance in Afghanistan. Community conserved areas seem to be a less desirable option for PA governance in post-conflict settings because the community has the ultimate governance power in its structure. In this case, community inclusion through a multi-stakeholder committee (that is, SHAFPAC), seems to be a good alternative for including the community in conservation decision-making without undermining the power of the state government.

This research emphasizes the importance of communities' connections to the land for encouraging participation in conservation. The significance of Shah Foladi mountains as refuge for many communities during the Taliban occupation made it a local symbol of resistance and persistence. Improving living conditions and livelihood-

generation were important factors for community collaboration, but connections to the land further encouraged participation in conservation.

The UNEP experts assessed the local context and incorporated local communities' values and preferences in the finali PA management plan. Localizing international development plans improves community acceptance and contributes to successful implementation. Plans that are co-designed with local people are more successful in meeting community needs (Stiefel, 1999; Anderson et al., 2012). Although UNEP localized the plans in SFPA, it is important to remember that aid is an unequal negotiation between the countries giving and receiving funds (Barakat, 2004). Despite inclusive and participatory planning in SFPA, the PA design and CBNRM projects were under the aegis of international donors.

3.8. References

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Chapter 4. Perceptions of Equity in the Management of Bhitarkanika National Park and Wildlife Sanctuary and Sabzkouh Protected Area

Abstract

Equity is an emerging criterion for assessing protected area (PA) management. Zafra-Calvo et al.'s (2017) framework provides a tool for assessing perceptions of equity and providing recommendations to improve PA conservation. I applied this tool in Bhitarkanika National Park and Wildlife Sanctuary, India, and in Sabzkouh PA, Iran. In Bhitarkanika, conservation enforcement has been successful, since 1975, in terms of the recovery of crocodile populations. Conservation success in the Sabzkouh PA has been uneven: local communities pursue unauthorized resource extraction activities but have also formed a local group to enforce customary and national conservation laws in a section of the PA (Chapter 2). Fieldwork to document and compare stakeholder perceptions involved interviews and participatory rural appraisal workshops with local communities, state government officials, researchers, and NGO partners from 2011 to 2016, complemented by follow-up interviews in 2017 and 2018. The data analyses identified four factors that impinge on equity in state governed PAs: policies at the time of PA establishment, histories of prioritizing biodiversity conservation over local community rights, resistance on the part of state government officials to share decision-making power with local communities, and inequalities within local communities. Despite differences in the two PAs, a majority of the equity criteria were marked as inequitable in both PAs. Perceptions of inequity in Sabzkouh show that a community's *de facto* power in resource extraction and management does not in itself create a sense of equity. Instead, it seems, at least in Sabzkouh, that senses of equity and justice arise mainly from conscious and deliberate collaboration in land and resource management Application of the equity framework further reveals that prospects for equitable conservation can improve through (1) aligning PA management institutions with local communities' cultural norms, traditional knowledge, and customary laws; (2) promoting shared governance, including use of multi-stakeholder management committees, to represent the full range of local community constituents; (3) ensuring just and transparent distribution of conservation benefits among local communities, especially the most vulnerable groups; and (4) defining and maintaining a conflict resolution body that

addresses conflicts related to the PA. This research supports the findings of previous studies that indicate that distributive equity is not in itself sufficient to improve community perceptions of equity, as in both cases the communities found PA management to be inequitable.

4.1. Social costs of state-governed conservation

The establishment of protected areas (PAs) during most of the 20th century was based on the American idea of a National Park as a pristine wilderness (Chape et al., 2008; Hutton et al., 2005; Andrade & Rhodes, 2012). Early state-based PAs pursued conservation by separating humans from other species and separating people from areas traditionally and habitually used and occupied, as well as separating people from PA management (Hutton et al., 2005, p.342). Many PAs evicted Indigenous peoples and local communities from land they had relied upon for livelihood and cultural perpetuation (Borrini-Feyerabend et al., 2004; Wolsink, 2018). Community exclusion resulted in hostility toward state-based conservation initiatives (Fu et al., 2004; Anthony, 2007; De Pourcq et al., 2015) and jeopardized conservation policies by creating conflicts between state PA managers and local communities (Lane, 2001). By the 1970s, *fortress conservation*, also known as the *fines and fences* paradigm, was being critiqued for creating benefits for the wealthy at the expense of the poor (Brockington, 2002; Andrade & Rhodes, 2012; Wolsink, 2018). Since the 1980s, conservation initiatives have increasingly addressed social dimensions, including the principle that conservation should not impose costs on local people and should, wherever possible, improve the livelihoods of local communities (Schreckenberg et al., 2016).

By the 1990s, fortress conservation no longer dominated PA policy (Hutton et al., 2005). The paradigm has been progressively replaced through the spread of decentralized, community-based approaches to conservation (Western et al., 1994; Adams & Hulme, 2001; Wilshusen et al., 2002; Wolsink, 2018). By the 2000's, a market-based conservation approach promoted the compensation of local communities harmed by conservation and the provision of tools to enable alternative livelihoods (Franks, 2016). Recent emphasis on community participation in PA management has shifted attention toward equity in conservation (Schreckenberg et al., 2016; International Union

for Conservation of Nature [IUCN] & World Commission on Protected Areas [WPCA], 2016a; Franks et.al, 2018). Equity, sometimes used synonymously with fairness or justice, is a “multi-dimensional concept of ethical concerns and social justice based on the distribution of costs and benefits, process and participation, and recognition, underpinned by the context under consideration” (Friedman et al., 2018, p.3). Equity is an important societal aspiration in various spheres of public policy, including housing and public health as well as environmental conservation (Friedman et al., 2018). The closely related concept of *environmental justice* has come to emphasize avoidance of disproportional impacts from industrial land use on economically and politically disadvantaged populations (Bullard et al., 2005; Plaganyi et al., 2013).

4.2. Arguments for considering equity in conservation

Emerging scientific discoveries, social contexts, and practical experiences have all led to changes in conservation policy and practice (Soule, 1985; Franks, 2016). While exclusionary governance and the injustices resulting from conservation practices have been topics of discussion for nearly three decades (Brechin et al., 2003; Schlosberg, 2007), conservation research has only recently engaged substantively and systematically with social equity issues, concerns, and reforms. An analysis of 138 peer-reviewed studies found that the majority of published studies on equity in conservation post-date 2009 (Friedman et al., 2018). There are two main arguments for inclusion of equity in the conservation paradigm: moral and instrumental.

4.2.1. Moral arguments

Moral arguments flow from requirements for PA policies to align with international commitments to safeguarding and promoting human rights (Schreckenberg et al., 2016). Since the late 1990s, the prevalent focus of the international development narrative has shifted from income provision and poverty eradication to contributing to human well-being, as defined by three dimensions: material, relational, and subjective (Mannigel, 2008). The United Nations (UN) Sustainable Development Goals (SDGs) in 2015 emphasize the importance of equity in rights, opportunities, and outcomes (UN General Assembly, 2015, p.17). Following this shift in international priorities, new conservation

paradigms were developed that focus on human well-being and equity. The Millennium Ecosystem Assessment (Millennium Ecosystem Assessment, 2003), which used a well-being framework to examine ecosystem services benefits to local communities was an early example of this shift (Franks et al., 2018).

PA conservation policies are partially affected by these international development narratives (Mannigel, 2008). As one part of the increasing focus on equity, in the early 2000s the International Union for Conservation of Nature (IUCN) introduced a taxonomy of PA governance types with equity as a central criterion (Borrini-Feyerabend et al., 2013; Franks et. al, 2018). Prior to 2001, IUCN's policies were mainly concerned with PA management through state governance. While management relates to "the means and actions" to achieve given objectives, governance of PAs focuses on "who holds power, authority, and responsibility" (Borrini-Feyerabend et al., 2013, p.11). The IUCN defines governance as the interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are made, and how citizens and other stakeholders have their say (IUCN, n.d., n.p.). As of 2001, IUCN guidelines include a full range of governance types for PAs, including state, private, shared, and community governed (Borrini-Feyerabend et al., 2013). Because governance involves decision-making for allocating resources, it is intrinsically linked to equity. Decision-making and trade-offs among PA management priorities, such as biodiversity conservation, economic return, and community participation, are essential aspects of governance. Therefore, assessing equity involves assessing governance (Franks et al., 2018).

In 2010, the CBD adopted 20 Biodiversity Targets for the 2011–2020 decade—the *Aichi targets* (CBD, 2010). CBD strategic goal D requires governance that enhances benefits to all from biodiversity and ecosystem services. Strategic goal E requires parties to enhance implementation through participatory planning, knowledge management, and capacity building (CBD, 2010, p.1). CBD's Aichi target 11 is to effectively and equitably conserve at least 17 per cent of terrestrial ecosystems and inland waters by 2020 (CBD, 2010, p.1). In 2014, the World Park Congress (WPC) pressed for governance of PAs that adopt rights-based approaches and address equitable management in pursuit of Aichi Target 11 (IUCN-WPC, 2014). IUCN's criteria for good governance, including legitimacy and voice, direction, performance, accountability, and fairness are accepted components for equity assessment (Borrini-Feyerabend, 2013; Franks et al., 2018). In

support of equitable PA management, IUCN introduced the Green List of PAs, comprised of PAs with "effective and equitable governance and management" (IUCN & WPCA, 2016b, p.5). Table 4.1 lists international policies that include equity in PA management mandates.

Table 4.1. International policies that promote equity in conservation.

Policy	Equity-promoting elements
IUCN, 2001 (Borrini-Feyerabend et al., 2013)	Introduction of community in governance typology
Convention on Biological Diversity, 2004 (Secretariate of CBD, 2004)	Goal 2.1 promotes "equity and benefit sharing." Goal 2.2 calls for enhancing "involvement of Indigenous and local communities and relevant stakeholders"
Convention on Biological Diversity, 2010 (CBD, 2010, p.1)	Aichi target 11: "effectively and equitably" conserve at least 17 per cent of terrestrial ecosystems and inland waters by 2020. (CBD, 2010) Aichi target 18: "Traditional knowledge … and customary use of biological resources are respected … fully integrated and reflected in the implementation of the Convention with the full and effective participation of Indigenous and local communities, at all relevant levels"
World Parks Congress, 2014 (IUCN-WPC, 2014)	Adopts rights-based approaches and "equitable management" dimensions of Aichi Target 11
Sustainable Development Goals, 2015 (UN, 2015, p.17)	Parties should "address poverty in all its forms" Parties should include equity in "rights, opportunities and outcomes" Parties should ensure gender equality
International Union for Conservation of Nature, 2016 (IUCN & WPCA, 2016b, p.5)	IUCN Green List Programme: "protected and conserved areas that deliver successful conservation outcomes through effective and equitable governance and management"

4.2.2. Instrumental arguments

Overlooking the rights and needs of local communities has been a root cause of significant conflicts in and over PAs (Lele et al., 2010). Instrumental arguments for prioritizing equity in PA management are based on evidence that equity is necessary for achieving and maintaining successful conservation and that injustice to those reliant on PAs poses threats to conservation (Franks, 2016; Schreckenberg et al., 2016).

Prior to the 1990s, narratives regarding instrumentalism focused on the importance of poverty eradication for improving conservation (Brundtland Report, 1987).

This instrumental narrative was grounded in assumptions that poor people damage environments to meet their daily needs (Schreckenberg et al., 2016). Policy innovations to improve conservation sought to address poverty by providing alternative livelihoods for local communities dependent on resource extraction. Two factors changed this instrumental narrative. First, evidence that wealthier classes put more pressure on natural resources showed that poverty is seldom the main source of environmental degradation (Cavendish, 2000). Second, documentation of successful cases of community-conserved PAs argued in favor of engagement of local rights- and stake-holders in conservation (Tauli Corpuz, 2016). Revised instrumentalism narratives emphasize boosting equity rather than just eradicating poverty, generally arguing that community participation in PA management and more equitable sharing of PA benefits is necessary for success in both conservation and economic development (Hatcher et al., 2000; Ohl et al., 2008; Oldekop et al., 2015; Franks et al., 2018). For example, research by Twinamatsiko et al. (2014) in Bwindi Impenetrable National Park in Uganda showed that feelings of injustice over PA conservation were as important as poverty in driving unauthorized resource use.

4.3. Improving PA management through equity assessment

Conservation success can be defined as “achievement of stated goals” based on “values and beliefs” (Klein et al., 2015, p. 299). The success of conservation interventions can be evaluated on the basis of biodiversity, equity, economic return, and other factors (Halpern et al., 2013). PA management requires measuring trade-offs between the resources and values. (Ellis et al., 2019). Halpern et al. (2013) found that social equity can compromise efficiencies in achieving conservation outcomes. Klein et al. (2015), found increased biodiversity is often achieved without increased equity. Nevertheless, continued inattention to the issue of equity in conservation decreases the chances of long-term conservation success (Halpern et al., 2013; Klein et al., 2015). Equity is embedded in many international policies as a conservation goal and as a guide toward successful conservation (Law et al., 2017). Based on moral arguments, equity is a human right that must be included in conservation goals; based on instrumental arguments, the pursuit of equity provides a means for reaching conservation goals. Regardless, the inclusion of equity principles in PA management seems to improve

prospects for conservation success (Twinamatsiko et al., 2014; Klein et al., 2015; Shreckenberg et al., 2016).

Historically, the first PAs ratified by state governments were often among the most scenic, recreationally important, or biologically diverse regions in each country (Borrini-Feyerabend et al., 2013). Because most of these PAs were established and managed in accordance with the fortress conservation paradigm, PA management reforms directed toward equity and other community-focused conservation goals hold the promise for significant impacts on global biodiversity conservation (Borrini-Feyerabend et al., 2013). The first step towards improving equity in established PAs is to understand prevailing conditions in affected communities and identify gaps in equity principles (Klein et al., 2015). Understanding impediments to reaching equity helps identify leverage points for investment and intervention (Hill et al., 2015).

In this chapter I examine two state-governed PAs, Bhitarkanika National Park and Wildlife Sanctuary in India and Sabzkouh PA in Iran. I use an equity framework to understand how locals perceive PA management and to investigate the options for improving their conservation through the application of equity principles. I did not consider the Shah Foladi PA (Chapter 3) here because it was established in 2010, well after the demise of the fortress conservation paradigm, and because safety concerns precluded additional travel in Afghanistan to assess equity issues via personal interviews.

4.3.1. Case study context and research questions

Sabzkouh PA in Iran and Bhitarkanika National Park and Wildlife Sanctuary in India were initially established under a top-down model of state control. They are both located in economically disadvantaged regions in fast-developing countries with long histories of human impacts on natural resources. As described in Chapter 2, Sabzkouh is a level VI PA in the Iranian province of Chahar Mahal and Bakhtiari, one of Iran's most rural and traditional regions. The management goal in Sabzkouh is to conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems (Dudley, 2008, p.22). According to the IUCN, in category VI PAs, protection of natural ecosystems and promotion of sustainable use must be integrated and mutually beneficial (Dudley, 2008, p.23). Conservation enforcement in Sabzkouh PA

struggles due to the shortage of both financial and human resources, and cultural and political barriers (Mojtahedi, 2009). Top-down PA management has not satisfied the needs of the local community, resulting in unauthorized resource extractions and land alterations, and occasional clashes between the state government and locals. However, some community members have organized a local conservation plan, called spring *qoroq*, to enforce traditional and state conservation laws in a small section of Sabzkouh PA. I use the term *community* in this case to refer to the herders with herding permits inside the spring *qoroq* area who settle in 12 villages in Sabzkouh in the summer.

Bhitarkanika National Park and Wildlife Sanctuary in India's Odisha (also "Orissa") province, is the home of all three Indian crocodiles, including the iconic saltwater crocodile (*Crocodylus prosus*), known as the earth's largest crocodilian (Nayak et al., 2018). The Bhitarkanika estuary, the second largest mangrove forest of mainland India, is situated at the lower reaches of the Brahmani and Baitarani river flood plains on India's east coast. The entire Bhitarkanika estuarine system has significant conservation value and has been protected as the Bhitarkanika Wildlife Sanctuary and the Gahirmatha Marine Sanctuary. The Gahirmatha Marine Sanctuary, declared in 1997, is the coastal belt of the area, managed for conservation of Olive Ridleysea turtle (*Lepidochelys olivacea*). The 145 km^2 core area of the Bhitarkanika Wildlife Sanctuary was declared a National Park in 1998. The Bhitarkanika National Park, Wildlife Sanctuary, together with parts of the Gahirmatha Marine Sanctuary, are collectively referred to as Bhitarkanika Conservation Area (BCA) (Hussain & Badoula, 2010) (Figure 4.1). While there are no villages in Bhitarkanika National Park, the Sanctuary encompasses 336 villages. I use the term *communities* in this case to refer to the villages in the sanctuary area. The National Park and Sanctuary are IUCN category II and IV PAs, respectively (Badola et al., 2012). The state government has made good progress toward the conservation goals of increasing crocodile populations since 1975 (Government of Odisha, n.d.). Communities adjacent to the National Park, however, have very few job prospects aside from traditional farming and the keeping of domestic livestock (Husain & Badola, 2010). Incidents of unauthorized resource extraction, some of which are associated with injuries from crocodile attacks, provide further evidence of the limited economic choices local people have. There are few clear benefits to locals from the PAs.

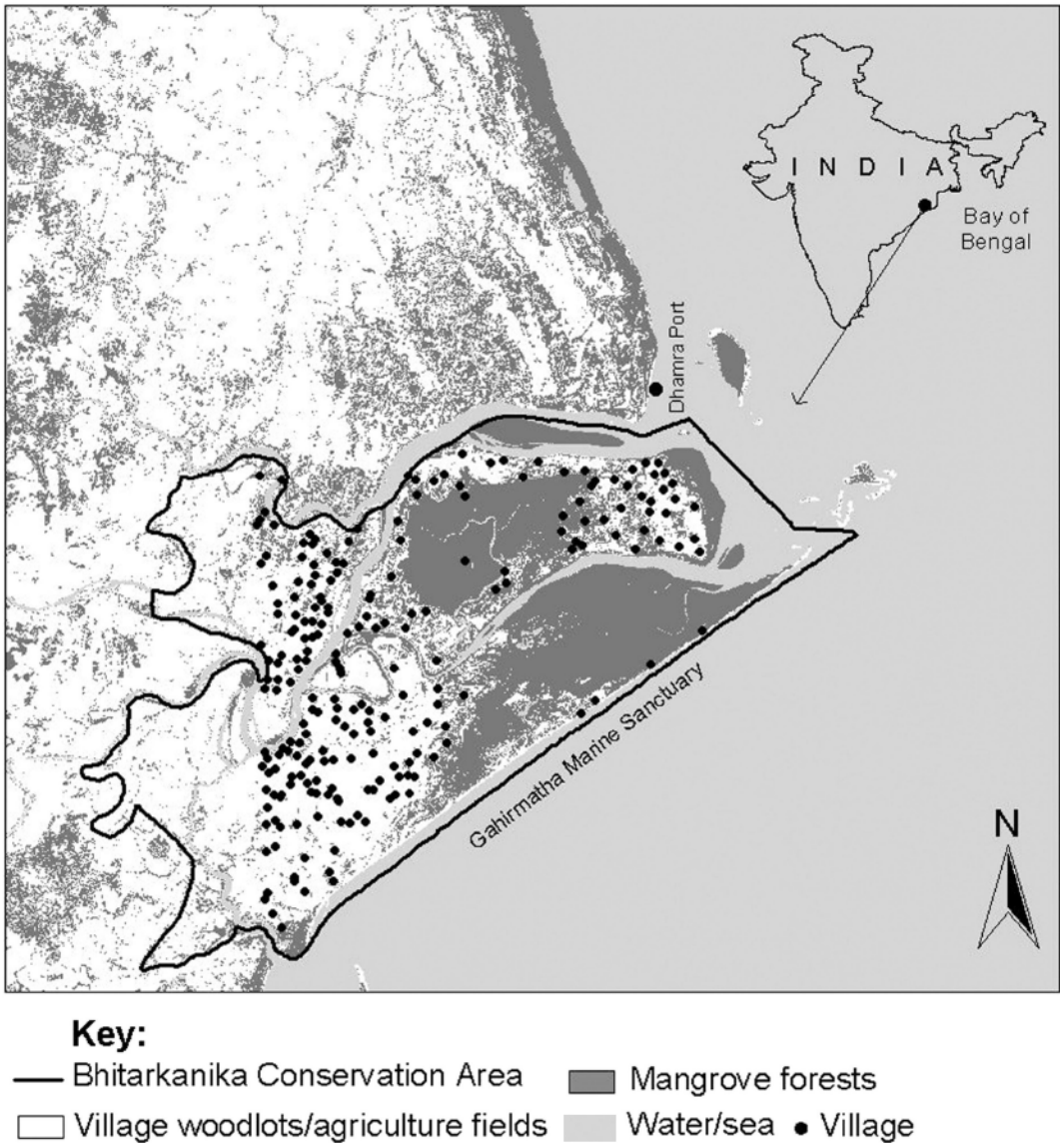

Figure 4.1. Bhitarkanika Conservation Area (Bhitarkanika National Park, Gahirmatha Marine Sanctuary, and agricultural land) and associated mangroves (Badola et al., 2012). Used with permission.

Based on state government reports, conservation plans in Bhitarkanika have led to satisfactory results in reaching conservation goals, i.e. increasing crocodile populations (Government of Odisha, n.d.) while negatively affecting the well-being of local communities (Badola et al., 2012). Government reports tout success in reaching conservation goals, i.e. increasing crocodile populations (Government of Odisha, n.d.), without giving attention to the negative effects of the PAs on local communities (Badola et al., 2012). In Sabzkouh, however, the state government is unable to enforce

conservation and reach conservation goals while the local community appears to be maintaining its livelihood, often via unauthorized resource extraction and land alteration (Mojtahedi, 2009). The juxtaposition of the two cases allows comparison of local community perceptions of equity in relation to weak and strong conservation enforcement and other dimensions of state-based PA management (Table 4.2).

Table 4.2. Conservation results and local community impacts for Bhitarkanika and Sabzkouh PAs.

PA	Conservation results	Impacts of the PA on the local communities
Sabzkouh	Unsuccessful state management results	Community has restrictions but still continues their unauthorized resource management practices. Community has initiated a conservation plan.
Bhitarkanika	Successful biodiversity conservation results	Limited development and livelihood options make life difficult for the communities. Crocodile attacks have increased as a result of the PA. Many community members are now migrant workers. Minimal community consultation.

In this chapter I address three primary research questions: (1) What conditions impede or foster the establishment or maintenance of equity in state governed PAs? (2) How do differences in conservation enforcement impact local community livelihoods and affect community perceptions of equity? (3) How can the use of equity principles improve conservation and community relations in state-governed PAs? The next section presents a framework suitable for understanding community perceptions of equity, the ways PA management and governance may impinge on positive perceptions, and the methods I used to gather and analyze data to assess equity in the two PAs.

4.4. Methods

4.4.1. A framework for assessing equity

Since 2010, several frameworks have been suggested for examining and assessing equity in PAs (McDermott et al., 2013; Klein et al., 2015; Schreckenberg et al., 2016; Franks et al., 2018). Schreckenberg et al. (2016) examined aspects of equity based on

the IUCN criteria for good governance, expert workshops, and consultation processes. The authors then tested the resulting framework at three wildlife parks in East Africa to refine tools for measuring equity in PA management policy and practice. While several equity frameworks focus on only assessing the effectiveness of PA management (means and actions to achieve management objectives), the Schreckenberg et al. framework also assesses the equity of PA governance (including who holds authority, power and responsibility) (Schreckenberg et al., 2016).

The Schreckenberg et al. framework, and the frameworks developed by others, identify *recognition*, *procedure*, and *distribution* as three key dimensions of equity (see also Mc Dermott et al., 2013; Schreckenberg et al., 2016; Dawson et al., 2017; Zafra-Calvo et al., 2017; Franks, et al., 2018). Recognition in this context refers to "acknowledging and respecting legitimacy of rights, values, interests, priorities, and human dignity" (Schrekenberg et al., 2016, p. 14). Recognition is particularly important for historically marginalized groups, such as Indigenous peoples and women. Procedural equity refers to "inclusive and effective participation of all relevant actors" (Schreckenberg et al., 2016, p.16). Distributive equity refers to the allocation of costs and benefits among human stakeholders, including communities, park managers, local and national state governments, and global stakeholders, such as the IUCN and Nation agencies. Distributive equity also includes "trade-offs between people in different places and generations" (Schreckenberg et al., 2016, p.17); for example, how decisions made by present generations may affect opportunities for future generations. Within these three dimensions, the Schreckenberg et al. framework identifies 16 priority equity issues framed as principles or desired outcomes for PA conservation. Supplemental Table 1 presents the Schreckenberg et al. (2016) framework, including the equity dimensions and principles.

The Schrekenberg et al. (2016) framework also introduces four *enabling conditions*, defined as "factors beyond the immediate control of the [PA] managers and other local stakeholders of a particular PA" that affect equity in conservation (Shreckenberg et al., 2016, p.17). These four enabling conditions are listed here and then discussed below: (1) "legal, political, and social recognition of all PA governance types" identified by the IUCN (Shreckenberg et al., 2016, p.15); (2) ensuring that "relevant actors have the capacity and opportunity to be recognized and to participate in PA management"; 3) alignment of statutory and customary laws and norms

(Shreckenberg et al., 2016, p.17); 4) adopting an adaptive learning approach for governance and management of PAs that responds to evolving local perceptions of equity. This adaptive learning approach is conducive to governance that is dynamic enough to address new challenges as they arise (Shreckenberg et al., 2016, p.15).

These enabling conditions provide bases and directions for assessing and reforming PA governance. The alignment of national and international laws facilitates resolving conflicts related to PAs, especially the ones arising from the lack of recognition of customary rights to resources (Shreckenberg et al., 2016, p.17). Reaching equity is an ongoing process and goal, as a community's perceptions of equity might change over time. For example, as people's rights are more widely recognized, protected, and fulfilled, and as people become wealthier, their perception of equity may change from having a voice in management to having access to a bigger share of benefits or advantages (Shreckenberg et al., 2016, p.22). Inclusion of equity as a PA management goal creates opportunities to pursue that goal, along with others, through adaptive management informed by stakeholder dialogue (Dawson et al., 2017).

Zafra-Calvo et al. (2017) used the Schreckenberg et al. (2016) framework to build a tool to help policymakers and practitioners assess the equitable management of PAs (Table 4.3). Zafra-Calvo et al. (2017) employ ten social equity criteria for the three dimensions of equity (i.e., recognition, procedure, and distribution), based on their prior use in PA planning and operation. The three criteria for the recognition dimension are inclusion of the community's cultural identity, traditional knowledge, and statutory and customary rights in PA management. The five criteria for the procedural equity dimension include local community satisfaction with transparent decision-making, access to justice, accountability, and free, prior and informed consent (FPIC). The two criteria for distributive equity are means for mitigating burdens of conservation to the local community and sharing conservation benefits with them. Zafra-Calvo et al. (2017) translate these criteria into ten perception-based indicators and propose a set of questions to assess each criterion (Table 4.4 sets out the criteria and questions for the recognition dimension) (Zafra-Calvo et al., 2017). Their multiple-choice questionnaire assesses the effects of PA establishment or management on each indicator. The three possible options for each indicator are: *inequitable* (if the PA has had a negative impact on the indicator), *no impact* (if the PA hasn't affected perceived equity), or *equitable* (if the PA has reduced perceived inequity for local stakeholders) (Zafra-Calvo et al., 2017).

These three-response options help identify context-specific dynamics and enable comparison of equity criteria at varied spatial and institutional scales (Zafra-Calvo et al., 2017). I use the Zafra-Calvo et al.'s (2017) questionnaire to assess the data from my two case studies to examine the condition of equity in my PAs.

Table 4.3. Indicators for assessing equity in PAs (After Zafra-Calvo et al, 2017, p.137. Used with permission).

Dimension	Equity criteria	Indicator
Recognition	Cultural identity	Cultural identities of local stakeholder groups incorporated in PA management
	Knowledge diversity	Traditional knowledge systems included in PA management
	Statutory and customary rights	Local stakeholder groups gain or retain their rights in the establishment or management of the PA
Procedure	Effective participation in decision-making	Local stakeholder groups satisfied with how decisions are undertaken
	Transparency	Local stakeholder groups have access to information about PA management and planning
	Access to justice	Local stakeholder groups resolve disputes about PA establishment or management
	Accountability	Local stakeholder groups know who to contact with concerns regarding PA management
	Free, prior, and informed consent (FPIC)	FPIC is sought and generally obtained
Distribution	Burdens	Households of local stakeholder groups relieved of burdens imposed by PA, through mitigation actions or compensation
	Benefits	Households of local stakeholder groups receive tangible benefits from PA management in accord with traditional distribution principles

Table 4.4 presents the recognition dimension of the Zafra-Calvo et al.'s (2017) proposed question-answer template, including multiple-choice questions and answers linked to the three equity criteria. For example, for the cultural identity criterion, the questionnaire asks, "have the cultural identities of local stakeholder groups contributed to the design and implementation of management actions in the protected area?" (Zafra-Calvo, et al., 2017, p.138). If "there are issues with some groups of local stakeholders because they feel their cultural identity is not respected", the criterion is marked as inequitable. If "they feel that their cultural identity is respected", it is considered no

impact. If “they feel that their cultural identity is appreciated, and their values incorporated into the management of the protected area, especially most vulnerable and Indigenous people,” it is considered equitable (Zafra-Calvo et al., 2017, p.138). Supplemental Table 2 presents the complete proposed indicator system, including multiple-choice questions and answers linked to each equity criterion.

Table 4.4. Recognition criteria, indicators, and questions (After Zafra-Calvo et al, 2017, p. 138. Used with permission).

Recognition Criteria	Indicators	Questions from questionnaire (ranking from inequitable to equitable)
Cultural identity	Cultural identities of local stakeholder groups incorporated into PA management	Have the cultural identities of local stakeholder groups, especially most vulnerable and Indigenous people, contributed to the design and implementation of management actions in the protected area? 1 (Inequitable): There are issues with some groups of local stakeholders because they feel their cultural identity is not respected 2 (No impact): They feel that their cultural identity is respected 3 (Equitable): They feel that their cultural identity is appreciated, and their values are incorporated into PA management
Knowledge diversity	Traditional knowledge systems incorporated into PA management	Are traditional knowledge systems included in the management of the protected area? 1a (Inequitable): Traditional knowledge systems are absent from PA management 1b (Inequitable): Traditional knowledge systems are not used because they are perceived as not useful in conservation 2 (No impact): Traditional knowledge systems are incorporated in the management of the PA 3 (Equitable): Traditional knowledge systems, including those of most vulnerable and Indigenous people, are equally or more represented than statutory ones
Recognition and respect for statutory and customary property rights	Local stakeholder groups gain or retain their rights in the establishment or management of the PA	Do local stakeholder groups retain their statutory and customary rights with the establishment or management of the PA? 1 (Inequitable): They have lost some rights with the establishment or management of the protected area 2 (No impact): They have retained their rights 3 (Equitable): They have gained some rights

4.4.2. Data Collection

Data collection in Bhitarkanika National Park and Wildlife Sanctuary. I conducted my primary fieldwork in Bhitarkanika in June and July 2013 with the help of Nature's Club, a local non-governmental organization (NGO) in Kendrapara. Open-ended interviews and participatory rural appraisal (PRA) workshops provided the primary data pertaining to local community perceptions of PA management. PRA is a family of methods for data collection that enable local people to express their knowledge of life and resource management conditions (Chambers, 1994). In PRA workshops the researcher acts as a facilitator by "handing the stick to the local community" and giving them the leading role to share information about their condition and problems (Mukherjee & Chambers, 2004, p.1803).

I interviewed 12 individuals from 11 villages and conducted five PRA workshops with 44 attendees in BCA. The villages were located at varying distances from the National Park boundaries. Five villages were within 1.5 km, four were within 1.5–3 km, and two were >3 km from the National Park boundaries. Hussain and Badola's (2010) research in BCA found these distance categories affect the socio-economic situation of communities, including their level of dependence on resources from the National Park for their livelihoods. I chose the villages based on ease of access and advice from informed local sources.

I carried out interviews with the assistance of the leader of Nature's Club. Nature's Club has a long history of working in villages in Bhitarkanika, and its executive director, Baba ji, is highly respected among the communities and is fluent in Oriya, the official language in Odisha. Working with Nature's Club and visiting a few villages with Baba ji helped me gain trust among the community members and recruit interviewees. I also interviewed two people from Nature's Club, as well as two wardens, two researchers, and two high-level state government officials. My time for data collection from villages in the Sanctuary area was limited due to unforeseen circumstances. Getting permits from the state government took a long time because a wild tiger had escaped from the Bhubaneshwar zoo, distracting state government officials for many days. Delays in getting the permits affected the rest of my plans in Bhitarkanika, as the NGO partners were occupied with other tasks.

The language barrier was a problem in this research, obliging my reliance on Baba ji. Baba ji is a prominent community member and his presence might have affected some responses I received from the local community members. However, the language barrier made me more diligent in observing. The many questions I asked about the community members' well-being and their livelihood needs created a sense of openness and altruism in my data gathering. Although I was a foreign national, the local communities seemed to feel comfortable with me and to respect my efforts to stand out as little as possible. Figures 4.2 and 4.3 show one of the interviews and a PRA workshop in Bhitarkanika.

As complements to the primary data, I used state government documents, NGO reports, and peer-reviewed articles as secondary data sources. I gathered most of the data for this research prior to the creation of the equity framework I later employed in my analyses. The descriptive nature of Zafra-Calvo et al.'s questionnaire made it easy to adapt my previously collected data to answer their questions. After selecting the Zafra-Calvo et al.'s (2017) equity framework as the basis for my analyses, I conducted several follow-up interviews to make sure the tools and methods I was adopting were suitable. I interviewed two members of Nature's Club and explained Zafra-Calvo et al.'s (2017) equity framework to them. In 2018, long after my departure from the field, the Nature's Club staff then used the equity framework questionnaire and conducted four interviews with prominent local community members. I used these interview data in my research as well.

Figure 4.2. PRA workshops in Bhitakanika National Park and Wildlife Sanctuary (June 2013).

Figure 4.3. PRA workshops in Bhitakanika National Park and Wildlife Sanctuary (June 2013).

Data collection in Sabzkouh PA. I conducted the primary fieldwork to collect data in Sabzkouh between 2011 and 2015. I augumented these data with further document reviews and interviews in 2016 and 2017. Through open-ended interviews I collected data from 54 local community members, 12 state government officials, three researchers, two staff members of a tourism business, and two NGO representatives. Seventy-two local community members from various socio-economic groups and genders attended 8 PRA workshops in 2015 and 2016. Document reviews provided background knowledge and foreground data from conservation plans, rangeland management plans, NGO reports, and previous research. When coupled with interview data, these documents enabled my assessment of the equity criteria in the Zafra-Calvo et al. (2017) framework. As a way to assess my initial findings, I also conducted six interviews via telephone in 2018 with one member of Daumoon NGO and five local community members.

4.5. Case study attributes

4.5.1. Bhitarkanika National Park and Wildlife Sanctuary

Conservation laws and arrangements. The Indian Wildlife (Protection) Act (1972) granted the state government the primary authority to set policies and make decisions regarding PAs (Government of India, 1972). The Indian Wildlife Protection Act of 1972 prohibits grazing of any livestock, hunting, construction activities, or destruction of habitat in National Parks, except in special conditions with the permit of the Principal Chief Conservator of Forest (PCCF) (Government of India, 1972, chapter VI, p.6). Regulations for sanctuaries, in contrast, allow for controlled local uses, including livestock grazing and harvest of non-timber forest products (NTFPs), with permits from the state government. The BCA is managed under the PCCF, through the Ministry of Environment and Forests and Climate Change's (MoEFCC) forest department office in the city of Bhubaneswar, capital of the Odisha province. The local PCCF office in Rajnagar enforces conservation using wardens operating out of small field offices.

Amendments to the Indian Wildlife Protection Act in 2002 introduced two new categories of PAs: *conservation reserve* and *community reserve*. These two categories

allow for sustainable resource use, while still giving a high priority to conservation (Government of India, 2002). India's Forest (Conservation) Act (1980; amended 1988) originally focused on the management of natural resources and did not consider community participation or the rights of Indigenous peoples (Government of India, 1980). In 2006, India's Forest Rights Act gave forest dwelling people rights to their ancestral lands, including those inside existing PAs. The 2006 Act obliged the state to consider the rights of local and Indigenous communities, to consult with them, and to obtain their consent for resource management practices that affect their livelihoods (Kumar & Kerr, 2012). 2012 amendments to the Forest Rights Act also recognize the rights of those living inside the PAs. Because state government officials perceive conflicts between the 2012 amendments to the Forest Rights Act and established conservation goals, however, as of 2017, this act had yet to be applied in BCA management (Banerjee & Pasha, 2017).

In 1992, India's government recognized *gram panchayats* as means for limited local self-governance. *Gram panchayats* typically represent 5–10 villages. Their structure includes elected community representatives from member villages and a *sarpanch* elected by the designated representatives to lead their group. In addition to the locally elected members, each *gram panchayat* has a secretary appointed by the state government and a set of committees to address local issues, such as rural development, energy, health, and sanitation (Sarma & Chakravarty, 2018). Bhitarkanika National Park is overlapped by the jurisdictions of six *gram panchayats,* namely Dangamala, Satabhaya, Iswarpur, Rangini, Talachua, and Gupti (Banerjee & Pasha, 2017). *Gram panchayats* enable communities to raise concerns about BCA management. The community structure in Odisha also has two other tribal components: *pallie sabha* and *gram sabha*. *Pallie sabha* is a decision-making body in each village that includes all the village members over the age of 18. *Gram sabha* is the elected committee in each village, which represents the village in regional decision-making. Villagers have easy access to elected representatives in *gram sabha.*

The state government is eager to improve conservation and boost Bhitarkanika's international profile as a means for increasing eco-tourism. The Bhitarkanika National Park and Wildlife Sanctuary was declared as a Ramsar site in 2002 because of its rich biodiversity (Banerjee & Pasha, 2017). In 2017, the state government nominated Bhitarkanika National Park and Wildlife Sanctuary for a Man and Biosphere Reserve

site. In part because of the high human population density in the Sanctuary, the nomination failed (author's interview, Nature's Club: March 2018). Nonetheless, national and regional officials remain attentive to opportunities to expand visitation to Odisha and Bhitarkanika.

Mangroves and cyclones. The previously widespread mangroves of coastal Odisha are now mainly limited to Bhitarkanika National Park. Mangrove forests provide breeding, feeding, and nursery grounds for diverse fish, shellfish, and water birds (Akanni et al., 2018). Degradation and reduction of mangrove forests in the last century has made coastal areas, previously buffered by mangroves, more vulnerable to cyclones (Badola & Hussain, 2005). The east coast of India is often adversely affected by cyclones, causing heavy loss of life and property. In 1999, a super-cyclone hit eastern India and Bengal Bay. More than 10,000 people were killed and an estimated 1.5 million were displaced (BBC News, 1999). Mangrove forests are natural barriers for protecting tropical shores and coastal communities from storms and cyclones (Gilbert & Janssen, 1998). The restrictions for crocodile rehabilitation programs in the National Park have led to mangrove conservation. Figure 4.4 shows a mangrove forest in BCA. The Sanctuary beyond the borders of the Park also has a few degraded stretches of mangroves and palm swamps. Communities in BCA are aware of the mangroves' roles in protecting them from cyclones, as noted in the following excerpts.

> The National Park is good for us. Mangroves save our lives. I remember when the cyclone happened it brought death bodies from villages closer to the shore to our village. The bodies were hanging on the trees and everywhere. Villages that had Mangrove covers, had a better condition (Local man B, Jun. 2, 2013).

> Life is difficult, we don't have many livelihood options and cyclones happen all the time. In my 40 years of life, we have moved 3 times because of cyclones and rising sea level. But we will stay here as long as the Krishna temple is surviving by the ocean over there (Local man C, Jun.1, 2013).

Local livelihoods. The local economy in BCA is based on rain-fed agriculture with small land holdings as well as domestic livestock dependent on the forests. Paddy cultivation, fishing, and wage labour are the main livelihood options. Locals use the mangrove forests as a source for honey, timber, poles, thatching, and fuel. Mangrove forests, especially the Avicennia tree, provide the region's main source of livestock fodder (Banerjee & Pasha, 2017). In a study on the impacts of mangroves on the local economy

in Bhitarkanika, Hussain and Badola (2010) estimated at least 14.5% of the local economy is dependent on mangroves. This dependence is at least 30% for communities located within 1.5 km of the National Park (Hussain & Badola, 2010). Most fodder and fuelwood harvests from the National Park are not authorized (author's observation: Bhitakanika, June 2013; Hussain & Badola, 2010).

Restriction of harvest inside the National Park is not the only livelihood restriction imposed on local livelihoods. A fishing ban in Gahirmatha Marine Sanctuary is enforced annually between November 1 and May 1 along a 20-Kilometer distance from the coast to protect the endangered Olive Ridley sea turtles (Rajagopalan, 2009; Tanaya, 2015). This ban affects nearly 20,000 traditional fishermen (Tanaya, 2015). Altough my study focused on Bhitarkanika National Park and the crocodile population, few community members differentiate between the restrictions for turtle conservation and those for crocodiles. They see both as impacts of conservation on their livelihoods.

Figure 4.4. Creek outside of a mangrove forest, Bhitarkanika National Park (Photo credit: Orissa-Tourism.com, n.d.).

The lack of small-scale industries, attributable in part to development limitations linked to the regional PAs, has led to low per capita income for communities in the BCA (Badola, et al., 2012). Many households have at least one member of the family working in other states, such as Maharashtra. Reliance on migrant workers affects the families and communities in BCA, as pointed out by a local woman living within 1.5 km of the National Park boundary (author's observation: Bhitarkanika, June 2013).

> My son works in Western India. He works in a fabric factory around Mumbai and sends us money. It is challenging for us as I only see him once or twice a year, but we don't have any other choice. I want him to get married and have his own family, but I don't want him to stay in Maharashtra. It is difficult to plan our lives with all the uncertainty (Local woman A, Jun. 3, 2013).

Conservation challenges. BCA is the home to all three species of Indian crocodiles: gharial (*Gavialis gangeticus)*, mugger (*Crocodylus palustris)*, and the iconic saltwater crocodile (*Crocodylus prosus*) (Figure 4.5). The restoration of depleted crocodile populations was one of the main goals driving the creation of the BCA (Singh, 1999). All crocodile species neared extinction in the early 1970s due to habitat reduction (Government of Odisha, n.d.). The Gharial and Saltwater Crocodile Conservation Program was first implemented in Odisha in 1975, and the Mugger Crocodile Conservation Program was initiated thereafter. The presence of all three species of Indian crocodilians in Odisha led to international funding and technical support from UNDP and FAO for projects to increase crocodile populations. Between 1977 and 1996, 2695 crocodiles were released into the Bhitarkanika mangrove forests (Gopi & Pandav, 2009). The population of all the crocodile species grew from 95 in 1975 (Government of Odisha, n.d., p.3) to 1682 in 2018 (The New Indian Express, 2018, p.1).

Figure 4.5. Crocodile in Bhitakanika (photo credit: OdishaLive Bureau, n.d.).

Conservation success—in the form of crocodile population re-expansion into creeks, rivers, and other water bodies inside and around BCA—has fueled human-wildlife conflicts. During 1975–2007, 72 cases of crocodile attacks on humans and 62 attacks on domestic livestock were reported (Gopi & Pandav, 2009). India's PA management policies permit limited compensation for such losses within PA boundaries. Attacks inside the National Park boundaries are not compensated because people and livestock are not allowed without permits. In contrast, compensation for an attack inside the Sanctuary is possible following government review of the claim. A female member of the *gram sabha*, who was attacked by a crocodile, pointed out that community members sometimes have to risk unauthorized entry into the National Park to feed their cattle (Figure 4.6).

> We have cattle and sometimes we have to go far [inside the National Park] to feed them. . . . A crocodile attacked me inside the National Park three years ago. I didn't get compensated. I don't go there anymore (Local woman B, Member of gram sabha, Jun. 5, 2013).

Figure 4.6. Village council representative who was bitten by a crocodile (June 2013).

Unauthorized settlement of immigrants from West Bengal, 1951–1961, resulted in an unprecedented population growth in the BCA. In 1994–1995, with scant regard for conservation statutes, the revenue department legalized an unauthorized settlement within the Sanctuary, leading to further loss of mangroves (Chadha & Kar, 1999). This loss has been further aggravated by encroachments and reclamation of land for agriculture (Roy, 1989). BCA is also the home of several communities of Sri Lankan immigrants, who moved to the coastal regions in the 1970s but have had less success gaining rights for their settlements (author's interviews: Bhitakanika, June 2013).

4.5.2. Sabzkouh PA

Chapter 2 provides a detailed description of the Sabzkouh PA. Background information and resource management conditions, including attributes pertinent to equity issues in Sabzkouh PA, are summarized in Table 4.5.

Table 4.5. Attributes of Sabzkouh resource management.

Attributes	Conditions in Sabzkouh PA
Location & history	• Located in Zagros Mountains, in Chahar Mahal and Bakhtiari province (Figure 2.1) • Ratified by Department of Environment (DOE) as a level VI PA in 1990. • Declared a Man and Biosphere Reserve by UNESCO in 2015. • PA guidelines authorize sustainable grazing.
Local communities	• Traditional summering ground of Bakhtiari Tribal Confederation (*il*). • Structure of the *il* damaged by central governments interventions in 1960s. The *il* was dissolved, the *khan* (head of the *il*) was removed, and people were re-structured as villagers. • 53 villages in Sabzkouh and Helen PA. • Communities reside in villages or campsites in Sabzkouh PA in the summer and move to a village or city near their wintering ground in Khuzestan, Fars, or Isfahan provinces of south-central Iran (Mojtahedi, 2009). • Village councils are in charge of management of local issues in the absence of the *khan*. • Village councils do not interfere in resource management for nomads, such as time of migration. • The two separate village councils for summering and wintering grounds confuse decision-making. • Community members identify as members of the Bakhtiari *il* and respect elders and descendants of traditional leaders.
Local livelihoods	• Nomadic herding is the main livelihood option for the Bakhtiari *il*. • The *ils* move with their livestock in search for fodder within and between summering and wintering grounds. • Community members have herding permits granted by the state government. • After nationalization of land, *il* members were assigned herding permits by the FRWO based on the number of the livestock they traditionally kept. This means elite members of the community received herding permits for a larger number of livestock and were assigned larger areas of grazing permits in the rangeland management plans. • Harvest of Non-Fodder Rangeland Products (NFRPs) is open to all. The community harvest them for food and medicine. • The community members have organized a seasonal restricted access area for the first 50 days of spring in Sabzkouh, called spring *qoroq*. Elders collect money from everyone with herding permits inside the spring *qoroq* area to pay for the local wardens (Figure 2.9).
Conservation arrangement and laws	• Forests and rangelands were nationalized in Iran in 1963. • The state government has the ultimate power for resource management. • Based on the nationalization act, range and forest use is regulated through management plans prepared and approved by the Forests, Rangelands and Watershed Organization (FRWO). • Department of Environment (DOE) is responsible for management of PAs.
Conservation challenges	• Conservation enforcement faces several severe challenges in Sabzkouh, especially unauthorized activities, including: • Keeping an excessive number of livestock, up to 10 times more than permit allowance, • Entering summer pastures prior to the 50th day of spring, • Over harvesting NFRPs due to increases in market prices and high unemployment, • Establishing unauthorized orchards in mountain slopes,

Attributes	Conditions in Sabzkouh PA
	• Establishing fish farms, • Building unauthorized houses inside the PA. • Community members with permits to graze more than 250 animals are more likely to establish unauthorized fish farms, orchards, and houses. Community members with the smallest herds (less than 50) mainly engage in excessive NFRP harvest. Each group blames others for natural resource depletions. • DOE and FRWO have thus been unable to prevent unauthorized resource extraction and land alteration due to personnel shortages and cultural and political issues. • Dual agency jurisdiction has further constrained management effectiveness. • State wardens believe judges are not aware of the extent of environmental damages and that they compromise law enforcement by reducing fines or forgiving poachers and trespassers. • There are conflicts around the boundaries between national and private land. Based on government laws, communities can claim national land on the basis of evidence of historical use. • Conflicts between the state government and local community reached violent points in 2016. The state government demolished some unauthorized houses in Sabzkouh, resulting in two state wardens being shot by poachers.

4.6. Results: Application of the equity framework in Sabzkouh PA and BCA

In this section, I examine the condition of each of the equity criteria from the Zafra-Calvo et al. (2017) framework in BCA and Sabzkouh. In presenting each criterion I list the Supplemental Table 2 question suggested for use in assessment by Zafra-Calvo et al. (2017). I then describe the conditions in BCA and Sabzkouh based on my data and identify the condition of each case study from three options: (1) Inequitable; (2) No impact; or (3) Equitable. The inequitable options for knowledge diversity, transparency, access to justice, and accountability criteria have more than one option (*1a* or *1b*) depending on the level of perceived equity within the communities. Providing opportunities for equitable participation and for procedural and distributional equity, especially for vulnerable groups, is central in equity assessment. Vulnerable groups are the "poor, disempowered or misrecognized groups of people living in or near the protected area" (Zafra-Calvo et al., 2017, p. 138). Table 4.6 concludes the section with a summary of the results of my assessment.

1. **Cultural identity.** Have the cultural identities of local stakeholder groups contributed to the design and implementation of management actions in the PA?

BCA. Inequitable. The experts of the Indian forest department in the Ministry of Environment and Forests and Climate Change (MoEFCC) designed Bhitarkanika's conservation management plan and pursue its implementation (Government of Odisha, n.d.). Cultural identity of the local communities was not considered in the preparation of the PA management plan. The area was chosen as a PA without community consultation because of its rich biodiversity, especially its value as crocodile habitat (Husain & Badola, 2012). I marked this criterion *inequitable*, per Zafra-Calvo et al. (2017, p. 138), "some local stakeholder groups feel their cultural identity is not respected."

Sabzkouh. Inequitable. The community's cultural identity was not considered in the design and management of the Sabzkouh PA. The Iranian government's Department of Environment (DOE) determined the need to establish the Sabzkouh PA, prepared a conservation plan, and initially pursued its implementation—all without local community involvement. The DOE decided on conservation terms of reference, goals, and indicators based on the national and international guidelines for the design and implementation of the PA management plan and without attention to local values or interests. The persistent influence of *il* structures has never been acknowledged by the state government. However, conservation is an important value for the local community as portrayed in the establishment of the spring *qoroq*.

2. **Knowledge Diversity.** Are traditional knowledge systems included in the management of the PA?

BCA. Inequitable (1a). Traditional knowledge (TK) systems were not included in management of the PA. Scientific knowledge was used for designing the PA and its relevant projects. State government and international experts carried out the data gathering without community consultation (Singh, 1999; Government of Odisha, n.d.). The knowledge of the communities was not used to design projects for crocodile rehabilitation and conservation (Gopi & Prandav, 2009). I marked this criterion *inequitable* (1a), per Zafra-Calvo et al. (2017, p. 138), "TK systems were absent from the PA management".

Sabzkouh. Inequitable (1a). Traditional knowledge (TK) systems were not used in the design of the current management plan for Sabzkouh PA. State government experts carried out the data gathering without community consultation or consideration of TK.

Mr. Sinazadeh, the elder in Sabzkouh who initiated the spring *qoroq,* said: “[T]he state government officials have always come to us to tell us the new agendas for conservation and explain what we are not allowed to do. The spring *qoroq* is the first time we are sharing our traditional knowledge” (Jul. 15, 2014).

3. **Statutory and customary rights.** Do local stakeholder groups retain their statutory and customary rights with the establishment or management of the PA?

BCA. Inequitable. The establishment of the National Park has limited some of the communities’ access and harvest rights. For example, the communities still have the right to take livestock to graze in the sanctuary area. However, they have lost access and harvest rights in the National Park. A seven-month fishing ban is enforced in Gahirmatha Marine Sanctuary for a 20 Kilometer distance from the shore. I marked this criterion *inequitable* because local stakeholder groups “have lost some rights with the establishment or management of the PA (Zafra-Calvo et al., 2017, p. 138).

Sabzkouh. Inequitable. The fall of the *khan* brought a new era to the *il*’s statutory rights and customary laws. After nationalization of forests and rangelands in 1963, the state government made new regulations based on national and international policies and customary laws. Some of the community’s rights, such as herding rights, were regulated by the state and assigned to community members based on rangeland management plans. Harvesting rights for NFRPs have stayed the same and open to all, so long as endangered species are avoided. Hunting rights are regulated, and the harvesting of trees is only permitted with state permission. However, design and management of the PAs has not integrated customary laws for conservation and PA status of Sabzkouh has further tightened the state’s resource management rules.

4. **Effective participation in decision-making.** Are local stakeholder groups satisfied with how decisions are taken in relation to PA management?

BCA. Inequitable. Public participation and community consultation were not required at the time of Bhitarkanika’s establishment. However, community participation has not increased since the creation of the PA. As of 2018, some of the communities’ viewpoints about the PA were being presented to the MoEFCC through the *gram panchayat*. In terms of satisfaction of the most vulnerable and marginalized groups, the *gram panchayat* system has yet to succeed in presenting voices of vulnerable groups in

decision-making. The most marginalized groups, including the Sri Lankan refugee descendants and less economically powerful community members, even people living in villages within 1.5 km of the National Park boundaries, do not feel represented in or benefitted by PA management. The Sri Lankan refugees, one of the most vulnerable groups, have not gained legal rights to land and face eviction. People living closest to the National Park seem to have accepted the prioritization of biodiversity conservation and respond by finding other livelihood options such as becoming migrant workers and engaging in unauthorized resource extraction to meet their needs (Badola et al., 2012). A local woman described this situation "I don't feel like we have any rights towards the National Park and conservation. I don't feel like we have any negotiating power or say. I think crocodile conservation is the most important issue here" (Jun. 12, 2013). A local man of Sri Lankan descent also expressed frustration: "[W]e have all the documentation [to have rights to use the land] but there hasn't been any rational response from the government to accommodate us. We have nowhere to go" (Jun. 10, 2013). I marked this criterion *inequitable* because the local stakeholder groups are not satisfied "about how decisions are taken" (Zafra-Calvo et al., 2017, p. 138).

Sabzkouh. Inequitable. The community is not satisfied with the way decisions for the PA and rangeland management are made. They have not been able to influence PA management policies and they pursue extensive unauthorized resource extraction and land use activities. Formation of the spring *qoroq* is an effort towards participation in decision-making.

5. **Transparency.** Are local stakeholder groups able to access information about management planning?

BCA. No Impact. *Gram panchayat* affords community access to resources related to PA management. Most community members are aware of the region's PA status (Badola et al., 2012). Lack of knowledge about conservation plans diminishes willingness to collaborate in conservation on the part of some community members. For example, fishers worry that agreeing to support conservation could limit their livelihood options: "[M]angroves save our lives. They give us life and food. But I am worried to lose my fishing rights because of the National Park. It is my only livelihood" (Jun. 10, 2013). I marked this criterion *no impact* per Zafra-Calvo et al. (2017, p. 138), "there is a mechanism that ensures access to information in a single format".

Sabzkouh. Inequitable (1b). Legally, community members can request the management and land-use plan through FRWO or DOE. However, the PA management plan is not easy to understand or use and FRWO does not always share the data about boundaries between private and national land. FRWO fears that community members will manipulate such information to establish claims to take ownership over national land. I marked this criterion *inequitable* per Zafra-Calvo et al. (2017, p. 138), ”there are mechanisms that ensure access to information, but they normally do not consult”.

6. **Access to justice.** Are local stakeholder groups able to satisfactorily resolve disputes by existing mechanisms?

BCA. Inequitable (1b). Community members must resolve conflicts regarding the PA through the formal judicial system. Because harvesting from the National Park is forbidden, there is no compensation for crocodile attacks inside the National Park. In the Sanctuary, government officials carefully assess reports of crocodile attacks before making a decision about compensation, a process that can take more than three years (author’s interviews: Bhitarkanika, June 2013). The lengthy assessment process for addressing crocodile attacks, restrictions on resource use, and the attitude of government officials to local people aggravate conflicts between local communities and PA managers. I marked this criterion *inequitable* (1b) because “there are currently unresolved disputes being addressed by existing mechanisms” (Zafra-Calvo et al., 2017, p. 139).

Sabzkouh. Inequitable (1b). The legal mechanism for conflict resolution about the PA management is the official judicial system. Community members and state government officials can raise claims in the provincial and national courts. However, taking matters to the courts is time-consuming and costly. There are no local means or mechanisms for resolving community members’ concerns relating to the PA.

7. **Accountability.** Do local stakeholder groups know to whom to raise concerns for solving issues related to management actions?

BCA. No impact. Most people in the community know they can raise their concerns through the *gram panchayat* (Badola et al., 2012). However, the community members do not feel their opinions matter in issues related to PA management.

Sabzkouh. Inequitable (1b). Local community members can raise their concerns through village councils about issues related to resource management. However, most community members are not aware of these mechanisms. Many do not even know how to get permits for harvesting trees; they simply wait for the state officials to be away, then harvest without authorization (author's observation, Sabzkouh: 2011–2016). Resource management issues for far-flung nomadic herding are well beyond the authority of village councils. Finally, dual agency management (DOE and FRWO) makes it difficult for the community to understand which set of officials to approach (author's interviews, Sabzkouh: 2011–2016). Only "some local community members, especially traditional leaders" know to whom to raise concerns related to management actions (Zafra-Calvo et al., 2017, p.139).

8. **Free, prior and informed consent (FPIC).** Has a free, prior and informed consent (FPIC) been obtained in the PA?

BCA. Inequitable. Because the laws did not require collaboration with the communities at the time of BCA establishment, FPIC is not embedded in management decision-making and has never been sought, much less obtained. India joined with the vast majority of states in formally endorsing the United Nations Declaration on the Right of Indigenous Peoples, which includes specific provisions for FPIC, but has not translated international political posture into local policy or practice (Banerjee & Pasha, 2017).

Sabzkouh. Inequitable. FPIC was not obtained and is not being contemplated. The PA was declared without consent or input from the local community. The declaration and management of PAs in Iran generally proceeds without the consent of local communities. Iran also formally endorsed the United Nations Declaration on the Right of Indigenous Peoples but has not adopted FPIC into local policy or practice (Unrepresented Nations and Peoples Organization [UNPO], 2011).

9. **Actions to mitigate burdens to stakeholders.** Are there actions to mitigate burdens to local stakeholder groups living in or near the PA?

BCA. No impact. State compensation for crocodile attacks inside the Sanctuary is contingent on a lengthy and complex process (Nyhus et al., 2003; Ogra & Badola, 2008). One local man explained, "My wife was killed by a crocodile and it took me three years to go through courts and numerous official assessments of the incident to get

compensated. We stay here because it is our home" (Jun. 5, 2013). A lack of compensation for crocodile attacks inside the National Parks adversely affects the most vulnerable and poorest community members, those who live closest to the National Park boundaries. As a compensation to fishermen affected by the 7-month fishing ban in Gahirmatha Marine Sanctuary, the state government offers 25 kg of rice for each month of fishing ban to each fisherman family. The rice is given to them at the subsidized rate of Rs 1 per kg to compensate for their livelihood loss during the ban period (Tanaya, 2015). I marked this criterion *no impact* because "there are actions to mitigate burdens for households that bear burdens" (Zafra-Calvo et al., 2017, p. 140). However, the actions for mitigating burdens do not seem sufficient to the community.

Sabzkouh. No impact. There have been efforts to help communities to establish alternative livelihoods through state government organizations. In Sabzkouh, state government agencies such as Ministry of Jahad-e-Agriculture have provided funding and services for community development and alternative livelihood projects. Few government plans for supporting alternative livelihoods are specific to PAs, but PA status has attracted NGOs and international partners. UNDP and local NGOs have initiated projects with the community to develop alternative livelihoods and they support ecosystem rehabilitation projects to set examples for improving rangeland management plans (UNDP, 2004). Regardless of source or intent, efforts to provide alternative livelihood options seem to be insufficient, as most or all of the local community members still pursue unauthorized resource extraction. All local community consultants affirmed that an increased number and diversity of sustainable livelihood options would result in fewer cases of unauthorized resource extraction.

> I don't really have an option other than harvesting herbs from the mountains. This is how I paid for my university expenses last year. I collected around 2 tons of wet herbs all through the summer and made enough money to pay for my university tuition for the year. If I had another option, I would not have done that (Local woman D in Sabzkouh, June 12, 2015).
>
> This land is all I have. I am proud of the [unauthorized] gardens I have made in the mountains. I am lucky the land for my traditional herding permit is far away from the [state] wardens' office and they can't stop me (Local man G in Sasbzkouh, June 13, 2015).

10. **Sharing benefits of conservation.** Do households of local stakeholder groups receive benefits from management actions in a culturally accepted way of benefit sharing?

BCA. No Impact. Bhitarkanika's rich biodiversity, and specifically the high population of crocodiles, attracts over 60,000 tourists annually (United News of India, 2019). The Indian government designed programs for economic development, introducing alternatives to the harvesting of forest resources, and providing monetary benefits from non-consumptive uses, like ecotourism (White et al., 2005). Through ecotourism, the state government aims to direct conservation benefits to the local communities in and around BCA. The communities have been engaged in ecotourism through *gram panchayat*s' eco-development committees (EDCs), which aim to build local community capacity through ecotourism projects. An evaluation of these projects in 2015 showed the EDCs' lack of expertise in establishing community tourism and a concomitant lack of success in building local capacity (Das & Chatterjee, 2015). The assessment suggests the need to launch programs for training EDCs, building infrastructure, and raising awareness to support local ecotourism. State support for inclusive, "socio-economically effective, culturally advanced, and environmentally sustainable" policies is required to enable ecotourism in BCA (Das & Chatterjee, 2015, p. 136). I marked this criterion *no impact* because "some of the households as agreed by a culturally accepted way of benefit sharing receive benefits" (Zafra-Calvo et al., 2017, p. 140).

Sabzkouh. Inequitable. PA management does not include specific mechanisms to share the benefits of conservation with the local community. As new opportunities for tourism have appeared, some community members, mostly elites, have been able to learn about and take advantage of these opportunities before the rest of the community gets involved. For example, as of 2019, plans are unfolding for the establishment of a new tourism facility in Sabzkouh. It is owned by an elite person and does not benefit the poor or less powerful members of the community. The other tourism facility in the region is owned and operated by outsiders and does not share any benefits with the local community.

Table 4.6. Equity criteria assessed in BCA and Sabzkouh.

Equity dimension	Equity criteria and assessment questions	BCA	Sabzkouh PA
Recognition	Cultural identity: Have the cultural identities of local stakeholder groups contributed to the design and implementation of management actions in the PA?	Inequitable	Inequitable
	Knowledge Diversity: Are traditional knowledge systems included in the management of the PA?	1a-Inequitable	1a-Inequitable
	Recognition and respect for statutory and customary property rights: Do local stakeholders groups retain their statutory and customary rights with the establishment or management of the PA?	Inequitable	Inequitable
Procedure	Effective participation in decision-making: Are local stakeholder groups satisfied with how decisions are taken in relation to PA management?	Inequitable	Inequitable
	Transparency supported by timely access to relevant information in appropriate forms: Are local stakeholder groups able to access information about management planning?	No Impact	1b-Inequitable
	Access to justice, including an effective dispute-resolution process: Are local stakeholder groups able to satisfactorily resolve disputes by existing mechanisms?	1b-Inequitable	1b-Inequitable
	Accountability for actions and inactions AND Clearly defined and agreed responsibilities of actors: Do local stakeholders groups know to whom to raise concerns for solving issues related to management actions?	No Impact	1b-Inequitable
	Free, prior and informed consent for actions that may affect the property rights of Indigenous peoples and local communities: Has a Free, Prior and Informed Consent (FPIC) been obtained in the PA?	Inequitable	Inequitable
Distribution	Burdens: Are there actions to mitigate burdens to local stakeholder groups living in or near the PA?	No impact	No Impact
	Benefits shared among relevant actors according to an agreed criterion: Do households of local stakeholder groups receive benefits from management actions in a culturally accepted way of benefit sharing?	No impact	Inequitable

4.7. Discussion

4.7.1. Factors that impinge on reaching equity in state governed PAs

Since the 2000s, the state governments, national NGOs, and international UN agencies have initiated projects at both BCA and Sabzkouh to increase community participation and improve local livelihoods. The national policies to require community participation in India and Iran have followed international leadership. India and Iran are signatories of the Convention on Biological Diversity (CBD). The Conference of the Parties (COP) is the governing body for the CBD. Both countries have also ratified the Convention, so they are "parties" to the CBD. The Aichi Targets were established as part of a strategic plan adopted by the COP in 2010. This means both countries have made international commitments to pursue equity in PAs. The 2002 amendment to the Indian Wildlife Act (originally 1972) introduced PA categories and policies that promote local community participation. In addition, India's Forest Rights Act (2006) supports local community rights and promotes local participation in decision-making. Section 29, Part b of Iran's Sixth National Development Plan, requires participation of the local community in natural resources management and delegation of natural resources plans to the local communities where possible (Iranian National Parliament, 2016). Alignment of international and national laws in matters related to community participation is an enabling condition for equity. Despite these efforts and rules supporting community participation, at least four factors impinge on equity in Sabzkouh and Bhitarkanika.

Factor 1: Policies at the time of PA establishment. The *inequitable* status of most equity criteria for the case studies arises in part because the policies under which the PAs were established did not require community participation. BCA was declared a PA in 1975 and then a National Park in 1988 because of its biodiversity values. Equity and community needs were not employed as planning principles by the Ministry of Environment and Forests and Climate Change (MoEFCC) in India in 1975.

Sabzkouh was declared a PA in 1999. After nationalization of natural resources in 1963, the Iranian government gained all the rights for resource management. Sabzkouh is a level VI PA, meaning that sustainable resource management is its intended goal (Dudley, 2008). However, the state government did not consult the community members for PA design and many of the community's resource extraction activities were

criminalized under the conservation law. The original state planners seem not to have considered the traditional migratory herding practices.

Factor 2: History of prioritizing conservation over community rights. Established norms that prioritize biodiversity conservation and undermine local communities' rights in PAs diminish stakeholders' support for reaching equity. In BCA, the state government and local NGO understand biodiversity as the main objective of PA management. Even the community members do not see rights for themselves in matters related to conservation. Some community members even deny their legal rights to resource extraction. A local man in BCA said "[C]rocodiles and mangroves conservation are the most important [issue] here. Mangroves save our lives and crocodiles bring researchers and tourists and funding. My livelihood doesn't seem the big concern here" (Jul. 6, 2013). This condition makes improving equity more difficult, as neither the NGOs, nor the local communities are advocating for moving toward equitable PA management. Lack of support from the environmental NGOs in India has even led to jeopardizing the Indian Forest Rights Act (2006). Specifically, in response to petitions filed by various wildlife conservation groups in February 2019, the Indian Supreme Court ruled that Indigenous people *illegally* living on forest land can be required by the government to move. This ruling may result in eviction of millions of forest dwellers (The Guardian, February 22, 2019).

Factor 3: Difficulty changing the mindset of state government officials toward collaboration and shared decision-making. The full range of PA management and governance categories are recognized in India and Iran. Even though both countries are IUCN and CBD signatories, changing the mindset of PA managers and wardens toward shared decision-making remains an elusive pre-requisite for community participation (Hill et al., 2015; Boilat et al., 2018). Many of these officials have spent careers trying to prevent unauthorized resource extraction and see themselves as community nemeses. When I was trying to obtain permission to visit BCA, Odisha's Principal Chief Conservator of Forest (PCCF) told me "I don't want you to go there [Bhitarkanika National Park and Wildlife Sanctuary] and interview people and give them the impression that they are wanted in the PA. I [would] rather have them removed from the PA" (Jun. 1, 2013). A professor and retired PCCF official emphasized the challenge of changing the mindset of state government staff:

> The wardens and foresters have fought to protect the natural resources and PAs for decades, and it is difficult for them to accept the new policies that now tell them they should collaborate with the community and give them more rights. It takes time and should happen incrementally (Retired PCCF, Jul. 3, 2013).

Factor 4: Pre-existing inequalities among members of local communities. Pre-existing inequalities within the communities inhibit equitable PA management in these case studies (Schreckenberg et al., 2016; Ward et al., 2018). In both cases some community members, mostly elites, have more information about government policies and use this knowledge to their advantage. The powerful community members are also more vocal and influence the local decisions and negotiations with the state government to their advantage. Elites are often the first community members who make themselves available for interviews. They are often primary contact points between government officials and communities. Equity principles in the Zafra-Calvo et al. (2017) framework emphasize the involvement of the communities' least powerful members in conservation planning, as well as gender equity. Reaching equity, therefore, requires intentional, carefully structured planning to amplify less powerful voices and share the processes of decision-making and the benefits of PA conservation with the most vulnerable communities and community sectors.

4.7.2. Comparison between community perceptions of equity in Sabzkouh PA and BCA

Despite the differences between the PA management impacts on local livelihoods, communities in both Sabzkouh and BCA find PA management inequitable. There are different reasons for these similar perceptions. Conservation enforcement in BCA has negatively affected the local communities by limiting their livelihood options. The PA status limits economic development projects such as establishment of factories. Most families rely on remittances from at least one member working in another province. Some community members risk their lives and go inside the National Park to harvest things like fodder from the forests. Despite their appreciation for mangroves as protection from storms and magnets for tourists, few community members perceive BCA management as equitable.

In Sabzkouh, however, local community stakeholders have acquired limited *de facto* management power. The establishment of the spring *qoroq* arrangement is an

indicator of this power. In addition, because of the state government's inability to enforce conservation, community members keep an excessive number of livestock, engage in unauthorized wood and NFRP harvest, build unauthorized houses, and pursue unauthorized hunting. Despite this array of unauthorized resource extraction activities, the local community still finds PA management inequitable in Sabzkouh. The Sabzkouh case suggests equity and a sense of justice towards conservation should be pursued through deliberate involvement of the community in PA management and decision-making. As shown in several case studies, involvement in decision-making increases a community's feeling of justice towards PA management and leads to higher local acceptance and satisfaction with the results (Lind & Tyler, 1988; Syme & Nancarrow, 2012; Twinamatsiko et al., 2014; Lecuyer et al., 2018). For example, Twinamatsiko et al.'s (2014) research in Bwindi Impenetrable National Park in Uganda showed that "the more community members felt involved in decision-making, the more benefits they reported" from the development projects planned to mitigate conservation burdens (Twinamatsiko et al., 2014, as cited in Schreckenberg et al., 2016, p.20).

The Indian and Iranian governments' efforts to increase equity have focused on providing services to diminish the burdens and share the benefits of conservation with local communities in BCA and Sabzkouh. As seen in several studies, distributive equity is not sufficient for obtaining community support and establishing a sense of justice (Shreckenberg et al., 2016; Dawson et al., 2017; Lecuyer et al., 2018; Franks et al., 2018). For example, Dawson et al.'s (2017) research on equity in PA management in Laos showed that focusing on material distribution results in a sense of inequity arising from scarcity of access to land.

Distributive equity, meaning the allocation of benefits from PAs, is even less successful in creating perceptions of equity about PAs among the communities in Irananian and Indian communities. In both countries the state government provides services to support rural communities. In Iran, the state government gives direct subsidies to all citizens from oil profits. This amount is substantially higher in rural areas, and several programs fund community initiatives and local entrepreneurs. Nomads receive subsidized fodder for their livestock and farmers receive subsidized pesticides and fertilizers. In India, the central government provides food grains to the communities at a subsidized rate (Namdev, 2018). The Indian central government also provides urban amenities to rural areas through the PURA program (Namdev, 2018). Thus, it is common

for the communities to receive services and benefits from the state and central governments. The regular receipt of services and benefit from state government appears to be a source of confusion within the local communities regarding PA management. If the state government pursues distributive equity, the community may perceive conservation benefits as *another service provided by the state government*. Community involvement in decision-making and focusing on procedural equity becomes more important in the situations described here. Similar dynamics are in play elsewhere. In Andrade and Rhode's (2012) meta-analysis of 55 case studies from developing countries, local community participation in the PA decision-making process was the only variable that significantly increased compliance with PA policies. Similarly, Arias et al.'s (2015) study of 12 marine protected areas in Costa Rica showed that higher levels of community involvement in decision-making increases compliance with conservation.

4.7.3. Improving equity in BCA and Sabzkouh

Achieving equity as a goal for PA conservation is a process that requires adaptive management approaches informed by ongoing dialogue among the stakeholders (Dawson et al., 2017). The recommendations I provide here are based on the equity criteria presented in the Zafra-Calvo et al. (2017) framework and can be used as the initial guidelines for moving towards equity in the case studies.

4.7.3.1. Improving equity in BCA

Based on the Zafra-Calvo et al. (2017) framework, conservation management in BCA has had shortcomings in all three dimensions of equity. Recognition of equity is defined by inclusion of the community's cultural identity, traditional knowledge, and respect for statutory and customary rights. All these criteria were inequitable through the assessment. The state government should use participatory methods to understand the cultural significance and value of conservation for the local communities, to document traditional knowledge and customary laws, and to apply the traditional knowledge in policy and practice. Lecuyer et al.'s (2018) study in Calakmul Biosphere Reserve in Mexico showed plurality of perspectives can create feelings of fairness.

Procedural equity refers to stakeholder satisfaction with decision-making, transparency in timely access to information, access to justice, management accountability (knowing who to approach with concerns regarding resource

management), and obtaining free prior informed consent (FPIC). FPIC for actions that may affect community property rights is an important component of procedural equity. Because this consent was not obtained prior to the establishment of BCA, it is important to define mechanisms to understand the local communities' needs and include them in conservation. Defining clear roles and responsibilities for each stakeholder group could promote accountability (Zafra-Calvo et al., 2017). For reaching equity in PAs, the Zafra-Calvo at al. (2017) framework suggests inclusion of the most vulnerable groups in PA management and ensuring their voice is heard. The *gram panchayat* has not been successful in representing the needs of the most vulnerable members of the community. The state government should define a mechanism to increase transparency and make the conservation plans and information accessible to all community members. Holding regular meetings with the local communities could contribute to transparency (Guillen et al., 2015). Formation of an environment committee in the *gram panchayat* could be effective in following-up on such initiatives. To give a voice to the most vulnerable groups in the community, a committee of these groups could be formed in the *gram panchayat.* In addition, the stakeholders, state government experts and local communities, may consider giving authority to the *gram sabha* to represent each village in the PA management decisions.

Access to justice for conflicts related to PA management is managed through the regular court system and resolving human-wildlife conflict takes a long time. However, defining a local conflict resolution mechanism could create a sense of belonging and provide an efficient way for improving conservation. Creating a conflict resolution body for resolving PA related conflicts could also increase community's faith in conservation (Williams & Tai, 2016).

Focusing on distributive equity is especially important in BCA. Having adequate resources for conservation enforcement has led to the state government's success in increasing the crocodile population. The staff of forest department do not want to make trade-offs that compromise improvements in biodiversity to increase equity (author's interview, Odisha PCCF, June 2013). However, they need the communities' support to satisfy India's international commitments and ensure continued progress in biodiversity conservation (Franks & Small, 2018; Klein et al., 2015). Because lack of employment and employment diversity are primary issues for the communities, government and NGO representatives will likely need to accept the challenge of increasing distributive equity.

Increasing equity in distribution means mitigating burdens of conservation to the local community and sharing conservation benefits with them (Zafra-Calvo et al., 2017). A new mechanism for compensation of crocodile attacks should be designed through community consultation. The state government should initiate improvements in the compensation system, informed by community consultations. To share the benefits of PA management, equity-oriented ecotourism could improve conditions in BCA. Several tourism companies are active in BCA, and despite the involvement of eco-development committees in ecotourism, vulnerable communities in BCA still do not get enough compensation. The state government and other partners, such as NGOs and international agencies, should also collaborate in the provision of alternative livelihood options and in sharing benefits from ecotourism. Tourism can contribute to improving the local economy (Atan & Arslanturk, 2012; Kumar & Hussain, 2014).

Changing the PA conservation category of the Sanctuary could be a viable option for pursuing conservation while creating more sustainable resource management opportunities for the communities. The Indian Wildlife (Protection) Act, 1972, as amended in 2002, suggests two more categories of PAs: *conservation reserve* and *community reserve* (Government of India, 2002). A conservation reserve allows for sustainable resource use, while giving a high priority to conservation. If the Sanctuary area is declared a conservation reserve, community's harvest of NTFPs in mangroves could be regulated to reflect sustainable resource management. The efforts towards mangrove restoration and ecotourism projects implemented by the local community can also be considered a part of sustainable resource use. Table 4.7 summarizes the findings of the BCA case study based on the Zafra-Calvo et al. (2017) framework and my suggested recommendations.

Table 4.7. Assessment of equity criteria in BCA and recommendations.

Equity dimensions	Equity criteria	Shortcomings in BCA	Recommendations
Recognition	Cultural identity Knowledge Diversity Recognition and respect for statutory and customary property rights	• Local community culture not reflected in PA management institutions • Western knowledge, not traditional knowledge (TK), used for crocodile rehabilitation and PA management • Statutory property rights changed by the PA establishment; community forced to comply with new laws	• Use participatory methods to understand the meaning of conservation to the community • Document TK • Apply TK in conservation policy and practice
Procedure	Full participation Transparent, timely access to relevant information Just, effective dispute-resolution process Accountability, defined and agreed upon roles and responsibilities FPIC for actions affecting the rights of Indigenous and local communities	• At present, the *gram panchayat* does not adequately represent vulnerable community members • No community access to PA management data • Appeals of PA management decisions requires protracted litigation • Communities have no voice in state government PA management • No FPIC	• Form committees in the *gram panchayat* to represent community interests and preferences in environmental management taking care of vulnerable groups • Consider granting some authority to the *gram sabha* to represent each village in PA management decisions • Create mechanisms to give communities access to management information • Hold regular meetings with local community members • Create conflict resolution mechanisms • Increase participation and share responsibilities with communities • Share conservation plans with community and include their input to make PA management more equitable
Distribution	Burdens Benefits shared among relevant actors according to an agreed criterion	• PA imposes several burdens to the local community • PA status limits industrial development • Compensation for crocodile attacks are time consuming and not available in the National Park • Eco-tourism is state government's solution for sharing benefits	• Initiate improvements in compensation system through community consultations • Support equity-oriented ecotourism • Collaborate with NGOs (national and international) to provide alternative livelihood options

4.7.3.3. Improving equity in Sabzkouh

The state government in Sabzkouh needs community cooperation to enforce conservation. The community takes advantage of a lack of capacity in the state government for conservation enforcement to pursue their unauthorized land alterations and resource extraction activities. However, the community's identity and livelihood are dependent on the rangelands in Sabzkouh, and efforts to establish the spring *qoroq* demonstrate the community's disagreement with a lack of law enforcement. Sabzkouh can benefit from improving equity and engaging the local community in conservation. Applying equity principles can foster collaboration and shared governance to improve conservation in Sabzkouh (de Koning et al., 2016). Building mutual understanding and trust, and developing dialogue are central components to enhance equity and to identify alternative management solutions beyond standard practices (Hill et al. 2015).

Recognition of the community's cultural identity, traditional knowledge, and customary laws could improve equity in Sabzkouh. The state government should recognize and use the persistent practical and symbolic power of the *il* to communicate and collaborate with the local community. The traditional knowledge of *il* for managing resources and customary laws should be documented and updated to reflect the current needs of the community.

Community engagement in conservation and the existence of the spring *qoroq* provides a natural opportunity for collaboration with the community to improve the procedural equity in Sabzkouh. Formation of a spring *qoroq* committee comprising various stakeholders and local community members could be the first step towards the allocation of decision-making power to the local community. To improve transparency, the state government should provide the means for sharing conservation plans with the community and give the community an outlet to raise concerns about conservation enforcement. The spring *qoroq* committee has the potential to be a good means for sharing conservation plans with community members. Establishing a mechanism for resolving conflicts related to PA management in a timely and fair manner is an important step towards gaining community support (Pinkerton, 2009). Raising awareness among the judges and preparing the judicial system to deal with conflicts related to natural resources management is an important step in improving conservation in Sabzkouh. The state and NGO partners could collaborate in this process. Elites and vulnerable

members of the community each pursue different unauthorized resource extraction practices. Therefore, it is important to include all socio-economic groups in Sabzkouh's conservation. Community members with fewer herding permits should also participate in PA decision-making and receive their fair share of conservation benefits.

As a level VI PA, sustainable resource management is a part of the PA management goal in Sabzkouh. The PA management plan does not forbid local community activities. In fact, harvesting from the rangelands is the permitted resource use in Sabzkouh. Clear negotiations with the community to find fair ways to deal with the issues related to unauthorized orchards, fish farms, and shortage of fodder is required. Additionally, tourism projects in the region do not share benefits with the community. The state government should make legal mandates for tourism projects in Sabzkouh to share benefits with the local community, especially with vulnerable community members.

Because the community is eager to participate in conservation, through the *qoroq* and comparable measures, and because sustainable resource management is the goal of state-based conservation in Sabzkouh, it is worth considering other PA governance options, particularly shared governance. Defining specific roles for each stakeholder group, including the state government agencies, NGOs, and the local community, can improve accountability (Zafra-Calvo et al., 2017). Defining these roles and responsibilities for the management of Sabzkouh through the formation of a Sabzkouh conservation committee, and clear negotiations among the stakeholders, suggests a more suitable governance option that can improve equity (Dawson et al., 2017). Table 4.8 summarizes the findings of the Sabzkouh case study based on the Zafra-Calvo et al. (2017) framework and my suggested recommendations.

Table 4.8. Assessment of equity criteria in Sabzkouh and recommendations

Equity dimension	Equity criteria and assessment questions	Shortcomings in Sabzkouh	Recommendations
Recognition	Cultural identity Knowledge Diversity Recognition and respect for statutory and customary property rights	• Community's cultural identity not used in the PA design • TK not included in PA design • PA created new regulations and affected local community's property rights • Hunting rights regulated • Land-use alterations forbidden	• Consult the leaders and acknowledge *il*'s traditional structure • Include *il*'s conservation values in PA management • Document the TK and consult it for PA management • Consult the local community and customary laws to update PA management
Procedure	Full participation	• Community members do not participate in decision-making • Elites and poor members of the community each pursue different unauthorized resource extraction practices	• Create a spring *qoroq* committee with the collaboration of various stakeholders and local community members from various socio-economic groups for deciding on issues related to PA management • Create a mechanism for sharing PA management information with the community members, such as annual community meetings • Define roles and responsibilities for each stakeholder group to participate in PA management • Provide a specific mechanism for access to justice for conflicts related to PA management • Raise awareness among the judges about environmental issues • Pursue clear negotiations with the community to find fair ways to deal with the issues related to unauthorized orchards, fish farms and shortage of fodder is required.
	Transparent, timely access to relevant information	• Access to information requires going to FRWO and DOE offices • FRWO doesn't share data about the boundaries between the private and national land	
	Just, effective dispute-resolution process	• Access to justice is through the official judicial system • Judges are not aware of issues related to environmental management	
	Accountability, defined and agreed upon roles and responsibilities	• Dual agency management creates confusion • Elite capture	
	FPIC for actions affecting the rights of Indigenous and local communities	• FPIC was not obtained • State government did not consult declaration of the PA with the local community	
Distribution	Burdens Benefits shared among relevant actors	• Efforts by NGOs, international partners, and the state government to establish alternative livelihoods • Local community is provided with subsidized fodder • Elites and outsiders take most of the benefits from tourism	• Expand projects for providing alternative livelihood options • Use participatory methods and community consultation to find new options to decrease the burdens of conservation • Design mandates to direct tourism benefits to the vulnerable community groups

4.8. Conclusion

Equity has emerged as one of the principal objectives in PA conservation (Franks et al., 2018). I assessed community perceptions of equity in two PAs to examine the relations between conservation enforcement and equity, and to provide recommendations for improving PA management by incorporating equity. Equity principles were not considered in conservation at the time of establishment of Sabzkouh and Bhitarkanika. However, several efforts were made through the years to improve the local community's well-being to ultimately improve conservation. State government plans for community participation in BCA and Sabzkouh align with distributive equity because they seek to mitigate burdens and share the benefits of conservation with the community. This research supports findings of previous studies indicating that a focus on distributive equity is not enough to improve community perceptions of equity, as in both cases the communities found PA management inequitable (Arias et al., 2015; Dawson et al., 2017; Lecuyer et al., 2018; Ward et al., 2018).

The finding of perceived inequity in Sabzkouh shows that having *de facto* power over resource extraction and management does not in itself create a sense of equity. These results suggest that equity and a sense of justice arise from conscious and deliberate efforts for collaboration. State governments should expand its focus to improving procedural equity and recognize local communities' rights and knowledge for conservation management (Pinkerton et al., 2019).

Despite the differences in conservation enforcement and impacts of PAs on the local community livelihoods in Sabzkouh and Bhitarkanika, recommendations arising from the equity framework analyses for the two settings are similar. The failure of state governments in both cases to incorporate equity principles in PA management seems to be the underlying reason for the similarities. The application of an equity framework in BCA results in four recommendations for state government. The state government should: (1) share the management plan with the community and include their TEK and cultural values in conservation; (2) focus benefit-sharing projects on villages closest to National Park boundaries; (3) consult with the village level local governance bodies, *gram sabha*, for issues related to conservation and for alternative livelihood options; (4) consider changing the Sanctuary's conservation category to provide more opportunities for the local community and to decrease unauthorized resource extraction from the

National Park. The state government experts are cautious to avoid jeopardizing biodiversity conservation to increase equity.

In the case of Sabzkouh, four recommendations emerged for the state government. The state government should: (1) acknowledge the community's traditional resource use and local leadership and governance structures, including the traditional knowledge and customary laws in conservation; (2) collaborate with the local community to improve conservation through a multi-stakeholder committee and consider changing the governance of Sabzkouh to a shared governance scenario; (3) define livelihood options and find ways to share the benefits and burdens of conservation with the local community, especially the most vulnerable groups in the community; (4) Empower a conflict resolution body to handle the conflicts related to conservation in a fair and timely manner.

Changing the mindset of the state government staff, including high-level managers and field wardens, is an essential step for increasing community participation in PA management. Reaching equity is a step-by-step process that requires changing the dynamic between the stakeholders. Deciding on conservation land jurisdictions and management practices in PAs and other public lands, requires negotiating trade-offs among values and stakeholders (Ellis et al., 2019). Advancing equity in PAs requires commitment from all the parties, and specifically from the state government to sponsor collaboration and dialogue for moving toward equity (Dawson et al., 2017; Hill et al., 2015). Training state government staff to collaborate with local communities seems to be an important requirement for pursuing a new agenda for equity. Changes in the organizational structure of the state institutions might be needed to include local community representatives in the design of PAs and the implementation of conservation plans that include community equity.

The complexity inherent in equity assessment studies might encourage researchers to simplify the frameworks in order to make them more manageable (Lecuyer et al., 2018). However, oversimplification creates new challenges. Dawson et al. (2017) warned researchers about dangers of oversimplification and reliance on standardized indicators. Oversimplification might forego opportunities to identify solutions and minimize trade-offs between equity and effectiveness in ways meaningful to those affected (Dawson et al., 2017). The Zafra-Calvo et al. (2017) framework was

designed to create a practical tool for equity assessment in PAs. The framework does not address equity-enabling conditions. However, in order to complete my analysis, I needed to discuss some of the enabling conditions to draw conclusions. I suggest the Zafra-Calvo et al. (2017) framework be expanded to incorporate enabling conditions and improve its analytic scope and potential beneficial impacts.

4.9. References

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4.10. Supplemental Tables

Supplemental Table 1. Equity principles and enabling conditions that apply to prior assessments and the establishment, governance and management of protected areas, and to other conservation and development activities directly associated with PAs (Schreckenberg et al., 2016. Used with permission)

Recognition
1. Recognition and respect for human rights 2. Recognition and respect for statutory and customary property rights 3. Recognition and respect for the rights of Indigenous Peoples, women, and marginalized groups 4. Recognition of different identities, values, knowledge systems, and institutions 5. Recognition of all relevant actors and their diverse interests, capacities, and powers to influence 6. Non-discrimination by age, ethnic origin, language, gender, class, and beliefs
Procedure
7. Full and effective participation of all relevant actors in decision-making 8. Clearly defined and agreed responsibilities of actors 9. Accountability for actions and inactions 10. Access to justice, including an effective dispute-resolution process 11. Transparency supported by timely access to relevant information in appropriate forms 12. Free, prior, and informed consent for actions that may affect the property rights of Indigenous Peoples and local communities
Distribution
13. Identification and assessment of costs, benefits, and risks and their distribution and trade-offs 14. Effective mitigation of any costs to Indigenous Peoples and local communities 15. Benefits shared among relevant actors according to one or more of the following criteria: •• Equally between relevant actors or •• According to contribution to conservation, costs incurred, recognized rights and/or the priorities of the poorest 16. Benefits to present generations do not compromise benefits to future generations
Enabling conditions
1. Legal, political, and social recognition of all protected area governance types 2. Relevant actors have awareness and capacity to achieve recognition and participate effectively 3. Alignment of statutory and customary laws and norms 4. An adaptive, learning approach

Supplemental Table 2. Indicator system and questions to assess the state of each criteria in a given PA (Zafra-Calvo et al., 2017, p.138–140. Used with permission).

Equity criteria assessed	Indicator	Question in the questionnaire collecting information for this indicator and its responses (ranking from inequitable to equitable)
Recognition Recognition of different identities, values, knowledge systems, and institutions		
Cultural identity	Cultural identities of local stakeholder groups incorporated in the management of the protected area	Have the cultural identities of local stakeholder groups, especially most vulnerable and Indigenous people, contributed to the design and implementation of management actions in the protected area? 1 (Inequitable). There are issues with some groups of local stakeholders because they feel their cultural identity is not respected 2 (No impact). They feel that their cultural identity is respected 3 (Equitable): They feel that their cultural identity is appreciated, and their values are incorporated into PA management
Knowledge diversity	Traditional knowledge systems included in the management of the protected area	Are traditional knowledge systems included in the management of the protected area? 1a (Inequitable): Traditional knowledge systems are absent from PA management 1b (Inequitable): Traditional knowledge systems are not used because they are perceived as not useful in conservation 2 (No impact): Traditional knowledge systems are incorporated in the management of the PA 3 (Equitable): Traditional knowledge systems, including those of most vulnerable and Indigenous people, are equally or more represented than statutory ones
Recognition and respect for statutory and customary property rights	Local stakeholder groups gain or retain their rights in the establishment or management of the protected area	Do local stakeholder groups retain their statutory and customary rights with the establishment or management of the PA? 1 (Inequitable): They have lost some rights with the establishment or management of the protected area 2 (No impact): They have retained their rights 3 (Equitable): They have gained some rights
Procedure Full and effective participation of all relevant actors in decision-making		
Full participation	Local stakeholder groups satisfied with how decisions are taken in decision-making	Are local stakeholder groups, especially most vulnerable and Indigenous people, satisfied with how decisions are taken in relation to protected area management? 1 (Inequitable). There are some issues about how decisions are taken 2 (No impact). There are no issues 3 (Equitable). They are satisfied with how decisions are taken, including most vulnerable

Equity criteria assessed	Indicator	Question in the questionnaire collecting information for this indicator and its responses (ranking from inequitable to equitable)
Transparency supported by timely access to relevant information in appropriate forms	Local stakeholde groups accessing information about management and planning	Are local stakeholder groups able to access information about management planning? 1a (inequitable). There is not mechanism that ensures access by them to the information about management planning 1b (Inequitable). There are mechanisms that ensure access to information, but they normally do not consult 2 (No impact). There is a mechanism that ensures access to information in a single format 3 (Equitable). There is a mechanism that ensures access to information in different formats (written, audio), and it is accessible to people from different educational backgrounds and languages
Access to justice, including an effective dispute-resolution process	Local stakeholder groups resolving satisfactory disputes due to protected area establishment or/and management by existing mechanisms	Are local stakeholder groups, especially most vulnerable and Indigenous people, able to satisfactorily resolve disputes by existing mechanisms? 1a (Inequitable). There are no mechanisms for resolving disputes 1b (Inequitable). There are currently unresolved disputes being addressed by existing mechanisms 2 (No impact). Most of the local stakeholder groups have satisfactorily resolved their disputes by using existing mechanisms 3 (Equitable). Most of the local stakeholder groups have satisfactorily resolved their disputes by using existing mechanisms, including most vulnerable
Accountability for actions and inactions AND Clearly defined and agreed responsibilities of actors	Local stakeholder groups knowing to whom to raise concerns for solving issues related to management actions	Do local stakeholder groups, especially most vulnerable and Indigenous people, know to whom to raise concerns for solving issues related to management actions? 1a (Inequitable). They do not know 1b (Inequitable – elite capture). Some of them know, especially traditional leaders 2 (No impact). Most of them know 3 (Equitable). Most of them know and there are specific mechanisms available for most vulnerable
Free, prior and informed consent for actions that may affect the property rights of Indigenous peoples and local communities Free, prior and informed consent (FPIC)	A Free, Prior and Informed Consent (FPIC) obtained	Has a Free, Prior and Informed Consent (FPIC) been obtained in the protected area? 1 (Inequitable). FPIC has not been obtained 2 (No impact). FPIC has not been obtained but other consultative procedures with local stakeholder groups exist 3 (Equitable). FPIC has been obtained for all of the affected local stakeholder groups

Equity criteria assessed	Indicator	Question in the questionnaire collecting information for this indicator and its responses (ranking from inequitable to equitable)
Distribution Effective mitigation of any costs to Indigenous peoples and local communities		
Burdens	Households of local stakeholder groups relieved of burdens through mitigation actions or comprehensively compensation of them	Are there actions to mitigate burdens to local stakeholder groups, especially most vulnerable and Indigenous people, living in or near the protected area? 1 (Inequitable). Actions to mitigate burdens are absent 2 (No impact). There are actions to mitigate burdens for households of local stakeholder groups that bear burdens 3 (Equitable). There are actions to mitigate burdens for households of local stakeholder groups that bear burdens and actions specifically directed to households of most vulnerable
Benefits	Households of local stakeholder groups receiving tangible benefits from management actions in a way that respects culturally accepted distributional principles	Do households of local stakeholder groups receive benefits from management actions in a culturally accepted way of benefit sharing? 1 (Inequitable). No one receive benefits 2 (No impact). Some of the households as agreed by a culturally accepted way of benefit sharing receive benefits 3 (Equitable). All households as agreed by a culturally accepted way of benefit sharing receive benefits

Chapter 5. Conclusion

Community participation has become an integral part and goal of conservation (Hutton, et al., 2005; Andrade & Rhodes, 2012; Heinen et al., 2019). Policies and practices recommended by leading international organizations, like the International Union for Conservation of Nature (IUCN) and the United Nations Environment Programme (UNEP), and international funding agencies, like the Agha Khan Foundation and the World Wide Fund (WWF), are exerting *top-down* influence on state governments to integrate local communities and their traditional knowledge and management models into resource management policy and practice (Williams, 2004; Rahnema, 2010). At the same time, local communities, often allied with researchers and local advocacy organizations, are asserting grassroots, *bottom-up* pressure to have a fair share of both participation in decision-making and in benefits from local resources (Anthony, 2007; Andrade & Rhodes, 2012; Cetas & Yasue, 2016). Top-down and bottom-up pressures to boost local community participation are converging in efforts to establish and improve the management of protected areas (PAs), especially PAs located in developing countries. According to IUCN, “long-term conservation of nature with associated ecosystem services and cultural values” is the goal for creating PAs (Dudley, 2008, p.8). Biodiversity conservation is not the only goal for PA management. In fact, participatory initiatives in PA management are aimed at improving efficiency and effectiveness while also increasing processual and distributive equity (Diamond et al, 2004; Cleaver, 2004; Paulson et al., 2012). Participatory approaches are known to improve the effectiveness of conservation and boost management efficiencies by increasing community support and decreasing the cost of conservation rule enforcement (Ohl et al., 2008; Oldekop et al., 2015; Franks et al., 2018).

In a quest to understand factors that improve community participation in state-governed PAs, I analyzed three case studies. Sabzkouh PA in Iran, Shah Foladi PA in Afghanistan, and Bhitarkanika National Park and Wildlife Sanctuary in India. These three case studies share commonalities that facilitate comparisons and distinguish them as legitimate sources of recommended policies and practices. All are state-governed, located in developing countries, and involve international and national non-governmental organizations (NGOs). Local communities in all three cases are resource-dependent and have incentives to support conservation, especially interests in the diversification of

employment and income alternatives to traditional livelihoods grounded in pastoralism, fishing, and farming. I present my results from Shah Foladi PA first, because it was the case with the greatest emphasis on community participation.

At Shah Foladi PA (SFPA) (Chapter 3) I looked at the process of PA establishment across a 9-year time span (2009–2018) that included relationship-building and incipient collaborations among the local communities, the Afghan government, and international partners. All the stakeholders recognized that steps beyond SFPA establishment on paper would depend on building the capacity of local community and state-based institutions to collaborate in PA management and achieve conservation goals. Shah Foladi PA management faced three main challenges: (1) shortage of livelihood options, (2) damages to local and state institutions from years of violent conflict, (3) a lack state and local community familiarity with collaborations in general, and cooperation on specific PA management initiatives. To address these challenges, UNEP devised and applied an experimental, community-based action methodology to build relationships and trust with the communities. Community-based natural resource management (CBNRM) projects were used in conjunction with other initiatives to build both trust among the stakeholders and their capacities to participate in PA management. A multi-stakeholder committee, Shah Foladi PA Committee (SHAFPAC) was established to support collaboration in PA management.

At Sabzkouh PA in Iran I analyzed relations between the state government and local communities through frameworks focussing on co-management (Chapter 2) and equity (Chapter 4). These analyses revealed ways to improve community participation in PA management and governance. My analyses found three characteristics of state government institutions that were impeding co-management: dual agency jurisdictions, shortage of financial and human resources for conservation enforcement, and top-down management planning not informed by local and regional realities. The analyses also found two characteristics of the local community that impeded co-management: historical efforts by the state government to undermine traditional resource management institutions and ongoing shortages of livelihood options to complement regional reliance on common pool rangelands and non-fodder rangeland products (NFRPs). The good news from Sabzkouh is a community-led initiative to self-regulate the spring *qoroq* rangelands, an arrangement constituting an important opportunity for collaboration between the state government and the local community. However, my application of the

Zafra-Calvo et al. (2017) equity framework at Sabzkouh showed that the majority of equity criteria were found to be inequitable despite the community's extensive unauthorized resource extraction and land alteration activities.

I also used the Zafra-Calvo et al. (2017) equity framework at Bhitarkanika National Park and Wildlife Sanctuary (Chapter 4) in India, where I examined how an understanding of equity criteria can reveal pathways to improving community participation in PA management. At Bhitarkanika, too, most of the equity criteria were not satisfied and this is unlikely to improve so long as local community livelihood options remain restricted. Three factors negatively affect relations between the communities and state government in PA management: decades of command-and-control policies that have created a siege mentality among the state government officials, lack of local community integration into PA management policy and practice, and time-consuming conflict resolution processes. In part, because Bhitrkanika's managers have adequate conservation enforcement capacities (Holmes, 2013), they remain resistant to increased community participation beyond modest tourism projects.

Creating effective collaborations between the state government and local communities is an explicit goal in management plans for both the Sabzkouh PA and the Shah Foladi PA. A multi-stakeholder management committee was formed in both places. In Shah Foladi, capacity building and relationship building were identified as important pre-requisites for initiating conservation and were the focus of UNEP's initial plans. I therefore focused my Shah Foladi analysis (Chapter 3) on capacity building initiatives. In Sabzkouh (Chapter 2), I used co-management frameworks to identify ways to improve collaborations between the state government and local community. The two chapters discussed two steps required for building collaborations among the stakeholders.

Levels of community participation differed among the three case studies. I identified some attributes of the state governments that probably contributed to variation in community participation (see Table 5.1). In case of Bhitarkanika, the state government has high enforcement capacity and correspondingly lower incentives to collaborate with the local communities. The fact that a single, provincial-level agency enforces conservation has probably supported their enforcement capacity. There is also a history of command and control policies that impede collaboration. Therefore,

community participation is limited to sharing profits of conservation with the community through CBNRM projects.

In Shah Foladi and Sabzkouh, the state government has low enforcement capacity and comparatively higher incentives for community collaborations. Dual agency jurisdiction of state government entities that dictates national-level conservation plans from the capital cities challenge conservation enforcement. For example, in Sabzkouh, collaboration between the state government agencies is low which divides resources and further complicates conservation enforcement. However, in Shah Foladi collaboration between the state government agencies is high, due in part to UNEP facilitation efforts. In addition, there is a history of command and control policies in Sabzkouh which impedes on community participation in decision-making. However, because the state government doesn't have enforcement capacity, community participation in Sabzkouh has expanded beyond CBNRM projects and is moving towards multi-stakeholder committees. In Shah Foladi, community participation happens through both CBNRM projects and community participation in decision-making. This is mainly due to the fact that the state government needs collaboration with the communities to be able to enforce conservation.

Table 5.1. State government attributes affecting community participation in case studies

PA Attributes	Shah Foladi, Afghanistan	Sabzkouh, Iran	Bhitarkanika, India
State's enforcement capacity	low	low	high
State's incentives for collaboration	high	high	low
Collaboration between state agencies	high UNEP's role	low	one agency
Level of state agency governance	National	National	Provincial
History of state command and control policies	doesn't exist	exists	exists
Community participation methods	CBNRM projects Participation in decision making	CBNRM projects Moving towards decision making	CBNRM projects

5.1. Steps toward effective community participation in PA management and governance

Community participation is an ongoing process that occurs through a variety of formal and informal interactions and negotiations (Cornwall, 2008). Through the analyses of these three case studies I identified a general sequence of overlapping steps, along with tools and mechanisms to support stakeholders and increase the likelihood of progress toward effective community participation in PA management and governance. These five steps are:

1. Develop pre-requisite capacities in state and community institutions for community participation.
2. Build trust continuously.
3. Create incentives and means for increasing community participation in management decision making and project / program implementation.
4. Create tools and mechanisms for effective participation.
5. Enlist NGOs to consolidate and expand community participation in and benefits from conservation.

This suite of steps is very general and case-specific circumstances will determine the sequencing, level of investment, and duration of each step in creating and sustaining effective community participation. I have identified the steps on the basis of my three case studies and will now use the steps as the bases for recommendations and reflections on improving conservation success in state-governed PAs that are located in developing countries and involve both resource-dependent communities and NGOs willing to assist state governments and local communities. Figure 5.1 provides a simple scheme to illustrate the stepwise process of engaging and expanding community participation in PA management.

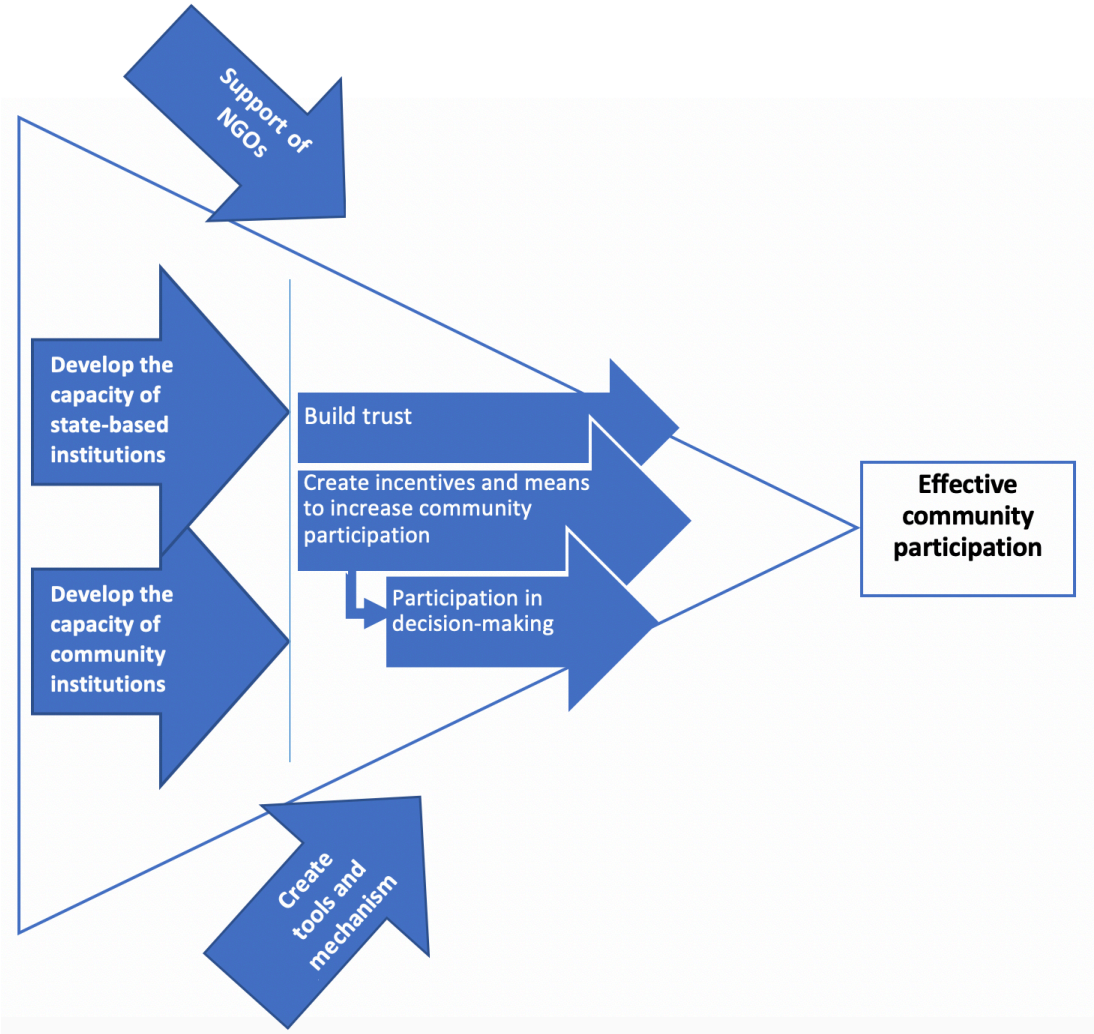

Figure 5.1. Steps towards effective community participation in PA management and governance. Developing the capacities of community and state-based institutions is prerequisite to effective community participation. Continuous trust-building and creation of incentives to increase the level of community participation can boost community participation in decision-making. Creating tools and mechanisms for collaboration and NGO support can, in turn, increase trust, capacity in community and state institutions, and incentives and means for community participation, and effective community participation.

5.1.1. Step 1: Develop pre-requisite capacities in state and community institutions for community participation

Developing state-based and local community institutions' capacities is a pre-requisite for effective community participation in PA management. However, even without these pre-requite capacities, the state government and local communities may collaborate in PA

management if incentives and mechanisms are in place. Developing capacity of state government and community institutions for collaboration is an ongoing process that can enable trust building and community participation (see Figure 5.1).

5.1.1.1. State-based institutions require capacity to support community participation in PAs

The state government agencies work in harmony with one another in order to be able to work with the local community. This means clear divisions of agency authority and responsibility, as well as harmonies between agency mandates and within agency structures and structured budget allocations. The Sabzkouh PA case showed that the breadth of agency mandates and size of budgets did not match for the Department of Environment (DOE) in Iran. This challenge, combined with lack of collaboration between the DOE and the Forests, Range, and Watershed Organization (FRWO) weakened conservation enforcement while creating confusions for local communities. The responsibilities of each organization should be clearly defined in order to improve efficiency of PA management and initiate an effective collaboration with the local community.

Having a collaborative approach on the part of state government officials is an important asset for advancing community participation in PAs. My assessment of equity in Bhitarkanika showed the histories of command and control policies make collaboration difficult for government officials. Training for state government officials could prove a necessary and useful means for preparing them to advance collaborative policies and implement practices for PA management. The forest department was not interested in increasing community participation in Bhitarkanika management. The Bhitarkanika case study thus offers few lessons for co-management. Indeed, the primary lesson from Bhitarkanika, one that merits attention in PA management in wealthier countries, is that investment in enforcement at the expense of equity may not be consistent with long-term conservation mandates.

5.1.1.2. Local community institutions require capacity to participate in PAs management.

Community institutions may be weakened or damaged by various factors. In Sabzkouh, the state government's early (and in many ways ongoing) efforts to centralize resource management and to reform land ownership policies have impinged on the sovereignty of

ils and damaged their original structure (Razmkhah, 2017). The formal leadership of village councils is not able to respond to complexities of resource management to support nomadic pastoralism. In Shah Foladi, decades of conflict have weakened the local institutions. In such cases capacity-building initiatives are likely required to prepare the local communities to collaborate in PA management. Innovative organizational and collaborative structures will likely be required to serve the communities' basic needs while also addressing PA resource management objectives.

5.1.2. Step 2: Build trust continuously

Trust-building is an important component for creating meaningful relationships between the state government and local communities in PA management (Beunen & de Vries, 2011; Cooke et al., 2011). The trust-building process in Shah Foladi started at the beginning of PA establishment. However, this can (and often must) be an on-going process as the stakeholders recognize their shared interests in PA conservation and sustainable management (Figure 5.1). Indeed, without initial and ongoing commitments to maintaining trust, the potential for deepening relationships and expanding collaborations is limited (Baral, 2012).

The process of establishing relationships among the stakeholders in Shah Foladi PA showed trust building is a time-consuming practice that must be done step-by-step. Building on the existing social capital of trusted local individuals, respecting the community norms, attending to the communities' livelihood needs, and continuous presence and engagement with the communities all helped create trust among the Shah Foladi stakeholders. The steps taken at Shah Foladi for building trust are, of course, similar to steps for improving perceptions of equity in PA management (Shreckenberg et al., 2016). Applications of equity principles in the Sabzkouh and Bhitarkanika cases showed that supporting local livelihoods is important for trust-building. However, the distribution of conservation benefits should be combined with respecting the community norms, knowledge, and customary rights, and allowing the community to be part of decision-making (Shreckenberg et al., 2016; Friedman et al., 2018).

The community in Sabzkouh has voluntarily participated in PA management through creating the spring *qoroq* arrangement. The spring *qoroq* arrangement enforces both traditional and formal conservation laws. This voluntary participation in conservation

seems to have increased the interest of state government to collaborate with the community. As a result of the community's voluntary collaboration in conservation, the state government trusts that collaboration with the community will produce results that support conservation goals.

5.1.3. Step 3: Create incentives and means for increasing community participation in management decision making and project / program implementation

At Sabzkouh, voluntary enforcement of conservation rules in the spring *qoroq* arrangement created a partnership with the state government and gained the community some *de facto* power in PA decision-making. The incipient partnership between the state government and local community for the spring *qoroq* arrangement is a form of "informal incomplete" co-management. Informal co-management arrangements have more flexibility than formal arrangements and provide opportunities to experiment with conservation approaches, which make them appropriate for the local social and ecological context in this case (Augustine & Dearden, 2014, p.311). Therefore, informal arrangements are favorable at the first stages of establishment of co-management. As co-management matures, a community's *de facto* rights could lead to gaining *de jure* rights in decision-making through building relationships, sharing capacity, and making formal rules (Pinkerton, 1989, p. 11; Schlager & Ostrom, 1992).

In Shah Foladi, the level of community participation in CBNRM projects increased from passive and consultative participation to active and interactive participation, 2009–2018 (Table 3.3. and Table 3.8). Community participation in CBNRM projects contributed to building the organizational and administrative capacity of the local community to collaborate in PA management. As communities' capacities were built, they became more active in SHAFPAC and, thereby, in other decisions regarding PA management. Creating means and incentives is an important element for reaching effective community participation in PAs that can lead to community participation in decision-making. Figure 5.1 depicts these relationships.

5.1.3.1. Community participation in decision-making

Participation in decision-making gives the community a sense of power and increases their interest in conservation and compliance with conservation plans (Pinkerton & John,

2008; Andrade & Rhode, 2012; Syme & Nancarrow, 2012; Twinamatsiko et al., 2014; Arias et al., 2016). My application of the equity framework in Sabzkouh and Bhitarkanika indicated that attention solely to *distributive* equity is not enough for creating equitable PA management and gaining communities' support (Arias et al., 2015; Dawson et al., 2017; Lecuyer et al., 2018; Ward et al., 2018). Attention to procedural equity, which includes different aspects of community participation in decision-making, is needed for creating a sense of equity among the community members. Although the community members in Sabzkouh engage in many unauthorized resource extraction activities, thereby seizing some level of *de facto* power in resource management, they still don't identify PA management as equitable. Strong perceptions of inequity among the community in Sabzkouh indicates an opportunity to increase the community's perception of equity through deliberate and structured community participation in decision-making. The goal, of course, must be to break the cycle of conflict-producing trespass-enforcement, a pattern that damages trust, degrades protected plants, animals, and minerals, and exhausts agency financial and staff resources.

5.1.4. Step 4: Create tools and mechanisms for effective participation.

Multi-stakeholder committees offer apt tools for initiating collaboration and conducting negotiations for PA management (Secretariat of Convention on Biological Diversity [CBD], 2010; Borrini-Feyerabend et al., 2013; Sessin-Dilascio et al., 2015). When given reasonable authorities and responsibilities these entities can provide the senses of consistency and democracy required to allow trust-building, empower shared decision-making, and enable continued negotiations among the partners (Rashid et al., 2013). For example, the Sessin-Dilascio et al. (2015) assessment showed that the participatory advisory council of the Cordoso Island State Park in Brazil played the central role in negotiating co-management arrangements.

Multi-stakeholder committees were formed in Sabzkouh and Shah Foladi to represent the local communities in conservation. UNEP created a strategic, technical, and scientific committee in Shah Foladi to facilitate cooperation between the communities, state government officials, and other stakeholders. Formation of the committee ensured the sharing of decision-making power with the communities while keeping the state government in the forefront to prevent shadow government formation. An organizing committee for the spring *qoroq* was formed by the elders in Sabzkouh PA.

Although the committee does not include all the community groups, it was still useful for deciding on matters related to the spring *qoroq* and to foster collaborations with the state government. Expansion of this committee to include other relevant state government agencies, like Ministry of Nomads Affairs, all the community user groups, and NGOs could facilitate expanded roles in planning and implementation of the spring *qoroq*. Involvement of all the community's socio-economic groups is an important means for avoiding elite capture and ensuring all community viewpoints and needs are represented (Rashid et al., 2013; Fedreheim et al., 2017). Multi-stakeholder committees are also useful means for resolving conflicts related to PA management.

Creating tools and mechanisms, such as multi-stakeholder committees, can improve the capacity of the state-based and community institutions, support trust-building, and create means and incentives for participation. Co-management in PAs calls on partners to redefine conservation using the local communities' values or a blend of local and state government and NGO values (Pinkerton, 2003; Schlager & Ostrom, 1992). Formation of multi-stakeholder committees can facilitate incorporation of community knowledge and vision in long-term conservation planning. When structured and operated in ways attuned to local circumstances, multi-stakeholder processes improve effectiveness and efficiency in conservation decision-making. Care must be taken in design and implementation to make them relevant to both state agency policy makers and local parties (Fraser et al., 2006, p.114). The structure and function of the multi-stakeholder committees should be designed based on local conditions. A solution that worked in one place does not necessarily work everywhere else.

5.1.5. Step 5: Enlist NGOs to consolidate and expand participation in and benefits from conservation

NGOs have been active in creating alternative livelihood options, supporting local economies, and engaging in community development and environmental awareness programs in all three case studies. International NGOs create policy models and provide funding that support community participation in PA management. Their efforts encourage national and local NGOs, as well as state governments, to adopt policies for community participation in PAs (Raustiala, 2002; Tallberg et al., 2018). NGOs can support the development of local community and state government capacities to

collaborate, help build trust, and create means and incentives for increasing the level of community participation in PAs (Figure 5.1).

National and international NGOs facilitated community participation in Sabzkouh by directing the attention of state government agencies to community-oriented resource management initiatives, adding legitimacy to these initiatives. In Shah Foladi, NGOs played a key role in design and implementation of CBNRM projects, in environmental awareness campaigns, and in facilitating relationships between communities and international donors. UNEP, in particular, supported CBNRM initiatives and supported increased local capacity--community and government—to collaborate in Shah Foladi management.

The relationship between NGOs and local communities is two-fold. NGOs can support local community initiatives and help them reach their resource management needs. However, NGOs pursue specific agendas supported by funding agencies. Especially in developing countries, NGOs receive funding from international aid agencies that promote international guidelines for community participation in conservation (Williams, 2004; Rahnema, 2010). In the case of Iran, the United Nations Development Programme's Global Environment Facilities/Small Grants Programme (UNDP/GEF/SGP) is an important funding source for environmental NGOs. GEF decides on environmental priorities for each world region that does not necessarily fit the local community needs. GEF's participatory project design process begins with the identification of community's needs and priorities as the basis for designing participatory projects. This methodology can foster trust between the NGO and local community members. Because the NGO is bounded by priorities dictated by the GEF, however, it cannot always address the most pressing environmental issues raised by the community. For example, water management was the most pressing issue identified by the community members in Toot village in Sabzkouh, but Daumoon could only design projects for endangered species conservation. In Bhitarkanika, where livelihood restrictions created by the National Park and crocodile attacks are important challenges for the communities, NGOs' environmental initiatives are mostly limited to providing clean energy through off-grid electricity projects. Direct discussions about human-wildlife conflicts and roles for community participation in PA management are difficult, in part because these discussions have not been promoted or supported by international

NGOs. Until that happens, the state government is unlikely to become interested in such discussions.

Nevertheless, the funding from the international NGOs is an important support for community participation (Williams, 2004; Rahnema, 2010; Mawdsley, 2017). In Sabzkouh, Daumoon NGO was able to support the spring *qoroq* arrangement by addressing it through the UNDP/GEF/SGP's biodiversity conservation agenda. In Shah Foladi, different funding agencies contributed in improving communities' livelihoods and building local community capacity to participate in conservation.

5.2. Final Reflections

The improvement of conservation through community participation and the application of equity principles have emerged as critically important aspects of management in state-based PAs (McDermott et al., 2013; Dawson et al., 2017). Reaching equity and biodiversity conservation are now widely defined as conservation goals (Dudley, 2008; CBD, 2010). Decisions regarding conservation and land use in PAs requires negotiating trade-offs among equity and biodiversity conservation values (Ellis et al., 2019). Because natural resources are limited, win-win solutions that ensure biodiversity conservation and improve local communities' livelihoods are seldom easily achievable (Sandker et al., 2009; Loken, 2016). Studies show that equity improves biodiversity conservation outcomes to a point (Halpern et al., 2013). Optimal biodiversity conservation outcomes are often achieved without perfect equity (Klein et al., 2015). Because equitable PA management does not necessarily mean better conservation, resource managers should be mindful to not jeopardize biodiversity or other conservation goals (Klein et al., 2015).

Conservation policies create constraints for local community livelihoods. Despite these challenges, the communities still have incentives to support conservation. Community interests in natural resources goes beyond just supporting livelihoods (Borrini-Feyerabed et al., 2004; Kothari & Neuman, 2014; Cooney et al., 2017). Place-based communities derive their identity from landscapes. In all my case studies, communities' spiritual and cultural connections to the land encourage participation in

conservation. Sabzkouh's value to the community is tied to their nomadic pride that gives them a sense of persistent identity even after the decimation of the authority of the Bakhtiari *il* by Iran's state government. Shah Foladi's mountains provided a shelter to the communities and saved their lives during the Taliban attack. The mangrove forests of Bhitarkanik are seen as lifesavers by the communities because they have played an important role in protecting them from recurring cyclones. Communities have many reasons for supporting conservation initiatives, and conservation initiatives should recognize and harness this diversity.

In scenarios involving multifaceted community-land relationships, providing opportunities for community participation in decision-making leads to higher compliance and acceptance (Lind & Tyler, 1988; Syme & Nancarrow, 2012; Twinamatsiko et al., 2014; Lecuyer et al., 2018). If involved in decision-making, the communities might agree to forego of short-term economic opportunities to support biodiversity conservation (Twinamatsiko et al., 2014; Cooney et al., 2017). Attention to procedural equity is important for increasing community interest in and support for conservation. However, it should be accompanied with distributive equity. Attention to distributive equity (sharing benefits and decreasing burdens of conservation for the community) is especially essential in such circumstances to compensate scarcity of land access and missing livelihood opportunities for the communities (Dawson et al., 2017). There are no simple formulae for improving community participation in PAs. Diverse and continuing research is required to understand the complexity of the relationships between the local communities and the state government in each case study and to design practical steps to improve community participation in PAs.

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