



**USAID**  
FROM THE AMERICAN PEOPLE

Biodiversity Research Paper

# MEASURING IMPACT REWARDS AND RISKS ASSOCIATED WITH COMMUNITY ENGAGEMENT IN ANTI-POACHING AND ANTI-TRAFFICKING



May 2016

**Front Cover:** Community meeting in Namibia. Photo Credit: Scott Felton World Wildlife Fund (WWF) North Atlantic Salmon Conservation Organization (NASCO)

**Back Cover:** NRT, Northern Rangelands Trust, Kenya. Photo Credit: USAID

**Authors:** Dr. David Wilkie, Wildlife Conservation Society; Dr. Michael Painter, Gordon and Betty Moore Foundation; and Dr. Anila Jacob, Smithsonian Institution

**The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.**

USAID is grateful to all who contributed their time, knowledge, and professional assessments to this report. We would like to acknowledge the Wildlife Conservation Society.

**About Measuring Impact:** This work is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of its requisition number REQ-EGAT-12-000014 (Measuring Impact) implemented by Environmental Incentives, LLC; Foundations of Success; and ICF International. Measuring Impact has been issued under contract number AID-OAA-C-12-00078 and supports the same program objectives as described in RFP number SOL-OAA-000050. The Measuring Impact initiative is funded and managed by the USAID Office of Forestry and Biodiversity/Bureau for Economic Growth, Education, and Environment.

# TABLE OF CONTENTS

---

Acronyms.....	4
<b>I. Executive Summary.....</b>	<b>5</b>
<b>Figure I:</b> Summary of factors that motivate local communities to engage in anti-poaching and anti-trafficking efforts.....	6
<b>II. Community Engagement in Combating Wildlife Crime .....</b>	<b>7</b>
Community-Based Natural Resource Management (CBNRM).....	7
The Importance of Community Rights .....	8
Community Jurisdiction and Policing Authority.....	8
<b>III. Community Engagement: Lessons from Implementation.....</b>	<b>10</b>
Lessons from Community Policing.....	10
Lessons from Conservation and Development.....	12
Community Engagement in CBNRM.....	12
Community Engagement in Illegal Bushmeat Hunting and Trading.....	13
Interviews and Case Studies.....	13
<b>Table I:</b> Case studies and applicable scenarios.....	14
<b>Scenario I:</b> Community Rights Are Formally Recognized and Wildlife is of Low Value.....	14
<b>Case Study:</b> Tamshiyacu Tahuayo Communal Conservation Area, Peru.....	15
<b>Case Study:</b> Locally Managed Marine Areas, Madagascar.....	15
<b>Scenario II:</b> Community Rights Are Formally Recognized and Wildlife is of High Value.....	16
<b>Case Study:</b> Community Conservancies, Namibia.....	16
<b>Case Study:</b> Northern Rangeland Trust, Kenya.....	16
<b>Scenario III:</b> Community Rghts Are Not Formally Recognized and State Attempts to Halt Poaching.....	17
<b>Case Study:</b> FISH and ECOFISH Projects, Philippines.....	17
<b>Case Study:</b> Protecting Tigers by Protecting Livestock, Indonesia.....	18
<b>IV. Considerations for Practitioners.....</b>	<b>19</b>
Ownership.....	19
Trust in Law Enforcement and the Legal System.....	19
Community Cohesion.....	20
Minimizing Risks to Communities.....	20
Literature Cited.....	21
Appendix 1 - Glossary of Terms.....	23
Appendix 2 – List of Interviewees.....	24
Appendix 3 – Structured Interview.....	25
Appendix 4 – Beyond Enforcement Conference Interviews.....	26
Appendix 5 – Case Study Template.....	29

# ACRONYMS

---

CBNRM	Community-Based Natural Resource Management
DRC	Democratic Republic of Congo
ECOFISH	Ecosystems Improved for Sustainable Fisheries
FISH	Fisheries Improved for Sustainable Harvest
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
IIED	International Institute for Environment and Development
IUCN	International Union for Conservation of Nature
LMMA	Locally Managed Marine Area
MPA	Marine Protected Area
NASCO	North Atlantic Salmon Conservation Organization
NGO	Non-Governmental Organization
NRT	Northern Rangelands Trust
USAID	United States Agency for International Development
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund



# I. EXECUTIVE SUMMARY

The roles citizens should play in preventing crime, enforcing laws, apprehending criminals, and promoting citizen safety have long been debated and have changed over time. Community engagement can take a variety of forms, from intelligence gathering (e.g., reporting crime, providing information) to participation in crime prevention and law enforcement operations, to serving as witness during criminal trials. Community policing and intelligence-led policing (i.e., crime prevention and law enforcement guided by information provided by the public) are now almost universally adopted approaches to crime control in urban and rural settings in high-, middle-, and low-income nations (Bullock 2013). In the context of wildlife crime, the concept of community engagement has increasingly been advocated as a way to curb trafficking by organized criminal gangs that use highly militarized poaching and trafficking to meet the demand for ivory, rhino horn, tiger bone, and other high-value wildlife products.

When should local communities be primarily responsible for anti-poaching policing, and when should they be integrated into anti-poaching and anti-wildlife trafficking informant networks? When do the risks exceed the rewards? The answers to these questions vary according to a number of factors. This paper explores those factors and the roles that individuals and communities do and should play in countering wildlife crime; possible motivations for individuals and communities to engage in anti-poaching and anti-trafficking efforts; what benefits they might gain; and what risks they might be exposed to.

This analysis was prepared at the request of the United States Agency for International Development (USAID) Bureau for Economic Growth, Education, and Environment Office of Forestry and Biodiversity (E3/FAB), which provides technical guidance and support to USAID Missions as they program biodiversity funding. This analysis seeks to help USAID staff and other conservation and development practitioners consider the best available evidence from the peer-reviewed literature and from the experiences USAID and its implementing partners have had in developing effective approaches to engage communities in anti-poaching programs. The findings show that the factors that determine the most appropriate role for and expectations of communities are: a) the value of the wildlife products that are being taken and trafficked; b) the effectiveness and accountability of state law enforcement; c) the clarity and recognition of a community's rights; d) the sense of community ownership of the wildlife that flows from these rights; and e) the degree of community cohesion.

**This analysis suggests that the factors that motivate or de-motivate local communities to engage in anti-poaching and anti-trafficking efforts are (Figure 1, page 6):**

**Ownership:** Communities have a strong incentive to detect and inform on poachers when they have rights of ownership and directly benefit from conservation and sustainable use. This is particularly true when the benefits accrued through sustainable wildlife management meet or exceed those that could be attained by poaching or trafficking. Benefits do not always have to be monetary. Other types of benefits include improved food security, increased sense of physical security, and reinforcement of cultural identity through devolution of ownership and management authority.

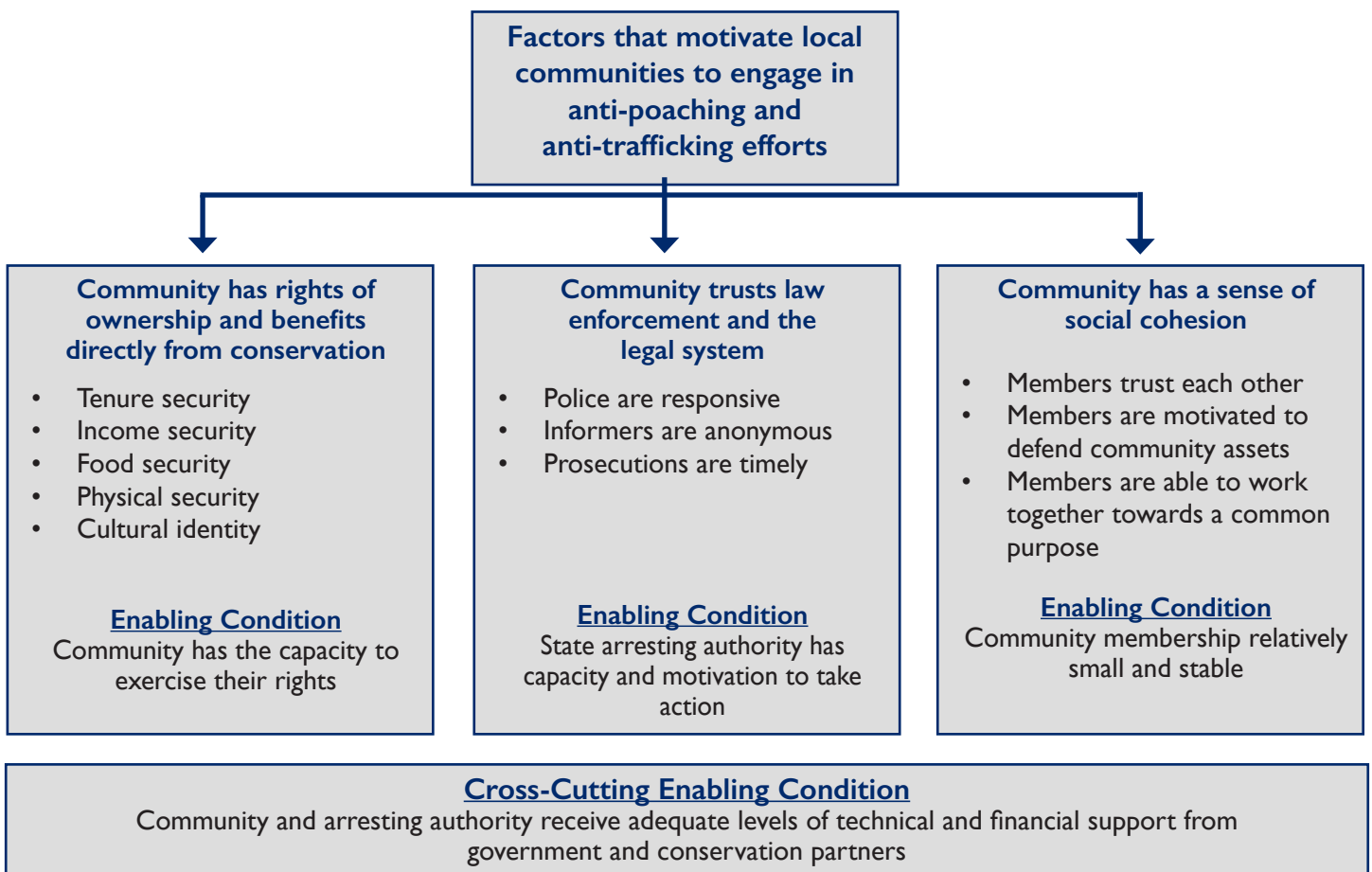
**Trust in law enforcement and the legal system:** Communities typically are unmotivated to assist the police, other arresting authorities, and the legal system in crime prevention and law enforcement if they perceive their authority to be illegitimate and their actions to be corrupt, unaccountable, or unfair. Citizens are more likely to be active in crime prevention efforts if they can act anonymously and have their identity protected in order to reduce the risks of retaliation. Furthermore, if police and the judiciary fail to prosecute and punish crimes effectively, communities are less likely to work with the arresting authority when they feel that there will be no real follow up, or the release of suspected criminals will increase the risk of reprisals.

**Community cohesion:** A community’s ability to mobilize and organize to prevent crime and enforce the law depends on its level of social cohesion. Residents who have a strong sense of community, such as the perception that “this is my neighborhood and it is important to me,” are more likely to want to defend it from criminals from both inside and outside the community. Conversely, social disorganization prevents communities from coming together to promote citizen safety because such efforts typically requires collective action, which is difficult to attain when neighbors do not trust one another. Communities that are able to come together and work collaboratively with the police can co-produce public safety, which is the most effective way to reduce or prevent crime of all types (Hawdon and Ryan 2011, Cordner 2014).

Additionally, this analysis strongly suggests that community engagement should be limited so as to minimize potential risks to community members.

**Minimizing risks to communities:** Community members incur higher risks from engagement in anti-poaching and anti-trafficking efforts when poachers are from outside the community, when poaching is conducted by organized criminal gangs and involves high-value wildlife products, and when the arresting authority is unable or unwilling to respond rapidly to providing community assistance. Ideally, community members serve as scouts, informants, and guides, and not as law enforcers. In those situations where a case can be made for extending their role to confronting and detaining poachers until formal arrest, communities should receive adequate training and preparation to reduce the associated social and physical risks.

Figure 1: Summary of factors that motivate local communities to engage in anti-poaching and anti-trafficking efforts



## II. COMMUNITY ENGAGEMENT IN COMBATING WILDLIFE CRIME

Communities (defined here as social aggregations of individuals and families, based on place, practice, or interest) have long been effective in regulating the behavior of their own members. However, the participation of community members in activities such as preventing crime, enforcing laws, apprehending criminals, and promoting citizen safety – particularly when threats originate from outside the community— has had varying levels of support. Increasingly, community engagement to prevent and detect wildlife crimes has been advocated as a way to address illegal take of wildlife (Kabiri and Child, 2014). The effectiveness of this approach depends in large part on the alignment between community values, rights, and responsibilities and the authorities who manage or assign the rights to manage those resources. Questions such as who owns the wildlife, who has the rights to benefit from wildlife, and who establishes what is and is not a wildlife crime, are critical to understanding both the role that communities can and should play in the detection and prevention of wildlife crime and their motivation for doing so (see Glossary in Appendix I, page 23).

The roles that individuals and communities can and should play in crime prevention, detection, and law enforcement are determined in part by who has jurisdiction, such as the community or a national arresting authority, and by factors that motivate or mitigate against community engagement. Although there is growing evidence that crime prevention and law enforcement are best accomplished when police and citizens co-produce public safety (Cordner 2014; Sabet 2014), the idea that law enforcement and communities should work in tandem to reduce crime and increase citizen security is a relatively new concept (Kyed and Albrecht 2015). This paper explores the roles that individuals and communities do and should play in countering wildlife crime; possible motivations for individuals and communities to engage in anti-poaching and anti-trafficking efforts; and the benefits and risks of doing so.

### COMMUNITY-BASED NATURAL RESOURCES MANAGEMENT (CBNRM)

The conservation-development paradigm of CBNRM offers one framework for assessment of the appropriate role and responsibilities of communities in anti-poaching activities. When clear boundaries are established and local communities gain formal access and use rights over their claimed natural resources, CBNRM can protect valued natural resources and increase local livelihood security, provided communities have the capacity to assemble the skills, knowledge, and operational resources to enforce their claims (Agrawal and Gibson 1999, Agrawal and Redford 2006). Sharp rises in the value of many wildlife products has precipitated the increasing involvement of organized crime in poaching and trafficking of high-value wildlife, such as rhinoceros and elephants. This has exposed both the successes and limitations of the CBNRM approach. CBNRM approaches are prominent in USAID's development programs, and special consideration should be given to the findings of this analysis in implementing CBNRM programs.

Regulatory weakness and lack of operational resources have long hindered the effectiveness of government agencies responsible for dealing with wildlife-related crime. In this context, building partnerships with local people is viewed by many governments, donors, and non-governmental organizations (NGOs) as an attractive approach to supplementing government capacity to address this threat. In addition, engaging more actively with government law enforcement offers communities and grassroots organizations increased opportunities to gain recognition of their land and resource claims.

## THE IMPORTANCE OF COMMUNITY RIGHTS

Community-based efforts to address the threats that criminal activity poses to wildlife and the negative influence it places on rural economies are predicated on the community's rights to exclude outsiders from their lands and their capacity to exercise those rights. When the legal authority of local people to manage their own resources and exclude outsiders is unclear, and when timely and adequate support from government law enforcement agencies and judicial authorities is lacking or absent, it is unlikely that apprehending poachers on community lands will have much impact on internationally organized crime. Worse, involving locals, who may be among the most vulnerable citizens of their countries, in efforts to combat wildlife crime has the potential to expose them to violence and mortal risk.

*"Full secure ownership is essential for local people to benefit from conserving wildlife."*

Greg Stuart-Hill  
WWF Namibia

Most nations treat wildlife as the property of the state, and government agencies are authorized to define and enforce use and access rights.

Although authority for wildlife management is still largely vested in the state, governments and their implementing agencies do, at times, allocate rights to access and sustainably use wildlife to local communities and individuals. Reasons for doing so include: providing economic development opportunities for underserved communities; acknowledging traditional rights of indigenous and native peoples; and devolving authority with the expectation that this will help reinforce the capacity of weak and under-resourced government wildlife management and wildlife crime prevention agencies. However, the rights and responsibilities that the state allocates or devolves to groups or individuals to manage wildlife are often determined with minimal participation by the claimants and with little transparency or accountability by government.

Specific challenges are posed by poaching and trafficking of wildlife by organized criminal gangs. Poachers from Sudan looking to kill elephants in the Dzanga-Sangha Special Reserve were armed with heavy machine guns and rocket propelled grenades. In the last 20 years, 140 park guards have been killed in the line of duty in Democratic Republic of Congo (DRC) alone. Ivory poachers recently killed four guards patrolling the Azande hunting area adjacent to Garamba National Park in DRC, and poachers murdered two forestry officers in their sleep during one of their regular patrols within the Preah Vihear Protected Forest of northern Cambodia.

*"The community needs to feel it is defending a resource that belongs to it."*

Lisa Naughton  
University of Wisconsin

The militarization and ruthlessness that characterize poaching and trafficking activities by organized criminal gangs have highlighted the regulatory weakness and lack of operational resources that have long hindered the effectiveness of government agencies responsible for dealing with wildlife-related crime.

Experience suggests that effective law enforcement depends on the cooperation of local populations and their willingness to share intelligence about poaching and trafficking activities that are taking place in their territories (Kabiri and Child 2014). Experiences including those of CBNRM efforts demonstrate that people who view poaching as stealing something of value from them are usually committed to conducting the intelligence gathering and information sharing required to detect and deter poaching (see case studies in Nelson 2012). Communities with a strong sense of ownership over resources are typically willing to publicly denounce and sanction community members who break natural resource use rules, even if this results in tensions within communities and households.

## COMMUNITY JURISDICTION AND POLICING AUTHORITY

Community organizations are expected to enforce the rules they enact on their own members. When the state devolves natural resource management to local communities, it typically, and often narrowly, prescribes their jurisdiction in terms of the geographical area and specific activities over which they have authority and responsibility. However, when communities also have the responsibility to exclude outsiders, the legal authority



usually comes from national legislation and not community rules and regulations. If an outsider breaks the law in these situations, the community organization typically has the right and responsibility to file a complaint with the expectation that government law enforcement will take appropriate action.

Most nations give citizens the right to detain a person who is caught committing a crime. Generally, citizens can apprehend a criminal, but do not have authority to arrest the individual. Instead, the citizen must swiftly deliver that individual to the police or another agency with the authority to arrest. The authority to physically remove or arrest an individual and to determine the appropriate punishment is generally vested in law enforcement agencies and the judicial authorities. In most cases, making community organizations responsible for arresting poachers would require them to exercise authority that they typically do not possess.

The internationalization of wildlife crime has made confronting poaching and trafficking at the local level much more difficult for several reasons. First, poachers are more likely to be outsiders who have few or no ties to the community. As a result, social connections are less useful in identifying wildlife law breakers, and poachers have fewer social constraints on the use of violence against local scouts and law enforcement officers. Second, anti-poaching and anti-trafficking efforts are more likely to involve higher-level government officials rather than the natural resource management agency staff with whom communities usually have regular interaction. These factors make it more difficult for local people to participate meaningfully in the governance of wildlife and may diminish their sense of ownership and willingness to collaborate with law enforcement agency staff.

In the last decade, there has been interest in extending the authority to arrest to community organizations (e.g., Tsavo Trust in Kenya) as an expansion of protected area co-management arrangements or in situations in which local communities and central government authorities work in partnership based on common interests. The prospect of providing local game scouts with arms and mandating their direct engagement in apprehending poachers assumes particular importance today when wildlife products such as tiger bone, rhino horn, elephant tusks, bear bile, and manta-ray gill rakers command very high prices in international markets, and when illegal hunters of wildlife are often members of international organized criminal gangs. The idea of expanding local authority in this way may appear attractive as a way to empower local communities, solidify their territorial and natural resource

*“Poaching is often done by professional gangs... community rangers are not effective in this context.”*

Matt Linkie  
Fauna and Flora International

claims, and offer the possibility of increasing capacity of economically strapped state agencies. Such proposals, however, involve fundamental changes in the relationship between local communities and the state, which has the right to use force to enforce the law. Making communities responsible for law enforcement increases their exposure to violence from lawbreakers. In addition, without appropriate training, the arrests may not be validated by the court if they fail to follow due process or established standards for evidence collection and curation.

In the following sections, the existing evidence base is reviewed to inform our understanding of the conditions under which community engagement is most likely to be an effective approach to combating wildlife crime. When should local communities be primarily responsible for anti-poaching policing, and when should they be integrated into anti-poaching and anti-wildlife trafficking informant networks? When do the risks of engagement exceed the rewards? The body of evidence that can be drawn upon to answer these questions is quite rich, but has not previously been synthesized to provide guidance for conservation and community development practitioners working with local communities. The findings presented below suggest that a number of factors, namely the value of the wildlife products that are being taken and trafficked, the effectiveness and accountability of state law enforcement, the clarity and recognition of a community’s customary rights, and the sense of community ownership of wildlife resources are all important factors affecting the success of community engagement in combating wildlife crime.

*“We encourage indigenous people ... to contact authorities rather than placing themselves in harm’s way trying to detain someone...”*

Eduard Niesten  
Conservation Stewards Program,  
Conservation International

# III. COMMUNITY ENGAGEMENT: LESSONS FROM IMPLEMENTATION

This paper summarizes a review and analysis of the literature to better understand the roles that communities should play in anti-poaching and anti-trafficking, their motivations for involvement, and the best approaches for minimizing the risks of engagement. A search of Web of Science, Scopus, Google Scholar, and the USAID Development Experience Clearinghouse failed to retrieve a single peer-reviewed or grey literature paper that explicitly focused on factors that motivate community engagement in wildlife anti-poaching and anti-trafficking efforts, or the risks and rewards of such engagement. As a result, the literature review was expanded to address two related topics: first, a review of lessons learned from the community policing, neighborhood watch, and intelligence-led crime control literature; second, a review of relevant documents from the vast body of work on CBNRM and the bushmeat trade.

Findings from the literature review were supplemented with a set of practitioner interviews and analysis of a set of case studies. Structured interviews were conducted with 27 conservation practitioners from around the world (Appendix 2, page 24). Conservation practitioners were identified from a pool of candidates suggested by senior staff at the Wildlife Conservation Society (WCS) and USAID and included individuals with field experience in CBNRM (particularly USAID-supported projects). After the initial interviews, additional interviewees were identified using a snowball-survey approach. The structured interview questionnaire is included in Appendix 3 on page 25. Less formal discussions were also held with more than 50 participants from the “Beyond Enforcement” conference held in South Africa in 2015 (Appendix 4, page 26). Case study information was provided by interviewees using a standard template developed jointly for this project and the International Institute for Environment and Development’s (IIED) “Beyond Enforcement” project (Appendix 5, page 29).

## LESSONS FROM COMMUNITY POLICING

Information on community policing of drug crimes, prostitution, burglary, and assault may seem an unlikely source of information to address the question of community engagement in wildlife law enforcement. However, the lessons gleaned from reviewing the literature on these topics are congruent with many of the factors that determine when rural communities living with wildlife might or might not be motivated to engage in anti-poaching and anti-trafficking efforts, and the risks and rewards of such engagement.

Community policing began in the late 1970s in the United States and the United Kingdom in an attempt to increase the legitimacy of the police in the eyes of citizens (Cordner 2014). In many ways, community policing was an intentional return to the old “beat cop” approach to controlling crime. This involved police officers on patrol every day and on foot in neighborhoods getting to know and becoming respected by the community (Verma, Das, and Abraham 2012). The approach serves as an alternative to traditional, reactive policing styles that rely on motorized patrols, rapid response to criminal acts and disorder, and enforcement of criminal law (Bullock 2013).

Early proponents viewed community policing as a way to improve citizen attitudes toward the police and to encourage their cooperation in preventing crime and apprehending criminals. The philosophy quickly evolved into the belief that a community’s participation in its own protection is essential for effective control of crime (Cordner 2014). Although community policing is now a major component of crime management and citizen safety around the world, solid

*“It is critical that the arresting authority does not let “poachers know who informed.”*

Mary Rowen  
USAID

evidence of the impact of community engagement with police in controlling crime is difficult to find (Kyed and Albrecht 2015, Cordner 2014, Rosenbaum 1988). This is due, in part, to vastly different contexts in the way in which community policing has been used. Recently, more rigorous research has shown that community policing can reduce crime when directed to concerns identified by residents (Bullock 2013), but it can also create new forms of disorder, social strife, and exclusion, particularly when used to extend the reach of an under-staffed, under-resourced, and unaccountable police force (Ruteere and Pommerolle 2003).

### Relevant lessons on community engagement in policing efforts include:

**Police and residents must co-produce public safety.** Police and scholars agree that successful crime-fighting requires police and residents to co-produce public safety (Hawdon and Ryan 2011). The importance of engaging local residents in crime prevention and law enforcement is well illustrated by the results of a survey of 5,422 police officers in metropolitan Guadalajara, Mexico (Sabet 2014). Forty-five percent of respondents felt that the most effective factor in combating crime was increasing community participation, as compared to increasing the number of police (14%), investing in more equipment (13%), and ending corruption (26%).

**Most citizens have little interest in becoming involved in policing efforts** (Grinc 1994). Those who do typically provide passive support to public safety efforts do so because such support does not require direct confrontation with criminals or public reporting to the police. Citizens can anonymously report crime, provide actionable intelligence to the police, serve as witnesses in court proceedings, and take preventative measures (Sabet 2014). Although some individuals and communities do provide active support by conducting surveillance patrols, there is almost universal agreement that individual citizens should not engage in the legal compulsion of criminals to cease and desist, or the use of arms. Instead, citizens should solely provide intelligence to the legitimate arresting authorities (Hawdon and Ryan 2011).

**People must trust the police.** Individuals are typically not motivated to assist the police in crime prevention and law enforcement if they believe the authority of the police is illegitimate and their actions are corrupt, unaccountable, and unfair (Tyler and Huo 2002). Positive personal relationships with police officers and trust are key to citizen engagement in crime prevention (Sampson, Raudenbush, and Earls 1997). Residents are also reluctant to become active in crime prevention efforts if they fear retaliation from criminals (Carr, Napolitano, and Keating 2007). Residents who live in high crime areas are more likely to assist the police in controlling crime and reducing disorder, as are property owners and those who have been victims of a personal or property crime (Pattavina, Byrne, and Garcia 2006).

**Prosecution and punishment are essential.** Those residents who do provide actionable intelligence to the police often stop doing so if they learn that the police and judiciary have failed to prosecute and punish crimes effectively (Ratcliffe 2012, Sabet 2014). This is less important than ensuring anonymity of residents and minimizing the transaction costs of collaborating with the police (Carr, Napolitano, and Keating 2007).

**Community cohesion counts.** Individuals are more likely to cooperate with and provide information to the police if they can communicate that information through a community organization (Smith, Novak, and Hurley 1997) because this increases their anonymity and reduces the risks of retaliation (Hawdon and Ryan 2008, Sun, Hu, and Wu 2012). However, the ability of a community to mobilize and organize to prevent crime and enforce the law depends on the level of social cohesion and sense of trust that exists among fellow community members (Pattavina, Byrne, and Garcia 2006, Bullock 2013). Communities with high levels of social disorganization are often unable to realize common goals, solve chronic problems, and engage in collective action (Kubrin and Weitzer 2003). As a result, these communities are often unable to collaborate effectively with police in reducing crime and social disorder.

## LESSONS FROM CONSERVATION AND DEVELOPMENT

Despite a lack of literature from conservation and development directly addressing the question of community engagement in wildlife anti-poaching and anti-trafficking efforts, several related topics are relevant to the issue. Vast literature on CBNRM examines barriers to collective action, the reasons for the success or failure of community engagement, and community members' willingness to comply with norms for community natural resource use. The body of literature on the motivations of local community members to participate in bushmeat hunting and, to a lesser extent, high-value wildlife poaching and trafficking, provides additional context regarding the motivations of individuals who continue to engage in, and communities that do not sanction, illegal hunting behaviors.

### Community Engagement in CBNRM

Lessons from the CBNRM literature identify conditions under which community engagement may be more likely to be successful as an approach for enforcing rules and regulations about the use of natural resources.

**The most important lessons on community engagement in natural resource management are:**

**Benefits are powerful incentives.** Individuals are more likely to engage in conservation actions and follow conservation rules when they directly and tangibly benefit from doing so. The right to benefit from wildlife and other natural resources is a powerful incentive for engagement in conservation action when combined with regulatory control over access to and use of resources to ensure those benefits. This is particularly true when the value of these benefits is comparable to or greater than the opportunity costs of compliance. Community engagement is also more likely when benefit-sharing is perceived as equitable and avoids elite capture. Non-tangible benefits, such as maintaining cultural identity, are also important.

**A sense of ownership motivates communities.** CBNRM models of wildlife conservation have not always adequately addressed the issues of rights and authority over wildlife. Unless a majority of local people have a clear sense of ownership over wildlife, they will have little motivation to invest their limited labor and capital resources in its conservation. Devolution of the rights over wildlife and other natural resources increases a community's sense of security in terms of exclusive access to valued resources and its willingness to protect and defend them. It is, therefore, not surprising that many conservation NGOs, with support from private foundations and bilateral and multilateral donors, have increasingly sought to work with communities to help them clarify and reinforce their legitimate claims to access, use, benefit from, and manage wildlife and other natural resources in their traditional territories.

**Devolution of authority must be appropriately considered.** A key lesson, underscored by both research and on-the-ground experience gained through the rights-based CBNRM approach, is that making local people responsible for addressing issues and enforcing rules that they do not have the capacity or authority to resolve is a major source of failure in the efforts to devolve wildlife management away from central government (Kabiri and Child 2014).

**Internal and external factors influence the success of community-based approaches.** Building the technical and social capacity of communities to govern natural resource use in ways that are transparent, participatory, and accountable are key to successful CBNRM outcomes, as are social cohesion (social capital) elements such as trust and reciprocity. Monitoring and public reporting of the state of valued resources and the incidence of rule-breaking provide opportunities for community learning and motivation to comply with community norms. Local ecological conditions, even though mentioned frequently in the literature (Agrawal and Chhatre 2006, Garnett, Sayer, and Du Toit 2007, Tole 2010), do not appear to have an impact on CBNRM outcomes (Brooks et al. 2013).



## Community Engagement in Illegal Bushmeat Hunting and Trading

The reasons that rural people who live with wildlife hunt and trade wildlife for food are now relatively well understood (inter alia Wilfred and Maccoll 2015, Fa et al. 2015, Rentsch and Damon 2013, Schulte-Herbruggen et al. 2013, Foerster et al. 2012, Nasi, Taber, and Vliet 2011, Schenck et al. 2006, Wilkie et al. 2006, Refisch and Kone 2005, Bassett 2005, Campbell 2005, Wilkie and Godoy 2001, Knapp 2012, Kahler and Gore 2015). A smaller set of studies has explored the motivations underlying rural community engagement in or prevention of poaching and trafficking of high value wildlife products such as ivory, rhino horn, and tiger bone (Knapp 2012, Lemieux 2014, Lotter and Clark 2014, Martin, Martin, and Vigne 2013, Wyatt 2013). Both bodies of evidence suggest that for community engagement to be successful as an approach for enforcing rules and regulations that go against existing behaviors, such as the illegal trade of bushmeat, the underlying factors that drive individuals and communities to participate must be addressed.

### The most important lessons about why individuals engage in illegal hunting and trading of bushmeat are:

**Economic factors are important drivers of behavior.** Rural communities that live with wildlife hunt for food because it is often the only or the cheapest source of animal protein available. These communities trade wildlife as a food commodity, in part because in isolated areas far from markets, the meat's high value-to-weight ratio relative to most agricultural crops makes it one of the few economically profitable marketable items available. Transporters and market sellers from urban areas engage in the bushmeat trade because there are few barriers to entry and profit margins are relatively high. Urban consumers who live close to sources of supply also eat bushmeat because it is inexpensive. In urban areas that are distant from wildlife areas, bushmeat is often more expensive than domesticated animal substitutes but is a luxury good that consumers eat occasionally as a way of remembering their rural heritage.

**Community customs and values can supersede outside interests.** Most individuals engaged in the bushmeat trade perceive bushmeat use laws as illegitimate or conflicting with customary laws. National laws and policies may restrict access to resources critical to the livelihoods and ways of life of local communities and indigenous and traditional peoples. When combined with weak or absent law enforcement, participants in the trade may have little fear of being arrested and punished for engaging in customary behaviors. Laws regulating access to and use of wildlife must be perceived as being legitimate and as a benefit to local people who live with wildlife and have legitimate claims over wildlife.

## INTERVIEWS AND CASE STUDIES

Information gathered during the structured interviews with conservation practitioners suggests that communities are motivated to engage in anti-poaching and anti-trafficking efforts in a variety of contexts. Six case studies were selected to illustrate the risks and rewards of community engagement in three different scenarios in which poaching occurs (Table 1, page 14):

1. Community or customary rights are recognized, the wildlife targeted has relatively low value, and wildlife products are primarily destined for local markets
2. Community or customary rights are recognized, the wildlife targeted has high value, and wildlife products are primarily destined for international markets
3. The state is the rights holder, the wildlife targeted are of low or high value, and wildlife products are destined for local or international markets

Table 1. Case studies and their applicable scenarios

<b>Scenario 1</b>
Tamshiyacu Tahuayo Communal Conservation Area, Peru
Locally Managed Marine Areas, Madagascar
<b>Scenario 2</b>
Community Conservancies, Namibia
Northern Rangelands Trust, Kenya
<b>Scenario 3</b>
FISH and ECOFISH Projects, Philippines
Goats for Hope, Indonesia

## Scenario 1: Community Rights are Formally Recognized and Wildlife is of Low Value

When wildlife is of low value, wildlife products are generally destined for local markets or subsistence uses. As a result, the benefits accrued from conservation do not need to be particularly high to compensate for lost revenues from poaching. If community rights to use and benefit from wildlife have been established, but community members continue to engage in poaching and trafficking, the question is why they would prefer poaching to managing wildlife with a plan for sustainable use. In some cases, there may be issues related to the distribution of the costs and benefits of wildlife management within the community. Alternatively, individuals may not perceive the benefits from legal use of wildlife as adequate compensation for the opportunity costs of not engaging in illegal activities, particularly if they feel there are important benefits that stem from such engagement.

However, when there is broad consensus within communities that sustainable management of wildlife enhances the opportunities people have to improve their quality of life by securing valued resources for their use or by reducing social disorder and insecurity, then exerting pressure on a small group of community members to stop poaching should not entail major difficulty or risk. A relatively high level of social cohesion within the community is required for a community to be willing to actively regulate the behavior of its members in this way. Without broad community ownership of wildlife and a common understanding that poaching is stealing from the community, community members who become involved in reporting or taking other actions to stop poaching may be subject to social isolation and informal sanctions by their neighbors and kinfolk. This may make it more difficult for community members who are engaged in anti-poaching and anti-trafficking activities to secure their livelihoods.

The issue of whether rights have been adequately recognized or clarified becomes particularly important when outsiders are responsible for most of the poaching. If the community has no right to exclude outsiders from killing wildlife on their lands, they may not have much motivation to attempt to stop poaching. When rights of use and access are clear, local communities are typically highly motivated to engage in efforts to halt low-value wildlife poaching by outsiders and face little physical and social risk in doing so.

### Case Study: Tamshiyacu Tahuayo Communal Conservation Area, Peru

Communities living in the Tahuayo and Blanco river basins in the Peruvian Amazon are among the most isolated in Peru. These communities are politically marginalized and often the last to receive social services. Securing access to natural resources now and in the future is the primary reason these communities are motivated to manage resources sustainably.

In order to exclude outside commercial fishers (*botes congeladores*) from unsustainably harvesting fish that are central to the diets and economy of the traditional residents of Tamshiyacu Tahuayo, the

community came together and began to conduct patrols and regulate the use of natural resources in the area. Their efforts led to formal recognition of their rights by the regional government in 1991, and the national government in 2009. The common desire to exclude outsiders generated a sense of solidarity among the different ethnic residents of what is now the Tamshiyacu Tahuayo Communal Regional Conservation Area. Today, this community not only excludes outsiders from their fishery but also has sufficient social cohesion to regulate the use of the fishery and terrestrial wildlife by their own community members.

There is compelling evidence that families within the Conservation Area are complying with resource use agreements and that the communities are effectively able to enforce resource use regulations. Wildlife surveys led by WCS suggest that the communities remain compliant with prohibitions on hunting threatened species, such as tapirs, jaguars, macaws, parrots, and river otters, and that they harvest hunted species sustainably. The model of community engagement is working in this region, providing resources for local people, and conserving key species inside the Conservation Area.

*“At that time, we began to write the agreements: how we are going to do this, how we are going to take care of our river, how we are going to take care of our resources so that one day our children will also know the animals, because if we use all of it, they will suddenly know nothing and will have nothing to eat.”*

Benito Cachique in Chirif, A. 2012.  
La historia del Tahuayo contada por sus moradores  
(The Tahuayo history told by its inhabitants).

### **Case Study: Locally Managed Marine Areas, Madagascar**

Political turmoil in Madagascar over the last decade dramatically decreased funding for government agency operations. In Antongil Bay in northeastern Madagascar, there are currently no on-site staff of the Madagascar Fisheries Surveillance Center, the government agency in charge of fisheries law enforcement. To fill the law enforcement gap, the government devolved authority to coastal communities over 25 Locally Managed Marine Areas (LMMAs). Within each LMMA, communities have rights to specify and enforce fishing regulations such as no-take zones, temporary closures, and gear restrictions.

Today, the Ministry of Fisheries recognizes over 250 unarmed Community Marine Rangers spread along 200 miles of coastline as legitimate LMMA law enforcement agents. Twice a year, the Surveillance Center assists in the destruction of illegal fishing gear seized with LMMAs by local rangers. Hundreds of illegal fishing nets (primarily highly destructive beach seines) have been seized by the local communities and destroyed by government authorities. In some villages, the practice of beach seining has been stopped. However, enforcement remains challenging at times because most seines are owned by wealthy, politically influential people and *fiavana*, a tradition of social cohesion, makes some community members unwilling to inform on community or family members.

In 2011, a participatory assessment was conducted to examine perceived changes in the state of LMMAs' resources as a result of community based fishery management initiatives (Andriamaharavo 2011). Community members around LMMAs noted increases in catch per unit effort, the size of fish caught, and juvenile fish abundance. They also identified positive changes in social capital, such as increased local capacity to manage resources, changes in attitudes in the form of improved relations between communities and local authorities, and decreases in destructive fishing behaviors (i.e., the use of beach seines). These positive outcomes occurred alongside an increase in economic revenue from fishing. In April 2013, underwater reef surveys confirmed the effectiveness of LMMA management on the recovery of fish stocks, demonstrating significantly higher fish density and biomass inside LMMA no-take zones, as compared to fishing sites outside them (Komeno and Randriamanantsoa 2013).

## Scenario II: Community Rights Are Formally Recognized and Wildlife is of High Value

In a context where community rights are recognized, but illegal wildlife use is of high value, there is little incentive for local residents to engage in anti-poaching efforts or change their behavior unless conservation generates commensurate benefits to poaching. Moreover, family members and neighbors who inform on poachers and support other actions to halt their activities are likely to be subjected to isolation, social sanctions, and potential violence.

However, if legitimate uses of wildlife can feasibly generate benefits that are comparable with the market value of wildlife products that are the target of poachers and traffickers, local people have strong incentives to engage in anti-poaching efforts. This is true even when most poaching is being done by outsiders attached to organized criminal enterprises. The major challenge is ensuring that community members do not place themselves in situations in which they do not have adequate training and equipment. The risks are highest when community members actively engage in detecting, detaining, and discouraging poachers without adequate support from state agencies with the power to arrest and charge poachers (Roe 2015).

### Case Study: Community Conservancies, Namibia

The Community Conservancy program began in 1993 with support from USAID. The program, implemented by the WWF and the Namibian Association of CBNRM Support Organizations, grants use rights—ownership rights remain vested in the state – to community organizations and their members to benefit from wildlife on community lands. Communities contract with trophy hunting outfitters and ecotourism operators and benefit from the value of these enterprises in the form of fees and salaries. These economic benefits provide an effective incentive for community members to decrease their own poaching as well as engage in anti-poaching activities such as providing intelligence to the Namibian Police. The program has grown to 79 registered conservancies which cover 160,244 km<sup>2</sup> (19.4% of the surface area of Namibia) and protect the largest population of black rhino on the continent. In 2014, the conservancies provided over 6,400 wage-paying jobs and generated \$6.2 million in benefits in 2014.

Under the Community Conservancy program, community members have a formal role as community rangers as well as a responsibility as legal stewards of the wildlife. In 2013, there were over 500 community rangers engaged in a number of activities within the conservancies such as addressing human-wildlife conflict situations, responding to poaching and other legal infringements, and maintaining conservancy infrastructure. Community rangers are not armed, and expect timely and competent support from the police. The police are aware that communities have legal rights to benefit from wildlife and have responsibility for protecting wildlife on their land. Each community ranger maintains an event book, which is used to document wildlife data and other information relevant to natural resource management. This system allows the community to collect data to establish monitoring priorities and adapt management.

Namibia, unlike other nations in Africa, has largely avoided the recent catastrophic losses of elephants and rhinos to poaching. Since establishment of the conservancies, aerial and road counts outside of state owned protected areas suggest that wildlife numbers and diversity have increased (App 2008, NASCO, 2014). Between 1995 and 2013, Namibia's elephant population grew from 7,500 to over 20,000. Populations of oryx, mountain zebra, kudu, and springbok have also increased since the establishment of the conservancies. However, a 2015 ban by major airline carriers on transporting trophy animals threatens the sustainability of the conservancy approach as 40% of the community benefits from wildlife come from fees and meat from trophy hunting.

### Case Study: Northern Rangeland Trust, Kenya

The Northern Rangeland Trust (NRT) transfers the rights to benefit from and responsibility to manage wildlife from the state to communities and private landowners. In Samburu, Laikipia, Isiolo, and Marsabit



counties in northern Kenya, 19 community conservancies manage 2.5 million hectares of woody savanna and the wildlife species these areas support. These conservancies operate outside the network of formally protected areas in locations where government capacity is low and illegal firearms, tribal conflict, and insecurity are prevalent. As such, they provide critical habitat for plains game animals, including elephants, which are at high risk of poaching for the illegal ivory trade.

The conservancies provide a formal platform for local rights holders to voice their interests and concerns and to participate actively in the management of their community resources. Individual conservancies are managed by a governance body that develops programs for peace, security, livelihoods, conservation, and business development. By being part of the NRT, conservancies are able to share the costs of technical training, business development, and patrolling of resource use. The NRT also provides a formal structure for problem solving and conflict resolution. Communities have benefited from participation in NRT activities through improved grazing and livestock health, which has led to greater economic benefits (Anderson & Mehta 2013).

The conservancies are responsible for almost all law enforcement and work with the Kenya Wildlife Service and the National Police, which provide support as needed. One interesting consequence of conservancy law enforcement is a dramatic reduction in livestock theft, inter-ethnic conflict, and banditry along roads. In addition to increased law enforcement, awareness campaigns and social pressure through publicly naming and exposing local poachers have resulted in significant declines in poaching on conservancy lands. In 2012, 101 elephant carcasses (or 81% of those found by conservancy rangers) showed evidence of poaching. In 2014, this number had dropped to 27 carcasses (or 43% of the carcasses found by rangers). Sightings of elephants within the conservancies are now stable, despite an overall decline in the region.

### **Scenario III: Community Rights Are Not Formally Recognized and the State Attempts to Halt Poaching**

If communities have incentives to poach or hunt wildlife, but their rights to use or benefit from wildlife have not been recognized by the state, then community cooperation with authorities to curtail poaching activities should be unlikely unless the community perceives other benefits from wildlife conservation. Otherwise, residents should have no reason to become involved in anti-poaching efforts and little incentive to change their behavior. Some individuals may be induced by state agencies to act as paid scouts or informants; however, in such a context they may face substantial risks to their community standing, their ability to make a living, and perhaps to their personal safety. The case studies below illustrate some of the challenges of engaging communities in anti-poaching activities when community rights to use or benefit from wildlife have not been formally recognized by the state.

#### **Case Study: Fisheries Improved for Sustainable Harvest (FISH) and Ecosystems Improved for Sustainable Fisheries (ECOFISH) Projects, Philippines**

Fishing regulations detailed in the 1998 Fisheries Code included the establishment of marine protected areas (MPAs), gear restrictions, and bans on fishing with poison and explosives. However, enforcement was practically non-existent due to inadequate staffing, poor inter-agency coordination, ineffective prosecutors and judges, poor delineation of MPAs, and low levels of interest among local political leaders to enforce fisheries laws. This lack of enforcement created a sense of impunity and a culture of disrespect for fishery laws within fisher communities which resulted in open access coastal fisheries with fishers competing with one another for dwindling stocks and catches. As a result, local communities in the Calamianes Group of Islands, Danajon Bank, Tawi-Tawi Bay, and Surigao del Sur saw their fish catches decline from overfishing by local fishers, non-locals, and at times, industrial-scale fishers from Malaysia. The USAID-supported FISH and ECOFISH projects started with the premise that fisheries management

was a key service that the government should provide. Both projects focused on building public demand for the government to provide fisheries management as a service, and worked with Local Government Units to establish a line item in their annual budgets for fisheries management. The projects provided technical and operations support to local municipalities to enforce fisheries laws within agreed upon MPAs and sought ways to engage illegal local fishers. The FISH project also promoted an ecosystem-based approach to management by conserving critical fish habitats, establishing over 20 new MPAs, strengthening the capacity of local institutions, and encouraging the use of appropriate gears and practices.

Distrust between communities and local police initially undermined the effectiveness of local law enforcement efforts. Local police needed to be called to arrest illegal fishers detected and detained by local patrols. Some local fishers were employed as fish examiners, which provided an additional source of income, but often resulted in conflicts with other family or community members. Ultimately, regular meetings, joint-patrols, and trainings increased favorable interactions between local fishers, municipal law enforcers, and the police. Ecological evangelizing by the Catholic clergy and a play produced by local children that depicted the huge harm done to local families by illegal fishing also helped to shift public opinion. Perhaps most importantly, a gradual increase in local fishers' legal landings increased local willingness to comply with municipal law enforcement.

The FISH end-of-project report card found that fish stocks increased by 12.8% in focal areas. The project initiated or strengthened 31 law enforcement units in its sites and introduced 65 fishing effort restrictions. Although stricter enforcement discouraged illegal fishing and the use of illegal gear in focal areas, illegal fishers were able to shift fishing efforts to areas without adequate enforcement. These results suggest that fishers were deterred from fishing in high enforcement areas, but lacked sufficient incentives to halt illegal fishing activities altogether. Greater cooperation among Local Government Units and additional enforcement at the provincial and national level may provide additional deterrents to illegal fishing. However, in the absence of rights-based management, where fishers have responsibility for management in designated fishing areas, they have fewer incentives to regulate their own behaviors.

### **Case Study: Protecting Tigers by Protecting Livestock, Indonesia**

For the past few years, WCS has helped the government of Indonesia protect tigers by protecting livestock (mostly goats) from tiger attacks in villages near the Bukit Barisan Selatan National Park in southwestern Sumatra. Before WCS helped start the Goats for Hope project, rural communities had little confidence in government programs intended to address human-tiger conflict and perceived many of these programs as imposing unjust rules limiting traditional use rights. As a result, government rules regarding trapping and hunting of tigers and their prey were ignored or flouted. Many families set traps for pigs and other tiger prey and encouraged professional poachers to rid them of tigers that preyed upon these sources of food. Overall, the cost of living with tigers discouraged communities from engaging in anti-poaching activities, and encouraged both retaliatory killings and support for professional tiger poachers.

Through Goats for Hope, a Wildlife Response Unit works with local people to build tiger-proof enclosures to secure livestock at night, support night patrols that keep tigers at a distance from village livestock, and respond rapidly to community reports of human-tiger conflict. The project helps communities generate additional income by providing higher quality breeder goats. Within the first year of implementing Goats for Hope in the 11 villages in Talang, the number of goats and chickens killed by tigers declined by 80% and has continued to decline. Community members are now willing to halt retaliatory killing of tigers and curb hunting tiger prey for food. Rather than helping professional hunters, they now provide actionable intelligence to the Wildlife Crime Unit.

The project has also changed community perceptions regarding the hunting of tigers and their prey. Communities increasingly understand that killing tiger prey within the park increases the likelihood that tigers will leave the park in search of food, thus increasing the threat to livestock. At the same time, communities have begun to recognize that there are benefits to having tigers in the park, since they eat pigs that are the main source of crop damage. Goats for Hope has been successful in changing the behavior of local communities to protect rather than kill tigers because the program began with something that communities really wanted to stop – tiger killing of livestock – and helped them realize that there were greater benefits from conservation than the killing of tigers and their prey.

## IV. CONSIDERATIONS FOR PRACTITIONERS

The literature review, interviews, and case studies uncovered a set of key factors that conservation practitioners should consider when assessing the risks and rewards of engaging communities in anti-poaching and anti-trafficking efforts.

### OWNERSHIP

Communities with rights of ownership and who directly benefit from conservation and sustainable use have a strong incentive to detect and inform on poachers. This factor is particularly pertinent when the benefits accrued through sustainable wildlife management meet or exceed those that could be attained by poaching or trafficking, or by helping others who poach. Benefits do not always have to be monetary: increased security of access to valued natural resources and the authority to exclude non-rights holders from using community resources are also incentives. This devolution of ownership and management authority from the state to the community can reinforce cultural identity. Simply put, when communities perceive poaching to be stealing from them, they will inform on their own community members and even take considerable risks to inform on and confront outsiders.

### TRUST IN LAW ENFORCEMENT

Individuals are typically not motivated to assist the police (or other arresting authority) in crime prevention and law enforcement if they perceive their authority to be illegitimate, and their actions corrupt, unaccountable, or unfair. Likewise, law enforcement officers are often distrustful of local communities when they see them as poachers and scofflaws. Evidence shows, however, that frequent and personal interactions between community members and law enforcement officers can build the necessary trust on both sides. Personal interaction encourages both engagement by the local community and responsiveness from the authorities, which in turn improves crime prevention, increases arrests of law breakers, and increases citizen safety. Law enforcement officers are more likely to respond to local communities when they see them as legitimate owners of their lands and wildlife and, therefore, that poaching is a breach of property rights.

Community members are understandably reluctant to become active in crime prevention efforts if they fear retaliation from criminals, who may be members of their extended family or community. The anonymity of informers, therefore, is key. Individuals are more likely to cooperate with and provide information to the police if they can do so through a community organization because this masks their identities and reduces the risks of retaliation. Individuals who do provide actionable intelligence to the police – either directly or through a community organization – often stop if the police and judiciary fail to prosecute and punish crimes effectively. They feel their efforts to engage with the police are worthless, and they fear that the release of suspected criminals will increase their risk of reprisals.

## COMMUNITY COHESION

The ability of a community to mobilize and organize to prevent crime and enforce the law depends on the level of social cohesion and sense of trust toward fellow community members. Residents who have a strong sense of community – i.e., this is my neighborhood and it is important to me – will be more likely to want to defend it from both inside and outside criminals. The kind of collective action required for communities to engage in anti-poaching and anti-trafficking activities is unlikely if neighbors do not trust one another. Communities that do come together and work collaboratively with law enforcement agencies can co-produce public safety. Evidence shows that this is the most effective way to reduce or prevent crime of all types. The police alone cannot solve the poaching and trafficking problem; they must co-produce a reduction of crime with local people. considerable risk.

## MINIMIZING RISKS TO COMMUNITIES

There is almost universal agreement that civilians should not confront criminals. Community members should only report, provide information to the police, serve as witnesses, and take preventative measures. Their roles should be as scouts, informants, and guides, and not law enforcers. In special situations in which their roles are justifiably extended to confronting and detaining poachers prior to police arrest (e.g., LMMAs where detecting poachers on the water is already very difficult), the authorities have a responsibility to ensure that community members are appropriately trained to deal with these situations and will not become targets for reprisals as a result of their efforts.

Risks to community members are lower when poachers are from the community, have social ties with the community, and when wildlife is of low value. Informants risk being shunned or even physically abused by poachers when communities have low social cohesion. However, local informants are at much greater risk from organized criminal gangs with no social ties to the community who poach for high-value wildlife products, particularly if they encounter or attempt to confront the poachers. Timely and competent support from a trusted national arresting authority is essential to minimize physical risk to community members who engage in anti-poaching and anti-trafficking activities. The risks are further diminished when the law enforcement process works (i.e., arrested poachers are charged, put on trial, and punished when convicted). Without a trusted and competent arresting authority that is able and willing to respond rapidly when communities ask for their assistance, local informants who provide intelligence about high-value wildlife poaching remain at considerable physical and social risk.



# LITERATURE CITED

---

- Agrawal, A., and Chhatre, A. 2006. "Explaining success on the commons: Community forest governance in the Indian Himalaya." *World Development* 34 (1):149-166.
- Agrawal, A., and Gibson, C. C. 1999. "Enchantment and disenchantment: The role of community in natural resource conservation." *World Development* 27 (4):629-649.
- Agrawal, A., and Redford, K. H. 2006. *Poverty, development and biodiversity conservation: shooting in the dark?*, WCS Working Paper No. 26. Bronx, NY: Wildlife Conservation Society.
- Anderson, J., Colby, M., McGahuey, M., and Mehta, S. 2013. Nature, wealth, & power 2.0: Leveraging natural and social capital for resilient development edited by USAID & IRG. <https://rportal.net/groups/nwp/>.
- Andriamaharavo, S. 2011. "Locally managed marine area successes in Antongil bay, North East Madagascar." WIOMSA 7th Scientific Symposium, 24-29 October 2011, Mombasa, Kenya.
- App, B. 2008. *USAID Support to the Community-based Natural Resource Management Program in Namibia: LIFE Program Review*: Agency for International Development.
- Bassett, T. J. 2005. "Card-carrying hunters, rural poverty, and wildlife decline in northern Cote d'Ivoire." *Geographical Journal* 171:24-35.
- Brooks, J., Waylen, K., and Mulder, M. 2013. "Assessing community-based conservation projects: A systematic review and multilevel analysis of attitudinal, behavioral, ecological, and economic outcomes." *Environmental Evidence* 2 (1):2.
- Bullock, K. 2013. "Community, intelligence-led policing and crime control." *Policing and Society* 23 (2):125-144.
- Campbell, M. O. 2005. "The ecological and social context of mammal hunting in the coastal savanna of Ghana." *Geoforum* 36 (6):667-680.
- Carr, P. J., Napolitano, L., and Keating, J. 2007. "We never call the cops and here is why: a qualitative examination of legal cynicism in three Philadelphia neighborhoods." *Criminology* 45 (2):445-480.
- Cordner, G. 2014. "Community Policing." *The Oxford Handbook of Police and Policing*:148.
- Fa, J. E., Olivero, J., Farfan, M. A., Marquez, A. L., Duarte, J., Nackoney, J., Hall, A., Dupain, J., Seymour, S., and Johnson, P. J. 2015. "Correlates of bushmeat in markets and depletion of wildlife." *Conservation Biology* 29 (3):805-815.
- Foerster, S., Wilkie, D., Morelli, G., Demmer, J., Starkey, M., Telfer, P., Steil, M., and Lewbel, A. 2012. "Determinants of bushmeat consumption among rural households in Gabon, Central Africa." *Conservation Biology* 26 (2):335-344.
- Garnett, S. T., Sayer, J., and Du Toit, J. 2007. "Improving the effectiveness of interventions to balance conservation and development: a conceptual framework." *Ecology and Society* 12 (1):2.
- Grinc, R. M. 1994. "Angels in marble: Problems in stimulating community involvement in community policing." *Crime & Delinquency* 40 (3):437-468.
- Hawdon, J., and Ryan, J. 2008. "Social capital, social control, and changes in victimization rates." *Crime & Delinquency*: doi:10.1177/001128708325421.
- Hawdon, J., and Ryan, J. 2011. "Neighborhood organizations and resident assistance to police." *Sociological Forum*.
- Kabiri, N., and Child, B. 2014. "Wildlife governance in Africa." In *Adaptive Cross-scalar Governance of Natural Resources*, edited by G. Barnes and Brian Child, 102-129. London: Earthscan.
- Kahler, J. S., and Gore, M. L. 2015. "Local perceptions of risk associated with poaching of wildlife implicated in human-wildlife conflicts in Namibia." *Biological Conservation* 189:49-58.
- Knapp, E. J. 2012. "Why poaching pays: a summary of risks and benefits illegal hunters face in Western Serengeti, Tanzania." *Tropical Conservation Science* 5 (4):434-445.
- Komeno, R., and Randriamanantsoa, B. 2013. *Assessing ecological impacts of Antongil bay LMMAs*. Bronx, New York: Wildlife Conservation Society.
- Kubrin, C. E., and Weitzer, R. 2003. "New directions in social disorganization theory." *Journal of research in crime and delinquency* 40 (4):374-402.
- Kyed, H. M., and Albrecht, P. 2015. "17. Community policing in rural Mozambique and Sierra Leone." *Handbook of International Security and Development*: 264.
- Lemieux, A. M. 2014. *Situational prevention of poaching*: Routledge.
- Lotter, W., and Clark, K. 2014. *Community involvement and joint operations aid effective anti-poaching in Tanzania*. PARKS.
- Martin, E., Martin, C., and Vigne, L. 2013. "Successful reduction in rhino poaching in Nepal." *Pachyderm* (54):66-73.

- Nasi, R., Taber, A., and Vliet, N. V. 2011. "Empty forests, empty stomachs? Bushmeat and livelihoods in the Congo and Amazon Basins." *International Forestry Review* 13 (3):355-368.
- Nelson, F. 2012. *Community rights, conservation and contested land: The politics of natural resource governance in Africa*: Routledge.
- Pattavina, A., Byrne, J. M., and Garcia, L. 2006. "An examination of citizen involvement in crime prevention in high-risk versus low-to moderate-risk neighborhoods." *Crime & Delinquency* 52 (2):203-231.
- Ratcliffe, J. H. 2012. *Intelligence-led policing*: Routledge, UK.
- Refisch, J., and Kone, I. 2005. "Market hunting in the Tai Region, Cote d'Ivoire and implications for monkey populations." *International Journal of Primatology* 26 (3):621-629.
- Rentsch, D., and Damon, A. 2013. "Prices, poaching, and protein alternatives: An analysis of bushmeat consumption around Serengeti National Park, Tanzania." *Ecological Economics* 91 (0):1-9. doi: <http://dx.doi.org/10.1016/j.ecolecon.2013.03.021>.
- Roe, D. 2015. "Involving communities in law enforcement efforts." *Beyond Enforcement: communities, governance, incentives, and sustainable use in combating wildlife crime*, Glenburn Lodge, Muldersdrift, South Africa.
- Rosenbaum, D. P. 1988. "Community crime prevention: A review and synthesis of the literature." *Justice Quarterly* 5 (3):323-395.
- Ruteere, M., and Pommerolle, M.-E. 2003. "Democratizing security or decentralizing repression? The ambiguities of community policing in Kenya." *African Affairs* 102 (409):587-604.
- Sabet, D. 2014. *Co-Production and Oversight: Citizens and Their Police*. Woodrow Wilson Center for International Scholars, Mexico Institute.
- Sampson, R. J., Raudenbush, S. W., and Earls, F. 1997. "Neighborhoods and violent crime: A multilevel study of collective efficacy." *Science* 277 (5328):918-924.
- Schenck, M., Effa Nsame, E., Starkey, M., Wilkie, D. S., Abernethy, K., Telfer, P., and Treves, A. 2006. "Why people eat bushmeat: results from two-choice, taste tests in Gabon, Central Africa." *Human Ecology* 34 (3):433-445.
- Schulte-Herbruggen, B., Cowlshaw, G., Homewood, K., and Rowcliffe, J. M. 2013. "The importance of bushmeat in the livelihoods of West African cash-crop farmers living in a faunally-depleted landscape." *PloS one* 8 (8):e72807.
- Smith, B. W., Novak, K. J., and Hurley, D. C. 1997. "Neighborhood crime prevention: The influences of community-based organizations and neighborhood watch." *Journal of Crime and Justice* 20 (2):69-86.
- Sun, I., Hu, R., and Wu, Y. 2012. "Social capital, political participation, and trust in the police in urban China." *Australian & New Zealand journal of criminology* 45 (1):87-105.
- Tole, L. 2010. "Reforms from the ground up: a review of community-based forest management in tropical developing countries." *Environmental Management* 45 (6):1312-1331.
- Tyler, T. R., and Huo, Y. 2002. *Trust in the law: encouraging public cooperation with the police and courts through*: Russell Sage Foundation.
- Verma, A., Das, D. K., and Abraham, M. 2012. *Global community policing: Problems and challenges*: CRC Press.
- Wilfred, P., and Maccoll, A. 2015. "Local perspectives on factors influencing the extent of wildlife poaching for bushmeat in a game reserve, western Tanzania." *International Journal of Conservation Science* 6 (1).
- Wilkie, D. S., Bennett, E. L., Starkey, M., Abernethy, K., Fotso, R. C., Maisels, F., and Elkan, P. 2006. "If trade in bushmeat is legalized can the laws be enforced and wildlife survive in Central Africa: evidence from Gabon." *Journal of International Wildlife Law and Policy* 9:335-349.
- Wilkie, D. S., and Godoy, R. A. 2001. "Income and price elasticities of bushmeat demand in lowland Amerindian societies." *Conservation Biology* 15 (3):1-9.
- Wyatt, T. 2013. *Wildlife trafficking: A deconstruction of the crime, the victims, and the offenders*: Palgrave Macmillan.

# APPENDIX I: GLOSSARY OF TERMS

<b>Authority</b>	The perception of natural resource users and rights holders that a governance group genuinely represents their interests and has legal or customary jurisdiction to govern “their” natural resources.
<b>Capacity</b>	The knowledge and skills to decide what to do and the staff and financial resources to implement those decisions.
<b>CBNRM</b>	Community based natural resource management. A model of conservation where local communities have the authority and responsibility for managing or co-managing natural resources within their jurisdiction.
<b>Communities</b>	Social aggregations of individuals and families, based on place, practice, or interest.
<b>Customary</b>	Rights conferred through tradition and often not recognized by government policies and executive branch agencies.
<b>Institutions</b>	The formal or customary norms, policies, rules, and regulations that are available to a governance group to define access to and meter use of natural resources within their jurisdiction.
<b>Legitimacy</b>	Recognition that a governance group either formally (i.e., legal, de jure) or informally (i.e., traditional, de facto) has jurisdiction over determining what resource or land use practices are permissible, defining who can access certain resources or implement certain land use practices, and establishing what sanctions can and will be imposed for infractions of these rules.
<b>Natural Resource Governance</b>	A social process that decides and defines what is and what is not acceptable behavior in terms of natural resource use in a given area, and how the process ensures that people comply with the policies, rules, and regulations for acceptable behavior.
<b>Natural Resource Management</b>	Natural resource “governors” are those individuals or groups that establish, and are accountable for, the implementation of natural resource access and use policies and norms (institutions). “Managers” are individuals or groups that are responsible for executing the policies, rules, and regulations (institutions) established by the “governors.”
<b>Poachers</b>	Individuals or groups that take wildlife without the recognized formal or traditional rights to do so.
<b>Poaching</b>	The illegal or illegitimate taking of wildlife.
<b>Rights</b>	The moral or legal entitlement to have or obtain something or to act in a certain way. In a wildlife management context the formal (de jure) or customary authority to access, use and benefit from wildlife stewardship.
<b>Trafficking</b>	The illegal or illegitimate transportation of wildlife from where it was poached to where it is sold to the consumer.

## APPENDIX 2: LIST OF INTERVIEWEES

---

The following 20 individuals were interviewed by using a structured questionnaire by telephone or through Skype.

#	Name	Organization
1	Stacy Jupiter	WCS Fiji
2	Lisa Naughton	University of Wisconsin
3	Brian Child	University of Florida
4	Chris Weaver	WWF Namibia
5	Mary Rowen	USAID Forestry and Biodiversity
6	Kristen Walker	Conservation International
7	Judy Oglethorpe	WWF Nepal
8	Adam Henson	Fauna and Flora International
9	Rosaleen Duffy	University of London
10	Sirilo Dulanaqio	WCS Fiji
11	Greg Stuart-Hill	WWF Namibia
12	Russell Taylor	WWF Namibia
13	Rodgers Lubilo	Southern Africa Wildlife College
14	Edward Niesten	Conservation International
15	Matthew Linkie	Fauna and Flora International Aceh
16	Rob Brett	Fauna and Flora International Africa
17	Adrian Treves	University of Wisconsin
18	Debbie Martyr	Fauna and Flora International Sumatra
19	Lykhim Ouk	Conservation International Cambodia
20	Francis Sakala	Zambia Wildlife Authority extension officer

# APPENDIX 3: STRUCTURED INTERVIEW

Following is the structured questionnaire that was used to guide each interview.

Interviewee Name and Organization:

Interview date:

#	Question	Answer
1	Organization you currently work for	
2	Years working on issues involving conservation and communities	
3	Would you describe your experience as being more related to conservation planning and implementation, or research and evaluation?	
4	Countries where you have the greatest experience on issues related to conservation and local communities	
5	Roles communities play	
6	Benefits they can accrue	
7	Factors that enable benefits	
8	Factors that militate against benefits	
9	Risks they may be exposed to	
10	Factors that elevate risks	
11	Factors that minimize risks	
12	Example of when engagement was a benefit	
13	Example of when engagement was a risk	
14	Conditions under which community engagement is effective in decreasing poaching/trafficking	
15	Factors that motivate communities to engage	
16	Can you recommend a field-based colleague, from your own organization, or a partner organization that is especially knowledgeable about these issues, with whom we should speak?	
	Other	



# APPENDIX 4: BEYOND ENFORCEMENT CONFERENCE INTERVIEWS

The following table lists all participants in the Beyond Enforcement conference held in South Africa in early 2015 and organized by the IIED and the IUNC on Environmental, Economic, and Social Policy, Sustainable Use and Livelihoods Specialist Group. Participants who were interviewed for this research project are indicated with a Y in the left column of the table.

Talk	First name	Last Name	Organization
Y	Max	Abensperg-Traun	Federal Ministry of Environment, Austria
Y	Nick	Ahlers	TRAFFIC
	James	Allan	The Centre of Excellence for Environmental Decisions, The University of Queensland
Y	Moemi	Batshabang	Ministry of Environment Wildlife and Tourism, Botswana
	Gordon	Bennett	Survival International
Y	Duan	Biggs	The Centre of Excellence for Environmental Decisions, The University of Queensland
Y	Hubert	Boulet	Food and Agriculture Organization of the United Nations
	Noelia Zafra	Calvo	United Nations University
Y	Susan	Canney	Mali Elephant Project
	Khristopher	Carlson	Small Arms Survey
	Thea	Carroll	Department for Environmental Affairs South Africa
Y	Jaime	Cavelier	Global Environment Facility
Y	Dan	Challender	IUCN Global Species Programme
	Brian	Child	University of Florida/Global Environment Facility Scientific and Technical Advisory Panel
	Kai	Collins	Wilderness Safaris
Y	Rosie	Cooney	IUCN Sustainable Use and Livelihoods Specialist Group
Y	Calvin	Cottar	Cottar's Safari Service
	Laura	Darby	Great Apes Survival Partnership
	Kimon	de Greef	Independent Researcher
	Tom	De Meulenaer	Convention on International Trade in Endangered Species of Wild Flora and Fauna
	Braulio	de Souza Dias	Convention on Biological Diversity
Y	Toan	Do	The World Bank
Y	Holly	Dublin	IUCN/Species Survival Commission African Elephant Specialist Group and IUCN Social Policy, Sustainable Use and Livelihoods Specialist Group Steering Committee
Y	Jeremy	Eppel	United Kingdom Department for Environment, Food & Rural Affairs
	Kathleen	Fitzgerald	African Wildlife Foundation
	Jumanda	Gakelebhone	Kalahari Game Reserve
Y	Edson	Gandiwa	Chinhoyi University of Technology
Y	Kenly	Greer	U.S. Department of State

Talk	First name	Last Name	Organization
	Max	Jenes	PAMS Foundation
	William	Kamgaing	Graduate School of Asian and African Area Studies Kyoto University
Y	Roopa	Karia	USAID
	Joe	Kassongo	Juristrale, DRC
Y	Aidan	Keane	Imperial College London
	Alex	Kisingo	College of African Wildlife Management
	Mike	Knight	IUCN/SSC African Rhino Specialist Group
	Adrian	Lombard	The International Association for Falconry and the Conservation of Birds of Prey
Y	Maxi	Louis	Namibian Association of CBNRM Support Organisations
	Rodgers	Lubilo	South African Wildlife College
	Katharine	Mansell	IIED
	Moscow	Marumo	Department for Environmental Affairs South Africa
Y	Roland	Melisch	TRAFFIC
	Minister Edna	Molewa	Ministry of Water and Environmental Affairs
Y	Alejandro	Morales	ARCAS, Centro de Rescate y Rehabilitación de Vida Silvestre
Y	Mike	Murphree	African Centre for Disaster Studies and IUCN SULI Steering Committee
	Abdallah	Mwanauta	Ministry of Natural Resources and Tourism, Tanzania
	Mlandelwa Nqo	Ndlovu	Resource Africa
Y	Johnson	Ndokosho	Ministry of Environment and Tourism, Namibia
	Benjamin	Neusel	German Society for International Cooperation (GIZ) National Resource Management Project Tanzania
Y	Daniel	Ole Sambu	Big Life Foundation and African Wildlife Foundation
	Garth	Owen-Smith	Integrated Rural Development and Nature Conservation
	Kumar	Paudel	Greenhood Nepal
	Scott	Perkin	IUCN Asia Regional Office
	Caroline	Petersen	United Nations Development Program
Y	Jacob	Phelps	Center for International Forestry Research
	Ana	Puyol	TRAFFIC
	Hasina	Randriamanampisoa	Durrell Wildlife Conservation Trust, Madagascar
Y	Elisa	Reuter	German Police Service
	Klemens	Riha	GIZ
	John	Robinson	WCS
Y	Doreen	Robinson	USAID
	Dilys	Roe	IIED
	Mary	Rowen	USAID
	Samia	Saif	Durrell Institute of Conservation and Ecology
Y	Jo	Shaw	WWF

Talk	First name	Last Name	Organization
	Maya	Sivagnanam	United Kingdom Foreign and Commonwealth Office
	Diane	Skinner	Environmental and Wildlife Consultant
	Iain	Stewart	United Kingdom Foreign and Commonwealth Office
	Greg	Stuart Hill	WWF
	Naresh	Subedi	National Trust for Nature Conservation, Nepal
Y	Louise	Swemmer	South African National Parks
	Russell	Taylor	WWF
	Henry	Travers	Imperial College London
Y	Nathalie	van Vliet	Center for International Forestry Research
	David	Wilkie	WCS
	Lim Teck	Wyn	Resource Stewardship Consultants Sdn Bhd, Malaysia

# APPENDIX 5: CASE STUDY TEMPLATE

## BENEFITS AND RISKS OF ENGAGING LOCAL COMMUNITIES IN WILDLIFE ANTI-POACHING AND ANTI-TRAFFICKING EFFORTS

Completing the template: Please answer as many questions as possible/relevant in the table below. Please add your answers to the right hand column using as much space as required.

Name of Case Study:

Question	Answer
Name of person writing case study	
Organization	
Relationship to case study	Example: project implementer, independent researcher, funder, etc.
KEY FACTS AND FIGURES	
Country where case study is located	
Site(s)	Example:, name of protected area(s) or other intervention sites. Please explain if not site specific.
Species of concern	Which species affected by crime does the project seek to address?
Name of project/case study	
Date (year) project started	
Current status	
Which of the commitments of the London Conference (or other international initiatives) on illegal wildlife trade does the project/case study address?	
Illegal wildlife trade context that the project seeks to address	Example: high/low/increasing/decreasing levels of poaching and trends, species involved, subsistence/local or national commercial/international; trafficking.
Value of trade item	What is the local trade value and final consumer trade value of the wildlife product?
Local or international trade	Trade in the wildlife product mostly local or national or is it mostly international.
Poachers	Are the poachers primarily from the ownership community or are they outsiders? And if outsiders, are they individuals or part of organized crime gangs?
Political context in which project operates	Example: strong/weak rule of law; conflict zone; high levels of corruption; weak governance.
Geographical context	Example: inside or outside a protected area.
The approach to community engagement that the project has taken and the rationale for this approach	Example: community game guards, intelligence providers, sustainable use schemes; co-management of protected area, livelihood alternatives in lieu of wildlife use; allocation of ownership rights of protected areas or wildlife.

Question	Answer
<b>LINKS BETWEEN COMMUNITY ENGAGEMENT AND IWT TRENDS</b>	
Is the community engagement project part of a wider response to wildlife crime in the areas?	Example: Is there a parallel law enforcement activity being implemented and if so how does the community engagement activity interact with this? Or does it replace the need for formal law enforcement?
What is the national policy context for community involvement in conservation (please identify relevant policies if known)	Example: Do local people have rights over land and resources? And for what purposes? Is sustainable use allowed, etc.? Do local people have weak or strong tenure or user rights explicitly over the species in trade?
What is the national policy context for the treatment of illegal wildlife trade? (please identify relevant policies that make provisions for illegal wildlife trade, if known)	Example: Is wildlife crime treated as serious crime? What penalties are provided for (e.g. scale of fines, length of prison sentences? Is the military involved or only the wildlife management authority?)
Have case study communities been negatively affected by government responses to illegal wildlife trade?	Example: Community members having reduced access to areas for their cattle grazing, for collecting food. Or community members get confronted aggressively by enforcers in their search for poachers in a way that impacts on their livelihoods?
What is the poverty context in which the project operates?	Example: Do the communities the project works with fall above/below national poverty lines? Are they the poorest of the poor? Is poverty a motivating factor behind involvement in illegal wildlife trade if the project is focused on changing community behaviour?
How effective has the project been? (please provide evidence)	Example: Has wildlife crime reduced as a result of the project? Have wildlife numbers increased/stabilised? Has the effect of illegal wildlife trade on local people changed?
Accountability – Who has the responsibility for monitoring and assessing the relationship between the participation of the local community and the trends observed in these species in trade?	Example: The community? The management authority? The project implementers?
<b>RISKS AND REWARDS TO LOCAL COMMUNITIES IN TACKLING INTERNATIONAL WILDLIFE TRADE</b>	
What role do the local communities play in tackling International Wildlife Trade	Example: They act as informants; they act as guards; they alter their own behavior away from poaching.
What rewards do they get? Please provide details of type and scale of rewards received including any trends over time.	Example: Salaries, revenue share from protected area entrance fees; direct income from tourism or trophy hunting concessions/sales; non-financial benefits.
What risks do they encounter?	Example: Are the poachers they deal with armed? Do community guards get shot? Do they get stigmatized if they are identified as informants? Does involvement of local individuals in tackling wildlife crime threaten the social cohesion of villages/communities, or do whole villages/communities become involved?



Question	Answer
Do rewards appear to adequately balance risks taken?	
What law enforcement back-up do they have?	Example: Are they connected to the police if they apprehend a poacher? Are they armed (and if so how does this compare to the types of arms the poachers carry)? Have they had specialist training? Are they covered by military law in the case of someone being killed?
<b>CHALLENGES</b>	
How easy/difficult was it to get communities interested/engaged in the project?	
What have been the major barriers to success?	Example: Political barriers, capacity constraints; sheer power of the challenge brought on by the value of species/commodities involved; complicity with illegal activity within the community; weaponry and tactics of poachers; funding constraints; policy and legislative framework.
In what ways these have hindered progress?	Example: Do they reduce the level of benefits available? Increase the level of risk?
What have been the major factors that have helped the project be successful (if applicable) and how have these aided success?	
How have the links between key factors and success/failure been measured?	Example: How do we actually know whether or not there is a correlation between community engagement and success/failure?
<b>LESSONS LEARNED</b>	
What are the key lessons that you would pass to someone else in terms of what works well and what doesn't?	
What could you say about the timelines involved and resources required to achieve success?	
What could you say about the extent to which your project operates in a unique context (because of the species involved, scale of poaching, political context, etc.) or whether it is a model that could be widely replicable elsewhere?	
<b>SUMMARY DESCRIPTION</b>	
In your own words please tell us the overall story of your case study. Much of the information will be included in the table above but please feel free to use anecdotes, quotes, photos to bring your story alive and to cover any points that may not have been captured above or where more detail would be useful. Please limit your story to <b>maximum of 1,000 words</b> .	



**U.S. Agency for International Development**

1300 Pennsylvania Avenue, NW

Washington, D.C. 20523

Tel: (202) 712-0000

Fax: (202) 216-3524

**[www.usaid.gov](http://www.usaid.gov)**