University of Cincinnati

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I, Jennifer Latessa, hereby submit this original work as part of the requirements for the degree of Master of Community Planning in Community Planning.

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The Prospect for Creative Collaboration: A Peace Park Between Myanmar and Thailand

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Committee chair: David Edelman, Ph.D.

Committee member: Jan Fritz, Ph.D.
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by

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April 2014

Committee:
David Edelman, Ph.D., Chair
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Abstract

This study evaluates the potential for a peace park in the mountain range that delineates the border between Myanmar and Thailand, or the Tanintharyi Mountain Range. The Tanintharyi Mountain Range is delicate, socioeconomically, environmentally, and politically, with a long history of conflict. With Myanmar re-opening its border, an international network has begun discussing the possibility of designating the land for shared conservation. The work being done by this network includes scientific research and a stakeholder analysis. These findings help contextualize the diagnostic results and support the overall goal of this study: to assess the challenges and solutions for the prospective peace park.

Translated versions of the Diagnostic Tool for Trans-boundary Conservation Planners, a questionnaire developed by the International Union for Conservation of Nature (IUCN), were created to collect results from stakeholders in the area who have the power to stop or start the initiative. These findings conveyed indicators of need, readiness, opportunities and threats for a shared conservation zone along the border. The logic and structure of this argument weaves through different disciplines and a large range of geographic and cultural contexts to address the varied nature of environmental conflict resolution. Although it may be challenging to form and maintain peace parks, peace parks have the ability to open up dialogue and mitigate issues, as well as enhance protection and maintenance for long term benefits through ecotourism, economic development and goodwill between neighboring boundaries and peoples. Peace parks offer many benefits to communities and support a way to build amity amongst border communities and their nations. Such an option should be considered by local and global leaders.
This first chapter introduces the research question and provides context for a peace park in the Tanintharyi Mountain Range today. Next, the literature review further explains peace parks and their history, both generally and in the region of study. Conflict resolution theories and environmental dispute practices are also incorporated in the second chapter. The diagnostic tool and methods are explored in chapter three and lead to the results and analysis in chapter four. Chapter five suggests recommendations for the site and its stakeholders and concludes with a broad overview on peace park formation in the region.
Acknowledgments

Thank you to my teachers, friends and family for your love and support.
"I know of no political movement, no philosophy, no ideology, which does not agree with the peace parks concept as we see it going into fruition today. It is a concept that can be embraced by all.

In a world beset by conflicts and division, peace is one of the cornerstones of the future. Peace parks are a building block in this process, not only in our region, but potentially in the entire world."

--Nelson Mandela, 2001

"Thousands of tired, nerve-shaken, over-civilized people are beginning to find out that going to the mountains is going home; that wildness is a necessity; and that mountain parks and reservations are useful not only as fountains of timber and irrigating rivers, but as fountains of life."

--John Muir, 1901

**Figure 1: Aerial Topography of Myanmar and Thailand.**

Table of Contents

Acknowledgments .................................................................................................................. v
List of Figures ............................................................................................................................ ix
List of Tables .............................................................................................................................. xii
Acronyms ....................................................................................................................................... xiii

1 Introduction ............................................................................................................................... 15

1.1 Research Question and Objectives ......................................................................................... 16
1.2 Scope, Background and Significance of the Problem ............................................................... 17
1.3 Peace Parks .............................................................................................................................. 24
1.4 Framework for Analysis .......................................................................................................... 28

2 Literature Review ....................................................................................................................... 30

2.1 Fields of Thought around Environmental Negotiation and Conflict Resolution .................... 31
2.2 Peace Parks in Southeast Asia ................................................................................................. 42
2.3 Neighboring Thailand and Myanmar ....................................................................................... 52

3 Methodology ............................................................................................................................. 68

3.1 Methods .................................................................................................................................... 68
3.2 Timeframe .................................................................................................................................. 70
3.3 Location(s) of the Study ........................................................................................................... 73
3.4 Access to the Data and Subjects ............................................................................................... 73
3.5 Population and Samples Involved ........................................................................................... 74
3.6 Participation ............................................................................................................................. 78
3.7 Selecting Contributors ........................................................................................................... 79
3.8 Critical Assessment ................................................................................................................ 79

4 Analysis ........................................................................................................................................ 83

4.1 Stakeholder and Area Characteristics Considered to Increase or Decrease the Likelihood of TBC Negotiation ........................................................................................................... 83
4.2 Diagnostic Tool for Trans-Boundary Conservation for Planners Report ................................ 84
4.3 Exploring the Results .............................................................................................................. 90

5 Recommendations and Conclusion ........................................................................................... 93

5.1 Policy Reform ......................................................................................................................... 93
5.2 Overcoming Historical Conflicts ............................................................................................ 96
5.3 Economic Revitalization ....................................................................................................... 96
5.4 Conservation Efforts .............................................................................................................. 99
5.5 Military Use ........................................................................................................................... 102
5.6 International Cooperation ..................................................................................................... 103
5.7 Conclusion ............................................................................................................................. 103
Appendices .......................................................................................................................... 118

Appendix I: Diagnostic Tool for Trans-Boundary Conservation Planners (English) .................. 119
Appendix II: “Key Stakeholders in the Conservation and Management of the Taninthayi Range between Myanmar and Thailand” ............................................................................................... 138
Appendix III: Cooperative and Non-Cooperative Options in Game Theory .............................. 142
Appendix IV: Planning for Cooperative Behavior through Environmental Means .................. 145
Appendix V: IRB Approval .................................................................................................... 146
List of Figures

Figure 1: Aerial Topography of Myanmar and Thailand.................................................. vi

Figure 2: Thanintharyi Mountain Range ................................................................. 17

Figure 3: Thanintharyi Mountain Range with Administrative Districts/Provinces . 18

Figure 4: “Proposed Trans-Boundary Biodiversity Cooperation area in the
Thanintharyi (Tenasserim) Mountain Range along the Border between Myanmar
and Thailand. In Myanmar, the Thanintharyi Nature Reserve and the Thanintharyi
National Park (proposed in 1992) are covered while Kaeng Krachan Forest
Complex is Included in Thailand” ................................................................. 20

Figure 5: “Important Corridors in Tiger Conservation Landscape in Myanmar” 21

Figure 6: “Proposed Trans-boundary Cooperation area between the Thanintharyi
Nature Reserve, in the Thanintharyi Hills, Southern Myanmar, the Two National
Parks in Western Forest Complex (WEFCOM), and the Kaeng Krachan Forest
Complex (KKFC), of Thailand” ........................................................................... 22

Figure 7: Waterton-Glacier International Peace Park.................................................. 25

Figure 8: "Spatial Distribution of 177,547 Nationally Designated Protected Areas
Around the World. Protected Areas with Marine Component are Shown in Blue,
Soley Terrestrial Protected Areas are Shown in Green” ....................................... 27

Figure 9: “Contending Pathways of Environmental Security Discourse” .......... 33

Figure 10: “The Triangle of Conflicting Goals for Planning, and the Three
Associated Conflicts. Planners Define Themselves, Implicitly, by where They
Stand on the Triangle. The Elusive Ideal of Sustainable Development Leads one
to the Center.” ........................................................................................................ 40
Figure 29: Species Research before Star Gazing in Southeast Asia at an Environmental Research Station .......................................................... 101

Figure 30: Park Military ................................................................................................................. 102

Figure 31: “Factors for Success of Conservation of Parks in Developing Regions” ................................................................................................................................. 104

Figure 32: Tanintharyi Mountains ................................................................................................. 107

List of Tables

Table 1 “Protected Areas in the Proposed Project Area in the Taninthayi (Tenasserim) Range Between Myanmar and Thailand” ......................................................... 19
Table 2: “2007 UNEP-WCMC Global List of Transboundary Protected Areas”. 27
Table 3: “Zoning Scheme for the PPFC Landscape” ................................................................. 47
Table 4: “Number of Villages, Households and Population inside and in the Buffer Zone of Sai Yok and Thong Pha Phum National Parks and Kaeng Krachan Forest Complex” .............................................................................................................................. 64
Table 5: “Livelihood Composition of Study Villages (By Households)” ....................... 65
Table 6: Primary, Secondary and Tertiary Stakeholders as Identified by the Government of Myanmar and the Government of Thailand ........................................ 76
Table 7: "Environmental Planning for Cooperative Behavior" .......................... 145
### Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
</tr>
<tr>
<td>ASEAN</td>
<td>Association of Southeast Asian Nations</td>
</tr>
<tr>
<td>BANCA</td>
<td>Biodiversity And Nature Conservation Association</td>
</tr>
<tr>
<td>ECCDI</td>
<td>Ecosystem Conservation and Community Development Initiative</td>
</tr>
<tr>
<td>ECODEV</td>
<td>Economically progressive Ecosystem Development group</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
</tr>
<tr>
<td>FREDA</td>
<td>Forest Resource Environment Development And Conservation Association</td>
</tr>
<tr>
<td>FRI</td>
<td>Forest Research Institute</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information Systems</td>
</tr>
<tr>
<td>IRB</td>
<td>Internal Review Board</td>
</tr>
<tr>
<td>ITTA</td>
<td>International Tropical Timber Agreement</td>
</tr>
<tr>
<td>ITTO</td>
<td>International Tropical Timber Organization</td>
</tr>
<tr>
<td>IUCN</td>
<td>International Union for Conservation of Nature</td>
</tr>
<tr>
<td>JICA</td>
<td>Japan International Cooperation Agency</td>
</tr>
<tr>
<td>KKFC</td>
<td>Kaeng Krachan Forest Complex</td>
</tr>
<tr>
<td>KPI</td>
<td>King Prajadhipok’s Institute</td>
</tr>
<tr>
<td>MERN</td>
<td>Myanmar Environmental Rehabilitation-conservation Network</td>
</tr>
<tr>
<td>MOECAF</td>
<td>Ministry of Environmental Conservation and Forestry</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
</tr>
<tr>
<td>NP</td>
<td>National Park</td>
</tr>
<tr>
<td>PA</td>
<td>Protected Area</td>
</tr>
</tbody>
</table>
PPFC : Pha Taem Protected Forest Complex
RECOFTC : The Center for People and Forests
RFD : Royal Forest Department
TBC : Trans-boundary Biodiversity Conservation
TBCA : Trans-boundary Biodiversity Conservation Areas
TBPA : Trans-boundary Protected Area
TFCA : Trans-frontier Conservation Area
TNP : Tanintharyi National Park
TNR : Tanintharyi Nature Reserve
TR : Tanintharyi (Tenasserim) Range
UN : United Nations
UNESCO : United Nations Educational, Scientific, and Cultural Organization
UNDP : United Nations Development Programme
UN-REDD+ : The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
WCS : Wildlife Conservation Society
WEFCOM : Western Forest Complex
WS : Wildlife Sanctuary
WWF : World Wildlife Fund
I Introduction

Peace parks are shared conservation zones that serve to “build or sustain” amity between communities and states (Ali, 2007, p. 1). They can play an influential role in building peace and long term stability in an area with or without a history of distrust and even territorial conflict (Ali, 2007). This does not prevent the prospect that, if mismanaged, peace parks themselves, both peace parks between enemies and friends may lead to conflict (Ali, 2007).

Historically, peace parks have been creative in methods to form and protect regions by applying mixed use approaches of dispute resolution, partnership building with local communities, and exercising political mergers for land use conservation and maintenance (Ali, 2007). Geopolitical spaces can achieve enough trust to transform their borders into harmonized and productive parks over assorted lands, through an intricate and widespread network, and multi-level and diverse management approaches for strides toward resilient and effective results (Ali, 2007).

The creation of such a peace park provides a chance for collaborative communal efforts to transform an area, conflict ridden or not, into a place of sustained ecological, economic and social significance (Ali, 2007; Quinn, Broberg, and Freimund, 2013).

The Tanintharyi (Tenasserim)\(^1\) Mountain Range area between the Republic of the Union of Myanmar (Burma)\(^2\) and the Kingdom of Thailand\(^3\) has the potential to become a peace park,

---

\(^1\) Tenasserim is the name of the mountain range in the Thai language, while Tanintharyi is used in Burmese, although it should be noted there are many different names for the area in different parts by different peoples. Thanintharyi, or Thaninthayi, depending on its English spelling, is used as the TBC project title and is the referenced name for the mountain range in this report. Spellings variations commonly occur when translating from regional languages into English. Spellings may be used interchangeably outside of this thesis.

\(^2\) The Republic of the Union of Myanmar or more simply Myanmar is also known as Burma, the former name of the country. This study refers to the country as Myanmar and other geographical names based on the current status of the country’s name and city spellings, not to advocate for or against any political affiliation.
since it could serve to sustain or build peace amongst local communities and nations. Peace parks can enhance the efficiency of transboundary biodiversity conservation (TBC) and can help lead to long term cooperation.

This first chapter introduces the research question and provides context for a peace park in the Tanintharyi Mountain Range today. Next, the literature review further explains peace parks and their history, both generally and in the region of study. Conflict resolution theories and environmental dispute practices are also incorporated in the second chapter. The diagnostic tool and methods are explored in chapter three and lead to the results and analysis in chapter four. Chapter five suggests recommendations for the site and its stakeholders and concludes with a broad overview on peace park formation in the region.

1.1 Research Question and Objectives

Taking place from January 2013 through March 2014, the goal of the research is to discover if the necessary conditions exist for establishing a peace park in the Taninthayi Mountain Range. This should be considered carefully because the results can indicate whether the endeavor will “fuel tensions or foster cooperation” between stakeholders and communities (Hammill and Besançon, 2007).

The information collected from willing stakeholders aims to provide insight on the need and readiness for a peace park in the area and any threats and/or opportunities that could slow down or speed up the process of its establishment, plus the observed stakeholders, geographic reach, and capacity indicators, and explains what stakeholder and area characteristics are

---

3 The short name for "Krung Thep Mahanakhon Amon Rattanakosin Mahinthara Ayuthaya Mahadilok Phop Noppharat Ratchathani Burirom Udomratchaniwet Mahasathan Amon Piman Awatan Sathit Sakkathattiya Witsanukam Prasit," the official title of the Kingdom.
considered to increase or decrease the likelihood of a TBC in the region. Throughout the research the tool itself is evaluated as it is the first time it is being practically used. An overarching goal of this research is to further support future peace park initiatives around the world, and particularly in Thailand and Myanmar.

1.2 Scope, Background and Significance of the Problem

Figure 2: Thanintharyi Mountain Range

The Thanintharyi Mountain Range delineates part of the borderline between Thailand and Myanmar; half of the mountain range belongs to Myanmar and the other half to Thailand. The mountain range has four important terrestrial regions⁴ that intersect with four bio-geographical zones⁵ and transitions from continental dry evergreen forests in the north to semi-evergreen rain forests to the south (Governments of Myanmar and Thailand, 2013). Further, the mountain range contains the Tenesserim and Dawna watersheds and converges with other

⁴ The four important terrestrial types are mixed deciduous forest, tropical evergreen forest, bamboo break and grassland areas (Governments of Myanmar and Thailand, 2013).
⁵ The four bio-geographical regions are the Indo-Chinese, Sino-Malayan, Indo-Burmese and Eastern India (Governments of Myanmar and Thailand, 2013).
mountain ranges and rivers\(^6\) (Governments of Myanmar and Thailand, 2013). It is located in central Thailand along its western border in Kanchanaburi, Ratchaburi, Phetchaburi and Prachuab Kiri Khan Provinces, and in southern Myanmar in the administrative districts of Kayin State, Mon State and the Tanintharyi Division as seen in the following figure.

**Figure 3: Tanintharyi Mountain Range with Administrative Districts/Provinces**

![Map of Tanintharyi Mountain Range with Administrative Districts/Provinces](image)

\[^6\] The Tenasserim, Salween, and Chao Phraya Rivers run into the Taninthayi Mountain Range (Governments of Myanmar and Thailand, 2013).
The mountain range serves an important ecological function, both on land and aquatically. The combined ecosystems create unique assemblages of diversity. The area includes endangered and endemic species, as well as an array of human cultures. Although the Government of Myanmar and the Government of Thailand are protecting areas on both sides of the border, the area as a whole remains vulnerable to mismanagement, environmental degradation, poverty and black market trade (Government of Myanmar and Government of Thailand, 2013).

Table 1 “Protected Areas in the Proposed Project Area in the Taninthayi (Tenasserim) Range Between Myanmar and Thailand”

<table>
<thead>
<tr>
<th>Name</th>
<th>Size (mi.)*</th>
<th>Size (km.²)</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Myanmar</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tanintharyi National Park</td>
<td>1,414.3</td>
<td>3,663</td>
<td>Proposed</td>
</tr>
<tr>
<td>Tanintharyi Nature Reserve</td>
<td>625.1</td>
<td>1,619</td>
<td>Designated</td>
</tr>
<tr>
<td>Taninthayi corridor area (partial area)</td>
<td>3,243.3</td>
<td>8,400</td>
<td>Proposed</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>5,282.6</strong></td>
<td><strong>13,682</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Thailand</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sai Yok National Park</td>
<td>193.05</td>
<td>500</td>
<td>Designated</td>
</tr>
<tr>
<td>Thong Pha Phum National park</td>
<td>476.84</td>
<td>1,235</td>
<td>Designated</td>
</tr>
<tr>
<td>Kaeng Krachan National Park</td>
<td>1,125.1</td>
<td>2,914</td>
<td>Designated</td>
</tr>
<tr>
<td>Mae Nam Prachi Wildlife Sanctuary</td>
<td>188.8</td>
<td>489</td>
<td>Designated</td>
</tr>
<tr>
<td>Chalerm Prakiat Thai Prachan National Park</td>
<td>127.03</td>
<td>329</td>
<td>Proposed</td>
</tr>
<tr>
<td>Kui Buri National Park</td>
<td>374.13</td>
<td>969</td>
<td>Designated</td>
</tr>
<tr>
<td>Kui Buri Reserve Forest (corridor area)</td>
<td>46.332</td>
<td>120</td>
<td>Designated</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>2,531.3</strong></td>
<td><strong>6,556</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7,813.9</strong></td>
<td><strong>20,238</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Conversion column added.


---

The status of the areas as ‘protected’ makes creating a peace park a much easier initiative since the area has already been put aside for preservation and monitoring. Reportedly, Myanmar has stressed the importance of designating land as protected since May 2012 and has begun formulating more opportunities to protect more of its land so it is likely the Government will continuously expand biodiversity conservation, especially in the Tanintharyi Mountains (Government of Myanmar, 2013). The size of the conservation area also creates a large range for the mega-fauna’s migratory patterns (Governments of Thailand and Myanmar, 2013).
Figure 4: “Proposed Trans-Boundary Biodiversity Cooperation area in the Tanintharyi (Tenasserim) Mountain Range along the Border between Myanmar and Thailand. In Myanmar, the Tanintharyi Nature Reserve and the Tanintharyi National Park (proposed in 1992) are covered while Kaeng Krachan Forest Complex is Included in Thailand”

Myanmar is working to establish more protected areas and corridors to be built in and around previously preserved naturally rich landscapes (Government of Myanmar, 2013). The proposed corridor areas will play a significant role for the TBC project. The corridors will support an ecological linkage between fragmented protected areas and migratory routes of animals such as elephants and tigers. The project also compliments the existing Global Tiger Conservation initiatives between the Taninthayi Nature Reserve and the Taninthayi National Park (WCS, 2013).
Figure 6: “Proposed Trans-boundary Cooperation area between the Tanintharyi Nature Reserve, in the Tanintharyi Hills, Southern Myanmar, the Two National Parks in Western Forest Complex (WEFCOM), and the Kaeng Krachan Forest Complex (KKFC), of Thailand”

Source: Governments of Thailand and Myanmar, 2013.

On Thailand’s side, the space between Sai Yok National Park (6) and the Mae Nam Prachi Wildlife Sanctuary (2) is reserved for the monarchy’s Royal Princess’ Project area. It is the border zone from the Western Forest Complex to the Kaeng Krachan Complex under the guard of the Royal Army, which has reportedly agreed to help with the TBC project (Trisurat, 2013a).
After Myanmar’s long time closed border reopened in 2011, many from the international community sought engagement to liberalize Myanmar's economy and resources. The International Tropical Timber Organization (ITTO) took the initiative to bring together the Governments of Myanmar and Thailand to create a joint agreement for TBC collaboration.

Figure 6: "Official Supporting Letters from the Governments of Myanmar (left) and Thailand (right)"

ITTO previously worked with Thailand on a different TBC initiative, in an area referred to by the local Thai people as the “Emerald Triangle” (see Chapter 2.3), and requested both the Governments of Thailand and Myanmar to have a joint proposal be complete and ready for submission in early June 2013.

Since Thai scientists and officials have been collecting data on the biodiversity of the forested area and have gauged the political stability of the region for a number of years (at least since 2007), they used data, and their experience in developing the Emerald Triangle Transboundary Site, to help guide the Government of Myanmar through a similar process (Trisurat, 2007). The proposal was jointly submitted by both countries in early June 2013, but
Thailand failed to ratify the new International Tropical Timber Agreement (ITTA) by the June deadline and was thus excluded from formal proceedings (Hwan-ok, 2013). This was difficult news for some of the scientists, proposal authors and officials after many hours of work and effort (Trisurat, 2013b).

Nevertheless, the proposal was submitted by the Government of Myanmar and was written in such a way that joint research on wildlife could be conducted in the future by both countries (Hwan-ok, 2013). The efforts were made in the hope of reducing some of the existing negative conditions in the area through shared preservation, eco-tourism, scientific study and education tools.

Since there have been challenges in creating a mutual agreement to transform the area into a mutual conservation zone, this research has significance in shedding light on the need, readiness and opportunities to speed up or slow down the transformation.

1.3 Peace Parks

The idea of a trans-boundary protected area (TBPA) or a trans-frontier conservation area (TFCA) transpired not initially as a potential tool for conflict alleviation, although peace parks eventually began to facilitate the resolution of territorial conflicts because of beauty and/or ecological significance, especially over lands that have restrictions on development activities (Ali, 2007, p. 27). The first TBPA was the Waterton-Glacier International Peace Park between two friendly countries, Canada and the United States. The Atlantic, Pacific, and Arctic Oceans converge in this area and so special measures were taken to preserve the sculpted natural beauty and geological framework that had taken eons to construct (Ramutsindela, 2007). The evaluation of
success is based on the effectiveness and resilience of meeting the objectives of the initial proposed plan (Tanner, Freimund, Hayden, and Dolan, 2007). Such a vague measurement tool can make it difficult to define specific objectives and purposes, since its roots in 1932 this open ended agreement has been tested, remains intact and has paved the way for other TBPAs to take frame on any border and prove that borders are “socially constructed” truce lines that can be worked over (Ramutsindela, 2007, p. 71; Tanner, Freimund, Hayden, and Dolan, 2007, p. 186).

**Figure 7: Waterton-Glacier International Peace Park**

![Waterton-Glacier International Peace Park](Source: Routes Travel, (2013)).

The Waterton-Glacial International Peace Park’s broad framework and success taught others that there must be shared interest for a common goal in order for there to be realistic and productive results, a framework must be put in place where goals can
be defined and achieved, and that issues of heightened security must be “constantly attended and not taken for granted,” as these issues can affect the future development and can make or break the agreement that is supported by trust and collaboration (Tanner, Freimund, Hayden, and Dolan, 2007, p.197). The International Union of Conservation for Nature (IUCN) helped momentum progress for such areas and directed different sets of issues with each place based on fundamental beliefs and interests toward different mechanisms to work across borders (Ali, 2007; Quinn, Broberg, and Freimund, 2013).

IUCN set up a trans-boundary sector with the World Commission on Protected Areas (PA), and, in 2001, took the idea further by suggesting the areas be used for peace and cooperation (Global Trans-boundary Protected Areas Network). IUCN defines a TBPA today as:

An area of land and/or sea that straddles one or more borders between states, sub-national units such as provinces and regions, autonomous areas and/or areas beyond the limit of national sovereignty or jurisdiction, whose constituent parts are especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed cooperatively through legal or other effective means (Global Transboundary Protected Areas Network, 2011).

After the World Parks Congress in 2003, the IUCN set up the Global Trans-boundary Protected Area Network, based in South Africa, to officially define five different types of TBPA.

These are:

- Two or more contiguous protected areas across a national boundary;
- A cluster of protected areas and the intervening land;
- A cluster of separated protected areas without intervening land;
- A trans-border area including proposed protected areas, and
- A protected area in one country aided by sympathetic land use over the border (Global Trans-boundary Protected Areas Network, 2011; Ali, 2007).
Each TBPA has its own unique values and examples around the world (Ali, 2007; Quinn, Broberg, and Freimund, 2013).

Figure 8: "Spatial Distribution of 177,547 Nationally Designated Protected Areas Around the World. Protected Areas with Marine Component are Shown in Blue, Soley Terrestrial Protected Areas are Shown in Green"

Table 2: “2007 UNEP-WCMC Global List of Transboundary Protected Areas”

<table>
<thead>
<tr>
<th>Continent</th>
<th>Area (MILES²)*</th>
<th>Area (KILOMETERS²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>583,639.22</td>
<td>1,511,627.08</td>
</tr>
<tr>
<td>Central and South America</td>
<td>550,075.77</td>
<td>1,424,697.66</td>
</tr>
<tr>
<td>Europe</td>
<td>72,645.99</td>
<td>188,153.30</td>
</tr>
<tr>
<td>Africa</td>
<td>359,697.69</td>
<td>931,617.95</td>
</tr>
<tr>
<td>Asia</td>
<td>220,272.31</td>
<td>570,505.86</td>
</tr>
<tr>
<td>Total¹</td>
<td>1,786,330.97</td>
<td>4,626,601.85</td>
</tr>
</tbody>
</table>

* Conversion column added.


IUCN and the Global Trans-boundary Protected Areas Network defined, among other types of trans-boundary conservation practices, the term “peace park” as:

Trans-boundary protected areas that are formally dedicated to the protection and maintenance of biological diversity and of national and associated cultural resources, and to the promotion of peace and co-operation (Global Transboundary Protected Areas Network, 2011).

¹⁰ Protected Areas covered a little more than 12% of the earth’s surface in 2006 (Marton-Lefevre, 2006, p. xiii).
Some scholars, like Gerardo Budowski of the University of Peace, argue such a definition is inadequate because it is limiting, especially to island states and other remote areas where conflict may be present (Budowski, 2003). To apply such views, a broad definition of a peace park is used for this research: “conservation zones in which sharing of physical space can build and sustain peace.” (Ali, 2007 p. 1). The Tanintharyi Mountain Range area appears to have interest in becoming a TBC and though it would not be a peace park in the hard sense of the word, its creation, adds a peace “bonus,” so if formed, it may be considered a ‘soft peace park.’

1.4 Framework for Analysis

“The borderlands have a peculiar appeal to proponents of peace parks because the demarcation of state borders have often led to disputes, most of which erupted into bloody wars.” (Ali, 2007, P.70).

In response to the complex and contentious nature of border relations, analytical tools were constructed to assess peace and conflict impacts. The first of these was work done by Ken Bush (1998) and Luc Reychler (1999). Since the first assessment, there has been a call for a universal protocol, but debates over the structure and practical application remain, and tools, methods, and analytical frameworks continue to be open, flexible, and customized for different purposes, such as stakeholder consultations, project documents, and media reports, by using different analytics, indicators, qualitative issue based-inquiries, and conflict analysis contexts; all to assess how projects, policies and programs implementation influence peace and conflict (Hammill and Besançon, 2007).

Assessments can be conducted by different actors at different stages of project cycles then repeated for re-assessment and generally include conflict mapping, project/program
mapping, an assessment of the impact of the conflict on the project, an assessment of the impact of the project on the conflict, and recommendations (Hammill and Besançon, 2007, p. 31). Such evaluations do not aim to improve the ways in which to intervene, but rather on how to improve the quality of intervention application (Hammill and Besançon, 2007, p. 31). Further, they are not supposed to measure effectiveness and goal setting abilities, and are more so meant to determine whether or not peace or the lack of peace will be added to the situation (Hammill and Besançon, 2007). These assessments can offer insight on how negotiations impact current factors to determine peace or conflict agendas; “however, for peace and conflict impact assessments to be useful and effective, they must involve those individuals and groups living in conflict zones” because the areas under review are typically conflict prone and affect residential livelihoods (Hammill and Besançon, 2007, p. 31). Assessments can also provide an equal playing field for all stakeholders and can help to decipher whether or not parties are interested in working together toward common goals (Ali, 2007).

Assessments can help to convert areas of conflict into regions of peace, through peace-making projects and by using them in areas meant to influence peace (Hammill and Besançon, 2007). This research uses an assessment, developed by the IUCN in 2012, through the advice from Ken Bush, who advised in 1998 when he first began assessing areas “[to disregard] their self-described face value” and systemically evaluate to find holes to better understand how intervention can contribute to peace or conflict, toward producing qualitative and quantitative results from key stakeholders and people of the area, to gain an enhanced overall picture of the project’s feasibility.
2 Literature Review

An integral measure in forming a comprehensive assessment for the prospect of a peace park in the Tanintharyi Mountain Range includes reviewing the literature revolving around environmental conflict resolution, peace parks in Southeast Asia, and past and present relationships between Myanmar and Thailand. Fields of study include:

- Environmental conflict resolution and the many disciplines for considering future issues and sustainability. These include law, political science, psychology, government, international relations, ecology, economics, business, planning, systems engineering, dispute/conflict analysis intervention and other fields of social and natural sciences. The interest is in finding ways to use environmental issues in resolving conflict and ecological economies in the long and short term\(^\text{11}\) and involves different ways of thinking about ways to manage or resolve conflict (Ali, 2008c). These are discussed in the first section.

- The next section introduces the formation, characteristics and evolution of the peace park in Southeast Asia’s Emerald Triangle, or the convergence area between Thailand, Cambodia and Laos. This provides background on Thailand’s capacity and experience with peace park initiatives. It also demonstrates the planning process followed when attempting to form a conservation zone in Southeast Asia.

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\(^{11}\) Competitive ecology refers to ecological economies in the long run and dimensional ecology pertains to ecological economies over a shorter time period.
Lastly, a brief historical and current view of the relations and cultural differences between Thailand and Myanmar are discussed to identify patterns, failures, and channels of communication.

These topics, among others in this chapter, seek a fundamental basis for insight on the role of the environment in conflict negotiations and community planning in the Tanintharyi Mountain Range. The main objective of this chapter is to summarize and synthesize the major research relevant for a peace park initiative in the Tanintharyi Mountain Range and to demonstrate the foundation on which the hypothesis is being built.

2.1 Fields of Thought around Environmental Negotiation and Conflict Resolution

Until the 1980s, the environment was connected to conflict only on a small scale (Ali, 2007, 2008a). The early literature that caused environmentalists to argue connections between scarcity, ecological degradation and conflict was supported by literature on environmental security till the end of the Cold War\(^{12}\), with a focus on how to improve environmental conditions as a means of addressing conflict (Homer-Dixon, 1999; Najam, 2003). This claim was only justifiable when environmental factors were a main cause for the conflict because when environmental factors were a small portion of the conflict, as opposed to larger concerns, such as ethnic, financial, or demographic issues, such factors were seen as the dominant forces leading to conflict, whereas environmental issues played a minor role, if any at all (Deudney and Matthew, 1999). In the 1980s, noticeable famines and droughts and Robert Kaplan’s 1994 article, “The Coming Anarchy,” which he later developed into a book, opened many up to the idea that there could be linkages between conflict and the environment. In his article Kaplan

\(^{12}\) The Cold War began in 1947 and ended in 1991.
used a compelling writing style to suggest that resource scarcity brings about conflict and international crisis, giving his piece lot of attention. President Clinton invited him and Thomas Homer-Dixon to offer advice on national security (Ali, 2008a).

Garret Hardin (1964) wrote the “Tragedy of the Commons” on micro conflict and used a lifeboat ethical metaphor to describe the group and individual behavior between scarcity and conflict. Why is the environment a national security issue? Is it because it leads to war? Many people started seeing the link between environmental scarcity and violent conflict. In the early 1990s, when this idea took off, some people were skeptical because the environment is one variable in host of variables. It also brought to light the idea that we fight over our own resources because we do not trust each other. Was there no trust because of ethnic or religious values? And, furthermore, people began asking what causes scarcity? Is it real, anecdotal, or created? Take food, for example, are there not enough tools to divide it up and prepare enough for all? If so, why are people starving? Or is it their fault in Pakistan that they have a bad climate? How do we resolve such issues?

It is often believed empirical information can provide the data needed. The “practice-oriented peace research institute” Swisspeace did a detailed study of the environment and conflict (Swisspeace, n.d.). Homer-Dixon also conducted a study (1994) of a huge UN database looking at resource availability of water and food and the incidence of conflict. The results showed environment is one variable, but not ultimately the determining variable. A general consensus emerged that the environment was important, but not that important, and all momentum was lost. The reasoning was that people are going to fight even if there is an environmental linkage. What is conflict? Is it one violent act, ten violent acts? What defines conflict? The ultimate conclusion comes from empirical data, and so the recent argument that
has emerged regarding environmental influences in conflict resolution looks at environmental issues’ role in cooperation and conflict, regardless of the source of the original conflict (Ali, 2007).

Contending pathways of environmental security discourse are depicted in the following image to indicate causality between environmental scarcity and abundance to conflict and cooperation, although it should be mentioned that the author defaulted lesser environmental quality resources into environmental scarcity research because environmental quality and quantity are often differentiated in resource economics (Ali, 2007).

Figure 9: “Contending Pathways of Environmental Security Discourse”


As shown, pathway A suggests cooperation will occur with mutual understanding of resource scarcity as aversion to such depletion, and, further, that peace-building can be brought about by awareness around key environmental issues, again observing that environmental issues can play a role in building cooperation regardless of the cause of the conflict (Ali, 2003; Conca
and Dabelko, 2002 & 2003). Water is typically used to indicate scarcity cooperation; despite the common belief that disputes occur over water ownership rights, in actuality, opponents work together to avert “water wars” and there tends to be water cooperation. Cooperation happens over water because people realize it is so essential (Wolf, 2002; Ali, 2008a). That level of cooperation will hopefully allow them to cooperate in the long run. The idea behind long term cooperation is it will eventually lead to trust, i.e., sharing data, having regular meetings, etc., and thus growing dependence on one another so when there is a state of emergency, like a hurricane, for instance, parties are much more likely to cooperate (Ali, 2007, 2008a).

Scarcity gravitating toward conflict leads to the circumstances of the tragedy of the commons, where independent and rational individuals act in their own self-interest, depleting natural resources despite their awareness that it goes against the group’s long term best interest (Hardin, 1968, Ali, 2007). The lack of trust in others and the uncertainty of future resources will then lead to conflict and scarcity, or pathway B as seen in the previous figure (Ali, 2007). Four factors have been identified as critically important for prevention of pathway B: long range plans for agreements, regularly identifying the risks at hand, having a reliable method for receiving and distributing information about one another’s actions, and having a mechanism in place for prompt information about any changes of one another’s plans (Oye, 1984; Axelrod, 1986).

Abundance can also lead to conflict when a bad system of governance is in place, and resources can be pillaged (Ali, 2007). The previous figure shows the two trends leading to this type of conflict (pathway C) entail having the ability to loot and having a black market in place (Ali, 2007). The argument that small scale processes can amend environmental conflicts may be true in some cases, but often involve large-scale operations: “small-scale artisanal mining
operations, for example, might be more anarchic and harder to govern than large scale mining run by multinationals” (Ali, 2007, p. 5).

Pathway D has both abundance and cooperative outcomes, which can be achieved through good governance and fairly allocated resources; it also works best if the players are equally powerful to conduct constructive competition (Ali, 2007). Although some governance today is operated through contentious politics, often the tensions lead to positive transformations and can often transpire cooperative outcomes (Ali, 2007). This pathway is usually more difficult to achieve than in a situation of scarcity because competitive behavior can override common interests (Ali, 2007).

Shrinking violence and honey pot is a study that “finds that an abundance of renewable resources, not its scarcity, leads to violence and to lower economic, human, and institutional development” by using a host of alternative measures of natural capital wealth, disaggregated as renewable and nonrenewable (De Soysa, 2002).

“Natural resource abundance is correlated with high levels of conflict and lower levels of human and institutional development” (De Soysa, 2002). The study results bring up concerns about the idea of “ecoviolence” and the author recommends future research should “trace the processes through which the “honey pot” of abundant resources promotes bad governance, inequity, poverty, environmental degradation, and conflict”. The author reflects:

The good news is that human greed and folly, not mother nature, is still the problem for peace. The bad news is that mother nature will continue to suffer given difficulties associated with controlling human nature.

The system between competition and conflict has failed because it is a system that encourages inefficiency and you may then have people willing to exploit it (Ali, 2008a).
The two schools of thought in political science (and assumptions to worldwide conflict) are realism and liberalism (Ali, 2008c). The realists believe there is a natural tendency in humans to fight and compete with each other; humans are inherently selfish and we want our own survival; and, if people are left on their own, they will fight, and government is needed to intervene (Ali, 2008c). The others are the liberals, who believe human beings are naturally cooperative and examples of this, they argue, can be seen in community and family structures (Ali, 2008c). Their view on wars is they are aberrations, or what happens sometimes when something goes wrong (Ali, 2008c). The question posed for each different perspective, then, is does government intervention lead to more conflict?

As far as the environment goes, the realists presume the environment irrelevant; the liberals would say let people work with the environment; people are not given the opportunity to the environment, but you have configured it and we need to work to change (Ali, 2008a). They would suggest reframing territory, land and religious identity to environmental sustainability (Ali, 2008c). Realists make the environment about power, importance, control and survival, for water, energy, and resources (Ali, 2008c). The liberals have more flexibility because more they have a more optimistic approach with the way people work, but is it naïve? Is there a way to have a realist approach and have it work like the liberalist?

Different approaches can be used to attempt such a blend. Game theory has been used as a tool to explore behavioral responses to uncertainty (Ali, 2008b). It is a mathematical way to equate human behavior. It is mathematical projection on how people will behave and it allows you to come up with a structure of human behavior and for that reason, it is very popular for conflict resolution (Ali, 2008b). Game theory shows analytical rigor can be applied

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to gain understanding on various peace scenarios to determine whether or not they may be
established (Ali, 2008b; Lejano, 2007; See Appendix III).

Cooptation helps us to understand situations in many different paradigms. A detailed
study, by Philip Selznick, looked at the Tennessee Valley Authority when trying to spy on U.S.
energy resources. His study focused on impoverished people during the 1940s and watched as
the government coopted the locals who later turned on the government. There is also the
North Korea example. How do governments coopt, and do people have an opportunity to
coopt in a good way?

Understanding apathy also acts as a way to analytically and strategically plan for an ideal
future. The absence of confrontation indicates apathy. Apathy happens on two occasions: when
you have too much, so we cooperate, and when you keep trying, and you cannot make change,
so you become apathetic (Ali, 2008a). John Gaventa (1982) did a study in Appalachia and wrote
describes why there is no conflict in Appalachia, and the author argues the people of the
Appalachians felt powerless. You can have constructive conflict because you want to avoid
apathy, but this becomes problematic when it becomes a violent confrontation so balance is
needed.

Many pacifists see peace as an ideal (Weatherford, 1993); it may not be reachable in its
entirety, but is something to work towards: “An eye for an eye leaves the whole world blind.”
But then when is violence justified? It is often justified for self-defense and when no violence
creates more violence. How to then to deal with Hitler? Are nuclear weapons answers to

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14 “An eye for an eye leaves the whole world blind” is frequently attributed to M. K. Gandhi. The Gandhi Institute
for Nonviolence states that the Gandhi family believes it is an authentic Gandhi quotation, but no example of its
use by the Indian leader has ever been discovered (Shapiro, 2006)."
conflict resolution? Humiliation allows for easy human manipulations: WWI led to Nazi power after the treaty of Versailles was signed when Germany lost dignity and was humiliated (Ali, 2008a). Now there is an argument that a similar situation is occurring with Putin in Russia. Liberals would say not everyone is like Hitler, and we could have used prevention to stop this from happening. The realists would say, deep down it is all the same, and we cannot prevent it (Ali, 2008c). Institutions, family, planning, groups (e.g., U.N.), and religion, can be peaceful or violent. Hilary Putnam (1981) argued there can be a breakdown of social networks that can lead to conflict, but there is a line where only so much injustice can occur. Martin Luther King Jr.’s role during the civil rights movement is used as an example of this.

A conflict resolution analysis typically evaluates the goal of intervention, i.e., how much of the threat can be retained externally, how much is it worth (cost benefit analysis), what institutions are available to make a difference, so what influence can be made, who or what are the people/alliance/support, resources, and is it a value-based conflict (Watkins, 2000). These factors can help determine whether mediation or negotiation is needed (Fritz, 2014b). “Mediation is a process built upon dialogue, an essential ingredient in advancing the Culture of Peace;” the use of such a method should be rights-based, humanistic and creative (Chowdhury, 2014, p. vii). Mediators, usually one or more impartial individuals, can assist parties in reaching “out of the box” solutions to expand the spectrum of possible solutions to disputes, or portions of the conflict (Fritz, 2014. p. viii; 3). Like mediation, adjudication uses one or more impartial person(s) to decide an outcome that is doable for disputants, who must agree to follow the direction (Fritz, 2014c). On the other hand, negotiation typically guide parties through conflict with a less impartial, positional or interested based approach (Fritz, 2014c). Often, all forms of dispute resolution have the common goal of solving a conflict.
Globalization can be used as a safety net in conflict; but while globalization is important, so is localization. It is a complex balance; when done correctly, it is referred to as “glocalization” (Ramutsindela, 2007). Globalization is significant and in a globalized world with good international relations, food can be imported if needed (Ali, 2008c). People tend to make globalization come across as a potentially dangerous course that may lead to conflict, but, if you analyze it further, globalization is not conflict driven in and of itself (Ramutsindela, 2007). It can be used as a safety mechanism in case you have scarcity, and, if you are globalized, you will be able to have that interaction and have potentially less conflict with global governance (Duffy, 2007). Safety mechanisms are built in, such as health care, education, etc. The true vision of globalization and global governance allows global governance to transcend (Ramutsindela, 2007). But, there is a dark side of globalization if not planned well; it needs to have a diverse balance of trade with different economies and resources (Ramutsindela, 2007).

Borders among developing countries are a colonial invention and have little to do with cultural affiliations (Spencely and Schoon, 2007). Consequently, underlying tribalism is being resurrected (Spencely and Schoon, 2007). It becomes a vicious cycle: there are bad institutions because borders were made in a way that was arbitrary, and this leads to failure of governance, which leads to poor distribution of resources and, in turn, dictators try to capitalize on shadow economies (Spencely and Schoon, 2007). As such, they come in and try to grab what is available (Spencely and Schoon, 2007). Kaplan’s work (1994) looks at big picture conflicts of the world regarding eco-violence.

Such a big picture in environmental conflict resolution, includes looking at a resource base (i.e., is there enough to go around, how can the economy be diversified and what is being used that is non-renewable?) and a middle ground between cultures for better communication;
the goal should be to preserve the positive attributes of culture, so you can celebrate it, and, during the process, give special privileges to minorities (Ali, 2008a). Further, can there be mediation, who would be an ideal mediator, and what would be the best process in the sequence to make for the best outcome is something to consider (Ali, 2008a; Fritz 2014a). Understanding the resource base and limits when dealing with environmental conflict negotiations can help broaden the perspective and thinking on solving the problems involved (Ali, 2007).

**Figure 10:** “The Triangle of Conflicting Goals for Planning, and the Three Associated Conflicts. Planners Define Themselves, Implicitly, by where They Stand on the Triangle. The Elusive Ideal of Sustainable Development Leads one to the Center.”

The causality between whether environmental cooperation is the result of conflict mitigation or leads to conflict resolution itself often eludes researchers, while politicians
typically consider a need for another form of conflict resolution mechanism in place initially before using environmental issues as an approach (Ali, 2007). However, “environmental issues can be an important entry point for conservation between adversaries and can also provide a valuable exit strategy from intractable deadlocks because of their global appeal;” though they are not sufficient as the only strategy for conflict resolution (Ali, 2007, p. 7). The peace building approach should have “linear causality,” while the conflict de-escalation process should be “nonlinear” and with a “complex series of feedback loops” as seen in the following figure (Ali, 2007, p. 7).

**Figure 11: ’Progress Toward a Goal or Objective’**

Typically, implementing conservation of environmental resources at different levels first requires the establishment of protected areas. This process can often be contentious because of questions of property rights, and the past misuse of such measures to remove people (or demographics of people) from an area (Ali, 2007). Large conservation organizations have been accused of detachment from indigenous people in their pursuit for conservation in the name of conservation; an issue of management, not in conservation itself (Chapin, 2004; Ali, 2007). With
conservation as the ultimate goal for many of these organizations, implementing peace parks also requires, “legitimacy of these groups […] essential for meeting the goals of conflict resolution” (Ali, 2007, p. 15). Accordingly, such groups must be able to compromise, show fairness and measured science, as well as analytical persuasion for policy in order for peace park initiatives to succeed (Ali, 2007).

To gauge the research at hand, the existing knowledge provides essential platforms for reference and with so many factors in play and so much at stake, a solid base of comprehension and wisdom is necessary to conduct an environmental negotiation analysis.

2.2 Peace Parks in Southeast Asia

The Emerald Triangle, named because of its “extensive tracts of monsoon forests,” is an area along the Mekong River between Thailand, Cambodia15 and Laos16 (Trisurat, 2008, p. 144). In 2001, ITTO and Thailand recognized the Emerald Triangle included existing and proposed protected areas17 and saw the potential to improve relations at the regional level by using Thailand’s economic and demographic power “to establish a peace park at the Emerald Triangle and the Mekong River to attract international tourists for an enriched visit to the Thai, Laotian, and Cambodian communities nearby” (Trisurat, 2007).

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15 Cambodia is officially known as the Kingdom of Cambodia.
16 Laos is officially titled Lao People’s Democratic Republic or Lao P.D.R. for short.
17 Thailand’s border had existing protected areas (Pha Taem, Kaeng Tana, and Phu Jong-Na Yoi National Parks, deemed by IUCN as category II and Yot Dom Wildlife Sanctuary, an IUCN category IV), and a proposed area (Bun Thrik-Yot Mon), while proposed areas were in Laos (Phouxeingthong National Biodiversity Conservation Area) and Cambodia Cambodia (Protected Forest of Conservation of Genetic Resources of Plants and Wildlife) (Trisurat, 2007, p. 144).
The Emerald Triangle area is in the Ubon Rachathani Province of Thailand, where most of the first phase of development of the TBC project\textsuperscript{18} took place until 2004. To begin, Thailand built an organization and management system, a geographic information system (GIS) database and an opening for cooperation amongst the three countries (Trisurat, 2007). The Thai scientists and officials refer to the entire area as the Pha Taem Protected Forests Complex\textsuperscript{19} (PPFC). As of 2003 the area was populated by 89,000 people in eighty-two villages living both in and around the protected reserve (Tanakarn, 2003). As seen in the next figure, the PPFC is not delineated by physical boundaries, such as walls or fences, so movement is often conducted freely around the border region (Trisurat, 2007).

\textbf{Figure 12: Illegal/Legal Trade across the Mekong River.}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure12.png}
\caption{Illegal/Legal Trade across the Mekong River.}
\label{fig:figure12}
\end{figure}

\textsuperscript{18} The type of trans-boundary conservation area initially proposed was classified as a “transborder area including proposed protected areas” according to the Trans-boundary Conservation Area Network, because it began as a pilot program developed by Thailand’s Royal Forest Administration (RFA) to build off of the many protected areas in the region, with the hope of extending protection across the border, without any formal agreement.

\textsuperscript{19} Protected areas in Thailand are clustered into 12 complexes; Kaeng Krachan Forest Complex is the second biggest (Governments of Thailand and Myanmar, 2013).
Demarcating boundaries is a possible strategy to reduce the influx of legal and illegal migration. Historical precedents of physical borders exist with the Berlin\textsuperscript{20} Wall, the Great Wall of China, in Israel and Saudi Arabia\textsuperscript{21}, and now with the United States and Mexico. In any case, according to Andrew Schoenholtz, a migration expert at Georgetown University and former Deputy Director of the U.S. Commission on Immigration Reform, a regime is going to need to not only construct a physical barrier, but also use its political will to enforce a fence through a workforce and the tools to actually control the border (Martin, 2007). Andrew Schoenholtz believes the real issue is not so much about illegal crossing, but about the labor market, that in some ways has invited illegal migrants to cross boundaries (Martin, 2007). Therefore, he believes in order to really stop illegal migration issues, one must control the labor market as a tool, to control the migration problem (Martin, 2007).

A fence indicates a diplomatic symbol that demonstrates the wrong message (Martin, 2007). In the long term countries should care about the message building a divide will send, and should work to evolve relationships over the next twenty years or so, especially when the communities depend on one another as principal trading partners (Martin, 2007; Ali, 2007, p. 219). As labor markets strengthen there is less of a need to send people over borders (Martin, 2007). Borders can then facilitate even more trade with the movement of people, and in the long term fortify partnerships (Martin, 2007). Schoenholtz claims there are two effective approaches to achieve such and aim: to use work-side verification in labor markets to make

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\textsuperscript{20} The Berlin Wall was aiming to control migration, but trying to keep their people in, rather than migrants out. In that case the government was willing to use its powers to use and control the wall, but to so an authoritarian regime is required (Martin, 2007).

\textsuperscript{21} Israel and Saudi Arabia have border fences for military purposes of national defense and security issues rather than to control migration. Their principle goal is security, although Saudi Arabia could have Iraqi refugees moving there, but this information is not well documented (Martin, 2007).
certain the working population is legal, and then to make sure employers can have legal workers; secondly, prevention rather than apprehension should be first sought. These principles are applied to Southeast Asia, in both the Emerald Triangle and in the Tanintharyi Mountain Range.

Currently, in the Emerald Triangle, the main occupations of the local residents are farming, livestock and fishing (Trisurat, 2007). Compared with the rest of Thailand the area is “economically depressed” and the issues of poverty blend into the landscapes of Laos and Cambodia (Trisurat, 2003).

PPFC also contains immense biodiversity and migration patterns across borders (Trisurat, 2007). The Thai scientists used a deductive model and GIS to find wildlife habitat needs and suitability by evaluating land use/land cover, accessibility to permanent water, elevation, slope, and distance to roads, ranger stations, and villages (Trisurat, 2007). The analysis determined overlying suitability trends, reasoned to be “hot spots” or high concentrations of areas, where species can be found in masses along the border (Trisurat, 2007). The results in the following figure show the suitability analysis for a protected TBCA (Trisurat, 2007).
After the information was populated, goals were defined for each proposed and protected area through medium and long term plans\textsuperscript{22}, zoning\textsuperscript{23} was used to maintain the

\textsuperscript{22}The medium range plan was set to take place from 2004 – 2006 and the long range plan from 2004-2023 (Trisurat, 2007). Overall management goals were set up for the medium range plan in accordance with the overarching management goals of the project aimed at creating sustainable communication, cooperation,
protected areas and surrounding landscapes to fulfill the needs of both biodiversity and people and six programs\(^{24}\) were set up under the management system to operate annual working plans (Royal Forest Department, 2004). Zoning in the PPFC region defined objectives and ecological quality factors as seen in the following table to state how each zone could be managed; subsequently, there is a map with PPFC’s spatial structure and zoning criteria.

**Table 3: “Zoning Scheme for the PPFC Landscape”**

<table>
<thead>
<tr>
<th>Character/criteria</th>
<th>Core zone</th>
<th>Buffer zone</th>
<th>Corridor</th>
<th>Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biophysical condition</strong></td>
<td>A critical ecosystem(s) that supports viable population of focal species and environmental services, normally remote from disturbances and human settlements</td>
<td>A natural area situated around the core area to manage unfavorable impacts that flow between the core area and its surrounding landscape</td>
<td>A linear assemblage of mainly continuous vegetation connecting fragmented critical ecosystems to encourage and facilitate migration and dispersal</td>
<td>An extensive cover and connectivity in the landscape where human settlements and intensive development are conducted</td>
</tr>
<tr>
<td><strong>Spatial criteria</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical habitat</td>
<td>Critical</td>
<td>Moderate</td>
<td>Critical—moderate</td>
<td>Low</td>
</tr>
<tr>
<td>Environmental service</td>
<td>Sensitive</td>
<td>Moderate</td>
<td>Sensitive—moderate</td>
<td>Low</td>
</tr>
<tr>
<td>Naturalness</td>
<td>Undisturbed vegetation</td>
<td>Undisturbed vegetation</td>
<td>Remnant vegetation, slightly disturbed</td>
<td>Settlement, reservoir, agriculture</td>
</tr>
<tr>
<td>Remoteness</td>
<td>&gt;3 km from settlement</td>
<td>Disturbed areas inside protected areas</td>
<td>Preferably remote from settlement</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>&gt;2 km from main road</td>
<td></td>
<td></td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>&gt;1 km from large agricultural activity</td>
<td></td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>Physical setting</td>
<td>&gt;1 km(^{2})</td>
<td>Not overlapping with core zone and matrix</td>
<td>May overlap with core area and buffer zone</td>
<td>Extensive and connected</td>
</tr>
</tbody>
</table>

Source: Trisurat, 2007, p. 149.

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\(^{23}\) The zoning scheme was adapted from UNESCO’s Biosphere Reserves (Trisurat, 2007).

\(^{24}\) The six programs are the Natural Resource and Conservation and Management Program, the Recreation and Ecotourism Management Program, the Integrated Community Development Program, the Organization and Human Resource Development Program, the Research Program, and the Trans-boundary Cooperation Program (Trisurat, 2007).
Figure 14: “Ecological Management Zones of PPFC Landscape.”

The work from the first phase brought to light many threats for further development of PPFC as a TBCA. The first threat identified was international cooperation. Laos showed signs of reluctance “because Laos is not an official member of ITTO, and it stands to gain limited direct benefits from the project” (Trisurat, 2007, p. 151). The second threat considered dealt with concerns around agricultural infringement and forest degradation in Laos and parts of Cambodia that affected large rare mammal grounds and the integrity of the forests (Trisurat, 2007). Another issue was flora and fauna poaching for illegal trade among the three countries. Next, “Cambodia and Laos lack[ed] capacity at all levels to manage and protect areas effectively” with limited access (if any) to training, monetary funds, and rangers (Trisurat, 2007, p. 152). Finally, and perhaps the greatest threat, landmines\(^\text{25}\) were dispersed around the border during the 1980s causing a huge threat to park rangers, researchers, large mammals and any potential visitors (Trisurat, 2007, p. 151).

\(^{25}\) During the 1980s the tri-state area was booby-trapped with landmines, and each country inserted high numbers of national guardsmen. Today, fighting has been reduced, but landmines remain, and costs are estimated at $70 million for removal; Norway and Japan are assisting with demining, the end result holds potential for ecotourism and residential safety (Trisurat, 2007, p. 157). The demilitarization process requires all three countries to participate in an integrated task force, a cooperative military agenda and further provides insight on illegal activities (Trisurat, 2007).
Additional caveats were identified because they remain scientifically ambiguous as to whether or not they have positive or negative impacts on deciduous forests: Forest fires, and some local people collect and destroy a popular fauna to stimulate young shoot rejuvenation (Trisurat, 2007, p. 152).

Despite these obstacles, opportunities also presented themselves. Firstly, the PPFC is the only complex in Thailand that contains both land and water ecosystems, forming a biodiverse area that sparks global interest for its unique and high risk distinction species (Trisurat, 2007). Second, the cooperation between Thailand and its neighbors has expanded since 2003 when each partnership (Thailand and Cambodia and Thailand and Laos) agreed “to strengthen natural resource conservation and tourism promotion in this region” (Trisurat, 2007, p. 152).

\[26\] In areas of the region with high concentrations of cattle, namely Pha Taem and Kaeng Tana National Parks, “herders burn large tracts of grasslands” in order to promote growth for new pasture (Trisurat, 2007, p. 152).
Other regional organizations have agreed to support this initiative and the international acceptance and recognition from regional groups helped establish cooperation and organization for the trans-boundary region (Trisurat, 2007). Lastly, this endeavor started a trend for others to promote TBCAs (Trisurat, 2007).

Phase II worked to add onto the strengths of the first phase and amend the weaknesses. The basis of the plan revolved around protecting and researching the most critical areas for wildlife conservation, specifically by creating protection from poachers and black markets, and through eliminating existing migration barriers (Trisurat, 2007). Scientists also planned ways to rebuild natural features to stimulate the regional ecosystem (Trisurat, 2007). Thailand and Cambodia set up international agreements between organizations to “further develop, stimulate, and support cooperation for transboundary conservation interventions” and tried to encourage participation from Laos by setting up meetings, trainings, and eco-tourism development strategy sessions (Trisurat, 2007, p. 154).

The PPFC project during phase II faced implementation threats from decision-makers and local residents in the buffer zones in all three countries (Trisurat, 2007). The differences between these countries created many nuances that needed to be considered for solutions.

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27 The Asian Development Bank “in early 2005 […] launched the Technical Assistance on Biodiversity Conservation Corridors Initiatives in the Greater Mekong Subregion (GMS) with […] China (Yunnan), Myanmar, Thailand, Laos, Cambodia, and Vietnam—in an aim to identify potential sites and develop strategic framework (2006-2015) and an action plan (2006-2008), as was agreed by these six countries […]” (Trisurat, 2007, p. 153).

28 Phase II was named “Management of the Emerald Triangle Protected Forests Complex to Promote Conservation for Trans-boundary Biodiversity Conservation between Thailand, Cambodia, and Laos,” by Thailand and Cambodia (Trisurat, 2007).

29 To spur economic development and to address the issues of poverty in the area, the eco-tourism strategies where planned in the buffer zones as alternative income sources to be gained from eco-tourism while weaning off of illegal activities and natural resource exploitation. A plan has been set in place on how to conserve the region with viable solutions. (Trisurat, 2007).

30 Laos and Cambodia for instance, had problems of forest degradation, but because they have much larger areas of intact forests, defragmentation was less severe (Trisurat, 2007). Management, corruption, and lower education levels for the field staff tend to be the more pressing issues in such countries, but a TBC agreement can help mitigate such problems.
Each country varies on the political and administrative systems used, as well\textsuperscript{31}. Despite the economic, political, environmental and social differences between Thailand and Cambodia, they were able to create a single cohesive and fair plan for the TBCA (Trisurat, 2007). Laos ceased participation throughout the entire second phase (Trisurat, 2007; Marion Suiseeya, 2012).

This TBC project demonstrates dominant power can play a central role in the formation of peace parks, and the important role local residents hold on protecting and maintaining an area\textsuperscript{32}. Although Laos is less incentivized to agree and continue further negotiations for the TBCA, Cambodia has a new management site located near the project area, which could promote engagement, and a financial package from Japan has helped to support Laos’ involvement (Marion Suiseeya, 2012; Trisurat, 2013a). the success in securing an agreement with Thailand and Cambodia holds hope for a similar arrangement with Myanmar.

\textbf{2.3 Neighboring Thailand and Myanmar}

Before examining whether or not a peace park as land use has international importance along a part of the \textasciitilde 1491 mile long border\textsuperscript{33} between two neighbors, first the characteristics of the countries and their historic and current relationship are briefly reviewed.

In 1569, Burmese troops invaded Ayudhya\textsuperscript{34}, the old capital of Thailand (see Figure 3), occupying it for thirty-four years before the Siamese King Naresuan reclaimed ownership in the battle of Nong Sarai (Chongkittavorn, 2003). Ayudhya signified the success and magnitude of the Siamese kingdom; it served as a political, economic, and spiritual center (Wongpolganan, 2003).

\textsuperscript{31} Thailand is a democratic monarchy, and Cambodia has a similar system in place, but one that has been beset by decades of armed conflicts and genocide, and Laos’ P.D.R. is a communist state that has also had a history of turmoil (Trisurat, 2007).

\textsuperscript{32} The project is also a particularly well suited for those interested in developing a TBPA in riparian areas.

\textsuperscript{33} Only a small portion of the Thai-Myanmar border has been jointly demarcated; the actual location of the border is still in dispute in many areas (Wongpolganan, n.d.).

\textsuperscript{34} English spellings of Ayudhya vary. Commonly, the city is also spelled Ayutthaya.
In 1767, the Burmese King Bayinnaung again attacked Ayudhya and after a long fight, with Burmese troops torching and taking valuables in Ayudhya, the city fell under Burmese rule (Chongkittavorn, 2003). In 1996 to the dismay of many Thais, a statue of King Bayinnaung was constructed by the Burmese junta, or military (Chongkittavorn, 2003). This 400 year old conflict has led to long term stigmas and enemy notions that remain in some today (Chongkittavorn, 2003, Wongpolganan N.D).

The two countries remained on neutral terms up until 1826 when the then titled Burma underwent British colonization (Chongkittavorn, 2003). Burma initially raided Britain across the Indian border, but Britain retaliated in 1824 and two years later colonized Burma (Chongkittavorn, 2003, Wongpolganan, n.d.). Growing concerned, Thailand drew up the Burney Treaty in 1909 to redefine their border and gained statehood through legal means and without having to submit to colonial rule (Chongkittavorn, 2003). This led many in Thailand to view Burma, especially its leaders, “[… as a symbol of failure for being unable to combat the forces of colonization” (Chongkittavorn, 2003, p. 117). The historian Somdet Kromphraya Damrong in his writings, “Thieu Muang Phrama” or “Travelling inside Burma” praised Thailand for the ability to protect the country from outside forces, while placing blame on Burmese leaders, seeing them as “corrupt and selfish, without any leadership” (Chongkittavorn, 2003). From 1932-1970 the Thai government in the “era of nationalism” encouraged Thai citizens to shun the Burmese and treat them as their “traditional enemy” or “historical archenemy” (Wongpolganan, n.d., Charnvit, 1998, p.16; Sunait, 2004, p. 27-67).

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35 Time period is referred to as “the era of nationalism” (Wongpolganan, n.d.). A belittling theme of Burmese leaders continued in Thailand through popular TV dramas (Chongkittavorn, 2003). The government used this sort of propaganda during World War II to justify their dealings with the Japanese (Chongkittavorn, 2003).
Burma was able to regain independence from British colonial rule in 1948 and established a prime minister. During the Cold War, Burma declared neutrality while Thailand aligned with the United States. At this point in history, the two countries had regular contact along the border, trading and learning from one another, despite the ongoing stereotypes portraying Burma in Thailand (Chongkittavorn, 2003). Burma began to grow skeptical of Thailand because it was believed Thailand was backing China’s Kuomingtang, which was approaching Burma from the North, and it took much dialogue to clear the air (Chongkittavorn, 2003). Through exchanged visits from government officials, relations between the two nations were renewed, and, in 1956, a peace treaty was signed (Chongkittavorn, 2003). The King and Queen of Thailand visited Burma for the first time in 1960, but, in 1962, General Ne Win’s 1962 coup deposed the former peace building Burmese Prime Minister, U Nu, and relations gradually deteriorated (Chongkittavorn, 2003). Ne Win grew suspicious about Thailand’s role in sheltering minorities, and Thailand was worried Burma would try to expand its socialist regime; therefore, neither side trusted the other and top-level dialogue nearly completely ceased (Chongkittavorn, 2003).

Since the 1962 one party rule military takeover, Burma has been “considered a pariah state, isolated from the rest of the world with an appalling human rights record,” and, while Burma cut off the outside world and grew engulfed with development problems, Thailand’s focus shifted to the east to the reunification of North and South Vietnam, the Khmer Rouge victory and the takeover of Laos by communists so ties were further severed between Thailand and Myanmar (BBC Monitoring, 2013; Chongkittavorn, 2003).

Other perceptions of Burmese by Thais exist: one is romanticized, “especially among the upper-middle class and nouveau riche,” by Thai writers praising their basic lifestyle and
socialism while omitting stories of political oppression (Chongkittavorn, 2003, p. 118). Another attitude especially prevalent from 1988 to 1991 during Thailand’s Chatchai Choonhavan government, whose administration exploited the Burmese junta in exchange for natural resources across the border, observed Myanmar as a business model or a place to gain new market wealth (Chongkittavorn, 2003, p. 118). Today, many Thais have sympathy for the citizens and the military since the 1962 transformation of government to a one party rule under military control took over (Chongkittavorn, 2003). Many Thais also admire their female role model, Aung San Suu Kyi, especially since female leadership has been more subdued in Thailand, although the current Prime Minister is a woman (Chongkittavorn, 2003). Another common perception: Thais see their country as more established than Burma, especially since Thailand’s democratic monarchy emerged in 1997, and because many take pride in Thailand’s administration and policies, specifically in areas of human rights (Chongkittavorn, 2003). Further sculpting negative stereotypes, many popular movies have been made based on the conflict between Myanmar and Thailand. Although history reveals there have been only two major battles between the nations in the past four centuries, these, the two countries commonly see each other as enemies (Chongkittavorn, 2003).
Figure 16: Buddhism in Thailand (left) and Myanmar (right)

"Culture is about shared values, attitudes, goals, traditions as well as norms and actual behavior that characterize a group and are passed down by the group to following generations;” Buddhism provides strong traditional, cultural, and religious values for both societies (Fritz, 2014 p. 8; Hanson, and Donohoe, 2011). Politically, in Thailand, the king stands as the representative and the leader of the nation. A major social issue for many Thais is the expanding gap between the rural poor and the urban rich. In social emergencies, the king can arbitrate on behalf of the nation, as was done in the April 2006 resignation of Premier Thaksin Shinawatra. The Thai military maintains strong ties with the king and Buddhism (Hanson, and Donohoe, 2011). Differently, in Myanmar, a major social concern is human rights. The Junta have fought to hold on to their power in a number of ways, including, but not limited to: moving the seat of government from Yangon [Rangoon] to the area of central Myanmar in November 2005; dispersing universities to make student protests less likely; and by not

36 The 2010 Census reported Thailand as 93.6% Buddhist, 4.9% Muslim, 1.2% Christian, .2% other, and .1% none. Myanmar is 89% Buddhist, 4% Christian (3% Baptist, 1% Roman Catholic), 4% Muslim, 1% animist, and 2% other (CIA, 2010a; CIA, 2000).

37 King Bhumibol Adulyadej was born December 5, 1927. He is greatly adored by the populace and represents “a center of national unity” (Hanson, and Donohoe, 2011).
allowing the parliament to convene (Hanson, and Donohoe, 2011). However, it appears the junta power is weakening. Elections are planned to take place in 2015 and predictions hold high hopes for Aung San Suu Kyi to win and hold office.

Both countries have together experienced very unpredictable border politics (Fink, 2001, p. 20, 235). Since gaining independence from the British, civil war has fluctuated across time and place along the border, especially with many indigenous peoples who have historically been “strongholded” by both Myanmar and Thailand (Wongpolganan, n.d.). Peoples like the Karen and Mon have been marginalized from possible opportunities to get ahead, through means of discrimination in employment, in education, and in citizenship (Wongpolganan, n.d.). Moreover, indigenous border communities have also been affected by Thailand’s policies on migrants and refugees from Myanmar (Wongpolganan, n.d.).

Figure 17: Migrant Immigrant “Card”

Many people seek refuge along the marginal area, some seek camps set in place up and down the border and others look to find work on the other side of the borderline.

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38 In the 1950s Thailand developed a border policy that surrounded the border with anticomunist buffer military groups, or “buffer armies” until 1988 when the massacre of demonstrators in Yangon inspired an open door policy to develop foreign investment and Thailand opted to change their border approach for development. After Daw Aung San Suu Kyi was denied office in 1990, again Thailand changed their tactic on border policies to the “Constructive Engagement” approach, to help promote democracy, open markets, human rights and economic and political ties, but some have criticized Thailand for using it to exploit Myanmar for their natural resources and cheap labor (Wongpolganan, n.d.).

39 Thai Immigration Law uses colored cards to categorize ethnic minority groups into nineteen different classifications (Wongpolganan, n.d.)
An estimated 50% of Thailand’s Mae Sot’s 80,000 Burmese workers do not have legal work permits (McGeown, 2007). Many will risk illegal work, because if caught, some Thai police and immigration officers “regularly extort bribes” or may return the person to the other side of the border near the checkpoint (and with a small bribe to the Burmese authorities seeking migrants may [again] cross illegally), but it becomes a much greater risk for the migrant worker if he or she is sent to the Burmese Government where large fines (about $8,300) must be paid to avoid jail (McGeown, 2007). Illegal work leaves many subject to abuse from employers who

40 According to one study, over 20,000 Myanmar employees were working in factories around the border area in northern Kanchanaburi Province (phophtaw.org, 2012).
pay employers less than the Thai minimum wage\textsuperscript{41}, withhold payments, use physical abuse and rape (McGeown, 2007). Workers are often protesting for increasing wages, safer conditions, overtime fees and compensation (McGeown, 2007). As an alternative, some individuals and families move to the border and create make-shift residential areas and shops, while others use the border as an opportunity to trade illegal goods and services on the black market.

**Figure 19: Checkpoint Community Market and Residence**

Source: Jennifer Latessa, 2013

In 2010 violence erupted on the border town of Myawaddy (See Figure 3), between Myanmar troops and Kayin rebels (Chapman, 2010). It was believed violence flared as troops were hunting down rebels who had previously attacked a police station and an army camp (Chapman, 2010). Several were injured by rockets and mortar bombs, including those on the other side of the border in Thailand (Chapman, 2010). The group responsible is believed to have broken away from the government and allied with the Democratic Karen Buddhist army because they oppose the government’s controversial election and plans for a united border guard across the border regions (Chapman, 2010).

Despite this outburst, relations have been generally better, but still challenging for Myanmar and Thailand. This is because in the late 1980s negotiation concessions for logging,

\textsuperscript{41} The legal daily wages of Thais is specified as 300B by the Thai Government, but wages of a worker in the northwestern part of Kanchanaburi, is is from lowest 100B (Baht) to 150B or with monthly wages between 1,800B to 4,500B ($1 is approximately 33B) (phophtaw.org, 2012).
fisheries, oil and gas were devised (Wongpolganan, N.D). The infrastructure to build pipelines, ports, and roadways to access these resources has had a major impact on the villages and the environment. However, the natural resource industry has helped to develop a working relationship between the two countries, enough so that, in April 2013, Thailand and Myanmar agreed to open three more permanent border checkpoints to boost economic development, all of which are in the Tanintharyi Mountain Range (Bangkok Post, 2013).

The populations living in or around the protected areas have an understanding of the land and culture and are directly affected by land policy changes. The populations in the area see trends in a rise and fall pattern due to biological potential, social interactions (the rise) and socio-political processes (the fall) (Governments of Thailand and Myanmar, 2013). Ethnic groups have been long time residents of the land, relying on the forests for subsistence and livelihoods and “in many ways, the traditional practices of these groups provide a template for sustainable use of the region’s rich natural resources” (Governments of Myanmar and Thailand, 2013). Although many of the practices are sustainable in their nature, the population factors, as well as economic need, and an increased dependence on the forest, subjects the area to long-term sustainability threats, such as:

- **Poaching** commercial and subsistence poaching and selling wildlife products through cross border trade depletes populations (Governments of Thailand and Myanmar, 2013).

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42 The Yadana gas pipeline alone had an impact on thousands of villagers in Mon and Karen States, some of whom were threatened with forced labor for construction and permanent relocation, others sued for confiscation of villagers’ land without compensation (Fink, 2001, p.242; Wongpolganan, n.d.).

43 The checkpoints are in Kanchanaburi and Myanmar’s Phayatongsu town; Ban Nam Pu Ron in Kanchanaburi and in Myanmar’s Tiki town; and the Singkorn temporary checkpoint in and Myanmar’s Mortong town (Bangkok Post, 2013).

44 Myanmar ethnic groups are: Burman 68%, Shan 9%, Karen 7%, Rakhine 4%, Chinese 3%, Indian 2%, Mon 2%, other 5%; In Thailand the ethnic makeup is: Thai 95.9%, Burmese 2%, other 1.3% (CIA, 2000; CIA, 2010a).
- **Small/Large Agriculture** clears forests and endorses fragmentation and encroachment (Governments of Thailand and Myanmar, 2013).

**Figure 20: Farming for Livelihood**

![Farming for Livelihood](image)

Source: Jennifer Latessa, 2013

- **Fragmentation** is anticipated to further increase from development since the Tanintharyi Range is within a Greater Mekong Subdivision’s economic corridor (Governments of Thailand and Myanmar, 2013). Thailand’s forest areas and biodiversity in the region show a steady declining trend, “from 53.3% of the total land area in 1961 to 33.6% in 2009” (Governments of Thailand and Myanmar, 2013, p. 5). Fragmentation may also add to barriers for migratory routes (Governments of Thailand and Myanmar, 2013).

- **Refugees/Immigrants** an influx of these populations from wartime, has the Government of Thailand worried over illegal immigration and potential negative outcomes like infectious diseases, human trafficking, and the legal questions that
come about for immigrant workers and their rights;\textsuperscript{45} most of Thailand’s illegal immigration stems from Myanmar (Trisurat, 2007).\textsuperscript{46}

- **Illegal/Legal Logging** Thailand banned timber exploitation in its forests in 1988, but Myanmar then gave Thai companies logging approval across the border (Governments of Thailand and Myanmar, 2013). Today illegal and legal logging is observed in Myanmar and Thailand “on a small scale” (Governments of Thailand and Myanmar, 2013).

**Figure 21: Furniture from Tropical Timber**

\textbf{Source: Jennifer Latessa, 2013.}

\textsuperscript{45} Thailand is also trying to create technical and developmental programs to help neighboring countries improve health care, education, and income generation to help resolve this issue (Trisurat, 2007).

\textsuperscript{46} Of the approximately 525,000 illegal immigrant workers and 20,000 Indochinese refugees, two thirds came from Myanmar to Thailand by the end of 1994, according to the Thai immigration office, and this number has increased in recent years (Shenon, 1995).
Increased Settlement in PAs and PA’s Buffer Zones leads to population rise, encroachment, pollution and wildlife impacts; Table 4 shows Thailand’s total population inside the KKFC and the buffer zone is 64,331, 60% of whom practice agriculture and enlarge when possible (Governments of Thailand and Myanmar, 2013). Table 5 depicts the livelihood composition of the villages by household in Myanmar, where reportedly forty-five villages live in the Tanintharyi National Park (TNR) with a population of around 30,00047 (Governments of Thailand and Myanmar, 2013).

47 Nine villages are within the TNR; eight are in the north and one in the south, ranging from twenty to seventy households per village (Government of Myanmar, 2013). One mile from the boundary outside the TNR there are no villages, but within the four mile perimeter, there are twenty-nine villages (Government of Myanmar, 2013).
Table 4: “Number of Villages, Households and Population inside and in the Buffer Zone of Sai Yok and Thong Pha Phum National Parks and Kaeng Krachan Forest Complex”

<table>
<thead>
<tr>
<th>Protected Area</th>
<th>Inhabitants Inside PAs</th>
<th>Inhabitants within 3-km buffer zone</th>
<th>Total population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of villages</td>
<td># of households</td>
<td>Population #</td>
</tr>
<tr>
<td>Sai Yok National Park</td>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Thong Pha Phum National Park</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>KKFC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kaeng Krachan National Park</td>
<td>8</td>
<td>889</td>
<td>2,402</td>
</tr>
<tr>
<td>Kui Buri National Park</td>
<td>2</td>
<td>123</td>
<td>432</td>
</tr>
<tr>
<td>Chalerm Prakiat National Park</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mae Nam Pachi Wildlife Sanctuary</td>
<td>2</td>
<td>93</td>
<td>402</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>1,105</strong></td>
<td><strong>3,236</strong></td>
</tr>
</tbody>
</table>

Table 5: “Livelihood Composition of Study Villages (By Households)”

<table>
<thead>
<tr>
<th>Village</th>
<th>Shifting-cultivation</th>
<th>Horticulture</th>
<th>Lowland</th>
<th>Odd-jobs</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yapu</td>
<td>20</td>
<td>112</td>
<td>1</td>
<td>25</td>
<td>35</td>
<td>193</td>
</tr>
<tr>
<td>Tharyarmon</td>
<td>41</td>
<td>34</td>
<td>4</td>
<td>25</td>
<td>-</td>
<td>104</td>
</tr>
<tr>
<td>Mayaungchaung</td>
<td>29</td>
<td>30</td>
<td>5</td>
<td>19</td>
<td>1</td>
<td>84</td>
</tr>
<tr>
<td>Michaunglaung</td>
<td>37</td>
<td>20</td>
<td>-</td>
<td>10</td>
<td>7</td>
<td>74</td>
</tr>
<tr>
<td>Zimba</td>
<td>50</td>
<td>30</td>
<td>10</td>
<td>34</td>
<td>15</td>
<td>139</td>
</tr>
<tr>
<td>Kyaukshut</td>
<td>15</td>
<td>86</td>
<td>-</td>
<td>46</td>
<td>11</td>
<td>158</td>
</tr>
<tr>
<td>Yepon</td>
<td>14</td>
<td>66</td>
<td>-</td>
<td>20</td>
<td>7</td>
<td>107</td>
</tr>
<tr>
<td>Heinze</td>
<td>5</td>
<td>20</td>
<td>-</td>
<td>8</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td>Hnan-kye</td>
<td>-</td>
<td>45</td>
<td>5</td>
<td>47</td>
<td>-</td>
<td>97</td>
</tr>
<tr>
<td>Wunpo</td>
<td>3</td>
<td>17</td>
<td>12</td>
<td>10</td>
<td>17</td>
<td>59</td>
</tr>
<tr>
<td>Total</td>
<td>214</td>
<td>460</td>
<td>37</td>
<td>244</td>
<td>94</td>
<td>1049</td>
</tr>
</tbody>
</table>


These villages are those selected to be surveyed by the research team.
• **Forest Fires and Repeated Burning** may lead to permanent ecosystem degradation (Governments of Myanmar and Thailand, 2013).

• **Human-Elephant Conflicts** are repetitious along park boundaries where elephants eat agricultural crops and then sometimes suffer deadly consequences from locals; this is especially prevalent in Kui Buri National Park and Kaeng Krachan National park (Governments of Myanmar and Thailand, 2013).

Figure 23: Wild Elephant

Source: Jennifer Latessa, 2013

• **Mismanagement** is amid contiguous protected areas due to a lack of capacity, skills, financial support and mechanisms in place, amongst different protected areas and countries (Governments of Myanmar and Thailand, 2013).
Such problems on the border highlight concerns that greatly affect the population and policies of both countries. Negotiations between Myanmar and Thailand are seen as pressing due to the long term history of conflict and the social and scientific concerns developing around the border. The twist is, Thailand has reduced forests, but has the resources and capacity available to manage forests, whereas Myanmar’s forests currently have few policies in place, and have had limited resources and scientific surveillance in the past, but are lush and intact (Governments of Thailand and Myanmar, 2013). Working together, the two countries could play to each other’s strengths to sustain economic and environmental activities.
3 Methodology

This research methods chapter describes the steps taken to design and execute the study. Included are:

- the methods used,
- the timeframe,
- the location(s) of the study,
- how access to the data and subjects was obtained,
- the population and samples involved in the research,
- how many participated in the evaluation,
- how contributors were selected and
- a critical assessment of the research methods.

The subsequent sections describe each step.

3.1 Methods

Data gathering involved various resources, such as books, articles, lectures and other electronic resources from academic sources and libraries, to provide a preliminary understanding of transboundary environmental negotiations, peace parks, key stakeholders and their positions and principles.

To measure the data, surveys were used. The survey approach is a research strategy that can provide a comprehensive and detailed view through obtaining data for mapping (Robson, 2007). Surveys have emerged in recent times because they provide wide and inclusive perspectives, they generally present current opinions and state of affairs, and they carry the idea of empirical research (Robson, 2007). There are a variety of ways surveys were
distributed: postal questionnaires, which involved sending ‘self-completion’ questionnaires through the post and included a large-scale mailing covering a wide geographical area; internet surveys, provided a fast and cheap alternative to data collection by attaching the survey in e-mails or through Google Forms; and interviews.

The Diagnostic Tool for Trans-boundary Conservation Planners by the IUCN was selected as the assessment survey because the IUCN demonstrates knowledge, understanding and a desire to invest in more TBCAs by setting up research departments and groups (Ali, 2007). The IUCN is cited as the oldest and largest global environmental organization and has been one of the longest promoters of TBCAs as “areas that involve a degree of cooperation across one or more boundaries between (or within) countries” (Marton-Lefevre, 2006, p. xiii; Ali, 2007). The IUCN is peer reviewed, it uses experts from around the world for its publications and is cited by scientists and researchers studying bio-diverse protected areas, peace parks and trans-boundary conservation areas as a credible source. (IUCN, 2013; Ali, 2007; Duffy, 2007; Quinn et al., 2013).

There were also additional advantages to using the tool for a comprehensive assessment. One of the benefits of the IUCN’s diagnostic tool is it consists of quantitative and qualitative questions for a dual and combined diagnosis. It also encourages a supplementary stakeholder analysis of the key stakeholder’s positions and principles to help depict the situation, strategy, process and potential outcomes (Watkins, 2000). The IUCN’s diagnostic tool also has a self-evaluation feature each participant receives once he or she completely fills out the questionnaire. An added bonus, the tool is relatively new so it is up to date on recent TBC theories and is receiving a lot of attention and focus for further use.
After the tool was selected, it was submitted to and approved by the Internal Review Board (IRB) of the University of Cincinnati. IRB determined the intent of the tool aims to find conservation feasibility (See Appendix V) and so the research was classified as a non-human research study. The IUCN’s diagnostic tool was translated into Thai, Burmese, and Karen\(^{49}\) and then used by participants in the site area.

The combined results from the survey tool and stakeholder analysis provide information that helps clarify the rules of the game and the resources available, as well as the participating parties, the agenda of the issues being negotiated, the distribution of information among the parties, any existing and potential linkages among negotiations and action-forcing events that could occur (Watkins, 2000). Barriers and opportunities can also arise from such context and structure (Watkins, 2000). The data gained from the surveys and stakeholder analysis provided the information for the needs assessment, and the recommendations for each party (ideal solutions) and conclusions (ideal outcomes) (Watkins, 2000).

### 3.2 Timeframe

The project began when the Faculty of Architecture, Urban Design, and Creative Arts at Mahasarakham University in Thailand offered an inbound internship for the summer of 2013. An application was sent in August 2012 and an acceptance letter was received November 2012 with a contract explaining the internship would involve research activities under the auspices of Dr. Tarawut Boonlua from May 1 – August 1, 2013; further, it stated that Mahasarakham University was responsible for allowance and accommodation of 11,000 baht per month, while

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\(^{49}\) Karen is an ethnic group in Myanmar. Karen people have their own language (along with dialects), culture, traditions, government, and reside in the research area on both sides of the border. The Karen tool is still in development because it has been difficult to find a font that will work electronically.
international and domestic transportation were the responsibility of the intern (Office of the International Affairs, 2013).

Prior to going to Thailand, research occurred in the spring semester of 2013 to come up with a potential topic and sites and prepare for a proposal through an independent study course. Upon arrival in Thailand, contacts were made and information was shared about the development of a transboundary proposal. While in Thailand and Myanmar, a research network was set up to connect to participants.

Specifically, the first month was spent adjusting to the culture and contacting stakeholders and people willing to help with the research. During the second month site visits were made to Thailand and Myanmar for field research to evaluate the land, gain an understanding of the cultural dynamics, collect data, make connections, and conduct interviews with local inhabitants, local leaders, and the local protecting authority, as well as the government, to receive survey results.
Site travel included Kanchanaburi, Ratchaburi, and Phetchaburi Provinces in Thailand, specifically to the main border checkpoint in Phetchaburi Province, or Singkhon Pass, and Yangon, in Myanmar, since official visa restrictions prohibit visitation to the Tanintharyi region. To ameliorate for this, a resident from Dawei, a city in the southern region of Myanmar, agreed to help as a team member to travel to the site and survey villagers (see Table 5), to obtain maps, and take notes and photographs to support the research. The final month was dedicated to promoting the research through mailings and writing and presenting preliminary findings.

After the inbound internship, communication continued via email and independent course work remained in the fall semester of 2013, when the project proposal defense took
place, and in the spring 2014 semester. The analysis, recommendations and conclusions were developed in February and March 2014. The defense took place at the end of March.

3.3 Location(s) of the Study

The locations reviewed for the potential TBCA site included the Hala Bala Forest Complex, the Pha Taem Protected Forest Complex (PPFC) and the forest complexes near Tanintharyi Mountain Range. The Hala Bala Forest Complex was ruled out because the area is politically unstable and entrenched in conflict. PPFC was also considered since Laos has been stagnant, but was also ruled out because so much has already unraveled there.

Since the Thanintharyi Mountain Range already has protected areas in place, there was a better chance sites would have bio-diversity data and a TBC was more likely to get off the ground since contentious issues over re-designation of land could be circumvented. In Thailand, the Western Forest and Kaeng Kachan Forest Complexes adjoin Myanmar's lush forest area. The joint conservation in place suggests a possible way out of geopolitical issues and into a harmonious and functional ecotourism location; one that promotes and incentivizes participation, benefits all fairly, and integrally involves the local communities with management (Ali, 2007; Trisurat, 2007).

3.4 Access to the Data and Subjects

In order to access the data and subjects, preliminary research led to the pursuit of a research network in both Thailand and Myanmar through different research facilities and individuals, including King Prajadhipok’s Institute (KPI), an official organization of the Thai

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50 Muslims in southern Thailand claim heavy-handed and unfair treatment from Buddhists has generated violence (Hanson, and Donohoe, 2011).
central government, Sakaerat Environmental Research Institute, “a research center for plant and animal species in the northeastern jungles open to groups interested in eco-tours”, the Master of Arts Programme in International Development Studies (MAIDS) at Chulalongkorn University, and the Faculty of Forestry at Kasetsart University, among others (Tourism Authority of Thailand, 2010). A team of researchers was then put together to assist with activities such as, data collection and entry, translation, networking, and interviewing. If someone was needed for translation, he or she was directly sourced and funded personally.

Stakeholders were contacted through the team either personally, by mail or electronically; they were approached during the months of May through March. Researchers directly responsible for conducting interviews were taught ethical rules and interviewing procedures. It should be noted they were not under the direct supervision of the researcher 100% of the time.

3.5 Population and Samples Involved

Stakeholders targeted for survey participation were defined as those individuals or organizations knowledgeable about the area and with the power to stop or start the initiative (Honadle, 2012). The IUCN’s diagnostic tool recommends directing questioning to key patrons such as protected area authorities, local governments and leaders, NGOs, international organizations or other TBC process initiator(s), which includes consultants with interested parties that might be involved in or affected by the foreseen process (IUCN, 2012; See Appendix I). Villagers’ perspectives were also gathered to capture their opinions and concerns in the data.
The Governments of Myanmar and Thailand created a stakeholder analysis in the joint proposal (See Appendix II); the stakeholders identified were then asked to complete the survey. The following image is a modified list with primary, secondary and tertiary stakeholders from Myanmar and Thailand. All were asked to participate in the study.
<table>
<thead>
<tr>
<th>Myanmar</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Stakeholders</strong></td>
<td></td>
</tr>
<tr>
<td>Wildlife Conservation Society (WCS) Myanmar Program</td>
<td>Wildlife Conservation Society (WCS) Thailand Program</td>
</tr>
<tr>
<td>Local communities* in the Taninthary Range in particular the Taninthary National Park and its surrounding areas</td>
<td>Local communities**</td>
</tr>
<tr>
<td>Forest Department (Planning and Statistics Division and Nature and Wildlife Conservation and Forestry)</td>
<td>Sub-district and village administrations</td>
</tr>
<tr>
<td>Forest Research Institute</td>
<td></td>
</tr>
<tr>
<td><strong>Secondary Stakeholders</strong></td>
<td></td>
</tr>
<tr>
<td>University of Forestry, Central Forestry Development Training Centre, Myanmar Forestry School</td>
<td>Protected area superintendents and forestry officials.</td>
</tr>
<tr>
<td>UN agencies (United Nations Development Programme [UNDP]-Myanmar, The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries [UN-REDD+], Food and Agriculture Organization of the United Nations [FAO] - Forestry, UN-habitats) and regional organizations – Association of Southeast Asian Nations (ASEAN) Biodiversity Centre and ASEAN-Wildlife Enforcement Network</td>
<td>Regional forestry, protected area, provincial and agricultural offices.</td>
</tr>
<tr>
<td>Conservation development NGOs (Forest Resource Environment Development And Conservation Association [FREDA],</td>
<td>Royal Forest Department and Department of National Park, Wildlife and Plant Conservation</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Thailand</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Biodiversity And Nature Conservation Association [BANCA], Ecosystem</td>
<td></td>
</tr>
<tr>
<td>Conservation and Community Development Initiative [ECCDI], Myanmar</td>
<td></td>
</tr>
<tr>
<td>Environmental Rehabilitation-conservation Network [MERN],</td>
<td></td>
</tr>
<tr>
<td>and Economically progressive Ecosystem Development group [ECODEV])</td>
<td></td>
</tr>
<tr>
<td>Army and Border patrol police</td>
<td></td>
</tr>
<tr>
<td>Development NGOs (World Wildlife Fund [WWF], IUCN and Elephant</td>
<td></td>
</tr>
<tr>
<td>Conservation Network in Thailand).</td>
<td></td>
</tr>
</tbody>
</table>

**Tertiary Stakeholders**

<table>
<thead>
<tr>
<th>Primary/middle and high schools in the Project site</th>
<th>Educational and research institutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Agriculture and Irrigation, Ministry of Livestock Breeding</td>
<td>National finance and private company</td>
</tr>
<tr>
<td>and Fisheries</td>
<td></td>
</tr>
<tr>
<td>Local authority</td>
<td>ITTO and international donors.</td>
</tr>
</tbody>
</table>

* See Table 4 for details
** See Table 5 for details
The stakeholders were first sent questionnaires by mail, then by email with reminders. Over 150 institutions and individuals were asked to participate. The Diagnostic Tool for Trans-Boundary Conservation for Planners generates an opportunity for the individual to add any additional key stakeholders he/she believes should be included in the study. If other stakeholders were identified by participants, he or she was asked to complete the survey.

3.6 Participation

The stakeholder analysis (Appendix II) provided background to introduce the players, issues and conflict, and show the situation, context and structure of the players (Watkins, 2000). It was predicted this research would obtain a small sample size because not that many individuals are directly involved and have knowledge about the TBC proceedings. The surveys may have been considered time consuming and overwhelming to some because the survey has ninety-one questions that require specific answers. As such, the initial sample size was increased to build upon the projected response rate, although it remains to be seen whether or not this effort helped. More groups and individuals were selected based on their ability to cease or start the peace park (Honadle, 2012). Some promised to return questionnaires repeatedly without delivering, while others did not respond at all, also, some of the researchers did not report their findings until after the deadline, all of which contributed to a very small sample size of sixteen institutional and individual responses from various areas on both sides of the border. Though it is difficult to say how many participants should be engaged in this process, this sample is believed to be too undersized to be considered reliable, and extra attention was paid to issue representation and to the extent to which generalizations were made on the basis of the
findings (Robson, 2007). Future use of this research should aim for at least thirty participants (Robson, 2007). Due to the few responses, the current sample population is anonymous.

### 3.7 Selecting Contributors

Some of the questionnaires returned were incomplete with questions unanswered. Depending on the severity of the unanswered questions, some surveys were disregarded. Other surveys were not used if during the interview the person did not directly answer the questions asked. After the contributors were selected, their responses were entered into an Excel database, and all valid responses were averaged to estimate the results. If the average was equal between two data points, the mode was used.

### 3.8 Critical Assessment

This portion examines the methods used to discuss what would be used again, and what would have been done differently. A disadvantage of using surveys is they can lack depth and detail, and participants can be dishonest. The IUCN’s survey was very good because it allowed for qualitative elaboration on quantitative questions. However, it may be easier to gauge the truth in the surveys if questions are used either as dummies or to check the stories of the participant(s) for flaws.

Another challenge was presented in finding direct emails to participants rather than general email addresses. Surveys can be easily ignored so response rates are generally low, and, therefore, it can be challenging to get a reasonable response rate (Robson, 2007). If a second batch of results is entered into the database, it would be interesting to compare and contrast the results, and also find the cumulative totals.
Sample bias is another issue, especially for those who can read and write or have access to the internet compared to those who do not. Due to the nature of this research, many of the villages are not powered and thus cannot participate in internet surveys. The following images show an energy engineer in the Thanintharyi Mountain Region, who harnesses energy through natural gas, sunlight, and conservation and distributes it to others without power in the region.

**Figure 25: Energy in the Taninthayi Mountain Range**

![Energy engineer in the Thanintharyi Mountain Region](image)

*Source: Jennifer Latessa, 2013.*

Most of the limitations revolved around language barriers and loyalty to one’s own identity, and they persisted throughout the research process. One major limitation to data collection on this project was that a large proportion of information was posted in languages other than English, most of which was not translated. Through Mahasarakham University and connections made in the region during field activities, English-translations were acquired, but with the caveat that communication may not have been relayed perfectly. On site, some of the locals were not able to read or write, and, the results depended upon translators and
researchers to assist participants with completing surveys. Translations for the surveys may have been oversimplified and could have impacted questioning, especially since local stakeholders may not have been familiar with the jargon or some of the more classified information.

The process of gathering the results also depended upon translations and language. Key stakeholders may have completed the assessments in a language that would either have to be translated electronically (i.e., Google Translate) or with the assistance of other individuals, so there is a risk the results could have been skewed or miscommunicated. Human error is also likely to have occurred. Finally, the research team members are from Thailand and Myanmar and thus may have biases that could influence the outcome of the results.

On the other hand, surveys tend to provide empirical data by producing data based on real-world observations (Robson, 2007). They cover a wide and inclusive perspective and can produce quantitative and qualitative results. Their cost is also predictable (Robson, 2007). A major success of the research was creating the translated diagnostic tools so they can be used in the future by others interested in assessing or re-assessing the feasibility for TBPAs in Thailand and in Myanmar.

The main reason for focusing on the strengths and weaknesses of this research is to identify areas and ways to enhance future use of this work. Since participation was low it may be more fruitful to provide the same survey questions to different levels of participants to target questions toward those who will have that information and to shorten the length of the questionnaire. Another approach could be sending the surveys with an endorsement from officials to participate and having the individuals and institutions sit down in a quiet room
together to either individually fill out the surveys anonymously, or have a meeting to work on the answers as a group.

The best participation success occurred in person, and, in the future, more time should be spent on site location with a large team of objective interviewers who can speak the language of the participant for better results.
4 Analysis

This chapter first presents stakeholder and area characteristics considered to increase or decrease the likelihood of TBC negotiation in the region and then presents the results from the questionnaires to indicate whether or not the necessary conditions exist for establishing a peace park in the Taninthayi Mountain Range. The findings are then examined for understanding and meaning.

4.1 Stakeholder and Area Characteristics Considered to Increase or Decrease the Likelihood of TBC Negotiation.

The questionnaire is broken down into four categories (1) compelling reasons for trans-boundary conservation, (2) stakeholders, (3) geographic reach, regional stability and complexity, and (4) capacity. Each of these groups has correlate factors that can impact the likelihood for TBC negotiation. This section breaks down each cluster to explain the different variables that direct the results.

(1) Compelling Reasons for Trans-Boundary Conservation

Different outcomes are possible to indicate the degree of need or compelling reasons for TBC. The three possible results are based on factors such as restrictions on movement across the border, cultural values, crime, the uniqueness and endangerment of species in the area, the distance of the area to other protected areas, pressures and threats from social, political, and economic institutions, and the ability of the TBC to serve to protect, restore, maintain, or sustainably use ecosystems. Depending on the answers, stakeholders can score a strong need for the TBC, a need for a TBC, or that the idea of TBC should be reconsidered.
Then opportunities that could speed up or threaten the TBC generation are reported based on the aforementioned variables and the corresponding grade.

(2) Stakeholders

The collection of questions asked in this portion uses a mix of qualitative and quantitative answers to identify stakeholders and critique them based on initiative, management capacity, attitude, interest, their sense of fairness, past experiences with trans-frontier collaboration, and the compatibility of the stakeholders in the area to work together.

(3) Geographic Reach, Regional Stability and Complexity

This set of questions evaluates physical, legal and warlike attributes of the area. The responses aim to identify unresolved conflicts, authorized procedures in place, and the military’s role in promoting or preventing TBC formation.

(4) Capacity

Capacity of the TBC is judged by physical and non-physical means. The questions examine whether or not resources, structures, tools, and energy sources are in place, and if not, are institutions or individuals willing and able to financially and emotionally invest in such mechanisms. This portion uses informative questions to identify the parties and members able to provide funding and increase capacity for TBC cooperation.

4.2 Diagnostic Tool for Trans-Boundary Conservation for Planners Report

The following report is from the surveys collected.
# REPORT

## FEASIBILITY FOR ESTABLISHING A TRANS-BOUNDARY CONSERVATION INITIATIVE

<table>
<thead>
<tr>
<th>Prepared by (Institution):</th>
<th>The mean estimate of all returned and valid surveys. If a tie, the mode was selected as the appropriate response.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>Surveys from June 2013-April 2014</td>
</tr>
</tbody>
</table>
| Protected area(s):         | *Designated:* Tanintharyi National Reserve (Myanmar), Sai Yok National Park (Thailand), Thong Pha Phum National Park (Thailand), Kaeng Krachan National Park (Thailand), Mae Nam Prachi Wildlife Sanctuary (Thailand), Kui Buri National Park (Thailand), Kui Buri Reserve Forest (corridor area in Thailand)*  
                            | *Proposed:* Tanintharyi National Park (Myanmar), Tanintharyi partial corridor area (Myanmar) |
| Country:                   | Myanmar and Thailand                                                                           |
| Geographical position:     | Tanintharyi Mountain Range                                                                     |
| Size:                      | *Designated PAs:* 7,846 km.$^2$ or 3,029.4 mi.$^2$; where 21% is in Myanmar and 79% is in Thailand.  
                            | *Proposed PAs:* 12,392 km.$^2$ or 4,784.6 mi.$^2$; where 97% is in Myanmar and 3% is in Thailand.  
                            | *Total:* 20,238 km.$^2$ or 7,813.9 mi.$^2$; where 68% is in Myanmar and 32% is in Thailand. |
| Authorities responsible for management of the protected area: | Non-governments and governmental departments (Departments for National Parks, the Departments for Wildlife and Plant Conservation, and Forestry Departments), militia, police, park rangers, and locals. |
| Natural values of this area: | *Cultural groups:* Different religions and different ethnicities.  
                            | *Natural resources:* Gas, oil, wood, and ores. |
Natural values of this area continued:

Biodiversity:

Thailand alone reported 720 wildlife species: 91 mammals, 461 birds, 87 reptiles, 33 amphibians, and 48 fish in the Kaeng Krachan forested area. The region in general was identified to have the following species (this is not the entire list of species found in the region):

**Fauna:** Asian Elephant, Dhole, Gurney’s Pitta, Southern Serow, Kitti’s Hog-Nosed Bat, Malayan Tapir, Tiger, Clouded Leopard, Common Leopard, Gaur, Wild Dog, Himalayan Black Bear, Asiatic Black Bear, Siamese Crocodile, Marbled Cat, Sambar, Wild Water Buffalo, Banteng, Sun Bear, Deer and 100+ avifauna.

**Flora:** Hopea sangal, Parashorea stellate, Shorea assamica, Shorea farinose, Anisoptera costata, Shorea gratissima, Shorea henryana, Hopea dorata, memecylon grande, Myristica malabarica, Schima wallichii

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### (1) Compelling Reason for Trans-boundary Conservation

There is need for TBC in the following areas:

- Protection, restoration, maintenance or sustainable use of shared habitats and ecosystems;
- Protected area management benefits i.e., science initiatives and tools, like with monitoring and controlling natural disasters (floods and fires) and species, especially invasive species; reduce crime in the form of wildlife trade and human trafficking, and illegal mining; create formal agreements, protect the forest from big corporations and celebrate cultures.

There are a number of opportunities that could speed up or be generated by the TB process, namely:

- There are agreements on certain aspects of protected area management between nature conservation authorities;
- The region shares distinctive natural/landscape phenomenon which could be recognized as a common feature of the proposed TBPA. Examples listed include: flooding, tsunamis, cyclones, wildfires, and endemic and shared endangered species.

There are a number of risks, namely:

- The significant disparity in the employment and welfare situation of the local population in the proposed TBPA in Myanmar in comparison to the Thailand;
- The national legislation on nature conservation in the concerned countries is completely different.
## Stakeholders

<table>
<thead>
<tr>
<th>Primary stakeholders in the potential trans-boundary initiative are:</th>
<th>Karen, Thai, and Burmese people and communities, the black market workers, NGOs, activist groups like Kesae, civil societies, the Karen Government, Government of Myanmar, and the Government of Thailand, Thailand’s Royal Forest Department, Myanmar’s Forestry Department, the Department of National Parks, gas and oil companies, and the military and police.</th>
</tr>
</thead>
<tbody>
<tr>
<td>International organization(s) involved in the trans-boundary initiative development is/are:</td>
<td>U.N., Green Peace, UNESCO, ITTO, and JICA</td>
</tr>
<tr>
<td>Major roles of primary stakeholders in the trans-boundary initiative are:</td>
<td>Educate, assist financially, cooperate, encourage and empower the TBC initiatives, not interfere.</td>
</tr>
<tr>
<td>Stakeholders with decision-making power:</td>
<td>The Governments of Thailand and Myanmar, the private sector, ethnic leaders, the military and the police were identified as the stakeholders with decision-making power.</td>
</tr>
</tbody>
</table>

### There are a number of opportunities that could speed up or be generated by the TB process, namely:

- Other stakeholders apart from protected area management authority participate in protected area and/or resource management; those listed were ethnic insurgent groups, community leaders, smugglers, Total Oil Co., Ltd., and PTT Public Company Limited (the Thai owned energy conglomerate).
- There are potential benefits for the local communities that could raise their support for establishing a TBPA, such as, economic, technological, and transit advancements, and better ties between the ethnic peoples and militaries.

### There are a number of risks, namely:

- N/A

## Geographic Reach, Regional Stability and Complexity

### There are a number of opportunities that could speed up or be generated by the TB process, namely:

- Trans-boundary initiative could help in reunification of communities and/or families across the state border.

### There are a number of risks, namely:

- N/A
### (4) Capacity

**Readiness of stakeholders to initiate TBC is good in the area(s):**

- N/A

**but, particular attention should be given to improving the area(s):**

- Availability of financial resources for trans-boundary related activities;
- Availability of people for coordination of trans-boundary related activities;
- Capacity (knowledge and skills) of people available for coordination of trans-boundary related activities;
- There are no people with vision and ability to make it compelling to others;
- Significant need for assistance in financial resources, and/or knowledge development from external sources (financial, technical, educational, and formally contracted support mentioned);
- Availability of sources of information (e.g. biodiversity inventories, maps, databases) for planning the proposed TBPA;
- No experience with management of externally funded projects.

<table>
<thead>
<tr>
<th>The following parties could potentially help increase capacity on trans-boundary cooperation:</th>
<th>Researchers, scientists, conservation groups, NGOs, and international organizations (IUCN, WCS, WWF), policy makers, minority advocates, volunteers, village people, park officials, forestry leaders, soldiers, local and national governments, financial groups, rangers, militaries, and security guards.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following parties could potentially help identify sources of funds and assistance for trans-boundary activities:</td>
<td>Government authorities (at the national and local levels), the private sector, NGOs, villagers and people like us.</td>
</tr>
</tbody>
</table>

**There are a number of opportunities that could speed up or be generated by the TB process, namely:**

- There is willingness to share any potential resources with partners across the border;
- Common initiatives aimed at improving the state of knowledge on biodiversity and natural resources of the proposed TBPA could be jointly undertaken.
There are a number of risks, namely:

- There are no available financial resources for trans-boundary related activities;
- There are no people available for coordination of trans-boundary related activities;
- Capacity development of people available for coordination of transboundary related activities is highly needed;
- There is significant need for assistance in financial resources, and/or knowledge development from external sources (financial, technical, educational, and formally contracted support mentioned);
- Institutional, operational and technical capacities between partners on each side of the state border are significantly different;
- No sources of information (e.g. biodiversity inventories, maps, databases) are available for planning the proposed TBPA;
- Sources of information (e.g. biodiversity inventories, maps, databases) in the concerned countries are not compatible;
- The state of knowledge on biodiversity and natural resources of the proposed TBPA in each country is significantly different;
- Methodologies for data collection and management in the involved countries are significantly different;
- No experience with management of externally funded projects.
4.3 Exploring the Results

The results signified there is a need for a TBC to protect and maintain the ecosystems and receive mutual benefits from doing so. There we similarities and differences presented in the findings of the report and in accordance with the mutual draft created by the Governments of Thailand and Myanmar. Those themes are addressed below.

Financing the project and coordinating the efforts between partners was an issue highlighted in the report and brought up by many, but financing the project was not so much in the mutual drafted agreement created by the Governments of Thailand and Myanmar. The estimated start-up cost of the peace park is approximately $4,250,000 (Governments of Thailand and Myanmar, 2013). The ITTO offered to help finance the project during the proposal period so it is possible the financial need is perceived because there is a lack of communication shared amongst stakeholders on the matter. With a large price tag and so much at stake, special measures should be taken to reach financial and cooperative fairness, if both parties have a long term goal to develop a peace park.

The stakeholders identified in the survey results are similar to those of the stakeholder analysis provided by the Governments of Myanmar and Thailand. These results emphasize categorizing the stakeholders into primary, international and powerful decision making groups. When identifying the roles of the primary stakeholders, the respondents indicated their function should be focused on improving the long term goals of the area in a laissez-faire way. All parties should consider what this means and how things can get done. The answers in the surveys were vague, but generally had a positive message. A similar approach was created at the Waterton-Glacier International Peace Park. The roles are undescriptive and simple, but
whether or not such roles are appropriate is unknown. Thoughtful consideration of this can help the primary stakeholders think about what objectives they would like to meet in future TBC attempts and how they can meet those aims in an accommodating way. Other stakeholders seen with power are energy companies, criminals, ethnic insurgent groups, and local leaders. This implies tension and unrest should be first addressed with suitable treatment and planning before attempting a TBC.

Geographic reach, regional stability and complexity conveyed an opportunity that could speed up or help generate a TBC is the reunification of families across borders. The results again fall in line with the context of the space and the past. Myanmar’s bloody history has caused many to move or flee from their homelands and realizing the potential in reuniting families across the border could help to play a role in the TBC’s long term development.

The capacity portion did not report any good insights toward readiness for future TBC aspirations, though many particular areas of special concern were identified. Coordination, experience, power differences, and management systems were identified in the report as major areas of concern. Shared technological and education advances are seen as opportunities, both in the drafted agreement the significant disparities between the two countries in their capacities is reported as a major issue. This can also be one of the greatest challenges in obtained Pathway D as seen in Figure 9. Thailand may be able to address issues of institutional, operation, and technical capacities differences, by using lessons learned from the Emerald Triangle project. Or, perhaps a trade for technologies and education could help neutralize these significant differences. The international donors and the assistance questions can help direct stakeholders in overcoming the major concern for future financial arrangements.
The report findings appear to be mostly consistent with the drafted document from negotiations between the two countries. A later re-assessment could report changes and progress and should be considered for use if interest continues towards a peace park negotiations in the region. Although the findings reported a need, a peace park should only be attempted when there is enough interest by the parties to do so and should not be forced (Ali, 2007).
5 Recommendations and Conclusion

The thesis closes with ideal solutions listed in the recommendations and ideal outcomes in the conclusion by using the assumption that the long term goal of the area is to become a peace park. To provide suggestions for a successful transition to peace park formation the following topics are discussed: policy reform challenges, overcoming a conflicting past and avoiding psychological traps, recommendations for economic development, best courses of action for conservation, the role of the military, and finally, international cooperation.

5.1 Policy Reform

One of the biggest challenges in securing peace park formation has been resistance to policy change beyond its boundaries from government officials. Different approaches\(^5\) to frame environmental conservation as a method for cooperation and peace include:

- **Dilemma of Common Aversions** denotes harm to the environment is destructive to all, and avoidance of this is preferable (Ali, 2007). In negotiation, this mutual avoidance may allow parties to see there are ways to work together for solutions that may help everyone (See Appendix IV).

- **Ecotourism as Economic Development** may use the environment to curb socioeconomic issues, but only if poor communities living in or near peace park boundaries are not sidelined and economic development incorporates local projects (Ali, 2007).

\(^5\) See Appendix IV.
Figure 26: Examples of Traditional Local Teachings (Left: Broom Weaving; Middle: Cooking Sweet Delights from Traditional Recipes and Local Ingredients; Right: Educational Nature Walks)

Source: Jennifer Latessa, 2013.

- **Delivering Peace Measures through Carefully Calculated Processes** in jointly protected areas plays a broader role in peace building (Ali, 2007).

Still, many challenges persist in persuading governments and leaders to form peace parks and it may be difficult to dissuade them from the idea that environmental concerns are low level politics, especially when policy makers are faced with loyalty dilemmas with parties who also believe environmental concerns are low level politics (Ali, 2007, p. 339). With environmental conservation listed as having low political importance, “at best, [it may] be a means of diplomatic maneuvering between mid-level bureaucrats, at worst, be a tool of cooptation by the influential members of a polity” (Ali, 2007, p. 337).

Politicians and governments should learn about the potential for environmental conservation so it may play an instrumental role in proving vital sources should be reserved, and so that environmental conservation may be framed in a positive light to allow opponents to realize the importance of resources, such as water, to encourage cooperation (Ali, 2007, p. 337). Environmental protection and conflict mitigation require urgency, advocacy, and for policy officials see peace parks and other environmental peacemaking efforts as a potential win-win solution for progress (Ali, 2007, p. 339).
The peace park in the Tanintharyi Mountain Range should be considered over a long term timeframe, as there will be a greater chance for policy reform when multiple factors are considered and patience is displayed to give some of the developments time to mature and work out any kinks (Ali, 2007, p. 341). The first step should be to disseminate information to all players in order to explain that threats to the environment are shared (Ali, 2007, p. 336; Appendix IV). The emphasis should then be placed on cooperation to alleviate the unwanted outcomes in the area (i.e., degradation, crime, poverty, inequality, corruption) (Ali, 2007, p. 336; Appendix IV). The next step should be to continue to exchange information to create clear communication, lesson rumors, and to ensure resource needs are met (Ali, 2007, p. 334; Appendix IV). This should lead to subdued conflicts and the realization that if all parties work together, trust may be built around environmental cooperation and potentially more can be gained with cooperation than without (Ali, 2007, p.336).

The trick is for governments, authorities and international community members to include the peoples in negotiations to keep goals aligned with the initiative, especially since a number of villages and communities live inside the protected areas (Fuller, 2007; Ali, 2007). The local communities of Thailand and Myanmar should feel they are educated, informed and updated on any changes being made to their surroundings and on best practices to protect and maintain ecosystems while living on the land (Ali, 2007). Even if the villagers do not have much power regarding whether or not the endeavor will happen, the higher officials and national governments should make them aware of what proceedings are taking place (Ali, 2007).

The peace park development examples around the world and the evidence of peace parks’ theoretical success have helped politicians and governments accept their capabilities,
positive results and see global politics in a new light (Quinn, et al., 2013; Ali, 2007). The hope is that the Governments of Thailand and Myanmar will see that same view.

5.2 Overcoming Historical Conflicts

Thailand and Myanmar’s 400 year old conflict, along with recent challenges, has led to severed ties, distrust and negative stereotyping. This long-term grudge can be amended with a change in thinking toward working with “traditional-enemies” or “historical archenemies” (Wongpolganan, n.d., Charnvit, 1998, p.16; Sunait, 2004, p. 27-67). Dr. Ali, in his Conflict Resolution course, at the University of Vermont, told his class a story provided by Jeffrey Rubin, a conflict psychologist, as an example to stimulate thinking of ends beyond entrapment. It is a grim tale of a wolf finding bait attached to a trapper’s knife. Trappers would bury a knife in the snow with a small piece of bait attached to the sharp end. When the wolf would begin to feast, it would cut itself and get a taste of its own blood, finishing both the snack and itself off, eventually bleeding to death. This is a classic psychological trap because it seems tempting and destined for failure at the same time. Perpetual conflict situations may often bring about entrapment and cynicism, especially when parties have been enduring a fight for a long time (Ali, 2007). It may feel as if there is too much to lose if a compromise is made, but as may be seen with the hungry wolf, failing to change a current trajectory may be fatal.

5.3 Economic Revitalization

The economic impact of peace parks may produce quantitative results based on potential tourism and prospective donor giving (Fuller, 2007). The International Tropical Timber Agreement offered a list of jobs that will be needed for TBC development and maintenance and how much those jobs will pay. For planning purposes future negotiations
should also include an assessment of jobs that will be lost (Fuller, 2007, p. 306). The possibility also still stands for on-site visa centers or a special permission visa for park entry (Fuller, 2007).

Figure 27: Examples of Money Making Schemes to Discourage in the Tanintharyi

Source: Jennifer Latessa, 2013.

Another suggestion is to begin providing alternative livelihood activities to help alleviate poverty, discourage illegal means of making a living for many of the people, and build movement toward peace park formation. This can be achieved by the following:

- **Expanding Economic and Community Cooperative Zones** to serve the community through different ways of income generation or small business assistance programs, not only generating economic development, but also helping to achieve the overall objective of improving the human condition and civil society (Fuller, 2007).

- **Diversifying Economic Ventures** is essential for long term development (Fuller, 2007). Such undertakings should go hand in hand with the future protected areas’ sustainable mission (Fuller, 2007). Some ways to generate financial sustainability for operation and maintenance might include user fees, product sales, management fees, professional services, sustainable use of revenues, ecotourism revenues, and direct/indirect subsidies (Fuller, 2007). To create lasting revenues, management for such activities needs to be collaborative
and if necessary, have built in systems so that different communities benefit (Fuller, 2007). Local community members should then become more willing and committed to participate in sustaining the initiative if they see positive results and outcomes (Fuller, 2007). Managing the activities together may be a challenge for diverse cultural and political groups, but it is more likely to succeed if the different parties have opportunities to express their concerns, ask questions, and make suggestions to help the programs succeed (Fuller, 2007).

- **Make Adjustments to Current Institutions** to try to assuage socioeconomic issues (Fuller, 2007). In order to do so, an evaluation should first be made on the present capacity of those agencies, and, then, such institutions (local or national) should look for ways to improve weaknesses and incorporate sustainable methods into planning and management (Fuller, 2007). For best results, evaluations should be formal and with the help of community participation because often, community members have great knowledge about the area and relaying that information through developmental strategies gives initiatives a better chance to thrive (KPI, 2013). Formal and participatory information compiled into a comprehensive assessment targets places with the greatest need of development and change and can then apply skills training and income generation opportunities to help improve food security, and access to health and education (Fuller, 2007).

A major concern is the willingness of the people in the area to destroy nature for valuable resources. The key is to get locals invested in wildlife long enough to realize living wildlife can be more valuable than dead. In Africa, are being taken to do just that and now the
locals do not just act as tour guides; they run the preserves (Sanjayan, 2014). The citizens there are seeing new lodging being developed, better security and money generated from tourism going into education (Sanjayan, 2014). Unfortunately changing attitudes takes time, and time is not on the side of endangered wildlife. Threats will continue to remain if poaching and development continues unchecked. Tougher anti-poaching laws, strengthening a wildlife ranger force, building wildlife underpasses below highways to allow mega-fauna to travel under corridors, and using GPS capabilities and digital ranger systems with posts throughout the area can help prevent illegal activities and better maintain the park.

5.4 Conservation Efforts

Widespread consistency should be developed throughout the entire peace park to make sure systems are in place and producing similar results (Fuller, 2007, p. 306). During development of the ITTA a good example was demonstrated to enforce peace park standards: set up administrative exchanges, mentoring programs, internships, formal courses or awards programs. Another way to ensure replicability is to expand across the entire transboundary area a program that transfers guests and employees around to trade information and/or experiences to make sure program components consist of the same fundamental goals and activities (Fuller, 2007, p. 306). To depict individualism, some variation may happen from place to place, but programs should be equally distributed and consistently managed across the entire protected network (Fuller, 2007, p. 306).
Rehabilitation should be designed by scientists, conservationists, and planners alike, to manage conservation efforts so they can serve as a bridge to restoring flora and fauna in needed areas (Fuller, 2007, p. 306). Management information systems, similar to the one set up in Phase I in the Emerald Triangle, should use an appropriate level of technology for the area, to build environmental, social and economic databases with qualitative and quantitative information (Fuller, 2007, p. 304). This, along with technical advisory boards may be used to ensure traditional means of ecological restoration and conservation are being used well (Fuller, 2007, p. 305). The board should be as diversified as possible (i.e., advisors and staff members from an array of institutions and on both sides of the border), and may want to start creating a technical and scientific database of surveys and assessments to strengthen programs, especially those in the core area(s)\textsuperscript{52} (Fuller, 2007, p. 305). Research of nearby active projects should also be

\textsuperscript{52} Reserved for biodiversity conservation.
conducted to devise plans to harmonize development efforts to match the environmental programs being created for environmental protection (Fuller, 2007, p. 306). All efforts should have the basic notion that activities should introduce social, financial, and environmental topics (Fuller, 2007).

The core and buffer areas should be considered and managed differently to meet the needs of the species interacting in and through the spaces (Fuller, 2007, p. 305). Both areas should strive for balanced gender management participation and should involve the community and stakeholders (Fuller, 2007, p. 304). The core area is connected to a larger network of natural areas and protected corridors for migratory and non-migratory species; thus, a regional planning approach should be implemented (Fuller, 2007, p. 305). It is suggested that programs educate public and private individuals and groups to understand the universal ecological context of the core area system (Fuller, 2007, p. 305). The buffer zone should strive to incorporate conservation values and sustainable resource use into management practices (Fuller, 2007, p. 305).

Figure 29: Species Research before Star Gazing in Southeast Asia at an Environmental Research Station

Source: Jennifer Latessa, 2013.
In situ conservation and ex situ conservation programming should be demonstrated for preserving species in their natural habitat and taking species out of their habitat to assist them with survival (Fuller, 2007, p.305). Programs should specifically target endangered or threatened species (Fuller, 2007, p. 305). The area could also benefit from other programs around the world that collect and offer other skills, services and facilities, i.e., the propagation of specific species, captive breeding, technical botanical and zoological initiatives, and collaborative efforts with other research facilities (Fuller, 2007, p. 305).

5.5 Military Use

The military should be considered as a facilitator of the process rather than a burden (Ali, 2007, p. 339). Before demilitarization, the military could help with environmental impact assessments and during transformation by mitigating security and employment concerns while conservation goals are set (Ali, 2007, p. 339). Although it will likely be more of a challenge to incorporate gracefully Myanmar’s military in such efforts due to recent conflicts and mistrust, collaborative efforts with Thailand’s military, or ethnic peoples’ militia, may help in making this effort less painful for the local communities.

Figure 30: Park Military

Source: Jennifer Latessa, 2013.
The Government of Myanmar must be especially cognizant of onward steps because in 2002 they limited consultation between local communities and local governments when the Tanintharyi National Park was proposed (Governments of Thailand and Myanmar, 2013). Although the Government is focused on providing enough resources to resolve these issues, the lack of communication and past violations from previous Myanmar authorities have made many people leery of trusting the Government (Government of Myanmar, 2013).

5.6 International Cooperation

International cooperation is an important function for transboundary conservation success (Ali, 2007; Fuller, 2007 p. 306). Since many international organizations have already expressed great interest in developing and maintaining the area, the active network of international reserve management specialists should remain on board and train others (Fuller, 2007 p. 307). Many of the programs set in place may benefit from international stakeholder recognition so cooperation should be fortified through standards and linkages (Fuller, 2007, p. 307). Additional long-term financial support may be obtained through partnerships with multilateral donor institutions, NGOs, philanthropic organizations and the private sector (Fuller, 2007, p. 307). Collaboration with such groups may also enhance conservation efforts through known program implementation (Fuller, 2007, p. 307). Lastly, such partnerships provide academic and agency exchange programs; the Governments of Myanmar and Thailand identified such linkages in the ITTA to help raise program capabilities (Fuller, 2007, p. 307).

5.7 Conclusion

Different disciplines and a large range of geographic and cultural contexts are covered in this thesis to address the multi-faceted nature of environmental conflict resolution; the dynamic
linkages among ecosystems that build the biosphere provide a common line for communities in conflict to find mutual ground for cooperation (Ali, 2007, p. 333). In order for successful negotiation, there are many important steps “to encourage conservation and deter short-term competitive interests over land resources” (Ali, 2007, p. 333). It is important to view peace parks with some skepticism because the development of peace parks is “intrinsically political, and disputes may occur over resource control” (Ali, 2007, p. 333). To mitigate issues, attention should be on the “long-term gains from cooperation and resource management for peace park formation” (Ali, 2007, p. 333). Symbiotic relationships should be performed through ecotourism, education, the culture and overcoming challenges with solutions.

This process should not be looked at without suspicion. As seen in the figure below, the process for peace park formation is complex and delicate (Ali, 2007).

Figure 31: “Factors for Success of Conservation of Parks in Developing Regions”


53 This image defines security as prevailing food and shelter that must perpetuate for successful peace park development (Ali, 2007).
A peace and conflict assessment should be perquisite for potential peace park areas, especially areas with previous conflict, to give players the same level of fairness and opportunities for engagement (Ali, 2007; Hammill and Besançon, 2007). And further, the community should be involved in the decision making process for success and not co-opted by conservation elites (Ali, 2007; Hammill and Besançon, 2007). In general, micro-conflicts should be avoided during environmental and peace-building efforts; specifically, historic dispossession of land for conservation that disconnects communities should be thoughtfully deliberated, as it has been the folly of conservation groups in the past (Ali, 2007). Private, governmental, and non-profit investors should consider the basic needs of the community to build trust while placing equal importance on environmental security to persuade political leaders of the importance of environmental conservation and the many benefits that come from supporting these measures and the repercussions that should be seen as extensions of such efforts, i.e., environmental education, civil engagement and science (Ali, 2007). Proper implementation of peace parks includes phases of local review and clear communication for all actions (Ali, 2007, p. 334).

Planners may play a role in communicating and materializing peace parks. Development may often be complex, and planning efforts may help assuage process issues (Ali, 2007, p. 334). Planners may spur initiation and educate others on the importance of the environment in peace building (Ali, 2007, p. 334). To avoid resource scarcity, planners should find alternative resources or reconstruct the problem so that new channels are available for solutions (Ali, 2007, p. 335). The environment may be a way for planners to increase security measures by focusing on sustaining fundamental resources, such as food and water, and move away from scarcity, distrust, uncertain futures and conflict (Ali, 2007, p. 335).
Since peace parks are often convoluted processes that aim to ameliorate past and present historical conflicts with current decisions that will depict future outcomes, academics and planning practitioners should find ways work and learn together to apply theories and practice for best outcomes (Ali, 2007, p. 339). Social scientists, ecologists and conservation managers could channel their efforts through planners to apply their models in a more streamlined manner (Ali, 2007, p. 338). By doing so, both researchers and practitioners could develop more constructive opportunities for contribution (Ali, 2007, p. 339). This may then help balance competition and collaboration (see Figure 9), and combine idealistic notions by using realistic limits, and finally may produce immediate solutions that are also flexible (Ali, 2007, p. 335).

Although it is unlikely for governments to realize the potential of global environmental collaboration in the immediate future, there has been a growing commitment to bioregionalism, and a growing number of joint environmental cooperatives by different jurisdictions worldwide in recent decades, which have not only protected the environment, but have also impacted human lives and livelihoods (Quinn et. al., 2013; Ali, 2007, p. 338). The history of human rights has proved it is possible to change universal ethical perceptions (Ali, 2007, p. 338). Bioregionalism and identifying unique environments to share have lead governments from manmade sovereign lines into a transformative path of environmental peace-building (Ali, 2007, p. 338).

Developing a peace park is a means of opening communication encouraging ties to be calmed and strengthened rather than strained (Ali, 2007). The Diagnostic Tool for Trans-boundary Conservation Planners may be used as a precursor toward this dialogue to mitigate problems,

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54 Bioregionalism is defined as the notion that ecological management must be defined by natural rather than artificial delineations (Ali, 2007, p. 338).
which in turn potentially leads to long term solutions, and alleviating the issues and challenges at hand. Peace and justice are genetic, environmental and behavioral (Ali, 2008c). The construction of a peace park in the Tanintharyi Mountain Range could develop more inclinations for a trustworthy, long term relationship that, like its natural state, ebbs and flows towards equilibrium and peace.

**Figure 32: Tanintharyi Mountains**

Source: Jennifer Latessa, 2013
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Appendices

For this research to be conducted, the IUCN’s *Diagnostic Tool for Trans-Boundary Conservation Planners* was translated. Below is the original English version. The tool strongly encourages a stakeholder analysis as an integral part of the diagnosis. The stakeholder analysis from the Governments of Myanmar and Thailand is included in Appendix II. Other fundamental resources used for making assumptions and recommendations are listed, as well.
Appendix I: Diagnostic Tool for Trans-Boundary Conservation Planners (English)

Diagnostic tool for trans-boundary conservation planners
Suggested questions to determine feasibility for trans-boundary conservation

Developed by
Maja Vasilijević*

in consultation with
Boris Erg**
IUCN WCPA Trans-boundary Conservation Specialist Group

Technical support
Antonio Vasilijević***

2012
This diagnostic tool is partly adapted from UNEP’s Assessing the Feasibility of Establishing Trans-boundary Protected Area - Gap and Opportunities Analysis (undated publication available from the author) and is based on a diagnostic framework of the trans-boundary conservation process presented in the publication: Erg, B., Vasilijević, M., McKinney, M. (eds.) (2012). Initiating effective trans-boundary conservation: A practitioner’s guideline based on the experience from the Dinaric Arc. Gland, Switzerland and Belgrade, Serbia: IUCN Programme Office for South-Eastern Europe. The above publication was made possible thanks to the support of the Ministry for Foreign Affairs of Finland.

* Chair, IUCN WCPA Trans-boundary Conservation Specialist Group
** Director, IUCN Programme Office for South-Eastern Europe
*** Eco Horizon NGO, Croatia
Introduction
Trans-boundary conservation (TBC) requires cooperation across state boundaries. Due to the very nature of boundaries, developing and implementing trans-boundary initiative can be complex and often difficult. Careful planning of the initiative prior to taking action can significantly help in bringing success and effectiveness of trans-boundary conservation, and in reducing potential risks that could hinder the process. Therefore, one of the recommended actions for initiators of TBC is to first diagnose the situation by determining feasibility for TBC before actual establishment of the cooperative process. This diagnostic tool offers know-how in diagnosing the situation. It provides a set of relevant questions resulting with guidance in the form of an automatically generated report on the most important issues one has to keep in mind when planning a trans-boundary initiative. The key features of the tool are: a qualitative assessment based on quantitative analysis, and the possibility of self-assessment.

Aim of the diagnostic tool
This practical tool assesses the feasibility of trans-boundary conservation in relevant countries. The tool was designed to support trans-boundary conservation planners and initiators (e.g. protected area authorities, governments, non-governmental organisations, local communities and other interested parties) in determining the need for a trans-boundary approach by assessing reasons for TBC, and in assessing the situation that might positively or negatively impact the trans-boundary initiative. That said, the questionnaire examines the following elements leading to conclusions about feasibility for TBC:

(1) The need for TBC;
(2) Readiness of stakeholders to initiate TBC;
(3) Opportunities that could speed up the process and/or be generated by TBC; and
(4) Risks that could slow the process.

Who should complete the questionnaire
It is recommended that the questionnaire be completed by stakeholders who intend to initiate the TBC process, whether they include protected area authorities, local governments, NGOs, international organisations or any other TBC process initiator. However, the diagnostic process of the TBC initiative has to be participatory and include consultations with all interested parties that might be involved in or affected by the foreseen process. The more participatory the diagnostic process, the more likely you are to arrive at a well-grounded conclusion about when and how to proceed with TBC. It is therefore strongly suggested that this questionnaire be supplemented by a stakeholder analysis, which should form an integral part of this tool. A stakeholder analysis is best performed by organising a meeting and consulting directly with key stakeholders.

How to use the diagnostic tool
Structure
The tool consists of: Questionnaire, Report and Annex (examples of potential fields and benefits of trans-boundary cooperation). The questionnaire has 91 questions that are standardised and not tailored to any particular area, designed to assess and diagnose four thematic areas:

(1) Compelling reason to act trans-boundary, as TBC planners see it;
(2) Stakeholders (determining who is interested in or affected by the issue);
(3) Geographic reach, regional stability, and complexity of the issue; and
(4) Capacity to work across boundaries.

Instructions
The questionnaire consists of a column with questions (i.e. Questions column) and a column with scores offered in a drop-down menu (i.e. Score column). The questions are either:

121
(a) 'I' (INFORMATIVE QUESTIONS)
These require a descriptive answer in the Questions column in the row provided below each 'I' marked question. Therefore, the answers to 'I' questions must not be written in the Score column. It is important not to repeat parts of the question while answering the 'I' questions, write only what is required. For example, question 10b) states: If yes, please list these threatened species. Your answer in the row below this question should be: Brown bear, wolf. Please ensure NOT to write: Threatened species are brown bear, wolf. The reason is that the format of the automatically generated report already contains the initial parts of the statements and therefore this will avoid repetition in the report.

(b) QUESTIONS SCORED QUANTITATIVELY
These questions contain scores (e.g. 5, 3, 1) each indicating an appropriate response, presented in the row below the question. To respond to these questions click on the appropriate box in the Score column, then click on the arrow shown on the right side of the box and choose the appropriate answer in the drop-down list.

Note that some questions contain two parts, (a) and (b), one of which is scored quantitatively while the other is informative. Please answer each question. If it is not applicable, circle the appropriate score offered in the Score column, i.e. N/A—Not applicable.

Results
The report is automatically generated while you are answering the questions. The full report is available upon completion of the entire questionnaire. The report consists of four thematic parts:

(1) Compelling reason for trans-boundary conservation
The objective of this part is to determine the need for trans-boundary conservation.

(2) Stakeholders
The objective of this part is to identify and start to involve the stakeholders, including identification of interaction between them and their interests.

(3) Geographic reach, regional stability, and complexity of the issue
The objective of this part is to determine the scale and complexity of the issue, and regional situation that might impact trans-boundary cooperation.

(4) Capacity
The objective of this part is to estimate the readiness of key stakeholders by evaluating their technical capacity, resources and knowledge/skills.
Each of the four thematic parts contains statements reflecting opportunities that could speed up the process and/or be generated by TBC, and risks that could slow the process, and each is relevant for a particular thematic part. Part (1) also contains statements addressing the need for TBC, while part (4) contains statements addressing the readiness of key stakeholders to initiate TBC.

What the results will enable
Once the report is generated, you will get an overview of the most important issues for initiating a TBC process in your particular region. You will be sure whether there is a sufficiently compelling reason, i.e. the need for a trans-boundary approach. You will also know if the key stakeholders are ready (i.e. have the necessary capacity) to engage in the TBC initiative and if there are any capacity development needs. The report will also detect multiple opportunities you can potentially use to fasten the whole process, while also showing those opportunities (i.e. benefits) that can be generated by the process. You will also be aware of the risks while engaging in the trans-boundary process and thus be more ready to act on time and mitigate them. All of this will help you more efficiently plan a successful TBC initiative and develop an action plan to establish the process.

Website and publication
The electronic edition of the diagnostic tool is available for free and can be downloaded at the following websites: http://www.tbpa.net and http://www.dinaricarc.net. Originally, the tool was developed for the purpose of an IUCN WCPA publication and is therefore also available in printed format in: Erg, B., Vasilijević, M., McKinney, M. (eds.) (2012). Initiating effective trans-boundary conservation: A practitioner’s guideline based on the experience from the Dinaric Arc. Gland, Switzerland and Belgrade, Serbia: IUCN Programme Office for South-Eastern Europe. This publication is also available for downloading at the above mentioned websites. The difference between the electronic and printed versions is in that
the electronic version enables automatic scoring and automatic report development. The publication, however, offers scientific explanations and reasoning behind the development of this tool. It uses manual scoring and the person performing the assessment compiles the report.

Continued development and feedback
Although comprehensive, there are certainly gaps and emerging issues that are not yet included in the diagnostic tool. Geographically, the tool can be applied to different regions and situations, though some issues will certainly be more relevant in some regions of the world compared to others. The tool is intended to be dynamic and it is planned to be updated over time based on the comments, reviews and case studies completed. Our intention is not to focus on expanding the number of questions, but rather to improve the tool in the future in order to better guide TBC initiators in planning the process. IUCN WCPA Trans-boundary Conservation Specialist Group is seeking funding for: translation to at least two more languages (French and Spanish), testing on potential TBC initiatives worldwide and preparation of an improved edition of the tool. Comments and reviews should be addressed to: maja.vasilijevic1@gmail.com.

Abbreviations
I Informative questions
TBPA Trans-boundary Protected Area
TBC Trans-boundary conservation
N/A Not applicable
### Questions to determine feasibility for trans-boundary conservation

<table>
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<tr>
<th></th>
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<th>Score</th>
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<tbody>
<tr>
<td>1</td>
<td>a) Name of the protected area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Country</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Name of the potential trans-boundary protected area (TBPA), if known</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>a) Geographical position of the area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Please state the size of the protected area(s) forming the potential TBPA in your country.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Please list the authorities responsible for management of the protected area.</td>
<td></td>
</tr>
</tbody>
</table>
| 5 | a) Is this protected area connected or adjacent to another protected area across the international boundary?  
   3—Yes; 2—Foreseen in the near future; 1—No¹  
   b) If yes, please provide the name of:  
   b1) protected area(s) in the neighbouring country/-ies:  
   b2) neighbouring country/-ies: |   |
| 6 | Is any community conserved area part of the planned TBPA? |   |
| 7 | What are the natural values of this area? |   |
| 8 | Would trans-boundary cooperation help to protect, restore, maintain or sustainably use any shared habitats and/or ecosystems?  
   5—Yes, significantly; 3—To some extent; 1—Not at all; N/A—Not applicable |   |
<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Do any species of conservation importance in this protected area have a territory that spans the state boundary?</td>
<td>3—Yes; 1—No</td>
</tr>
<tr>
<td>10. a) Would trans-boundary cooperation help to improve the conservation status of threatened species (according to IUCN’s Red List of Threatened Species and other recognised global/regional/national species evaluation systems)?</td>
<td>5—Yes, significantly; 3—To some extent; 1—Not at all; N/A—Not applicable</td>
</tr>
<tr>
<td>b) If yes, please list these threatened species.</td>
<td></td>
</tr>
<tr>
<td>11. a) Would trans-boundary cooperation help to improve the conservation status of species of conservation importance that span the state boundary?</td>
<td>5—Yes, significantly; 3—To some extent; 1—Not at all; N/A—Not applicable</td>
</tr>
<tr>
<td>b) If yes, please identify these species.</td>
<td></td>
</tr>
<tr>
<td>12. Are there restrictions to wildlife movement across the state boundary due to man-made boundary demarcation or features (e.g. road, fence, border markers)?</td>
<td>3—Yes; 2—Partially; 1—No</td>
</tr>
<tr>
<td>13. Could wildlife movement across the boundary be improved by trans-boundary cooperation?</td>
<td>5—Yes; 3—Partially; 1—No</td>
</tr>
<tr>
<td>14. Does this protected area face threats (e.g. man-made threats, natural hazards)? If yes, which ones?</td>
<td></td>
</tr>
<tr>
<td>15. Would threat(s) (including common threats) be mitigated by trans-boundary cooperation?</td>
<td>5—Yes, significantly; 3—To some extent; 1—Not at all; N/A—Not applicable</td>
</tr>
<tr>
<td>16. Do the threat(s) impact the social, economic, institutional and political dimensions?</td>
<td>3—Yes, significantly; 2—To some extent; 1—Not at all</td>
</tr>
<tr>
<td>17. Is there any pressure (political, public, and/or judicial) to initiate trans-boundary cooperation in concerned region?</td>
<td>3—Yes; 2—To some extent; 1—Not at all</td>
</tr>
<tr>
<td>18. Are the management priorities and objectives of protected areas on each side of the state border similar?</td>
<td>5—Yes, significantly; 3—To some extent; 1—Not at all; N/A—Not applicable</td>
</tr>
<tr>
<td>19. a) Please identify any potential opportunities for cross-border cooperation related to protected area management (please see Annex; e.g. fire management, control of invasive species, monitoring of species, sharing of equipment, etc.).</td>
<td></td>
</tr>
<tr>
<td>b) To what extent would trans-boundary management of opportunities detected in question 19a) be beneficial for your protected area?</td>
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</tr>
<tr>
<td>20.</td>
<td>To what extent would trans-boundary management of opportunities listed in question 19 be beneficial for local communities?</td>
</tr>
<tr>
<td>21.</td>
<td>a) Does the region share any distinctive natural/landscape phenomenon which could be recognised as a common feature of the proposed TBPA?</td>
</tr>
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<td></td>
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<tr>
<td>22.</td>
<td>Do the cultural values in the concerned region face any threats? If yes, which ones?</td>
</tr>
<tr>
<td>23.</td>
<td>Would addressing the threat(s) to cultural values benefit from trans-boundary cooperation?</td>
</tr>
<tr>
<td>24.</td>
<td>a) Are there any social issues (e.g. disputes on access to resources) in the concerned region that could hinder the development of trans-boundary cooperation?</td>
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<td></td>
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<tr>
<td>25.</td>
<td>Are there any potential conflict issues between the local populations across the border to be resolved or mitigated in the course of the development of trans-boundary cooperation?</td>
</tr>
<tr>
<td>26.</td>
<td>To what extent do different forms of land ownership and/or land management rights in the national part of the proposed TBPA and its buffer zone cause difficulties in TBPA establishment?</td>
</tr>
<tr>
<td>27.</td>
<td>What are the relations between the local communities in the concerned countries?</td>
</tr>
<tr>
<td>28.</td>
<td>What are the relations between the local governments in the concerned countries?</td>
</tr>
<tr>
<td>29.</td>
<td>Could any regional cultural or social events gathering stakeholders from different national parts of the proposed TBPA be used to strengthen social relations among local communities from concerned countries?</td>
</tr>
<tr>
<td>30.</td>
<td>a) Does the region share any elements of cultural heritage which could be useful for building the common regional identity?</td>
</tr>
</tbody>
</table>

126
<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) If yes, which one(s)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>Are there disparities in the employment and welfare situation of the local population in the proposed TBPA in your country, in comparison to the neighbouring country?</td>
<td>1—Significant disparity; 3—Disparity to some extent; 5—No disparity</td>
</tr>
<tr>
<td>32.</td>
<td>What are the main sectors of the local economy that are of predominant importance for subsistence and/or meeting economic demands of the local inhabitants?</td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>Which traditional natural resource use practices are of predominant importance for subsistence and/or meeting economic demands of the local inhabitants?</td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>Are there any possibilities for developing, exchanging and promoting traditional products in the region?</td>
<td>5—Yes; 3—To some extent; 1—Not at all</td>
</tr>
<tr>
<td>35.</td>
<td>Do you see the possibility of mutual cooperation in joint marketing and joint promotion of the region?</td>
<td>5—Yes; 3—To some extent; 1—Not at all</td>
</tr>
<tr>
<td>36.</td>
<td>Are there any possibilities for establishing a common tourism infrastructure (e.g. visitor information centre, common tourist trail) across the state border?</td>
<td>5—Yes; 3—To some extent; 1—None</td>
</tr>
<tr>
<td>37.</td>
<td>Are there any major political issues that might hold back the process of trans-boundary cooperation establishment?</td>
<td>1—Yes; 3—To some extent; 5—None</td>
</tr>
<tr>
<td>38.</td>
<td>How would you describe the current political relations between the concerned countries?</td>
<td>5—Friendly; 3—Neutral; 1—Conflicting; 0—No relations</td>
</tr>
<tr>
<td>39.</td>
<td>Could a trans-boundary initiative in your region enhance political relations between the concerned countries?</td>
<td>5—Yes; 3—To some extent; 1—No/Not applicable</td>
</tr>
<tr>
<td>40.</td>
<td>If there are political tensions or conflicts between the countries, could a potential TBPA act as reconciliation element?</td>
<td>5—Yes, significantly; 3—To some extent; N/A—Not applicable/No</td>
</tr>
<tr>
<td>41.</td>
<td>How good are the informal relationships between protected area managers?</td>
<td>5—Friendly; 3—Neutral; 1—Conflicting; 0—No relations</td>
</tr>
<tr>
<td>42.</td>
<td>Please assess the similarities and disparities between the national legislation on nature conservation in your country and the neighbouring country/countries involved in the planned TBPA.</td>
<td>5—Identical/Very similar; 3—Similar to some extent; 1—Completely different</td>
</tr>
</tbody>
</table>
| 43. | Do any official agreements and/or treaties (e.g. conventions, bilateral treaties, memoranda of understanding) signed between governments (central, regional, local) of the concerned countries provide for trans-boundary cooperation?  
5—Yes; 3—To some extent; 1—None |
|---|---|
| 44. | Do any agreements on certain aspects of protected area management between the nature conservation authorities exist?  
5—Yes; 1—No |
| 45. | Would trans-boundary cooperation help reduce the extent of illegal activities across the state border (e.g. cross-border poaching, movement of illegal immigrants, illegal trade), if such occur?  
5—Yes, significantly; 3—To some extent; 1—No; N/A—Not applicable |
| 46. | List major interest groups (i.e. primary/key stakeholders) that might want to be involved in the trans-boundary initiative or might be affected by it. |
| 47. | Is there any international organization involved or foreseen to be involved in the trans-boundary initiative, and what is its role? |
| 48. | Identify major roles of key stakeholders in the trans-boundary initiative. |
| 49. | Identify those stakeholders that have decision-making power. |
| 50. | a) Do any stakeholders apart from protected area management authority participate in protected area and/or resource management?  
5—Yes; 1—None  
b) If yes, indicate which stakeholders. |
| 51. | Please assess the interests of primary stakeholders identified in question 46.  
5—Similar; 3—Different but compatible; 1—Conflicting |
| 52. | a) Do any interests of stakeholders in potential trans-boundary initiative cut across the state boundary?  
5—Yes, many; 3—Only some; 1—None  
b) If yes, please identify these key interests. |
| 53. | a) Could any stakeholder undermine the trans-boundary process or outcome?  
1—Yes; 3—Potentially; 5—No  
b) If yes, please indicate who. |
<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you support the trans-boundary initiative development?</td>
<td>5—Yes, significantly; 3—To some extent; 1—Not at all</td>
</tr>
<tr>
<td>Would key stakeholders benefit from trans-boundary cooperation?</td>
<td>5—Yes, majority; 3—Only some; 1—None</td>
</tr>
<tr>
<td>Would any stakeholders be disadvantaged by trans-boundary cooperation?</td>
<td>1—Yes; 5—None</td>
</tr>
<tr>
<td>Have any of the key stakeholders already engaged in some form of cooperation with parties across the state boundary?</td>
<td>5—Yes, successfully; 3—Yes, but with difficulty; 1—No</td>
</tr>
<tr>
<td>a) Are there any potential benefits for the local communities to raise their support for establishing a TBPA?</td>
<td>5—Yes; 1—No</td>
</tr>
<tr>
<td>b) Please indicate them.</td>
<td></td>
</tr>
<tr>
<td>Which administrative jurisdictions are foreseen to be involved in the trans-boundary initiative?</td>
<td></td>
</tr>
<tr>
<td>Would administrative jurisdictions involved in the TBPA hinder the trans-boundary initiative?</td>
<td>1—Yes, significantly; 3—To some extent; 5—Not at all</td>
</tr>
<tr>
<td>Are there any settlements located within the territory or adjacent to the proposed TBPA?</td>
<td></td>
</tr>
<tr>
<td>Are there any unresolved claims to land areas or water bodies on either side of the present state border?</td>
<td>1—Yes; 5—No</td>
</tr>
<tr>
<td>Would trans-boundary cooperation allow freer circulation of the local population across the state border?</td>
<td>5—Yes, significantly; 3—To some extent; 1—Not at all</td>
</tr>
<tr>
<td>How developed is the transport infrastructure network between the protected areas in the proposed TBPA, including border crossings?</td>
<td>5—Well developed; 3—Somewhat developed; 1—Not very developed/Non-existent</td>
</tr>
<tr>
<td>Is there a visa regime that regulates the movement of people?</td>
<td>1—Yes; 5—No</td>
</tr>
<tr>
<td>Can trans-boundary cooperation help in the reunification of communities and/or families across the state border?</td>
<td>5—Yes; 1—No; N/A—Not applicable</td>
</tr>
<tr>
<td>Has there recently been a military or ethnic conflict or tension between the countries concerned that could negatively affect future cooperation?</td>
<td></td>
</tr>
</tbody>
</table>
68. To what extent could trans-boundary cooperation mitigate any potential damages or adverse impacts of the past military and/or ethnic conflict to nature and/or the local population?
5—Significantly; 3—To some extent; 1—Not at all; N/A—Not applicable

69. Do you have available financial resources for trans-boundary related activities?
5—Yes, sufficient; 3—Limited, but enough to start; 1—None

70. Do you have people available for the coordination of trans-boundary related activities?
5—Yes, most of them; 3—Some, but enough to start; 1—None

71. Do the people available for the coordination of trans-boundary related activities have the relevant knowledge and skills (i.e. capacity)?
5—Yes, sufficient; 3—Limited, but enough to start; 1—Capacity development is highly needed

72. Are there any people with vision and ability to make it compelling to others?
5—Yes; 1—No

73. a) Do you have the facilities (e.g. telephone, internet access, meeting rooms) to manage regular and effective communication with partners in proposed TBPA?
5—Yes, most of them; 3—Some, but enough to start; 1—None

   b) Please list the facilities that you have available.

74. Are you willing to share any potential resources with your partners?
5—Yes; 1—No

75. a) Can operational and/or technical capacities be improved by mutual assistance?
5—Yes; 3—To some extent; 1—No

   b) Please list those capacities that you could provide to your partner in a neighbouring country (1), as well as those that you would benefit from mutual cooperation (2).

76. a) Is there a need for assistance in financial resources and/or equipment and/or knowledge development from external sources?
5—No need; 3—Some need; 1—Yes, significant need

   b) Please list the needed resources.

77. Would a financial contribution for trans-boundary cooperation activities be available from the state budget?
5—Yes; 3—Potentially; 1—No

78. Would financial support be accessible from the local municipal/community budgets or the private business sector?
5—Yes; 3—Potentially; 1—No
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>79. Can partners across the state boundary understand each other’s language(s) or effectively communicate in a mutually understood language?</td>
<td>5—Yes, completely; 3—Yes, well enough; 1—Not at all</td>
</tr>
<tr>
<td>80. How different are institutional, operational and technical capacities between partners on each side of the state border?</td>
<td>1—Significantly different; 3—Somewhat different; 5—Not different</td>
</tr>
<tr>
<td>81. Are any sources of information (e.g. biodiversity inventories, maps, databases) available for planning the proposed TBPA?</td>
<td>5—Yes, most of them; 3—Enough to start planning the TBPA; 1—None</td>
</tr>
<tr>
<td>82. To what extent is the available information from question 81 compatible in the involved countries?</td>
<td>1—Significantly different; 3—Different to some extent; 5—Not different</td>
</tr>
<tr>
<td>83. Do legal provisions for data exchange exist between partners (e.g. nature conservation authorities, protected area administrations, local authorities, scientific institutions) on each side of the state border?</td>
<td>5—Yes; 3—To some extent; 1—None</td>
</tr>
<tr>
<td>84. To what extent is the state of knowledge on biodiversity and natural resources of the proposed TBPA different in each country?</td>
<td>1—Significantly different; 3—Different to some extent; 5—Not different</td>
</tr>
<tr>
<td>85. To what extent do methodologies for data collection and management differ in involved countries?</td>
<td>1—Significantly different; 3—Different to some extent; 5—Not different</td>
</tr>
<tr>
<td>86. Could any common initiatives aimed at improving the state of knowledge on biodiversity and natural resources of the proposed TBPA be jointly undertaken in the course of trans-boundary cooperation?</td>
<td>5—Yes; 1—No</td>
</tr>
<tr>
<td>87. Would you benefit from scientific cooperation across the boundary?</td>
<td>5—Yes, significantly; 3—To some extent; 1—Not at all</td>
</tr>
<tr>
<td>88. Have any common trans-boundary research activities been implemented?</td>
<td>5—Yes, successfully implemented; 3—Yes, but implemented with difficulty; 1—None</td>
</tr>
<tr>
<td>89. Do any potential partners have previous experience in managing externally funded projects?</td>
<td>5—Yes; 1—No</td>
</tr>
<tr>
<td>90. Who could assist in increasing capacities on trans-boundary cooperation?</td>
<td>I</td>
</tr>
<tr>
<td>91. Who could assist in identifying sources of funds and assistance for trans-boundary activities?</td>
<td>I</td>
</tr>
</tbody>
</table>

¹ Please consider streamlining your efforts to assist the neighboring country establish protected areas as one of the key first steps in your future trans-boundary initiative process.
REPORT
FEASIBILITY FOR ESTABLISHING A TRANS-BOUNDARY CONSERVATION INITIATIVE

Prepared by (Institution):
Date:

Protected area:
Country:
Geographical position:
Size:

Authorities responsible for management of the protected area:

Natural values of this area:

(1) **Compelling reason for trans-boundary conservation**

There are a number of opportunities that could speed up or be generated by the TB process, namely:

There are a number of risks, namely:

(2) **Stakeholders**

Primary stakeholders in the potential trans-boundary initiative are:

International organization(s) involved in the trans-boundary initiative development is/are:

Major roles of primary stakeholders in the trans-boundary initiative are:

Stakeholders with decision-making power:

There are a number of opportunities that could speed up or be generated by the TB process, namely:

There are a number of risks, namely:
(3) Geographic reach, regional stability and complexity

There are a number of opportunities that could speed up or be generated by the TB process, namely:

There are a number of risks, namely:

(4) Capacity

Readiness of stakeholders to initiate TBC is good in the area(s):

but, particular attention should be given to improving the area(s):

- The following parties could potentially help increase capacity on trans-boundary cooperation:
- The following parties could potentially help identify sources of funds and assistance for trans-boundary activities:

There are a number of opportunities that could speed up or be generated by the TB process, namely:

There are a number of risks, namely:
## Annex. Examples of potential fields and benefits of trans-boundary cooperation

<table>
<thead>
<tr>
<th>Fields of cooperation</th>
<th>Examples of possible common actions</th>
<th>Examples of potential benefits</th>
</tr>
</thead>
</table>
| **Information and data exchange**      | Exchange of information on natural and cultural values                                                | • developed common inventories  
• developed common strategies and planning common trans-boundary actions  
• common identity building  

Exchange of information on common threats to environment and/or nature | • enhanced prevention of natural hazards and man-made threats to environment and/or nature |
Exchange of information on tourism | • monitoring visitor traffic and its seasonality  
• research on main visitor destinations  
• development of a common sustainable tourism development strategy at the regional scale |  
Establishing the common GIS database for the entire trans-boundary area | • common planning and monitoring of conservation activities |
Organisation of joint events | • improved information flow  
• sharing results of scientific research |  

### Research

| Establishing common resource centres and trans-boundary ‘think-tanks’ | • increased, cumulated pool of expertise  
• elaboration of common approaches to common challenges and management issues |  
Implementing joint scientific projects and programmes | • elimination of potential duplication of efforts  
• exchange of research methodologies and technical skills |  
Standardisation of research and monitoring methodology | • compatibility of data collection, processing and management methods  
• comparability of research results |  

### Management planning

| Cooperation on developing management plans for particular protected areas involved, and for the entire trans-boundary area | • provides protected area managers, planners and scientists with a more holistic and wider ecoregional approach  
• harmonisation of management plans at the TBPA scale  
• developed common vision of the future TBPA  
• developed common strategies and planning common trans-boundary actions |  
Cooperation on developing spatial management/land development plans | • harmonised and/or coordinated spatial management/land development plans on TBPA scale |
| Cooperation on protection of the common natural and cultural heritage | Coordination of protective measures concerning threatened, protected and migratory species as well as rare habitats and endangered ecosystems | • coordinated ecosystem-based management for plant and animal species where populations occur on both sides of the state boundary or for migratory wildlife species that cross state border(s)  
• implementation of coordinated protective measures  
• reduced risk of biodiversity loss |
| --- | --- | --- |
| Exchange of specimens of animal or plant species, establishing common ex-situ seed/gene banks and/or nurseries of rare and threatened species, transfer of specimens for ex-situ restoration | • protection or restoration of animal or plant species that are threatened or extinct in one national area but still viable across the border  
• reduced risk of biodiversity loss  
• prevented negative inbreeding effects in isolated wildlife populations  
• reintroduced wildlife species requiring a large habitat range, such as large carnivores or birds of prey  
• sharing and reducing the costs of reintroduction activities |
| Coordinated protection and restoration of ecological corridors | • wildlife and plant species migrations across the state border  
• coordinated ecosystem-based management for species where populations occur on each side of the state border or for migratory wildlife species that cross state border(s) |
| Joint patrolling and surveillance of border area, sharing of the intelligence database and law enforcement methods | • enhanced law enforcement, better control of poaching and illegal trade in plants and animals  
• better control of wildfire |
| Implementing common control measures on invasive species | • control, and where required, eradication of pest species (pathogens, insect pests or invasive alien species) |
| Implementing common projects on the protection of historical and cultural heritage | • technical skills, experience, and knowledge exchange |
| Capacity building for protected area authorities | Joint staff training, staff exchange and secondment programmes | • personnel capacity development  
• experience exchange, e.g. in law enforcement, protected area management, fundraising and project management, environmental education |
<p>| Sharing expensive research or heavy | • reduced operational costs |</p>
<table>
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<tbody>
<tr>
<td><strong>technical equipment</strong></td>
<td>technical skills exchange</td>
<td></td>
</tr>
<tr>
<td><strong>Direct technical assistance</strong></td>
<td>enhanced operational capacity building</td>
<td></td>
</tr>
<tr>
<td><strong>Sustainable tourism development and shared visitor management</strong></td>
<td>Preparation of the common sustainable tourism development strategy</td>
<td>harmonised development of tourist facilities throughout the TBPA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>enhanced common visitor 'code of conduct'</td>
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<tr>
<td></td>
<td></td>
<td>enforced compatible visitor access regulations</td>
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<td></td>
<td>provides for streamlining the flow of visitors according to the common strategy for the entire area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>building the common identity of the TBPA region</td>
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<tr>
<td><strong>Development of joint tourism services</strong></td>
<td>Development of joint tourism services</td>
<td>greater marketing strength of the TBPA</td>
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<tr>
<td></td>
<td></td>
<td>improved quality of tourism services</td>
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<td></td>
<td>attracts tour operators due to the economy of scale and more diversified and broader tourist product package available</td>
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<tr>
<td></td>
<td></td>
<td>higher tourist attractiveness</td>
</tr>
<tr>
<td><strong>Organising joint training of tourist guides and interpretative personnel</strong></td>
<td>Organising joint training of tourist guides and interpretative personnel</td>
<td>experience and interpretative skills exchange</td>
</tr>
<tr>
<td></td>
<td></td>
<td>better knowledge of the TBPA region</td>
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<tr>
<td></td>
<td></td>
<td>better communication and understanding between partners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>building the common identity of the TBPA region</td>
</tr>
<tr>
<td><strong>Joint marketing and promotion of tourism potential</strong></td>
<td>Joint marketing and promotion of tourism potential</td>
<td>greater marketing strength of the TBPA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>increased income of the local tourism service and accommodation providers</td>
</tr>
<tr>
<td><strong>Common labelling, marketing and promotion of local agricultural products and handicrafts</strong></td>
<td>Common labelling, marketing and promotion of local agricultural products and handicrafts</td>
<td>increased income of the local farmers and craftsmen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>contribution to protection of traditional knowledge and cultural heritage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>developed common regional products</td>
</tr>
<tr>
<td><strong>Cross-cultural management</strong></td>
<td>Establishing cultural links that promote regional identity, promoting joint cross-cultural events and cultural exchange</td>
<td>enhanced protection of the common historical and cultural heritage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>better understanding of the neighbour's culture and traditions</td>
</tr>
<tr>
<td><strong>Developing a common trans-boundary logo</strong></td>
<td>Developing a common trans-boundary logo</td>
<td>increased marketing strength of the whole TBPA region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>building the common identity</td>
</tr>
<tr>
<td><strong>Organisation of neighbour’s language training courses</strong></td>
<td>Organisation of neighbour’s language training courses</td>
<td>improved communication between partners</td>
</tr>
</tbody>
</table>

136
| **Public relations, communication, and awareness raising** | **Providing assistance to the neighbouring protected areas in acquiring international designations (e.g. Biosphere Reserve, World Heritage Site)** | • improved international recognition of the TBPA region  
• increased marketing strength of the whole TBPA region  
• increased credibility of common fundraising initiatives |
| **Development of the common communication strategy** | • better understanding of shared natural and cultural values, and of the added value of trans-boundary cooperation  
• building the common identity of the TBPA region |
| **Developing common communication tools (e.g. maps, brochures, publications, website)** | • improved information, communication and experience exchange between partners  
• improved international recognition of the whole TBPA region  
• reduced operational costs  
• increased credibility of common fundraising initiatives |
| **Publishing information materials in all national languages and unifying the design of materials** | • better knowledge of the whole TBPA region  
• improved communication between partners  
• increased ‘corporate identity’ of the TBPA |
| **Organisation of field staff meetings from neighbouring areas across the border** | • improved protected area staff morale  
• improved working contacts in border areas and reduced feeling of isolation in remote locations  
• helps to overcome cross-cultural differences |
| **Cooperation in environmental education programmes, organisation of youth exchanges and joint volunteer camps** | • experience and interpretative skills exchange  
• better knowledge of the whole TBPA region, as well as understanding of the added value of trans-boundary cooperation  
• promotes better understanding of neighbour’s culture and traditions |
| **Funding** | **Developing joint project proposals** | • greater lobbying strength for fundraising efforts and attracting international donors and assistance agencies  
• greater responsibility to honour obligations for support among external founders, decision-makers, authorities and governmental agencies |
| **Establishing common funding mechanisms for trans-boundary cooperation** | • continuity of trans-boundary cooperation activities  
• covering core costs of trans-boundary cooperation  
• provides greater lobbying strength for fundraising efforts  
• provides matching funds/own contribution required when applying for external project funding |
Appendix II: “Key Stakeholders in the Conservation and Management of the Taninthayi Range between Myanmar and Thailand”

Myanmar

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Characteristics</th>
<th>Problem/needs</th>
<th>Potential</th>
<th>Involvement in the project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Stakeholders</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest Department (Planning and Statistic Division and Nature and Wildlife Conservation Division) Ministry of Environmental Conservation and Forestry</td>
<td>Key element in the sustainable management of natural forests and planted forests, biodiversity and ecosystem management</td>
<td>Limited human resources, Limited infrastructure, Limited financial resources, Need to upgrade and technical cooperation Weak coordination, limited human resource capacity, limited technology, insufficient infrastructures, weak law enforcement Problems of unsustainable management practices, climate change impacts, limited capacity to effective biodiversity conservation</td>
<td>-Decision maker -Key player for planning and decision making processes - Key role in international cooperation in forestry sector</td>
<td>- Project administration, leading role in successful implementation of the project together with national and international partners - Provide general guidelines for overall management - Take leading role in implementing and disseminating project outcomes</td>
</tr>
<tr>
<td>Forest Research Institute</td>
<td>Key element in the technical aspect of project</td>
<td>Limited human resources in biodiversity assessment and monitoring, Limited infrastructure, Limited financial resources, Need to upgrade and technical cooperation</td>
<td>Only institution to conduct forestry related research Key role in research &amp; educational development in forestry sector</td>
<td>- Facilitate biodiversity research - Take a leading role in biodiversity assessment and monitoring with the assistance of partners including WCS-Myanmar - Take a leading role in publishing technical reports resulting from the project - Facilitate the preparation of scientific papers for their inclusion in relevant international journals</td>
</tr>
<tr>
<td>Local communities in the Taninthayi Range in particular the Taninthayi National Park and its</td>
<td>Highly dependent on natural resources (all forests are State-owned)</td>
<td>Lack of knowledge and skills, low level of awareness about important role of forests and</td>
<td>Key player to implement project and conserve biodiversity Decision maker</td>
<td>Involve in the activities related with biodiversity conservation, capacity building,</td>
</tr>
<tr>
<td>Institutions</td>
<td>Characteristics</td>
<td>Problem/needs</td>
<td>Potential</td>
<td>Involvement in the project</td>
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</tr>
<tr>
<td>surrounding areas</td>
<td>biodiversity, limited alternative income options Less opportunities to communicate with Government officials</td>
<td>under participatory approach</td>
<td>extension activities</td>
<td></td>
</tr>
<tr>
<td>WSC Myanmar Program</td>
<td>Play important role in wildlife monitoring and conservation</td>
<td>Inadequate facilities and resources to conducted large scale wildlife monitoring High potential to cooperate with MOECAF in wildlife monitoring and smart patrol activities, as well as training activities</td>
<td>Sub-contract to conduct wildlife monitoring with involvement from protected area staffs</td>
<td></td>
</tr>
<tr>
<td><strong>Secondary Stakeholders</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Forestry, Central Forestry Development Training Centre, Myanmar Forestry School</td>
<td>Prominent institution in the development of technologies, methodologies, capacity building centre</td>
<td>Limited facilities, media, research facilities, limited access to updated information, limited budget to conduct research, limited capable resource persons Play important role to produce well-trained foresters and staff to manage forests sustainably</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UN agencies (UNDP-Myanmar, UN-REDD, FAO, UN-habitats) and regional organizations – ASEAN Biodiversity Centre and ASEAN-Wildlife Enforcement Network</td>
<td>Independent to communicate with Government Ministries and to facilitate working relationship with NGOs</td>
<td>Lack of linkage with national policy, lack of integration with forestry master plan Key elements in coordination among relevant stakeholders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conservation development NGOs (FREDA, BANCA, ECCDI, MERN, and ECODEV)</td>
<td>Play important role in the community development, extension and mediation</td>
<td>Lack of facilities, access to formal institutions, lack of resources, Lack of awareness, limited capacity in biodiversity conservation and planning, lack of linkage with national policy, lack of integration with forestry master plan High potential to cooperate with MOECAF in extension activities, conservation and participatory carbon monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tertiary Stakeholders</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
### Institutions

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Characteristics</th>
<th>Problem/needs</th>
<th>Potential</th>
<th>Involvement in the project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary/middle and high schools in the Project site</td>
<td>Active participation in environmental conservation</td>
<td>Limited knowledge, low level of awareness about ecosystem services, limited facilities, limited environmental education</td>
<td>High potential, new generation to conserve biodiversity and enhance environmental services</td>
<td>Involve in the extension activities such as public educational talks, poster and environmental exhibition, seminars</td>
</tr>
<tr>
<td>Ministry of Agriculture and Irrigation, Ministry of Livestock Breeding and Fisheries</td>
<td>Key player in conserving agro-biodiversity and aquatic biodiversity</td>
<td>Weak coordination and cooperation with other ministries and agencies</td>
<td>Play in high potential involving biodiversity conservation</td>
<td>Involve in various types of agro-forestry, income generating activities for local communities, extension activities</td>
</tr>
<tr>
<td>Local authority</td>
<td>Authorized body to monitor and coordinate every affair including forestry-related matters</td>
<td>Limited knowledge, low level of awareness about ecosystem services, limited facilities, limited environmental education</td>
<td>Key element to coordinate relevant Ministries, organizations and stakeholders</td>
<td>Involve in the coordination mechanism among stakeholders</td>
</tr>
</tbody>
</table>

### Thailand

#### Stakeholder

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Characteristics</th>
<th>Problems, Needs, Interests</th>
<th>Potential</th>
<th>Involvement in project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary stakeholders</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local communities.</td>
<td>Derive income from natural resources.</td>
<td>Insufficient economic options; livelihoods depend on natural resources.</td>
<td>Raising conservation awareness and improving local livelihoods.</td>
<td>Benefit from livelihood improvements and support conservation activities.</td>
</tr>
<tr>
<td>Sub-district and village administrations.</td>
<td>Responsible for making and implementing community development plans.</td>
<td>Lack of capacity for ICDP planning and solving human-wildlife conflicts</td>
<td>Authority to influence local development.</td>
<td>Receive project support to strengthen planning capacity.</td>
</tr>
<tr>
<td>Development WCS Thailand Program</td>
<td>Active involvement in wildlife monitoring in Kaeng Krachan national park and training for park rangers</td>
<td>Limited capacity to speed up wildlife monitoring in remaining protected areas</td>
<td>Provide data and assist in Smart patrolling, support training activities</td>
<td>Collaboration in implementing project activities.</td>
</tr>
</tbody>
</table>

#### Secondary stakeholders

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Characteristics</th>
<th>Problems, Needs, Interests</th>
<th>Potential</th>
<th>Involvement in project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protected area superintendents and forestry officials.</td>
<td>Responsibilities on the ground to manage and conserve biodiversity in protected areas and buffer zones.</td>
<td>Lack of capacity, skills and facilities to manage protected areas in a framework of trans-boundary biodiversity conservation.</td>
<td>Authority to conserve trans-boundary biodiversity in the Tenasserim Range.</td>
<td>Primary participants responsible for management and conservation on the ground.</td>
</tr>
<tr>
<td>Regional forestry, protected area, provincial and agricultural offices.</td>
<td>Provide services and advice to protected areas and field management units and insufficient financial means and capacity to advise on effective</td>
<td>Mobilize staff to support project implementation; proper land use</td>
<td>Direct involvement in project implementation.</td>
<td></td>
</tr>
<tr>
<td>Stakeholder</td>
<td>Characteristics</td>
<td>Problems, Needs, Interests</td>
<td>Potential</td>
<td>Involvement in project</td>
</tr>
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</tr>
<tr>
<td>Royal Forest Department and Department of National Park, Wildlife and Plant Conservation</td>
<td>Responsible agencies that formulate policies and make decisions on trans-boundary issues and tri-national cooperation in the Tenasserim Range</td>
<td>Lack of awareness and political disputes interrupt international collaboration.</td>
<td>Authority to make decisions affecting international collaboration.</td>
<td>Responsible for ensuring that project activities are executed as planned.</td>
</tr>
<tr>
<td>Army and Border patrol police</td>
<td>Responsible for securing borders, controlling illegal trade and protecting corridor area between Kaeng Kracan and Kui Buri</td>
<td>Lack of skills to use geo-spatial tools and information for patrolling</td>
<td>Reduce poaching, illegal trade and provide information on wildlife movements along borders.</td>
<td>Direct involvement in project implementation.</td>
</tr>
<tr>
<td>Development NGOs (WWF, IUCN and Elephant Network in Thailand).</td>
<td>Active involvement in wildlife monitoring, conservation, and community forests.</td>
<td>Limited capacity resources; local NGOs have skills to manage protected areas in a framework of trans-boundary biodiversity conservation.</td>
<td>Provide data and support local communities in ICDP and resolve wildlife-human conflict, and promote the project to international communities.</td>
<td>Collaboration in implementing project activities.</td>
</tr>
</tbody>
</table>

**Tertiary stakeholders**

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Characteristics</th>
<th>Problems, Needs, Interests</th>
<th>Potential</th>
<th>Involvement in project activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational and research institutes</td>
<td>Possess educational and research skills and experience.</td>
<td>Lack means and/or have limited resources to research collaboration and capacity building.</td>
<td>Competence in research, training and awareness raising</td>
<td>Collaboration in implementing project activities</td>
</tr>
<tr>
<td>National finance and private company</td>
<td>Finance local development activities.</td>
<td>Lack sufficient means to finance collaboration.</td>
<td>Experience in providing development grants through CRS projects.</td>
<td>Involvement in local grant and CSR programs.</td>
</tr>
<tr>
<td>ITTO and international donors</td>
<td>Provide financial support for project implementation.</td>
<td>Limited financial support to sustain the project.</td>
<td>Provide financial support advice on sustaining the project.</td>
<td>Involvement in the PSC.</td>
</tr>
</tbody>
</table>

Source: Governments of Thailand and Myanmar, 2013
Appendix III: Cooperative and Non-Cooperative Options in Game Theory


Source: Lejano, 2007, p. 47.
Cooperative and non-cooperative options are available, but there is a bind for cooperation, and in the direction of the pathway to non-cooperation there are no such constrains (Ali, 2007). There are three different games used in conflict resolution:


Nash's Equilibrium: How the prisoners are likely to behave based on their incentives.

Rousseau’s Stag Hunt shows that hunting stag can be quite challenging and requires mutual cooperation.

3. Sen’s Paradox

Amartya Sen’s contribution was Sen’s paradox, or the application to north/south relations and preference schedules (Ali, 2008c). Preference schedules are important to understand (Ali, 2008c). Instead of focusing on common interests, you end up competing with each other; you can find a common aversion (Ali, 2008c). An example is everyone wants to avoid getting in an accident, not with common interests, one is going in one direction one is going in the other, but they have common aversions, they do not want to get into an accident (Ali, 2008c).
Appendix IV: Planning for Cooperative Behavior through Environmental Means

<table>
<thead>
<tr>
<th>Concept</th>
<th>Approach</th>
<th>Action</th>
<th>Initiative</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Framing conflict as a dilemma of common aversion</td>
<td>Provide information on joint harms of noncooperation</td>
<td>Institute long-term engagement between parties to monitor environmental harms</td>
<td>Joint audits of environmental criteria and data collection for ecosystem-based planning efforts</td>
<td>Establishes neutral cognitive base for discussion of derivative issues</td>
</tr>
<tr>
<td>Linking environmental concerns to other issues</td>
<td>Provide a bargaining opportunity for sides where none was perceived to exist</td>
<td>Negotiate comprehensive agreements rather than individual contracts on specific issues</td>
<td>Interdisciplinary commissions for problem-solving that are facilitated by a mutually agreeable mediator</td>
<td>Enlarges “the pie” for positive solutions and adds flexibility for integrative bargaining</td>
</tr>
<tr>
<td>Using environmental concerns as a trust-building tool</td>
<td>Provide forums for joint participation in conservation initiatives</td>
<td>Develop conservation plans that would be inclusive of adversaries</td>
<td>Good neighbor compacts on riparian conservation and sister-city lesson drawing arrangements</td>
<td>Provides a mutually satisfying experience for parties to exemplify rewards of cooperation</td>
</tr>
</tbody>
</table>

Table 7: "Environmental Planning for Cooperative Behavior"

Appendix V: IRB Approval

Institutional Review Board - Federalwide Assurance #00003152

University of Cincinnati

Date: 4/9/2013 9:43 AM

From: UC IRB Committee

To: Principal Investigator: Jennifer Latessa
    CECH Center for Research Support

Re: Study ID: 2013-1995
    Study Title: Study of Peace Parks in Thailand

The Institutional Review Board (IRB) acknowledges receipt of the above referenced proposal. It was determined that this proposal does not meet the regulatory criteria for research involving human subjects (see below). Ongoing IRB oversight is not required.

Please note the following requirements:

AMENDMENTS: The principal investigator is responsible for notifying the IRB of any changes in the protocol, participating investigators, procedures, recruitment, consent forms, FDA status, or conflicts of interest. Approval is based on the information as submitted. New procedures cannot be initiated until IRB approval has been given. If you wish to change any aspect of this study, please communicate your request in writing to the IRB providing a justification for each requested change.

Statement regarding international conference on Harmonization and Good Clinical Practices: The Institutional Review Board is duly constituted (fulfilling FDA requirements for diversity), has written procedures for initial and continuing review of clinical trials: prepares written minutes of convened meetings and retains records pertaining to the review and approval process; all in compliance with requirements defined in 21 CFR Parts 50, 56 and 312 Code of Federal Regulations. This institution is in compliance with the ICH GCP as adopted by FDA/DHHS.

Thank you for your cooperation during the review process.

45 CFR § 46.102(d): Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.

45 CFR § 46.102(f): Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains:

1. data through intervention or interaction with the individual, or
2. identifiable private information.

Intervention includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the subject or the subject's environment that are performed for research purposes.

Interaction includes communication or interpersonal contact between investigator and subject.

Private information includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is
or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.

**FDA regulations** apply whenever an individual is or becomes a participant in research, either as a recipient of a FDA-regulated product or as a control, and as directed by a research protocol and not by medical practice. FDA-regulated activities involve individuals, specimens, or data, as patients or healthy controls, in any of the following:

a. any use of a drug or biologic, other than the use of an approved drug or biologic in the course of medical practice
b. any use of a device (medical or other devices, approved or investigational) to test the safety or effectiveness of the device
c. any use of dietary supplements to cure, treat, or prevent a disease or bear a nutrient content claim or other health claim
d. the collection of data or other results from individuals that will be submitted to, or held for inspection by, the FDA as part of an application for a research or marketing permit (including foods, infant formulas, food and color additives, drugs for human use, medical devices for human use, biological products for human use, and electronic products.)
e. activities where specimens (of any type) from individuals, regardless of whether specimens are identifiable, are used to test the safety or effectiveness of any device (medical or other devices, approved or investigational) and the information is being submitted to, or held for inspection by, the FDA.