MASTERARBEIT | MASTER'S THESIS

Titel | Title

The fight against illegal wildlife trafficking in East Asia. Lessons that can be drawn from the strategies implemented by China and Vietnam.

verfasst von | submitted by

Celine Rat

angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of

Master of Arts (MA)

Wien | Vienna, 2024

Studienkennzahl lt. Studienblatt | Degree programme code as it appears on the student record sheet:	UA 066 864
Studienrichtung lt. Studienblatt | Degree programme as it appears on the student record sheet:	Masterstudium East Asian Economy and Society
Betreut von | Supervisor:	Univ.-Prof. Mag. Dr. Rüdiger Frank

Table of Contents

List of Abbreviations

TCM	Traditional Chinese Medicine
TRAFFIC	Trade Records Analysis of Flora and Fauna Commerce
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
WPL	Wildlife Protection Law
NGO	Non-governmental organization
ASEAN	Association of South East Asian Nations
SEA	South East Asia
UNTOC	United Nations Convention against Transnational Organized Crime
KPI	Key performance indicator
WWF China	World Wide Fund for Nature China
IFAW	International Fund for Animal Welfare
IUCN	International Union for Conservation of Nature and Natural Resources
NICE-GG	National Interagency CITES Enforcement Coordination Group
USAID	U.S. Agency for International Development
MARD	Ministry of Agriculture and Rural Development
CNMA	China National Management Authority
CBD	Convention on biological diversity
NFGA	National Forestry and Grassland Administration
MARA	Ministry of Agriculture and Rural Affairs
HIS	Human Society International
ENV	Education for Nature Vietnam
FPD	Forest Protection Department

List of Tables

1. Introduction

1.1. Research Objective and Question

Illegal wildlife trafficking is a global concern. It poses a threat to global biodiversity and the survival of numerous wildlife species (Moorhouse et al. 2020, 1). Wildlife species are endangered by illegal trafficking and face extinction unless government and population work towards a sustainable future with a flourishing biodiversity (Vu 2023, 1). The illegal trade of wildlife is up to par with other major illegal trades such as illegal substances and narcotics, arms and people trafficking (Moshier, Steadman, and Roberts 2019, 1308). It is estimated that in the East Asian region illegal wildlife trafficking generates up to 2.5 billion dollars annually (D. H. Nguyen and Dinh 2020, 1). China and Vietnam are important players in the illegal wildlife trade. They are both main consumer markets as well as destination markets for illegally trafficked wildlife (Thu Thuy Pham et al. 2021, 279:1). Additionally, both countries have a large biodiversity from which certain species are in need of protection due to the existing populations dwindling (The Office of the National Assembly of Vietnam 2019, 6), (Gong et al. 2020, R915). The need to protect endangered wildlife and reduce illegal wildlife trafficking is thus a priority for these countries (Thu Thuy Pham et al. 2021, 279:1). In response to the pressing conservation challenge, China and Vietnam have implemented a range of strategies aimed at combatting illegal wildlife trafficking and protecting endangered species (Gong et al. 2020, R915), (Thi Thuy Pham et al. 2021, 1).

The objective of this thesis is to conduct a comprehensive review and evaluation of the strategies implemented by China and Vietnam to address illegal wildlife trafficking and to determine their success. Furthermore, this thesis aims to provide valuable insights and lessons derived from these findings. The objective of this research is to gain a better comprehension of the existing strategies, how these strategies work in practice, and their impact on tackling illegal wildlife trafficking. Building on this line of enquiry, this thesis addresses the following research question: *What lessons can be drawn from the strategies implemented by China and Vietnam in the fight against illegal wildlife trafficking in East Asia?*

1.2. Relevance

In China and Vietnam, illegally trafficked wildlife serves a multitude of purposes, ranging from food and luxury items to status symbols and pets (M.-H. Nguyen and Jones 2022, 2), (Jiao and Lee 2021, 2, 3). The consumption and use of wildlife and products derived from

wildlife is deeply entrenched in Asian cultural norms (Jiao and Lee 2021, 3), (D. H. Nguyen and Dinh 2020, 9). Exotic meats and rare animal parts, especially from endangered species, are associated with wealth, social status, and hospitality (L. Xiao et al. 2021, R169). For instance, especially in Vietnam, there is a custom of offering tiger products and other endangered animal products as an act of honor or as presents (Collier and Kirkpatrick 2020, xiv). This cultural practice of offering endangered species products as gifts during special occasions or ceremonies further drives up the demand for illegal wildlife products and reinforces their perceived value as symbols of prestige and respect (Shairp et al. 2016, 8).

The importance and intersection of cultural practices, status symbols, and traditional Chinese medicine (TCM), contribute to the persistent demand for illegal wildlife products in China and Vietnam. Especially in China, cultural practices are closely connected to using wildlife for multiple purposes such as medicine, textiles and food (Wang et al. 2019, 427). Consequently, the illegal wildlife trade thrives as it is fueled by a lucrative market driven by consumers. Poachers and traffickers profit from these lucrative markets disregarding measures set in place by China and Vietnam, forcing both countries to reevaluate and adapt their policies to disrupt criminal networks in the long term (D. H. Nguyen and Dinh 2020, 8), (Yu 2010, 120). China and Vietnam have taken action to protect the biodiversity by using various tactics to tackle the issue of illegal wildlife trafficking (Gong et al. 2020, R915).

Amongst all countries, China and Vietnam are frequently identified as among the most significant target countries for illegally sourced wildlife (Burgess et al. 2022, 24). There is a high demand for illegally trafficked wildlife products in China and Vietnam. On example is rhino horn, which is used not only for consumption but also for TCM (Burgess et al. 2022, 24). There is a prevalent belief in the health benefits of consuming certain wildlife products, particularly in TCM, which people in both China and Vietnam practice (Moorhouse et al. 2020, 1). Despite limited evidence supporting health benefits in TCM and evidence contesting TCM health benefits, many people in China and Vietnam continue to seek out wildlife products as remedies (Moorhouse et al. 2020, 9). Proceeding with the example of illegally trafficked rhino horn, the Trade Records Analysis of Flora and Fauna Commerce (TRAFFIC) has noticed an increase in poaching of rhino horn, necessitating the need for strategies protecting endangered wildlife and increasing the relevance of the topic (Collier and Kirkpatrick 2020, xlii). Vietnam is a main consumer of rhino horn products and additionally serves as a main transit hub for illegal trafficking towards China (Collier and Kirkpatrick 2020, xxxvii). To cover the high demand of rhino horn in Vietnam, the country has driven the

species to extinction within its borders (Luong 2022, 1). In 2012, Vietnam has eradicated two rhino species withing its borders, the Javan rhinoceros and the Rhinocerotidae (Burgess et al. 2022, 14).

As reported by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and TRAFFIC, wildlife trafficking and seizures reached a peak in 2019, exceeding the previous peak observed in 2010 (Burgess et al. 2022, 52). However, this peak can either be due to an increase in illegal trafficking, but it may also be related towards a rise in enforcement measures implemented by the countries (Burgess et al. 2022, 52). CHANGE, a community of conservation practitioners reported over 250 species being endangered in Vietnam (The Office of the National Assembly of Vietnam 2019, 6). Therefore, Vietnam faces a deterioration in wildlife species, necessitating the need for conservation policies and measures to curb illegal wildlife trafficking (The Office of the National Assembly of Vietnam 2019, 6). China, Vietnam, and other nations face the challenge of preserving wildlife amidst wildlife deterioration through illegal wildlife trafficking.

Another example of a species facing extinction in both countries are pangolins. They are as well a major target of illegal wildlife trafficking (Collier and Kirkpatrick 2020, xiii). The species can be used for a multitude of purposes, such as for the skins to produce leather or for consumption recreationally and medically (Collier and Kirkpatrick 2020, vi). As mentioned previously, China utilizes many endangered species in TCM, and pangolin products are a favored medical enhancer in the practice of TCM (Collier and Kirkpatrick 2020, vi). In 2019, a report on pangolin product seizures by TRAFFIC revealed seizures of about 156 kg of trafficked pangolin products (Collier and Kirkpatrick 2020, ix). China has been identified as a main target country and Vietnam an important trafficking route (Collier and Kirkpatrick 2020, xiii). However, China emerged as a growing target destination and trafficking route as well (Collier and Kirkpatrick 2020, xiii). Through the efforts of law enforcement, China has successfully intervened illegal pangolin packages in transit for Korea (Collier and Kirkpatrick 2020, xliii).

Especially faced with a loss of biodiversity and international scrutiny by governments and organizations protecting and monitoring wildlife species, both countries make efforts to establish policy frameworks which comply with international standards, shape consumer demand towards more sustainability and establish measures for effective wildlife conservation (A. Hughes et al. 2023, 2). Illegal wildlife trafficking affects multiple areas and stakeholders, highlighting the relevance of establishing strategies with purpose. Therefore, a variety of

strategies need to be implemented to tackle the issue. It is important to avoid relying on a single strategy to curb illegal trafficking (Fukushima et al. 2021, 2). Accordingly, the multitude of strategies implemented need to be enforced on several levels, on domestic levels through multiple ministry departments and the government, as well as on international levels through effective enforcement and collaboration (Fukushima et al. 2021, 2).

1.3. Structure of the Thesis

This thesis begins with a comprehensive literature review, examining common strategies employed to take measures against illegal wildlife trafficking. Drawing from existing research, the literature review highlights key approaches such as demand reduction campaigns, conservation, and law enforcement efforts. Building upon the insights gained from the literature review, an analytical framework for evaluating the strategies implemented by China and Vietnam in combatting illegal wildlife trafficking is presented. This framework identifies success factors based on the previous literature research and evaluates the effectiveness of the different strategies in addressing wildlife crime. By systematically analyzing the strategies employed by China and Vietnam, this thesis aims to provide an assessment of the efforts and identify lessons learned for future conservation initiatives. Following the analytical framework, the thesis focuses on the data analysis, where the framework is applied to examine the strategies implemented by China and Vietnam. The data analysis assesses the strengths and weaknesses of each country's approach to combatting illegal wildlife trafficking. By systematically analyzing the strategies adopted by China and Vietnam, this thesis aims to shed light on the factors contributing to the success or failure in addressing wildlife crime. The subsequent discussion section presents a synthesis of the findings, highlighting key insights and lessons learned from the strategies implemented by China and Vietnam. The discussion explores the factors contributing to the effectiveness of certain approaches, as well as the limitations and challenges encountered in the implementation of the strategies combatting illegal wildlife trafficking. By critically examining the strategies implemented by the two countries, this thesis aims to provide valuable insights for policymakers, conservation practitioners, and researchers working to combat illegal wildlife trafficking. Finally, the thesis concludes by summarizing the most important findings and lessons learned from the strategies implemented by China and Vietnam. By reflecting on the successes and challenges encountered in their efforts to combat wildlife crime, this conclusion offers suggestions for informing future conservation initiatives and shaping more effective strategies for protecting biodiversity and wildlife populations.

2. Literature Review

The following section presents the relevant literature regarding the strategies which are commonly implemented in regions around the world which fight against illegal wildlife trafficking. To give an overview of these existing strategies, the literature review is divided into three parts. The first part is going to outline existing demand reduction strategies in the field of illegal wildlife trafficking, such as educational or behavior change strategies that intend to reduce and change consumer demand for example. The second section outlines literature regarding wildlife management, specifically strategies that approach wildlife conservation efforts or anti-poaching strategies. The last section of the literature review will deal with the legal framework and laws which are implemented to combat illegal wildlife trafficking. This legal framework is composed of strategies such as trade-bans, international cooperations, or the Wildlife Protection Law (WPL). For all three sections, the strategies outlined in the review take place in various countries which have dealings in combatting illegal wildlife trafficking.

Some studies presented in this literature are investigating multiple strategies, which can be sorted into more than one of the beforementioned categories. Therefore, this literature review has placed these studies in the most appropriate section. In addition to that, the presented literature does not only outline the existing strategies, but the presented studies in the review outline success factors for the corresponding strategies as well. With these success factors, the results of the presented strategies can be determined and furthermore be applied to other regions.

Acquiring the relevant literature was achieved by initially searching through databases such as Elsevier, Scopus, and Google Scholar. In a first step, the databases were screened by different terms relating to strategies combatting illegal wildlife trafficking. Furthermore, the obtained results were additionally filtered by setting key words as limitations, and only English articles were taken into consideration. The keywords considered are but were not limited to ‘demand reduction’, ‘anti-poaching’, ‘wildlife management’, ‘illegal wildlife trafficking’, ‘legal framework’, ‘trade bans’, and ‘wildlife protection law’. This reduced the results to a more suitable output and a more manageable number. In the next step titles and abstracts were screened in order to collect relevant literature. Only scientific journals, articles, and scholarly journals were taken into account as primary literature sources for the literature review. To find additional pertinent material, scanning the beforementioned databases was combined with

forward and backward literature research. Additionally, the literature considered has been published in the time frame from 2008 to 2023.

2.1. Demand Reduction Strategies

As mentioned before, this section outlines common strategies which exist to reduce the demand for illegally trafficked wildlife and therefore protect the existing wildlife. The most common strategy is to reduce the existing consumer demand for wildlife products in the form of demand reduction campaigns. These campaigns can be shaped in different ways, such as educational campaigns, social marketing campaigns or behavior change campaigns. (Ayling 2015), (Veríssimo and Wan 2019), (Greenfield and Veríssimo 2019) and several more authors explore these types of strategies with different methods.

Ayling (2015) investigates demand reduction strategies to curb illegal wildlife trafficking. The author therefore investigates two types of strategies from demand reduction strategies (Ayling 2015, 9). One strategy is the consumer education campaign, and the other is a legal prohibition on consumption strategy (Ayling 2015, 9). The author starts by detailing the concept of demand and implemented demand reduction strategies by analyzing demand reduction with regulatory theory and finally investigates how to increase the capabilities in order to reduce demand optimally (Ayling 2015, 9). The author addresses state actors' strategies such as China's law on consumption of endangered wildlife and the lack of enforcing the laws sufficiently, but also addresses non-state actors such as non-governmental organizations (NGOs), communities, and businesses (Ayling 2015, 11, 12). In addition, the author addresses collaboration between different actors such as between Vietnam CITES and the Humane Society International NGO (Ayling 2015, 8). Therefore, a strong legislation and enforcement system as well as international collaboration between the legislative organs are extrapolated as success factors for the strategies (Ayling 2015, 13, 14). Additionally, conducting and following an international collaboration metric to track and share information and conduct joint operations are identified as success measures (Ayling 2015, 13, 14). The author suggests maintaining and publishing records of illicitly traded wildlife (Ayling 2015, 13, 14).

Veríssimo and Wan (2019) examine the consumer demand for illegally trafficked wildlife products and focus on behavioral change strategies to reduce demand. The authors investigate a collection of over 200 behavior change campaigns related to illegal wildlife trafficking on their outcomes and their impacts (Veríssimo and Wan 2019, 625, 626). They found that the campaigns' impacts and outcomes are largely biased, making it difficult to compare the

impacts of the campaigns in a scientific manner (Veríssimo and Wan 2019, 630). Furthermore, they found conservation efforts to alleviate illegal wildlife trafficking (Veríssimo and Wan 2019, 630). Interventions in illegal wildlife trafficking need to be evaluated by the cost and benefit trade off (Veríssimo and Wan 2019, 631). The authors thus base the success of the demand reduction on consumer surveys, directly evaluating the targeted audience, as well as interpreting market data, tracking the number and size of illegally sold wildlife (Veríssimo and Wan 2019, 629–31). The authors infer that conducting methodological pre and post campaign evaluation can help in assessing the success from demand reduction campaigns (Veríssimo and Wan 2019, 630).

Greenfield and Veríssimo (2019) as well research demand reduction campaigns regarding illegally trafficked wildlife. The authors focus on social marketing in connection with demand reduction (Greenfield and Veríssimo 2019, 42). They base their research on existing benchmarks of social marketing practices in order to analyze the demand reduction campaigns regarding elephant ivory and rhino horn products and how well these demand reduction campaigns meet the predefined benchmarks in terms of social marketing (Greenfield and Veríssimo 2019, 42). To achieve this goal, the authors investigated demand reduction campaigns from a 10-year span and conducted interviews with the corresponding and responsible organizations (Greenfield and Veríssimo 2019, 42, 43). Furthermore, the authors focused on eight social marketing best practices benchmarks and by evaluating to which level the demand reduction campaigns meet the chosen benchmarks, they determined the effectiveness and success of the campaigns in influencing consumer behavior to reduce their demand for illegally trafficked wildlife products (Greenfield and Veríssimo 2019, 42). They found that the benchmarks are not necessarily met by every campaign, and consequently, the need to integrate social marketing and existing benchmarks more thoroughly in demand reduction campaigns can increase their effect (Greenfield and Veríssimo 2019, 49, 50). Additionally, they found that incorporating market research, social media and consumer behavior analysis in designing demand reduction campaigns can have a positive effect on the outcomes of the campaigns (Greenfield and Veríssimo 2019, 50).

Rosen and Smith (2010) investigate illegally trafficked wildlife seizures records by TRAFFIC and outline existing strategies which are implemented to curb illegal wildlife trafficking (Rosen and Smith 2010, 25). As such they focus on enforcement efforts, which they find to be not as successful as other strategies, i.e. local campaigns, to educate people about wildlife trafficking and therefore reducing demand, and collaboration between regional and national

agencies, to increase the capacities for successful enforcement efforts (Rosen and Smith 2010, 30). Regarding enforcement, the authors suggest investing in infrastructure to bolster enforcement with necessary equipment and monetary funds (Rosen and Smith 2010, 30). Additionally, the authors put focus on investing into science to support enforcement endeavors (Rosen and Smith 2010, 30). To better understand and compile the seizure data, international cross-border collaboration and the successive data between the agencies can improve the exchange of information and joint efforts in combatting transnational criminal networks involved in illegal wildlife trade (Rosen and Smith 2010, 30).

MacFarlane et al. (2022) investigate demand reduction concerning harmful products which can be related to wildlife products and draw parallels to consumer demand reduction concerning wildlife products (MacFarlane et al. 2022, 2, 3). The authors present seven measures which exist that are used to reduce the demand of wildlife products (MacFarlane et al. 2022, 4). These measures are as follows: the first measure concerns mass-media campaigns, aimed at utilizing mass-media communication in order to make the public aware of the issues and change their behavior (MacFarlane et al. 2022, 4, 5). Next, incentives measures are discussed, followed by advertising bans (MacFarlane et al. 2022, 5). The fourth measure MacFarlane et al. (2022) investigate is social marketing campaigns, focusing on education, social initiatives and utilizing marketing principles (MacFarlane et al. 2022, 6). The authors additionally investigate location bans, focusing on legal frameworks and policies, as well as norm appeals, with laws and regulations but also social norms (MacFarlane et al. 2022, 6). The last measure the authors examine is risk warning, therefore, focusing on raising awareness of the accompanying risks some product consumption carries (MacFarlane et al. 2022, 7). The authors analyze the measures towards their effectiveness and provide possible solutions and how to proceed with the proposed measures (MacFarlane et al. 2022, 16).

Thomas-Walters, Veríssimo, et al. (2020) examine demand reduction strategies and evaluate the resultant impact on the consumers behavior change (Thomas-Walters, Veríssimo, et al. 2020, 2). The authors outline challenges in conjuncture with behavior change and propose a holistic approach to incorporate system thinking to such interventions (Thomas-Walters, Veríssimo, et al. 2020, 2). The goal of the authors is to highlight likely unfavorable consequences of interventions, focus on sustainability and realistically evaluate their success (Thomas-Walters, Veríssimo, et al. 2020, 2). They found various factors which can impact the success of behavioral change campaigns, such as that the costs of the campaigns can limit the success as they will not be of good quality (Thomas-Walters, Veríssimo, et al. 2020, 4, 5).

The campaign needs to be adjusted to the target audience and their social norms (Thomas-Walters, Veríssimo, et al. 2020, 5). The cultural context as well need to be incorporated into the campaigns and alternatives or substitutes need to be proposed to the target audience (Thomas-Walters, Veríssimo, et al. 2020, 5, 6). However, the authors infer that behavior change campaigns may also have undesired consequences, such as creating a bias towards the product or negative spillover effects (Thomas-Walters, Veríssimo, et al. 2020, 6). That being the case, it is important not only to look at the positive impact of demand reduction strategies, but also to evaluate the unforeseen consequences to ensure that the demand reduction interventions fulfill their original purpose without deviating towards negative outcomes (Thomas-Walters, Veríssimo, et al. 2020, 7, 8).

Wallen and Daut (2018) investigate behavior change methods and frameworks in the context of illegal wildlife trafficking (Wallen and Daut 2018, 57). Their study is based on consumer demand and human behavior (Wallen and Daut 2018, 56, 57). They investigate several existing frameworks as well as behavior change practices in relation to behavior towards illegal wildlife trafficking (Wallen and Daut 2018, 58). The study extracts consumer behavior as a key factor in reducing the demand for illegal wildlife products (Wallen and Daut 2018, 70). The authors outline several strategies to mitigate the demand of illegally trafficked wildlife, such as raising awareness and adjusting education, public advertisement, and social marketing, cooperating with traditional medical practitioners or social influences (Wallen and Daut 2018, 58, 60, 65). Social influences especially are difficult to change as they are often additionally culturally embedded, resulting in the necessity of behavior change methods to account for these social influences and cultural cues (Wallen and Daut 2018, 70).

Hinsley, Verissimo, and Roberts (2015) investigate consumer preferences regarding wildlife products through the use of economic consumer theory and choice experiments (Hinsley, Verissimo, and Roberts 2015, 81). The authors can thus identify different consumer groups and their preferences, through which conservation efforts can be adequately adapted to, in order to achieve a successful conservation strategy (Hinsley, Verissimo, and Roberts 2015, 81). Therefore, through the use of market research of consumer groups and their demand, specific data collection and the identification of consumer preferences and motivations of buying certain products can aid conservation efforts and increase their success (Hinsley, Verissimo, and Roberts 2015, 85). Furthermore, the authors infer that to reduce demand for wildlife and design sustainable conservation efforts, consumer preferences need to be considered and the consumers need to be educated more on the implication of trading and

buying endangered wildlife (Hinsley, Verissimo, and Roberts 2015, 85). The authors propose for educational campaigns to modify their message and tailor it to the specific preferences of consumer groups (Hinsley, Verissimo, and Roberts 2015, 84). Commonly utilized campaigns can increase consumer demand due to their emphasis on how uncommon certain wildlife species are, as rarity of a wildlife product is often times a consumer preference and decisive buying factor (Hinsley, Verissimo, and Roberts 2015, 84, 85).

Ryan et al. (2020) examine demand reduction strategies, especially in connection to marketing measures (Ryan et al. 2020, 356). Conserving wildlife and impeding the illegal trade of it can be influenced by the marketing strategies implemented in different reduction campaigns such as social marketing campaigns and other behavior change campaigns (Ryan et al. 2020, 356). The authors therefore examined multiple studies regarding this topic and evaluated them on their effectiveness to conserve wildlife as well as their psychological influence (Ryan et al. 2020, 356). They categorize the effects as cognitive, behavioral, or affective, and build a comprehensive overview of different studies and how they analyze marketing measures in regard to campaigns to reduce illegal wildlife trafficking (Ryan et al. 2020, 356, 357). The authors come to the conclusion that implementing marketing strategies in conservation efforts and reduction campaigns can aid in the success of a strategy (Ryan et al. 2020, 364, 365). However, the authors also caution that biases can occur and impede the outcome of different campaigns (Ryan et al. 2020, 365). In addition, the replicability of certain campaigns can be difficult as well, due to lack of information and transparency of different campaigns and strategies (Ryan et al. 2020, 365). In conclusion, the authors propose to implement a standardized methodological approach as well as a standardized terminology (Ryan et al. 2020, 365).

Kachen and Krishen (2020) investigate the relationship of marketing and social media with illegal wildlife trafficking and how the insights can help to improve campaigns which focus on reducing demand and use social media as a messaging medium (Kachen and Krishen 2020, 1772). The authors make a differentiation between emotional and informational messaging methods and find that emotional and social context generates a higher turnover rate as well as more interaction between social media users, resulting in more attention drawn to the issue of illegal wildlife trade and the preservation of wildlife (Kachen and Krishen 2020, 1773, 1778). Furthermore, the focus on social media and its usefulness to utilize different messaging strategies can be the basis of designing effective marketing strategies to reduce the demand and educate consumers of illegally trafficked wildlife (Kachen and Krishen 2020, 1778,

1779). The authors, although finding that emotional messaging strategies are best to generate a lot of attention, conclude that combining emotional messaging strategies with informational based knowledge can enhance its effect to educate consumers and reduce their demand (Kachen and Krishen 2020, 1778, 1779).

2.2. Wildlife Management Strategies

Following the previous section of demand reduction strategies, there are additional efforts made towards wildlife management and the conservation of wildlife. These efforts deal with protecting wildlife from being illegally trafficked and poached. Reducing and combatting illegal wildlife trafficking can be achieved through strategies, such as conservation strategies and anti-poaching efforts. The following authors have focused on and investigated these types of strategies. (Duffy et al. 2015), (Chen 2016) and (Galster, Schaedla, and Redford 2010) for example focus on anti-poaching strategies, whereas (Thomas-Walters et al. 2021) and (L. J. Hughes et al. 2023) address conservation strategies, and (Tensen 2016) explores wildlife farming strategies.

Duffy et al. (2015) focus on anti-poaching strategies and how they can be a global security initiative (Duffy et al. 2015, 345). Conservation organizations on both a non-governmental and governmental level, as well as on a national and international level, call for stricter anti-poaching measures (Duffy et al. 2015, 345). However, the authors argue that more rigorous measures could be counter-productive (Duffy et al. 2015, 345). They identify that poaching is closely related to consumer demand (Duffy et al. 2015, 345). Consequently, in order to reduce poaching, reducing consumer demand is necessary and policy initiatives need to account for and counter the growing consumer demand for illegal wildlife products (Duffy et al. 2015, 346). Such initiatives include raising awareness of the issue as well as introducing focused interventions tailored to the issues at hand (Duffy et al. 2015, 346). Additionally, the authors infer that anti-poaching strategies can not only reduce illegal wildlife trafficking, but also support regional stability (Duffy et al. 2015, 346). Nevertheless, they are concerned about harsh anti-poaching measures, as they could be ethically concerning due to sever injustices (Duffy et al. 2015, 346). As a result, the authors implore for anti-poaching strategies which are ethically, socially, and politically long-term viable (Duffy et al. 2015, 346). To determine the viability of the measures, the authors see collaboration between legal organs as necessary (Duffy et al. 2015, 346).

Chen (2016) investigates two anti-poaching measures in their effectiveness in order to determine if one of the two measures is better than the other one (Chen 2016, 65, 66). These

two measures both intend to reduce the motivation to poach (Chen 2016, 66). The first strategy focuses on the community and inducing them to conserve the species themselves (Chen 2016, 65, 66). The second strategy focuses more on the legal aspect of implementing anti-poaching measures, such as augmenting regulations as well as observing the wildlife and its trafficking (Chen 2016, 65, 66). Therefore, the author investigates these anti-poaching measures under the aspect of the snob effect, an effect which causes a product to be perceived as rarer due to other people's valuation of a product (Chen 2016, 66). Chen (2016) comes to the conclusion that anti-poaching efforts need to be made and adjusted on both the supply and demand side, while factoring in side effects such as the snob effect can affect the effectiveness of the anti-poaching regulations (Chen 2016, 68, 69). As a conclusion, the study proposes two key factors for the success of anti-poaching strategies, one observing the traded as well as exploited wildlife, and two, increasing investments needed to make these observations and to support the anti-poaching strategies (Chen 2016, 68, 69).

Kamminga et al. (2018) examine different techniques and strategies to detect and prevent poaching in regard to illegal wildlife trafficking (Kamminga et al. 2018, 2). They identify that poaching is driven by demand, oftentimes demand from the destination countries for the poached wildlife, but also due to economic need from poachers themselves (Kamminga et al. 2018, 3). The authors outline various poaching detection systems, such as different sensors, perimeter, arial, as well as ground-based poaching detection technologies (Kamminga et al. 2018, 4). As the authors outline these various techniques to detect poaching, they infer that the current poaching techniques require continuous improvements and identify data collection as a key point in increasing the successfulness of different poaching detection technologies as well as combining multiple techniques together (Kamminga et al. 2018, 4, 23). In addition, the authors propose national and international collaboration between stakeholders and governments to reduce poaching incidents and to combine different poaching detection strategies with other strategies such as demand reduction campaigns, increased law enforcement and substitution products (Kamminga et al. 2018, 19).

Galster, Schaedla, and Redford (2010) focus on the conservation of wildlife, through cooperation of different stakeholders and on anti-poaching efforts (Galster, Schaedla, and Redford 2010, 122). The authors propose a strategic concept which links multiple approaches together in order to combat the illegal poaching and successive trafficking of wildlife (Galster, Schaedla, and Redford 2010, 122). Therefore, Galster, Schaedla, and Redford (2010) outline several projects in place which tackle the issue of poaching and reduce illegal wildlife

trafficking (Galster, Schaedla, and Redford 2010, 122, 123). In order to conserve wildlife, the authors outline programs which focus on this issue and propose key factors to make the proposed strategies successful (Galster, Schaedla, and Redford 2010, 122, 123). To conserve a wildlife species, the wildlife needs to be closely observed and protected, not only through legal institutions, but also the community itself can support wildlife conservation through better education and increased awareness (Galster, Schaedla, and Redford 2010, 123). Proposing adequate alternatives as well, seemed to reduce the exploitation and trafficking of wildlife according to the authors (Galster, Schaedla, and Redford 2010, 118, 119). Moreover, a measure to reduce the interest in illegally trafficked wildlife is to recruit and use popular people such as Prime Ministers, actors, or models, to support anti-poaching measures publicly (Galster, Schaedla, and Redford 2010, 121). Lastly, the authors focus on the cooperation between agencies in order to reduce trafficking and raise awareness of popular trafficking routes to determine where intervention is needed the most (Galster, Schaedla, and Redford 2010, 123).

Tensen (2016) investigates wildlife management under the aspect of farming species to conserve them (Tensen 2016, 288). The author imposes some restraints under which wildlife farming can be successful for conservational purposes, disregarding the inhumane treatment of animals which this practice of farming commonly entails for her study (Tensen 2016, 288). The first aspect which the author analyzes regards the demand (Tensen 2016, 289). To conduct effective wildlife farming, the demand for the wildlife species and the resulting products need to be defined, as farming can increase demand as price for the wildlife would drop (Tensen 2016, 289). Consequently, wildlife farming needs to be subsidized by the government and the demand needs to remain stable or drop for successful conservation purposes (Tensen 2016, 289, 290). The second aspect regards substitutes (Tensen 2016, 290). Substitution products from wildlife farming depend on consumer preference, hence, the author proposes educational campaigns to change consumers preferences (Tensen 2016, 291). Furthermore, successful substitution of illegally trafficked wildlife with farmed wildlife needs to be heavily regulated in order to keep rural areas from exploiting wildlife again (Tensen 2016, 290, 291). The third aspect regards the cost efficiency of having a legal supply of wildlife products by farming wildlife (Tensen 2016, 291). The success factors for cost efficiency depend on governmental monetary support and on which wildlife species is farmed, as different species require different financial resources (Tensen 2016, 292, 293). The last point the author makes regards laundering and its prohibition (Tensen 2016, 293). For wildlife farming to be successful, Tensen (2016) establishes that illegally trafficked wildlife entering

the market cannot easily be differentiated from farmed wildlife (Tensen 2016, 293). For that reason, laundering can hinder the conservational success of wildlife farming (Tensen 2016, 293, 294).

Thomas-Walters et al. (2021) focus their study on the motivations of consumers regarding illegal wildlife products, and how these identified motivations can be beneficial in developing conservation strategies, such as demand reduction campaigns, incentive programs, or legal frameworks and enforcement efforts (Thomas-Walters et al. 2021, 485). As the authors see consumer motivation and behavioral science as a vital key point regarding conservation strategies developed to reduce illegal wildlife trafficking, they have devised a typology framework with five of the most prevalent motivation categories of consumers who utilize illegally trafficked wildlife products (Thomas-Walters et al. 2021, 485, 486). Using the developed framework, the authors outline in which aspects the framework can be beneficial in its application (Thomas-Walters et al. 2021, 486). With the knowledge of the specific motivational drivers of consumers, social marketing campaigns can be adjusted in their messaging strategies or legal frameworks and the enforcement measures can be adapted (Thomas-Walters et al. 2021, 489).

L. J. Hughes et al. (2023) investigate ecological drivers and their consequences in illegal wildlife trafficking (L. J. Hughes et al. 2023, 776). The authors focus amongst other topics such as the overexploitation of wildlife, on different conservation interventions and evaluate these approaches, the first intervention being regulatory and enforcement approaches (Thomas-Walters et al. 2021, 783). These approaches include CITES and the CITES Appendices as a framework to regulate legal guidelines to monitor and curb wildlife trafficking as well as implementing trade bans to protect species (Thomas-Walters et al. 2021, 783, 784). In addition, the authors focus on local measures such as anti-poaching enforcement and penalizing illegally trafficked wildlife (Thomas-Walters et al. 2021, 784). The second intervention Hughes et al. (2023) focus on, are community-based measures such as conservation measures adjusted to local cultural variations (Thomas-Walters et al. 2021, 784, 785). Moreover, they investigate captive breeding and wildlife farming as a conservation strategy to manage the existing overexploitation of highly trafficked species (Thomas-Walters et al. 2021, 785). The last measure the authors focus on, is to translocate and rewild depleted wildlife populations and therefore monitor the newly introduced population as well as their development (Thomas-Walters et al. 2021, 786). In order to measure the success of these interventions, a factor is monitoring trade volumes and their changes (Thomas-Walters et al.

2021, 786). A regulated trade can help monitor a species and protect it (Thomas-Walters et al. 2021, 784, 785).

Scheffers et al. (2019) focus their study on monitoring trafficked wildlife and the impacts this trafficking can have on a wildlife species, especially regarding illegal trafficking (Scheffers et al. 2019, 1). The authors identify species which are traded and those which are likely to be traded because of their distinct features, which can lead to a more intense trading of certain species (Scheffers et al. 2019, 2, 3). Through this analysis, the authors identify hotspots of wildlife that are traded and where they are traded from (Scheffers et al. 2019, 3). Adding a rarity-value feedback model to their analysis, the authors propose to monitor wildlife species which are similar to highly traded wildlife species, as these similar wildlife species have a higher risk of being subjected to higher trading volumes (Scheffers et al. 2019, 5). Furthermore, they propose to update and align the various endangered species list from different organizations (Scheffers et al. 2019, 5).

Travers et al. (2019) examine key drivers which lead people to commit wildlife crime (Travers et al. 2019, 1298). These key drivers are evaluated, and possible intervention strategies are examined in their performance considering these key drivers and their effect on the interventions (Travers et al. 2019, 1298). Using an indirect questioning approach, the authors gather the necessary data to evaluate the key drivers and further investigate their effects (Travers et al. 2019, 1298). The findings by Travers et al. (2019) indicate that in order to reduce wildlife crime and have effective interventions to do so, depend on directly addressing key drivers (Travers et al. 2019, 1303, 1304). The interventions the authors consider in their study are human-wildlife conflict mitigation, wildlife scouts, wildlife friendly enterprises, increased patrol effectiveness, removal of resource access and regulated hunting (Travers et al. 2019, 1303, 1304).

Cherkaoui et al. (2020) investigate conservations efforts in rural and protected areas (Cherkaoui et al. 2020, 1). The authors establish that tourism often has an impact on conservation efforts due to communities gaining more focus from foreigners and the emphasis of conserving wildlife is intensified (Cherkaoui et al. 2020, 2). The outbreak of the Covid-19 pandemic has had an impact on conservation efforts due to the decrease of tourism (Cherkaoui et al. 2020, 2). For that reason, the authors derive that conservation efforts are improved by flourishing tourism as community participation in conservation efforts are increased (Cherkaoui et al. 2020, 4). The authors furthermore establish that the resulting increase in economic activity due to tourism has an impact on the communities and their

attitude and willingness to participate in conservation efforts (Cherkaoui et al. 2020, 4). Additionally, the authors identify financial support for communities participating in conservation measures as well as anti-poaching measures to be a key factor in the success of these conservation efforts (Cherkaoui et al. 2020, 4). This generates more support and entices communities to actively work against poachers and traffickers (Cherkaoui et al. 2020, 4). By funding conservation efforts, a sustainable and strong relationship can be built between partners collaborating with local communities to protect wildlife (Cherkaoui et al. 2020, 4, 5). In addition, the authors infer that by sustainably conserving flora and fauna, the value and appeal increase, which can change the attitude towards illegal wildlife trafficking of local communities (Cherkaoui et al. 2020, 4, 5). The authors also infer that due to a healthy wildlife, the appeal towards foreigners increases, therefore boosting tourism, and in turn stimulating the economic activity (Cherkaoui et al. 2020, 4, 5).

2.3. Legal Framework Strategies

This last section of the literature review outlines strategies regarding the legal frameworks in place to combat illegal wildlife trafficking. These legal frameworks strategies deal with laws such as the wildlife protection law as investigated by (Trouwborst et al. 2017), or adhering to the internationally acknowledged and implemented CITES regulations and recommendations for example, as explored by authors such as (Rivera, Knight, and McCulloch 2021) and (A. Hughes et al. 2023). Additionally, strategies such as trade-bans are considered which are reviewed by authors such as (Bennett, Underwood, and Milner-Gulland 2021), (Noer, Santosa, and Rahman 2022) and (Weber et al. 2015). Furthermore, the legal framework encompasses cooperation between the legal institutions and government which facilitates a better cooperative working atmosphere in order to reduce and combat illegal wildlife trafficking. These types of strategies are covered by (Jiao, Yeophantong, and Lee 2021) and (Moshier, Steadman, and Roberts 2019).

Trouwborst et al. (2017) give an overview of how international wildlife law can shape and affect illegal wildlife trafficking (Trouwborst et al. 2017, 784). The authors outline several limitations of international wildlife law, such as the implementation of an international wildlife law is difficult to achieve due to differences in governance in each country (Trouwborst et al. 2017, 784). Different interpretation approaches of the proposed laws are additionally reviewed (Trouwborst et al. 2017, 787, 788). As there are differences in governance and laws, implementing wildlife laws relies on the compliance of the government with the proposed international wildlife laws (Trouwborst et al. 2017, 787). However, the

authors outline several opportunities for international wildlife laws (Trouwborst et al. 2017, 787). One such opportunity is the cross-border cooperation between governments and increased conservation efforts in protecting wildlife and preventing poaching as well as illegal hunting and subsequent illegal trafficking (Trouwborst et al. 2017, 787). As a result, Trouwborst et al. (2017) infer that international wildlife laws are successful due to them increasing and ameliorating the beforementioned opportunities as well as expanding monitoring and collecting data. Such laws contribute therefore to conservation efforts and outcomes (Trouwborst et al. 2017, 787, 788).

Rivera, Knight, and McCulloch (2021) investigate the repercussions and limitations of enforcing the CITES guidelines regarding illegally trafficked wildlife and the handling of the confiscated or seized wildlife through interviews and a thematically coded framework (Rivera, Knight, and McCulloch 2021, 2, 3, 6). As CITES provides, amongst other directives, specific guidelines for endangered wildlife and flora which has been seized, the authors identified that the enforcement of following these guidelines can lead to unsuspected or more intensive effects than anticipated and planned for (Rivera, Knight, and McCulloch 2021, 12, 13). The CITES guidelines are meant to conserve and protect wildlife with a considerate method and additionally prevent further trafficking (Rivera, Knight, and McCulloch 2021, 5). The authors therefore identify through interviews of responsible actors eight limitations of the CITES regulations and therefore propose seven alternatives and approaches in order to better handling of confiscated and seized wildlife (Rivera, Knight, and McCulloch 2021, 1). These seven alternatives are composed of an improved wildlife management, increasing the legislative support, facilitate reforms in the political sphere, reduce demand, increase the global cooperation in the topic of illegal wildlife trafficking, license and update rescue centers to the necessary standards, and lastly the authors recommend changing the terminology as the current terminology has a negative bias for the public (Rivera, Knight, and McCulloch 2021, 14, 15, 16).

Hughes et al. (2023) investigate the determinants of sustainability in regard to different mechanisms in place concerning illegal wildlife trade (A. Hughes et al. 2023, 3). The authors developed a research and policy framework based on their findings with respect to legality, sustainability, positive as well negative impacts on legal and illegal trade, and on CITES successfulness (A. Hughes et al. 2023, 3). The authors define that in order to measure sustainability, there have to be predefined benchmarks and quotas for different areas of application (A. Hughes et al. 2023, 4). Furthermore, they stress the importance of monitoring

and data collection to evaluate the impact different measures have on illegal wildlife trade (A. Hughes et al. 2023, 12). Regarding this, A. Hughes et al. (2023) determine four intricate factors to measure sustainability, which are as mentioned previously, data collection and monitoring of wildlife, collecting and interpreting trade data, extend existing databases and improve trade conditions, and lastly raising awareness of existing trade bans as well as species substitutions (A. Hughes et al. 2023, 15).

Bennett, Underwood, and Milner-Gulland (2021) investigate the trade in wildlife and consequently the illegal trade of wildlife (Bennett, Underwood, and Milner-Gulland 2021, 2). The authors use a Bayesian Belief Network to investigate how different trade managements, be it illegal, banned, sustainable or legal trade, can impact a wildlife species in its population and sustainable management (Bennett, Underwood, and Milner-Gulland 2021, 3, 4). Based on their findings, they propose a framework for assessing approaches in their conservation effort (Bennett, Underwood, and Milner-Gulland 2021, 13). In addition, the authors infer that conservation efforts need to be reflected in the trade of wildlife (Bennett, Underwood, and Milner-Gulland 2021, 13). As complete trade bans are, according to the authors, not effective in their conservation intention of the species, different sustainable trade management styles need to be implemented in order to protect and conserve a wildlife species (Bennett, Underwood, and Milner-Gulland 2021, 13). The authors outline that trade bans as well as sustainable trade both have little effect on conservation efforts of wildlife as the management along the trade chain is difficult to maintain to similar levels all along (Bennett, Underwood, and Milner-Gulland 2021, 13). Evaluating the opportunity of illegal sales and trafficking of a species along the trade chains as well as countering hunting can be indicators of the effectiveness of the trade management styles (Bennett, Underwood, and Milner-Gulland 2021, 3). Bennett, Underwood, and Milner-Gulland (2021) infer, that with tactical implementation of site-based protection, trade bans, as well as enforcement measures, illegal wildlife trafficking can be reduced, and the endangered wildlife species can be protected (Bennett, Underwood, and Milner-Gulland 2021, 3).

Noer, Santosa, and Rahman (2022) investigate the economic valuation of illegal wildlife with two approaches, one with the market price, and the other with maintenance cost, and analyze these approaches with a data analysis (Noer, Santosa, and Rahman 2022, 27). This type of economic valuation can be a key factor in determining future monetary penalties as well as determine the severity of juridical punishments (Noer, Santosa, and Rahman 2022, 27). The authors found that while the market price can be a good indicator as to how to set penalties

and punishments for illegally trafficked wildlife, the maintenance cost approach however shows an increased economic value, portraying the value and necessity of protecting wildlife which is the focus of illegal trafficking (Noer, Santosa, and Rahman 2022, 32). Thus, using economic valuation of wildlife can contribute to gaining insights regarding trade bans and managing the demand of wildlife products (Noer, Santosa, and Rahman 2022, 32).

Weber et al. (2015) focus on trade bans and their impact, but compared to other authors, they focus on the possible negative outcomes, which were not anticipated when these trade bans were implemented (Weber et al. 2015, 390). Furthermore, they examine CITES regulations and how the implemented regulation and lists contribute to conservation measures (Weber et al. 2015, 390). The authors infer that CITES is a valuable tool, however, as CITES focuses primarily on international trade, the domestic trade does not profit as much as the international trade does regarding the conservation of wildlife species (Weber et al. 2015, 390). In order to benefit wildlife, the authors propose for CITES to adapt their listing and Appendices according to trade trends (Weber et al. 2015, 395). Additionally, Weber et al. (2015) make a point of trade bans rarely being effective as their implementation and enforcement remains difficult across borders, and additionally, they can diminish conservation incentives of local areas (Weber et al. 2015, 395, 396). Therefore, the authors propose trade bans as a short-term strategy (Weber et al. 2015, 396, 397). To increase the protection and conserve the endangered species, the authors propose regulated and controlled trade instead of complete trade bans, as a more enforced trade supports and develops sustainable wildlife management (Weber et al. 2015, 396, 397).

Jiao, Yeophantong, and Lee (2021) examine cross-border and domestic strategies to combat illegal wildlife trafficking in Southeast Asia and China (Jiao, Yeophantong, and Lee 2021, 2). Specifically, they focus on the existing policy frameworks regarding the issue (Jiao, Yeophantong, and Lee 2021, 2). The authors outline the key legal provisions each Association of South East Asian Nations (ASEAN) member state and China has pertaining to the criminalization of wildlife offenses and note the key developments in each state (Jiao, Yeophantong, and Lee 2021, 6, 7). Furthermore, they examine the cooperation and multilateral agreements between China and South East Asia (SEA) and how they can be more effective by improving cooperation (Jiao, Yeophantong, and Lee 2021, 8). Additionally, aside from investigating the legal frameworks between China and ASEAN, the authors as well draw from the framework proposed by the United Nations Convention against Transnational Organized Crime (UNTOC) in regard to the proposed international legal cooperation (Jiao,

Yeophantong, and Lee 2021, 10). The framework can be utilized as a basis and combatting tool as increased cooperation between the international legal organs can improve measures to interfere and eventually dissolve transnational wildlife trafficking (Jiao, Yeophantong, and Lee 2021, 12). Improved transnational cooperation can lead to greater success in persecuting wildlife trafficking offenders and facilitate their punishment across borders (Jiao, Yeophantong, and Lee 2021, 12).

Moshier, Steadman, and Roberts (2019) have investigated the stakeholder community involved in combatting illegal wildlife trade, and how their collaboration aids in reducing the illegal trafficking (Moshier, Steadman, and Roberts 2019, 1308). Their method of analysis focused on a social network analysis and interviews of different involved legislative bodies as well as organizations (Moshier, Steadman, and Roberts 2019, 1308, 1309). By analyzing the relationships and communication patterns among the stakeholders involved in combatting illegal wildlife trafficking, the success of demand reduction strategies can be evaluated (Moshier, Steadman, and Roberts 2019, 1308). In case of network collaboration and multiple legislative organs from different countries working together, a good success measurement can be based on the communication and collaboration of organizations, governments and stakeholders that are working against illegal wildlife trafficking (Moshier, Steadman, and Roberts 2019, 1316).The authors infer that due to the increased communication as well as collaboration between the stakeholders, the coordination and implementation of strategies against illegal wildlife trafficking can lead to more successful outcomes (Moshier, Steadman, and Roberts 2019, 1316). Moreover, by increasing the collaboration and communication between the different stakeholders, information and data sharing is increased, which can be an additional tool in creating and ameliorating strategies against illegal wildlife trafficking, therefore increasing their possible success (Moshier, Steadman, and Roberts 2019, 1316).

Van Uhm and Moreto (2018) investigate the corruption in existence regarding illegal wildlife trade (Van Uhm and Moreto 2018, 865). As the authors establish in their study, dealing with corruption is necessary to reduce illegal wildlife trafficking, as corruption intervenes in conservation efforts and law enforcement efforts (Van Uhm and Moreto 2018, 867). Furthermore, there is an apparent symbiotic relationship in illegal wildlife trafficking, and according to the authors, this relationship can manifest in multiple ways, such as in collaborating with traffickers and border control, thus facilitating the trafficking, or funding where legal organizations support criminal organizations either willfully or unconsciously (Van Uhm and Moreto 2018, 868, 869). Therefore, to analyze corruption in wildlife

trafficking, the study uses case studies and interviews (Van Uhm and Moreto 2018, 869). The authors find that corruption is present in most aspects, such as the legal aspect or the conservation aspect, within the chain concerning illegal trafficking (Van Uhm and Moreto 2018, 879).

Wilson and Boratto (2020) investigate policies on sentencing criminals in the line of illegal wildlife trafficking and which key drivers play a role in the sentencing of them (Wilson and Boratto 2020, 2). The authors outline that punishing illegal wildlife traffickers has the goal to deter other people from committing illegal trafficking, to restrain criminals from continuing their illegal activities, and additionally, to reeducate the traffickers to refrain from trafficking again (Wilson and Boratto 2020, 2). Furthermore, by outlining these different punishment policies, the authors come to the conclusion that implementing harsh deterrence punishments are not as successful as illegal trafficking of wildlife does not decline (Wilson and Boratto 2020, 4). Therefore, the authors propose some alternative policies and enforcement measures to reduce the crime rate and illegal trafficking (Wilson and Boratto 2020, 4). As a result, the authors advise for more cohesive data collection in order to tailor legal interventions and seizures specifically to different cases, making the intervention more successful (Wilson and Boratto 2020, 5). Furthermore, they insist on involving and working together with different stakeholders, such as communities and organizations to build partnerships and prevent communities to work together with wildlife traffickers (Wilson and Boratto 2020, 5).

3. Analytical Framework

This section defines the research method and analytical framework used in this thesis. The thesis follows the design of an exploratory qualitative analysis and investigates strategies implemented in the combat against illegal wildlife trafficking and how these different strategies can be deemed successful in reaching their intended goal. The analytical framework is therefore divided into two parts, whereas the first part is composed of Table 1, an evaluative table regarding existing strategies against illegal wildlife trafficking and their existence in the two target countries China and Vietnam. The second part is composed of a second evaluative table, Table 2, which intends to analyze and identify the success of the beforehand outlined and implemented strategies in the first evaluative table. Both tables will be analyzed and applied to the two countries China and Vietnam. These two countries have been chosen as the subject to investigate as they both are heavily involved in with the issue of illegal wildlife trafficking as destination as well as source countries (Thu Thuy Pham et al. 2021, 279:1).

Therefore, drawing from the literature discussed in the previously conducted literature review, several strategies to combat illegal wildlife trafficking commonly implemented in the field of illegal wildlife trafficking are identified and extracted. Furthermore, a number of sub-criteria have been sourced and selected from the literature and successively been compiled into the respective evaluative tables to determine how the strategies are established in the two target countries.

To investigate and analyze these strategies, a selection of qualitative papers, concerning common illegal wildlife trafficking reduction strategies, serve as a foundation and their findings are brought together and are listed comprehensively in the following Table 1 and Table 2. As such, inferring from the literature on the subject matter, the analytical framework considers the same three broad categories as the literature review does. The first category encompasses different demand reduction strategies. Consequently, the framework considers the following three strategies as demand reduction strategies, namely (1) educational campaigns, (2) social marketing campaigns, and (3) behavioral change campaigns. The second category is composed of strategies regarding wildlife management; thus, these next two strategies are considered in the framework: (4) conservation policy and (5) anti-poaching. The third and last category is titled as legal frameworks and this analytical framework considers three strategies within that category, specifically (6) wildlife protection law, (7) trade-bans and lastly (8) legal policies.

In order to determine if the beforementioned strategies, which are defined as criteria in the analysis, are applicable in China and Vietnam respectively, their existence and their extent in these countries need to be confirmed. This confirmation will be determined on the basis of the chosen sub-criteria which have been selected through the previously conducted literature review. To evaluate the sub-criteria, each sub-criterion is assessed within their corresponding unit and against the corresponding data as outlined in the evaluative table. Multiple sub-criterions can be evaluated by means of the same data source. The necessary data for the analysis originates from data sources such as TRAFFIC, CITES, further literature, and applicable case studies.

1. Category	*2. Criteria*	*3. Sub-Criteria*	*4. Unit*	*5. Data Sources*
Demand reduction strategy	(1) Educational campaigns	- Existence in target country? - Area of implementation?	Yes/No/Can not tell Schools, institutions, workspace, social media, advertisement etc.	TRAFFIC CITES Case studies
	(2) Social Marketing Campaigns			
	(3) Behavioral change campaigns	- Different/multiple marketing channels used? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes/No/Can not tell Yes/No/Can not tell	
Wildlife management strategy	(4) Conservation Policy	- Existence in target country? - Captive breeding programs? - Protected areas established? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes/No/Can not tell	
	(5) Anti-poaching policy			
Legal Framework	(6) Trade-bans	- Existence in target country? - National list of protected species existing and implemented? - CITES endangered species Appendix considered? - International or domestic organizations, NGOs,	Yes/No/Can not tell	
	(7) Wildlife protection law			
	(8)			

	Legal policies	government agencies or local community involved? - Cross-border cooperation and multilateral agreements?		

Table 1: Confirming illegal wildlife reduction strategy existence

To assess the successfulness of each strategy which are effectively present in the target countries China and Vietnam, multiple criteria are extracted from the existing and reviewed literature. It can be said that the success of each strategy against illegal wildlife trafficking can be measured through various indicators, therefore the following table, Table 2, has compiled success indicators, titled in the following as key performance indicators (KPIs). Taking the KPIs together, the success of a strategy can be measured, and eventual opportunities identified to improve a strategy and lessons drawn from them for future use.

To give an overview before going into detail, the success can be measured through a combination of indicators, such as the implementation of enforcement techniques, the impact of wildlife conservation on the environment and ecological factors, the economic disruption of wildlife trafficking networks through reduction in trade volume as well as price and availability changes, and the strength of communication as well as collaboration amongst stakeholders and legislative organs geared towards reducing illegal wildlife trafficking.

All proposed strategies require a comprehensive as well as a multidimensional approach to measure their success and oftentimes, the long-term evaluation and observation of a strategy can indicate the success of each strategy. To assess the success of the proposed demand reduction campaigns, namely the (1) educational campaigns, (2) social marketing campaigns and (3) behavioral change campaigns, a number of key indicators have been extracted from the literature and are evaluated. To analyze and evaluate the success and outcome of these demand reduction campaigns, the following KPIs have been extracted from the preceding literature research: knowledge and awareness, behavior and attitude change, reduction in demand, campaign reach, long term impact, partnerships and collaboration, and lastly, legal enforcement. The combination of these different approaches can offer a better understanding of the success of demand reduction strategies and identify areas for improvement.

Regarding the next category, wildlife management strategies, the success of each strategy as well is composed of a multitude of KPIs, and a comprehensive and multi-faceted approach is necessary. Therefore, factors which contribute to the success or failure of a strategy, such as

the (4) conservation and (5) anti-poaching strategy, are identified as ecological indicators, reduction in trade volume as well as in wildlife product seizures and poaching incidents, partnerships and collaboration, and legal enforcement.

The last category legal framework which encompasses the strategies (6) trade bans, (7) wildlife protection law, and (8) legal policy framework, is composed of several KPIs as well. The factors to evaluate in this category and which contribute to the success of each strategy are identified and labeled as ecological indicators, reduction in trade volume as well as in wildlife product seizures, partnerships and collaboration, and legal enforcement.

Moreover, to successfully evaluate each KPI from every strategy on their negative, neutral, or positive impact, an additional column has been established in the evaluative Table 2, which is composed of carefully chosen sub-success factors from the existing literature. Through the evaluation of each sub-success factor according to their corresponding unit, each KPI can be assessed more thoroughly and eventually, their negative, neutral, or positive impact can be determined in order to consequently evaluate the success of each strategy. A negative impact constitutes a rise of illegal wildlife trafficking, a neutral impact sees no discernible change in illegal wildlife trafficking and finally, a positive impact consists of a reduction in illegal wildlife trafficking. Similar to the previous evaluative Table 1, the sub-success factors and KPIs can be assessed by means of the same data source, such as data from TRAFFIC, CITES or relevant case studies and literature.

2. ***Criteria***	***6.*** ***Key performance indicator (KPI)***	***7.*** ***Sub-success factor***	***8.*** ***Unit***	***9.*** ***Data sources***
(1) Educational campaigns	Knowledge and awareness	- Surveys tracking behavior or attitude change conducted? - Observational studies conducted? - Perception change of wildlife products or wildlife conservation efforts? - Illegal activities reported to authorities?	Yes/No /Cannot tell	TRAFFIC CITES Case studies

	Reduction in demand	- Consumer surveys conducted? - Changes in consumer demand monitored? - Sales data change? - Market research conducted?		
	Campaign reach	- Campaign adjusted to target audience? - Campaign adjusted to cultural differences? - How broad is the reach? - Multiple channels of distribution of campaigns? - Media coverage of campaigns? - Public engages with the campaigns?		
	Long-term impact	- Changes in attitude or behavior persist after the campaign? - Follow up surveys conducted? - Does the campaign adjust its message over time?		
	Partnerships and Collaboration	- Are there partnerships or collaborations participating in the campaigns? - If partnerships are applicable, do they enhance the campaign? - Expert opinion/expertise integrated in campaign message?		
	Legal enforcement	- Did the campaign lead to increased enforcement measures?		
(2)	Knowledge and awareness	- Pre- and post-campaign assessment? - Observational studies conducted?	Yes/No /Cannot tell	

Social marketing campaigns		- Perception change of wildlife products or wildlife conservation efforts? - Illegal activities reported to authorities?		
	Reduction in demand	- Consumer surveys conducted? - Changes in consumer demand monitored? - Sales data change? - Market research conducted?		
	Campaign reach	- Campaign adjusted to target audience? - Campaign adjusted to cultural differences? - Multiple channels of distribution of campaigns? - Media coverage of campaigns? - Public engages with the campaigns?		
	Long-term impact	- Changes in attitude or behavior persist after the campaign? - Follow up surveys conducted? - Does the campaign adjust its message over time?		
	Partnerships and Collaboration	- Are there partnerships or collaborations participating in the campaigns? - If partnerships are applicable, do they enhance the campaign? - Famous people involved?		
	Legal enforcement	- Did the campaign lead to increased enforcement measures?		

(3) Behavioral change campaign	Behavior and attitude change	- Pre- and post-campaign assessment? - Observational studies conducted? - Attitude or perception change of wildlife products or wildlife conservation efforts? - Illegal activities reported to authorities?	Yes/No /Cannot tell	
	Reduction in demand	- Consumer surveys conducted? - Changes in consumer demand monitored? - Sales data change? - Market research conducted?		
	Campaign reach	- Campaign adjusted to target audience? - Campaign adjusted to cultural differences? - Multiple channels of distribution of campaigns? - Media coverage of campaigns? - Public engages with the campaigns?		
	Long-term impact	- Changes in attitude or behavior persist after the campaign? - Follow up surveys conducted? - Does the campaign adjust its message over time?		
	Partnerships and collaboration	- Are there partnerships or collaborations participating in the campaigns? - If partnerships are applicable, do they enhance the campaign? - Famous people involved?		

	Legal enforcement	- Did the campaign lead to increased enforcement measures?		
(4) Conservation policy	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Substitution available?	Yes/No /Cannot tell	
	Reduction in trade volume	- Changes in trade volume monitored? - Trade data monitored? - Market monitored? - Changes in availability of wildlife products?		
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Information sharing between stakeholders? - Capacity building initiatives available?		
	Legal enforcement	- Arrests enforced? - Prosecution/penalties enforced? - Convictions made? - Number of wildlife product seizures monitored? - Confiscation rates changed? - Are the laws updated?		
(5) Anti-poaching	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats?	Yes/No /Cannot tell	

		- Surveys conducted? - Substitution available?		
	Reduction in poaching incidents	- Number of poaching incidents monitored? - Illegal hunting or trapping incidents tracked?		
	Reduction in wildlife product seizures	- Number of wildlife product seizures monitored? - Confiscation rates changed?		
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Local communities involved/reporting illegal activities? - Information sharing between stakeholders? - Capacity building initiatives available?		
	Legal enforcement	- Arrests enforced? - Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for poaching and trafficking enforced? - Are the laws updated?		
(6) Trade bans	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Substitution available?	Yes/No /Cannot tell	

	Reduction in trade volume	- Changes in trade volume monitored? - Trade data monitored? - Market monitored? - Changes in availability of wildlife products?		
	Reduction in wildlife product seizures	- Number of wildlife product seizures monitored? - Confiscation rates changed?		
	Price and availability	- Changes in wildlife product availability? - Market survey conducted? - Price changes for trafficked wildlife products? - Substitution products available? - Certification of traded product?		
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Local communities involved/reporting illegal activities? - Information sharing between stakeholders? - Capacity building initiatives available?		
	Legal enforcement	- Arrests enforced? - Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for trafficking enforced? - Are the laws updated?		

(7) Wildlife protection law	Ecological Indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Substitution available?	Yes/No /Cannot tell	
	Reduction in wildlife product seizure	- Number of wildlife product seizures monitored? - Confiscation rates changed?		
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Information sharing between stakeholders? - Capacity building initiatives available?		
	Legal enforcement	- Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for trafficking enforced? - Are the laws updated?		
(8) Legal policy framework	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Substitution available?	Yes/No /Cannot tell	
	Reduction in trade volume	- Changes in trade volume monitored? - Trade data monitored? - Market monitored?		

		- Changes in availability of wildlife products?		
	Reduction in wildlife product seizures	- Number of wildlife product seizures monitored? - Confiscation rates changed?		
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Local communities involved/reporting illegal activities? - Information sharing between stakeholders? - Capacity building initiatives available?		
	Legal enforcement	- Arrests enforced? - Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for trafficking enforced? - Are the laws updated?		

Table 2: Evaluating the success of strategies reducing illegal wildlife trafficking

4. Data Analysis

After having established the two evaluative lists in the section 'Analytical Framework', this section is going to analyze China and Vietnam respectively for their strategies which they implement in tackling the issue of illegal wildlife trafficking by means of the evaluative lists and the outlined data sources in the tables. The data analysis is organized as follows: the first evaluative list will be analyzed first with China, followed by Vietnam. Afterwards, the second evaluative list will be analyzed, again first in regard to China followed by Vietnam. Additionally, the previously established tables in the analytical framework can be found in

answered form for each country attached in the appendix, see Table 3, Table 4, Table 5, and Table 6.

4.1. China, Table 1

4.1.1. Demand Reduction Strategies

Starting with the first category, demand reduction strategies, the category is divided into three criteria, (1) educational campaigns, (2) social marketing campaigns, and (3) behavioral change campaigns.

(1) Educational Campaigns

As for the (1) educational campaigns, China has made efforts to establish and implement educational campaigns, issued by the government itself as well as educational campaigns carried out by other stakeholders such as NGOs (Feng et al. 2021, 12). For example, these educational campaigns are implemented by stakeholders such as zoos, to target a range of people, notably children and adolescents (Feng et al. 2021, 5). Oftentimes, rural areas do not have as much access to education on illegal wildlife trafficking as compared to more populated cities, therefore educational campaigns are not as much present in the rural region of China (L. Zhang, Hua, and Sun 2008, 1511). Nevertheless, educational campaigns are meant to educate people on the repercussions of the illegal trade and help to curb the demand of these types of wildlife products (Nataraajan 2020, 1681). Especially local communities can profit from more precise education tailored to the issue of illegal wildlife trafficking, eliciting a supply reduction (Nataraajan 2020, 1679).

The area of implementation of educational campaigns can vary and be diverse. With the increased focus on protecting and conserving wildlife from being trafficked, zoos are a prime location to convey educational information to a multitude of visitors (Clayton et al. 2018, 120). Not only zoos try to convey educational information towards its customers, but also public areas and institutions have established their own educational campaigns by displaying informational signs about the risks of illegally trafficked wildlife products (L. Xiao et al. 2021, R171). However, the implementation of educational campaigns can prove itself as difficult depending on the region in China, as border regions are not as accessible for educational campaigns due to local customs and cultures (L. Zhang, Hua, and Sun 2008, 1511).

In order to promote and disperse educational information, several different channels of distribution are utilized (Z. Song et al. 2021, 3). Such channels are especially online media

forms but also conventional media forms such as newspapers which are used to spread knowledge to educate consumers of wildlife products (Z. Song et al. 2021, 3). Another channel of distribution which is used, is displaying signs and posters throughout cities in populated areas such as restaurants or marketplaces (L. Xiao et al. 2021, R171).

NGOs, as well as international animal conservational related organizations make use of the multiple media channels to disperse valuable educational information about illegal wildlife trade in order to reach the broad public (Z. Song et al. 2021, 10), (Z. Zhang et al. 2022, 2). Additionally, the CITES office implements education programs in connection to multiple government ministries (L. Zhang, Hua, and Sun 2008, 1511).

(2) Social Marketing Campaigns

Proceeding to the (2) social marketing campaigns, it can be said that there have been launched a multitude of social marketing campaigns in China (Wallen and Daut 2018, 64). These campaigns are launched by World Wide Fund for Nature China (WWF China) and WildAid in collaboration with Chinese authorities (Collier and Kirkpatrick 2020, xxiv). They target different endangered species such as elephants, pangolins and tigers (Collier and Kirkpatrick 2020, xxiv). Especially regarding the recent Covid-19 pandemic, social marketing has gained in importance as marketers have made renewed efforts to highlight the issue of illegal wildlife trafficking and its impact not only on the flora and fauna, but also on the people themselves (Nataraajan 2020, 1681).

Social marketing campaigns are implemented in multiple areas. The campaigns can be used to persuade customers of illegally trafficked wildlife products to consider alternatives and change the demand (Moorhouse et al. 2020, 9). This can be helpful when dealing with traditional Chinese medicine (Moorhouse et al. 2020, 9). Additionally, social marketing campaigns focus on the broad public, wanting to reach a maximum amount of people, however, there have been efforts made to reach specific customer groups through market research (Greenfield and Veríssimo 2019, 50).

To disseminate the message of the campaigns and reduce demand through them, a multitude of distribution and marketing channels are used, especially various media channels, such as newspaper or online media channels (Z. Song et al. 2021, 9). The most commonly used channel is social media, as it serves as a marketing channel to reach a broad variety of people, especially the younger generation (Greenfield and Veríssimo 2019, 50, 51).

Several stakeholders are involved in the process of launching social marketing campaigns, such as international working NGOs, which have a close cooperation with Chinese public figures for added national support and acknowledgement (Margulies, Wong, and Duffy 2019, 217). These Chinese public key figures are for example actors, athletes and musicians (Margulies, Wong, and Duffy 2019, 217). Additionally, domestic NGOs and organizations focused on conserving wildlife, utilize social marketing campaigns to raise awareness to the illegal wildlife trade (Z. Song et al. 2021, 9).

(3) Behavioral Change Campaigns

The third criterion in the category of demand reduction strategy is (3) behavioral change campaigns. China has implemented several campaigns to change behavior and these campaigns target different endangered species (Collier and Kirkpatrick 2020, v). A behavior change campaign targeting the rejection of pangolin products is implemented by WildAid and the China Wildlife Conservation Association (Collier and Kirkpatrick 2020, v). WWF China has launched two campaigns targeting the use of rhino horn products (Collier and Kirkpatrick 2020, v). These campaigns aim at reducing the demand for illegally trafficked wildlife which is most commonly achieved by altering the behavior of consumers (Margulies, Wong, and Duffy 2019, 216, 217). Additionally, changing the behavior of consumers is closely connected to changing and influencing their beliefs, most intrinsic values, and customs (Margulies, Wong, and Duffy 2019, 217), (Rock and MacMillan 2022, 92). Therefore, starting as early as possible, changing the behavior of children can contribute to a long-term behavior change and demand reduction of illegally trafficked wildlife (Xu and Jiang 2022, 1).

Behavior change campaigns are used to reward good and desirable behavior, while occasionally penalizing undesirable behavior (Nataraajan 2020, 1679). Therefore, the campaigns are implemented in multiple areas. Targeted consumer groups not only include the general public, but especially the younger generation as they are easily reached through social media channels (Rock and MacMillan 2022, 108). Apart from social media, behavior change campaigns are also commonly disseminated in events for the public through influential people of interest holding speeches (Margulies, Wong, and Duffy 2019, 217).

Therefore, behavior change campaigns are promoted through various channels, especially media channels are a common distribution channel for these types of campaigns (Margulies, Wong, and Duffy 2019, 217). Moreover, advertisements play an important part in disseminating the desired message to the broad public, through online as well as offline advertisement (Margulies, Wong, and Duffy 2019, 217). Influential key figures as well,

participate in behavior change campaigns by holding speeches or being part of the campaign, increasing the interest in the campaign itself (Margulies, Wong, and Duffy 2019, 217).

Stakeholders such as the International Fund for Animal Welfare (IFAW) and the Chinese government put further effort into behavior change campaigns, as supplementing other strategies to curb illegal wildlife trafficking with behavior change campaigns can increase the success in reducing the demand for illegally trafficked wildlife products (Nataraajan 2020, 1679). Especially internationally working NGOs have an interest in conducting behavior change campaigns, as they want to reduce the illegal trafficking globally (Margulies, Wong, and Duffy 2019, 217).

4.1.2. Wildlife Management Strategies

Continuing with the second category, wildlife management strategy, there are two criteria considered, (4) conservation policy and (5) anti-poaching policy.

(4) Conservation Policy

The formerly mentioned criterion, (4) conservation policy, proves itself to be an important issue, whose importance only grew in the recent years due to the intensive consumption and usage of wildlife in China (Wang et al. 2019, 425, 426). The high demand for wildlife prompted the need in China for conservation policies to protect threatened wildlife species and ensure a sustainable relationship between supply and demand (Wang et al. 2019, 426). Therefore, as part of the conservation policy and by substituting illegally trafficked wildlife, the establishment of wildlife farms is implemented as a sustainable alternative and to protect the wildlife (Jiao and Lee 2021, 3). Furthermore, the conservation policy requires farmed wildlife to be subjected to a marking scheme to indicate the legality of the commercialized wildlife (Jiao and Lee 2021, 3).

With the increased consciousness of conserving wildlife, the Chinese government has made efforts to establish captive breeding programs (Wang et al. 2019, 426). These captive breeding programs are a common practice in China and multiple species, endangered species as well as species not listed on the International Union for Conservation of Nature and Natural Resources (IUCN) Red list, are being part of these programs (Wang et al. 2019, 427). However, these captive breeding programs incur some controversy as the increased available wildlife can boost demand (Wang et al. 2019, 428). The established captive breeding programs and wildlife farms are geared towards covering the increasing demand for wildlife products and to reduce illegal poaching (Jiao and Lee 2021, 3).

Additionally, the government has established protected areas to give wildlife the chance to recuperate and regenerate without facing illegal hunting and trafficking (Wang et al. 2019, 426). However, despite the protected areas being an established measure in the enforcement, it's execution remains inadequate, as only major wildlife populated areas are protected, whereas less wildlife dense areas remain unprotected (Feng, Liao, and Hu 2019, 8).

Multiple stakeholders have a great interest in conserving wildlife and curb the illegal trafficking to avoid certain species facing extinction (Wang et al. 2019, 425). These stakeholders in particular are not only domestic and international NGOs, but the government and local communities themselves have an interest in fostering viable conservation policies (Wang et al. 2019, 425, 426).

(5) Anti-poaching Policy

For the (5) anti-poaching policy criterion, it can be said that anti-poaching policies are an important strategy in the combat of illegal wildlife trafficking.

As China is a main destination country for illegally poached wildlife due to the high consumer demand, anti-poaching policies mainly affecting the source country can have an impact on China as well (Haas and Ferreira 2016, 11). As a result, China has established a prohibition on illegally poaching, especially for prohibiting poaching for nutrition utilization (Huang et al. 2021, 666). However, people living in rural areas often lack in education regarding the endangered status of wildlife and depend on poaching for their economic income (L. Zhang, Hua, and Sun 2008, 1495). Therefore, the authorities are monitoring poaching incidents (L. Zhang, Hua, and Sun 2008, 1495) and have established protected areas as a means to diminish illegal poaching (Feng, Liao, and Hu 2019, 8).

In order to reduce poaching, establishing captive breeding programs such as wildlife farms, is a common practice in China, as having commercialized breeding farms negates the need to illegally poach wildlife (Jessica Bell Rizzolo 2021, 2, 3). This wildlife farming can be a method of trying to counteract illegal poaching by having a steady supply of the demanded wildlife. However, the commercialized breeding can exaggerate unfavorable side effects, such as illegally trafficked wildlife being laundered through legalized wildlife farms or even drive up demand (Jessica Bell Rizzolo 2021, 3).

To further protect wildlife species, the Chinese government has enforced the establishment of protected areas (Feng, Liao, and Hu 2019, 8). This ensures that wildlife can have safe spaces and habitats where poachers do not have access to it and hunting is restricted (Feng, Liao, and

Hu 2019, 8). Additionally, these environmental spaces prohibit economic projects which would compromise wildlife habitats (Feng, Liao, and Hu 2019, 8). Despite these implementations being regulated, the enforcement of protected areas remain limited, as these areas encompass only the most important and populated wildlife habitats, but should be expanded to provide more protection for the wildlife (Feng, Liao, and Hu 2019, 8).

As for the involvement of stakeholders in anti-poaching policies, stakeholders such as the Chinese government and different organizations develop collaborative databases to track poaching incidents and increase communications (L. Zhang, Hua, and Sun 2008, 1495).

4.1.3. Legal Framework

(6) Trade Bans

As part of the WPL, trade bans of illegally traded wildlife are an important aspect on its own to curb the illegal trade (Koh, Li, and Lee 2021, 3). Especially the recent Covid-19 pandemic has brought forth trade bans as well as consumption bans of wildlife (Koh, Li, and Lee 2021, 2), (X. Xiao et al. 2021, 6). Therefore, the Chinese government has issued temporary trade bans in light of disease outbreaks (L. Xiao et al. 2021, R170) which prohibits the trade of illegally trafficked wildlife and the overconsumption of such wildlife in order to secure the public health (Du, Fathollahi-Fard, and Wong 2023, 10). Nevertheless, there are a multitude of trade bans in existence such as tiger or ivory trade bans, domestic and international trade bans (Abbott and van Kooten 2011, 722). One successful trade ban has been achieved in 2017, where China has banned ivory for trading purposes nationally and a long standing trade ban in place is the ban of rhino horn since the early 1990's (Nataraajan 2020, 1680). As mentioned previously, there is a tiger trade ban, however, this ban exists only domestically and concerns the illegal trafficking of wild tigers (A. Y. Song and Yao 2022, 162). The use of tigers from breeding farms and their by-products, however are legal trade goods (A. Y. Song and Yao 2022, 162).

Incorporated and considered in the trade bans are species listed in the special state protection list (L. Xiao et al. 2021, R171). Although the species listed in the national list of species to be protected, some species, such as tigers have been available to be traded despite their endangered and protected status (A. Y. Song and Yao 2022, 153, 154). This double standard has given rise to international controversy such as was the case with tiger products as they lifted the trade ban on these products (A. Y. Song and Yao 2022, 153, 154).

Additionally, species considered in the CITES Appendices are subjected to sustainable trade and trade bans (L. Xiao et al. 2021, R170). Furthermore, CITES prohibits the trade with ivory and as China is adhering to the CITES regulations, China's domestic ban of ivory trade complies with the CITES regulations (Nataraajan 2020, 1680).

Trade bans affect stakeholders such as farmers dealing in wildlife farming and the rural population who is dependent on trading hunted wildlife as most of them do not have any other economic income (L. Xiao et al. 2021, R170). Furthermore, in order to regulate the trade and enforce the instituted trade bans, different state departments and institutions need to collaborate (L. Xiao et al. 2021, R170).

As China is a destination country for illegally traded and hunted wildlife, international collaboration is needed to enforce trade bans and reduce the illegal wildlife trade (L. Xiao et al. 2021, R171). Consequently, cross border collaboration on enforcing trade bans can be further established through the Conference of the Parties on the Convention on Biological Diversity, of which China is part of (L. Xiao et al. 2021, R171).

(7) Wildlife Protection Law

China has introduced the first version of the Wildlife Protection Law (WPL) in 1989 to protect, conserve and legislate the use of endangered wildlife (Wang et al. 2019, 426). After the first version of the WPL has made significant progress in protecting and conserving wildlife, the Chinese government has revised the WPL to focus more on the conserving aspect, which became effective in 2017 (Wang et al. 2019, 428, 429).

The WPL differentiates between three sections of wildlife. The first section concerns the most threatened and scarce wildlife, the second sections encompasses wildlife with specific value aspects for science, ecology or society, and lastly the third section includes the wildlife species not accounted for in the first two sections (You 2020, 2). Consequently, the WPL considers two levels of endangered species to be protected, differentiating between first and second class conservation (Wang et al. 2019, 431). Additionally incorporated into the revised WPL are a number of certain species which are not to be subjected to utilization of any form (Wang et al. 2019, 429). However, the WPL does not consider every species in need of protection, as updating the list with species in dire need of protection is slow despite the revised goal of adjusting the lists in a time span of every five years (Gong et al. 2020, R916).

China is part of and adheres to the CITES regulations, accordingly the WPL includes an article which stipulates to consider the CITES listed endangered species under the WPL after

careful consideration of the Chinese CITES office (You 2020, 2). Therefore, the species listed in the CITES Appendices are incorporated in the different sections outlined in the WPL (Jiao and Lee 2021, 2). Despite CITES being considered, not all CITES listed endangered species are being considered under the WPL, some species are regulated in the three sections, however, other species do not fall under the WPL (You 2020, 2).

In order for the WPL to be viable, different stakeholders apart from the government need to adhere to the WPL, especially stakeholders such as institutions or certified companies handling endangered wildlife (Wang et al. 2019, 430). The WPL advocates for NGOs to follow and support the WPL and the different government bodies in the execution of upholding and following the goals of the WPL (Wang et al. 2019, 430). However, within the regulations of the WPL, some government bodies in China such as the National Forestry and Grassland Administration as well as the Ministry of Agriculture and Rural Affairs have the ability to declare protected species for utilization (Jiao and Lee 2021, 2).

As China is a partner of CITES and adheres mostly to and incorporates their regulations in the WPL it can be said that there is a cross border cooperation through its involvement with CITES (L. Xiao et al. 2021, R170). As mentioned previously, the WPL takes the CITES listed endangered species to a certain degree into account, therefore establishing cross border cooperation (Yu 2010, 2).

(8) Legal Policies

China has several laws in place regarding wildlife and its protection as well as utilization additionally to the WPL (You 2020, 1). These legal policies are implemented as well enforced on a national level and on a local level (Jiao, Yeophantong, and Lee 2021, 7). Additionally, several different ministerial departments are involved in enforcing and regulating legal policies to tackle illegal wildlife trafficking to promote the effectiveness of enforcement measures (Jiao, Yeophantong, and Lee 2021, 4). In order to establish and enforce legal policies regarding illegal wildlife trafficking, China has established an interagency platform in 2016 (Jiao, Yeophantong, and Lee 2021, 7). The participating ministry departments convene regularly to enforce the standing wildlife food ban, monitor the wildlife trade and tackle reported wildlife violations (Jiao, Yeophantong, and Lee 2021, 7). Once a wildlife trafficker has been found guilty, the trafficker can face punishments of imprisonment of 15 years up to a lifetime sentence (Jiao, Yeophantong, and Lee 2021, 5).

Additionally, China implements a national list of protected species (Luong 2022, 9). This national list is incorporated in the legal policy frameworks and part of the WPL as well (Luong 2022, 9), (You 2020, 2). The WPL, as mentioned in category (7) WPL, outlines three different tiers of wildlife species which are to be protected and furthermore which can be considered the national list of species to be protected (You 2020, 2). However, despite implementing a national list of protected species, the upkeep of the existent lists are slow and incomplete, neglecting species in dire need of protection (Gong et al. 2020, R916).

China has established an National Interagency CITES Enforcement Coordination Group (NICE-GG) in 2011 which acts as a bridge between the CITES conservation goals and the enforcement of these goals through the different Chinese authority bodies (Jiao, Yeophantong, and Lee 2021, 7). In order to enforce the CITES guidelines, 12 different departments throughout multiple ministries are involved in the National Interagency CITES Enforcement Coordination Group (NICE-GG) and coordinate collaborative enforcement missions as well as hold regular sessions to determine further steps (Jiao, Yeophantong, and Lee 2021, 7).

Additionally to the Forest Department and Fishery Department managing mainly the WPL, the legal policy frameworks are managed by a multitude of government departments and organizations (Gong et al. 2020, R915). This separate management of legal policies and frameworks by myriad of stakeholders, such as local and national departments is ground for issues concerning the implementation of legal policies (Gong et al. 2020, R915).

As illegal wildlife trafficking is not only a problem in China but also in surrounding countries due to illegal poaching and hunting and the resulting trafficking to various destination countries, several bilateral as well as multilateral agreements have been established to foster cross border collaboration in tackling the issue (Jiao, Yeophantong, and Lee 2021, 8). An important cross border cooperation has been established in 2014 whereas China and ASEAN amongst other countries have established multiple agreements to tackle illegal wildlife trafficking and join forces by signing and abiding to the Declaration on Combating Wildlife Trafficking (Jiao, Yeophantong, and Lee 2021, 8).

4.2. Vietnam, Table 1

4.2.1. Demand Reduction Strategies

Continuing with the examination of Vietnam on the basis of Table 1, this section as well considers three demand reduction strategies. The first demand reduction strategy considered is

criterion (1) educational campaigns, the second one criterion (2) social marketing campaigns and finally criterion (3) behavioral change campaigns.

(1) Educational Campaigns

One of the biggest issue which has been targeted by demand reduction campaigns is the use of rhino horn in Vietnam for Traditional Chinese Medicine (TCM) or other areas (Vu 2023, 6). As a result, lot of demand reduction campaigns aim to educate people on the ineffectiveness in using rhino horn in TCM, as the medical benefit of using rhino horn is not scientifically supported (Vu 2023, 6). One major educational campaign in Vietnam tackles the aspect of educating young people on the issues of using rhino horn and was launched by an international organization, namely WildAid (Ayling 2015, 7). Furthermore, educational campaigns target the public in order to raise their awareness towards the issue of illegal wildlife trafficking and the legal repercussions of partaking in the illegal trafficking (McEwan and Turley 2021, 97, 98).

Especially in terms of area of implementation, educational campaigns targeting illegal wildlife products used in TCM are directed to consumers and practitioners of TCM (Vu 2023, 6). Not only are TCM practitioners and users of TCM targeted, educational campaigns are already implemented in the early educational system, where schools and organizations work together to educate children and youth on wildlife trafficking (Ayling 2015, 12).

Commonly used marketing channels to distribute the educational campaigns are message dissemination through TVs, social media and the use of celebrities for their cause, resulting in a mix of distribution channels to gain a far reach (Ayling 2015, 7). Additionally, a widely utilized marketing tool for educational campaign is the use of public key figures, whose influence can increase the reach of educational campaigns (Vu 2023, 7).

Several stakeholders are involved in launching educational campaigns, such as the domestic Vietnam CITES office and the NGO Education for Nature Vietnam, but additionally international acting stakeholders, such as the Humane Society International and other NGOs (McEwan and Turley 2021, 97, 98). Moreover, the government has an interest in collaborating with NGOs, local communities and other stakeholders (McEwan and Turley 2021, 97, 98). Collaborating with schools and educational institutions can raise awareness about the issues from early age on (Ayling 2015, 12).

(2) Social Marketing Campaigns

A large social marketing campaign which has been launched in Vietnam is the Chi Initiative campaign from 2014 (Offord-Woolley 2017, 144). This campaign aims at reducing the usage of rhino horn and prevent rhinos from being poached excessively to extinction (Offord-Woolley 2017, 144). The first phase of the campaign consisted of an extensive marketing strategy of one and a half years (Offord-Woolley 2017, 145). The second phase followed an adjusted marketing strategy based on the first phase (Offord-Woolley 2017, 146). Since its launch in 2014, the Chi Initiative campaign has entered a third phase in 2019, showing a continuous effort by TRAFFIC and the U.S. Agency for International Development (USAID) Wildlife Asia in tackling the issue of illegal rhino horn trafficking (Collier and Kirkpatrick 2020, xxxiv). In addition, TRAFFIC in collaboration with the British embassy have established an online campaign regarding the use of ivory (Collier and Kirkpatrick 2020, xxiv).

The campaigns target a range of relevant consumer groups through advertisement in newspapers or magazines (Offord-Woolley 2017, 145). A large target group is comprised of TCM users, as the TCM market uses a lot of illegally sourced wildlife (Sexton, Nguyen, and Roberts 2021, 1). Consequently, social marketing campaigns target this area with the intent of having an impact on TCM consumers (Sexton, Nguyen, and Roberts 2021, 1).

Distributing the message and social marketing campaign can take place through various channels, such as advertising through posters and signboards in populated areas, informative texts in leisure magazines as well as newspapers, online channels such as websites and advertisements (Offord-Woolley 2017, 145). Furthermore, participating NGOs and companies use their own reach to spread the campaigns message (Offord-Woolley 2017, 145).

To boost campaigns, people of interest have been participating in disseminating the campaigns messages, such as famous people as well as known business people (Vu 2023, 1), (Offord-Woolley 2017, 145). Also, not only stakeholder such as famous people take part in campaigns, but government bodies, educational bodies, and medical practitioners have an interest in supporting demand reduction campaigns (Vu 2023, 1, 6). Additionally, there are social marketing campaigns which have been developed and launched by internationally working organizations (Offord-Woolley 2017, 144).

(3) Behavioral Change Campaigns

As Vietnam is one of the countries where wildlife products have been trafficked in abundance, especially rhino horn, multiple behavioral change campaigns targeting the issue have taken place (Olmedo, Sharif, and Milner-Gulland 2018, 2). Specifically for example, a behavioral change campaigns launched, in 2014, a campaign by the Vietnamese TRAFFIC has had some success through a thought out design due to previous market research (Thomas-Walters, Cheung, et al. 2020, 967). Additionally, there have been a multitude of behavior change campaigns launched in Vietnam regarding various wildlife trafficking issues, concerning especially rhinos and pangolins, species which are popular amongst various consumer groups (Vu 2023, 1, 2).

As a lot of wildlife is a substantial part of TCM, such as pangolin scales or rhino horns, several behavioral change campaigns aim for a change in TCM practices as well as consumer behavior change (Vu 2023, 6). Other behavior change campaigns aim to address consumers who obtain illegally trafficked wildlife as part of the luxury market (Olmedo, Sharif, and Milner-Gulland 2018, 7). Furthermore, behavior change interventions address the broad public in order to reach as many people as possible (Olmedo, Sharif, and Milner-Gulland 2018, 7).

In order to disseminate behavioral change campaigns, multimedia channels are used for the distribution of the campaign (Thomas-Walters, Cheung, et al. 2020, 967). These channels range from online channels to channels which don't require media access such as advertisements in form of posters or public announcements (Vu 2023, 1). Especially social media is a widely used tool due to its large reach (Greenfield and Veríssimo 2019, 47, 48). Furthermore, influential people boost the campaign for the targeted consumer group, increasing the reach and success of a behavioral change campaign (Thomas-Walters, Cheung, et al. 2020, 967).

Behavioral change campaigns target and work together with companies and influential people to boost the effectiveness of the campaign, therefore, these stakeholders can make a difference in the success of a campaign through showing a positive example and environmental sustainability while maintaining inherent cultural values (Thomas-Walters, Cheung, et al. 2020, 967). Not only local influential and well known people advocate for the campaigns, but internationally famous people are also known to support behavior change campaigns with success (Vu 2023, 6). Such stakeholders are often different organizations such as TRAFFIC, WildAid, an environmental organization, or CITES, which have offices and operate in

Vietnam (Vu 2023, 1, 2). Additionally to the organizations, local NGOs have an interest as well in participating and launching demand reduction campaigns (Vu 2023, 2, 4).

4.2.2. Wildlife Management Strategies

(4) Conservation Policy

Vietnam's conservation policy encompasses a range of approaches, such as decreasing the need and necessity for illegally trafficked and hunted wildlife (Drury 2009, 268). In order to protect a wildlife species, the conservation policy targets consumers motivations for consumption and demand by providing wildlife substitutes and instituting wildlife farming as a conservation measure (Drury 2009, 268). Furthermore, as part of the conservation policy, informal guardianship can help maintaining conservation goals by surveying and discouraging behavior which goes against conservation efforts (Viollaz et al. 2022, 125, 126). Therefore, community based conservation is an established conservation policy that is implemented in Vietnam (Jessica B. Rizzolo et al. 2021, 2).

Vietnam participates as part of its conservation policy in farming wildlife (Drury 2009, 266). As wildlife products are high in demand in Vietnam, the country has established early on the captive breeding of wildlife to meet the consumer demand and conserve wildlife (Thu Thuy Pham et al. 2021, 279:52). Consequently, Vietnam has implemented a law on animal husbandry to regulate the captive breeding of wildlife species requiring conservation efforts (Thu Thuy Pham et al. 2021, 279:34). Furthermore, wildlife farms handling protected species need to be recorded either by the CITES Vietnam office or the regional corresponding Forest Protection Department (FPD) (Thi Thuy Pham et al. 2021, 5).

Vietnam has several established protected areas and national reservation parks, which are managed by the Ministry of Agriculture and Rural Development (MARD) (Vu 2023, 12). These protected areas encompass more than a 160 places in order to let wildlife thrive in a sustainable and preserved way (D. H. Nguyen and Dinh 2020, 8).

Many stakeholders take part in conservation policies, such as Vietnamese, the government and NGOs working together with rangers to enforce conservation policies (Jessica B. Rizzolo et al. 2021, 5). Especially in the case of informal guardianship, local community members take on an important role, as they may have more influence on their local community members than the government members (Viollaz et al. 2022, 126). The collaborative work of local communities and the government is especially important, as the local community has an in depth knowledge about the wilderness (Viollaz et al. 2022, 127).

(5) Anti-poaching Policy

Vietnam's anti-poaching policy encompasses the enforcement of protecting sites which are used for poaching and report instances where poaching has occurred (Viollaz et al. 2021, 1379). Additionally to establishing protected areas, another anti-poaching policy encompasses the establishment of wildlife farms in order to lower poachers motivation as wildlife farms provide wildlife (Shairp et al. 2016, 2). Furthermore, poachers face deterrence incentives from the government through Situational Crime Prevention Techniques (Viollaz et al. 2021, 1381) as well as punishments in varying degrees (Viollaz et al. 2021, 1389). The poaching policies can be enforced on a local level, by directly acting where poaching incidents occur, or on a national level through policy enforcement, resource provision and prosecution (Viollaz et al. 2021, 1382).

To mitigate poaching, the government has established and supports captive breeding of wildlife species which are highly illegally trafficked and poached (Shairp et al. 2016, 2). This support of captive breeding and consequential wildlife farming is expressed by supporting legal policies, to give this practice of wildlife farming structure and monitor the state of the farms (Shairp et al. 2016, 2).

Furthermore, Vietnam has several laws in place which advocate and outline protected areas in nature (Viollaz et al. 2021, 1380). These protected areas are designated as such through laws by the government, but organizations with focus on conservation as well have an interest in maintaining and protecting these designated areas (Viollaz et al. 2021, 1382).

The government is a main stakeholder in enforcing anti-poaching policies, however, other stakeholders such as the local population close to poaching areas can have a large impact on enforcing anti-poaching measures (Viollaz et al. 2021, 1384). Especially leaders of local populations can have an influence on the enforcement, and Youth Unions with ties to the government play a part in implementing anti-poaching policies by disseminating a conservationist perspective (Viollaz et al. 2021, 1384). Additionally, rangers who survey protected areas work together with the government when catching illegal poachers (Jessica B. Rizzolo et al. 2021, 6). On a local level, Vietnamese government works cooperates with the local communities by privatizing natural areas in an effort to minimize illegal poaching (Van Song 2008, 160).

4.2.3. Legal Framework

(6) Trade Bans

Vietnam has a trade ban on the species listed in the various protective lists, such as the CITES Appendices, the IUCN Red List, and national list of protected species (Thu Thuy Pham et al. 2021, 279:46). In order to trade a wildlife species listed in the previously mentioned lists, permits and certifications are necessary (Thu Thuy Pham et al. 2021, 279:6). Despite these exceptions, Vietnam implements an import ban of protected wildlife species by emphasizing the control measures by multiple government departments (Thu Thuy Pham et al. 2021, 279:8). In addition, there are trade policies in place such as the Foreign Trade Management Law monitored by the Ministry of Industry and Trade (Thi Thuy Pham et al. 2021, 2, 3). Not only does Vietnam implement trade bans, but also advertisements bans for illegally trafficked wildlife (Thi Thuy Pham et al. 2021, 3) and with the recent Covid-19 pandemic, the Vietnamese government has additionally established a ban on the consumption on wildlife (M.-H. Nguyen and Jones 2022, 4).

Furthermore, Vietnam has established several lists of species in need of protection outlined in several decrees (Thu Thuy Pham et al. 2021, 279:47). These decrees outline endangered species facing extinction, similar to the CITES Appendices and the IUCN Red List, but additionally outline species which hold different forms of value for science, the environment or cultural purposes (Thu Thuy Pham et al. 2021, 279:47). These national lists of protected species are continuously adapted to include added species as necessitated, however, the to be protected species are not extensively incorporated (Thu Thuy Pham et al. 2021, 279:46, 47).

Vietnam's CITES office is in charge of surveying the trade of wildlife, especially the illegally trafficked wildlife, therefore, the office can issue permits for trading wildlife (Van Song 2008, 153). Nevertheless, all species listed in CITES Appendices and the IUCN Red List are subjected to a trade ban (Thu Thuy Pham et al. 2021, 279:46).

Several ministry departments work together in cooperation to monitor the trade of wildlife in order to identify illegally trafficked wildlife (Thu Thuy Pham et al. 2021, 279:51). Not only do the ministry departments survey the trade, but the police as well as the border control enforce the trade bans of protected species (Thu Thuy Pham et al. 2021, 279:50, 51). Additionally to the state departments and ministries taking part in enforcing the trade ban on protected wildlife species, the Supreme People's Court and People's Committees of provinces take part in these enforcement measures (Thu Thuy Pham et al. 2021, 279:9).

There is an attempt at international cross border cooperation, however, the cooperation between agencies proves itself to be difficult due to lack of data sharing and lack of authority of legal enforcement (Thu Thuy Pham et al. 2021, 279:51). Nevertheless, Vietnam has increased the cross-border cooperation with international organizations, especially in light of the recent Covid-19 pandemic (Thi Thuy Pham et al. 2021, 1, 3).

(7) Wildlife Protection Law

Compared to China, Vietnam does not have a specific wildlife protection law, but rather multiple laws in place protecting the wildlife (D. H. Nguyen and Dinh 2020, 8). A law that can be seen as the wildlife protection law is the Law on Forest Protection and Development as well as the Fisheries and Biodiversity Act, which have been implemented in 2004 and 2008 respectively (D. H. Nguyen and Dinh 2020, 8). However, as there is no explicit WPL similar to the explicitly outlined and implemented WPL of China, these policies and additional policies will be discussed in the context of criteria (8) legal policies. The sub-criteria following the sub-criterion 'Existence in target country' of the first evaluative list will hence not be discussed further for the criteria (7) WPL for Vietnam. Therefore, for the second evaluative list which will be discussed in the following section, this criterion (7) will not be considered and evaluated for Vietnam, but only for China.

(8) Legal Policies

To protect the wildlife, the Vietnamese government has implemented various frameworks to protect the environment and enforce the legislation towards curbing illegal wildlife trade (Van Song 2008, 148). As mentioned in the previous criteria, the main legal polices are the Law on Forest Protection and Development and the Fisheries and Biodiversity Act (D. H. Nguyen and Dinh 2020, 8). In addition, in 2018, Vietnam has updated and adjusted its Penal Code regarding illegal wildlife trafficking (Vu 2023, 4). As a result, not complying with the established regulations and policies, illegal wildlife traffickers face punishments up to twelve or fifteen years when caught (Jiao, Yeophantong, and Lee 2021, 5). Furthermore, there are additional policies and decrees in place which relate to protect and manage wildlife in Vietnam (D. H. Nguyen and Dinh 2020, 8). These decrees encompass temporary regulations on hunting wildlife, define a record of protected wildlife species, outline the management of endangered wildlife, and define norms (D. H. Nguyen and Dinh 2020, 8).

Vietnam has an national list of protected species additionally to the CITES Appendices (Luong 2022, 9). Vietnam considers in its policies the ICUN Red List (Luong 2022, 10). The national list of protected species maintained by Vietnam is regularly worked over by giving

species an updated status of protection according to the necessity (Thu Thuy Pham et al. 2021, 279:39). Additionally, there are different decrees where each decree specifies the protection of species and outlines the multitudes of species which are encompassed (D. H. Nguyen and Dinh 2020, 8).

As Vietnam is a part of CITES since 1994 (Luong 2022, 2), the CITES office Vietnam takes part in enforcing and recommending legal policies (Vu 2023, 12). The regulations and recommendations imposed by the organization CITES have been incorporated into Vietnam's policies for protecting endangered wildlife (D. H. Nguyen and Dinh 2020, 8). However, there are inconsistencies with the CITES listed species in need to be protected and the species protected under Vietnam's legal policy frameworks (Thu Thuy Pham et al. 2022, 504). Nevertheless, International CITES parties have an interest in Vietnams legal policy framework and approve of the new Penal Code which has been implemented in 2018 (Vu 2023, 4).

Several stakeholders take part in forming and enforcing legal policies, such as the Vietnamese CITES office and Committees (Thu Thuy Pham et al. 2021, 279:15–18). As the government is one of the main enforcer of legal policies in Vietnam, the protection laws additionally require multiple ministries and department to collaborate (Thu Thuy Pham et al. 2022, 501). Therefore, the Health department of the state, the Natural Resource and Environment department as well as the Agriculture and Rural Development department of state all take part in shaping and enforcing the policies in place to protect wildlife and curb wildlife trafficking (Thu Thuy Pham et al. 2022, 501). Furthermore, not only are different ministries involved in enforcing the legal policies concerning wildlife, but veterinary agencies are involved as well (Thu Thuy Pham et al. 2022, 503). Additionally, wildlife farmers are involved in adhering to and following along the legal policies regarding wildlife protection in order to maintain wildlife farms in accordance to the law (Thu Thuy Pham et al. 2022, 505).

Vietnam has had cooperative missions with China and Laos with the focus on illegal wildlife trafficking in order to improve the multilateral relationship between the countries and build collaborative capacities for enforcement measures (Jiao, Yeophantong, and Lee 2021, 9). Furthermore, Vietnam maintains several bilateral and multilateral relations as well as relations with international organizations (Vu 2023, 4).

4.3. China, Table 2

4.3.1. (1) Educational Campaigns

Knowledge and Awareness

Starting with the KPI of knowledge and awareness, there are several sub-success factors considered. Firstly, there have been studies conducted which tracked the behavior and knowledge of the issue on illegal wildlife trafficking (Z. Zhang et al. 2022, 3). Observational studies in China show that raising awareness through education and educational advertisements in public spaces can influence customers to refrain from buying illegally trafficked wildlife products due to a better understanding of the issues involved with illegally trafficked wildlife (L. Xiao et al. 2021, R171). A main goal of educational campaigns is to raise awareness of which species are protected and illegally trafficked (L. Zhang, Hua, and Sun 2008, 1514). In terms of obtaining a perception change in consumers of illegally trafficked wildlife through education, the campaigns consider the amount consumed by the consumers as well, as heavy wildlife consumers are not as impacted by educational campaigns as lighter consumers (L. Zhang, Hua, and Sun 2008, 1513).

Reduction in Demand

The reach of educational campaigns can vary, however, through the use of various channels and locations, surveys are conducted on the target groups and the intended outcomes are evaluated (Clayton et al. 2018, 121). WildAid has established public education and awareness raising campaigns in China, and through market research on their part, have found a reduction in trade volume and therefore demand for endangered species, particularly sharks and their fins, indicating for successful campaign and reduction of demand for endangered wildlife (Ayling 2015, 7).

Campaign Reach

Several domestic as well as international NGOs are utilizing the media channels as a way to distribute information about wildlife trafficking, such, social media and online news are a widely used tool (Z. Song et al. 2021, 9). The educational campaigns itself are furthermore distributed through multiple channels such as educational signs in different institutions, having conversations with knowledgeable individuals in educational spaces such as museums, or interactive panels (Clayton et al. 2018, 122, 123). These signs and panels are distributed in

areas of high traffic, especially in institutions whose focus is to educate the public, that, the public can easily interact with the campaigns (Clayton et al. 2018, 123).

Long-term Impact

Regarding the KPI long-term impact, there have been studies which have repeated the conducted surveys a couple of years later in order to measure the behavior change and awareness towards the issue of illegal wildlife trafficking (Z. Zhang et al. 2022, 2). To measure the long-term impact, studies have repeated their surveys in the following years and found an increased interest in the topic of wildlife conservation (Clayton et al. 2018, 126). In order to have a long-term impact through educational campaigns, studies implore for designing interactive educational campaigns with the knowledge of previous campaigns (Clayton et al. 2018, 127).

Partnerships and Collaboration

Educational campaigns have an interest in enlisting the help of other stakeholders to further the reach of a campaign and to have a bigger impact on the target group, therefore, oftentimes educational campaigns would collaborate with stakeholders such as schools and zoos to disseminate information (Clayton et al. 2018, 120). Additionally, not only do national stakeholders have an interest in collaborating with educational campaigns, but also international organizations provide monetary support to enable these educational campaigns (Clayton et al. 2018, 127). One way to enhance the educational campaigns is to engage famous people from various fields for their cause and collaborate with them (Song et al. 2021, 9, 10). The engagement of celebrities can enhance the campaigns, as they have the ability to freely express themselves and serve as an informational ambassador (Z. Song et al. 2021, 10). Especially in China, celebrities have the ability to advocate for certain causes more freely (Z. Song et al. 2021, 10). Moreover, the Chinese government has established and directed educational campaigns to raise awareness to the issue of illegal wildlife trafficking (Feng et al. 2021, 12). Nevertheless, by conducting prior surveys, campaigns are designed more impactful and future campaigns can be enhanced with the insights gained from previous campaigns (Ayling 2015, 7). TRAFFIC as well collaborates with experts on different topics in order to create workshops for other organizations to incorporate in their educational campaigns, increasing the success of a campaign and enhancing them overall (Ayling 2015, 8)

Legal Enforcement

China has implemented the ecological civilization program in order to further support education on nature and wildlife, promoting and furthering educational campaigns (Z. Song et al. 2021, 9)

4.3.2. (2) Social Marketing Campaigns

Knowledge and Awareness

Designing a social marketing campaign requires a certain amount of pre-campaign assessment of the market and the consumer segment in order to achieve the highest success with the campaign (Greenfield and Veríssimo 2019, 44). An Ivory campaign launched by WWF China has found an increase in awareness of conservation efforts comparing sentiments before and after the campaign has run its course (Collier and Kirkpatrick 2020, xxiv). However, organizations rarely have the time and funds to conduct an in depth market research to best optimize the campaigns, which can lead to a limited success of a campaign (Greenfield and Veríssimo 2019, 44). According to a study by (Moorhouse et al. 2020), consumers who have already been exposed to social marketing campaigns advocating to reduce illegal wildlife trafficking, are impacted in their perception. Repeated social marketing campaigns raising awareness of the issue thus have a positive effect on the perception of illegally trafficked wildlife and its consumption (Moorhouse et al. 2020, 6). Additionally, through observational studies, campaigns have determined that the awareness level regarding illegal poaching and trade have increased (Margulies, Wong, and Duffy 2019, 217).

Reduction in Demand

Throughout studies, it has been shown that consumers responded positively towards social marketing campaigns and would minimize their consumption of illegally trafficked wildlife, especially if the consumers have been exposed to previous awareness raising campaigns (Moorhouse et al. 2020, 6). A campaign addressing ivory poaching by the NGO WildAid was successful in reducing the demand for ivory with their campaign (Margulies, Wong, and Duffy 2019, 217). Two previously launched campaigns have had a positive impact on the demand of ivory products, as the demand and sale of ivory items have lessened (Margulies, Wong, and Duffy 2019, 218).

Campaign Reach

Designing a social market campaign requires the organization which launches the campaign to carefully adjust their campaign to the target audience in order to achieve a higher success (Greenfield and Veríssimo 2019, 46). Therefore, assessing the target group beforehand and identifying insights and beliefs related to them can be beneficial as adjusting the campaign message to the target group can consequently lead to a higher success of the campaign (Greenfield and Veríssimo 2019, 45). This adapted messaging can be seen in China with campaigns which appeal towards the target groups beliefs and culture (Greenfield and Veríssimo 2019, 45). Therefore, the importance of adjusting the campaign towards the cultural and social beliefs of Chinese people is important, as it can impact the outcome of the campaign (Moorhouse et al. 2020, 8), (Greenfield and Veríssimo 2019, 50). Social marketing campaigns can be introduced to the public via different marketing channels, and a commonly used distribution channel is the media channel due to its far reach and easy accessibility, as well as the publics ability to interact with the campaign (Moorhouse et al. 2020, 4). TV, social media and online as well as offline newspapers are commonly utilized distribution channels to advocate for the campaigns goals and reach the broad Chinese public easily (Greenfield and Veríssimo 2019, 48).

Long-term Impact

As for the long-term impact, through comparative surveys, it can be said that the awareness levels have risen in the targeted consumer group (Margulies, Wong, and Duffy 2019, 217). In comparison of two surveys conducted in a time span of two years apart, it has been made clear that the previously mentioned WildAid campaign was successful in raising awareness of the issue, as more of the population become aware of the issue of illegal wildlife trafficking and adjust their attitude (Margulies, Wong, and Duffy 2019, 217). Additionally, social marketing campaigns adjust their message over time towards the Chinese language particularities (Greenfield and Veríssimo 2019, 45). Adjusting message delivery techniques and message wording according to the impact of the campaign and what Chinese target consumers react to increases the long-term impact (Greenfield and Veríssimo 2019, 45).

Partnerships and Collaboration

In order to manage and analyze the social marketing campaigns, stakeholders such as qualified market research businesses take part in the campaigns to raise their success and extend the reach (Moorhouse et al. 2020, 4). Additionally, a widely used tool is the

cooperation and collaboration of famous Chinese celebrities and business people who are a public figure and known in China, thus enhancing the campaign and increase the success (Greenfield and Veríssimo 2019, 48). By using national celebrities of all entertainment sectors, the campaigns are enhanced and increase their likelihood of having a successful impact on the targeted group and furthermore on the issue of illegal wildlife trafficking (Margulies, Wong, and Duffy 2019, 217).

Legal Enforcement

Social marketing campaigns have been successful in leading to an increased enforcement against illegal wildlife trafficking in China (Wallen and Daut 2018, 64). These types of campaigns often intent for the desired effect to not only raise the awareness of the people about illegal wildlife trafficking, but also motivate the government to implement enforcement changes, such as was the case where continuous social marketing campaigns have had an influence in the creation of banning ivory trade (Wallen and Daut 2018, 64). A campaign targeting the reduction of ivory poaching and trafficking in China has had success in leading the Chinese government to implement a national ban on ivory sales (Margulies, Wong, and Duffy 2019, 217).

4.3.3. (3) Behavioral Change Campaigns

Behavior and Attitude Change

Organizations launching behavior change campaigns use research to analyze the market before launching the campaign in order to reach more people and have an impact on the target groups (Greenfield and Veríssimo 2019, 50). Therefore, the analysis of the previous behavior change campaigns can gives insights on which messaging strategies work better than others for later campaigns (Greenfield and Veríssimo 2019, 52). However, with the post campaign assessment it is difficult to attribute the observed impacts to the campaign as other ongoing conservation efforts might influence the results of the assessment (Veríssimo and Wan 2019, 630). Especially the younger generation portrays a different behavior towards illegally trafficked wildlife and its consumption (Rock and MacMillan 2022, 106). It has been shown through observational studies that the younger population has grown up with influences focused on behavior change and sustainable wildlife trade (Rock and MacMillan 2022, 106). Accordingly, there is a difference in the attitude between the generations (Rock and MacMillan 2022, 106).

Reduction in Demand

Gaging the reduction in demand requires consumer surveys and studies have found differentiating results on the demand of people for wildlife products (Rock and MacMillan 2022, 106). However, the observed changes in demand can be attributed in part to the result of the multiple running campaigns, speaking for a success of behavior change campaigns in China (Rock and MacMillan 2022, 106). Furthermore, to elicit a reduction in demand, the use of substitution is a viable option, as shown through a survey, respondents were not averse towards using sustainable substitutes available in the market of similar quality (Rock and MacMillan 2022, 107).

Campaign Reach

While designing a campaign, one important sub-factor needs to be considered when assessing the campaign's reach. In order to reach the most amount of people, campaigns launched by WildAid and IFAW are adjusted towards the Chinese target audience and their cultural peculiarities, as there are differences in targeting Chinese consumers and western consumers (Margulies, Wong, and Duffy 2019, 217). Not considering these sub-factors can diminish the campaign reach as targeted people might not feel addressed as thoroughly as they could be (Margulies, Wong, and Duffy 2019, 217). In order to disseminate a behavior change campaign, the use of social media as a channel is important, especially for the younger generation which has grown up in a digital world and uses social media to interact (Rock and MacMillan 2022, 108). Additionally, other distribution channels are used, such as advertisements in public spaces as well as online advertisements, awareness raising and behavior influencing speeches at events pertaining towards the sale of wildlife which has been illegally trafficked and public key figures advocating for the cause of the behavior campaign (Margulies, Wong, and Duffy 2019, 217). These public key figures used in behavior change campaigns range from national public figures, such as basketball players and actors, until internationally known key figures such as the British royal family (Margulies, Wong, and Duffy 2019, 217). Through the use of public figures participating in a behavior change campaign, the media covers their participation in the campaigns due to their fame and reach, further disseminating campaigns (Z. Song et al. 2021, 10).

Long-term Impact

As mentioned within the previous KPI behavior and attitude change, the long-term impact can be deemed as successful, as with the growing influence of multiple campaigns geared towards

changing the mindset of people, the younger generation has been impacted positively as they are more conscious of the downsides and risk of illegally trafficked wildlife products (Rock and MacMillan 2022, 106). Furthermore, to have a long-term impact on the target group of the campaigns, the campaign designers continuously adjust the campaign as they first-hand experience which messaging tools and communication resonates with the target group (Greenfield and Veríssimo 2019, 45). However, the assessment of the long-term impact can be influenced by ongoing conservation efforts, as it is difficult to defer a behavior change solely to the campaign (Veríssimo and Wan 2019, 630). Not just during campaigns do organizations assess the impact and reach, but additionally, analyses are conducted as follow ups to gain insights of the impact of the behavior change campaigns (Greenfield and Veríssimo 2019, 51).

Partnerships and Collaboration

Creators of behavior reduction campaigns tend to be NGO's, therefore these organizations collaborate with local people who can have an impact on the target group such as publicly known figures (Margulies, Wong, and Duffy 2019, 217). A campaign launched by WildAid has incorporated famous athletes, actors and musicians in their campaign to further their reach and enhance the campaign to make it more appealing towards the target group (Margulies, Wong, and Duffy 2019, 217). According to the WildAid institution, the collaboration with famous Chinese people has enhanced the campaign and led to successfully raise the attention of the public towards the issue of illegal wildlife trafficking, specifically poaching and ivory trade (Margulies, Wong, and Duffy 2019, 217).

Legal Enforcement

Behavior change campaigns launched by the NGO WildAid and the International Fund for Animal Welfare (IFAW) have registered changes in the legal enforcement in the wake of their campaigns (Margulies, Wong, and Duffy 2019, 217). One major legislative change in wake of the campaigns was, as mentioned previously in China, social marketing campaigns (2), point 2.6 legal enforcement, the implementation of an ivory sales ban (Margulies, Wong, and Duffy 2019, 217).

4.3.4. (4) Conservation Policy

Ecological Indicators

To effectively establish sustainable conservation strategies, the ecological indicators need to be assessed. Therefore, the government is monitoring the wildlife population and their

habitats in order to adeptly providing support for the wildlife population by trying to alleviate the pressure on the wild population with captive breeding and wildlife farms (Wang et al. 2019, 427). This measure seems to be positively received, as wildlife populations are gradually restored (Wang et al. 2019, 427). Additionally, the Chinese government has declared several wildlife habitats as protected areas, promoting a positive change for wildlife (Wang et al. 2019, 428). As part of the conservation policies and ecological indicators, providing substitutes for illegally trafficked wildlife can aid in alleviating unsustainable management of a wildlife species (Rock and MacMillan 2022, 99). In order to provide substitutes, the Chinese government has allowed for wildlife farming to meet the high demand for wildlife products but also to protect the wildlife (Jiao and Lee 2021, 3).

Reduction in Trade Volume

As part of China's conservation strategy, the reduction in trade volume is one of the KPIs. The monitoring of the market and trade volume as well as monitoring any changes in the availability of wildlife products are important sub-factors contributing to the success of the strategy. The Chinese government is using economic wildlife farming to reduce the illegal trafficking of protected wildlife species, by making wildlife more accessible in a controlled environment and therefore appease the high demand of consumers, but at the same time reducing the illegal hunting and trafficking of wildlife (Jiao and Lee 2021, 3). On the other hand, this ready supply of farmed wildlife has a negative impact as demand for wildlife products surges and provides opportunities for illegal traffickers to flourish (Jiao and Lee 2021, 4). Despite this downside, the market and trade of wildlife is carefully surveilled and licenses of farmed wildlife products in the market are reviewed and inspected (Wang et al. 2019, 430).

Partnerships and Collaboration

Part of the conservation strategy is the collaboration between the government, NGOs, and international organizations (Wang et al. 2019, 425, 426). China is collaborating with international organizations such as CITES due to its membership, and recognizes and implements the conservation strategies proposed by these organizations (Wang et al. 2019, 426). Furthermore, the local communities are incorporated in the conservation strategies by building cooperative capacity initiatives, as they benefit economically and shift the illegal trafficking and poaching behavior to more sustainable behavior, for example with the practice of wildlife farming (Wang et al. 2019, 426). This economic benefit for the local community

mainly stems from compensation efforts due to conservation policies negatively affecting the local economic stability (Yu 2010, 122). On one hand, the locals cooperate with the conservation policies, however, they are less supportive of conservation policies as when the given funds for conservation do not cover for the monetary deficits (Yu 2010, 122).

Legal Enforcement

One issue which occurs especially with the wildlife farming aspect of the conservation strategy, is that the enforcement and consequent prosecution proves itself as difficult due to the administrative government having difficulties in distinguishing illegally trafficked wildlife from farmed wildlife (Jiao and Lee 2021, 5). The marking scheme in place mitigating this issue is lacking in depth coverage of all wildlife species in the scheme, therefore, enforcement remains limited (Jiao and Lee 2021, 4). Based on the evolving and dynamic situation, the legal enforcement has to adapt the regulations continuously and revise existing laws (Wang et al. 2019, 428). Due to the laws and enforcement lacking definite thresholds, the enforcement and conviction of criminals trading in illegally trafficked wildlife is difficult and not as enforced as it should be, giving criminals opportunities to continue with the wildlife trafficking business, especially with less known species which are nonetheless threatened from extinction (Yu 2010, 121).

4.3.5. (5) Anti-poaching

Ecological Indicators

To assess the ecological indicators, several subfactors can be investigated. In order to monitor and assess the wildlife population as well as their habitat, surveys are carried out to get an overview of the state of affairs regarding wildlife populations (L. Zhang, Hua, and Sun 2008, 1500). The monitoring of the wildlife population and their habitats gives valuable insights towards the existing threats in form of poaching and changes in the habitats and population are easier to identify (L. Zhang, Hua, and Sun 2008, 1497). Popular species which are illegally poached are under monitoring in China, therefore the authorities notice changes in the wildlife population (Challender and MacMillan 2014, 485). Especially the popular pangolins are decreasing in population numbers due to their intensive poaching and hunting (Challender and MacMillan 2014, 485) Therefore, the protected areas are applicable to the anti-poaching strategy as well, as by enforcing the established protected areas of wildlife habitats, poachers are dissuaded from illegally hunting wildlife (Feng, Liao, and Hu 2019, 8). One ecological indicator is the provision of substitutes for a threatened wildlife species, as the

provision of a wildly accepted substitute can lessen the strain on threatened species, such as species from a wildlife farm (Rock and MacMillan 2022, 99).

Reduction in Poaching Incidents

Through monitoring poaching, it has been found that poaching incidents tend to occur in the more rural area of China, where the local communities are dependent on poaching to be financially secure (L. Zhang, Hua, and Sun 2008, 1495). With increased data collection and monitoring of poaching incidents, there has been an increase in poaching incidents (Collier and Kirkpatrick 2020, xlix). However, it is inconclusive if the rise in poaching incidents is due to a rise in criminal activity or stems from increased data availability (Collier and Kirkpatrick 2020, xlix).

Reduction in Wildlife Product Seizures

Monitoring the trade data and seizure data show some discrepancies, as the trade data indicates a reduction in illegal wildlife trafficking, however, contrary to the trade data, seizure data has not diminished and indicates a flourishing illegal trafficking despite efforts to diminish it (L. Zhang, Hua, and Sun 2008, 1500). As it is, China is emerging as a trafficking route, and there is an increase in illegal wildlife product seizures at the border (Collier and Kirkpatrick 2020, xiii). Despite this seemingly increase of seizures in 2019, there are more data sources available compared to the previous years (Collier and Kirkpatrick 2020, xiii). Therefore, a distinct increase in seizures cannot be determined.

Partnerships and Collaboration

Surveilling anti-poaching efforts and minimizing the subsequent trade of poached wildlife requires multiple organizations to work together with the Chinese government, especially within cross border collaboration (L. Zhang, Hua, and Sun 2008, 1495). Within this collaboration there are efforts made for more capacity building initiatives by developing a cooperative database and improving dialogue between stakeholders (L. Zhang, Hua, and Sun 2008, 1495). An important collaborative factor is the involvement of the public in reporting illegal poaching incidents, however, there seems to be a lack and reluctance of the publics participation in reporting these illegal activities (Du, Fathollahi-Fard, and Wong 2023, 8, 9).

Legal Enforcement

In order to enforce the anti-poaching policies and arrest poachers, the Chinese authorities have to have definite proof of poaching incidents (He, Chen, and Zhang 2015, 589, 590).

Hence, there is a difficulty in prosecuting and convicting poachers resulting in low conviction rates, which additionally signals and leads to poachers risking illegally hunting wildlife instead of disrupting criminal networks (He, Chen, and Zhang 2015, 590). Nevertheless, there have been convictions and penalties enforced by the government (Li 2007, 79). However, these enforcements are limited at best, as the concerning laws are vaguely defined and contradict each other (Li 2007, 79, 87). Additionally, the laws regarding illegal poaching have been adjusted, especially due to the Covid-19 pandemic, and the poaching ban for consumption augments previous enforcement policies (Huang et al. 2021, 666).

4.3.6. (6) Trade Bans

Ecological Indicators

Having a trade ban can have a positive effect on the wildlife population as with reduced trade, the strain on wildlife can be lessened so that wildlife can regenerate to healthy numbers again (L. Xiao et al. 2021, R168). However, the assessment of wildlife populations and their monitoring as well is challenging as this type of assessment needs constant updating which seems to be lagging (L. Xiao et al. 2021, R168). By instituting wildlife breeding farms, China can change the wildlife populations of endangered species, such as tigers, positively (A. Y. Song and Yao 2022, 161). Though, breeding farms are criticized by other international stakeholders as breeding farms facilitate higher demand, therefore driving up illegal hunting despite a national trade ban (A. Y. Song and Yao 2022, 161). Additionally, illegally hunted wildlife can be substituted by wildlife from breeding facilities, nevertheless this substitution is viewed critically (A. Y. Song and Yao 2022, 161, 162). Despite this, China has additionally instituted that wildlife from breeding facilities are released back into the wild to protect and positively influence the wildlife population (A. Y. Song and Yao 2022, 162).

Reduction in Trade Volume

A resulting change in trade volume of a species which is subjected to a trade ban can reduce the trade volume of that specific species (Nataraajan 2020, 1680). However, as successful as this measure is, an issue can arise which causes a negative impact on another species, as the falling demand and trade volume may increase the trade volume of another threatened species (Nataraajan 2020, 1680). By monitoring the trade data, it has been shown that the trade and markets along the border of China and Vietnam are flourishing due to the proximity of the countries (L. Zhang, Hua, and Sun 2008, 1499). Nevertheless, China is monitoring the trade and with the licensing system in place, the trade is carefully monitored in order to restrict

illegal trafficking (Jiao and Lee 2021, 3). Furthermore, to monitor the market and wildlife sold, the government has instituted the program "Special Marking for Wildlife Trade and Utilization" within which the sold wildlife is specifically marked in order to distinguish it from illegally sold and protected wildlife (Jiao and Lee 2021, 3). However, this program is not fully developed yet, as not every vendor is encompassed nationwide, despite its launch 20 years ago (Jiao and Lee 2021, 3). With the institution of trade bans, the availability of wildlife products has changed slowly, for example in the case of ivory products, where the Chinese government firstly supported the cultural praxis of ivory carving (A. Y. Song and Yao 2022, 164). However, this support changed, as there has been a complete ban on every ivory product, reducing the availability of ivory products on the market (A. Y. Song and Yao 2022, 164).

Reduction in Wildlife Product Seizures

The monitoring of wildlife product seizures by the government and customs show that there is a seemingly decrease in wildlife product seizures according to the data collected by customs (L. Zhang, Hua, and Sun 2008, 1500). However, contradicting these data points, the government collected data does not identify such a decrease (L. Zhang, Hua, and Sun 2008, 1500). Judging by the governments data of seized wildlife products, illegal trafficking is conducted through black markets where customs do not reach, therefore demonstrating the contrasting data (L. Zhang, Hua, and Sun 2008, 1500).

Price and Availability

There have been some changes in the availability of certain wildlife products with the introduction of trade bans. One positive aspect is the reduction in availability of ivory products after introducing the ban on ivory products (A. Y. Song and Yao 2022, 153). But there has also been a much less positive aspect, specifically the lifting of the ban on the use of tiger products (A. Y. Song and Yao 2022, 153). Yet, the Chinese government has rescinded the dissolution of the ban on tiger product due to heavy international backlash (A. Y. Song and Yao 2022, 153). The bans have driven up demand for ivory and pangolin products for example, which in turn invoked an increase in price for products from both these species (Challender and MacMillan 2014, 487). Furthermore, there have been studies investigating the market prior and after trade bans in connection to the Covid-19 pandemic (X. Xiao et al. 2021, 3) Due to the pandemic tighter laws regarding the wildlife trade have been introduced (X. Xiao et al. 2021, 3). To reduce the sale of illegally traded wildlife, farmed wildlife is a

substitution, however, China has regulations on which wildlife species is allowed to be captive bred and which are illegal to farm (X. Xiao et al. 2021, 3). Additionally, the substitution with farmed wildlife is not quite meeting the expectations of the public, as there is a public inclination for wild sourced wildlife (Jiao and Lee 2021, 3). In order to monitor the availability of wildlife products, the Chinese government has instituted a certification process of traded products, where wildlife products have to be labelled by a registered farm, in order to differentiate illegally hunted and traded products from products procured by official breeding farms (A. Y. Song and Yao 2022, 161). Traded wildlife sold in markets are required to publicly show the necessary certification (X. Xiao et al. 2021, 2).

Partnerships and Collaboration

To see through a trade ban and have it being enforced across China, multiple stakeholders need to interact and collaborate on the issue, therefore, different departments cooperate to enforce trade bans (L. Xiao et al. 2021, R170). Especially the State Forestry Administration is in charge of enforcing the existing laws and works closely with the China National Management Authority (CNMA) as well as the Forestry Bureau to enforce the CITES regulated trade bans (L. Zhang, Hua, and Sun 2008, 1502). Furthermore, to get a cohesive collaboration between the different government departments and agencies, departments cooperate with each other, sharing data and information between them as well as build up capacities for new initiates to regulate trade (L. Zhang, Hua, and Sun 2008, 1502).

Legal Enforcement

An issue which occurs with the legal enforcement is the slow upkeep with maintaining an up to date list of protected species and the consequent implementation of having the protected species put under trade bans (L. Xiao et al. 2021, R168). In consequence, the number of arrests have been rising, additionally due to the age of online business, where hunters can easily sell illegally hunted wildlife and eventually get caught (Yu 2010, 120). The growing online business makes it difficult to disrupt criminal networks, as the networks are able to reestablish themselves quickly after being detained by the Chinese government (Yu 2010, 120). Convicted and prosecuted illegal traders of wildlife are punished severely to spend up to 15 years in jail and have to pay monetary penalties for their crimes (X. Xiao et al. 2021, 2). Nevertheless, the laws regarding the trade of wildlife are continuously updated as well as the laws pertaining to penalizing illegal trade (X. Xiao et al. 2021, 2).

4.3.7. (7) Wildlife Protection Law

Ecological Indicators

As the WPL focuses on protecting the species and maintaining up to date records of species in need of protection, the upkeep and assessment of wildlife populations is a key ecologic indicator to measure the success of the WPL. However, the assessment of wildlife populations and their habitat is a work in progress which seems to be slow going as China struggles with updating the available information and institute current species in need of protection into the available protective lists (L. Xiao et al. 2021, R168). One implementation China has fostered is the act of wildlife farming, which promotes changes in wildlife population due to state promoted wildlife farms (L. Xiao et al. 2021, R169). However, wildlife farming is not necessarily an implementation brought about due to the intention to protect wildlife from being illegally trafficked but rather to be a monetary investment for rural regions by providing wildlife substitutes (L. Xiao et al. 2021, R169). Even so, wildlife farming does increase the wildlife population of endangered wildlife promoting a positive change in wildlife population, it conjointly leads to heightened illegal poaching and trafficking to satisfy increased demand (L. Xiao et al. 2021, R169). Furthermore, protected areas contribute to changes in wildlife habitats as well (Feng, Liao, and Hu 2019, 8). Due to monitoring protected areas of wildlife and their major habitats, illegally hunting of wildlife can be reduced (Feng, Liao, and Hu 2019, 8).

Reduction in Wildlife Product Seizures

As wildlife farming is an accepted tool under the WPL, this measure is reducing the number of wildlife seizures (Wang et al. 2019, 428). Due to wildlife farming covering a large part of the demand for wildlife products, illegal trafficking and the subsequent seizures of illegal wildlife products are minimized (Wang et al. 2019, 428). In case of seized wildlife, the WPL stipulates different ways of handling these seizures, such as auctions, destruction, conserving, or managing of the wildlife products (Wang et al. 2019, 431). Especially trafficked wildlife across China's borders requires the seized wildlife to be returned to the country of origin, nationally trafficked wildlife however may, additionally to the previously mentioned handling ways, be used as requisites for educational purposes (Wang et al. 2019, 431).

Partnerships and Collaboration

To promote the WPL and ensure a sustainable handling of wildlife, the Chinese government is working closely with multiple agencies, especially international ones such as CITES and the

convention on biological diversity (CBD) (L. Xiao et al. 2021, R170). Despite the ongoing collaboration and partnerships in enforcing the WPL, there seems to be a lack of cross-sector cooperation as the enforcement and managing of the WPL is spread across multiple departments, resulting in the need of open communication between departments, which is not met as thoroughly as needed (L. Xiao et al. 2021, R169). Nevertheless, multiple departments such as the National Forestry and Grassland Administration (NFGA) and the Ministry of Agriculture and Rural Affairs (MARA) collaborate and share information between each other as to which species is in need of protection and has to be updated into the national protective lists or can be listed in the list which allows for usage in a predetermined matter (Jiao and Lee 2021, 2). This collaboration seems to have a positive impact to reduce illegal wildlife trafficking, however, both departments do not entirely cooperate with CITES, as some protected species listed under CITES have been cleared for economic trade (Jiao and Lee 2021, 2). Furthermore, with the revision of the WPL the Chinese government aims for more collaboration from NGO's, for example with outsourcing the licensing scheme (Wang et al. 2019, 430). This can improve the data sharing between the departments and relevant organizations, while additionally building more capacities for the future, and promoting positive partnerships and reliable collaborations (Wang et al. 2019, 430).

Legal Enforcement

Enforcing the WPL is a priority to the Chinese government as they have instituted the different protection lists and a licensing scheme regarding protected species (L. Xiao et al. 2021, R168). However, this scheme lacks the necessary enforcement and prosecution due to technicality issues (L. Xiao et al. 2021, R168). These technicality issues become especially relevant during enforcing prosecution, convictions, and penalties, as the legal departments have trouble in distinguishing legal and illegal trade of wildlife (L. Xiao et al. 2021, R169). Due to these technicalities of the formulation of the WPL stipulations regarding enforcement, the convictions are limited and therefore criminal networks are not necessarily disrupted (Li 2007, 87). Furthermore, the WPL has gone under some revisions first in 2016 (Wang et al. 2019, 428) and then again recently in 2021, thus keeping up with the trends of species in need of protection and contributing to positively shaping the legal enforcement in favor of protected species (Jiao and Lee 2021, 2).

4.3.8. (8) Legal Policy Framework

Ecological Indicators

As for investigating the ecological impact, the Chinese government, specifically the State Forestry Administration is monitoring and assessing the wildlife population and their habitats to observe changes in the wildlife population and their habitat through surveys (Feng, Liao, and Hu 2019, 5). These assessment are valuable insights of information pertaining the wildlife and through the gathered data, the legal system can address occurring issues more precisely and adjust the conservation efforts (Feng, Liao, and Hu 2019, 5). To reduce illegal wildlife trafficking, the substitution of trafficked wildlife with a viable option which does not threaten protected species nor leads to another species being threatened can aid in combatting illegal wildlife trafficking as it shifts consumer demand away from threatened species (Rock and MacMillan 2022, 99).

Reduction in Trade Volume

To reduce the trade volume, it is important to understand the market. Therefore, market monitoring is a valuable tool in assessing the market and how the population views illegal trafficking of wildlife, the subsequent sales and the importance of protecting wildlife (Feng, Liao, and Hu 2019, 7, 8). By monitoring the market and trade and conducting surveys throughout a span of six years, it has been shown that there has been a slight decrease in the consumption of wildlife, indicating a higher conscience in wildlife protection and illegal trafficking awareness in China (Feng, Liao, and Hu 2019, 8). The reduced demand can provoke a reduced illegal trade volume as the necessity of availability for wildlife products decreased and as demand and illegal poaching of wildlife are connected to an extent, they can impact each other (Feng, Liao, and Hu 2019, 8).

Reduction in Wildlife Product Seizure

Investigating the reduction in wildlife product seizure, the Chinese government is monitoring wildlife seizures (Wang et al. 2019, 428). Noticing, that with the legislations in place, such as wildlife farming, the illegal trafficking is reduced (Wang et al. 2019, 428). Due to the farming being able to provide enough captive wildlife the existing demand is covered, leading to fewer seizures (Wang et al. 2019, 428). However, there have been successful seizures of illegally trafficked wildlife by the Chinese authorities, where pangolin scales have been seized at border control (Collier and Kirkpatrick 2020, ix, xii).

Partnerships and Collaboration

To achieve a successful legal policy framework, the Chinese government has to collaborate with multiple stakeholders, especially international organizations as illegal trafficking is not only a domestic but an international issue (Feng, Liao, and Hu 2019, 2). Consequently, the cooperation with adhering to international treaties such as CITES increases the success of the legal framework, enforcement as information sharing between stakeholders is enabled, and there are multiple initiatives and resources available (Feng, Liao, and Hu 2019, 4, 5). Furthermore, on the domestic side, the legal policy framework is instituted by multiple departments and ministries of the government, distributing the enforcement over the legal system (Feng, Liao, and Hu 2019, 2). However, the public involvement and collaboration is limited (Feng, Liao, and Hu 2019, 2). This limited local community engagement can stem from the fact that wildlife damages which occur through wildlife protection is difficult to compensate by the government, as the jurisdiction of who is responsible for compensation is unclear (Feng, Liao, and Hu 2019, 8).

Legal Enforcement

Regarding the legal enforcement, studies have shown that when the legal enforcement by the government is maintained and implemented, people are hesitant to participate in illegal wildlife trafficking and the consumption of trafficked wildlife (Rock and MacMillan 2022, 99). However, the enforcement of the prosecution is a difficult matter, as the legal policy framework in China is vague on clearly defining it's laws and wildlife, leading to issues in enforcement of the laws and the subsequent prosecution as well as convictions (Feng, Liao, and Hu 2019, 5). In case of actual prosecution and penalties for trafficking being enforced, China has prosecuted a number of people and several more have been arrested and imprisoned, however the prosecution and penalties enforced are low (Yu 2010, 118). As the legal policies have been instated the first time, the Chinese government has revised some of the existing laws due to health hazards and the rapid endangerment of species, such as the list of wildlife under special state protection and the WPL (L. Xiao et al. 2021, R171). The updating and maintaining of the laws is an important part of increasing the success of law enforcement, as wildlife trafficking is a dynamic issue to which the government needs to act accordingly to prevent trafficking from increasing and to diminish it (L. Xiao et al. 2021, R171).

4.4. Vietnam, Table 2

4.4.1. (1) Educational Campaigns

Knowledge and Awareness

To measure the success of the key performance indicators (KPI) knowledge and awareness, several sub-factors are considered. Studies investigating educational campaigns in Vietnam regarding illegal wildlife trafficking carried out surveys during an educational campaign and after an educational campaign, show an increase in the awareness regarding the issue (McEwan and Turley 2021, 97). Educating people on the effects of wildlife products is vital, as false information can spread widely and change the perception of wildlife negatively (Ayling 2015, 5). Additionally, conservation efforts and awareness raising campaigns can be undermined, as was the case with supposedly positive medical effects of rhino horn regarding cancer (Ayling 2015, 5). Therefore, observing sales data can indicate changes in knowledge and awareness (Ayling 2015, 5).

Reduction in Demand

According to a survey conducted in the premise of researching educational campaigns and their impact, it has been shown that there has been a decrease in sales data, which implies a reduced consumer demand (McEwan and Turley 2021, 97). Furthermore, consumer surveys conducted by the IUCN help to identify a possible reduction in demand and further assess the market conditions (Ayling 2015, 7). Using consumer surveys and market research, a reduction in demand for rhino horn has been identified, which can be attributed to an educational campaign on the topic of rhino horn connected to medical effectiveness (Ayling 2015, 8).

Campaign Reach

Educational campaigns launched by WildAid conduct regular surveys to assess the impact of their campaigns on the target group (Ayling 2015, 7). Additionally to assessing the persistence of a changed behavior, the organization utilizes the gained insights to further design and adjust campaigns to the target groups and their culture for the future (Ayling 2015, 7). These campaigns in addition to being disseminated in public education also use multi-media channels as a distribution tool of their campaign messages (Ayling 2015, 7). Due to the educational information being covered by the media, more of the public is easily reached and influenced (Sexton, Nguyen, and Roberts 2021, 8). Furthermore, local communities engage with the campaigns and disseminate the educational value of the campaign to more target groups, therefore mitigating cultural differences when campaigns are disseminated by

international organizations (Ayling 2015, 8). As local communities work together with the Vietnam CITES office and other NGOs, the reach of the campaign is broader as local people have more reach to other target groups (Ayling 2015, 8).

Long-term Impact

To determine the long-term impact, an educational campaign has on the targeted group and the public, organizations such as the NGO Human Society International (HIS) conduct surveys in time intervals after introducing the campaigns to the public, such as was the case with an educational campaign regarding the medical effects of rhino horn (Ayling 2015, 8). In this particular case the surveys indicated a demand reduction for rhino horn with a persisting behavior change, suggesting a positive long-term impact (Ayling 2015, 8). As mentioned in the previous KPI, WildAid utilizes their gained insights through surveys of the campaign to adjust their campaign message (Ayling 2015, 7).

Partnerships and Collaboration

The NGO Education for Nature Vietnam (ENV) collaborates with different stakeholders and NGOs, national ones as well as international ones to further their reach and to enhance the campaigns (Vu 2023, 7). One major collaborative partner is the Vietnam CITES office, who facilitates educational campaigns together with other stakeholders such as the Humane Society International, to pool efforts and enhance the campaigns (McEwan and Turley 2021, 97). Not only are other NGOs involved and collaborate together, but educational campaigns utilize the reach and influence of celebrities such as actors advocating and educating the public on the repercussions of illegal wildlife trafficking (Vu 2023, 7). Furthermore, organizations launching educational campaigns work on a local level together with schools and educational institutions, disseminating the message of the campaign to the youth to raise awareness as early as possible (Ayling 2015, 12). The involvement of expert opinions on the issue of illegal wildlife trafficking and how to implement their knowledge in educational campaigns is led by TRAFFIC and aids campaigns in raising their success (Ayling 2015, 8).

Legal Enforcement

The current literature review did not provide conclusive evidence regarding the impact of educational campaigns on increased enforcement measures. While the reviewed papers and sources did not delve into the legal enforcement aspect of educational campaigns, they did highlight a clear indirect contribution. Educational campaigns foster a culture of compliance

and understanding, which can put pressure on the Vietnamese government to increase legal measures against illegal wildlife trafficking (Vu 2023, 11).

4.4.2. (2) Social Marketing Campaigns

Knowledge and Awareness

To design a successful social marketing campaign a pre campaign assessment can be beneficial (Greenfield and Veríssimo 2019, 45). However, there have been varying opinions about implementing common theories in the campaign to increase the success (Greenfield and Veríssimo 2019, 45). The perception of wildlife products is impacted by social marketing campaigns, especially in case of repeated social marketing campaigns, the awareness of the issue regarding illegal wildlife trafficking can be increased positively (Moorhouse et al. 2020, 6). Due to pangolins being an important part of TCM in Vietnam, the species is targeted by social marketing campaigns in order to protect them (Sexton, Nguyen, and Roberts 2021, 3). Therefore, challenging these beliefs, social marketing campaigns are implemented to raise awareness and elicit a perception change about pangolins being a luxury good and a product used in TCM (Sexton, Nguyen, and Roberts 2021, 2, 3).

Reduction in Demand

Studies investigating social marketing campaigns have observed a reduction in demand for illegal wildlife products, notably in case of repeatedly being exposed to social marketing campaigns regarding the issue (Moorhouse et al. 2020, 6). However, this finding applies to occasional consumers of illegal wildlife products, frequent consumers are slightly less impacted by the campaigns (Moorhouse et al. 2020, 6). Deeply ingrained Vietnamese beliefs , for example concerning TCM, are difficult to change, as established with the use of bear bile in TCM (Moorhouse et al. 2020, 2). Therefore, achieving a demand reduction with social marketing campaigns for these types of TCM relevant endangered species in Vietnam for example is questionable (Moorhouse et al. 2020, 2). This is congruent with other studies that suggest that social marketing campaigns do not have much of an impact on reducing demand (Sexton, Nguyen, and Roberts 2021, 3).

Campaign Reach

To obtain a higher success of the campaign in raising awareness and reducing the demand for illegal wildlife products, the campaign can be adjusted to previously gathered insights about the target group, identifying their beliefs and cultural practices and directly challenging them (Greenfield and Veríssimo 2019, 46). This type of adjusting has been utilized in campaigns in

Vietnam where they highlighted the controversial benefits of rhino horn by using negative messaging and imagery, appealing to the target groups by their health and emotions (Greenfield and Veríssimo 2019, 46). However, there are still instances and campaigns from international organizations which do not adjust their messaging towards the cultural beliefs of the target country Vietnam and its people, diminishing the reach of the campaign (Greenfield and Veríssimo 2019, 49). In order to distribute the social marketing campaign, different distribution channels are used, one of the most commonly used channels is the online media channel as online media has the advantage of providing a far reach and accessibility for a large number of people (Moorhouse et al. 2020, 4). Through online media, advertisements are placed in newspapers, on TV and social media, but also the radio is commonly used by campaigns as well as offline media (Greenfield and Veríssimo 2019, 47, 48). Not only do the campaigns use media as a channel, but the media covers the campaigns independently due to their nature of challenging beliefs and involving Vietnamese celebrities in the campaign, generating additional further campaign reach (Vu 2023, 6). However, one restraint campaigns face when utilizing distribution channels is the cost factor of placing advertisements in certain areas as some placement areas are more expensive as others (Greenfield and Veríssimo 2019, 48). Additionally they compete with advertisements advocating for the opposite goal (Greenfield and Veríssimo 2019, 48). As the campaigns are distributed throughout the Vietnamese public, the local communities themselves interacts with the campaigns as they question the proposed narrative (Vu 2023, 6). Especially in the case of a campaign advertising to put a stop to using rhino horn as a medical enhancement, the public challenged statements and voiced their confusion towards certain statements (Vu 2023, 6).

Long-term Impact

By monitoring changes and conducting surveys after a campaign, the long-term impact can be determined, however there are suggestions that the present social marketing campaigns in circulation do not alter the behavior long-term due to unsuccessful intervention measures (Sexton, Nguyen, and Roberts 2021, 3). To mitigate this and evoke long-term successes, social marketing campaigns stakeholders investigate key points of consumer demand which are later incorporated into other campaigns (Sexton, Nguyen, and Roberts 2021, 3). These key points are then implemented in other campaigns in Vietnam (Offord-Woolley 2017, 146). Successful initial social marketing campaigns which score successes, such as the Chi Initiative implemented in Vietnam, receive follow-up campaigns ensuring long-term successes (Offord-Woolley 2017, 146).

Partnerships and Collaboration

To increase the success of a campaign, a commonly used tool is to collaborate with famous people who promote the campaigns message publicly (Greenfield and Veríssimo 2019, 48). These types of people are commonly celebrities, but also business people who support the campaign and lead by example (Greenfield and Veríssimo 2019, 48). Vietnamese campaigns directly reach out to influential public figures to garner their support (Greenfield and Veríssimo 2019, 48). Especially social wise, using celebrities and their influence can have a positive impact on the community due to their social influence (Wallen and Daut 2018, 61, 62). Therefore, a campaign aimed at reducing ivory use in Vietnam launched by TRAFFIC in collaboration with the British embassy involved Vietnamese football players for their cause (Collier and Kirkpatrick 2020, xxiv).

Legal Enforcement

Similar to the previously mentioned KPI legal enforcement of (1) educational campaigns for Vietnam, the KPI legal enforcement for (2) social marketing campaigns cannot be discussed with certainty. The current literature review falls short of offering conclusive evidence regarding the impact of social marketing campaigns on increased legal enforcement measures. Social marketing campaigns like the previously mentioned Chi campaign collaborate with different stakeholders as established in the forementioned section (Offord-Woolley 2017, 147). These participating stakeholders are, inter alia, comprised of Vietnamese government departments, deducing some legal enforcement involvement (Offord-Woolley 2017, 147) Social marketing campaigns as well are intent on raising understanding of the issue surrounding illegal wildlife trafficking, however, increased enforcement measures were not addressed explicitly in the review literature.

4.4.3. (3) Behavioral Change Campaigns

Behavior and Attitude Change

To assess the behavior and attitude change, campaigns need to assess the state pre- and post-campaign (Olmedo, Sharif, and Milner-Gulland 2018, 6). However, it is difficult to attribute a perceived change in behavior through decrease of demand for a single campaign, as there are multiple campaigns running which tackle a similar issue (Olmedo, Sharif, and Milner-Gulland 2018, 6). Despite this difficulty, through the pre- and post-campaign assessment, organizations were able to identify a positive change in behavior, indicating a success for the campaigns launched in Vietnam (Olmedo, Sharif, and Milner-Gulland 2018, 6). A positive

behavior and attitude change due to the increased awareness from behavior change campaigns from various international organizations has resulted in the local population to report illegal activities to Vietnamese government officials (Thu Thuy Pham et al. 2022, 504). Furthermore, the raised awareness motivates the public to notify the authorities of existing markets for wildlife in order to shut them down (Thi Thuy Pham et al. 2021, 4).

Reduction in Demand

As indicated in the previous KPI, some campaigns such as a campaign launched by the Vietnam CITES office regarding rhino horn have registered a reduction of demand concerning rhino horn through the monitoring of consumer demand (Olmedo, Sharif, and Milner-Gulland 2018, 6). Furthermore, behavior change campaigns assess their impact after the campaign and evaluate the impact through the use of market research (Veríssimo and Wan 2019, 628).

Campaign Reach

Adjusting the campaign to the target audience can help in raising the success of a campaign, therefore, researching the target group the campaign aims at is important and can be conducted in different ways (Olmedo, Sharif, and Milner-Gulland 2018, 3). Campaigns targeting the behavior of the Vietnamese public towards rhino horn have utilized market research on their own, or based on other studies and institutions research to adjust their campaign towards the targeted group (Olmedo, Sharif, and Milner-Gulland 2018, 3, 4). This adjusting towards the target group can account for adjustments in messaging style, but also adjusting according to cultural differences (Olmedo, Sharif, and Milner-Gulland 2018, 7). In terms of media coverage and distribution of the campaign, the organizations launching the campaign utilize social media as a resource not only for far distribution purposes, but also in the sense that the public can interact and engage with the campaign (Olmedo, Sharif, and Milner-Gulland 2018, 5). In addition to social media, the campaigns message is disseminated through other channels, such as TV channels or even through workshops, where people can directly learn about the campaigns message and the issue of illegal wildlife trafficking (Olmedo, Sharif, and Milner-Gulland 2018, 5). The campaigns itself are additionally covered by media outlets, generating a higher campaign reach (Vu 2023, 6).

Long-term Impact

By continuously appraising the impact the campaign has on the target group and following up with observational surveys during and post campaign, the organizations involved in designing

and issuing later campaigns can adjust their campaign message and distribution for later campaigns in order to achieve greater success (Olmedo, Sharif, and Milner-Gulland 2018, 7). Adjusting the campaign message over time is a valuable sub-factor in the KPI long-term impact, as the long-term success of a campaign increases when the messaging is adjusted according to how the public interacts and reacts towards the campaign as seen with a campaign targeting the consumer behavior towards the consumption of rhino horn in Vietnam (Vu 2023, 6)

Partnerships and Collaboration

Multiple international organizations such as WildAid launch campaigns in Vietnam targeting a behavior change regarding illegally trafficked products (Olmedo, Sharif, and Milner-Gulland 2018, 2). These international organizations collaborate with domestic offices and organizations such as CHANGE in Vietnam to successfully launch these campaigns (Olmedo, Sharif, and Milner-Gulland 2018, 2). Furthermore, collaborating with international and national research companies can enhance the campaigns as more information is available to design and launch a behavior change campaign, increasing the success due to a better adjusted campaign (Olmedo, Sharif, and Milner-Gulland 2018, 3, 4). Some campaigns collaborate with famous people who support their cause and set a public example of how the behavior can be changed and implemented, leading to higher chances of success of the campaign and influencing other people to act similar (Olmedo, Sharif, and Milner-Gulland 2018, 5).

Legal Enforcement

Not only are behavior change campaigns targeted towards consumers, but there have been campaigns aimed at law enforcement to increase existing enforcement and ameliorate existing enforcement measures successfully in Vietnam (Olmedo, Sharif, and Milner-Gulland 2018, 4).

4.4.4. (4) Conservation Policy

Ecological Indicators

The Vietnamese government assesses and monitors the wildlife population, however, this assessment is inadequate (Thi Thuy Pham et al. 2021, 5). Necessary resources to identify changes in the wildlife population and habitats are limited and not current, hindering proper assessment of wildlife populations (Thi Thuy Pham et al. 2021, 5). To support wildlife and their habitats as part of the conservation policy, Vietnam has established protected areas to help regenerate the wildlife and conserve endangered species (Thi Thuy Pham et al. 2021, 5).

However, these changes of the wildlife habitats to protected areas involve questionable ethics as with the establishment of protected areas, local communities have to be relocated, indicating a negative conservation policy aspect (Thi Thuy Pham et al. 2021, 5).

Reduction in Trade Volume

Monitoring the trade data and markets in Vietnam is an issue as the data collection is slow often not up to date, therefore hindering the identification of changes of the amount of trafficked wildlife (Thi Thuy Pham et al. 2021, 5). Vietnams authorities monitor the market and close down markets geared towards wildlife (Thi Thuy Pham et al. 2021, 5). Yet, this does not necessarily promotes a change in the availability of wildlife products as the demand and market shift towards illegal markets (Thi Thuy Pham et al. 2021, 5).

Partnerships and Collaboration

Partnerships and collaboration are an important KPI in the conservation strategy in Vietnam. The conservation policies require the collaboration from different stakeholders, especially stakeholders who deal with wildlife such as forestry departments and veterinarians (Thu Thuy Pham et al. 2022, 503). Not only are national collaborations between different departments implementing conservation efforts, but internationally led conservation projects take place in Vietnam (Thu Thuy Pham et al. 2022, 504). Additionally to different departments, the Vietnamese government has made efforts to invest more in conservation strategies and in capacity building by incorporating and providing modern technology to forestry departments and wildlife farms in order to manage and keep track of the wildlife, diseases and detect illegal trafficking of wildlife (Thu Thuy Pham et al. 2022, 503, 504). This digital information sharing between the stakeholders can enhance the conservation policies and furthermore collaborating with the local population on incorporating traditional and cultural knowledge can positively support sustainable conservation policies (Thu Thuy Pham et al. 2022, 504). Despite the advantages of the digital technology involvement, several forestry departments are unable to use these resources due to lack of capacities and technological development (Thu Thuy Pham et al. 2022, 504).

Legal Enforcement

Due to the conservation policies being not as cohesive with different enforcement regulations clashing with each other, the enforcement of penalties proves itself as difficult (Thi Thuy Pham et al. 2021, 4). As the provided regulations on convictions and penalties are inconsistent with multiple implemented policies, the enforcement of convictions and penalties hinders a

successful legal framework and conservation policy (Thi Thuy Pham et al. 2021, 4). Furthermore, the Vietnamese government lacks necessary resources to convict wildlife traffickers (Thi Thuy Pham et al. 2021, 5). Additionally, the Vietnamese lacks resources to confiscate illegally traded wildlife and conserve wildlife (Thi Thuy Pham et al. 2021, 5). The lack of comprehensive data and difficulties with collecting data also renders the monitoring and conviction of illegal wildlife trafficking more difficult (Thi Thuy Pham et al. 2021, 5). Nevertheless, collected data suggests that there is an increase of illegal wildlife trafficking instances recorded, indicating a positive impact and success for the legal enforcement (Thu Thuy Pham et al. 2021, 279:41). The conservation policy is continuously shaped based on the resources available to the Vietnamese government and the different departments, and as the conservation policies are revised, the conservation efforts increase their success due to better enforcement (Thu Thuy Pham et al. 2022, 504). Despite the continuous updating of conservation policies, there are still issues as the updated policies are based on international regulations and not as well assimilated to Vietnamese standards, making prosecution and eventual convictions difficult for the legal enforcement (Thu Thuy Pham et al. 2022, 504).

4.4.5. (5) Anti-poaching

Ecological Indicators

Anti-poaching measures need to be situationally implemented not only long-term but also at short notice, as through the monitoring of wildlife species populations and their habitats a decline of a certain species can be decreased (Viollaz et al. 2021, 1382). Poaching is a problem especially in established protected areas of Vietnam, and through wildlife habitat monitoring, studies have found poaching to be a threat to these areas (Viollaz et al. 2021, 1382). However, monitoring poaching incidents in wildlife habitats is difficult as Vietnam's authorities have difficulties in keeping up with the data collection (Thu Thuy Pham et al. 2021, 279:53). Surveys and workshops have been conducted to analyze the wildlife and their habitats and poaching habits (Viollaz et al. 2021, 1384).

Reduction in Poaching Incidents

The number of poaching incidents are monitored and when illegal poaching occurs, local Vietnamese law enforcement tracks the poaching incidents by providing reports on the incidents (Viollaz et al. 2021, 1379). These reports can be used to monitor current poaching cases and track the development of anti-poaching measures on their successfulness (Viollaz et al. 2021, 1379). However, the recent Covid-19 pandemic has been a driver of illegal

poaching, as rural communities resorted to poaching in order to combat food scarcity, therefore having driven up poaching incidents (Thi Thuy Pham et al. 2021, 5).

Reduction in Wildlife Product Seizures

The Vietnam Ministry of Agriculture and Rural Development (MARD) monitors the number of illegally trafficked wildlife product seizures, tracking the data and recording high seizure numbers in the early 2000s with little change in the following years (Van Song 2008, 153). In 2019, TRAFFIC has recorded increasing seizure numbers (Collier and Kirkpatrick 2020, xlii). This increase is partly due to the higher number of seizures reported and increased data availability (Collier and Kirkpatrick 2020, xlii). Despite this increased data availability, TRAFFIC suggest an upward trend of poaching incidents as confiscation rates increase (Collier and Kirkpatrick 2020, xlii). To add to that, wildlife poaching can be reduced by involving Vietnamese local communities which leads to reduced wildlife product seizures (Viollaz et al. 2021, 1389)

Partnerships and Collaboration

The Vietnamese authorities collaborate with local rangers and enforcement units in cases of illegal poaching, as local rangers have a better understanding of local communities who oftentimes use illegal poaching as a means to feed themselves (Viollaz et al. 2021, 1379). Anti-poaching measures rely additionally on the collaboration with local people, as local communities feel more comfortable in reporting poaching incidents to a local community member who is in contact with law enforcement rather than going directly to a law enforcement establishment (Viollaz et al. 2021, 1381). Moreover, local rangers share important information about the development of poaching incidents with the next higher law enforcement establishment, building capacity initiatives to directly target illegal poaching incidents (Viollaz et al. 2021, 1384, 1389).

Legal Enforcement

As mentioned before, the local population in rural areas is dependable on poaching to support themselves, therefore local authorities have difficulties in differentiating poachers who utilize poaching as a means to support themselves from poachers who participate in illegal wildlife trafficking, making prosecution and convictions difficult (Viollaz et al. 2021, 1379). When an illegal poaching incident is identified, especially in a preserved area, the government enforces monetary penalties (Viollaz et al. 2021, 1382). Low penalties and low arrest rates enable criminal networks to continue in illegal poaching (Challender and MacMillan 2014, 487).

4.4.6. (6) Trade Bans

Ecological Indicators

Monitoring the wildlife population and their habitats is managed by local patrols as they have a better understanding of the ongoings of illegal poachers and traders in the local areas (Thu Thuy Pham et al. 2021, 279:50). However, the monitoring of the wildlife population and their habitat is not comprehensive as regular monitoring and updating resources on the current state of affairs is slow and irregular, therefore noticing changes is difficult (Thu Thuy Pham et al. 2021, 279:53). Nevertheless, incorporating farmed wildlife in the wildlife trade provides a more sustainable substitution compared to illegally hunted and later traded wildlife , while additionally giving a reprieve of wild wildlife (Thu Thuy Pham et al. 2021, 279:40).

Reduction in Trade Volume

Reducing the trade volume is difficult to achieve, especially regarding the negative side effects which can occur due to the trade bans of other countries (Nataraajan 2020, 1680). As mentioned in the previous correlating section of China's trade bans and the KPI reduction in trade volume, the Chinese ban of rhino horn has led to a decrease of trade in China (Nataraajan 2020, 1680). However, this resulted in a negative side effect for Vietnam, as due to the Chinese ban, the demand for rhino horn has increased in Vietnam, increasing the trade rather than decrease, therefore having a negative impact (Nataraajan 2020, 1680). The monitoring of trading data by the government indicates that especially along the border of China and Vietnam trade is flourishing (L. Zhang, Hua, and Sun 2008, 1499, 1500). Additionally, Vietnam is an important transit hub for trafficking illegal tiger products to China and collected seizure data shows an increase in illegal trade (Collier and Kirkpatrick 2020, xxii). However, this perceived increase can also stem from the increased availability of data sources in 2019 compared to previous years (Collier and Kirkpatrick 2020, xxii).

Reduction in Wildlife Product Seizures

The number of wildlife product seizures are monitored by the government, specifically the Ministry of Agriculture and Rural Development (MARD) (Van Song 2008, 153). The changes in seizures data recorded indicate high seizure numbers in 2002 (Van Song 2008, 153). More recent data sets confirm high product seizure numbers as trade of illegally trafficked wildlife does not diminish (Thu Thuy Pham et al. 2021, 279:45). However, there has been a noticeable reduction in wildlife product seizures inland with the Covid-19 pandemic as borders closed down and illegal trade was impacted by the trade bans and pandemic regulations (Thu Thuy

Pham et al. 2021, 279:45). Despite the reduced seizures inland, seizures along the borders and sea routes of Vietnam did not minimize, but rather increased (Thu Thuy Pham et al. 2021, 279:45), (Thu Thuy Pham et al. 2022, 498). Monitoring seizures, a large seizure of illegally traded ivory in 2019 revealed that reputable businesses operate as a cover for and facilitate illegal wildlife trade (Collier and Kirkpatrick 2020, xlvi).

Price and Availability

The increased trade regulation regarding illegal wildlife trafficking have had an impact on the availability and price of wildlife products (Thu Thuy Pham et al. 2022, 503). Especially in combination with international trade bans, the demand for illegal wildlife products has decreased which thus resulted in a decreased price on account for the decreased demand (Thu Thuy Pham et al. 2022, 503). Nevertheless, protected wildlife availability is not as much impacted by the trade regulations as law enforcement intents, especially in the case of pangolin and connected products (Sexton, Nguyen, and Roberts 2021, 8). Pangolin is one of the main trafficked wildlife species in Vietnam due to the prevalent traditional Chinese medicine (TCM) market (Sexton, Nguyen, and Roberts 2021, 8). The Covid-19 pandemic exacerbated the decrease in demand, driving down prices further (Thu Thuy Pham et al. 2022, 503). Furthermore, there has been a positive impact as a result of the pandemic, as illegal wildlife products have not been as readily available as before the pandemic due to border closures and imposed restraints of movement in the country (Thu Thuy Pham et al. 2021, 279:45). Additionally, the establishment of wildlife cultivation and breeding farms enabled substituting caught wildlife with specifically produced wildlife, giving a reprieve towards wildlife in their habitats (Thu Thuy Pham et al. 2021, 279:42). In order to provide retracement of the traded wildlife products, wildlife farms are required to provide a certification issued by the correlating office such as the Vietnam CITES office or the Forest Protection Department (FPD) (Thu Thuy Pham et al. 2021, 279:52). Despite this requirement, the illegal wildlife trade is predominant as the certifications are forged (Thu Thuy Pham et al. 2021, 279:52).

Partnerships and Collaboration

The Vietnamese government is collaborating across departments and sectors in order to maintain and establish trade bans (Thu Thuy Pham et al. 2022, 501). In the wake of the pandemic and with the progression of the pandemic, the trade bans of wildlife have become more sever (Thu Thuy Pham et al. 2022, 501). Despite a more restricted trade and calls from international organizations to implement complete trade bans of endangered species, the

Vietnamese government established limited trade regulations, therefore participating in limited cooperation with international organizations and limiting capacity building initiatives between the stakeholders (Thu Thuy Pham et al. 2022, 501). Multiple ministries and departments collaborate to reduce illegal wildlife trafficking and increasing wildlife conservation efforts by shifting illegal wildlife trafficking towards legal trade of wildlife from captive breeding farms (Thu Thuy Pham et al. 2022, 501). Especially in case of dealing with live wildlife seizures, the government is collaborating with rescue centers, rangers and local communities to reintroduce the wildlife to their habitat or similar (Thu Thuy Pham et al. 2022, 502, 503). However, there is a lack of capacities and legal matters elongate the rehabilitation process (Thu Thuy Pham et al. 2022, 502, 503). Despite the collaboration between the necessary authorities, there is a lack of coordination between the different involved parties, leading to lengthy processes which could be shortened with more open communication and information sharing (Thu Thuy Pham et al. 2021, 279:51).

Legal Enforcement

As for the legal enforcement KPI, there has been higher numbers of arrest concerning illegal wildlife trafficking in Vietnam, indicating a success of the enforcement in place (Thu Thuy Pham et al. 2021, 279:45). Despite the updated and heavier laws on the illegal trade of wildlife, criminal networks are not disrupted and the illegal trade continues to flourish (Thu Thuy Pham et al. 2021, 279:45). In cases of arrests, there are authority issues as to who can issue prosecution, convictions and deal out penalties, leading to a lengthy and tedious process of legal enforcement (Thu Thuy Pham et al. 2021, 279:50, 51). Nevertheless, there have been adjustments made towards the law in regards of increasing the punishment for illegal wildlife trafficking (Thu Thuy Pham et al. 2021, 279:50). However the punishment for breaking the trade bans in place are not as harsh as to deter illegal traffickers from participating in illegal wildlife trade due to the lucrative business of dealing with illegally trafficked wildlife (Thu Thuy Pham et al. 2021, 279:50).

4.4.7. (7) Wildlife Protection Law

As mentioned in the data analysis of the evaluative Table 1 regarding Vietnam, the criterion (7) wildlife protection law will not be discussed as part of the evaluative Table 2 for Vietnam. This section will proceed directly towards the next criterion (8) legal policy framework.

4.4.8. (8) Legal Policy Framework

Ecological Indicators

The wildlife population and their habitats are monitored and assessed, particularly with regard to illegal wildlife trafficking (Luong 2022, 9). Through monitoring the wildlife population and habitats, studies have shown that overexploitation has a negative impact as with fewer wildlife species, nature processes are disrupted, and as such, not only having an impact on fauna but also on flora (D. H. Nguyen and Dinh 2020, 7).

Reduction in Trade Volume

Despite efforts to reduce the illegal wildlife trafficking through implementing policy frameworks, monitoring Vietnamese markets indicate a flourishing wildmeat consumption behavior (Luong 2022, 10). Endangered species such as in Vietnam popular rhino horn and tiger products are not only used for consumption and medicine, but also serve as a status symbol and luxury good (Luong 2022, 10). The trade data is monitored, and by tracking the trade volume, studies have found specific times in a year where illegal trafficking increases, specifically during national holidays in Vietnam as well as in China and off rainy season (Van Song 2008, 161). However, the trade data is difficult to monitor and different sources portray differentiating results (Thu Thuy Pham et al. 2022, 499). Despite efforts from the Vietnamese government, a study by the Science, Technology And Environment Committee has found an increase in illegal trade of protected wildlife, thus indicating a negative impact on the success of legal policy frameworks (Thu Thuy Pham et al. 2022, 499). CITES as well recorded an increase in illegally trafficked wildlife when analyzing trade data (Thu Thuy Pham et al. 2022, 501).

Reduction in Wildlife Product Seizure

The Criminal Justice Department of Vietnam and the Wildlife Conservation Society collect data and develop statistics on the number of wildlife products which are seized (D. H. Nguyen and Dinh 2020, 2, 3). But despite the monitored seizures, it is difficult to determine a reduction of wildlife product seizures and confiscations as the trade market for illegally trafficked wildlife is far more complex to be entirely monitored and policed by the law enforcement measures (D. H. Nguyen and Dinh 2020, 3, 4). Nevertheless, reviewing seizures, particularly pangolin seizures, there seems to be an increased level of trafficking (Sexton, Nguyen, and Roberts 2021, 2). In 2019, there have been ten major seizures regarding pangolins by the Vietnamese government officials (Collier and Kirkpatrick 2020, x. xi, xii).

Major cities in Vietnam indicate high seizure numbers and along the border of Vietnam the number of seizures are close to the ones of major cities (Thu Thuy Pham et al. 2021, 279:45).

Partnerships and Collaboration

Vietnam is collaborating with CITES, as the country is a member of the CITES treaty, and adheres to and collaborates with other member countries in designing laws and agreements in order to protect the wildlife (Vu 2023, 4). Not only is Vietnam adhering to and cooperating with the CITES regulations, but Vietnam has additionally joined in international treaties, cooperating with multiple nations, building capacities and sharing information between stakeholders (D. H. Nguyen and Dinh 2020, 8). Despite this, the coordination of the Vietnamese government with the CITES office is lacking due to slow information sharing (Thu Thuy Pham et al. 2021, 279:51). The collaboration between local communities require information sharing between official law establishments and local communities in order to achieve a comprehensive conservation strategy and enforcement of the laws (D. H. Nguyen and Dinh 2020, 9). However, this information sharing requires inter alia educational campaigns to be successful as local communities rely on traditional medicine and cultural beliefs, which do not take into account the endangerment of wildlife species (D. H. Nguyen and Dinh 2020, 9). Vietnams capacity building initiatives are restricted due to limited budget, because policy frameworks, enforcement measures and programs for protecting wildlife receive limited monetary support (Van Song 2008, 155, 156).

Legal Enforcement

Prosecuting illegal wildlife trafficking cases remains difficult in Vietnam (D. H. Nguyen and Dinh 2020, 8). Many identified cases do not reach the stage of prosecution as legal policies are not enforced as intended (D. H. Nguyen and Dinh 2020, 8). This lack of enforcement and prosecution as well as insufficiently developed legal frameworks lead to a lack of convictions, essentially not contributing to the protection and conservation of threatened wildlife despite multiple laws being in place for this cause (D. H. Nguyen and Dinh 2020, 8). In 2018, Vietnam has updated its enforcement and policies, especially the enforcement of penalties, where the penalties for illegal wildlife trafficking have increased in intensity, establishing harsher repercussions (Vu 2023, 4). With the more rigid laws, the Vietnamese government has carried out more convictions, however, the amount of trafficked wildlife showed an increase despite the upped penal code (Sexton, Nguyen, and Roberts 2021, 2, 3). The disruption of criminal networks remain difficult (Van Song 2008, 157). Leaders of trafficking

rings remain unaffected by the legal enforcement measures due to the legal system mostly convicting small traffickers and middlemen (Van Song 2008, 157). Additionally, due to the size of criminal networks, the legal system's efforts to penalize and convict criminals proves difficult (Sexton, Nguyen, and Roberts 2021, 2). Disrupting criminal networks therefore requires seizures and convictions of large scale to make a positive impact on the conservation of a species (D. H. Nguyen and Dinh 2020, 5).

5. Discussion

The research has provided insights into the different strategies which China and Vietnam are implementing in the fight against illegal wildlife trafficking in East Asia. In the following, the results of the previously conducted data analysis are reflected upon, and lessons are drawn from the strategies implemented in China and Vietnam. This section will therefore begin with a critical reflection on the strategies implemented by China, followed by the strategies implemented by Vietnam and finally look at the specific lessons and limitations of both countries' strategies.

5.1. China

The previous analysis demonstrates that valuable insights can be gained from the implementation of the various strategies. Throughout the data analysis, it became clear that the fight against illegal wildlife trafficking is multifaceted. The various KPIs have an influence on each other, emphasizing the importance of a comprehensive approach.

5.1.1. Demand Reduction Strategies

In the category of demand reduction three strategies were considered as criteria. The first criterion, (1) educational campaigns, contributes to enhancing knowledge and awareness surrounding the issue of illegal wildlife trafficking. Raising awareness about protected and trafficked species and incorporating the knowledge about illegal trafficking issues in public education has shown to be essential for eliciting a perception change (L. Xiao et al. 2021, R171). Collaborating with multiple stakeholders, such as zoos, can raise awareness of the issue particularly in the younger population (Feng et al. 2021, 5, 12). A more subtle form of educational campaigns have emerged in form of informational signs, provoking a passive awareness raise about the issue of illegal wildlife trafficking (L. Xiao et al. 2021, R171). This varied reach through diverse channels and locations is crucial in promoting a reduction in demand. Disseminating information about wildlife trafficking and targeting consumers positively impacts the success of educational campaigns (Clayton et al. 2018, 121). WildAid

campaigns in China implementing these forms of educational campaings show evidence of a reduced trade volume, indicating a successful reduction in demand (Ayling 2015, 7). The partnerships and collaborations with different stakeholders have proven to be instrumental in further extending the reach and impact of educational campaigns (Clayton et al. 2018, 120). The engagement of influential Chinese key figures as influential ambassadors for the campaign brings attention to the issue of illegal wildlife trafficking and enhances the success of such campaigns (Z. Song et al. 2021, 10). Studies indicate a heightened interest of the Chinese population in wildlife conservation long-term, indicating the ongoing impact of educational campaigns (Clayton et al. 2018, 126). It has been shown that continuous evaluation, collaboration and innovation of educational campaigns are important factors to ensure a sustained success in educating people long-term in matters of illegal wildlife trafficking (Clayton et al. 2018, 127), (Ayling 2015, 7). As part of the legal enforcement, China has established an ecological civilization program to encourage continuous education on nature and wildlife, facilitating the goals of educational campaigns (Z. Song et al. 2021, 9).

The implementation of (2) social marketing campaigns requires strategic planning and the need for an audience-centric approach. As established, China is a cultural and traditional sensitive country, therefore social marketing campaigns launched require prior market research and continuous adjusting of the campaigns to raise awareness and knowledge (Greenfield and Veríssimo 2019, 44). Assessing the market prior to launching a campaign can positively impact the spread of knowledge and awareness. However, this is limited by time and fund constraints (Greenfield and Veríssimo 2019, 44). Social marketing campaigns have had a positive effect on reducing the demand for illegally trafficked wildlife products in China (Margulies, Wong, and Duffy 2019, 217). Partnerships and collaboration with stakeholders, such as market research businesses and influential Chinese public figures enhance the campaigns as well, contributing to the success of the campaigns (Greenfield and Veríssimo 2019, 48). The collaboration with NGOs, such as WWF China and WildAid, and with the Chinese authorities facilitate far reaching campaigns and raise awareness about multiple endangered species (Collier and Kirkpatrick 2020, xxiv). Because of their measurable impact, positive consumer responses, and the effectiveness in reducing demand, these campaigns should be continued (Margulies, Wong, and Duffy 2019, 217). The significance of adjusting to the Chinese target audiences cultural and social beliefs enhances the success of the campaigns, while utilizing multiple media channels and distribution devices of the campaign ensures extensive campaign reach as well as public interaction (Greenfield and Veríssimo 2019, 44, 45). A distribution tool for social marketing campaigns in China which shows much

potential for increased future utilization is the use of social media to disseminate the message of the campaigns (Greenfield and Veríssimo 2019, 50, 51). As young people use social media predominantly, the social marketing campaigns can target young people directly and raise their awareness about the issue of wildlife conservation and illegal wildlife trafficking from a young age (Greenfield and Veríssimo 2019, 50, 51). The increased awareness levels and continuous adjustment to messaging techniques therefore contribute to a successful long-term impact of social marketing campaigns (Margulies, Wong, and Duffy 2019, 217). The ongoing adaptations of these campaigns aim to maximize their effectiveness in increasing legal enforcement, which is a crucial part of demand reduction strategies in the fight against illegal wildlife trafficking (Wallen and Daut 2018, 64).

As part of demand reduction strategies, (3) behavior change campaigns are an important strategy in combatting illegal wildlife trafficking. They offer valuable insights into effective interventions, as e.g. which messaging techniques work best and by providing references for future campaigns (Greenfield and Veríssimo 2019, 52). China has implemented multiple campaigns targeting different endangered species, such as pangolins, or rhinos (Collier and Kirkpatrick 2020, v). NGOs, such as WildAid, WWF China and the China Wildlife Conservation Association use behavior change campaigns in China to elicit a long-term behavior change in the targeted audience by influencing and challenging long standing beliefs and customs (Collier and Kirkpatrick 2020, v), (Margulies, Wong, and Duffy 2019, 217), (Rock and MacMillan 2022, 92). This targeted approach requires market analysis and the need for research before the launch of a campaign (Greenfield and Veríssimo 2019, 50). One important lesson is the emphasis on the importance of understanding the Chinese target audiences (Rock and MacMillan 2022, 106). Factors such as generational differences have an impact on the effectiveness of the behavior change campaign (Rock and MacMillan 2022, 106). Therefore, continuously adjusting the campaigns and making collaborative efforts to enhance the campaigns and their reach can create lasting impacts on attitudes and behaviors (Margulies, Wong, and Duffy 2019, 217). Partnerships and collaboration with NGOs and Chinese celebrities have proven to positively enhance the impact of campaigns, creating lasting impacts on attitudes and behaviors (Margulies, Wong, and Duffy 2019, 217). The long-term impact of a behavior change campaign is driven by continuously adapting it based on experiences and adjusting it to resonate with the evolving preferences of the targeted Chinese consumer groups (Greenfield and Veríssimo 2019, 45). By combining behavior change campaigns with other strategies targeting illegal wildlife trafficking, the Chinese

government and international stakeholders such as the International Fund for Animal Welfare (IFAW) influence the demand for wildlife products (Nataraajan 2020, 1679).

5.1.2. Wildlife Management Strategies

With regard to the wildlife management strategy (4) conservation policy, the development and implementation of successful conservation policies require fostering ecological sustainability and partnerships to reduce wildlife trafficking and conserve endangered wildlife species (Rock and MacMillan 2022, 99), (Wang et al. 2019, 425, 428). Monitoring the ecological indicators, such as wildlife populations and habitats allows for targeted support (Wang et al. 2019, 427). The implementation of economic wildlife farming aims to control and reduce wildlife trafficking (Wang et al. 2019, 427). Captive breeding farms indicate positive outcomes and a potential solution for restoring endangered and depleted wildlife populations in China (Wang et al. 2019, 427). However, wildlife farming presents a challenge in not stimulating demand through a ready supply of farmed wildlife. Therefore, licensing and inspections are identified as essential monitoring devices that can mitigate a reduction in trade volume (Wang et al. 2019, 430). Accordingly, partnerships and collaboration enhance China's conservation efforts. International collaborations demonstrate a commitment to global conservation standards. Involving local communities establishes a long-term approach to conservation efforts (Wang et al. 2019, 426). The challenge for legal enforcement of the conservation strategies is to differentiate between farmed wildlife and illegally trafficked wildlife (Jiao and Lee 2021, 5). Deficient regulations and lack of enforcement make it difficult to prosecute offenders. Thus, continuous adaptation and collaboration can strengthen the effectiveness of policies (Wang et al. 2019, 428), (Yu 2010, 121).

Continuing with (5) anti-poaching policies, this strategy requires a multifaceted approach as well. Ecological indicators, seizure data analysis, partnerships and collaboration and legal enforcement are all interconnected. Monitoring wildlife populations and their habitats show the dynamics of endangered species, and the Chinese authorities can address poaching threats more directly (Challender and MacMillan 2014, 485). Especially the establishment of protected areas has made a positive impact in context of anti-poaching efforts (Feng, Liao, and Hu 2019, 8). As poaching thrives in economically challenged rural areas, sustainable development and community engagement have been shown to reduce the reliance on poaching and help reduce poaching incidents (L. Zhang, Hua, and Sun 2008, 1495). Discrepancies between trade and seizure data present a challenge of assessing the impact of anti-poaching efforts (L. Zhang, Hua, and Sun 2008, 1500). Strengthening partnerships and

initiating capacity building initiatives with data sharing can enhance anti-poaching policies. Cross-border collaboration positively impacts anti-poaching efforts. However, the public reluctance to report poaching incidents poses challenges (Du, Fathollahi-Fard, and Wong 2023, 8, 9). Especially local Chinese communities are reluctant to report poaching incidents as they themselves rely on poaching (L. Zhang, Hua, and Sun 2008, 1495). This dependency is based on the necessity of using poaching as an economic income source, as a food source or in cultural practices (Wang et al. 2019, 426). Therefore, reporting poaching incidents would not benefit the local communities (L. Zhang, Hua, and Sun 2008, 1495). To prevent these dependencies, wildlife farming as well can be a measure against illegal poaching (Du, Fathollahi-Fard, and Wong 2023, 10). Establishing wildlife farms aid in the procurement of food establishes an economic income source for local communities (Du, Fathollahi-Fard, and Wong 2023, 10). Addressing legal ambiguities and loopholes in Chinese wildlife protection laws requires clear and well-defined adjustments to laws to build effective and sustainable anti-poaching initiatives. Low conviction rates and legal ambiguities thus pose challenges in disrupting criminal networks and hinder effective law enforcement (Challender and MacMillan 2014, 487).

5.1.3. Legal Frameworks

In the category legal frameworks, three strategies have been considered as criteria. The implementation of (6) trade bans contributes to shaping the dynamics of wildlife conservation and management. Trade bans highlight the complexities of wildlife trade regulations, and underline the need for ongoing adaptation, collaboration, and comprehensive monitoring to balance conservation efforts and market dynamics. By introducing trade bans on tigers and ivory products, the strain on ecological indicators such as wildlife population can be alleviated, allowing wildlife populations to regenerate and thrive (L. Xiao et al. 2021, R168), (Abbott and van Kooten 2011, 722). However, monitoring the populations and habitats of wildlife poses challenges. Taking the long standing trade ban concerning rhino horn established in China as an example, continuous assessment and monitoring are shown to be important to measure the success of trade bans (Nataraajan 2020, 1680). The domestic trade ban on tigers in China has led to the implementation of breeding farms, to appease the current demand (A. Y. Song and Yao 2022, 162). But, a potential drawback is that breeding farms increase demand, negating their positive impact and leading to criticism from various stakeholders (A. Y. Song and Yao 2022, 161). Trade bans and trade regulations have had successes in reducing the illegally trafficked wildlife volume (Collier and Kirkpatrick 2020,

xlix). However, a decreased demand for one species can lead to an unwanted increase in trade volume for another endangered species (Nataraajan 2020, 1680). Monitoring and licensing programs such as the "Special Marking for Wildlife Trade and Utilization" need nationwide coverage to restrain border markets from flourishing with illegally trafficked wildlife (Jiao and Lee 2021, 3). In China few traders adhere to these licensing systems, requiring an expansion of to cover more businesses (Jiao and Lee 2021, 3). The reduction in wildlife product seizures highlights discrepancies in collected data, as illegal trade persist in areas beyond official scrutiny (L. Zhang, Hua, and Sun 2008, 1500). The price and availability of wildlife products are heavily impacted by the demand (Challender and MacMillan 2014, 487). This results in a dynamic market, where consumer preferences and the rhino ban's impact on prices reduce the rhino product availability successfully but may drive up demand for rhino products (Challender and MacMillan 2014, 487). Cohesive partnerships and collaborations are encouraged by the Chinese government and different ministries to facilitate data sharing and capacity building, which can aid in regulating wildlife trade (L. Xiao et al. 2021, R171). The challenge of enforcing trade bans requires maintaining updated protected species lists and addressing the rising online businesses (L. Xiao et al. 2021, R168).

The next criterion is the (7) wildlife protection law. The Chinese WPL focuses on improving conditions relating to ecological indicators, making wildlife population upkeep and habitat assessment important challenges. Consistent efforts are required to update information and incorporate current endangered species into the established protected lists and sections of the Chinese WPL (L. Xiao et al. 2021, R168). Protected areas play a crucial role in altering wildlife habitats and reducing illegal hunting (Feng, Liao, and Hu 2019, 8). In addition, wildlife farming in China contributes to positive changes in endangered wildlife populations and preserving endangered species (L. Xiao et al. 2021, R169). However, it also leads to higher rates of illegal poaching and trafficking to meet the rising demand (L. Xiao et al. 2021, R169). Despite this, wildlife farming reduces wildlife product seizures by meeting a significant portion of the demand for wildlife products (Wang et al. 2019, 431). The Chinese WPL specifies methods for handling seized wildlife, including auctions, destruction, conservation, and utilization for educational purposes (Wang et al. 2019, 431). As part of the WPL, fostering partnerships and collaborations can have a positive impact such as the interaction of different departments with each other (Jiao and Lee 2021, 2). Collaborating departments such as the NFGA and MARA can update endangered species into the protective lists of the WPL, facilitating up to date protection (Jiao and Lee 2021, 2). The Chinese government furthermore collaborates with different agencies such as CITES to promote the

WPL and ensure sustainable wildlife handling (L. Xiao et al. 2021, R170). A section of the Chinese WPL is dedicated to licensing the different species under the WPL, though the WPL creates vagueness with the licensing scheme (L. Xiao et al. 2021, R168, R169). Additionally, licensing schemes are outsourced to NGOs to improve data sharing and capacity building (Wang et al. 2019, 430). However, effective cross-sector cooperation is lacking in the WPL which hinders communication between departments and has a negative impact on enforcement (L. Xiao et al. 2021, R169). To add to this, the WPL faces challenges in enforcement due to technicalities, particularly the difficulties of distinguishing legal and illegal wildlife trade. This hinders the conviction of criminals and limits the disruption of criminal networks (L. Xiao et al. 2021, R169), (Li 2007, 87).

The last criterion examined in this thesis is the (8) legal policy framework. This criterion relies on ecological indicators to actively monitor and assess wildlife populations and their habitats to gain valuable insights (Feng, Liao, and Hu 2019, 5). The collected data by the Chinese State Forestry Administration assists in precisely addressing issues and adjusting conservation efforts (Feng, Liao, and Hu 2019, 5). By promoting substitutions, consumer demand is shifted away from endangered wildlife and aids in the combat against illegal wildlife trafficking (Rock and MacMillan 2022, 99). The reduced demand leads to a decrease in illegal trade volume (Feng, Liao, and Hu 2019, 8). For that reason, monitoring the market is a crucial part of legal policy framework as trends are identified and acted upon accordingly (Feng, Liao, and Hu 2019, 8). By analyzing trade data, the Chinese government has observed a reduction in wildlife product seizures due to positive legislation effects like wildlife farming (Wang et al. 2019, 428). The legal framework in China includes partnerships and collaborations across the ministries (Gong et al. 2020, R915). Despite regular collaborative sessions between the ministries, the separate management of the legal framework policies across the ministries leads to issues for the subsequent implementation of policies, requiring cohesive streamlining of the policy management (Jiao, Yeophantong, and Lee 2021, 7), (Gong et al. 2020, R915). Therefore, an interagency platform, the NICE-GG, was put together to enforce the legal polices and conservation goals (Jiao, Yeophantong, and Lee 2021, 7). This information sharing and the availability of initiatives and resources contribute to positively impacting the enforcement (Feng, Liao, and Hu 2019, 4, 5). However, there remains vagueness in the legal policy framework as laws are not as comprehensively defined, leading to difficulties in enforcement, prosecution, and convictions (Feng, Liao, and Hu 2019, 5). Despite convicting illegal traffickers and criminals connected with illegal wildlife trafficking, the disruption of criminal networks barely lasts as they are quick to reestablish

themselves (Yu 2010, 120). Through the data analysis, the importance of revising existing laws and adapting them has been highlighted and addressing the dynamic nature of wildlife trafficking remains a priority to increase enforcement success (L. Xiao et al. 2021, R171).

5.2. Vietnam

Like China, Vietnam's strategies against illegal wildlife trafficking incorporate multiple aspects, with each KPI contributing to the success of these strategies. Throughout the data analysis lessons concerning the implementation of the different strategies and the fight against illegal wildlife trafficking can be surmised. Each strategy is multifaceted and the different KPIs work together and influence each other. Consequently, it is necessary to approach each strategy comprehensively and in regard to a bigger picture.

5.2.1. Demand Reduction Strategies

As previously established, the demand reduction strategies are comprised of three criteria. Starting with criterion (1) educational campaigns in Vietnam, it is important to consider knowledge and awareness as an KPI. False information can have a negative impact on wildlife perceptions, emphasizing the significance of education (Ayling 2015, 5). Surveys throughout Vietnamese campaigns indicate an increased awareness, therefore promoting a reduction in demand (McEwan and Turley 2021, 97). As the knowledge and awareness for the issue surrounding illegal wildlife trafficking rises, consumers are more conscious of their demands and reduce them, thus driving down sales (Ayling 2015, 5). In addition, the campaign's reach can be increased and its effectiveness enhanced by using multimedia channels and engaging with the local community, taking into account Vietnamese cultural differences (Ayling 2015), (Sexton, Nguyen, and Roberts 2021, 8). This provokes a long-term impact as continued evaluation and adjustment of campaign messages contribute to sustained effectiveness (Ayling 2015, 8). Partnerships and collaborations with stakeholders illustrate the importance of collective efforts (Vu 2023, 7), (Ayling 2015, 12). Especially the collaboration with Vietnamese and international celebrities increases the leverage of educational campaigns, and involving local communities further enhances the effectiveness of awareness initiatives (Vu 2023, 7), (Ayling 2015, 12). As mentioned in the data analysis, fostering a culture of understanding issues revolving around illegal wildlife trafficking and the involvement of NGOs showcase the interconnected nature of educational campaigns and legal enforcement efforts (Vu 2023, 11).

Continuing with criterion (2) on social marketing campaigns, it can be stated that pre-campaign assessments are a valuable resource for designing effective campaigns that promote knowledge and awareness in the targeted Vietnamese groups (Greenfield and Veríssimo 2019, 45). Repeating campaigns, such as the Chi Initiative campaign, increase the perception on the issue of illegal wildlife trafficking with each stage (Moorhouse et al. 2020, 6), (Offord-Woolley 2017, 145, 146). As the data analysis shows, a reduction in demand in Vietnam can depend on various factors, such as the frequency with which a consumer uses wildlife products, so it is important to understand the different consumer groups in order to target interventions (Moorhouse et al. 2020, 6). Additionally, like educational campaigns, tailoring the campaign to the Vietnamese cultural beliefs and adjusting messaging to challenge these beliefs enhances the success (Greenfield and Veríssimo 2019, 46). Consequently, maximizing the campaign reach and raising awareness contribute to a successful long-term impact of the campaign (Sexton, Nguyen, and Roberts 2021, 3). The challenge presents itself in ensuring lasting changes. Collaborating with influential Vietnamese figures significantly enhance the success of social marketing campaigns (Vu 2023, 4). The positive impact of social influence strengthens community engagement and reinforces campaign messages (Vu 2023, 6). Similar to the (1) educational campaigns, the data analysis does not show an explicit increase in enforcement measures. However, as demand reduction strategies foster awareness and compliance, it is likely that there is an indirect impact on increased legal measures (Offord-Woolley 2017, 147).

The third and last criterion of demand reduction strategies are (3) behavior change campaigns. As the name already implies, the focus of behavior change campaigns is to foster positive changes in attitudes and action of consumers. Increased awareness empowers communities to report illegal activities and markets, showcasing a positive shift in behavior regarding the illegal wildlife trafficking issue in Vietnam (Thu Thuy Pham et al. 2022, 504). By changing the behavior and attitude, a reduction in demand can be provoked, as shown by a campaign targeting rhino horn in Vietnam (Olmedo, Sharif, and Milner-Gulland 2018, 6). As with the other demand reduction campaigns, tailoring the behavior change campaigns to the Vietnamese target audience as well is crucial for success (Olmedo, Sharif, and Milner-Gulland 2018, 3). Adjusting messaging style and cultural nuances can provoke interaction and engagement with the public (Olmedo, Sharif, and Milner-Gulland 2018, 4). This leads to an increased campaign reach and a long-term impact, as the dynamic adjustments of the campaign increase their success (Vu 2023, 6). Furthermore, partnerships and collaboration with research companies provide valuable information for campaign design (Olmedo, Sharif,

and Milner-Gulland 2018, 5). The incorporation of famous Vietnamese key figures serves as a public example and increases the success as well as the influence of a campaign (Olmedo, Sharif, and Milner-Gulland 2018, 5). Behavior change campaigns additionally target law enforcement, aiming to enhance existing enforcement measures and ensure effective legal frameworks (Olmedo, Sharif, and Milner-Gulland 2018, 4).

The effectiveness of demand reduction strategies depends on the precise targeting of consumers (Olmedo, Sharif, and Milner-Gulland 2018, 3). As Vietnam is a major consumer of rhino horn, many demand reduction campaigns focus on tackling a reduction for these products (Vu 2023, 6). Continuous evaluation and meaningful collaborations with NGOs, the local communities, government bodies, and research organizations all contribute to the success of these strategies (Olmedo, Sharif, and Milner-Gulland 2018, 2). Integrating legal enforcement aspects, such as having the public report violations, can further strengthen the overall impact of demand reduction strategies in combatting illegal wildlife trafficking (Thu Thuy Pham et al. 2022, 504). Nevertheless, the data analysis emphasizes the importance of flexibility as well as cultural sensitivity in crafting effective campaigns against illegal wildlife trafficking (M.-H. Nguyen and Jones 2022, 3). The demand reduction strategies aim to change the preconceived cultural notions regarding wildlife (M.-H. Nguyen and Jones 2022, 1). Thus, the campaigns need to merge traditional cultural values with new and more sustainably guided cultural values (M.-H. Nguyen and Jones 2022, 1).

5.2.2. Wildlife Management Strategies

As part of the wildlife management strategies, (4) conservation policies aim to protect wildlife. It is important to focus on ecological indicators and establishing protected areas to regenerate wildlife habitats and populations is crucial (Thi Thuy Pham et al. 2021, 5). Balancing conservation and local communities, who oftentimes rely on wildlife hunting and poaching, is essential for effective conservation policies (Thu Thuy Pham et al. 2022, 504). Additionally, monitoring trade data and markets efficiently is necessary to close down markets in case of illegal wildlife trafficking and handling (Thi Thuy Pham et al. 2021, 5). However, this is challenging due to the lack of real-time, accurate data collection and limited resources of the Vietnamese government (Thi Thuy Pham et al. 2021, 5). It is therefore necessary for the Vietnamese government to adapt the technological resources required and provide financial as well as human resources for wildlife conservation (Thi Thuy Pham et al. 2021, 5). Partnerships and collaboration efforts are another essential part of enforcing conservation policies. Investing in technology, capacity building and fostering digital

information sharing through collaboration of national and international departments and government bodies can enhance conservation policies (Thu Thuy Pham et al. 2022, 504). To add to that, the involvement of local populations and incorporation of their traditional knowledge positively supports sustainable conservation policies (Thu Thuy Pham et al. 2022, 504). Despite successful collaborations, the legal enforcement of conservation policies in Vietnam is lacking in certain aspects (Thu Thuy Pham et al. 2022, 504). Inconsistencies in regulations hinder the effective enforcement of penalties (Thi Thuy Pham et al. 2021, 5). Lack of resources, both financial and technological, pose additional challenges in convicting traffickers and disrupting criminal networks (Thi Thuy Pham et al. 2021, 5). Consequently, continuous policy updates based on available resources are crucial for enhancing conservation policy effectiveness (Thu Thuy Pham et al. 2022, 504).

The next criterion (5) anti-poaching strategy requires both long-term and situational implementation of ecological indicators. Monitoring wildlife populations and habitats is crucial for identifying species decline as analyzing poaching habits contributes to informed decision-making for anti-poaching initiatives by the Vietnamese government (Viollaz et al. 2021, 1382). To reduce poaching incidents, as mentioned previously, monitoring and tracking poaching incidents are fundamental (Viollaz et al. 2021, 1382). Regular reports enable the Vietnamese law enforcement to assess the effectiveness of measures (Viollaz et al. 2021, 1379). However, external factors can drive an increase in poaching incidents, emphasizing the need for adaptive anti-poaching measures to address these challenges (Thi Thuy Pham et al. 2021, 5). Regarding the KPI reduction in wildlife product seizures, data from the early 2000s indicated high seizure numbers in Vietnam (Van Song 2008, 8).Yet, a lack of data and the ambiguous nature of illegal wildlife trafficking makes tracking seizures and monitoring changes difficult (Van Song 2008, 8). Consequently, partnerships and collaborations are key for successful anti-poaching efforts. Local Vietnamese rangers who are familiar with the terrain and the communities play a pivotal role (Viollaz et al. 2021, 1379). Building partnerships with local communities encourages reporting of poaching incidents, thus contributing to more effective law enforcement (Viollaz et al. 2021, 1381). Compared to China, more local communities in Vietnam utilize poaching to bolster their economic income (Challender and MacMillan 2014, 488) and use poached wildlife as a food source (M.-H. Nguyen and Jones 2022, 1). Vietnamese people have deeply embedded cultural and sociological beliefs (M.-H. Nguyen and Jones 2022, 3). The hierarchically oriented Vietnamese society communicates these cultural values and their social rank through the consumption of wild meat, contributing to the persistent poaching issue (M.-H. Nguyen and

Jones 2022, 3). The Vietnamese legal enforcement faces challenges in distinguishing survival driven poaching incidents from organized trafficking incidents leading to prosecution difficulties (Viollaz et al. 2021, 1379). Despite penalties being enforced by the Vietnamese government, marginal punishments rarely discourages poachers from poaching and as a result, criminal networks are not disrupted (Challender and MacMillan 2014, 487).

5.2.3. Legal Frameworks

The next category, legal frameworks, comprises the last three strategies, which are labeled as criteria. Beginning with criterion (6) trade bans, it can be argued that trade bans on wildlife require vigilant monitoring not only by the Vietnamese government, but also by local patrols to ensure ecological sustainability (Thu Thuy Pham et al. 2021, 279:50). These patrols can give insights into illegal activities (Thu Thuy Pham et al. 2021, 279:50). However, a challenge are the slow and irregular resource updates, which impact the ability to notice changes effectively (Thu Thuy Pham et al. 2021, 279:53). A sustainable alternative Vietnam implements to support trade bans is incorporating farmed wildlife, fostering a balance between conservation and meeting demand (Thu Thuy Pham et al. 2021, 279:40). Additionally, monitoring wildlife product seizures is integral to assessing the impact of trade bans (Van Song 2008, 153). Collected seizure data by the Vietnamese government and NGOs indicates a thriving illegal trade of wildlife (L. Zhang, Hua, and Sun 2008, 1499, 1500), (Thu Thuy Pham et al. 2021, 279:45). The dynamic nature of illegal wildlife trade promotes coordinated efforts between Vietnamese ministries to address the continuous shifting patterns (Thu Thuy Pham et al. 2022, 501). As trade bans directly impact the availability of wildlife products, demand is impacted as well (Thu Thuy Pham et al. 2022, 503). On one hand, the Covid-19 pandemic has reduced the demand for wildlife products (Thu Thuy Pham et al. 2022, 503). But due to the large TCM market a large demand for wildlife products remains (Sexton, Nguyen, and Roberts 2021, 8). Partnerships and collaborations across government departments are essential for effective trade bans (Thu Thuy Pham et al. 2022, 501). Although Vietnam's collaboration with international organizations has become more pronounced during the pandemic, combined efforts remain limited due to a lack of coordination (Thu Thuy Pham et al. 2022, 501). Regarding legal enforcement, there are complexities in authority issues, prosecution, and penalties, which can lead to prolonged legal processes, similar to other criteria (Thu Thuy Pham et al. 2021, 279:51). It is important to ensure a clear and logical structure when discussing legal matters. Despite adjustments to existing laws, criminal networks are rarely disrupted, and the deterrence effects remain minimal (Thu Thuy Pham et

al. 2021, 279:50). This highlights the need for more stringent measures to combat the lucrative illegal wildlife trade.

As mentioned in the data analysis, Vietnam lacks a dedicated and specifically outlined (7) wildlife protection law. This is a major difference between China and Vietnam, as China has implemented the WPL targeting the protection of wildlife specifically in addition to other legal policy frameworks (You 2020, 1). Vietnam, however, has not implemented such a law, implementing instead a multitude of policies tackling the issue of protecting endangered wildlife (D. H. Nguyen and Dinh 2020, 8). Vietnam's legal policy framework for wildlife protection relies on multiple laws, including the Law on Forest Protection and Development as well as the Fisheries and Biodiversity Act (D. H. Nguyen and Dinh 2020, 8). Therefore, this discussion is proceeding directly to the next criterion for Vietnam.

Vietnam implements a plethora of (8) legal frameworks. As established by the other criteria, ecological indicators such as monitoring wildlife populations and their habitats, are critical for understanding the ecological impact of illegal wildlife trafficking (Luong 2022, 9). Overexploitation disrupts ecosystems, emphasizing the need for conservation efforts and legal frameworks to address these issues (D. H. Nguyen and Dinh 2020, 7). Furthermore, although Vietnam has implemented policy frameworks aiming to decrease the amount of illegal wildlife trafficking, markets in the country continue to exhibit a persistent demand for wildmeat for consumption, particularly during national holidays (Luong 2022, 10), (Van Song 2008, 161). Accordingly, the dynamic nature of illegal wildlife trafficking and complex wildlife trade markets pose a challenge of seizing wildlife products (D. H. Nguyen and Dinh 2020, 3, 4). Nevertheless, Vietnam is committed to partnerships and collaboration efforts, especially through the participation of its government in international treaties, which contribute to global conservation efforts (Vu 2023, 4), (D. H. Nguyen and Dinh 2020, 8). Collaboration with locals can contribute to effective legal frameworks through information sharing and capacity building initiatives (D. H. Nguyen and Dinh 2020, 9). However, limited budget and financial support pose challenges to enforcing the legal policy frameworks in place (Van Song 2008, 155, 156). Despite legal updates of the policy frameworks and penalty code, enforcement is insufficient (Sexton, Nguyen, and Roberts 2021, 2, 3). Criminal networks are rarely disrupted as the legal system primarily targets small traffickers and rarely convicts leaders of trafficking rings due to the size and complexity of criminal networks (Van Song 2008, 157).

5.3. Lessons and Limitations

In terms of the demand reduction strategies, which consist of educational, social marketing, and behavior change campaigns, cultural sensitivity is a crucial factor (Vu 2023, 13). This is particularly important for campaigns launched by international NGOs and stakeholders, as tailored messages and cultural adjustments are necessary to effectively reach the target country (Vu 2023, 13). The Chinese and Vietnamese public have different intrinsic and cultural values regarding the use of wildlife compared to other countries and Western cultures (Thomas-Walters, Cheung, et al. 2020, 965). Yet, China and Vietnam differ in their values and cultural beliefs as well. Whereas both countries practice TCM, China has more deeply rooted values concerning TCM (Thomas-Walters et al. 2021, 488). In Vietnam wildlife products such as pangolins for example, are used to convey social status (Thomas-Walters et al. 2021, 485). Additionally, comparing China and Vietnam, campaigns launched in Vietnam focus mostly on rhino horn, as Vietnam is a major consumer of this product (Vu 2023, 6). Demand reduction campaigns launched in China target a multitude of endangered species such as pangolins, rhinos, tigers and elephants (Collier and Kirkpatrick 2020, xxiv). To create a campaign that has a lasting impact on the target audience, the delivery of the campaigns can vary depending on peculiarities in different cultures and countries (Margulies, Wong, and Duffy 2019, 218), (Vu 2023, 13). For example, in China, people celebrate successes with treating themselves to special food derived from endangered wildlife and offering endangered wildlife products to their business partners (Margulies, Wong, and Duffy 2019, 217). Vietnamese people as well use endangered wildlife as gifts for business partners (Shairp et al. 2016, 8). This necessitates awareness and demand reduction campaigns to alter this type of behavior. Demand reduction campaigns can educate people for example on the origin and issues connected to gifting endangered wildlife to business partners (Vu 2023, 7), (Shairp et al. 2016, 12). Additionally, stakeholders launching campaigns should not omit pre-campaign assessments and continuous adjustments to the campaign itself (Olmedo, Sharif, and Milner-Gulland 2018, 7). Targeting a large audience requires flexibility and adaptation to effectively impact the target audience and create a lasting impact in attitudes, behaviors and understanding (Olmedo, Sharif, and Milner-Gulland 2018, 7). These results are consistent with other scholars findings (Margulies, Wong, and Duffy 2019, 218), (Olmedo, Sharif, and Milner-Gulland 2018, 7), (Vu 2023, 13).

However, one limitation of demand reduction strategies, as noted by other scholars such as Veríssimo and Wan (2019), is the challenge of assessing the impact of educational, social

marketing and behavior change campaigns. The observation of the impacts post-campaign proves to be challenging due to the influence of multiple conservation efforts being implemented at the same time (Veríssimo and Wan 2019, 630). The success of these campaigns cannot necessarily be isolated and allocated to a specific strategy as there are multiple intervention efforts in place simultaneously to disrupt and reduce illegal wildlife trafficking (Veríssimo and Wan 2019, 630). Consequently, there is a continuous challenge in navigating the complexities of attributing long-term behavior change solely to demand reduction campaigns (Veríssimo and Wan 2019, 630). Demand reduction strategies certainly aid in raising awareness of the issue of illegal wildlife trafficking (L. Xiao et al. 2021, R171), (McEwan and Turley 2021, 97). But the wide-spread and prevalent TCM market and beliefs contrast the efforts of demand reduction strategies and create a rift between long standing traditions and modern knowledge (Sexton, Nguyen, and Roberts 2021, 3), (Moorhouse et al. 2020, 2).

Concerning the wildlife management, one important lesson to consider is that the cultural, societal, and consumption aspects of China and Vietnam drive the issue of poaching and wildlife trafficking (Feng, Liao, and Hu 2019, 8). The establishment of protected areas, especially in cooperation with local communities, aids in achieving ecological sustainability and mitigate illegal wildlife trafficking and poaching (Jessica B. Rizzolo et al. 2021, 6). Additionally, wildlife farms lessen the strain on wildlife populations, by providing the opportunity for regeneration of the wildlife populations due to less poaching incentives (Jiao and Lee 2021, 3). Nevertheless, the consumption of wild meat conveys the social status and cultural values in both countries (M.-H. Nguyen and Jones 2022, 3). China is a main consumer country of wild meat and wildlife, and products derived from wildlife are used commonly in TCM (Feng, Liao, and Hu 2019, 8). Vietnamese people have deeply embedded cultural and sociological beliefs, therefore the hierarchically oriented Vietnamese society communicates these cultural values and their social rank through the consumption of wild meat, contributing to the persistent poaching issue (M.-H. Nguyen and Jones 2022, 3).

There are several limitations connected to protective areas and wildlife farming. These strategies face challenges in effective monitoring and licensing efforts (L. Xiao et al. 2021, R168). Poachers use wildlife farms, legal ambiguities, and the lack of monitoring, to launder illegally trafficked wildlife legally in the market (Jessica Bell Rizzolo 2021, 3). Nevertheless, the implementation of wildlife farms and captive breeding alleviates to a certain extent the strain on endangered species (Wang et al. 2019, 427). However, this ready supply of species

can have the downside of driving up demand, provoking the opposite of the intended goal to protect endangered species and incentivize illegal poaching and trafficking (Jiao and Lee 2021, 4), (Challender and MacMillan 2014, 490). Additionally, wildlife farms are critically viewed internationally (A. Y. Song and Yao 2022, 161). Using wildlife farming as a tool to support the diminishing numbers of endangered wildlife can lead to unsustainable management and excessive wildlife breeding (D. H. Nguyen and Dinh 2020, 7). There are ethical and animal welfare concerns as the commercialization of wildlife through wildlife farming (Wang et al. 2019, 428). Ethically farmed wildlife is reduced to a commodity, and as for animal welfare concerns, farmed wildlife have poor living conditions and are subjected to improper handling (Jessica Bell Rizzolo 2021, 3, 4). Despite these issues, taking China as an example, ethical concerns for wildlife by the Chinese population is lowered when the wildlife has uses in TCM (Jessica Bell Rizzolo 2021, 11). To mitigate these limitations, it is necessary for both countries to invest more into resources for monitoring and licensing (Thi Thuy Pham et al. 2021, 5). Vietnams government should allocate financial and human resources to ameliorate wildlife monitoring and handling, while making sure to update wildlife data regularly (Thi Thuy Pham et al. 2021, 5). The Chinese government as well should expand their current licensing schemes to include more business and wildlife farms, in order to better monitor and manage wildlife conservation (Jiao and Lee 2021, 3). By increasing monitoring and strengthening wildlife farming regulations, illegal wildlife poaching and the subsequent laundering through wildlife farms could be curbed (Jiao and Lee 2021, 5).

Congruent with other studies, a lesson that can be learned from the trade-bans, WPL, and legal framework strategies investigated previously, is that the disruption of criminal networks is insufficient (D. H. Nguyen and Dinh 2020, 8), (Wang et al. 2019, 431), (Challender and MacMillan 2014, 487). Legal enforcement in both China and Vietnam faces challenges in convicting illegal wildlife traffickers (Feng, Liao, and Hu 2019, 5), (D. H. Nguyen and Dinh 2020, 8). Law enforcement agencies often convict smaller traffickers rather than criminal leaders and thus rarely disrupt large criminal networks (Van Song 2008, 157). However, there have been successes in exposing criminal networks through collaboration between China and Vietnam (Collier and Kirkpatrick 2020, xlvii). These disruptions require time and resources and investigations can take up multiple months of planning (Collier and Kirkpatrick 2020, xlvii). Both China and Vietnam have made efforts to update their legal systems concerning the punishment and conviction of illegal trafficking (L. Xiao et al. 2021, R171), (Vu 2023, 4). It is necessary to improve and adjust the existing legal framework to combat illegal wildlife

trafficking, which is dynamic in nature (L. Xiao et al. 2021, R171). Legislative frameworks need to be flexible and adaptive (Wang et al. 2019, 428).

To reiterate in terms of limitations, the legal framework in both China and Vietnam has issues in breaking up and convicting criminal networks trafficking wildlife illegally (Feng, Liao, and Hu 2019, 5), (D. H. Nguyen and Dinh 2020, 8). In particular, the Chinese WPL creates deliberate vagueness for certain aspects such as for example the licensing scheme, because of Chinas close connection to TCM and cultural beliefs (L. Xiao et al. 2021, R168, R169), (Wang et al. 2019, 427, 428). Vague wording and technicalities leads to issues in disrupting criminal organizations (L. Xiao et al. 2021, R169), (Li 2007, 87). Furthermore, there are issues in prosecuting wildlife traffickers due to limited enforcement of policies, resulting in few identified cases to be prosecuted with legal repercussions (D. H. Nguyen and Dinh 2020, 8). Despite Vietnam implementing harsher policies and increasing convictions, traffickers are not deterred and continue to engage in illegal wildlife traffickers (Sexton, Nguyen, and Roberts 2021, 2, 3). This persistent trafficking partly stems from the fact that prosecuted criminals are small traffickers and middlemen (Van Song 2008, 157). China also has a low level of enforced prosecution, leading to difficulties in disrupting criminal networks (Feng, Liao, and Hu 2019, 5), (Yu 2010, 118).

Another lesson emerging from the data analysis conducted, and supported by other scholars, emphasizes the need to invest more resources in data monitoring, data collection, and data sharing (Wang et al. 2019, 432), (Collier and Kirkpatrick 2020, I), (Jiao and Lee 2021, 5). Streamlined data collection and monitoring is necessary to adjust the implemented strategies to curb illegal wildlife trafficking (Feng, Liao, and Hu 2019, 5). Comprehensive data collections can indicate trends in wildlife and trafficking, particularly in relation to anti-poaching measures and conservation policies (Challender and MacMillan 2014, 485), (L. Zhang, Hua, and Sun 2008, 1497). Increased funding for data monitoring and collection methods can be a viable tool to improve existing strategies, interpret data trends and establish tailored enforcement measures (Thu Thuy Pham et al. 2022, 503, 504). Taking Vietnam as an example, the country can benefit from improved data collection and monitoring as the data available is often out of date and does not accurately represent of the illegal trade (Thi Thuy Pham et al. 2021, 5). Misrepresentation and outdated data hinders the effective implementation of conservation and policy measures (Thi Thuy Pham et al. 2021, 4, 5). Having accurate data can show arising trends in wildlife trafficking, promoting targeted measures (Thi Thuy Pham et al. 2021, 7). The Vietnamese government has made efforts to

incorporate new technology for this purpose, however as there is a lack of technological development, departments are unable to implement the technology (Thu Thuy Pham et al. 2022, 504). Additionally, streamlining the collected data from different stakeholders necessitates an increase in collaboration between stakeholders (Jiao and Lee 2021, 2). Data sharing can fill in gaps for other stakeholders which might not have the necessary resources to conduct data collection and monitoring themselves (Thu Thuy Pham et al. 2022, 504). Increased collaboration facilitates information sharing and can improve existing strategies and enforcement measures (D. H. Nguyen and Dinh 2020, 8, 9). For example, China has established a licensing scheme for the use and trade of farmed wildlife as part of its conservation policy and WPL, which aids in authenticating farmed wildlife (Jiao and Lee 2021, 3). However, this scheme is not as well established as it could be (Jiao and Lee 2021, 3). The licensing process takes times, and the number of wildlife farms in China far surpass the allocated licenses (Jiao and Lee 2021, 3). Despite this, there is a limitation to China's marking system, as very few wildlife species are considered in the system (Jiao and Lee 2021, 4). The enforcement of the marking system as well necessitates continuous legal enforcement and data updating to have an impact on conservation and sustainability (Jiao and Lee 2021, 4).

In accordance with findings from other studies, the data analysis shows that despite far reaching collaborations domestically and internationally, both countries should strengthen international cooperation and adherence to global standards such as CITES and other standards which contribute to conservation efforts (Gong et al. 2020, R918), (D. H. Nguyen and Dinh 2020, 8). Although both China and Vietnam adhere to CITES, the execution of protecting CITES-listed species remains ambiguous, and the upkeep with endangered species is slow (Gong et al. 2020, R917). Many species listed in the CITES Appendixes are the subject of TCM practices and allowed for utilization in China and Vietnam (Jiao and Lee 2021, 2, 3), (Thu Thuy Pham et al. 2021, 279:1). As both China and Vietnam are defenders and users of TCM, certain species that are widely used in TCM, such as pangolins or rhinos, therefore face challenges in conservation efforts (Burgess et al. 2022, 24), (Moorhouse et al. 2020, 1). China's WPL allows certain species listed in the CITES Appendixes to be farmed and subsequently used in TCM or as a food source (Jiao and Lee 2021, 3). This allowance by the WPL drives up demand and negates anti-poaching efforts, as illegal poaching is used to meet the higher demand than what wildlife farming can provide (Jiao and Lee 2021, 3). In the case of Vietnam, the government adheres to the CITES regulations, however there is a lack of information sharing between the Vietnamese government and the CITES office (Thu Thuy Pham et al. 2021, 279:51). This data issue, lack of coordination, and cooperation poses

problems in the eventual enforcement of punishments and arrests (Thu Thuy Pham et al. 2021, 279:51). There is a need for both China and Vietnam to adjust their legal framework to remove any ambiguous formulations regarding wildlife handling, conservation, and management (Thu Thuy Pham et al. 2022, 504), (Jiao and Lee 2021, 4, 5).

6. Conclusion

The objective of this thesis was to evaluate the effectiveness of the strategies adopted by China and Vietnam in curbing illegal wildlife trafficking. It also aimed to draw lessons in light of the results. This study sought to improve the understanding of current tactics and how their implementation contributes to the prevention of illegal wildlife trafficking. The complex and multifaceted nature of illegal wildlife trafficking demands nuanced and scientifically informed strategies for effective reduction of illegal wildlife trafficking (Fukushima et al. 2021, 7). Extensive work has been done to combat illegal wildlife trafficking and various strategies have been implemented to address the issue (Gong et al. 2020, R915), (Thi Thuy Pham et al. 2021, 1). However, illegal wildlife trafficking remains a highly dynamic problem (Fukushima et al. 2021, 7).

The dynamic nature of demand reduction strategies underscores the ongoing efforts in China and Vietnam to combat illegal wildlife trafficking. Designing effective campaigns tackling the issue of illegal wildlife trafficking demands continuous research and development (Greenfield and Veríssimo 2019, 44). By targeting drivers of wildlife demand and addressing issues connected to illegal wildlife trafficking, the three demand reduction strategies addressed contribute as tools in mitigating the issue of illegal wildlife trafficking (Moorhouse et al. 2020, 6). The effectiveness of these demand reduction strategies depend on cultural sensitivity and adaptability to the target countries China and Vietnam (Greenfield and Veríssimo 2019, 44, 45), (Olmedo, Sharif, and Milner-Gulland 2018, 4). Furthermore, continuous assessment and evaluation can ensure successful and long-term demand reduction (Margulies, Wong, and Duffy 2019, 217), (Ayling 2015, 8). Educational, social marketing and behavior change campaigns have to be tailored to the intrinsic values and beliefs of the target audience considering the differences between Western and Asian cultures, and more specifically differences between China and Vietnam (Vu 2023, 13), (Margulies, Wong, and Duffy 2019, 218). As these campaigns are often launched by international NGOs and globally acting agencies, adaptability towards the target audiences is essential (Vu 2023, 13). Therefore, there is a need to evaluate the campaigns more rigorously in order to track the achievements and adjust accordingly (Olmedo, Sharif, and Milner-Gulland 2018, 7). These demand reduction

strategies raise awareness (Greenfield and Veríssimo 2019, 45), (Clayton et al. 2018, 127). However, the challenge lies in attributing a long-term behavior change to the target audiences to effectively reduce illegal wildlife trafficking (Greenfield and Veríssimo 2019, 45), (Clayton et al. 2018, 127). While demand reduction strategies contribute to a reduction in illegal wildlife trafficking, a definite reduction of illegal wildlife trafficking cannot solely be accredited to demand reduction strategies as there is a complex interplay of multiple conservation efforts (Veríssimo and Wan 2019, 630). Whereas China has implemented campaigns targeting a multitude of endangered animals, campaigns launched in Vietnam are more focused on elephants and rhinos (Collier and Kirkpatrick 2020, iv). Vietnam has a large market especially for rhino horn and ivory products as social status items (Collier and Kirkpatrick 2020, xxxvii), (Shairp et al. 2016, 8). China utilizes a multitude of endangered species in TCM (Thomas-Walters et al. 2021, 488). Therefore, campaigns conducted in China focus on a variety of species (Thomas-Walters et al. 2021, 488).

Wildlife management strategies, such as conservation policies and anti-poaching policies, hold promise in curbing illegal wildlife trafficking and poaching. Effective conservation policies are critical for safeguarding and promoting wildlife populations and habitats (Thi Thuy Pham et al. 2021, 5), (Viollaz et al. 2021, 1382). They furthermore necessitate a multifaceted approach that balances ecological sustainability with community needs (Jiao and Lee 2021, 3), (Thu Thuy Pham et al. 2022, 503, 504). Targeted interventions and conservation efforts such as wildlife breeding farms can mitigate wildlife trafficking and conserve endangered species (Jessica B. Rizzolo et al. 2021, 6). By farming animals and providing protected areas, endangered species can be released into the wild again to aid in bolstering their dwindling numbers (A. Y. Song and Yao 2022, 162). Additionally, protected areas, wildlife farms and the fostering of sustainable development in rural communities can reduce the reliance of communities on poaching and promote long-term conservation (Jessica B. Rizzolo et al. 2021, 6), (Jiao and Lee 2021, 3). However, there are challenges connected to these conservation efforts. The regulation of wildlife farms is not fully established and while wildlife farms aim to alleviate pressure on wildlife populations, demand may inadvertently be stimulated (Jiao and Lee 2021, 4), (L. Xiao et al. 2021, R168). This side effect can undermine conservation efforts as illegal poaching increases (Jiao and Lee 2021, 3), (Challender and MacMillan 2014, 490). To mitigate these issues, technological and human resources should be allocated for stricter enforcement of regulations, licensing schemes should be expanded to encompass more wildlife farms and businesses, and monitoring and data collection efforts should be increased (Thi Thuy Pham et al. 2021, 5), (Jiao and Lee 2021, 3, 5). Additionally,

the commercialization of wildlife farms faces international ethical and animal welfare concerns (Wang et al. 2019, 428). While both China and Vietnam adhere to international agreements such as CITES, enforcement remains inconsistent, and the protection of endangered species lags behind (Gong et al. 2020, R917).

The legal framework strategies in China and Vietnam as well face significant hurdles. The disruption of criminal networks is scare and law enforcement in China and Vietnam are not enough (D. H. Nguyen and Dinh 2020, 8), (Feng, Liao, and Hu 2019, 5). Although there have been successes in uncovering and disrupting operations by criminal networks, criminal networks are quick to reassemble and resume the illegal trafficking of wildlife (Collier and Kirkpatrick 2020, xlvii). Additionally, there are discrepancies between seized illegal wildlife and the subsequent quantity of convictions (Collier and Kirkpatrick 2020, xlix). Consequently, there is a need for China and Vietnam to increase their efforts in prosecuting wildlife trafficking crimes (Collier and Kirkpatrick 2020, xlix). Additional resources should be allocated to law enforcement and investigative departments should have the necessary tools and training to effectively gather evidence that leads to convictions (Collier and Kirkpatrick 2020, xlix). Regular law enforcement updates can benefit conservation efforts. However, it is important to consider that both China and Vietnam are culturally rich countries that place great emphasis on their traditions, such as TCM (Jiao and Lee 2021, 3), (Wang et al. 2019, 427). Although there is an attempt to incorporate global conservation standards, there are still double standards and legal ambiguities in place regarding endangered species (A. Y. Song and Yao 2022, 153, 154). Technicalities in law regulations allow for endangered wildlife to be farmed for commercial use, undermining conservation efforts (Jiao and Lee 2021, 2). Legal ambiguities therefore do not aid in the conservation of endangered species but sustain illegal wildlife trafficking (Feng, Liao, and Hu 2019, 5). Efforts are made to raise awareness about the issue, but long-standing traditions and cultural beliefs undermine these efforts (Sexton, Nguyen, and Roberts 2021, 3), (Moorhouse et al. 2020, 2).

In conclusion, the findings presented in this thesis offer valuable insights into the topic of illegal wildlife trafficking in East Asia and which lessons as well as limitations can be drawn from the strategies implemented by China and Vietnam. Illegal wildlife trafficking is a highly dynamic and global issue which requires a mix of strategies to mitigate and reduce illegal trafficking. Long-term as well as short-term measures aid in promoting sustainable wildlife conservation. Continuous research and adaptability of the implemented strategies pave the

way for China and Vietnam to protect and support the wildlife and biodiversity in harmony with the respective cultural beliefs, traditions, and global standards.

7. References

Abbott, Brant, and G. Cornelis van Kooten. 2011. "Can Domestication of Wildlife Lead to Conservation? The Economics of Tiger Farming in China." *Ecological Economics* 70 (4): 721–28. https://doi.org/10.1016/j.ecolecon.2010.11.006.

Ayling, Julie. 2015. "A Regulatory Approach to Demand Reduction in the Illegal Wildlife Market." *Social Science Research Network*. https://doi.org/10.2139/ssrn.2634303.

Bennett, Elizabeth L., Fiona M. Underwood, and E.J. Milner-Gulland. 2021. "To Trade or Not to Trade? Using Bayesian Belief Networks to Assess How to Manage Commercial Wildlife Trade in a Complex World." *Frontiers in Ecology and Evolution* 9. https://www.frontiersin.org/articles/10.3389/fevo.2021.587896.

Burgess, Gayle, Sam Ferreira, Bibhab Talukdar, Michael Knight, Sharon Baruch-Mordo, and Susie Ellis. 2022. *African and Asian Rhinoceroses: Status, Conservation and Trade: Report from the IUCN Species Survival Commission (IUCN SSC) African and Asian Rhino Specialist Groups and TRAFFIC (CITES CoP19 Doc 75)*.

Challender, Daniel W. S., and Douglas C. MacMillan. 2014. "Poaching Is More than an Enforcement Problem." *Conservation Letters* 7 (5): 484–94. https://doi.org/10.1111/conl.12082.

Chen, Frederick. 2016. "Poachers and Snobs: Demand for Rarity and the Effects of Antipoaching Policies." *Conservation Letters* 9 (1): 65–69. https://doi.org/10.1111/conl.12181.

Cherkaoui, Sidi Imad, Mohamed Boukherouk, Tarik Lakhal, Adil Aghzar, and Lahcen El Youssfi. 2020. "Conservation Amid COVID-19 Pandemic: Ecotourism Collapse Threatens Communities and Wildlife in Morocco." *E3S Web of Conferences* 183: 01003. https://doi.org/10.1051/e3sconf/202018301003.

Clayton, Susan, Sarah M. Bexell, Ping Xu, Zhihe Zhang, Li Wen Jing, Chen Hong Wei, and Hao Yan. 2018. "Confronting the Wildlife Trade through Public Education at Zoological Institutions in Chengdu, P.R. China." *Zoo Biology* 37 (2): 119–29. https://doi.org/10.1002/zoo.21402.

Collier, Peter, and Craig Kirkpatrick. 2020. "USAID WILDLIFE ASIA COUNTER WILDLIFE TRAFFICKING DIGEST: SOUTHEAST ASIA AND CHINA, 2019." Research report Issue III. Counter Wildlife Trafficking Digest: Southeast Asia and China. TRAFFIC CHINA. http://www.trafficchina.org/node/1612/.

Drury, Rebecca. 2009. "Reducing Urban Demand for Wild Animals in Vietnam: Examining the Potential of Wildlife Farming as a Conservation Tool." *Conservation Letters* 2 (6): 263–70. https://doi.org/10.1111/j.1755-263x.2009.00078.x.

Du, Na, Amir M. Fathollahi-Fard, and Kuan Yew Wong. 2023. "Wildlife Resource Conservation and Utilization for Achieving Sustainable Development in China: Main Barriers and Problem Identification." *Environmental Science and Pollution Research International*, April. https://doi.org/10.1007/s11356-023-26982-7.

Duffy, Rosaleen, Freya a. V. St John, Bram Büscher, and Dan Brockington. 2015. "The Militarization of Anti-Poaching: Undermining Long Term Goals?" *Environmental Conservation* 42 (4): 345–48. https://doi.org/10.1017/S0376892915000119.

Feng, Lu, Qiyi Cai, Yang Bai, and Wenjie Liao. 2021. "China's Wildlife Management Policy Framework: Preferences, Coordination and Optimization." *Land* 10 (9): 909. https://doi.org/10.3390/land10090909.

Feng, Lu, Wenjie Liao, and Junhua Hu. 2019. "Towards a More Sustainable Human–Animal Relationship: The Legal Protection of Wildlife in China." *Sustainability* 11 (11): 3112. https://doi.org/10.3390/su11113112.

Fukushima, Caroline Sayuri, Patricia Tricorache, Adam Toomes, Oliver C. Stringham, Emmanuel Rivera-Téllez, William J. Ripple, Gretchen Peters, et al. 2021. "Challenges

and Perspectives on Tackling Illegal or Unsustainable Wildlife Trade." *Biological Conservation* 263 (November): 109342. https://doi.org/10.1016/j.biocon.2021.109342.
Galster, Steven, William Schaedla, and Tim Redford. 2010. "Partnering to Stop Poaching: Developing Cross-Sector Strategic Responses to Wildlife Poaching." In *Tigers of the World (Second Edition)*, edited by Ronald Tilson and Philip J. Nyhus, 113–24. Noyes Series in Animal Behavior, Ecology, Conservation, and Management. Boston: William Andrew Publishing. https://doi.org/10.1016/B978-0-8155-1570-8.00007-4.
Gong, Shiping, Jun Wu, Yangchun Gao, Jonathan J. Fong, James F. Parham, and Haitao Shi. 2020. "Integrating and Updating Wildlife Conservation in China." *Current Biology* 30 (16): R915–19. https://doi.org/10.1016/j.cub.2020.06.080.
Greenfield, Steven, and Diogo Veríssimo. 2019. "To What Extent Is Social Marketing Used in Demand Reduction Campaigns for Illegal Wildlife Products? Insights From Elephant Ivory and Rhino Horn." *Social Marketing Quarterly* 25 (1): 40–54. https://doi.org/10.1177/1524500418813543.
Haas, Timothy C., and Sam M. Ferreira. 2016. "Combating Rhino Horn Trafficking: The Need to Disrupt Criminal Networks." *PloS One* 11 (11): e0167040. https://doi.org/10.1371/journal.pone.0167040.
He, X., M. Chen, and E. Zhang. 2015. "Dispersal of Reintroduced Chinese Water Deer after Release in Nanhui East Shoal Wildlife Sanctuary of Shanghai, China." *Italian Journal of Zoology* 82 (4): 582–91. https://doi.org/10.1080/11250003.2015.1051140.
Hinsley, Amy, Diogo Verissimo, and David L. Roberts. 2015. "Heterogeneity in Consumer Preferences for Orchids in International Trade and the Potential for the Use of Market Research Methods to Study Demand for Wildlife." *Biological Conservation* 190 (October): 80–86. https://doi.org/10.1016/j.biocon.2015.05.010.
Huang, Xiang-Qin, Chris Newman, Christina D. Buesching, Mei-Ling Shao, Yun-Chun Ye, Sha Liu, David W. Macdonald, and Zhao-Min Zhou. 2021. "Prosecution Records Reveal Pangolin Trading Networks in China, 2014–2019." *Zoological Research* 42 (5): 666. https://doi.org/10.24272/j.issn.2095-8137.2021.156.
Hughes, Alice, Mark Auliya, Sandra Altherr, Brett Scheffers, Jordi Janssen, Vincent Nijman, Chris R. Shepherd, Neil D'Cruze, Emerson Sy, and David P. Edwards. 2023. "Determining the Sustainability of Legal Wildlife Trade." *Journal of Environmental Management* 341 (September): 117987. https://doi.org/10.1016/j.jenvman.2023.117987.
Hughes, Liam J., Oscar Morton, Brett R. Scheffers, and David P. Edwards. 2023. "The Ecological Drivers and Consequences of Wildlife Trade." *Biological Reviews* 98 (3): 775–91. https://doi.org/10.1111/brv.12929.
Jiao, Yunbo, and Tien Ming Lee. 2021. "China's Conservation Strategy Must Reconcile Its Contemporary Wildlife Use and Trade Practices." *Frontiers in Ecology and Evolution* 9. https://www.frontiersin.org/articles/10.3389/fevo.2021.675400.
Jiao, Yunbo, Pichamon Yeophantong, and Tien Ming Lee. 2021. "Strengthening International Legal Cooperation to Combat the Illegal Wildlife Trade Between Southeast Asia and China." *Frontiers in Ecology and Evolution* 9. https://www.frontiersin.org/articles/10.3389/fevo.2021.645427.
Kachen, Sheen, and Anjala S. Krishen. 2020. "Exploring Online Comments from a Strategic Marketing Stance to Reduce Wildlife Crime." *Psychology & Marketing* 37 (12): 1771–80. https://doi.org/10.1002/mar.21420.
Kamminga, Jacob, Eyuel Ayele, Nirvana Meratnia, and Paul Havinga. 2018. "Poaching Detection Technologies—A Survey." *Sensors* 18 (5): 1474. https://doi.org/10.3390/s18051474.

Koh, Lian Pin, Yuhan Li, and Janice Ser Huay Lee. 2021. “The Value of China’s Ban on Wildlife Trade and Consumption.” *Nature Sustainability* 4 (1): 2–4. https://doi.org/10.1038/s41893-020-00677-0.

Li, Peter J. 2007. “Enforcing Wildlife Protection in China: The Legislative and Political Solutions.” *China Information* 21 (1): 71–107. https://doi.org/10.1177/0920203X07075082.

Luong, Hai Thanh. 2022. “Understanding the Illegal Wildlife Trade in Vietnam: A Systematic Literature Review.” *Laws* 11 (4): 64. https://doi.org/10.3390/laws11040064.

MacFarlane, Douglas, Mark J. Hurlstone, Ullrich K. H. Ecker, Paul J. Ferraro, Sander van der Linden, Anita K. Y. Wan, Diogo Veríssimo, et al. 2022. “Reducing Demand for Overexploited Wildlife Products: Lessons from Systematic Reviews from Outside Conservation Science.” *Conservation Science and Practice* 4 (3). https://doi.org/10.1111/csp2.627.

Margulies, Jared D., Rebecca W. Y. Wong, and Rosaleen Duffy. 2019. “The Imaginary ‘Asian Super Consumer’: A Critique of Demand Reduction Campaigns for the Illegal Wildlife Trade.” *Geoforum* 107 (December): 216–19. https://doi.org/10.1016/j.geoforum.2019.10.005.

McEwan, Alexandra, and Emma L Turley. 2021. “Green Criminology–Law Interdisciplinarity Towards Multispecies Justice: The Case of Wildlife Trafficking in Vietnam.” *International Journal for Crime, Justice and Social Democracy* 10 (3). https://doi.org/10.5204/ijcjsd.1804.

Moorhouse, Tom P., Peter G. R. Coals, Neil C. D’Cruze, and David W. Macdonald. 2020. “Reduce or Redirect? Which Social Marketing Interventions Could Influence Demand for Traditional Medicines?” *Biological Conservation* 242 (February): 108391. https://doi.org/10.1016/j.biocon.2019.108391.

Moshier, Andrea, Janna Steadman, and David L. Roberts. 2019. “Network Analysis of a Stakeholder Community Combatting Illegal Wildlife Trade.” *Conservation Biology* 33 (6): 1307–17. https://doi.org/10.1111/cobi.13336.

Nataraajan, Arthi Shri. 2020. “Wildlife Trafficking: Focusing on the Entire Supply Chain.” *Psychology & Marketing* 37 (12): 1677–83. https://doi.org/10.1002/mar.21431.

Nguyen, Duc Hanh, and Thi Mai Dinh. 2020. “Impacts of Wildlife Trade and Sustainable Development in Vietnam.” Edited by S. Kudriavtcev and V. Murgul. *E3S Web of Conferences* 157: 03001. https://doi.org/10.1051/e3sconf/202015703001.

Nguyen, Minh-Hoang, and Thomas E. Jones. 2022. “Predictors of Support for Biodiversity Loss Countermeasure and Bushmeat Consumption among Vietnamese Urban Residents.” *Conservation Science and Practice* 4 (12). https://doi.org/10.1111/csp2.12822.

Noer, Ilham Setiawan, Yanto Santosa, and Dede Aulia Rahman. 2022. “ECONOMIC VALUATION OF THE MOLUCCAN ECLECTUS BASED ON MARKET PRICE AND MAINTENANCE COST APPROACH.” *Media Konservasi* 27 (2): 27–33. https://doi.org/10.29244/medkon.27.2.27-33.

Offord-Woolley, Susie. 2017. “The Chi Initiative: A Behaviour Change Initiative to Reduce the Demand for Rhino Horn in Viet Nam.” *Pachyderm* 58: 144–47.

Olmedo, Alegría, Vian Sharif, and E.J. Milner-Gulland. 2018. “Evaluating the Design of Behavior Change Interventions: A Case Study of Rhino Horn in Vietnam.” *Conservation Letters* 11 (1). https://doi.org/10.1111/conl.12365.

Pham, Thi Thuy, Van Thong Pham, Thi Mai Trinh, Nhat Long Cao, Thi Thuy Anh Nguyen, Thi Van Anh Nguyen, Thi Kim Hong Tang, and Van Thai Nguyen. 2021. *Enhancing the Legal Framework towards Holistic and Sustainable Wildlife Conservation in Vietnam*. Center for International Forestry Research (CIFOR). https://doi.org/10.17528/cifor/008298.

Pham, Thu Thuy, Thi Kim Hong Tang, Hai Phuong Dang, Thi Kieu Nuong Nguyen, Tuan Long Hoang, Ngoc My Hoa Tran, Thi Thuy Anh Nguyen, Thi Van Anh Nguyen, and Isabela Valencia. 2022. "Policymaker Perceptions of COVID-19 Impacts, Opportunities and Challenges for Sustainable Wildlife Farm Management in Vietnam." *Environmental Science & Policy* 136 (October): 497–509. https://doi.org/10.1016/j.envsci.2022.07.017.

Pham, Thu Thuy, Thi Kim Hong Tăng, Thi Thuy Anh Ngyuen, and Thi Van Anh Ngyuen. 2021. *Wildlife Management and Conservation in Vietnam: From Policy to Practice*. Vol. 279. CIFOR. https://books.google.at/books?hl=de&lr=&id=Qe2bEAAAQBAJ&oi=fnd&pg=PP1&dq=Wildlife+management+and+conservation+in+Vietnam:+From+policy+to+practice&ots=sYV8F7HAUU&sig=vxLaEErnrUQUfzvI0Y-I3FcnMds.

Rivera, Shannon N., Andrew Knight, and Steven P. McCulloch. 2021. "Surviving the Wildlife Trade in Southeast Asia: Reforming the 'Disposal' of Confiscated Live Animals under CITES." *Animals* 11 (2): 439. https://doi.org/10.3390/ani11020439.

Rizzolo, Jessica B., Meredith L. Gore, Barney Long, Cao T. Trung, Josh Kempinski, Benjamin Rawson, Hoàng T. Huyễn, and Julie Viollaz. 2021. "Protected Area Rangers as Cultural Brokers? Implications for Wildlife Crime Prevention in Viet Nam." *Frontiers in Conservation Science* 2. https://doi.org/10.3389/fcosc.2021.698731.

Rizzolo, Jessica Bell. 2021. "Effects of Legalization and Wildlife Farming on Conservation." *Global Ecology and Conservation* 25 (January): e01390. https://doi.org/10.1016/j.gecco.2020.e01390.

Rock, Katherine I., and Douglas C. MacMillan. 2022. "Can Substitutes Reduce Future Demand for Wildlife Products: A Case Study of China's Millennial Generation." *Human Ecology* 50 (1): 91–111. https://doi.org/10.1007/s10745-021-00279-0.

Rosen, Gail Emilia, and Katherine F. Smith. 2010. "Summarizing the Evidence on the International Trade in Illegal Wildlife." *EcoHealth* 7 (1): 24–32. https://doi.org/10.1007/s10393-010-0317-y.

Ryan, Jillian, Sarah Mellish, Jillian Dorrian, Tony Winefield, and Carla Litchfield. 2020. "Effectiveness of Biodiversity-Conservation Marketing." *Conservation Biology* 34 (2): 354–67. https://doi.org/10.1111/cobi.13386.

Scheffers, Brett R., Brunno F. Oliveira, Ieuan Lamb, and David P. Edwards. 2019. "Global Wildlife Trade across the Tree of Life." *Science* 366 (6461): 71–76. https://doi.org/10.1126/science.aav5327.

Sexton, Rebecca, Trang Nguyen, and David L. Roberts. 2021. "The Use and Prescription of Pangolin in Traditional Vietnamese Medicine." *Tropical Conservation Science* 14 (January): 194008292098575. https://doi.org/10.1177/1940082920985755.

Shairp, Rachel, Diogo Veríssimo, Iain Fraser, Daniel Challender, and Douglas MacMillan. 2016. "Understanding Urban Demand for Wild Meat in Vietnam: Implications for Conservation Actions." *PloS One* 11 (1): e0134787. https://doi.org/10.1371/journal.pone.0134787.

Song, Annie Young, and Yanran Yao. 2022. "To Ban or Not to Ban: China's Trade in Endangered Species." *Journal of Contemporary China* 31 (133): 153–67. https://doi.org/10.1080/10670564.2021.1926103.

Song, Zhifan, Qiang Wang, Zhen Miao, Kirsten Conrad, Wei Zhang, Xuehong Zhou, and Douglas C. MacMillan. 2021. "The Impact of Information on Attitudes toward Sustainable Wildlife Utilization and Management: A Survey of the Chinese Public." *Animals* 11 (9): 2640. https://doi.org/10.3390/ani11092640.

Tensen, Laura. 2016. "Under What Circumstances Can Wildlife Farming Benefit Species Conservation?" *Global Ecology and Conservation* 6 (April): 286–98. https://doi.org/10.1016/j.gecco.2016.03.007.

The Office of the National Assembly of Vietnam. 2019. “Handbook on Wildlife Conservation Policy.” Summary Report. Hanoi, Vietnam: The National Assembly of Vietnam. https://changewildlifeconsumers.org/toolkit/viet-nam-national-assembly-handbook-on-wildlife-conservation/.

Thomas-Walters, Laura, Hubert Cheung, Tien Ming Lee, Anita Kar Yan Wan, and Yifu Wang. 2020. “Targeted Values: The Relevance of Classical Chinese Philosophy for Illegal Wildlife Demand Reduction Campaigns.” *People and Nature* 2 (4): 964–71. https://doi.org/10.1002/pan3.10127.

Thomas-Walters, Laura, Amy Hinsley, Daniel Bergin, Gayle Burgess, Hunter Doughty, Sara Eppel, Douglas MacFarlane, et al. 2021. “Motivations for the Use and Consumption of Wildlife Products.” *Conservation Biology* 35 (2): 483–91. https://doi.org/10.1111/cobi.13578.

Thomas-Walters, Laura, Diogo Veríssimo, Erica Gadsby, David Roberts, and Robert J. Smith. 2020. “Taking a More Nuanced Look at Behavior Change for Demand Reduction in the Illegal Wildlife Trade.” *Conservation Science and Practice* 2 (9). https://doi.org/10.1111/csp2.248.

Travers, Henry, Lucy J. Archer, Geoffrey Mwedde, Dilys Roe, Julia Baker, Andrew J. Plumptre, Aggrey Rwetsiba, and E.j. Milner-Gulland. 2019. “Understanding Complex Drivers of Wildlife Crime to Design Effective Conservation Interventions.” *Conservation Biology* 33 (6): 1296–1306. https://doi.org/10.1111/cobi.13330.

Trouwborst, Arie, Andrew Blackmore, Luigi Boitani, Michael Bowman, Richard Caddell, Guillaume Chapron, An Cliquet, et al. 2017. “International Wildlife Law: Understanding and Enhancing Its Role in Conservation.” *BioScience* 67 (9): 784–90. https://doi.org/10.1093/biosci/bix086.

Van Song, Nguyen. 2008. “Wildlife Trading in Vietnam: Situation, Causes, and Solutions.” *The Journal of Environment & Development* 17 (2): 145–65.

Van Uhm, Daan P, and William D Moreto. 2018. “Corruption Within the Illegal Wildlife Trade: A Symbiotic and Antithetical Enterprise.” *The British Journal of Criminology* 58 (4): 864–85. https://doi.org/10.1093/bjc/azx032.

Veríssimo, Diogo, and Anita K. Y. Wan. 2019. “Characterizing Efforts to Reduce Consumer Demand for Wildlife Products.” *Conservation Biology* 33 (3): 623–33. https://doi.org/10.1111/cobi.13227.

Viollaz, Julie, Barney Long, Cao Tiến Trung, Josh Kempinski, Benjamin M. Rawson, Hoàng Xuân Quang, Nguyễn Ngọc Hiền, et al. 2021. “Using Crime Script Analysis to Understand Wildlife Poaching in Vietnam.” *Ambio* 50 (7): 1378–93. https://doi.org/10.1007/s13280-020-01498-3.

Viollaz, Julie, Jessica Bell Rizzolo, Barney Long, Cao Tien Trung, Josh Kempinski, Benjamin M. Rawson, Danielle Reynald, et al. 2022. “Potential for Informal Guardianship in Community-Based Wildlife Crime Prevention: Insights from Vietnam.” *Nature Conservation* 48 (May): 123–47. https://doi.org/10.3897/natureconservation.48.81635.

Vu, Anh Ngoc. 2023. “Demand Reduction Campaigns for the Illegal Wildlife Trade in Authoritarian Vietnam: Ungrounded Environmentalism.” *World Development* 164 (April): 106150. https://doi.org/10.1016/j.worlddev.2022.106150.

Wallen, Kenneth E., and Elizabeth Daut. 2018. “The Challenge and Opportunity of Behaviour Change Methods and Frameworks to Reduce Demand for Illegal Wildlife.” *Nature Conservation* 26 (April): 55–75. https://doi.org/10.3897/natureconservation.26.22725.

Wang, Wenxia, Liangliang Yang, Torsten Wronski, Shaozhi Chen, Yanjie Hu, and Songlin Huang. 2019. “Captive Breeding of Wildlife Resources—China’s Revised Supply-Side Approach to Conservation.” *Wildlife Society Bulletin* 43 (3): 425–35. https://doi.org/10.1002/wsb.988.

Weber, Diana S., Tait Mandler, Markus Dyck, Peter J. Van Coeverden De Groot, David S. Lee, and Douglas A. Clark. 2015. "Unexpected and Undesired Conservation Outcomes of Wildlife Trade Bans—An Emerging Problem for Stakeholders?" *Global Ecology and Conservation* 3 (January): 389–400. https://doi.org/10.1016/j.gecco.2015.01.006.

Wilson, Lauren, and Rachel Boratto. 2020. "Conservation, Wildlife Crime, and Tough-on-Crime Policies: Lessons from the Criminological Literature." *Biological Conservation* 251 (November): 108810. https://doi.org/10.1016/j.biocon.2020.108810.

Xiao, Lingyun, Zhi Lu, Xueyang Li, Xiang Zhao, and Binbin V. Li. 2021. "Why Do We Need a Wildlife Consumption Ban in China?" *Current Biology* 31 (4): R168–72. https://doi.org/10.1016/j.cub.2020.12.036.

Xiao, Xiao, Chris Newman, Christina D. Buesching, David W. Macdonald, and Zhao-Min Zhou. 2021. "Animal Sales from Wuhan Wet Markets Immediately Prior to the COVID-19 Pandemic." *Scientific Reports* 11 (1): 11898. https://doi.org/10.1038/s41598-021-91470-2.

Xu, Jiaping, and Aiwu Jiang. 2022. "Effects of Nature Contact on Children's Willingness to Conserve Animals under Rapid Urbanization." *Global Ecology and Conservation* 38 (October): e02278. https://doi.org/10.1016/j.gecco.2022.e02278.

You, Mingqing. 2020. "Changes of China's Regulatory Regime on Commercial Artificial Breeding of Terrestrial Wildlife in Time of COVID-19 Outbreak and Impacts on the Future." *Biological Conservation* 250 (October): 108756. https://doi.org/10.1016/j.biocon.2020.108756.

Yu, Xiaojiang. 2010. "Biodiversity Conservation in China: Barriers and Future Actions." *International Journal of Environmental Studies* 67 (2): 117–26. https://doi.org/10.1080/00207231003683457.

Zhang, Li, Ning Hua, and Shan Sun. 2008. "Wildlife Trade, Consumption and Conservation Awareness in Southwest China." *Biodiversity and Conservation* 17 (6): 1493–1516. https://doi.org/10.1007/s10531-008-9358-8.

Zhang, Zheng, Timothy C. Bonebrake, Shuang Xing, Caroline Dingle, Iris Ho, and Astrid A. Andersson. 2022. "Low Pangolin Consumption in Hong Kong Pre- and Post- the COVID-19 Outbreak: Conservation and Health Concerns Both Contribute to People's Attitudes." *Global Ecology and Conservation* 35 (June): e02107. https://doi.org/10.1016/j.gecco.2022.e02107.

Appendix A - Abstract

English Abstract

Illegal wildlife trafficking is a global concern and one of the largest illegal trades in East Asia (Moshier, Steadman, and Roberts 2019, 1308). China and Vietnam have a rich biodiversity in need of protection, as large illegal trafficking markets are decimating existing and endangered wildlife populations (The Office of the National Assembly of Vietnam 2019, 6). China and Vietnam respond to the challenge of conserving wildlife with a multitude of strategies to combat illegal wildlife trade and conserve endangered wildlife (Gong et al. 2020, R915), (Thi Thuy Pham et al. 2021, 1). This thesis evaluates the effectiveness of China's and Vietnam's approaches to combat illegal wildlife trafficking by conducting a thorough literature review, analysis, and evaluation of these strategies. Moreover, this thesis offers lessons, insights, and important takeaways from the findings. The goal of the research is to improve the understanding of current tactics, their application in real world situations, and their influence on combatting illegal wildlife trafficking. Three main strategies are identified. Demand reduction strategies in China and Vietnam are important tools in tackling illegal wildlife trafficking. Their effectiveness depends on cultural sensitivity, adaptability to the target audiences, and continuous assessment and evaluation. However, there are difficulties in attributing long-term behavior change to specific strategies as multiple strategies interact during the same time span. Regarding wildlife management strategies, breeding farms and protected areas hold promise in curbing illegal wildlife trafficking. Despite this, there remains inadequate regulations and legal frameworks concerning wildlife farms, as they can stimulate demand through commercialization and drive-up poaching. Inconsistent enforcement and adherence to international agreements remain and negatively influence conservation efforts. The legal framework strategies in both China and Vietnam face significant obstacles as there is inadequate law enforcement, enabling the quick reassembly of criminal networks. Insufficient and outdated data collection and technologies as well pose challenges. Legal ambiguities remain regarding endangered species regulations and global conservation standards. China and Vietnam have made great strides toward protecting and promoting wildlife and biodiversity in accordance with their unique cultural values, traditions, and international norms, due to ongoing research. Both short-term and long-term strategies support the promotion of sustainable wildlife protection and mitigate illegal wildlife trafficking.

German Abstract

Der illegale Handel mit Wildtieren ist ein globales Problem und einer der größten illegalen Märkte und Handelsströme in Ostasien (Moshier, Steadman und Roberts 2019, 1308). China und Vietnam verfügen über eine reiche biologische Vielfalt, die aufgrund der großen Märkte für illegalen Handel gefährdet ist. Dies führt zum Rückgang bestehender und gefährdeter Wildtierpopulationen (The Office of the National Assembly of Vietnam 2019, 6). China und Vietnam reagieren auf die Herausforderung des Schutzes von Wildtieren mit einer Vielzahl von Strategien, die darauf abzielen, den illegalen Wildtierhandel zu bekämpfen und gefährdete Wildtiere zu erhalten (Gong et al. 2020, R915), (Thi Thuy Pham et al. 2021, 1). Ziel dieser Arbeit ist es, die Wirksamkeit der chinesischen und vietnamesischen Ansätze zur Bekämpfung des illegalen Wildtierhandels zu bewerten, indem eine gründliche Literatur Überprüfung, Analyse und Bewertung dieser Strategien durchgeführt wird. Darüber hinaus bietet diese Arbeit Erkenntnisse und wichtige Schlussfolgerungen aus den Ergebnissen. Ziel der Untersuchung ist es, das Verständnis für die aktuellen Taktiken, ihre Anwendung in realen Situationen und ihren Einfluss auf die Bekämpfung des illegalen Wildtierhandels zu verbessern. Drei Hauptstrategien werden identifiziert. Strategien zur Nachfragereduzierung in China und Vietnam sind wichtige Instrumente im Kampf gegen den illegalen Wildtierhandel. Die Wirksamkeit dieser hängt von der kulturellen Sensibilität, der Anpassungsfähigkeit an das Zielpublikum und der kontinuierlichen Bewertung und Evaluierung ab. Es ist jedoch schwierig, langfristige Verhaltensänderungen bestimmten Strategien zuzuordnen, da mehrere Strategien im gleichen Zeitraum zusammenwirken. Was die Strategien zum Management von Wildtieren betrifft, so sind Zuchtfarmen und Schutzgebiete vielversprechend, um den illegalen Wildtierhandel einzudämmen. Dennoch gibt es nach wie vor unzureichende Vorschriften und rechtliche Rahmenbedingungen für Wildtierfarmen, da diese die Nachfrage durch Kommerzialisierung anregen und die Wilderei anheizen können. Auch die uneinheitliche Durchsetzung und Einhaltung internationaler Abkommen bleibt bestehen und wirkt sich negativ auf die Erhaltungsbemühungen aus. Sowohl in China als auch in Vietnam stehen die Strategien zur Schaffung eines rechtlichen Rahmens vor erheblichen Hindernissen, da die Durchsetzung der Gesetze unzureichend ist und kriminelle Netzwerke schnell wieder aufgebaut werden können. Unzureichende und veraltete Datenerfassung und Technologien stellen ebenfalls eine Herausforderung dar. Es bestehen nach wie vor rechtliche Unklarheiten in Bezug auf die Vorschriften für gefährdete Arten und die globalen Naturschutzstandards. China und Vietnam haben dank laufender Verbesserungen ihrer Strategien große Fortschritte beim Schutz und der Förderung von Wildtieren und biologischer Vielfalt im Einklang mit

ihren einzigartigen kulturellen Werten, Traditionen und internationalen Normen gemacht. Sowohl kurz- als auch langfristige Strategien unterstützen die Förderung eines nachhaltigen Schutzes von Wildtieren und die Eindämmung des illegalen Handels mit Wildtieren.

Appendix B - China

Existence of Strategies in China

1. Category	*2. Criteria*	*3. Sub-Criteria*	*4. Unit*	*5. Data Sources*
Demand reduction strategy	(1) Educational campaigns	- Existence in target country? - Area of implementation? - Different/multiple marketing Channels used? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes Zoo, public areas, institutions Yes Yes	TRAFFIC CITES Case studies
	(2) Social Marketing Campaigns	- Existence in target country? - Area of implementation? - Different/multiple marketing Channels used? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes Public areas, TCM users and market Yes Yes	
	(3) Behavioral change campaigns	- Existence in target country? - Area of implementation?	Yes Public events, social media	

		- Different/multiple marketing Channels used? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes Yes	
Wildlife management strategy	(4) Conservation Policy	- Existence in target country? - Captive breeding programs? - Protected areas established? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes Yes Yes Yes	TRAFFIC CITES Case studies
	(5) Anti-poaching policy	- Existence in target country? - Captive breeding programs? - Protected areas established? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes Yes Yes Yes	
Legal Framework	(6) Trade-bans	- Existence in target country? - National list of protected species existing and implemented? - CITES endangered species Appendix considered? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes Yes Yes Yes	TRAFFIC CITES Case studies

		- Cross-border cooperation and multilateral agreements?	Yes	
	(7) Wildlife protection law	- Existence in target country? - National list of protected species existing and implemented? - CITES endangered species Appendix considered? - International or domestic organizations, NGOs, government agencies or local community involved? - Cross-border cooperation and multilateral agreements?	Yes Yes Yes Yes Yes	
	(8) Legal policies	- Existence in target country? - National list of protected species existing and implemented? - CITES endangered species Appendix considered? - International or domestic organizations, NGOs, government agencies or local community involved? - Cross-border cooperation and multilateral agreements?	Yes Yes Yes Yes Yes	

Table 3: Existence of strategies in China

KPI and Success Evaluation of Strategies in China

2. Criteria	*6. Key performance Indicator (KPI)*	*7. Sub-success factor*	*8. Unit*	*9. Data sources*
(1) Educational campaigns	Knowledge and awareness	- Surveys tracking behavior or attitude change conducted? - Observational studies conducted? - Perception change of wildlife products or wildlife conservation efforts? - Illegal activities reported to authorities?	Yes Yes Yes Cannot tell	TRAFFIC CITES Case studies
	Reduction in demand	- Consumer surveys conducted? - Changes in consumer demand monitored? - Sales data change? - Market research conducted?	Yes Yes Cannot tell Yes	
	Campaign reach	- Campaign adjusted to target audience? - Campaign adjusted to cultural differences? - Does the reach have a broad scope? - Multiple channels of distribution of campaigns? - Media coverage of campaigns? - Public engages with the campaigns?	Cannot tell Cannot tell Yes Yes Yes Yes	
	Long-term impact	- Changes in attitude or behavior persist after the campaign?	Yes	

		- Follow up surveys conducted? - Does the campaign adjust its message over time?	Yes Yes	
	Partnerships and Collaboration	- Are there partnerships or collaborations participating in the campaigns? - If partnerships are applicable, do they enhance the campaign? - Expert opinion/expertise integrated in campaign message?	Yes Yes Yes	
	Legal enforcement	- Did the campaign lead to increased enforcement measures?	Yes	
(2) Social marketing campaigns	Knowledge and awareness	- Pre- and post-campaign assessment? - Observational studies conducted? - Perception change of wildlife products or wildlife conservation efforts? - Illegal activities reported to authorities?	Yes Yes Yes Cannot tell	
	Reduction in demand	- Consumer surveys conducted? - Changes in consumer demand monitored? - Sales data change? - Market research conducted?	Yes Yes Yes Yes	
	Campaign reach	- Campaign adjusted to target audience? - Campaign adjusted to cultural differences? - Multiple channels of distribution of campaigns? - Media coverage of campaigns? - Public engages with the campaigns?	Yes Yes Yes Yes Yes	

	Long-term impact	- Changes in attitude or behavior persist after the campaign? - Follow up surveys conducted? - Does the campaign adjust its message over time?	Yes Yes Yes	
	Partnerships and Collaboration	- Are there partnerships or collaborations participating in the campaigns? - If partnerships are applicable, do they enhance the campaign? - Famous people involved?	Yes Yes Yes	
	Legal enforcement	- Did the campaign lead to increased enforcement measures?	Yes	
(3) Behavioral change campaign	Behavior and attitude change	- Pre- and post-campaign assessment? - Observational studies conducted? - Attitude or perception change of wildlife products or wildlife conservation efforts? - Illegal activities reported to authorities?	Yes Yes Yes Cannot tell	
	Reduction in demand	- Consumer surveys conducted? - Changes in consumer demand monitored? - Sales data change? - Market research conducted?	Yes Yes Cannot tell Yes	
	Campaign reach	- Campaign adjusted to target audience? - Campaign adjusted to cultural differences? - Multiple channels of distribution of campaigns?	Yes Yes Yes	

		- Media coverage of campaigns? - Public engages with the campaigns?	Cannot tell Yes	
	Long-term impact	- Changes in attitude or behavior persist after the campaigns? - Follow up surveys conducted? - Does the campaign adjust its message over time?	Yes Yes Yes	
	Partnerships and collaboration	- Are there partnerships or collaborations participating in the campaigns? - If partnerships are applicable, do they enhance the campaign? - Famous people involved?	Yes Yes Yes	
	Legal enforcement	- Did the campaign lead to increased enforcement measures?	Yes	
(4) Conservation policy	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Substitution available?	Yes Yes Yes Yes Yes	
	Reduction in trade volume	- Changes in trade volume monitored? - Trade data monitored? - Market monitored? - Changes in availability of wildlife products?	Yes Yes Yes Yes	
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations?	Yes	

		- Information sharing between stakeholders? - Capacity building initiatives available?	Yes Yes	
	Legal enforcement	- Arrests enforced? - Prosecution/penalties enforced? - Convictions made? - Number of wildlife product seizures monitored? - Confiscation rates changed? - Are the laws updated?	Cannot tell Yes Yes Cannot tell Cannot tell Yes	
(5) Anti-poaching	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Surveys conducted? - Substitution available?	Yes Yes Yes Yes Yes Yes	
	Reduction in poaching incidents	- Number of poaching incidents monitored? - Illegal hunting or trapping incidents tracked?	Yes Cannot tell	
	Reduction in wildlife product seizures	- Number of wildlife product seizures monitored? - Confiscation rates changed?	Yes Cannot tell	
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations?	Yes	

		- Local communities involved/reporting illegal activities? - Information sharing between stakeholders? - Capacity building initiatives available?	No Yes Yes	
	Legal enforcement	- Arrests enforced? - Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for poaching and trafficking enforced? - Are the laws updated?	Yes Yes Yes No Yes Yes	
(6) Trade bans	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats - Substitution available?	Yes Yes Yes Yes Yes	
	Reduction in trade volume	- Changes in trade volume monitored? - Trade data monitored? - Market monitored? - Changes in availability of wildlife products?	Yes Yes Yes Yes	
	Reduction in wildlife product seizures	- Number of wildlife product seizures monitored? - Confiscation rates changed?	Yes Yes	
	Price and availability	- Changes in wildlife product availability? - Market survey conducted	Yes Yes	

		- Price changes for trafficked wildlife products? - Substitution products available? - Certification of traded product?	Cannot tell Yes Yes	
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Local communities involved/reporting illegal activities? - Information sharing between stakeholders? - Capacity building initiatives available?	Yes Cannot tell Yes Yes	
	Legal enforcement	- Arrests enforced? - Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for trafficking enforced? - Are the laws updated?	Yes Yes Yes No Yes Yes	
(7) Wildlife protection law	Ecological Indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Substitution available?	Yes Yes Yes Yes Yes	
	Reduction in wildlife product seizure	- Number of wildlife product seizures monitored? - Confiscation rates changed?	Yes Yes	
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local	Yes	

		communities, and international organizations? - Information sharing between stakeholders? - Capacity building initiatives available?	 Yes Yes	
	Legal enforcement	- Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for trafficking enforced? - Are the laws updated?	Yes Yes No Yes Yes	
(8) Legal policy framework	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Substitution available?	Yes Yes Yes Yes Yes	
	Reduction in trade volume	- Changes in trade volume monitored? - Trade data monitored? - Market monitored? - Changes in availability of wildlife products?	Yes Yes Yes Yes	
	Reduction in wildlife product seizures	- Number of wildlife product seizures monitored? - Confiscation rates changed?	Yes Cannot tell	
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Local communities involved/reporting illegal activities?	Yes Yes	

		- Information sharing between stakeholders? - Capacity building initiatives available?	Yes Yes	
	Legal enforcement	- Arrests enforced? - Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for trafficking enforced? - Are the laws updated?	Yes Yes Yes Cannot tell Yes Yes	

Table 4: KPI and success evaluation of strategies in China

Appendix C - Vietnam

Existence of Strategies in Vietnam

1. Category	*2. Criteria*	*3. Sub-Criteria*	*4. Unit*	*5. Data Sources*
Demand reduction strategy	(1) Educational campaigns	- Existence in target country? - Area of implementation? - Different/multiple marketing Channels used? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes TCM users and market, schools, Yes Yes	TRAFFIC CITES Case studies
	(2) Social Marketing Campaigns	- Existence in target country? - Area of implementation? - Different/multiple marketing Channels used? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes Advertisement, TCM users and market Yes Yes	
	(3) Behavioral change campaigns	- Existence in target country? - Area of implementation? - Different/multiple marketing Channels used?	Yes TCM users and market, public areas Yes	

		- International or domestic organizations, NGOs, government agencies or local community involved?	Yes	
Wildlife management strategy	(4) Conservation Policy	- Existence in target country? - Captive breeding programs? - Protected areas established? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes Yes Yes Yes	TRAFFIC CITES Case studies
	(5) Anti-poaching policy	- Existence in target country? - Captive breeding programs? - Protected areas established? - International or domestic organizations, NGOs, government agencies or local community involved?	Yes Yes Yes Yes	
Legal Framework	(6) Trade-bans	- Existence in target country? - National list of protected species existing and implemented? - CITES endangered species Appendix considered? - International or domestic organizations, NGOs, government agencies or local community involved? - Cross-border cooperation and multilateral agreements?	Yes Yes Yes Yes Yes	TRAFFIC CITES Case studies

	(7) Wildlife protection law	- Existence in target country? - National list of protected species existing and implemented? - CITES endangered species Appendix considered? - International or domestic organizations, NGOs, government agencies or local community involved? - Cross-border cooperation and multilateral agreements?	Not applicable No No No No No	
	(8) Legal policies	- Existence in target country? - National list of protected species existing and implemented? - CITES endangered species Appendix considered? - International or domestic organizations, NGOs, government agencies or local community involved? - Cross-border cooperation and multilateral agreements?	Yes Yes Yes Yes Yes	

Table 5: Existence of strategies in Vietnam

KPI and Success Evaluation of Strategies in Vietnam

2. ***Criteria***	*6.* ***Key performance Indicator (KPI)***	*7.* ***Sub-success factor***	*8.* ***Unit***	*9.* ***Data sources***
(1) Educational campaigns	Knowledge and awareness	- Surveys tracking behavior or attitude change conducted? - Observational studies conducted? - Perception change of wildlife products or wildlife conservation efforts? - Illegal activities reported to authorities?	Yes Yes Yes Cannot tell	TRAFFIC CITES Case studies
	Reduction in demand	- Consumer surveys conducted? - Changes in consumer demand monitored? - Sales data change? - Market research conducted?	Yes Yes Yes Yes	
	Campaign reach	- Campaign adjusted to target audience? - Campaign adjusted to cultural differences? - Does the reach have a broad scope? - Multiple channels of distribution of campaigns? - Media coverage of campaigns? - Public engages with the campaigns?	Yes Yes Yes Yes Yes Yes	
	Long-term impact	- Changes in attitude or behavior persist after the campaigns? - Follow up surveys conducted?	Yes Yes	

		- Does the campaign adjust its message over time?	Yes	
	Partnerships and Collaboration	- Are there partnerships or collaborations participating in the campaigns? - If partnerships are applicable, do they enhance the campaign? - Expert opinion/expertise integrated in campaign message?	Yes Yes Yes	
	Legal enforcement	- Did the campaign lead to increased enforcement measures?	Yes	
(2) Social marketing campaigns	Knowledge and awareness	- Pre- and post-campaign assessment? - Observational studies conducted? - Perception change of wildlife products or wildlife conservation efforts? - Illegal activities reported to authorities?	Yes Cannot tell Yes Cannot tell	
	Reduction in demand	- Consumer surveys conducted? - Changes in consumer demand monitored? - Sales data change? - Market research conducted?	Cannot tell Yes Cannot tell Yes	
	Campaign reach	- Campaign adjusted to target audience? - Campaign adjusted to cultural differences? - Multiple channels of distribution of campaigns? - Media coverage of campaigns?	Yes Yes Yes Yes	

		- Public engages with the campaigns?	Yes	
	Long-term impact	- Changes in attitude or behavior persist after the campaign? - Follow up surveys conducted? - Does the campaign adjust its message over time?	Yes Yes Yes	
	Partnerships and Collaboration	- Are there partnerships or collaborations participating in the campaigns? - If partnerships are applicable, do they enhance the campaign? - Famous people involved?	Yes Yes Yes	
	Legal enforcement	- Did the campaign lead to increased enforcement measures?	Yes	
(3) Behavioral change campaign	Behavior and attitude change	- Pre- and post-campaign assessment? - Observational studies conducted? - Attitude or perception change of wildlife products or wildlife conservation efforts? - Illegal activities reported to authorities?	Yes Yes Yes Yes	
	Reduction in demand	- Consumer surveys conducted? - Changes in consumer demand monitored? - Sales data change? - Market research conducted?	Yes Yes Cannot tell Yes	
	Campaign reach	- Campaign adjusted to target audience? - Campaign adjusted to cultural differences?	Yes Yes	

		- Multiple channels of distribution of campaigns? - Media coverage of campaigns? - Public engages with the campaigns?	Yes Yes Yes	
	Long-term impact	- Changes in attitude or behavior persist after the campaigns? - Follow up surveys conducted? - Does the campaign adjust its message over time?	Yes Yes Yes	
	Partnerships and collaboration	- Are there partnerships or collaborations participating in the campaigns? - If partnerships are applicable, do they enhance the campaign? - Famous people involved?	Yes Yes Yes	
	Legal enforcement	- Did the campaign lead to increased enforcement measures?	Yes	
(4) Conservation policy	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Substitution available?	Yes Yes Yes Yes Cannot tell	
	Reduction in trade volume	- Changes in trade volume monitored? - Trade data monitored? - Market monitored? - Market surveys conducted? - Changes in availability of wildlife products?	Yes Yes Yes Yes No	

	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Information sharing between stakeholders? - Capacity building initiatives available?	Yes Yes Yes	
	Legal enforcement	- Arrests enforced? - Prosecution/penalties enforced? - Convictions made? - Number of wildlife product seizures monitored? - Confiscation rates changed? - Are the laws updated?	Yes Yes Yes Cannot tell Yes Yes	
(5) Anti-poaching	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Surveys conducted? - Substitution available?	Yes Cannot tell Yes Cannot tell Yes Cannot tell	
	Reduction in poaching incidents	- Number of poaching incidents monitored? - Illegal hunting or trapping incidents tracked?	Yes Yes	
	Reduction in wildlife product seizures	- Number of wildlife product seizures monitored? - Confiscation rates changed?	Yes Yes	

	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Local communities involved/reporting illegal activities? - Information sharing between stakeholders? - Capacity building initiatives available?	Yes Yes Yes Yes	
	Legal enforcement	- Arrests enforced? - Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for poaching and trafficking enforced? - Are the laws updated?	Yes Yes Yes No Yes Cannot tell	
(6) Trade bans	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Substitution available?	Yes Yes Yes Yes Yes	
	Reduction in trade volume	- Changes in trade volume monitored? - Trade data monitored? - Market monitored? - Changes in availability of wildlife products?	Yes Yes Yes Yes	
	Reduction in wildlife	- Number of wildlife product seizures monitored? - Confiscation rates changed?	Yes Yes	

	product seizures			
	Price and availability	- Changes in wildlife product availability? - Market survey conducted? - Price changes for trafficked wildlife products? - Substitution products available? - Certification of traded product?	Yes Cannot tell Yes Yes Yes	
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Local communities involved/reporting illegal activities? - Information sharing between stakeholders? - Capacity building initiatives available?	Yes Yes Yes Yes	
	Legal enforcement	- Arrests enforced? - Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for trafficking enforced? - Are the laws updated?	Yes Yes Yes No Yes Yes	
(7) Wildlife protection law	Ecological Indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Substitution available?	Not applicable	

	Reduction in wildlife product seizure	- Number of wildlife product seizures monitored? - Confiscation rates changed?		
	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Information sharing between stakeholders? - Capacity building initiatives available?		
	Legal enforcement	- Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for trafficking enforced? - Are the laws updated?		
(8) Legal policy framework	Ecological indicators	- Wildlife population assessed and monitored? - Changes in wildlife population? - Wildlife habitats monitored? - Changes in wildlife habitats? - Substitution available?	Yes Yes Yes Yes Cannot tell	
	Reduction in trade volume	- Changes in trade volume monitored? - Trade data monitored? - Market monitored? - Changes in availability of wildlife products?	Yes Yes Yes Yes	
	Reduction in wildlife product seizures	- Number of wildlife product seizures monitored? - Confiscation rates changed?	Yes Yes	

	Partnerships and collaboration	- Collaboration between government agencies, NGOs, local communities, and international organizations? - Local communities involved/reporting illegal activities? - Information sharing between stakeholders? - Capacity building initiatives available?	Yes Yes Yes Yes	
	Legal enforcement	- Arrests enforced? - Prosecution enforced? - Convictions made? - Criminal networks disrupted? - Penalties for trafficking enforced? - Are the laws updated?	Yes Yes Yes No Yes Yes	

Table 6: KPI and success evaluation of strategies in Vietnam