

Template for new CITES and livelihoods case studies

Note:

1. The main purpose of the new case studies is to identify how regulated trade in CITES-listed species of wild animals and plants contributes to the livelihoods of rural communities that live alongside the species and to the conservation of the species where applicable. This means that the case studies must involve trade in CITES-listed species.
2. "Rural community" here also includes single households.
3. As information on all points may not be available for all studies, case study developers are urged to include as much information as feasible on the topics listed below.

Country	MEXICO
Name of agency, organisation or individual submitting the case study	National Commission for the Knowledge and Use of Biodiversity (CONABIO)
Contact person (name, title, email, telephone)	Hesiquio Benítez Díaz General Director of International Cooperation and Implementation Head of CITES Scientific Authority hbenitez@conabio.gob.mx / ac-cites@conabio.gob.mx (+52 55) 5004 5025
Methodologies used in the case study (e.g. desk-based, interviews, local surveys etc)	<ol style="list-style-type: none"> 1. Monitoring of Morelet's crocodile nests and populations. Field sampling to obtain information on conservation status and population trends, in accordance to procedures manual for the Morelet's crocodile Monitoring Program (http://www.conabio.gob.mx/institucion/cooperacion_internacional/doctos/manualf_monitoreo_cocodrilo.pdf). 2. Promotion of the direct participation of local communities in conservation, management and sustainable crocodile nest harvesting for high quality skin production, generating economic benefits, market incentives for conservation and socio-economic opportunities to improve their livelihoods. This, under a benefit-sharing scheme among the actors of the productive chain and in accordance with national legislation and CITES regulations. 3. Development of the Morelet's crocodile Ranching Protocol coordinated by CONABIO in collaboration with the Group of Experts on Crocodilians of Mexico (GEC), composed by more than 70 experts, from academia, government, the private sector, civil organizations and independent researchers. Ranching consists on the sustainable collection of crocodile nests from free-range Management Conservation

	<p>Units (UMA) for the artificial incubation and breeding of wild eggs under controlled conditions, significantly raising the species natural survival rate. https://www.biodiversidad.gob.mx/planeta/cocodrilos_m/pdf/Prot_Ranch_v4_Web.pdf</p> <p>4. Legal Registration of UMA and Management plan under the Ministry of Environment and Natural Resources (SEMARNAT).</p> <p>5. Collaboration between local communities, private sector, experts and authorities (national, state/province and local).</p> <p>6. Sustainable nest harvest authorization quota from SEMARNAT through ranching activities.</p> <p>7. Offspring sold by Local community to farm (intensive UMA) for the production of high-quality skins to be sold/exported to fashion companies.</p>
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1. Introduction

a. Species

- i. scientific and common name of the species concerned.

Scientific name: *Crocodylus moreletii* Dumèril and Bibron, 1851

Common name: Morelet's crocodile, Swamp crocodile (Cocodrilo de pantano, cocodrilo Moreletii).



Figure 1. Banco de Imágenes/CONABIO (left) y Barrios, G. y J. Cremieux (comp.), (2018); (right).

- ii. CITES Appendix listing, including, where relevant, a summary history of the listing.

Morelet's crocodile (*Crocodylus moreletii*) was included in CITES Appendix I in 1975 due to the decrease of its populations as a consequence of overhunting and unregulated trade in its skins.

CONABIO coordinated and financed the study "Diagnosis of the status of wild populations of the Morelet's crocodile (*Crocodylus moreletii*) in Mexico and assessment of its status in CITES" (CoPan Project,) conducted by the Institute of Natural History and Ecology of Chiapas (IHNE) in 2002-2004. The results were reviewed in an expert workshop (Cd. de México, December 2004) where it was concluded that the species was no longer threatened and did not meet the criteria of our national risk list, the Mexican regulations NOM-059-SEMARNAT, nor the IUCN's global red list. Similarly, the species no longer met the criteria to be included in CITES Appendix I. These results were presented during the 18th meeting of the CSG-IUCN (Montélimar, June 2006, Sánchez and Álvarez-Romero, 2006), where they were analyzed and supported by the Specialist Group members.

At the 15th Meeting of the Conference of the Parties to CITES (CoP15, Doha, March 2010), the proposal of Mexico and Belize to transfer their Morelet's crocodile populations from Appendix I to Appendix II with a zero quota for wild specimens traded for commercial purposes was adopted (CoP15 Prop. 8; CoP15 Inf. 34).

Following on the CoPan Project and the CITES recommendations, CONABIO developed, and since 2011 coordinates, the Morelet's Crocodile Monitoring Program. Using standardized field methods (Sánchez et al., 2011) and a centralized database, through the program's implementation, authorities have been supervising the state and trend of the species main wild populations and their habitat in Mexico.

During 17th CITES Conference of the Parties (CoP17, Johannesburg, South Africa, 2016), Mexico's amendment proposal (CoP17 Prop.22) to delete the zero quota for wild specimens traded for commercial purposes was approved by consensus, resulting in a CITES listing that currently allows for the sustainable use and trade of wild origin specimens.

iii. Population size, trends and distribution.



Figure 2. Distribution of *Crocodylus moreletii* in Mexico (in green) and monitoring units (in magenta). Source: CONABIO, 2010.

As a result of the Morelet's Crocodile Monitoring Program implementation during the first five years (2011-2016), the encounter rate remains around 3.23 ± 1.46 ind / km. The potential habitat of the species in 2016, using the MaxEnt algorithm, was estimated at $22,833 \pm 24$ km of rivers and perimeters of water bodies. The population size is estimated to be around 73,960 wild individuals. There is a general upward trend in the species population.

b. Community

- i. Brief description of the rural community (or communities, as relevant) involved in the relevant harvest/trade, including number of people or households involved in the project and their means of income. (while it is often difficult to quantify how many people are involved with

precision, please include any available quantitative or qualitative measures, making clear what these are based on).

Currently there are two rural communities benefiting from the project: a) Ejido Chacchoben in Bacalar, Quintana Roo and b) Ejido Santa Isabel in Palizada, Campeche.

a) **Chacchoben**, Quintana Roo. Where there are two communities of approximately 2,000 people; 308 of which are *ejidatarios* (22% being women) that own and work the land.

In Chacchoben, ecotourism activities are carried out benefiting from the archaeological site and the cenotes, in which visitors can swim and practice diving. They conduct sustainable forest management practices for timber production, as well as agricultural and livestock activities in few areas.

Within the ejido, a free-range Management Unit for Wildlife Conservation (UMA), which according to Mexican legislation is the only scheme where wild flora and fauna can be legally used and harvested, has been registered.

The people currently working directly on the project are 15 men and 12 women.

b) **Santa Isabel, Campeche.** Is composed by 3 communities making a total of 675 families with around 2,500 people, of whom 98 are *ejidatarios* with a 20% women representation.

Santa Isabel has 2 already established intensive UMA; one of which manages crocodiles and the other one turtles. In addition, the community recently registered a free-range UMA, and the community also fishes and plants corn and fruits and produces backyard birds (poultry), mainly for local consumption.

The people working directly on the project are 14 men and 2 women.

- ii. Description of the role and activities of the rural community in trade, including its role(s) in the supply chain, e.g. collection/harvesting, captive breeding of animals or artificial propagation/cultivation of plants, processing, storage, transport, sale etc. Include any relevant social/cultural/historical background as appropriate.

The ranching, monitoring and management activities that the communities carry out, are guided by the "**Ranching Protocol for the Morelet's crocodile (*Crocodylus moreletii*) in Mexico**" (https://www.biodiversidad.gob.mx/planeta/cocodrilos_m/pdf/Prot_Ranch_v4_Web.pdf), published by CONABIO (2018), and developed in collaboration with the Mexican Cocodrilian Expert Group (GEC), composed by more than 70 national and international experts from the academia, government and the private sector, as well as civil organizations and independent researchers.

The Ranching Protocol is being implemented by the communities themselves in order to obtain detailed and standardized information on the species populations, nests and eggs, from which the sustainable harvest rates for ranching are being estimated. In addition, the Protocol serves as a basis to guide the nest extraction and egg incubation, and to obtain offspring to be sold by the communities. With this, it seeks to provide benefits to the species, its habitat and the local communities.

After almost 50 years of prohibition, in 2017, the UMA "Cocodrilos Chacchoben", Quintana Roo, was the first one in Mexico, to sustainably and legally harvest Morelet's crocodile from wild populations through the implementation of the Ranching Protocol.

The activities covered by the Protocol are briefly described below:

- **Monitoring of Morelet's crocodile nests and populations.** Field sampling to obtain information on trends of harvested populations, is carried out according to the methods described in the procedures manual for the Morelet's crocodile Monitoring Program (http://www.conabio.gob.mx/institucion/cooperacion_internacional/doctos/manualf_monitoreo_cocodrilo.pdf, Sánchez -Herrera et al., 2011). The resulting information is crucial in order to be able to identify the need to adjust the management measures in place (adaptive management).



Figure 3. Data collection process during the monitoring program. Source: Barrios, G. y J. Cremieux (comp.), (2018).

- **Ranching (nest/egg collection).** Work is conducted with a minimum of three people. Before approaching the nest, the female is located, and a series of precautionary measures are taken to avoid accidents. Before removing the eggs, they are marked one by one to indicate their position inside the nest and each egg is lifted gently and placed in the incubation vessel in the same position as it was taken. Once the eggs are collected, the nest is reconstructed.



Figure 4. Eggs extraction from nests. Source: Barrios, G. y J. Cremieux (comp.), (2018).

- c. **Eggs incubation.** The communities built artificial incubators and containers for younglings. The incubation stage plays a very important role, since it is key to the success or failure this management scheme.



Figure 5. Artificial incubator (up) and eggs and offspring inside containment units found in it. Source: UMA Cocodrilos Chacchoben Report, (2018).

- **Offspring management.** Newborns up to the first year old, need special care to survive during this first stage of their development in captivity. The most important factor to be minimized is stress. For this, it is sought to give the young right conditions of temperature, food and spacious and clean enclosures.



Figure 6. Offspring management. Source : Barrios, G. y J. Cremieux (comp. 2018), (left) and Chacchoben Report (2018) (right).

- **Offspring sale.** The offspring is sold to the intensive UMA (captive breeding facility) that the free-range UMA is partnered with. Here, specimens will be raised and grown to obtain high quality skins for commercial trade.



Figure 7. Quintana Roo's Governor, Carlos Joaquín, at the event where the first ranched generation of crocodiles was sold by the free-range UMA "Cocodrilos Chacchoben" to the farm "Cocodrilia". Source: CONABIO (2018).

- iii. Outline the participation of women in relevant activities including harvesting, breeding and trade.

There are currently 14 women from the communities involved in the ranching activities going on in the 2 sites. Due to the delicacy that egg extraction and their transport to the incubation facilities require, they are mainly involved in these activities. However, they also participate in the egg incubation and offspring care.



Figure 8. Woman handling and managing offspring at the UMA Cocodrilos Chacchoben. Source: UMA "Cocodrilos Chacchoben" (2018).

Since 2016, a woman, Fabiola Berthely, is the technical manager responsible at the UMA “Cocodrilos Chacchoben” in Bacalar, Quintana Roo. She coordinates and provides guidance to the rest of the people working in the project’s activities.

The UMA “Cocodrilos de Santa Isabel”, Campeche, has also been technically advised by a woman, Tixchel Vasquez, who has been involved in the project since it started and is working closely with the community.



Figure 9. Technical manager responsible of the UMA “Cocodrilos Chacchoben” (left) and technical advisor for UMA “Cocodrilos Santa Isabel” (right). Source: UMA Cocodrilos Chacchoben and Barrios, G. y J. Cremieux (comp.), (2018).

- iv. local/traditional knowledge and management approaches that are of relevance to the species/project.

In order to find the nests in the wild, local knowledge was used, since the *ejidatarios* know the habits and places where the crocodiles prefer to nest.

c. Project

A brief description of the project (bearing in mind there may be no formal "project" in certain situations):

- i. Main objective of the project.

Establish an integrated production system for high quality *C. moreletii*'s skins and derivatives, based on their conservation and that of their habitat, as well as on a sustainable, legal, and traceable scheme, procuring a fair and equitable distribution of benefits for all the actors of the productive chain, particularly for the local communities involved.

- ii. Source of funding, if applicable.

At initial stages (2014) financial resources for project’s design and implementation up to 2017, were provided by CONABIO, RESP and Crocodilia. Since 2017, Quintana Roo’s Ministry of Agricultural, Rural and Fisheries Development (SEDARPE) provided financial support initially directed to the free-range UMA “Cocodrilos Chacchoben”, and further expanded it to support more sites with ranching potential and committed support until 2021. It is expected that in the long term, the project will be self-financed.

- iii. When it was started, who manage it and how it works.

At CITES COP 15 (Doha, 2010) Mexico successfully submitted an amendment proposal to transfer Mexican and Belizean populations of Morelet’s Crocodile to Appendix II with a zero quota from wild specimens, based on the fact that wild populations are not endangered.

Since 2010, CONABIO (Mexican CITES Scientific Authority) collaborated with the United Nations Conference on Trade and Development (UNCTAD) to integrate the Morelet's crocodile into a BioTrade Initiative and published in 2014 (BioTrade - Designer's Toolkit for Morelet's Crocodile);

Also, CONABIO collaborated with the London College of Fashion- on a documentary on the use of Morelet's crocodile skins in the fashion industry and its relationship with conservation and local community benefits in Mexico.

At COP 17 (Johannesburg, 2016), the zero quota for wild specimens traded for commercial purposes of Morelet's crocodile was successfully removed.

The "Pilot project on sustainability, production systems and traceability of Morelet's crocodile (*Crocodylus moreletii*) skins in Mexico" initiated, coordinated by the Mexican CITES Authorities (CONABIO, DGVS-SEMARNAT, and PROFEPA) in collaboration with RESP. This project involves local communities in the conservation of the species and its habitat through ranching (free-range UMA), supported by sustainable harvest rates and Non-Detriment Findings (NDF) in compliance both with national legislation and CITES. The obtained offspring will be sold to farms (intensive UMA) for the production of high quality skins to be sold/exported to fashion companies. The above, under a benefit-sharing scheme among the actors of the productive chain and with the support of a traceability system that ensures the skins' legal and sustainable origin.

iv. Harvest methods.

Ranching is a breeding system in which the species reproductive cycle is carried out in the wild and offspring is bred in captivity, raising the species survival success in at least 90% in the case of crocodiles. This methodology consists on the collection of nests and wild eggs for their incubation and breeding under controlled conditions and, where appropriate, the subsequent release of juveniles to their site of origin. The quota to be released, if needed, should be established according to the population's natural survival rate.

For a ranching program to be successful, basic information of the population to be harvested must be available. In this sense, key indicators – such as the encounter rate (ind / km) and the number of nests located in each site- are analyzed in order to establish harvest rates. On the other hand, additional indicators can provide complementary information to understand the population dynamics; such as the number of eggs laid per female, the hatching success, and the offspring survival after the first season. The above, under the scheme supported by the Ranching Protocol.

v. Area of extraction focused on in this study (e.g. local area, country etc).

The "**Pilot project on sustainability, production systems and traceability of Morelet's crocodile (*Crocodylus moreletii*) skins in Mexico**" is currently carried out in the Ejido Chacchoben in Bacalar, Quintana Roo and in the Ejido Santa Isabel in Palizada, Campeche.

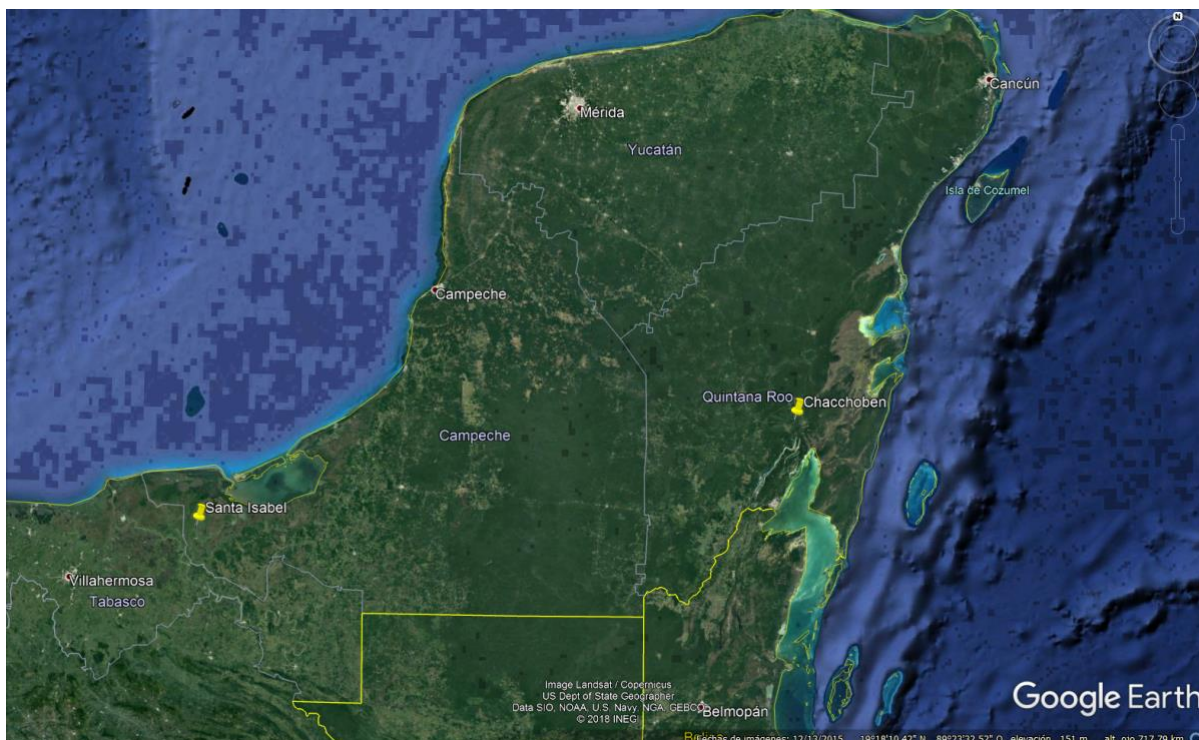


Figure 10. Pilot project sites of Ejido Chacchoben in Bacalar, Quintana Roo and Ejido Santa Isabel in Palizada, Campeche.

Free-range UMA “Cocodrilos Chacchoben”: The ejido has an area of 18,000 ha, where there is pasture, low sub-perennial forest and secondary vegetation. Within the ejido, 14,000 ha are forest reserves and the community has made the commitment to **conserve 4,000 ha**, that have been registered as a free-range UMA with the aim of implementing this project and sustainably managing and harvesting Morelet’s crocodile and its habitat. 42% of the UMA is considered to be a priority site according to CONABIO’s gap analysis in biodiversity conservation (2CONABIO, 2016), and it is part of the Mesoamerican Biological Corridor.

The site is a potential distribution area for 563 species, which correspond to 13 amphibians, 41 reptiles, 349 birds, 82 mammals and 78 plant species. Of these, eight species are endemic to the country. In addition, 115 are included in the Mexican species at risk list (NOM-059-SEMARNAT-2010): 14 are classified as being in danger of extinction (P), 40 threatened (A) and 61 are subject to special protection (Pr).

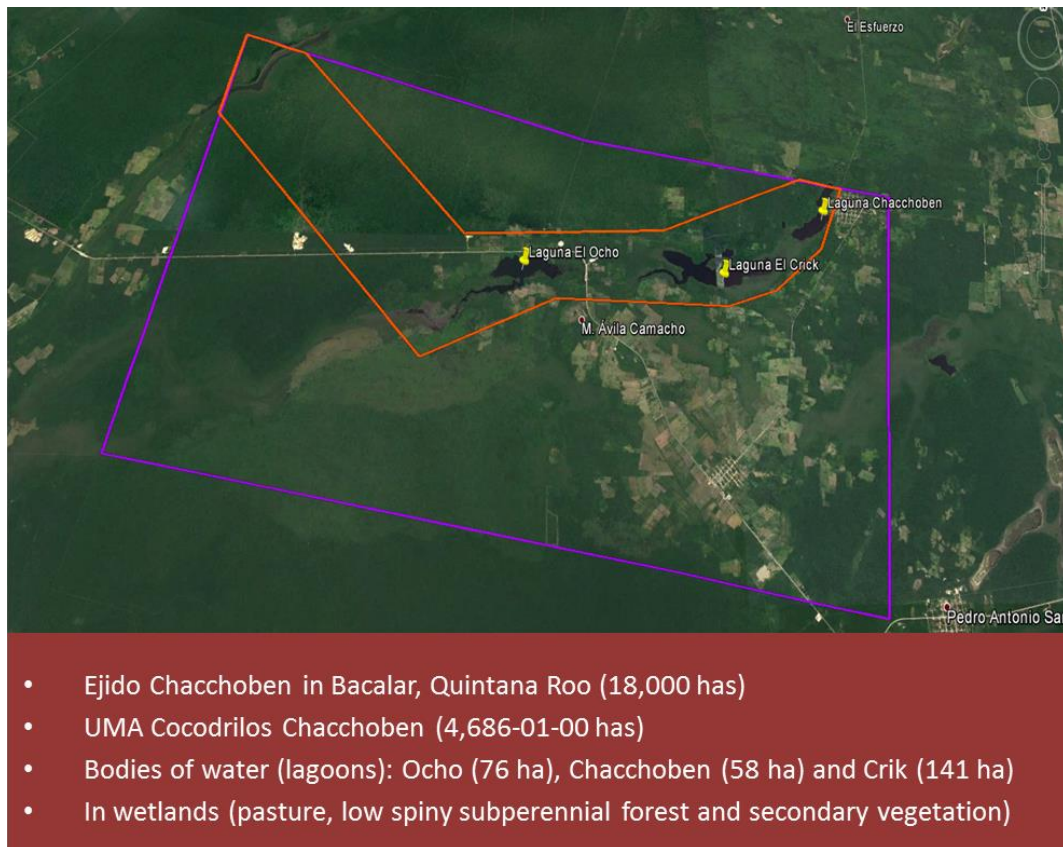


Figure 11. Pilot site of Chacchoben in Bacalar, Quintana Roo.

Free-range UMA “Cocodrilos de Santa Isabel”: The ejido has an area of 13,720 ha, of which the communities have committed to **conserve 10,600 ha** through the establishment and registration of a free-range UMA to sustainably manage and harvest Morelet’s crocodile and its habitat. The site is located within two Natural Protected Areas (ANP): “Pantanos de Centla Biosphere Reserve” and “Laguna de Términos Flora and Fauna Protection Area”.

Pantanos de Centla constitutes the largest wetland area in North America (Arriaga, et al., 2000) and is the most important one in Mesoamerica, due to the number of hydrophytic plants and the level of fresh water discharge it receives from the Grijalva and Usumacinta rivers (www.conanp.gob.mx). At the international level, this wetland is a NAWCA site (North American Wetlands Conservation Act) since 1989, a RAMSAR site since 1995, and an Area of Interest for Bird Conservation (AICA) since 2006. The Laguna de Términos represents the most important water supply from the continent to the coast (Arriaga, et al., 1998).

According to CONABIO’s gap analysis in biodiversity conservation (2CONABIO, 2016), 97.2% of the area is considered to be a priority site, and 74.8% an epicontinental water priority site; both based on their unique biodiversity. Here, potentially 603 species are distributed, which correspond to 16 amphibians, 41 reptiles, 367 birds, 77 mammals and 102 plant species. Of these species, nine are endemic to the country. In addition, 143 are included in the Mexican species at risk list (NOM-059-SEMARNAT-2010): 28 are classified as being in danger of extinction (P), 44 threatened (A) and 71 are subject to special protection (Pr).

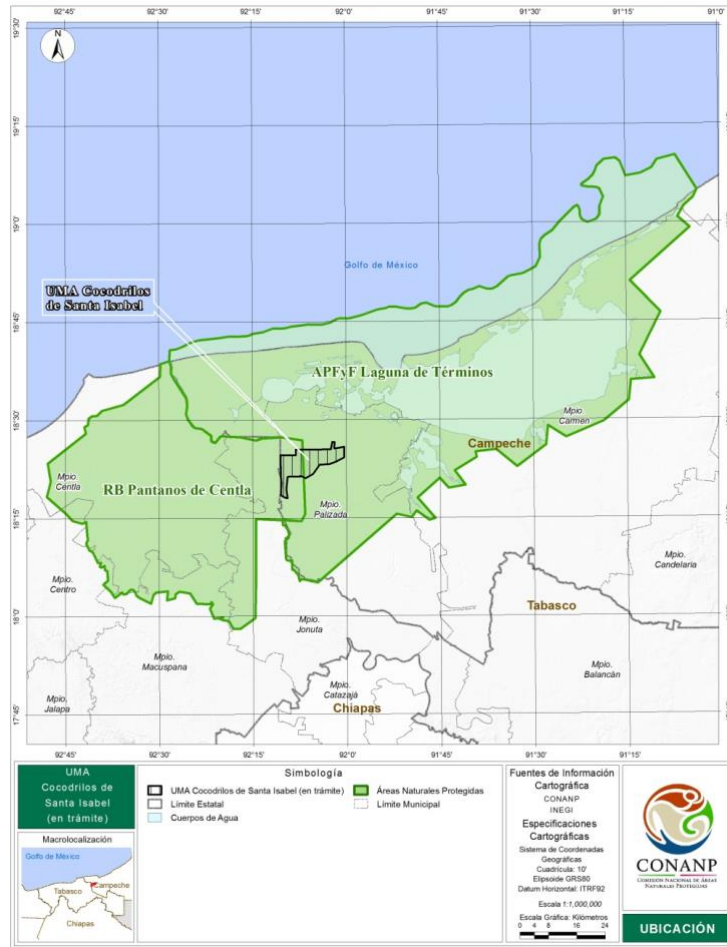


Figure 12. Pilot site of Santa Isabel in Campeche.

2. Livelihood benefits

a. How does the engagement of these communities in this trade contribute to their livelihoods?

Livelihood benefits may be tangible (e.g. income, schools) or intangible (pride, continuation of culture). Please try to explain the livelihood benefits of regulated trade in CITES species on the following five livelihoods assets:

Considering that we **STILL on a PILOT phase**. The benefits that the communities have obtained through the implementation of the **"Pilot project on sustainability, production systems and traceability of Morelet's crocodile (*Crocodylus moreletii*) skins in Mexico"** are the following:

- human capital (including education, training, skills, nutrition and health)
 - Knowledge about the species (*C. moreletii*), its habitat, its importance in the ecosystem and its economic importance.
 - Strengthened technical capacities for the management of the species.
- financial capital (savings, income flows)
 - Economic compensation for carrying out the ranching required activities (monitoring, surveillance, egg extraction, handling of eggs and hatchlings).
 - Economic compensation for the offspring sale.

- social capital (including institutions for managing natural resources, community pride)
 - Local employment
 - Business initiation
 - Local, statewide, national and international recognition
 - Establishment of contact networks
- natural capital (including wildlife populations, forests, grazing lands etc.)
 - Conservation of Morelet's crocodile populations.
 - Habitat preserved for crocodiles and other species.
 - Conservation of water as a provision ecosystem service.
 - Natural landscape.
 - Regulation of the hydrological cycle.
 - Raw material (firewood, fruit, wood, etc.)
- physical capital (including infrastructure, water and sanitation systems)
 - Infrastructure for the incubator and hatchling ponds.
 - Equipment for the incubation and offspring handling.

Where relevant, please explain benefit-sharing arrangements, specifying what percentage of total value is returned to communities, and any requirements for how such payments are spent.

b. What would the impacts on livelihoods be of the removal of CITES trade opportunities for these communities?

Without participation in trade in CITES species, would the income or other livelihood outcomes of these rural communities be significantly reduced? What broader social/cultural impacts might this have? Are there feasible alternatives that could replace benefits from CITES trade?

In this first pilot stage, the ejidos still do not receive enough income for the sale of the young crocodiles, so they cannot yet replace their agricultural and livestock practices for this activity. We expect that in following years income will turn more relevant.

However, If the offspring were not commercialized, crocodile populations and their habitat would be negatively impacted, since previously the crocodile was seen as a threat that did not have any economic use. Currently, with the Project, the communities know they have to conserve the crocodiles and their habitat because they provide for an alternative source of income.

The alternative that could replace the benefits derived from this CITES listed species trade, is the ecotourism, which is currently being carried out. Moreover, communities are seeking to diversify incomes and combine them.

c. How could livelihood benefits of trade in CITES species be improved?

Discuss how livelihood benefits for these communities could be improved. What are the most important limitations for improving these benefits?

It is important to have a fund that subsidizes the highest operating expenses during the first years in order to ensure that the activity stabilizes and can continue and sustain itself.

3. Conservation impacts

a. Has trade in CITES-listed species been beneficial for the conservation of that species and/or its habitat and/or other species?

If so, please explain these benefits. Conservation benefits could include e.g.

- YES, recovery, stabilization or increase of the population.

- Since the inhabitants know that the crocodiles represent a promising economic income, they take care of them along with their habitat, which allows to promote their conservation. There is annual monitoring that lets us know the state of the population and, where appropriate, adjust management measures. In addition, this allows to know the population size and determine a sustainable harvest rate.
- Reduced illegal harvest and trade (of the CITES-listed species itself or other species) Each community has a Monitoring Committee to prevent illegal extraction of this and other species. This activity has managed to reduce illegal take and trade in the registered Ejidos.
- Decreased demand for unsustainably wild-collected specimens (in the case of captive breeding or artificial propagation). The legal market already has another more sustainable option that will allow buyers to show which ejido will benefit from their purchases.
- Establishment of community-managed conservation infrastructure or institutions, e.g. local conservancies. The community knows that it must preserve the ecosystem where the crocodile lives to guarantee its conservation. In the same way, with its management, the community acquires knowledge about the species.
- improved data availability for management. The implementation of the "**Pilot project on sustainability, production systems and traceability of Morelet's crocodile (*Crocodylus moreletii*) skins in Mexico**" will allow to trace specimens all the way from the egg to the finished product, since CONABIO has a database where ranched eggs are register.

b. Have the livelihood benefits of trade been important in securing these conservation benefits?

If so, please explain how these are linked. For example, the livelihood benefits of CITES trade may be providing alternative income such that people do not need to harvest illegal species, or may be motivating people to conserve habitat, or may be motivating people to reduce livestock numbers in key habitat.

Morelet's crocodile (*C. moreletii*) sales currently represent an extra income to the activities communities commonly perform. The villagers know that this is consequence of caring for -and avoiding the illegal extraction of- the Morelet's crocodile, so now they enhance activities that promote their conservation.

c. Have traditional culture and indigenous knowledge played a role in achieving the livelihoods and conservation benefits in this project?

The Morelet's crocodile has cohabited with the people of both ejidos, so they know the species and its habits, therefore, nesting sites have been easier to locate in these places.

4. Lessons learnt: successes and failures

a. What are the most key factors that have made CITES trade work for this community?

The support that communities have received from various actors involved in the crocodile skin products value chain, has been one of the most valuable assets derived from this work. Clear rules and transparency in decision making.

Mexican CITES Authorities.

CONABIO (CITES Scientific Authority): Since 2011, it has been promoting the Morelet's crocodile monitoring program in Mexico. It has also promoted the development of the Ranching protocol, by coordinating various experts and has provided funds for the first stage of the project.

The General Direction of Wildlife of the Ministry of Environment and Natural Resources, DGVS-SEMARNAT (CITES Management Authority): Has provided support to communities to register specific areas of their lands as UMA and promote sustainable use under a legal framework. At the same time, it evaluates and authorizes sustainable harvest rates.

The Federal Attorney for Environmental Protection, PROFEPA (CITES Law Enforcement Authority): Verifies the legality of both, the activities conducted within the ranching project and the traceability of crocodile skin products throughout their value chain.

RESP. They have financed elements of planning and development of essential knowledge for the project. In addition, they have expressed their interest to strengthen commercial links with communities and establish market mechanisms that provide long-term continuity to the project.

Other federal authorities

National Commission of Natural Protected Areas (CONANP): Has provided support to verify and supervise the sustainability of the activities that are being carried out in the free-range UMA inside protected areas.

Specialist Group on Crocodilians of Mexico (GEC). The Project has the support of more than 70 experts in crocodilians from the academic, government, NGO, production, and marketing sectors, among others.

State governments

Ministry of Agricultural, Rural and Fisheries Development (SEDARPE): Financially supports the Ranching Project in the state of Quintana Roo.

Intensive UMA (Farms). Some closed-cycle farms have committed to support the project and to buy the offspring resulting from ranching activities conducted by the communities at a fair price.

Crocodile farms have played a key role in identifying communities interested in conducting ranching activities. They have been involved in the project since the beginning, and have provided equipment (eg vehicles and boats), training and necessary infrastructure to the communities involved. Currently, they are adapting their breeding facilities in order to buy offspring to communities conducting ranching activities.

b. What has been learnt from failures?

Failures are often very informative, and sharing lessons from these provides valuable insights for others. Have there been failures in the history of CITES trade by this community, or of government, private sector, NGO or community initiatives or efforts? What can be learnt from these? What lessons can be taken for the implementation of similar future projects?

Some of the key lessons learnt through the implementation of this project are:

- The coordination -since the beginning of the project- among the actors involved in the value chain is of outmost importance in order to define a market strategy and improve production practices.
- Ensure financial support for the continuity of the monitoring and ranching activities.
- Train technicians on ranching and commercial production to guarantee quality of products and sustainable use of the species and its habitat.
- Several market scenarios must be contemplated.
- Mexican farmers promote long-term supply contracts with the companies that offer the best prices and provide the greatest amount of support.

c. What are the main challenges?

Please describe the challenges faced in the context of this CITES trade, and how they were overcome (if they were overcome). What are the main challenges now (if any) and for the future?

Challenge	Strategy
Wild populations	
Species incorrectly listed in CITES Appendix I. then no legal trade allowed.	CONABIO coordinated and financed the study "Diagnosis of the status of wild populations of the swamp crocodile in Mexico and assessment of its status in CITES" (CoPan Project,) conducted by the Institute of Natural History and Ecology of Chiapas (IHNE) in 2002-2004. The results concluded that the species was no longer threatened and did not meet the criteria for CITES Appendix I. At the 15th Meeting of the Conference of the Parties to CITES (CoP15, Doha, March 2010), the proposal to transfer Mexico's and Belize's populations of Morelet's crocodile to Appendix II with a zero quota for wild was adopted (CoP15 Prop. 8; CoP15 Inf. 34).
Species transferred to Appendix II with a zero quota for wild specimens for commercial purposes. As a preventive measure.	After 5 years of its implementation (2011-2016), the Monitoring Program showed a healthy Morelet's crocodile population with a general upward trend. During the last meeting of the CITES Conference of the Parties (CoP17, Johannesburg, South Africa, 2016), Mexico's proposal to delete the zero quota for wild specimens was accepted (CoP17 Prop.22).
Need of detailed knowledge about reproductive aspects of the species in the wild (number of nests, size of clutches, fertility, births, natural mortality, etc.) in order needed to establish the ranching program.	The Ranching Protocol was elaborated taking into account experiences in other countries, as well as consultations with national and international experts, and then adapted to the characteristics of this particular species and its habitat in Mexico.
The extraction of crocodiles was only allowed in Mexico under the captive management scheme.	Derived from the results of the Monitoring Program implementation, and the listing amendments that the species went through in CITES, Mexican authorities agreed to open the possibility for the sustainable use of the species wild populations. This, beginning at pilot sites defined as part of the "Pilot Project on Sustainability, Production Systems and Traceability of Swamp Crocodile Skins (<i>Crocodylus moreletii</i>) in Mexico" (Pilot Ranching Project).
The communities willing to involve in the ranching activities, lacked a detailed business plan.	The pilot sites (ejidos) were selected only if they established a "binomial" with an active crocodile farm. The farms guide the ejidos in the administrative and business aspects of the project.
Farms	
Crocodile breeding has been an emerging activity in Mexico, which has had very little support.	SEDARPE has provided financial support for the Ranching Project in Quintana Roo. Other Ministries and stakeholders are expected to join these efforts to expand the ranching activities throughout the country.
Most farms are small and do not have populations greater than 1,000 animals.	After the implementation of the Pilot Ranching Project in Quintana Roo, the farm "Cocodrilia" has

These small farms are mainly maintained by tourism and sale of souvenirs.	exceeded 1,000 specimens, and has managed to increase its production as a result of the offspring bought to the community of Chacchoben, the support of SEDARPE, and the support of companies that it has already partnered with.
There is a shortage of captive bred reproductive age <i>C. moreletii</i> specimens which was an obstacle for the increase of crocodile skin production and the establishment of new commercial farms.	Through ranching, farms are being supplied with offspring, and the lack of reproductive age specimens seems to no longer be an obstacle.
The national crocodile skin production is low. Currently, a single farm is exporting <i>C. moreletii</i> skins, with a volume of around 1,000 hides per year.	The pilot Project seeks to increase the volume of production on a national scale with a higher quality standard.
Lack of enough trained technicians to manage and breed the species.	During the implementation of the Pilot Ranching Project, the technicians and ejidatarios involved in the project were trained. The Ranching protocol guides technicians and communities on the implementation of the ranching activities.
Most farms lack a functional and technologically efficient incubator.	The Ranching Protocol details information on the equipment needed for each activity.
There is a lack of integration and trust among producers, which would benefit from organizing as a group and pursuing common objectives with a long-term vision.	As part of the Pilot Ranching Project's implementation, there are periodic meetings with representatives of the whole value chain to seek coordination and cooperation for reaching common goals.
Intermediaries / tanners	
There is limited access to the processing industry, in tanning and finished leather goods.	Links have been made with fashion companies that have the mechanisms for processing high quality leather. Mapping value chain and engagement.
Traditionally, the intermediaries or tanners pay low prices for Mexican produced skins, which they later resell at higher prices.	Direct links have been made with fashion companies that can pay high prices for good quality skins.
Traceability	
A more robust traceability system is needed to track crocodile products from their origin to the end market.	A traceability system is being developed, and it is based on skin photographs that will be used to identify organisms (and derived products) through their scales arrangement (similar to a fingerprint).

d. What are the key lessons for CITES?

What could be considered as lesser successes of the project? What lessons does this case study provide for CITES regulation of international wildlife trade, in terms of how it impacts on livelihoods of rural communities involved in trade and the conservation of species? This could address such questions as:

- Are there ways that CITES regulations or their implementation could improve CITES' influence on sustainable livelihoods on the ground?
- Are there ways this influence could be more beneficial for livelihoods? What would the likely conservation impacts be?

- Has CITES been a hindrance to legal trade and associated livelihoods benefits? How? Are there ways that such hindrances could be changed, without compromising conservation?

As opposed to being a hindrance, CITES was actually the trigger of the current ranching activities that Morelet's crocodile is subject to in Mexico. The species Appendix I listing lead to the recovery of its wild populations in the country, which was corroborated and documented by CONABIO in its role as Mexico's CITES Scientific Authority. This, through the establishment and coordination of the Morelet's crocodile Monitoring Program, which in turn resulted in the species amendment to Appendix II. As interest grew within the country and CITES community, CONABIO, together with experts, stakeholders, and other authorities, started to explore ways to sustainably manage Morelet's crocodile wild populations as a means to conserve the species and its habitat, while providing benefits to local communities with which they coexist. A partnership with RESP and other stakeholders began, and the Pilot Ranching Project was established with the support of the other national CITES Authorities. In short, this success story is a result of the species CITES listing and its implementation and follow-up by the Convention's national authorities in collaboration with communities, experts, NGOs, the private sector, and many other stakeholders.

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