

Crocodile Specialist Group Steering Committee Meeting
Skukuza, Kruger National Park, South Africa
22nd May 2016

Information Item

Siamese Crocodile Task Force Report

Report on Activities

Siamese Crocodile Task Force (SCTF) Activities, June 2015 – March 2016

Since May 2015, Siamese Crocodile Task Force (SCTF) meeting in Siem Reap province, Cambodia until March 2016 which is 10 months. SCTF activities following those discussion especially strengthening of SCTF network in the region :

- a. Technical visits and gap analysis ;
- b. Convene the meetings to examine specific issues ;
- c. Fostering cooperation between people involved in release and restocking

Technical visits and gap analysis :

Crocodile farm management and health care consultancy were provided through short term visit such as in Cambodia or discussion through e-mail with crocodile farmer in the region on requested.

Convene the meetings to examine specific issues :

SCTF plan to held annual meeting of SCTF group regularly. We will start in **the first week** of March 2017 in Thailand. This will be hosted by Crocodile Management Association of Thailand (CMAT), Crocodile and Ostrich Cooperative of Thailand (COCOT), Crocodile Health Research Center (CHRC), Faculty of Veterinary Science,

Mahidol University (FVS-MU), Department of Fisheries (DOF), Department of National Parks, Wildlife, and Plant Conservation (DNP), and Crocodile Specialist Group (CSG).

The hosts will sponsor one representative from each countries; Cambodia, Lao PDR and Vietnam. Scientists, farmers, NGOs and GOs who interested in crocodile conservation, farming, and commercialization are welcome.

Fostering cooperation between people involved in release and restocking :

Reintroduction programs of *C. siamensis* are establishing in Cambodia , Lao PDR, Vietnam, and Thailand. Activities were conducted through local and international organizations. SCTF will put together those who involved at SCTF annual meeting in order to exchange information and strengthen collaboration among the region. Short course training or workshop can be set up with in the main meeting.

❖ Thailand activities :

Crocodile Management Association of Thailand (CMAT), Crocodile and Ostrich Cooperative of Thailand (COCOT), Faculty of Veterinary Science, Mahidol University (FVS-MU), Department of Fisheries (DOF) and Department of National Parks, Wildlife, and Plant Conservation (DNP) put together a set of research proposal submitted to Agricultural Research Development Agency (Public Organization) (ARDA) for *C. siamensis* reintroduction conservation program and diseases diagnosis prevention and control projects. This collaborative research effort will benefit both conservation and commercial of crocodile in Thailand. We do hope to get funding within a couple of months.

National Bureau of Agricultural Commodity and Food Standards (ACFS), Ministry of Agriculture and Cooperatives, has assigned Faculty of Veterinary Science, Mahidol

University to study and draft a “Guideline for Crocodile Farming in Thailand”. This guideline has been approved by ACFS and launched as TAS (Thai Agricultural Standard) 7700 – 2016. By the way, ACFS also offer a new task to FVS-MU to study and draft a “Guideline for Crocodile Slaughter Facility in Thailand”. This project is in process which supposed to finish by the end of 2016.

Crocodile Health Research Center (CHRC), Faculty of Veterinary Science, Mahidol University, Thailand :

CHRC is preparing a guideline for submission of specimens for diseases diagnosis. Delayed in permits are problems to be solved which was discussed with CITES authorities.

More of diagnostic facilities are setting in order to provide wider range of diseases screening and definitive diagnosis services for farmers. Consultation for diseases prevention and control measure in the area of basic husbandry, farm management and biosecurity at farm level, slaughtering and processing procedures were provided to reduce production loss and biological risks associated with consumption of crocodile products and occupational health of farm workers.

Research in *Chlamydia* spp. vaccine development and antimicrobial resistance (AMR) have been purposed to funding agency which hope to be rewarded by this year.

In order to establish capacity building between crocodile veterinarian and farmer within the region as well as networking with other crocodile health care and research personal in the other region, CHRC plan to launch website for communication and knowledge management. Local training program rotation was discussed and planned to start according to availability of trainer and sponsor.

Problems :

Conservation and commercialization of crocodile in this region are mostly conducted and controlled under governmental management. Problems arise when changing of government officers due to retirement or rotation or changing of position occurred. Reconnecting and educating new officers consume time, resources, and effort to resume effective status of management or normal practices.

Prepared by: Assoc. Prof. Parntep Ratanakorn, Yosapong Temsiripong and

Kanittha Tonchiangsai

Date prepared: April 15th, 2016

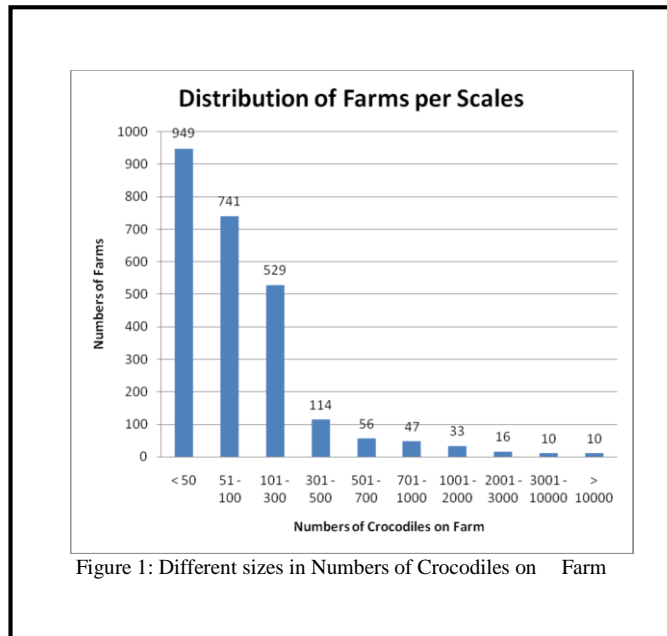
❖ Siamese Crocodile Husbandry and Management in Viet Nam :

1. Current status of *Crocodylus siamensis* and their habitats in the wild

Freshwater crocodiles are now considered to be effectively extinct in the wild due to massive habitat loss, intensive hunting and live capture for crocodile farming.

Only two individuals were detected in Ha Lam lake (Krong Trai Nature Reserve, Phu Yen province) during a survey conducted in 2005 by a team of Institute of Tropical Biology.

The Freshwater crocodile (*Crocodylus siamensis*) is listed in Group IIB of endangered, rare and precious forest fauna which are restricted from exploitation or use for commercial purposes under Government Decree No. 32/2006/ND-CP of 30 March, 2006.



2. Conservation action

In the early 2000s, 60 freshwater crocodiles were re-introduced to Bau Sau (Crocodile Lake) in Cat Tien National Park, with at least one nest being produced in 2005.

Reportedly, up to 25% of adults was killed in 2004 by local residents. However, monthly monitoring and especially the survey report of Kristian Robert Pahl (2011) show detections of more than 100 crocodiles including hatchlings and juveniles, confirming that successful breeding continues. Monitoring and protection of this population is being conducted by Cat Tien National Park.

3. Current status of *C. siamensis* in captivity

Crocodylus siamensis farming began in the early 1980s. In this context, Ministerial Standard 04 TCN 87 – 2006 on Technical Regulations in Freshwater Crocodile Husbandry has been issued by Ministry of Agriculture and Rural Development (MARD) since 2006.

Currently, there are about 2,500 breeding farms and raising facilities, mainly located in southern provinces, with varying sizes of *C. siamensis* stocks as presented in Figure 1.

There are 9 CITES-registered crocodile breeding farms with a stock of 247,291 heads, accounted for 34,33 percents of the total crocodile stock as detailed in Table 1.

Table 1: Total stocks of Freshwater crocodiles on Farms

	Total stock (heads)	Of which, parental stock (heads)		Annual production (yearlings)
		Male	Female	
9 CITES-registered breeding Farms	247,291	2,698	7,397	80,000
PFPD-registered breeding Farms	472,863	2,594	8,819	
Total stock (heads)	720,154	5,292	16,216	

In terms of management, other small farms have been registered and supervised by Provincial Forest Protection Departments (PFPDs) in accordance with Viet Nam legislation, specifically the Decree 82/2006/ND-CP dated 10/8/2006 of Government of Viet Nam on management of export, import, re-export, introduction from the sea, transit, breeding, rearing and artificial propagation of rare, precious, endangered wild animals and plants.

4. Domestic versus International Trade

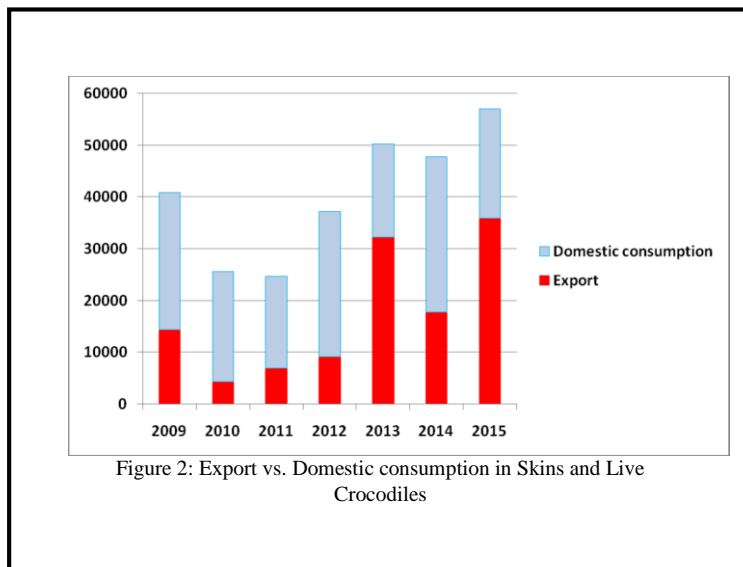


Figure 2 shows a fluctuation in annual exportation of skins and live crocodiles from Viet Nam with a drop to 4,330 specimens in 2010 and a recovery to 35,800 specimens in 2015. Meanwhile, average domestic consumption is of 29,500 specimens per year.

5. Legislation Update

The Penal Code amended in 2015 with stricter provisions to combat and handle environmental crimes, including illegal wildlife trade.

Prepared by: Thai Truyen

Date received: March 31st, 2016

❖ Cambodia Activities :

Cambodia describing the restocking and release programs are being presented within the meeting sessions:

- a. WCS Program - including releases
- b. FFI Program - including releases
- c. Plans to release crocodiles every year

- d. Cambodia considers that a proposal to CITES to downlist *C. siamensis* from Appendix I to Appendix II at CITES CoP17 would be beneficial as it would allow conservation efforts to be better integrated with the large number of farms producing *C. siamensis* more as domestic animals.
- e. Update on crocodile farmers association: currently some 1000 farms, mostly small village level, producing 500,000 hatchlings annually.

Prepared by: Heng Sovannara

❖ **Lao PDR Activities :**

**Community Based Crocodile Recovery and Livelihood Improvement Project
(CBCRLIP)**

Overview :

The current project is to implement the CBCRLIP in accordance with the MoU with the PAFO of SVK province, signed on 30 April 2010. The current MoU expires on the 19th April 2013. WCS has secured further funding for the activities in this MOU and wish to extend the MOU period to end on 31 December 2013.

The goal for each project site is ***recovery of the local crocodile population and restoration of associated wetlands, linked by socio-economic incentives that substantially improve local livelihoods***. The specific objectives of the project as stated in Section 3.1 of the MOU are;

1. **Livelihood improvement.** Improvement of local livelihoods is mainly linked to alternate sourcing of water and earthmoving initiatives that create new bodies of water. If the crocodile recovery is successful, tourism will be new source income.
2. **Wetlands conservation.** Crocodile habitat at most project sites is moderately to heavily disturbed by local people striving to satisfy their basic economic needs. A key strategy in restoring wetlands important for crocodiles and long-term conservation is to shift pressure away from these sites. This will be done by providing alternative, awareness and law enforcement.

3. **Crocodile replenishment.** ‘Headstarting’ is the method of choice to boost small existing populations at several sites and re-introduce crocodiles at sites where suitable habitat exists or can be restored. Relocated baby crocodile will come for the Ban Khern zoo.
4. **Project implementation.** Implementation will be co-managed by a Crocodile Project Unit consisting of PAFO and DAFO, members of local communities and WCS. WCS staff will at every stage build Lao staff capacity to eventually sustain project activities.

Current progress of the project according to these objectives and activities mentioned in Section 3.2 of the MOU are presented in the table below. A short description of additional activities to be completed to 31 December 2013 is also presented in the table below.

Table 1. Activities, current results, and further planned activities of the CBCRLIP.

Activity	Results	Further planned activities
DNA determination and ‘head-starting’	<p>We have assessed the DNA of 21 adults at the Lao Zoo which may potentially be used for captive breeding of Siamese crocodiles that may be released to the wild. Of these 10 individual crocs, 3 males and 7 females, were identified as pure Siamese crocodiles. We have now established a captive breeding program for Siamese crocodiles at the zoo.</p> <p>Regarding ‘head-starting’ we have successfully reared 26 juvenile crocodiles, 19 of which have already been released to the Xe Champhone wetland complex. 17 of the juvenile crocodiles are still being raised at a local village and in the Lao Zoo. These 36 crocodiles represent a 10.4% increase in the global population. All of these crocodiles have been</p>	<p>Now that we have identified the pure Siamese crocodiles at the Lao Zoo and started the captive breeding program it is important to continue this activity to raise crocodiles that can be released to the wild to strengthen head-starting.</p> <p>We will continue to raise the remaining 17 crocodiles and we expect them to be released in early 2014. We will also continue surveys at the project site to locate more nests and eggs during the breeding season this year.</p>

	hatched from eggs from the wild that were located during our regular annual surveys.	
Conservation Outreach	<p>We have used two main methods to increase awareness about crocodile related conservation issues. These are;</p> <ul style="list-style-type: none"> • Radio Spot: 2 days a week, 30 mins per day for 6 months. 15 hours total (through Savannakhet radio station) • Crocodile Campaign awareness was running in 9 village and 5 school secondary schools and over 4.000 people involved. 	<p>Assisted by Lao students and local government staff we will conduct a post campaign review to assess the effectiveness of the conservation outreach methods.</p> <p>We will also conduct further conservation outreach to strengthen the knowledge and understanding of local regulations about usage of natural resources in wetland areas.</p>
Nest guarding and boundary demarcation	<p>During our surveys once we have located a crocodile nest the nests are then monitored and guarded until the eggs are collected. Each breeding season we have teams of survey staff from local communities who seek out new nests of Siamese crocodiles. To date we have located 7 nests.</p> <p>To date we have assisted 9 local communities in two districts (Champhone, Songkhone and Xonnabouly) to zone 2,550 ha of critical crocodile habitat. We have also assisted these villages to develop usage regulations for the zoned wetland areas.</p>	<p>During the breeding season of 2013 we will continue to survey for breeding crocodiles. Once located these nests will be guarded and where possible we will obtain the eggs for head-starting.</p> <p>We will continue to assist one community to create crocodile conservation zones, particularly in those areas where we plan to release in 2014 the crocodiles from head-starting activities.</p>
Wetland improvement	We have successfully developed regulations at 8 villages to manage the use of critical habitat for crocodiles. These regulations are	Up to the end of the year we plan to assist communities by developing community based protection teams to enforce

	<p>based on both customary and formal rules to protect habitat and crocodiles at project sites</p> <p>We have also completed the establishment of Village Crocodile Conservation Committees totaling 67 people in 9 villages. Each committee consists of five to seven people. The project team also lead village conservation group and villagers in 4 villages/wetland areas to reduce invasive plant species and water hyacinth which improves wetland conditions.</p>	<p>local regulations and also monitor crocodiles in key habitat areas. This will help them protect natural resources that are crucial for their livelihood.</p>
Monitoring crocodile populations	<p>Since 2011 the village monitoring teams have conducted monitoring 78 times (66 times at day time and 12 time at night time) and about 258 hours in total. The team collected 41 crocodile scats and encountered 5 tracks and 7 nests with 112 eggs.</p>	<p>We will continue all of these monitoring techniques until the end of December 2013.</p>
Fish pond and irrigation development	<p>We have helped target communities to increase their agriculture production through the construction of irrigation 3 dykes and 2 weirs in Champhone and Xonnabouly districts. This has increased the number of hectares of rice production from 25 to 110 hectares. We also have conducted regular maintenance on all dykes and weirs that we have constructed. This increased production should reduce pressure on wetland habitat that the crocodiles live in. It also increases the amount of water area that is</p>	<p>We will continue to monitor the effectiveness of these dykes and weirs.</p>

	available for fish to breed in and the amount of fish available to local communities to support their livelihood.	
Meeting and workshop	We have held regular meetings with our government and local community counterparts to discuss issues and plan activities. Each year we also hold a large meeting to report results to our counterparts and consult with them about any issues and upcoming activities.	We will hold our next annual meeting in April 2013. Before the end of 2013 we will also host a study tour to share knowledge and exchange experience with other crocodile management experts in Cambodia. We also plan to support a project representative to attend the next Crocodile Specialist Group meeting in May 2013.

Additional activities completed :

- The project supported 3 students from NUoL to undertake their internship and complete their final year's thesis.
- 67 villagers (VCCG) were trained on how to use GPS and collect data during surveys of wetland areas
- 4 government staff from target districts were trained on crocodiles biology, GPS usage and data collection
- 18 villagers and 2 district officials attended a study tour to the Lao Zoo in order to learn and experience about how baby crocodiles should be raised and treated.
- Project staff and a government representative attended a Crocodile Specialist Group (CSG) meeting in the Philippines. The project also hosted a visit by the to the project's site
- Developed a conceptual model for the project in the future

In addition to the above activities WCS is currently discussing with donors and local counterparts about the continuation of project activities after the end of 2013. Crocodile and wetland management, as well as the improvement of local livelihoods, are

ongoing tasks and WCS believes it is important to continue to strengthen our project in the future to ensure successful outcomes. At our CBCRLIP annual meeting to be held on 4 April 2013 we will be discussing with counterparts the priority objectives for the next phase of the project. We expect these to include;

1. Strengthening wetland management practices and protection
2. Increasing the resilience of communities to effectively deal with climate change by assisting to establish models for alternative livelihood sources, for example community based tourism
3. Continuing the head starting program and increasing effective monitoring of the crocodile population
4. Continuing appropriate awareness raising activities
5. Continuing research about crocodiles and other wetland biodiversity
6. Furthering collaboration with concerned government sectors and other project partners operating in the RAMSAR listed Xe Champhone wetland complex
7. Continuing to develop the capacity of local community and government counterparts to actively engage in long term management of critical wetland areas

Rationale for extension of the MOU :

As already shown above, this project has successfully completed many activities. These successful activities not only meet the objectives outlined in the MOU but the project team has completed additional activities such as a tourism feasibility study and successful support for development of Lao students. The main success of the project activities thus far has been the steps toward sustainable management of key wetland areas which support the livelihoods of local communities. Another key result was the releasing of 19 juvenile crocodiles has been a significant contribution to the Lao PDR population of this culturally important species in Lao PDR.

We have a very clear vision of why we need to extend the current MOU. Firstly, through effective management of project finances there are funds remaining as indicated in Table 2. Secondly, there are activities that can be further implemented to ensure the long term success of the project. The activities presented in Table 1 will all be implemented in line with overall goal of the project; *recovery of the local crocodile population and restoration of associated wetlands, linked by socio-economic incentives that substantially*

improve local livelihoods. In January 2014 a complete technical reports will be produced to report on all project activities implemented since 19 April 2010.



Figure 1. DNA sample collection



Figure 2. Conservation outreach with local communities

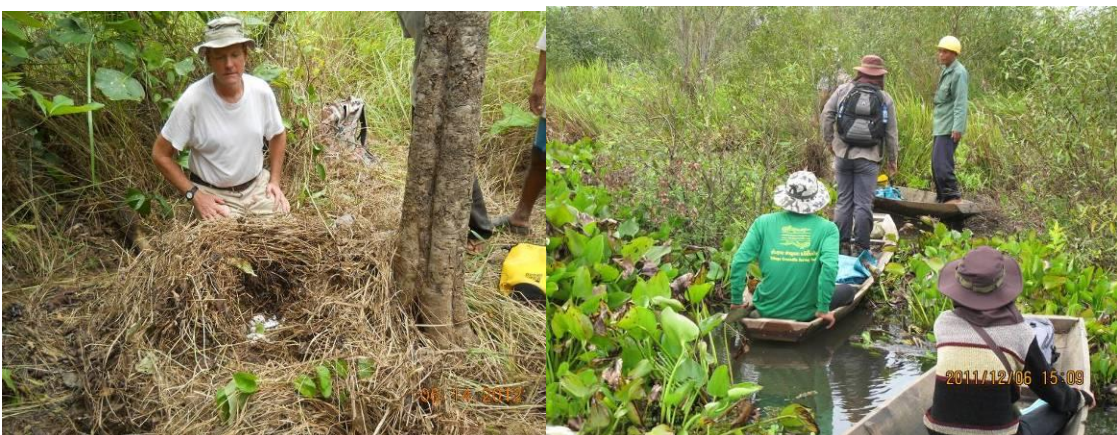


Figure 3. Crocodile monitoring



Figure 4. Crocodile conservation zoning meeting, and demarcation of zoning



Figure 5. Train VCCG team on survey and data collection



Figure 6. Sightings of Siamese crocodiles in the wild in Savanakheth Province



Figure 7. A staff attended Crocodile Specialist Group (CSG) meeting in the Philippines, and hosting the CSG visit to Lao PDR



Figure 8. Dam and weir construction at target villages to improve water management and availability



**Lao PDR
Program**
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