CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Sixty-sixth meeting of the Standing Committee
Geneva (Switzerland), 11-15 January 2016

Interpretation and implementation of the Convention

Exemptions and special trade provisions

Registration of operations that breed Appendix-I animal species
in captivity for commercial purposes

REGISTRATION OF THE OPERATION "NOUVELLE DÉCOUVERTE", BREEDING *ASTROCHELYS RADIATA*

1. This document has been prepared by the Secretariat. It refers to an application from Mauritius to include the operation "Nouvelle Découverte", breeding *Astrochelys radiata*, in the Secretariat's *CITES Register of operations that breed Appendix-I animal species for commercial purposes*, and an objection from Madagascar thereto.

2. Resolution Conf. 12.10 (Rev. CoP15) on *Registration of operations that breed Appendix-I animal species in captivity for commercial purposes* establishes the procedure for the registration of the captive-breeding operations, including, *inter alia*: descriptions of the role of the Management Authorities, Animals and Standing Committee and the Secretariat; and the steps to follow in case of an objection to the registration, or non-compliance with the Provisions of the Resolution.

3. On 6 March 2014, the Secretariat received an application from Mauritius to include the operation "Nouvelle Découverte", breeding *Astrochelys radiata,* in the *CITES Register of operations that breed Appendix – I animal species for commercial purposes*. Upon receipt of full information (Annex 1), the Secretariat published Notification to Parties No. 2015/035 of 15 June 2015, proposing the above new captive-breeding operation to be added to the Register, and setting 13 September 2015 as the deadline for submitting objections to the registration of this operation.

4. On 7 August 2015, the Secretariat received an objection from Madagascar to this proposed registration, which questioned, *inter alia*, the legality of *Astrochelys radiata* in Mauritius, and the technical capacities of the breeding operation (Annex 2). On 24 August 2015, with the consent of Management Authority of Madagascar, the Secretariat transmitted the objection to the Management Authority of Mauritius, encouraging it to contact the Management Authority of Madagascar and establish a dialogue about the registration. However, the Secretariat is not aware of any direct contacts between the two Parties on the issue.

5. In response to the questions raised by Madagascar, Mauritius provided the Secretariat with additional information on the operation on 15 September 2015 (Annex 3). In a further attempt to initiate a dialogue between the two Parties, and with the consent of Management Authority of Mauritius, the Secretariat translated Mauritius' response into French and shared it with Madagascar on 21 September 2015.

6. Resolution Conf. 12.10 (Rev. CoP15), Annex 2, provides that:

> "*If any Party objects to the registration, the Secretariat shall refer the documentation to the Animals Committee to review the objection. The Animals Committee shall comment on the objection within 60 days. The Secretariat shall forward the comments made by the Animals Committee to the Parties concerned and allow a further 30 days for resolution of the identified problem(s)*."

7. On 16 September 2015, and in line with the provision above, the Secretariat submitted the documentation from the Management Authority of Mauritius concerning the breeding operation “Nouvelle Découverte”, together with the objection from Madagascar and the subsequent reply from Mauritius, to the Animals Committee. It invited the Committee to review the objection and provide its comments by 15 November 2015.

8. After reviewing the documentation and the objection, the Animals Committee commented as follows:

   The Animals Committee has reviewed the material supporting Madagascar's objection to the registration of a captive facility (Nouvelle Découverte) on Mauritius to breed Astrochelys radiata*, an Appendix I species. In our view, Mauritius has demonstrated that the registration is in accordance with Resolution Conf. 12.10 (Rev. CoP15). The Animals Committee thus does not concur with the objection raised by Madagascar.*

9. In compliance with Resolution Conf. 12.10 (Rev. CoP15), Annex 2, paragraph 3, the Secretariat forwarded the comments of the Animals Committee to Madagascar and Mauritius on 17 November 2015 to allow a further 30-day period for resolving the identified problems. This period expired on 17 December 2015.

10. On 16 December 2015, before the expiry of 30-day period, the Secretariat reminded Madagascar and Mauritius that if the objection had not been withdrawn, the matter would move to the Standing Committee for deliberation at the present meeting.

11. Despite of this reminder, the Secretariat has received no indication that the objection from Madagascar had been withdrawn or the identified problems resolved. In accordance with Resolution Conf. 12.10 (Rev. CoP15), Annex 2, paragraph 4, the application shall therefore be submitted to the Standing Committee at its following regular meeting.

Recommendation

12. The Committee is invited to consider the objection concerning the registration of the captive breeding operation “Nouvelle Découverte” for *Astrochelys radiata* in Mauritius in accordance with Resolution Conf. 12.10 (Rev. CoP15), Annex 2, paragraph 4.

    a) If the Committee considers the objection trivial or ill-founded, it shall reject it and the application shall be accepted.

    b) If the Committee considers the objection justified, it shall review the response of the applying Party and decide whether or not to accept the application.

MINISTRY OF AGRO INDUSTRY & FOOD SECURITY
National Parks & Conservation Service, (NPCS)
Réduit

Our Ref: NP 40/EXP/Aldabra Tortoise **17 March 2015**

Re: Application of Mr. Forget

Please find below clarifications on the different sections mentioned below, concerning the application of Mr. Forget for the registration of his farm as a breeding center for commercial purposes for ***Astrochelys radiata***.

Section 5 of the application "Parental breeding stock":-

There are two sub-adult animals which have been included in the list of breeding stock.

Section 6 "Proof of legal acquisition":-

There is no feral population of ***Astrochelys radiata*** in Mauritius. All the animals introduced since the beginning of the eighteenth century have been kept in captivity or what is called "a controlled environment". As per application submitted, breeding stocks were established in 2005 from animals from own personal collection and bought locally.

Regarding evidence of parental stock, please note that parental stock have been obtained legally as no animals have been captured from the wild and the original parent stock have been introduced in Mauritius well before the enactment of the Convention.This species is protected under the second schedule of the Wildlife & National Parks Act (1993).

Section 7 "Other stock":-

This refers to the 45 breeding stock and 20 juveniles.

Section 9 "Reproduction":-

One generation has been bred on the farm from animals which are born in Mauritius, hence for two generations.

We wish to bring to your kind attention that La Vanille Reserve des Mascareignes is a registered breeder with the Secretariat and this is listed on the CITES Website.Date of CITES registration is 1 October 2012.Operation No: A-Mu-501.

Section 10 "Annual production:-

Annual production since 2005(see appended table)

Section 11 "Need for additional specimens":-

This will be catered for during local registration.

Section 12 "Type of product exported":-

All animals to be exported should be a size that they can be microchipped before export.

Section 13 "Marking methods":-

Specification for microchip and microchip readers are as follows:-

Microchip - 100A : 11.5mm

Microchip Reader: Reader TROVAN GR 251 High Performance Portable Multi Reader.
TROVAN Reader LID – 560 ISO Pocket Reader

NPCS can countercheck these microchip numbers.

Section 14 "Inspection and Monitoring procedures":-

Officers from National Parks and Conservation Service and Division of Veterinary Services carry out site visits and monitoring at least once a year to see if the animals are well kept and if premises are maintained to the satisfaction of the Veterinary Officer.

Section 15 "Facilities":-

The Tortoises will be kept on a plot of land of 8 acres with applicant living on site together with security watchman. 2 outdoor fenced pen of approximately 25 mts X 25 mts for the adults and one rearing outdoor enclosure of approximately 10 mts X 10 mts and a indoor room of 7 mts X 3 mts.

	Females	Males	Thought Males But Females	Mortality Males	Mortality Females	Sub-Adults Females??	Total	juveniles born	Mortality	Gift/Sold	Total
2005	15	30					4	9			13
2006							13	7			20
2007							20	12			32
2008	10				1		32	9			41
2009							41	26		6	61
2010			3	1			61	27			88
2011							88	18	4	2	100
2012							100	23	2		121
2013						2	121	0	6	2	113
Total feb 2013	27	26				2		135 *	12	10	589
	(15+10-1+3)	(30-3-1)									

*+ 4 juveniles born in 2004.

Application for CITES Permit

1.	**Name of Applicant**	Mr. Gilbert Forget
2.	**Contact Details**	Nouvelle Découverte St Pierre Ile Maurice
3.	**Date of Establishment:**	• Established since 2000. • Registered as a breeder with National Parks & Conservation Services (NPCS) since 2005.
4.	**Species Bred**	• Astrochelysradiata • Common Name :Sokatra, Tortue étoilé, Sokake
5.	**Parental Breeding Stock**	• 27 adult females • 26 adult males
6.	**Proof of Legal Acquisition**	• Affidavit and supporting Documents
7.	**Other Stock**	• 2 sub adults • 113 juveniles
8.	**Mortality Rate**	
9.	**Reproduction**	As the parental stock specimens were brought to Mauritius by the 18th century, they are long time ago F2 captive bred specimens and kept by several backyards owners on the island since. In our operation we collect the eggs mainly in summer after spotting the female digging the nest, mark the place and after she has finished, come back to dig for the eggs to be brought to the incubator.
10.	**Annual Production**	Expect 80-90 offsprings during the first years, 27 females having 3 clutches of 3 eggs = 243 eggs/ year
11.	**Need for additional Specimens**	With the very long life cycle of the Astrochelysradiata (75-100 years) we will not need additional specimens to increase the genetic pool in a near future. Yet in case of need, we may get a few locally with backyard owners or set up an exchange program with la vanilla reserve des Mascareignes in Mauritius & Rodrigues.
12.	**Type of product exported**	Live animals

SN	Year	Cause of Death	Age	Specification
1.	2008	Accident	20 Years	One Female
2.	2010	Kidney Failure	Old Age	One Male
3.	2011	At Birth	Juvenile	Four
4.	2012	At Birth	Juvenile	Two
5.	2013	At Birth	Juvenile	Six

13.	**Marking Methods**	• Breeding stock: All parental stock has transponders. • Offspring: Up to 3 years each juvenile is marked with a number on the carapace • Exported specimen: will be marked with transponders
14.	**Inspection and Monitoring Procedures**	All breeding stock and offspring are marked with transponders and are to be inspected and controlled by National Parks & Conservation Services (NPCS) giving access to the farm and to available data.
15.	**Facilities**	1&2. The breeding stock is kept on the property, a fenced plot of land of 8 arpents with applicant living on site, with watchman and CCTV Camera will be installed 3. 2 outdoor fenced pen of 25mts x 25mts for the adults, one rearing outdoor enclosure of approximately 10mts x 10mts and one indoor room 7mts x 3mts for rearing. Each has available fresh borehole water taps and ponds for drinking water and soaking. 4. 3 incubators of 96 eggs each with heating mats and apparatus for controlling the heat and humidity. 5. Mauritius being a tropical island, the captive stock can easily be fed with readily available food for herbivores on and around premises very similar as in their natural habitat, plus a supplement of calcium, vitamin and occasionally some fruits and always fresh water available. 6. We can get access very easily to veterinary services in Mauritius, there are several private veterinary services available, there are also free services offered by Government for live stock breeders, Internet is also a very good source of information, and applicant own several books of reference.
16.	**Conservation**	Each captive breed specimen to be exported for the pet trade and zoo will have been born in captivity at lease F2, monitor by NPCS and having transponder thus preventing poaching the wild breed animals in their country of origin, eventually a survival insurance to increase the wild population in the country of origin and a helping hand to the conservation of the species. With the actual market price, we will donate of 100 US dollars per tortoise exported to CITES Malagasy We are agreeable to pass on our "savoir faire" to the cause of conservation of the Astrochelysradiata in their natural habitat. Many worldwide experts in conservation suggested implementing regulated & homologated breeding farm of Astrochelysradiata to help and give an alternative to the degradation of habitat, food consumption of sokatra and illegal traffic that are decimating nature. Some go even further saying registered Captive Breeding Farm is the only way to go.

17.	**Animal Treatment**	Each tortoise living on the farm operation enjoys very good living conditions in appropriate enclosures in same climatic condition of their country of origin with a lot of space around; they are feed daily with grass and other plants as in their natural habitat, a lot of sunlight, shade, humidity and a supplement of calcium, vitamin and fresh water, supervise by NCPS. Applicant holds a certificate of achievement "The tortoise trust course on chelonian husbandry" and several books of reference.

Submitted on 28.02.2014

MINISTRY OF AGO INDUSTRY AND FISHERIES
National Parks & Conservation Service Réduit
Tel: 464 4016, 464 2993; Fax: 465 1184
Email: npcs@mail.gov.mu

Our Ref: NP 31/1

10th January 2006

To: **Mr. Gilbert Forget**
Bumma Lane
Nouvelle Decouverte
St. Pierre

Thro' Director, NPCS 4/13/nc6

TORTOISE REARING – GILBERT FORGET

National Parks and Conservation Service (NPCS) is pleased to inform you that the Ministry of Agro-Industry & Fisheries in a letter dated 29th December 2005, has approved your request for breeding tortoises at the above-mentioned address.

However, you are also informed that the breeding activity has to be carried out to the satisfaction of both NPCS and Veterinary Services, who will have to carry out regular monitoring (e.g site visit).

Yours faithfully

Dr. R. Sookhareea
Research and Development Officer (Wildlife)
For Senior Chief Executive

rs/rb

IN THE SUPREME COURT OF MAURITIUS

I, Gilbert Jean-Claude Forget, a Company General Manager, of Nouvelle Découverte and bearer of National Identity Card No. F2209548204420

MAKE OATH AND SAY AS FOLLOWS:-

Duval Chambers
Suite 509-510 St James Court
St Denis Street, Port Louis
Tel: 211-8688/210-7353
Fax: 210-7364
E-mail:pnyush03@yahoo.com

1. That I am now 52 years old and have since my childhood been keenly interested in the breeding of tortoises. I devote a lot of my time to that particular hobby of mine. Indeed various members of my family have, for generations, bred tortoises in their backyard.

2. That in December 2005, the Ministry of Agro Industry and Fisheries of Mauritius approved my request to be allowed to breed tortoises at Nouvelle Découverte under the provisions of the Wildlife National Parks Act, 1993 hereinafter referred to as "the Act".

3. That I have in my breeding stock certain specimen of the species known as GEOCHELONE RADIATA, a species provided for in the Fourth Schedule to the Act and which were all born on the island of Mauritius.

4. That the said GEOCHELONE RADIATA species was introduced in Mauritius at the end of the eighteenth century and has ever since lived in this Country in what is called "a controlled environment".

5. That all the GEOCHELONE RADIATA tortoises now to be found in my breeding farm are at least second generation offspring (F2) bread in "controlled environment". This is supported –

(a) by the work written by Marlène Lingrad, Nivo Raharison, Elizabeth Rabakonandrianina & ors and published by SAGE Publications, New Delhi where, at page 225, one reads:-

"During the eighteenth and nineteenth centuries great number of radiated tortoises were exported to the islands of Réunion and Mauritius where the species are considered a delicacy. Malagasy authorities initially protected the radiated tortoise in 1960, and in 1975 the species were listed in Appendix I of the Convention of International Trade in Endangered Species (CITES)"; and

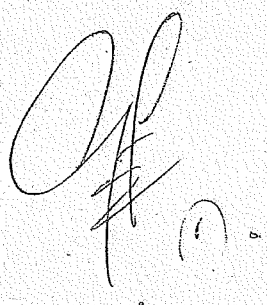
(b) various documents published under the authority of Cites as can be verified on :-

(a) CITES listed species database obtainable on http://sea.unep-wcmc.org/CITES

(b) UNEP World Conservation Monitoring Centre, http://sea.unep-wcmc.org/isdb/CITES

(c) Photocopies of studies of Mascarene Island Birds Edited by AW Diamond A S Cheke and Sir H.F.I Elliott.

6. That I finally confirm that to the best of my knowledge and belief that none of the tortoises found on my farm were brought from abroad and that they do all conform to the CITES requirements concerning tortoises for export abroad.



7. I swear accordingly upon my honour.

Sworn by the above named deponent)
At Chambers, Supreme Court House)
Port Louis, this 5th day of)
February, 2007.)

Drawn up by me

Me.Geereesha Ramsarran
Attorney At Law

Before me

M. PALAWAN
Chief Court Officer
SUPREME COURT

Supreme Court

Tortoise Trust
BM Tortoise
London, WC1N 3XX, U.K.

Tortoise Trust Institute
www.ttinstitute.co.uk

CERTIFICATE OF ACHIEVEMENT

This certificate is awarded to

Gilbert J.C. Forget

For having successfully completed

THE TORTOISE TRUST COURSE ON CHELONIAN HUSBANDRY

A.C. Highfield — Director

15th July 2006

Liste of Astrochelys Radiata

		Transponder		SCL
1	Female	95600000	2894569	34 cms
2	Male	95600000	2896529	31 cms
3	Male	95600000	2898979	38 cms
4	Male	95600000	2894879	39 cms
5	Male	95600000	2896332	40 cms
6	Female	95600000	2897883	33 cms
7	Male	95600000	2907282	38 cms
8	Male	95600000	2892517	35 cms
9	Male	95600000	2897138	31 cms
10	Female	95600000	2898481	35 cms
11	Male	95600000	2890598	47 cms
12	Male	95600000	2896924	36 cms
13	Male	95600000	2893201	36 cms
14	Female	95600000	2892197	28 cms
15	Female	95600000	2896599	37 cms
16	Female	95600000	2896657	36 cms
17	Female	95600000	2894288	36.5 cms
18	Female	95600000	2897412	37 cms
19	Female	95600000	2891388	37.5 cms
20	Male	95600000	2892854	37 cms
21	Male	95600000	2895673	41 cms
22	Female	95600000	2893648	30.5 cms
23	Female	95600000	2900286	35 cms
24	Male	95600000	2897270	36 cms
25	Male	95600000	2893058	39 cms
26	Male	95600000	2894211	35 cms
27	Male	95600000	2896997	39.5 cms
28	Female	95600000	2893550	38 cms
29	Male	95600000	2907460	37.5 cms
30	Male	95600000	2892493	34 cms
31	Female	95600000	2898484	37 cms
32	Male	95600000	2893490	42.5 cms
33	Female	95600000	2895281	40.5 cms
34	Female	95600000	2894994	34.5 cms
35	Female	95600000	2895594	39 cms
36	Male	95600000	2891007	39 cms
37	Female	95600000	2894855	33.5 cms
38	Female	95600000	2897004	30 cms
39	Female	95600000	2893510	28.5 cms
40	Female	95600000	2907274	38 cms
41	Male	95600000	2898099	34 cms
42	Female	95600000	2892203	36,5 cms
43	Female	95600000	2895614	34 cms
44	Female	95600000	2893007	37.5 cms
45	Male	95600000	2890864	34.5 cms
46	Male	95600000	2895160	37 cms
47	Male	95600000	2896330	42 cms
48	Male	95600000	2891620	38 cms
49	Male	95600000	2894757	37 cms
50	Female	95600000	2897713	38 cms
51	Female	95600000	2898927	35 cms
52	Female	95600000	2900107	37 cms
53	Female	95600000	2895910	32 cms
54	Female	95600000	2896539	31.5 cms
55	Female	95600000	2893994	33 cms

113 juveniles

Reproductive ecology and egg production of the radiated tortoise (*Geochelone radiata*) in southern Madagascar

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We studied reproduction of wild *Geochelone radiata* at the Cap Sainte Marie Special Reserve in southwestern Madagascar to gain insight into life history traits related to reproductive success. Reproductive behaviour was observed over two nesting seasons and egg production was studied by radiographing telemetered females at regular intervals. We captured and marked 1438 radiated tortoises of which 26% were adults. Mating and nesting coincided with the rainy season, and mating events peaked in December, shortly before females started nesting in January. The incubation period was approximately 263–342 days, and hatchlings emerged after the onset of the rainy season when new plant growth became available. Hatching success was high and incidental destruction by humans rather than predation had the greatest impact on tortoise nests. Individual females produced from 0–3 clutches per season with 1–5 eggs per clutch. Body size had a weak effect on clutch size, but clutch size was lower in the dry year (2000) than in the wet year (1999) and appears to reflect resource availability. Mean egg size per clutch increased significantly with increasing body size. These findings emphasize that protection of large females should be considered in the conservation of this species.

Key words: radiated tortoises, *Geochelone radiata*, reproduction, eggs, nests, Madagascar.

INTRODUCTION

Radiated tortoises or Sokatra (*Geochelone radiata*) are one of four species of tortoises endemic to Madagascar (Juvik 1975; Ernst & Barbour 1989). Their natural distribution is limited to xeric spiny forest of southwestern Madagascar (Iverson 1992a) in the regions of the Mahafaly and Karimbola Plateaus; however, they have been introduced to the islands of Mauritius and Réunion (Gonzalez 1993).

The IUCN Red List (Hilton-Taylor 2000) classifies *G. radiata* as 'Vulnerable'. Primary threats to the radiated tortoise's survival are collection and habitat loss (Durrell *et al.* 1989; Nussbaum & Raxworthy 2000). Although a local taboo against eating or touching radiated tortoises affords them protection, exploitation by immigrants and people from different regions has increased in recent years (Lewis 1995; Nussbaum & Raxworthy 2000). Significant habitat loss and destruction occur through forest clearing for agricultural use, charcoal production and overgrazing by livestock (Nussbaum & Raxworthy 2000). Additionally, protected areas such as Cap Sainte Marie Special Reserve and Lake Tsimanampetsotsa Strict Nature Reserve have free-ranging cattle and goats, which probably compete for food with wild tortoise populations.

Although Andriamampiandry (1987) examined the bio-ethology of radiated tortoises at the Beza-Mahafaly Special Reserve; Bloxam (1988) investigated temperature and activity rhythms; Lewis (1995) reported on population densities and Young (1997) studied demography at Cap Sainte Marie, no study has examined reproduction and hatchling survivorship of wild *G. radiata*. Existing information on reproduction is based on studies of captive animals: egg development (Schweizer 1965), reproduction (Zovickian 1973), courtship and breeding behaviour (Auffenberg 1978), captive management (Burchfield *et al.* 1980) and captive breeding (Peters 1969; Behler & Iaderosa 1991).

Their vulnerable status, scarcity of ecological information, and threats to *G. radiata* populations necessitate studies to gather baseline life-history data from healthy, natural populations. Effective

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The Role of Local Taboos in Conservation and Management of Species: The Radiated Tortoise in Southern Madagascar

Marlene Lingard, Niry Raharison,
Elisabeth Rabakonandrianina,
Jean-Aimé Rakotoarisoa
and Thomas Klingvist*

The radiated tortoise, Geochelone radiata, is endemic to the semi-arid region of southern Madagascar. Despite formal protection by law since 1960 and listing in CITES since 1975, tortoise populations have been reported to be in rapid decline, mainly due to illegal harvesting for food and commercial trade. The Tandroy people, inhabitants of the Androy region, which covers approximately half the tortoise distribution range, do not, however, exploit the species. The Tandroy prohibition against tortoise consumption is expressed as a taboo or fady. The aim of this study was to document the narratives, rules and enforcement mechanisms linked to the taboo, and to assess the potential role of the taboo for the protection and management of the radiated tortoise. Interviews revealed that the Tandroy perception of the animal as 'dirty' underlies the Tandroy taboo, although one informant suggested that the taboo once originated in notions of sacredness. Estimated tortoise abundances ranged from 20 tortoises per ha in an area with no harvesting to 0.6 per ha in an area where a significant proportion of residents were reported to violate the taboo. Infrastructure changes and increasing numbers of immigrants to the region are sources of new pressures on the tortoise. An official

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acknowledgement of the folk custom and the transformation of this institution for the purpose of conservation and sustainable management of the tortoise may considerably reduce the current high costs of enforcement by formal institutions. The tortoises may constitute an important economic source of revenue if local communities are granted rights to a regulated small-scale trade for the pet market based on locally controlled farming of tortoises. Such actions may provide economic incentives for further transforming and building effective institutions for sustainable management. However, a local institutional strategy also needs to be nested with institutions across scales, for example, at regional and national levels, assisting in controlling harvest and trade.

Introduction

The role of local communities and local ecological knowledge in the management of natural resources and ecosystems has received increasing attention in recent years (for example, Berkes and Folke 1998, 2002; Berkes et al. 2000, 2003; Gadgil et al. 1993; Olsson and Folke 2001; Ostrom 1990). Local ecological knowledge refers to a cumulative body of knowledge, practice and belief of the relationships of living beings (including humans) with one another and with their environment, reflecting the dynamic way in which people organise perceptions of flora, fauna, ecosystem processes, culture beliefs and history (for example, Berkes and Folke 1998; Berkes et al. 2003; Gadgil et al. 1993). Such knowledge is often tacit, and its transmission and practical implementation is frequently accomplished through the prescriptions of social institutions, such as rituals and taboos (Colding and Folke 2001). The institution of taboos is a universal regulator of human behaviour, and a taboo can be described as a social prohibition of something that is regarded holy or unclean, and is often connected to ritual. Colding and Folke (2001) consider some taboos to be integral parts of 'invisible' systems of resource management and refer to nature-related social taboos as *resource and habitat taboos* (Table 1).

Colding and Folke argue that, although not necessarily perceived as instruments of resource management by the people who practise them, taboos nevertheless often show a functional similarity to the institutions of formal nature conservation. Specific-species taboos regulate the utilisation of particular species and are usually inclusive prohibitions, barring exploitation of a particular species at all times. The rationale behind the existence of specific-species taboos vary, ranging from notions of the species being toxic, being perceived as religious symbols, as well as being avoided due to their behavioural and physical appearance. In an analysis of seventy specific-species taboos, about 30 per cent, predominantly reptiles and mammals, were found to be involve species recognised as 'threatened' by the International Union for the Conservation of Nature (IUCN) (Colding and Folke 1997). While this may be an unintended consequence, the enforcement of taboos may have a direct impact on species conservation. Taboos and other forms of informal institutions have, however, seldom been incorporated in biological conservation schemes, partly due to narrow definitions of what constitutes conservation (Berkes et al. 2003; Colding et al. 2003).

Table 1

Resource and Habitat Taboos, and the Nature Conservation and Resource Management Functions of Each Category

Category	Function
Segment taboos	Regulate resource withdrawal
Temporal taboos	Regulate access to resources in time
Method taboos	Regulate methods of resource withdrawal
Life history taboos	Regulate withdrawal of vulnerable life history stages of species
Specific-species taboos	Total protection of species in time and space
Habitat taboos	Restrict access and use of resources in time and space

Source: Colding and Folke (2001).

The radiated tortoise, *Geochelone radiata*, is among the world's rarer tortoises and is one of four endemic tortoise species in Madagascar. It occurs in the semi-arid region of the southern part of the island. Populations of the radiated tortoise are reported to be in decline throughout much of its range (Durrell et al. 1989; Juvik 1975; Nussbaum and Raxworthy 2000; O'Brien et al. 2003). Over the past twenty-five years the geographic range of the tortoise is estimated to have decreased by approximately 20 per cent (O'Brien et al. 2003), and the IUCN has listed radiated tortoise as 'vulnerable' (Hilton-Taylor 2000). Humans have harvested tortoises at least since the arrival of Europeans. The giant tortoise, *Geochelone gigantea*, most likely went extinct in Madagascar as a consequence of heavy exploitation and trade in the past (Bourn et al. 1999). During the eighteenth and nineteenth centuries great numbers of radiated tortoise were exported to the islands of Réunion and Mauritius where the species was considered a delicacy. Malagasy authorities initially protected the radiated tortoise in 1950, and in 1975 the species was listed in Appendix I of the Convention on International Trade in Endangered Species (CITES). Despite these initiatives, great numbers of radiated tortoise are killed for food and for the manufacture of tourist items, as well as exported as part of the exotic pet trade (Durrell et al. 1989; Juvik 1975; Nussbaum and Raxworthy 2000). Basing their proposition on three pieces of evidence, O'Brien et al. (2003) suggested that over-exploitation by humans is currently the most important driver of the decline of the radiated tortoise, that is: (*a*) commercial harvesters travel increasingly far, up to 200 km, to find sufficient densities of tortoises; (*b*) tortoises are either completely absent or present at very low abundance at sites subject to commercial harvesting, while in remote regions with no harvesting, tortoises persist at densities of up to 2,500 tortoises per sq. km; and (*c*) tortoise abundance increases significantly with distance from urban centres of high demand for tortoise meat.

The Tandroy people, inhabitants of the Androy region (Figure 1), which covers approximately half of the tortoise distribution range, do not exploit the tortoise

REPOBLIKAN'I MADAGASIKARA
Fitiavana - Tanindrazana - Fandrosoana

Antananarivo le, 04 AOUT 2015

SECRETARIAT GENERAL
DIRECTION GENERALE DES FORETS
DIRECTION DE LA VALORISATION DES RESSOURCES FORESTIERES
SERVICE DE LA GESTION DE LA FAUNE ET DE LA FLORE

N° 471 -2015/MEEMF/SG/DGF/DVRF/SGFF

Le Directeur Général des Forets
Organe de Gestion CITES

à

Monsieur le Secrétaire Général de la CITES

Maison Internationale de l'Environnement
15, chemin des Anémones
CH-1219 Châtelaine
Genève-Suisse
e-mail :info@cites.org
Fax : 4122 797 3417

Objet: Objection à la Notification N°2015/035 du 15 Juin 2015.

Monsieur le Secrétaire Général,

Ayant pris en compte la Notification citée en objet, j'ai l'honneur de vous faire part de notre objection à cette proposition pour les raisons suivantes :

- L'*Astrochelys radiata* est endémique à Madagascar. Dans la notification, il n'y a aucun document justifiant la présence de cette espèce ni à l'Ile Maurice ni dans le centre de l'opérateur.
- Nous aimerions aussi que les données ainsi que la capacité techniques du demandeur soient présentées pour que les Parties membres de la CITES puissent donner leur appréciation.
- Actuellement, le trafic des tortues dont l'espèce en question n'est pas encore maitrisable à Madagascar. De ce fait nous ne pouvons pas émettre un avis favorable à sa commercialisation tant que nous ne pouvons pas faire un suivi rigoureux du centre d'élevage.
- Certes, Madagascar a donné son accord exceptionnel pour le Centre « La Vanille, Réserve des Mascareignes » à l'Ile Maurice du fait qu'il développe une organisation orientée à la conservation aussi bien dans ce pays qu'à Madagascar et en plus il présente un excellent modèle pour l'élevage de la tortue Aldabra.

Notre préoccupation est actuellement de nous assurer de l'impact de la commercialisation des tortues radiées effectuée par La Vanille sur la situation de cette espèce à Madagascar dans un court et moyen terme. Ceci doit être fait avant de prendre une décision sur l'octroi d'autres agréments.

Comptant sur votre compréhension et votre diligence pour la diffusion de notre objection à cette demande d'enregistrement, je vous prie de recevoir, Monsieur le SG, l'expression de mes salutations les meilleures.

ANDRIAMIARO Fidy José
Ingénieur Principal des Eaux et Forêts

(English and French only / Unicamente en inglés y francés / Seulement en anglais et français)

Objection à la Notification 2015/035
Director - National Parks and Conservation Service 15/09/2015 10:48
To: Elena KWITSINSKAIA
Cc: Tom DE MEULENAER

Dear Elena

Please refer to your mail dated 24 August 2015 and its attachment on the above mentioned subject.

This Service as the CITES Management Authority(MA) of Mauritius(MRU) would to express its views and concerns to the Malagasian authorities regarding their objections to the request from Mr G. Forget(Mr G.F) to register his captive breeding facilities for the rearing and export of Astrochelys radiata .

a) Documents justifying the presence of A.radiata in Mauritius and at the breeder's place
It has been amply demonstrated through numerous publications that A. radiata has been introduced in Mauritius well before the entry in force of the CITES convention. Numerous documents have been supplied in the past to the CITES Secretariat and the Malagasy CITES MA to substantiate this fact in good faith. In the case of the application of " La Vanille Crocodile Park Ltd" , the Animals Committee has ruled out that " the breeding stock was established legally" Additionally," the UNEP-WCMC database lists the species as introduced into Mauritius"(Refer to email dated 23/07/07 from Paula Nicollin from the CITES secretariat addressed to me). You are also requested to refer section 6 of the application from Mr G.F on proof of legal acquisition. We are of opinion that Malagasy CITES MA is omitting the essentials.

b) Access to data and the technical expertise of breeder
Mr G.F and the MRU MA are ready to supply any data regarding his facilities and breeding stock to any Parties making the demand. Mr G.F has been rearing tortoises for the past 20 years and is registered as a breeder with NPCS since 2005. He is also a holder of a certificate of achievement (The Tortoise Trust course on chelonian husbandry". The MRU MA and Division of Veterinary Services are satisfied of the technical expertise of the breeder.
Additional information on breeder:
• Has a collection of 300 Tortoises and Turtles, including 168 Astrochelys Radiata , 75 Dipsochelys dussumieri , Geochelone carbonaria (the three species are reproducing) and 5 other species.
• Some reference books such as: Practical Encyclopedia of Keeping and Breeding tortoises and freshwater Turtles. Medicine of Tortoises and Surgery and Turtles by Stuart McArtur, Roger Wilkinson and John Meyer.
• Is using on the farm the High performance multi Trovan reader G251, the Trovan pocket reader LID -560, and the Trovan 100a transponders,
• Recently, he invested in the installation of CCTV video camera system to improve security of compound.
Does the Malagasy CITES MA doubt the competence and integrity of the MRU MA?

c) Illegal trafficking of this species
The third objection does not hold good because it was not deemed sufficient to counter the approval of la Vanilla Park in Mauritius as a registered breeding facility for A.radiata with the CITES secretariat .
In any case, in addition to the visits and control of the CITES MA of MRU, the applicant has also proposed that he would sponsor any visit to his farm that the CITES MA of Madagascar is willing to effect. Further we quote Malagasy CITES MA "Le trafic des tortues dont l'espèce en question n'est pas encore maitrisable à Madagascar"

The CITES secretariat may wish to note that A. radiata has been listed as a protected species in Madagascar since the year 1960 and has benefited from huge amount of funding and technical support from various funding bodies.

d) Commitment of Mr G.F for the conservation of this species in Madagascar
You may wish to refer to section 16 of his application whereby Mr G.F took the commitment to contribute what his colleague from La Vanille had proposed for the conservation of the radiated tortoise in Madagascar and is also willing to pay a fee of 100 $ per head sold ,to help Madagascar to better protect this species. In this matter, we respect the efforts undertaken by the Directorate General of Madagascan forests, but must emphasize that the validation of Mr G.F demand for registration is long overdue and cannot be delayed any longer in a spirit of fairness.
« Quote » from Animals Committee 2007 regarding the application from La Vanille Ltd."The committee recommends that this application be accepted for inclusion in the Register, being of opinion that the breeding stock was established legally and considering the breeding of this species in captivity for commercial purposes to be in the interest of conservation (giving this species a value, reducing the pressure on the wild populations, contributing to the livelihoods of the population)."As it can be seen any additional registered captive breeding facility can only contribute positively to the conservation of the radiated tortoise.

e) Concerns on the impact on the survival of this species through international trade of this species in short and medium term by La Vanille Crocodile Park ltd.
Regarding this concern of Madagascar MA of the impact of the commercialization of radiata tortoises in the short and medium termt -the facts speak for themselves, it is estimated to 7.5 to 12 Million radiata tortoises in their natural habitat (Leuteritz et al., 2005), 60,000 to 241,000 tortoises are illegally harvested per year (PHVA report 2005) (Randriamahazo et al., 2007), of which a large majority for local consumption as food (WWF Strategic Plan 2010) (IUCN redlist.org). Tortoise meat is especially popular around Christmas and Easter (Lewis 1995).
The application of La Vanille mentions a production estimation of 160 juveniles and 75 by Mr. G Forget in the early years, which brings us to +/- 235 specimens exported / year with transponders. Instead of having unjustified preoccupations for the two breeding farms of Mauritius, one should see as being not "Detrimental to the survival of the species in the wild" and acquired legally. As it can be seen any additional registered captive breeding facility can only contribute positively to the conservation of the radiated tortoise.
Protocol agreement already mentioned and discussed with MA of Madgascar.
Specimens 3 years for export will be equipped with transponder.
An official visit of 3 officers of Madagascar MA for 3 days, on the farm when there will be export sales.
A levy of US $ 100 per animal exported, for the conservation of the species in Madagascar.

In view we are of opinion that objections raised by Madagascar are unfounded and it would be appreciated if you could relay the contents of this mail to the Malagasy CITES MA, for consideration to withdraw their objection.

Kind regards

Vishnu

Vishnuduth Bachraz
Deputy Director
NPCS
Management Authority of Mauritius
Reduit
FOR DIRECTOR