TÍTULO

REGISTRATION OF CAPTIVE BREEDING FACILITIES THE 'ONE AND ONLY' ROAD TO COMMERCIAL TRADE WITH CAPTIVE BRED APPENDIX I ANIMAL SPECIES?

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"REGISTRATION OF CAPTIVE BREEDING FACILITIES

THE 'ONE AND ONLY' ROAD TO COMMERCIAL TRADE WITH CAPTIVE BRED APPENDIX I ANIMAL SPECIES?"

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LIST OF ACRONYMS

CBD	Convention on Biological Diversity
CITES	Convention on International Trade in endangered Species of Wild Fauna and Flora
Conf.	Conference
CoP	Conference of the Parties
CPI	Corruption Perception Index
E.g.	For example
EU	European Union
F1	First-generation offspring
F2	Second-generation offspring
FATF	Financial Action Task Force
GBC	Global Corruption Barometer
i.e.	that is (id est)
MA	Management Authority
ml	Milliliter
NGO	Non-Governmental Organization
No.	Number
Party	Party to CITES
Res.	Resolution
Rev.	Revised
SA	Scientific Authority
SC	Standing Committee
UN	United Nations
UNEP-WCMC	United Nations Environment Programme/Conservation Monitoring Center
UNODC	United Nations Office on Drugs and Crime
WG	Working Group

CITES CODES

Purpose codes

T	Commercial
Z	Zoo
G	Botanical garden
Q	Circus or travelling exhibition
S	Scientific
H	Hunting trophy
P	Personal
M	Medical
E	Education
N	Reintroduction or introduction into the wild
B	Breeding in captivity or artificial propagation
L	Law enforcement / judicial / forensic

Source codes

W	Specimens taken from the wild
X	Specimens taken in "the marine environment not under the jurisdiction of any State"
R	Ranched specimens: specimens of animals reared in a controlled environment, taken as eggs or juveniles from the wild, where they would otherwise have had a very low probability of surviving to adulthood.
D	Appendix-I animals bred in captivity for commercial purposes in operations included in the Secretariat's Register, in accordance with Resolution Conf. 12.10 (Rev. CoP15), and Appendix-I plants artificially propagated for commercial purposes, as well as parts and derivatives thereof, exported under the provisions of Article VII, paragraph 4, of the Convention
A	Plants that are artificially propagated in accordance with Resolution Conf. 11.11 (Rev. CoP18), as well as parts and derivatives thereof, exported under the provisions of Article VII, paragraph 5 (specimens of species included in Appendix I that have been propagated artificially for non-commercial purposes and specimens of species included in Appendices II and III)
C	Animals bred in captivity in accordance with Resolution Conf. 10.16 (Rev. CoP19), as well as parts and derivatives thereof, exported under the provisions of Article VII, paragraph 5
F	Animals born in captivity (F1 or subsequent generations) that do not fulfil the definition of 'bred in captivity' in Resolution Conf. 10.16 (Rev. CoP19), as well as parts and derivatives thereof
Y	Specimens of plants that fulfil the definition for 'assisted production' in Resolution Conf. 11.11 (Rev. CoP18) as well as parts and derivatives thereof
U	Source unknown (must be justified)
I	Confiscated or seized specimens
O	Pre-Convention specimens (may be used with other source codes).

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ABSTRACT

The thesis addresses the issue whether the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) stipulates Parties' legal obligations to export captive-bred Appendix I animal species only, if the breeding facility registered is registered under Resolution Conf. 12.10 (Rev. CoP15). Beyond the legal question, the focus is mainly on the policy issue whether the registration system provides added value in respect of the protection of endangered species in comparison to a stand-alone permit system, balanced against a possible delta regarding administrative burdens, and should therefore be the preferred option.

The research was conducted as a desktop study. Key documents from the CITES context were identified and used, as well as data from the CITES Trade Database covering a five-year period from 2017 to 2021, the CITES Register on breeding operations, information from the United Nations Office on Drugs and Crime (UNODC), UNODC's World Wildlife Crime Reports on laundering risk, Transparency International's corruption index, published information on six registration procedures, and a chronology of CITES Resolutions dealing with a register for captive-breeding operations.

The findings are that, strictly from a legal point of view, there is no legal obligation. In addition, a strict permit system could qualify as a stricter domestic measure. From a policy perspective, the current registration system provides added value. However, its administrative burdens compared to the counterfactual outweigh the benefits. Therefore, a stand-alone national permit system is preferred, alternatively, the registration system should be reformed. Ideas for reforms are included.

1. INTRODUCTION

The thesis addresses the issue whether the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) obliges the Parties to allow international trade with captive bred Appendix I animal species, only if they have been bred in a facility that was registered under Resolution (Res.) Conf. 12.10 (Rev. CoP15) (CITES, 2002). This Resolution requires that 'Parties shall restrict imports for primarily commercial purposes, as defined in Res. Conf. 5.10 (Rev. CoP19) (CITES, 1985), of captive-bred specimens of Appendix-I species to those produced by operations included in the Secretariat's Register'.

Firstly, this raises the legal question whether this aspect of the Resolution goes further than the Convention and whether it may therefore not be legally binding. Or, otherwise, whether the Resolution provides the correct interpretation of the Convention, for example by expressing a "common understanding" of the Parties in this document and this might count as "subsequent practice", which may in some circumstances (provided for in the Vienna Convention of the Law of Treaties) be a valid argument to tip the balance in a difficult issue of interpretation in one direction or the other.

Beyond the legal question, the thesis covers foremost the policy issue whether Parties, in their national law, should treat registration in its current design as a prerequisite for commercial exports of captive bred Appendix I specimens, in line with the language of Res. Conf. 12.10 (Rev. CoP15) (CITES 2002), and whether the Resolution requires an amendment, respectively, a wider reform.

These two questions are of particular importance, they are timely, and have significant implications for trade in Appendix I species. The underlying issues were discussed, *inter alia*, at the recent meetings of the Standing Committee, at its 74th session in Lyon in March 2022 and at its 75th session in Panama City in November 2022, as well as at CoP19 in Panama City, in November 2022.

CoP19 decided, *inter alia*, to give the Animals and the Plants Committee a mandate for the following intersessional work in this area:

> "In support of the Standing Committee's implementation of Decision 19.179, the Animals and Plants Committees shall, separately and together in their joint session: a) consider the key elements in the current implementation of Article VII

paragraphs 4 and 5 for animals and plants, respectively, in the current applicable Resolutions; b) determine if there is a need to implement Article VII paragraphs 4 and 5 differently for either animal specimens from species bred in captivity or plant specimens that are artificially propagated than what is outlined in existing Resolutions, and provide their recommendations to the Standing Committee in time for its 78th meeting; and c) provide any other scientific advice and guidance on CITES provisions concerning trade in non-wild specimens of CITES-listed animal and plant species to the Standing Committee upon request and as appropriate." (Decision 19.180 (CITES, 2022))

The Standing Committee was vested with the following mandate:

> "The Standing Committee shall: a) in consultation with the Animals and Plants Committees, develop specific terms of reference including modus operandi and a roadmap as appropriate, to guide the continuation of the review of trade in specimens of both CITES-listed animals and plants not of wild source; b) continue to consider amendments to Res. Conf. 10.16 (Rev. CoP19) and Res. Conf. 12.3 (Rev. CoP19), as well as any amendment to other Resolutions concerning provisions on trade in specimens of both CITES-listed animals and plants not of wild source, taking into account findings and suggestions in document SC74 Doc. 56 and any related comments and recommendations from the Standing Committee, Parties, the Secretariat or other stakeholders; c) review issues and challenges in the application of the Convention for trade in non-wild specimens of both CITES-listed animal and plant species, in particular key elements that may contribute to the uneven application of Article VII, paragraphs 4 and 5, and consider the scientific advice and guidance from the Animals and Plants Committees on the need for implementing these Articles differently for either animal specimens from species bred in captivity or plant specimens that are artificially propagated; and d) make recommendations for addressing these issues and challenges, including amendments to existing Resolutions or development of a new Resolution or Decisions to address these issues and challenges, for consideration at the 20th meeting of the Conference of the Parties." (Decision 19.179 (CITES, 2022)

> "The Standing Committee shall, taking into consideration document CoP19 Doc. 55, review the application of Res. Conf 12.10 (Rev. CoP15) on Registration of operations that breed Appendix-I animal species in captivity for commercial purposes, for situations where there is a change in the nature of the operation, or in the types of products being produced for export, and other matters raised in document CoP19 Doc. 55 as appropriate, and provide its recommendations to the 20th meeting of the Conference of the Parties." (Decision 19.181 (CITES, 2022)

On this basis, it can be expected that the work of the Standing Committee and the two Scientific Committees in the current intersessional period will continue to involve intensive discussions on these topics that could also include, as one of the core underlying issues, the two focal questions raised in this paper. The work of the Standing Committee will be prepared by two intersessional working groups. The questions are contentious, and Parties take different lines in their practice. Some Parties only allow commercial exports of specimens of Appendix I species from facilities that have successfully completed the registration process. In addition, if facilities are not registered, imports of their specimens are not accepted by some Parties. Other Parties allow commercial exports notwithstanding that the facility has not been registered. The European Union (EU) Commission and the EU Members States have recently adopted Guidelines on captive breeding (EU, 2022), which coordinate the approach taken by Member States. The EU is also in the spotlight of an on-going pre-compliance procedure, which addresses the question, whether the approach taken by the EU and its Member States to allow commercial exports of captive-bred specimens of Appendix I species from non-registered captive breeding operations is justified.

In respect of some Parties (including Germany), there is a significant volume of trade with captive-bred Appendix 1 specimens that have not been bred at registered facilities. Therefore, the future course of CITES on this matter could have a significant impact.

2. OBJECTIVES AND RESEARCH QUESTIONS

The objectives of the thesis are the following:

- Assess whether, on the basis of the current legal framework, registration of captive breeding facilities is mandatory for Appendix I specimens exported for commercial purposes, *i.e.* a legal obligation.
- If this is not the case, assess whether registration of captive breeding facilities should be made mandatory for Appendix I specimens exported for commercial purposes.

  As this may not be possible in the sense of a legal obligation (without changing the Convention), the question is probably more accurately phrased, whether it should be made *de facto* mandatory, for example, in the sense of a recommended and expected course of action that could trigger trade suspensions, if not complied with.
- If registration is mandatory, in the sense of a legal obligation, assess whether the legal obligation should be abolished.

In order to achieve the above objectives, the core question to be answered, apart from the legal question, is the policy question:

What are the pros and cons of imposing a mandatory registration process as a prerequisite for commercial exports of Appendix I captive bred specimens?

Does it provide added value as compared to a pure permit system?

Do its advantages outweigh its disadvantages.

The following questions may be helpful for this investigation:

What is the historical development of the registration procedure over almost four decades from to 1985 to today?

What is the overall structure of the registration process?

What are the substantive criteria for registration?

What are differences to the permit procedure?

How many facilities are currently registered? In which countries and for which species?

Are registered facilities mainly breeding species that occur naturally in the territory of the Party where they are based?

With regard to (commercial) trade in captive bred specimens, what is the share of trade comparing registered facilities with unregistered breeders? What are the species concerned?

For the species or group of species traded in the highest volumes, what are the specimens that are traded most, live animals, skins, leather products?

What conclusions can be drawn from the application of the registration process in practice?

For example, from two recent examples, *Totoaba*/Mexico and *Falco pelegrinoides*/*Falco peregrinus*/Uzbekistan?

Or from other examples?

Which positions on the issue as to whether registration is a requirement for the export (or re-export) of captive bred Appendix I specimens for commercial purposes are taken in the following key documents and materials:

- Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022),
- Report by Animals Committee CoP11 Doc. 48 (CITES, 2000)
- Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002),
- Report by Animals Committee CoP13 Doc. 56.1 Annex (CITES, 2004)
- EU Guidance Document on Captive Breeding (EU, 2022).

- US proposal to extend scope of registration procedure (CoP19 Doc. 55)
- Pre-compliance procedure against the EU and its Member States (CoP 19 Doc. 29.1 (CITES. 2022)
- Canada's Information Document CoP19 Inf. 13 (CITES, 2022) linked to earlier report of Secretariat SC70 Doc. 31.1 (CITES, 2018)

From a legal perspective, do Articles VII.4/VII.5 CITES require a registration of the breeding facility as a prerequisite for exports of Appendix I captive bred specimens?

What can be derived from the wording of the provisions, their historical context, and their context within the Convention?

What is the guidance a teleological interpretation (*i.e.* regarding their aim and purpose) of the provisions can provide for the interpretation of the provisions?

To what extent can Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002) be regarded as "subsequent practice" (Article 31(3) b) Vienna Convention on the Law of Treaties) (UN, 1969), which provides elements for the interpretation of the provisions?

Does a mandatory registration of captive breeding facilities reduce the risk that wild specimens are laundered as captive-bred specimens more effectively than a case-by-case assessment in the context of the assessment of applications for permits?

What is the result of the same comparison regarding the ability to detect cases where the requirements of Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022) are not met.

Does a registration requirement increase or decrease the administrative burden for applicants and CITES authorities when compared to a "pure" permit procedure?

And for the Animals Committee, the Standing Committee, and the Secretariat?

For example, is the same type of information required in either one of the two procedures?

How can import countries react to an approach by an exporting country not to require registration of facilities breeding Appendix I species?

What is the result of balancing pros and cons with regard to the registration procedure?

3. BACKGROUND

As background to the issues raised by this thesis it is helpful to trace the historical development of the Resolutions.

3.1. Historical background

This chapter focuses on how registration of captive breeding instruments was introduced and how it has evolved. There is a line of Resolutions that were adopted and modified over four decades. The current Resolution on the issue is analysed at a later stage. The descriptions address the main developments focusing on the following issues:

- The criteria for registration
- The procedure for registration
- The procedure for third Parties to challenge a registration during the and after the approval process
- The procedure for the host country to have a registration deleted
- Marking

3.1.1. The provisions in the Convention

The captive breeding exemption in Article VII.4 and VII.5 does not mention an international registration procedure as a prerequisite for commercial exports of captive-bred Annex I species of animal specimens:

‘4. Specimens of an animal species included in Appendix I bred in captivity for commercial purposes, or of a plant species included in Appendix I artificially propagated for commercial purposes, shall be deemed to be specimens of species included in Appendix II.

5. Where a Management Authority of the State of export is satisfied that any specimen of an animal species was bred in captivity or any specimen of a plant species was artificially propagated, or is a part of such an animal or plant or was derived therefrom, a certificate by that Management Authority to that effect shall be accepted in lieu of any of the permits or certificates required under the provisions of Article III, IV or V.’

3.1.2. CoP2 (1979)

Res. Conf. 2.12 (CITES, 1979) is entitled “Specimens bred in captivity or artificially propagated”. It was adopted at CoP2 in San José, Costa Rica. The Resolution does not address the issue of registration at all. However, it provides the basis for a standard

interpretation of Articles VII paragraph 4 and 5 of the Convention and a common understanding of the term “bred in captivity”.

3.1.2.1. Criteria for registration

The requirements for captive-breeding are developed in some detail. In particular, (i) offspring has to be “produced in a controlled environment”, and the parental breeding stock (ii) must be “established in a manner not detrimental to the survival of the species in the wild”, (iii) maintained without adding specimens from the wild (with some exceptions), and (iv) managed in a manner designed to maintain the breeding stock indefinitely.

3.1.2.2. Procedure for registration

None.

3.1.2.3. Procedure for third Parties to challenge a registration during and after the approval process

None.

3.1.2.4. Procedure for the host country to have a registration deleted

None.

3.1.2.5. Marking

None.

3.1.2.6. Other issues

The Resolution recommends a separate application of Article VII paragraph 4 and 5 of the Convention. It is set out in the Convention that “captive-bred specimens of Appendix I species […] shall be deemed to be specimens of species included in Appendix II”, *i.e.*, so the reading of the Resolution, “they shall be treated as if they were in Appendix II”, therefore “they shall not be exempted from the provisions of Article IV”. This means that “granting certificates to the effect that specimens are captive-bred” is not sufficient. They need import and export permits and have to comply with Article IV.

3.1.3. CoP4 (1983)

A registration procedure at international level has not been introduced before 1983. At CoP4 in Gaborone, Botswana, Res. Conf. 4.15 (“Control of captive breeding operations in Appendix I species”) was adopted. The first Resolution on the issue of registration was rather short and left many gaps.

3.1.3.1. Criteria for registration

Res. Conf. 4.15 does not expressly provide for criteria for registration. It only contains a general reference, in its recitals, to Res. Conf. 2.12 that "precisely defines the expression 'bred in captivity' " (2nd recital).

3.1.3.2. Procedure for registration

In this context, the following two points are relevant:

- Res. Conf. 4.15 recommends that "Parties provide the Secretariat with any appropriate information on the operations occurring in their territories which regularly breed in captivity, for commercial purposes, specimens of species included in Appendix I to which Article VII, paragraph 4, of the Convention applies." (point a)).
- The Resolution also "requests the Secretariat to compile and update a Register of the operations which breed specimens of species included in Appendix I in captivity for commercial purposes, on the basis of the information received from the Parties and other sources, and to communicate this Register to the Parties."

3.1.3.3. Procedure for third Parties to challenge a registration during and after the approval process

Such a procedure has not been introduced at this stage.

3.1.3.4. Procedure for the host country to have a registration deleted

Such a procedure has not been introduced at this stage.

3.1.3.5. Marking

Marking is not addressed in Res. Conf. 4.15.

3.1.3.6. Other issues

Two further issues raised in the Resolution merit to be addressed here:

- The Resolution also contains the recommendation that "Parties reject any document granted under Article VII, paragraph 4, of the Convention, if the specimens concerned do not originate from an operation duly registered by the Secretariat".
- The Resolution also clarifies that an export permit according to Article IV (*i.e.* for Appendix II species) is required for captive-bred Appendix I specimens ("Parties strictly implement the provisions of Article IV of the Convention with respect to

specimens of species included in Appendix I originating from operations which breed such specimens in captivity for commercial purposes" point e)). In other words, a certificate of captive breeding (foreseen in Article VII paragraph 5) is not sufficient.

3.1.4. CoP6 (1987)

In 1987, at CoP6 in Ottawa, Canada, Res. Conf. 6.21 was adopted. Its title is "Control procedures for commercial captive breeding operations". Document 6.34 reveals that the members of the working group that was involved in the preparation of the draft Resolution held "on a number of issues" rather divergent" (point 5.)

3.1.4.1. Criteria for registration

As set out in the Resolution (point b)), the decision by the Conference of the Parties (with two-thirds-majority) was foreseen in order to ensure that operations meet the requirements, in particular, of

- Res. Conf. 2.12 (establishing the definition of "bred in captivity", *i.e.* the parental stock must be established in a manner not detrimental to the survival of the species in the wild, the parental stock must be maintained without augmentation from the wild, except for occasional addition to prevent deleterious inbreeding, and the parental stock must also be "managed in a manner designed to maintain the breeding stock indefinitely"), (point c))
- Res. Conf. 4.15 (the Parties are to provide "any appropriate information" on the captive-breeding operations).

Res. Conf. 6.21 allocates the decision whether specimens meet the requirements for captive-bred specimens clearly to the Management authority hosting the captive-breeding facility ("although the criteria recommended for allowing trade in captive-bred Appendix I specimens are sufficiently strict, there is […] no provision allowing other Parties to assess whether these criteria are met or continue to be met", 3rd recital).

3.1.4.2. Procedure for registration

Res. Conf. 6.21 provided for a procedure whereby the registration of captive-breeding operations needed to be approved by the Conference of the Parties. Prior to Res. Conf. 6.21, operations were registered by the Secretariat after information had been submitted by a party regarding the operation. Res. Conf. 6.21 recommended that a two-thirds

majority of the Conference of the Parties is needed to register a captive-breeding operation, if it is the first commercial breeding operation for a particular Appendix I species (point b)).

3.1.4.3. Procedure for third parties to challenge a registration during and after the approval process

The Resolution provides that third Parties can "propose that the Conference of the Parties delete the operation from the register" point e), "after consultation with the Secretariat and the Party concerned" if the Party "becomes aware of and can demonstrate a failure to satisfactorily comply with the requirements for a registered breeding operation" point e).

3.1.4.4. Procedure for the host country to have a registration deleted

Res. Conf. 6.21 provides that any host country can ask the Secretariat to have a captive-breeding operation removed from the register. A decision by the Conference of the Party is not foreseen ("any Party within whose jurisdiction an operation is registered pursuant to Res. Conf. 4.15, may unilaterally request the removal of that operation from the Register without reference to other Parties by so notifying the Secretariat", point g)).

3.1.4.5. Marking

Res. Conf. 6.21 (point a)) recommends that "Parties develop suitable measures to ensure that already registered breeding operations, and the processors and manufacturers of products, adopt a marking system for products of the operation that meets as a minimum the requirements of the uniform marking system described in Res. Conf. 5.16 concerning trade in ranched specimens." For live birds, the Resolution also contains a specific recommendation to adopt a marking system based on "the individually marked closed ring of an appropriate size which cannot be removed from the bird's leg after having been applied in the first days of the birds's life […]" (point d)). In addition, the Resolution recommends that any CITES document issued for a captive-bred specimen of a registered operation "mention the individual marks of the specimens, and that […] such documents be not accepted by other Parties for specimens which are not marked or where the individual marks are not contained n the documents concerned" (point h)).

3.1.4.6. Other issues

An export permit according to Article IV (*i.e.* for Appendix II species) is sufficient for captive-bred specimens ("Parties can issue Appendix II permits for Appendix I specimens at their own discretion" 2nd Recital).

3.1.5. CoP7 (1989)

In 1989, at CoP7 in Lausanne, Switzerland, Res. Conf. 7.10 (CITES, 1989) recommended "Format and criteria for proposals to register the first commercial captive-breeding operation for an Appendix I animal species". This was also the title of the Resolution. Res. Conf. 7.10 is quite detailed. It is based on a draft Resolution prepared by Canada and the United States (Doc 7.38 (CITES, 1989).

3.1.5.1. Criteria for registration

The Resolution refers to the following requirements:

- "the species can be bred reliably in captivity" (point b)),
- "the operation's breeding stock will be maintained indefinitely without the addition of specimens from the wild, except were necessary to avoid deleterious inbreeding" (point c)),
- "marking and inspection of specimens in the operation be undertaken in such a manner that the unauthorized addition of wild specimens is not likely to occur without detection" (point e)).

3.1.5.2. Procedure for registration

The Resolution sets out requirements for the information that have to be contained in the proposal for registration regarding the following issues:

- source of the breeding stock (point g)),
- the need to demonstrate "that the species has been bred reliably to at least the second generation (F2) in captivity" (point b)),
- "the measures that will be taken to recognize and avoid deleterious inbreeding" (point c)), "marking and inspection of specimens in the operation […] in a manner that the unauthorized addition of wild specimens is not likely to occur without detection"(point e)).

Res. Conf. 7.10 (in point g) and in its Annex) also sets out in further details the information and data to be provided with regard to

- the parental breeding stock,
- the husbandry and breeding methods,

- the operating strategy, including anticipated future production of offspring and development of captive-breeding population, share of breeding-age population that has produced offspring,
- marking and inspection,
- description of breeding facility,
- trade data including trade threats.

3.1.5.3. Procedure for third Parties to challenge a registration during and after the approval process

The Resolution does not address this issue.

3.1.5.4. Procedure for the host country to have a registration deleted

The Resolution does not address this issue.

3.1.5.5. Marking

Res. Conf. 7.10 addresses marking issues in the context of the provisions that concern the information to be provided for proposals for registration. In particular, the requirement to describe the "marking methods to be used for breeding stock and offspring (point g) iv), Annex point 223). The Resolution also recommends that "the marking and inspection of specimens in the operation be undertaken in such a manner that the unauthorized addition of wild specimens is not likely to occur without detection" (point e)).

3.1.6. CoP8 (1992)

At CoP8, in 1992 in Kyoto, Japan, Res. Conf. 8.15 (CITES, 1992) was adopted. Its title is "Guidelines for a Procedure to Register and Monitor Operations Breeding Appendix-I Animal Species for Commercial Purposes". Res. Conf. 8.15 (CITES, 1992) repealed Res. Conf. 4.15 (CITES, 1983), Res. Conf. 6.21 (CITES, 1987), and Res. Conf. 7.10 (CITES, 1989). As mentioned in the Resolution, at this point of time, by13 March 1992, "approximately 60 operations, breeding a total of 14 species in captivity for commercial purposes" had been registered. Canada submitting the document on behalf of the Animals Committee concludes that "many of the [captive-breeding] guidelines have proven workable." "However, the procedure is not seen to be without problems. It has become complicated and bureaucratic, perhaps to the extent that it hinders the legitimate addition of new species to the Register." (CoP8 Document 8.38 (CITES, 1992))

So far, Res. Conf. 8.15 (CITES, 1992) has been the most detailed Resolution on the registration of captive-breeding operations. It sets out in four Annexes the role of the

commercial captive-breeding operation (Annex 1), the Role of the Management Authority (MA) (Annex 2), the role of the Secretariat (Annex 3), and the role of the Parties and the Conference of the Parties (Annex 4). The objective of the Resolution is to "describe a clear and comprehensive procedure for qualifying, registering and monitoring commercial captive -breeding operations for Appendix-I species" (p.50, first paragraph of operative text).

3.1.6.1. Criteria for registration

The following elements of the Resolution are relevant in this context:

- "[T]he Secretariat includes a new captive-breeding operation in its Register only after it is satisfied that the operation meets the requirements set forth in Res. Conf 2.12 (point g)).
- If the "establishment of a captive-breeding operation involves the removal of animals from the wild", the operation should be able to "demonstrate to […] the Management Authority and the Secretariat that the removal of such specimens is not detrimental to the conservation of the species, and in the case of non-native species, such removal should require the agreement of the state of origin inconformity with Art. III of the Convention" (point n).
- "[W]here the conservation needs of the species warrant, the Management Authority shall satisfy itself that the captive -breeding operation will make a continuing meaningful contribution to the conservation of the species (point o)).
- "Parties and Secretariat may establish additional special criteria for the registration of operations intending to breed specimens of species known to be difficult to breed in captivity, or known to have specific requirements for successful breeding in captivity, or […] known to be difficult to distinguish from wild-taken specimens when in trade" (point p)).

3.1.6.2. Procedure for registration

There are quite a few recommendations in Res. Conf. 8.15 (CITES, 1992):

- "[T]he first and major responsibility for approving captive-breeding operations under Article VII, paragraph 4, shall rest with the Management Authority of each Party, in consultation with the Scientific Authority of that Party" (point c)).
- The registration procedure also applies to existing operations if they want to add additional wild specimens (point i)).

- It seems that the detailed information already required by prior Resolutions if further expanded, in particular with regard to "description of founder stock in the country [note: not only the facility in question] concerned (including source and likely genetic relationship, general breeding performance in captivity, general breeding techniques successfully used)", "description of inspection procedures to confirm identity of breeding stock and offspring and to detect the presence of unauthorized specimens held at the operation or provided for export" (Annex 2)
- The Resolution foresees a more robust role of the Secretariat in the registration procedure: "the Secretariat should have a stronger "oversight" role in screening applications from Management Authorities […] and that it may reject applications that it believes do not meet the criteria of Res. Conf. 2.12 concerning conservation needs of the particular species involved". The Secretariat "will admit new operations to its Register only after it is satisfied that these operations meet the requirements set forth in Res. Conf. 2.12 and in the Guidelines for a Procedure to Register and Monitor Operations Breeding Appendix-I Animal Species for Commercial Purposes." "[I]f a registered operation appears no longer to meet the required criteria, the Secretariat may recommend its deletion from the Register to the Management Authority and to the Conference of the Parties" (Annex 3)

3.1.6.3. Procedure for third Parties to challenge a registration during the and after the approval process

The following two points are related to this issue:

- „[T]he Secretariat shall notify all Parties, particularly range States, of each request for registration and shall provide full information to any party that requests it" (point f)).
- The introduction of an opposition procedure is also new. If there is no objection, the Secretariat includes the operation in the Register. If one Party raises an objection, the Conference has to decide, and registration only takes place if it is supported by a two-thirds majority. (points g) h))

3.1.6.4. Procedure for the host country to have a registration deleted

The procedure as introduced in Res. Conf. 6.21 (CITES, 1987) was not changed.

3.1.6.5. Marking

Res. Conf. 8.15 (CITES, 1992) recommends that "registered captive-breeding operations shall continue to use a uniform markting system for their specimens in trade, and adopt superior marking methods as they become available" (point k)).

3.1.6.6. Other issues

It is also appropriate to draw attention to a number of other issues raised in this Resolution:

- The Resolution encourages Parties to establish captive-breeding operations in range states ("where appropriate captive-breeding operations for commercial purposes for indigenous species of animals included in Appendix I") (point b)).
- "[P]rior to the establishment of captive-breeding operations for exotic species, a study of ecological risks should be completed, in order to prevent any negative effects on the ecosystem and the native species" (point d)).
- Annex 2 recognizes also "that the Management Authority is responsible for ensuring that registered captive-breeding operations continue to meet the requirements after they become registered" (recital 4).
- With regard to the issuing of permits pursuant to Art. IV for exports of captive-bred specimens of Annex I species Res. Conf. 6.21 seems to be more more flexible ("Parties can …] at their own discretion" 2nd Recital) than Res. Conf. 4.15 ("Parties strictly implement the provisions of Article IV …" point b)).

3.1.7. CoP10 (1997)

A summary of the current version of Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022) is provided below (5.1.1.3.2. and 5.5.1.).

3.1.7.1. Criteria for registration

See below (5.1.1.3.2).

3.1.7.2. Procedure for registration

None.

3.1.7.3. Procedure for third Parties to challenge a registration during and after the approval process

None.

3.1.7.4. Procedure for the host country to have a registration deleted

None.

3.1.7.5. Marking

None.

3.1.7.6. Other issues

None.

3.1.8. CoP11 (2000)

At CoP11 in Gigiri, Kenya, 2000, Res. Conf. 11.14 (CITES, 2000) was adopted and Res. Conf. 8.15 (CITES, 1992) was repealed. The title of the Resolution was "Guidelines for a procedure to register and monitor operations that breed Appendix-I animal species for commercial purposes". Doc. 11.48 prepared by the Animals Committee sets out in detail how Res. Conf. 8.15 (CITES, 1992) was proposed to be amended and revised to avoid duplication, remove statements that may no longer be accurate, update to take account of the replacement of Res. Conf. 2.12 (CITES, 1979) by Res. Conf. 10.16 (CITES, 1997) (requirements for captive breeding), remove statements not directly related to the registration process and ensure that in the allocation of topics the annexes are limited to clarifying the operative text and to move some provisions to the operative text of the Resolution. In Doc. 11.48 (CITES, 2000), the Animals Committee clearly states that there was disagreement on two critical issues: Firstly, "whether every operation should be registered with the Secretariat" and secondly, whether "operations located in non-range States, that have become established using specimens acquired in the past, perhaps by questionable means" should be eligible for registration (Doc 11.48, p.1). This will be discussed in more detail below (see below 5.5.2.).

The Animals Committee also expresses their view that the registration system applicable at the time (as set out in Res. Conf. 8.15 (CITES, 1992)) is "largely unworkable". In its comments, the Secretariat goes even further and proposes to repeal Res. Conf. 8.15 (CITES, 1992) because "does not contribute to the implementation of CITES". It refers to the fact that "a total of only 81 operations in only 19 Parties have been registered in nine years" and that "nothing prevents trade in captive-bred Appendix-I specimens that have not originated from operations contained in the register kept by the Secretariat pursuant to Res. Conf.

8.15." (Doc 11.48 p.7-8 (CITES, 2000)). If a registration system should be needed, the Secretariat proposes to tailor it along the lines of the registration of nurseries for artificially propagated plants set out in Res. Conf. 9.19 (CITES, 1994) (*i.e.* a national registration system that is implemented by each Party).

Res. 11.14 (2000) had been conditioned on the approval by the Standing Committee of a list in Annex 3 with species that are critically endangered in the wild and/or difficult to keep or breed in captivity. Subsequently, there were difficulties to agree on such a list.

3.1.8.1. Criteria for registration

The requirement for approval of a captive-breeding for registration refer to Res. Conf. 10.16 (CITES, 1997) instead of Res. Conf. 2.12 (CITES, 1979), after the former replaced the latter.

3.1.8.2. Procedure for registration (including scope of application)

Two points are relevant for the registration procedure:

The registration procedure foreseen in Res. Conf. 11.14 (CITES, 2000) would have applied only to captive-breeding operations that breed species that are critically endangered in the wild and or known to be difficult to keep or breed in captivity. This would have been in contrast to the procedure foreseen by Res. Conf. 8.15 (CITES, 1992) (and earlier Resolutions on captive-breeding) that had provided for a registration process that applies to captive-bred species of all Appendix I species.

- For species that are not on the list, the Resolution provided that it was up to the Management Authority of the host country to determine whether to apply the exemptions in Art. VII, paragraph 4 for the export of captive-bred specimens. It was foreseen that this decision was to be taken "on the advice of the Scientific Authority that each operation complies with the provisions of Res. Conf. 10.16 (Rev.)." (CITES, 1997)

3.1.8.3. Procedure for third Parties to challenge a registration during and after the approval process

The opposition procedure introduced in Res. Conf. 8.15 (CITES, 1992) is further elaborated. Grounds on which a Party can oppose a registration are spelled out as follows "any Party believing that a registered operation does not comply with the provisions of Res. Conf 10.16 (Rev.)" (CITES, 1997) So far, e.g. in Res. Conf. 8.15 (CITES, 1992), this clear link (in that case to Res. Conf. 2.12 (CITES, 1979) preceding Res. Conf. 10.16

(Rev) (CITES, 1997)) was only spelled out in the context of the procedure foreseen for third Parties to ask for the removal of an operation that is already registered.

3.1.8.4. Procedure for the host country to have a registration deleted

The provision in Res. Conf. 6.21 (CITES, 1987) was not changed, but supplemented with a text that provides that "the operation shall be removed [from the Register] immediately" if the host country requests the removal from the register (point h)).

3.1.8.5. Marking

Res. Conf. 11.4 (CITES, 2000) consolidates the requirements in earlier Resolutions. It recommends that "registered captive-breeding operations shall ensure that an appropriate and secure marking system is used to clearly identify all breeding stock and specimens n trade, and shall undertake to adopt superior marking and identification methods as these become available." (point f)).

3.1.8.6. Other issues

The Management Authority (in collaboration with the Scientific Authority) is responsible for monitoring the registered captive-breeding operation. If there is a "major change in the nature of the operation or in the type(s) of products being produced for export" the Management Authority informs the Secretariat. The Animal Committee then "reviews the operation to determine whether it should remain registered" (point g)

3.1.9. CoP12 (2002)

The Secretariat maintained its strong criticism of the registration system: "The Secretariat is among those who believe that the procedure created was unnecessarily complicated and who doubt the utility of registering commercial captive-breeding operations. The fact that 10 years later only 18 Parties have registered such operations only feeds this doubt." (CoP12 Doc. 55.1 point 7 (CITES, 2002)).

After CoP11 it was unclear whether Res. Conf. 6.21 (CITES, 1987) continued to apply or whether Res. Conf. 11.14 (CITES, 2000) applied. The Secretariat expressed itself in favour of applying the new Resolution, even though the list of species for which captive-breeding operations should be registered had not been agreed on at that time. Therefore, the Secretariat was of the opinion that in a transition period all species could be registered (CITES Secretariat, Notification No 2001/006 of 9 Febuary 2001 (CITES, 2001)). Some Parties were of the opinion that the new Resolution would only apply once the condition was fulfilled and a new list was agreed on (CoP12 Doc. 55 para. 11 (CITES, 2002)).

The Animals Committee was not able to agree on a list and its Chairman, on behalf of the Committee, proposed that all species should be subject to registration (CoP12 Doc. 10.1. para. 33-41) (CITES, 2002). This issue was not decided, but at CoP 12 (2002) in Santiago (Chile),a new Resolution 12.10 (CITES, 2002) was adopted (CoP12 Com. I Rep. 14 (Rev.) para. 55 (CITES, 2002), CoP12 Plen. 8, p.6, point 55 a) (CITES, 2002)).

A summary of the current version of Resolution Conf. 12.10 (Rev. CoP15) (CITES, 2002) is provided below (5.1.1.).

3.1.9.1. Criteria for registration

See below (5.1.1.1.3.).

3.1.9.2. Procedure for registration (including scope of application)

See below (5.1.1.2. and 5.1.1.1.).

3.1.9.3. Procedure for third Parties to challenge a registration during and after the approval process

See below (5.1.1.2.).

3.1.9.4. Procedure for the host country to have a registration deleted

See below (5.1.1.2.).

3.1.9.5. Marking

See below (5.1.1.3.3.).

3.1.9.6. Other issues

None.

3.1.10. CoP13 (2004), CoP14 (2007), CoP15 (2010)

Res. Conf. 12.10 (CITES, 2002) was amended at CoP13 (2004), in Bangkok, Thailand, CoP14 (2007) in The Hague, Netherlands, and CoP15 (2010) in Doha, Qatar.

At CoP13, the debate about a fundamental reform of the registration system continued. The Secretariat maintained its criticism and also spoke out against the proposed changes for Res. Conf. 12.10 (CITES, 2002) submitted by the Animals Committee: “The Secretariat doubts the utility of internationally registering operations that breed Appendix-I species in captivity for commercial purposes, and believes that the procedures for registering such operations, as now laid out in Res. Conf. 12.10 for animals, are unnecessarily complicated and over-bureaucratic.” (CoP13 Doc. 56.1, p.2 point A.

(CITES, 2004)). "The Committee's corresponding recommendations […] are undemanding and unlikely to improve the current situation significantly. It is unfortunate that the Animals Committee was unable to agree on more fundamental changes to the processes and Res. Conf. 12.10." (CoP13 Doc. 56.1, p.2 point B. (CITES, 2004)). The Secretariat demanded the following: "If there needs to be a system for the registration of certain or all captive-breeding operations producing Appendix-I animal species for commercial purposes, it should be practical, realistic in scope, easy to monitor and up-to-date" (CoP13 Doc. 56.1, p.2 point C. (CITES, 2004))

The Animals Committee had submitted a list of "perceived problems limiting the wider use of the registration procedure laid out in Res. Conf. 12.10" (CoP13 Doc. 56.1 Annex (CITES, 2004)) and had submitted recommendations how to solve the problems. It had not proposed a far reaching reform of the registration system. This document is discussed in more detail below (see 5.5.4.).

At CoP14, the relationship between ex-situ production and in-situ conservation was discussed on the basis of a document prepared by the Standing Committee's Clearing House (CoP14 Doc. 48 (Rev. 1). Some smaller changes to Res. Conf. 12.10 were adopted in the context of the review of Resolutions (Cop14 Doc. 20.2 p.6 (CITES, 2007), CoP14 Com. II.9 (CITES, 2007), CoP14 SR Plen. 4 (Rev. 2) item 20.2) (CITES, 2007).

At CoP 15, in the context of the review, Res. Conf. 12.10 (CITES, 2010) was amended (CoP15 Plen. 3 (Rev.2), item 18, Annex 12 (CITES, 2010); CoP15 Com. II. 37 (CITES, 2010)), mainly "simplification and rationalization" after some discussion of further reaching reforms as proposed by the Secretariat (CoP15 Doc. 18 Annex 12 a) para.7-9, 10-18, and Annex 12 c), (CITES, 2010)). The Secretariat also drew attention to the fact that in September 2009, 26 years after its establishment, the Register contained 179 captive breeding operations registered by 24 Parties for 25 species, "mainly birds for falconry and display, fish for aquaria, and crocodiles for the leather industry." (CoP15 Doc. 18 Annex 12 a) para. 5 (CITES, 2010)). However, some of the changes were significant (e.g. Standing Committee decides in place of Conference of the Parties, requirement that objections need to be fully documented, Standing Committee can reject objections if "trivial or ill-founded") ." (CoP15 Doc. 18 Annex 12 a) para. 16 (CITES, 2010)).

The agreed changes concerned the following topics:

3.1.10.1. Criteria for registration

No changes were made in this respect at CoP13, CoP14 or CoP15.

3.1.10.2. Procedure for registration

At CoP13, a paragraph was added that urges the Management Authorities "to work closely with captive-breeding operations to prepare the information required". Parties are encouraged to offer "faster processing of permit applications, issuance of a formal certificate of approval as an internationally registered breeding operation, or possibly reduced export permit fees" in order to "provide incentives for their captive-breeding operations to register". Parties are also asked to "provide simple application forms […] and clear instructions"

There were changes regarding the information that has to be provided on operations to be registered. For instance, at CoP 14, the paragraph that allowed "signed affidavits supported by other documents (*e.g.* dated receipts)" in lieu of certain documents that were explicitly required was deleted. CoP15 added a sample registration form as Annex 3 to Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002). It deleted an explicit requirement that non-range states need to provide evidence regarding specimens of breeding stock. The three situations described are all covered by the general requirement to provide evidence for the legal acquisition of breeding stock (Annex 1, point 5).

At CoP15 the decision of the Standing Committee whether to register an operation is prescribed as follows: if it considers the objection "trivial or ill-founded" it rejects the objection (Annex 2, point 4 a)). If the Committee considers the objections "justified, it shall review the response of the applying Party and decide whether or not to accept the application. " (Annex 2, point 4 b)).

3.1.10.3. Procedure for third Parties to challenge a registration during the and after the approval process

At CoP15 Parties decided to transfer the power to decide whether to remove an operation from the register from the Conference of the Parties to the Standing Committee (point i)). The same applies to the inclusion of an operation in the register (Annex 2, point 4). The Parties also added at CoP15 that the objection must be "fully documented". The Party raising an objection must "include the supporting evidence that has given rise to concerns" (Annex 2, point 2). CoP15 deletes from the text the explicit obligation of the

Secretariat "to facilitate a dialogue between the Management Authority" of the host country and the Party raising the objection.

3.1.10.4. Procedure for the host country to have a registration deleted

In case, the Management Authority of the host country identifies a major change in the nature of an operation or in the type(s) of products produced for export and informs the Secretariat, this does no longer trigger a review procedure by the Animals Committee and also removes its role to determine whether the operation remains in the register (point g)). (CoP15)

3.1.10.5. Marking

At CoP13, it was added that the information provided by the Secretariat to all Parties should also include details of the specific marking method used by the captive-breeding operation (point 1c)).

3.1.10.6. Other issues

At CoP14, an explanation was added in another recital that "the import of specimens of Appendix-I species bred in captivity not for commercial purposes that are covered by a certificate of captive breeding does not require the issuance of an import permit and may therefore be authorized whether or not the purpose is commercial". A paragraph that provided a narrower interpretation of Art. VII paragraph 5 was deleted ("an animal bred for non-commercial purposes where each donation, exchange or loan is not for profit and is conducted between two operations involved in a cooperative conservation programme that provides for the participation and/or support of one or more range States for the species concerned").

3.2. Brief literature review

So far, the issue as to whether registration of captive breeding facilities should be mandatory if captive bred Appendix I specimens are exported for commercial purposes has not been the subject of a monography or an article.

The literature on captive breeding has so far focused on other issues, in particular, on the following:

- Biological aspects of captive breeding (*e.g.* Williams & Hoffman (2009)).
- Techniques how to differentiate in practice between captive-bred specimens and specimens sourced from the wild (*e.g.*, van Schingen, Ziegler & Boner (2016)).

- Captive breeding as a tool to reduce pressure on wild populations (*e.g.*, Wang, Yang & Wronski (2019)).
- Economic aspects of captive breeding (*e.g.*, Damania & Bulte (2007)).
- Development of trade with particular species or a small group of species, including captive-bred specimens, globally or with reference to a country or region (*e.g.*, Hierink, Bolon & Durso (2020)).
- Trade with endangered species in general (including captive-bred specimens) (e.g., Harfoot, Glaser & Tittensor (2018)).
- Related questions regarding the effectiveness of CITES (including the rules on captive breeding) (*e.g.*, Wyatt, T. (2021)).

4. METHODOLOGY AND PROCEDURE

The concept of the thesis is to conduct a desktop research and analysis focusing on the primary documents that are relevant for this topic:

- Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022),
- Report by Animals Committee CoP11 Doc. 48 (CITES, 2000),
- Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002),
- Report by Animals Committee CoP13 Doc. 56.1 Annex (CITES, 2004),
- EU Guidance Document on Captive Breeding (EU, 2022),
- US proposal to extend scope of registration procedure (CoP19 Doc. 55),
- Pre-compliance procedure against the EU and its Member States (CoP19 Doc. 29.1 (CITES. 2022), and
- Canada's Information Document CoP19 Inf. 13 (CITES, 2022) linked to earlier report of Secretariat SC70 Doc. 31.1 (CITES, 2018).

The analysis also uses the available trade data regarding commercial exports from registered and non-registered captive breeding operations in the CITES Trade Database established by UNEP-WCMC (2023), as well as the information on registered captive breeding operations that are published on the website of CITES as a Register (CITES, 2023).

The investigation focuses on two aspects: the legal analysis and a policy analysis. The main question of the legal analysis is whether there is a legal obligation to register captive breeding operations as a pre-requisite for commercial exports of captive bred specimens. One of the main issues in this context will be whether the restriction of exports for commercial purposes of Appendix I specimens set out in Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002) is an element that can be regarded as the common understanding of the Parties in the interpretation of the provisions of the Convention. This issue is connected to the rules of the Vienna Convention on the law of Treaties (United Nations, 1969).

Secondly, the more complex issues concern policy considerations. The main focus of the policy analysis will be a comparison between the registration process and the process for the assessment of individual applications for export permits. The two procedures will be compared with a view to two main effects of a mandatory registration procedure, firstly, on the risk that wild specimens are laundered as captive-bred specimens as well as the risk that operations do not meet the requirements for captive breeding, and secondly, on

the administrative burden for applicants, other CITES authorities, the Standing Committee, Animals Committee, and the Secretariat. A follow-on question is how importing countries can react to the approach currently adopted by some Parties, such as the EU Member State Germany, to assess captive breeding issues in the context of their assessment of applications for export permits.

The added value that the registration procedure might have, if that should be the result of the analysis, would then need to be balanced against the administrative burden it imposes on the applicant, the Parties concerned, and the institutions involved. On this basis, it will be possible to provide a conclusion, as to whether mandatory registration in its current form, is an advisable course of action.

As preliminary steps to this analysis, an overview of the following aspects complement the investigation:

- an overview of the history of the rules on registration of captive breeding operations (this was already provided in the earlier chapter “background”),
- a description of the registration process,
- practical examples for the registration of captive breeding facilities, and
- a description of the procedure for the assessment of captive breeding in the context of an application for an export permit.

5. RESULTS AND DISCUSSION

This is the main chapter of this paper. In a first subchapter, the registration process and the permit procedure are described. A second subchapter provides facts and figures about registered facilities. A third subchapter provides trade data for non-registered facilities and for registered facilities separately. In subchapter four, eight examples for registration procedures are provided. Subchapter five analyses eight key documents from the CITES context which contain positions on registration of captive bred specimens. A sixth subchapter deals with possible laundering risks and other situations in which specimens claimed to be captive-bred do not meet the requirements to qualify as captive bred. The seventh subchapter deals with the legal question, whether there is a legal obligation to register captive breeding operations. Finally, in subchapter eight, the policy questions are discussed and the pros and cons of registration vs. pure permit system are weighed carefully.

5.1. Registration process and assessment in the context of permit procedure

Firstly, the registration process is described, secondly, the assessment of captive breeding in the context of the permit procedure, which is conducted ad hoc, when an applicant needs an export permit (or a re-export certificate).

5.1.1. Registration process

Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002) sets out in some detail the registration process. In the following, firstly, the information to be provided in an application are set out. Secondly, the steps of the registration procedure are outlined. Thirdly, the substantive criteria that a captive-breeding operation has to fulfil to be registered are addressed.

5.1.1.1. Information to be provided in the application

The information to be provided in the application is set out in Annex 1 of Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002). It includes the following:

-- basic information about the breeding operation, i.e. date of establishment (para. 2), Appendix-I-species to be bred (para. 3), type of product exported, “e.g. live specimens, skins, hides, other body parts, etc.” (para. 11), name and address of its owner and manager (para. 1)) (Res. Conf. 12.10 (Rev. CoP15), Annex 1 (CITES, 2002)),

- detailed information about the facilities and some core aspects of their operation (number and size of breeding and rearing enclosures, tanks, ponds, egg incubation capacity, food production or supply, availability of veterinary services, record keeping,

security measures to prevent escapes and/or thefts) (Res. Conf. 12.10 (Rev.CoP15), Annex 1, para. 14 (CITES, 2002)),

- detailed information about the parental breeding stock (numbers and ages of males and females (Res. Conf. 12.10 (Rev. CoP15), Annex 1, para. 4 (CITES, 2002)), evidence on the legal acquisition of the breeding stock, i.e. "that the parental stock has been obtained in accordance with relevant national measures and the provisions of the Convention (e.g. dated capture permits or receipts, CITES documents, etc.)" (Res. Conf. 12.10 (Rev. CoP15), Annex 1, para. 5 (CITES, 2002)),

- detailed information regarding the performance of the breeding operation ((Res. Conf. 12.10 (Rev. CoP15), Annex 1, (CITES, 2002)), in particular (current stock in numbers of females and males held in addition to breeding stock (para. 4); percentage mortalities by age and sex (para. 7); documentation showing that operations has bred F2 and description of applied husbandry methods, or ability of operation to breed F2 by showing application of husbandry methods that have successfully bred F2 in other operations (para. 8); past, current, and expected annual production of offspring, number of females producing offspring each year, unusual fluctuations including an explanation on their probable cause (para. 9),

- information regarding the need to add additional specimens to augment the breeding stock and their source "to increase the genetic pool of the captive population in order to avoid any deleterious inbreeding" (Res. Conf. 12.10 (Rev. CoP15), Annex 1, para. 10 (CITES, 2002)),

- information on marking, inspections and monitoring (detailed description of marking methods, for breeding stock and types of specimens to be exported, "e.g. bands tags, transponders, branding, etc." (Res. Conf. 12.10 (Rev. CoP15), Annex 1, para. 12 (CITES, 2002)); description on inspection and monitoring measures applied by the Management Authority "to confirm the identity of the breeding stock and offspring and to detect the presence of unauthorized specimens held at or reported by the operation or being exported" (Res. Conf. 12.10 (Rev. CoP15), Annex 1, para. 13 (CITES, 2002)),

- information on contribution to conservation (*i.e.* strategies or activities of operation that contribute to conservation of wild population(s) of the species) (Res. Conf. 12.10 (Rev. CoP15), Annex 1, para. 15 (CITES, 2002)), and

- information on animal welfare (assurance that breeding facilities shall operate in a humane (non-cruel) manner) (Res. Conf. 12.10 (Rev. CoP15), Annex 1, para. 16 (CITES, 2002)).

5.1.1.2. The steps of the registration procedure

The first stage of the registration procedure is handled at the level of the Party which is the host country of the captive-breeding operation.

- The applicant prepares an application and submits it to the CITES Management Authority MA) of the country where the captive-breeding operation is located. The Resolution encourages Parties to provide simple application forms and clear instructions to captive breeding operations that are candidates for registration (Res. Conf. Res. 12.10 (Rev. CoP15), para. 7 a) (CITES, 2002)). In its Annex 3, the Resolution provides a sample application form. For the information to be provided see above (5.1.1.1.).
- Management Authorities are urged to work closely with captive-breeding operations to prepare the required information. As an alternative instrument of assistance, the Resolution mentions a support group established by the Management Authority and consisting of members representing breeders and members representing government. (Res. Conf. 12.10 (Rev. CoP15) para. 6 b) (CITES, 2002)).
- The Management Authority, in consultation with the Scientific Authority assesses the registration, in particular whether the application is complete and contains all the information set out in Res. Conf. 12.10 (Rev. CoP15) Annex 1 (CITES, 2002).
- In addition, the Management Authority's assessment also encompasses whether the specimens produced by the operation meet the criteria for captive-bred specimens contained in Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022).

  This step is not explicitly mentioned in Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002) as a procedural step, but it is clear from the procedural context in conjunction with the substantive criterion that this is the task for the Management Authority before submitting the application to the Secretariat. In addition, it can also be deduced from the general stipulation in Res. Conf. 12.10 (Rev. CoP15), 5 b) (CITES, 2002) that the "first and major responsibility for approving captive-breeding operations under Article VII paragraph 4 shall rest with the Management

Authority of each Party …". More details on the substantive assessment are provided below (5.1.1.3.).

This is however not a final approval, which would be immediately effective. The approval is still subject to further stages of the registration procedure at the international level set out in Annex 2.

- Marking and the contribution of the operation to conservation of the species is also described below (5.1.1.3.3. and 5.1.1.3.4.).
- The Management Authority submits the information set out in Annex 1 Res. Conf. 12.10 (Rev. CoP15), 5 c) (CITES, 2002) to the Secretariat "to obtain […] the registration of [the] captive-breeding operation" (see above ….)

The second stage of the registration procedure takes place at the international level. The following steps are foreseen:

- The role of the Secretariat is mentioned in Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002), para 2 and its general task is described ("… the exemption of Article VII, paragraph 4, should be implemented through the registration by the Secretariat of operations that breed specimens of Appendix-I species in captivity for commercial purposes").
- First of all, the Secretariat applies a preliminary assessment of the application that is restricted to verifying that the information provided meets the requirements of Annex 1 Res. Conf. 12.10 (Rev. CoP15), Annex 2, para. 1 a) (CITES, 2002).
- All Parties are notified by the Secretariat that a registration has been submitted (Res. Conf. 12.10 (Rev. CoP15) para. 5 d) (CITES, 2002). In practice, the Secretariat provides core information regarding the captive-breeding operation, in particular: country, species, owner/manager, date of establishment, origin of the stock, marking of specimens (see, *e.g.* Notification 2022/053 (CITES, 2022)). The Resolution expressly mentions only "details of the specific marking methods" (Res. Conf. 12.10 (Rev. CoP15) para. 5 d) (CITES, 2002))
- Other Parties can assess the information provided and have 90 days from the date of Notification to raise an objection against the registration. They can request additional information from the Secretariat: *i.e.* a copy of the application ("full information (specified in Annex 1) on the operation") (Res. Conf. 12.10 (Rev. CoP15) Annex 2, para. 1 b) (CITES, 2002)). If objections are raised, they need to be explained and supported by relevant documents ("fully documented and

contain the supporting evidence that has given rise to concerns") (Res. Conf. 12.10 (Rev. CoP15) Annex 2, para. 1 c) (CITES, 2002)).

- If no objections are raised, the registration can be finalized (see below last point).
- If an objection is raised, in practice, the Secretariat informs the Party that has submitted the application of the objection. On this basis there is an opportunity for both Parties to discuss and resolve the matter. If this is not possible, the Party hosting the operation may either decide to withdraw the application or to uphold it (by doing nothing).
- If the objection cannot be resolved, the Secretariat transmits it to the Animals Committee. The Animals Committee reviews it within a time limit of 60 days and provides the Secretariat with its assessment. (Res. Conf. 12.10 (Rev. CoP15) Annex 2, para. 3 (CITES, 2002)).
- The Animal Committee's comments are forwarded to the Parties concerned, *i.e.* the Party that submitted the application for a registration and the Party or Parties that raised objections against the registration. The Secretariat "allows [them] a further 30 days for resolution of the identified problem(s)" (Res. Conf. 12.10 (Rev. CoP15) Annex 2, para. 3 (CITES, 2002)). This means for example that the captive-breeding operation effectively addresses the concerns that were confirmed by the Animals Committee. In this scenario, a reasonable reaction by the Party that has raised the objection would be to withdraw the objection. The same applies if the Animal Committee's comments do not confirm the objection, unless the objecting Party has valid scientific or legal reasons to disagree.
- If the objections are withdrawn or if the identified problem(s) are resolved, the registration can be finalized (see below).
- If the Animals Committee confirms the objection, the Party requesting the registration may also decide to withdraw the application.
- Otherwise, the matter is referred to the Standing Committee at its following regular meeting ("the application shall be submitted to the Standing Committee") (Res. Conf. 12.10 (Rev. CoP15) Annex 2, para. 4 (CITES, 2002)). The Standing Committee rejects the objection, if it considers it "trivial or ill founded" (Res. Conf. 12.10 (Rev. CoP15), Annex 2, para. 4 a) (CITES, 2002)). Otherwise (*i.e.* if it "considers the objection justified"), the Standing Committee decides "whether or not to accept the application" after reviewing the response of the Party that

submitted the application for registration (Res. Conf. 12.10 (Rev. CoP15), Annex 2, para. 4 b) (CITES, 2002)).

- To sum up, the registration can go ahead, if no objections have been raised, if identified problems have been resolved, or if any objection has been withdrawn, or if the Standing Committee accepts the application for registration. The registration cannot go ahead if the Standing Committee continues to consider the objection as justified after considering the response of the Party that had submitted the application.
- As a last step in the procedure, the Secretariats publishes the captive-breeding operation in the CITES register. The Resolution mentions publication of the name "and other particulars" (Res. Conf. 12.10 (Rev. CoP15), Annex 2, para. 5, (CITES, 2002)).

5.1.1.3. Requirements for approval of a captive breeding operation

The following four elements need to be considered by the Management Authority in the host country, the Animals Committee, and, ultimately, the Standing Committee: (i) full information specified in Annex 1 contained in application, (ii) definition of captive-breeding met, (iii) marking system appropriate and secure, and (iv) continuing and meaningful contribution to conservation needs.

5.1.1.3.1. Full information specified in Annex 1 contained in application

The application must contain the information that is required in Annex 1 of Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002). This is not phrased as a condition in contrast to the requirement related to captive breeding ("may only be registered […] if", Res. Conf. 12.10, para. 5 a) (Rev. CoP15) (CITES, 2002)). However, without the information set out in the Annex it will normally not be possible to obtain a registration. This follows from the procedural steps foreseen in the Resolution, in particular, the obligation of the Management Authority "to provide the Secretariat with appropriate information […] as set out in Annex 1" and the description of the last milestone of the procedure set out in Annex 2, the publication of the operation in the register by the Secretariat, if it is "satisfied that an application meets all requirements in Annex 1" (Res. Conf. 12.10, para. 5 c), Annex 2, para. 5 (Rev. CoP15) (CITES, 2002)).

5.1.1.3.2. Definition of captive-breeding met

In its para. 5 a), Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002) stipulates that a captive breeding operation "may only be registered […] if specimens produced by that operation qualify as 'bred in captivity' according to the provisions of Res. Conf. 10.16 (Rev. CoP19)" (CITES, 1997). This condition is confirmed in the Resolution's 5th recital, which explains that "Resolution Conf. 10.16 (Rev. CoP19) […] establishes the definition of 'bred in captivity' and provides the basis for determining, whether or not an operation is eligible to be considered for registration".

In the context of this paper it is sufficient to provide a brief summary of the definition without going into further details regarding the development of the Resolutions, the sometimes intricate issues that arise in this area, and the discussions the issues give rise to (including, for example, most recently at CoP19, see CoP19 Doc. 53 and CoP19 Com. II Rec. 15 (Rev. 1), p. 4 (CITES, 2022).

In a nutshell, the definition of captive-breeding is met, if it is possible to ascertain the following elements for specimens produced in a captive-breeding operation:

- Offspring has to be "born or otherwise produced in a controlled environment", *i.e.* "an environment that is manipulated for the purpose of producing animals of a particular species". The facility must have "boundaries designed to prevent animal, eggs or gametes of the species from entering or leaving the controlled environment". The facility provides, for example "artificial housing, waste removal, health care, protection from predators, and artificially supplied food". (Res. Conf. 10.16 (Rev. CoP19) para. 1 d), 2 b) (CITES, 2022)).
- "If reproduction is sexual" the offspring's "parents [must have] mated […] in a controlled environment" or, "gametes [must have] otherwise been transferred in a controlled environment" (Res. Conf. 10.16 (Rev. CoP19) para. 2 b) i) (CITES, 2022)).
- "If reproduction is asexual" "the parents [must have been] in a controlled environment when development of the offspring began" (Res. Conf. 10.16 (Rev. CoP19) para. 2 b) i) (CITES, 2022)).

The parental breeding stock must fulfil several conditions. Breeding stock of an operation is defined as "the ensemble of the animals in the operation that are used for reproduction" (Res. Conf. 10.16 (Rev. CoP19) para. 1 c) (CITES, 2022)):

- The breeding stock must be "established […] in a manner not detrimental to the survival of the species in the wild" (Res. Conf. 10.16 (Rev. CoP19) para. 2 b) ii) A (CITES, 2022))
- The breeding stock must be "established in accordance with the provisions of CITES and relevant national laws" (Res. Conf. 10.16 (Rev. CoP19) para. 2 b) ii) A (CITES, 2022))
- The breeding stock must be "maintained without the introduction of specimens from the wild" (with some exceptions for "occasional addition[s]" in line with CITES provisions and national laws and in a manner not detrimental to the survival of the species in the wild and for a small number of specified uses) (Res. Conf. 10.16 (Rev. CoP19) para. 2 b) ii) B (CITES, 2022))

The following requirements apply to the management of the breeding stock by the operation:

- The breeding stock must "[have] produced offspring of second generation (F2) or subsequent generation (F3, F4, etc.) in a controlled environment (Res. Conf. 10.16 (Rev. CoP19) para. 2 b) ii) C 1 (CITES, 2022))
- Or the breeding stock must be "managed in a manner that has been demonstrated to be capable of reliably producing second-generation offspring in a controlled environment" (Res. Conf. 10.16 (Rev. CoP19) para. 2 b) ii) C 2 (CITES, 2022)).

5.1.1.3.3. Marking system appropriate and secure

It seems that the ongoing obligations of captive breeding operations "to ensure that an appropriate and secure marking system is used to clearly identify all breeding stock and specimens in trade, and shall undertake to adopt superior marking and identification methods as these become available" (Res. Conf. 12.10 (Rev. CoP15), para. 5 f) (CITES, 2002)) also has an impact on the registration process. In contrast to the requirements for captive breeding referred to in para. 5 a) (Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002)), the marking system is formulated as an ongoing obligation and not as a condition for registration. Nevertheless, this is an issue that the Management Authority will need to discuss and settle with the applicant already at the stage of the application process, because the registration procedure requires the Secretariat to publish "details of the specific marking method (and the identifying codes or prefixes, where possible) used by the captive-breeding operation" as part of the Notification to propose a new captive-

breeding operation and information on marking is also part of the information that has to be provided as part of the application (Res. Conf. 12.10 (Rev. CoP15), Annex 2, para. 1 c), Annex 1 para. 12 (CITES, 2002)).

The applicants will also have a vital interest to engage on this topic with the Management Authority, if there is a marking issue, because the captive-breeding Resolution recommends the following for the subsequent permitting procedures: "that the trade in a specimen bred in captivity be permitted only if it is marked in accordance with the provisions on marking […] and if the type and number of the mark are indicated on the document authorizing the trade" (Res. Conf. 10.16 (Rev. CoP19) (CITES 2022)). Still, it is not argued here that the marking requirements amount to a condition for registration.

5.1.1.3.4. Continuing and meaningful contribution to conservation needs

The Resolution dealing with registration contains another requirement that has an impact on the registration process: "the Management Authority shall satisfy itself that the captive-breeding operation will make a continuing meaningful contribution according to the conservation needs of the species concerned" (Res. Conf. 12.10 (Rev. CoP15), para. 1 j) (CITES, 2002)). As for other issues, this is a topic on which the Management Authority will consult with the Party's Scientific Authority (see Res. Conf. 12.10 (Rev. CoP15), para. 5 b) (CITES, 2002)).

As explained in the context of marking, there is a difference to the requirements for captive-breeding, which are formulated as a condition ("may only be registered") (Res. Conf. 12.10 Annex 1, para. 5 a) (Rev. CoP15) (CITES, 2002)). This difference is also confirmed by the rules for the deletion of operations from the register, in cases where third Parties raise concerns. This procedure is only foreseen if third Parties "believe that a registered operation does not comply with the provisions of Res. Conf. 10.16 (Rev. CoP19)". It should be noted though that a "[description] of the strategies used or activities conducted by the breeding operation to contribute to the conservation of wild populations(s) of the species" has to be included in the application. Therefore, also on this issue there will at least have to be some level of discussion or understanding between the Management Authority and the captive breeding operation.

5.1.2. Assessment of captive-bred specimens in the context of the application process for export permits

The definition of captive-breeding has to be met, for example the legality of the breeding stock needs to be demonstrated. This is the core part of the assessment in the context of the procedure to obtain an export permit. For some more details on this point see above (5.1.1.3.2.). Marking of the particular specimens to be exported also plays a role in the context of an individual permit procedure, see above (5.1.1.3.3.).

5.2. Facts and figures on registered facilities

This section provides a brief overview of current registrations of captive breeding operations. It focuses on the following data: (i) the number of registered facilities, (ii) Parties that have registered facilities, (iii) species bred in captivity by the registered facilities. With regard to the data in (ii) and (iii) information is also provided on the regional distribution, with reference to the CITES regions.

5.2.1. Number of registered operations

As of 20 February 2023, 512 captive breeding operations were registered according to the Register (CITES, 2023) published on the website of the CITES Secretariat (https://cites.org/eng/common/reg/e_cb.html).

5.2.2. Parties with registered operations

Registered breeding facilities are located in the territory of 35 Parties (as of 20 February 2023). Currently, there are 184 Parties (including the EU). Only 19 percent of Parties have registered at least one captive-breeding operation. The vast majority of Parties has so far not registered any. (CITES, 2023). Table no. 5.1. shows the Parties, where registered captive breeding operations are located.

Table no. 5.1.- Parties with registered captive breeding operations (in alphabetical order)
Source: https://cites.org/eng/common/reg/e_cb.html, 2023

Argentina*	Germany*	Serbia*
Australia*	Honduras	Singapore*
Bahrain*	Indonesia*	South Africa*
Bangladesh*	Italy*	Spain*
Brazil*	Malaysia*	Thailand*
Cambodia*	Mali*	Tunisia

Table no. 5.1.- Parties with registered captive breeding operations (in alphabetical order) Source: https://cites.org/eng/common/reg/e_cb.html, 2023		
Canada*	Mauritius*	United Arab Emirates*
China*	Mexico*	United Kingdom*
Colombia*	Peru*	United States of America*
Cuba*	Philippines*	Viet Nam*
Czech Republic*	Russian Federation*	Zambia
Denmark*	Senegal*	

Countries that also had commercial exports of captive-bred specimens (C, T) during the period under review (1997-2021) are marked with an asterisk (*).

The facilities are from all CITES Regions of the world, *i.e.* Africa, Asia, Central and South America and the Caribbean, Europe, North America, and Oceania. The share of Parties with registered facilities differs between the regions:

All three countries from the North America region registered at least one facility (100 % of the countries in the region). Clearly the highest ratio. In Oceania, only one country, namely Australia, registered a facility (11 % of the countries in the region). With six facilities in Africa, the share of countries within the region that hosts a registered facility also amounts to 11 Percent. They are the two regions with the lowest ratio worldwide. In the other regions about 15 to 30 percent of the countries have registered at least one captive-breeding operation. In Europe, the share is only slightly higher than in Africa and Oceania. The share amounts to 16 percent. In Central and South America and the Caribbean, the share is slightly higher than in Europa, 19 percent. In Asia, the number is 10 percentage points higher than in Central and South America and the Caribbean, *i.e.* 29 percent. Table no. 5.2. shows the Parties, where registered captive breeding operations are located, by region.

Table no. 5.2.- Parties with registered captive breeding operations are located by region Source: https://cites.org/eng/common/reg/e_cb.html, 2023					
Africa 6 (53) 11 %	**Asia 11 (38) 29 %**	**Central and South America and the Caribbean 6 (31) 19 %**	**Europe 8 (50) 16 %**	**North America 3 (3) 100%**	**Oceania 1 (9) 11 %**
Mali	Bahrain	Argentina	Czech Republic	Canada	Australia
Mauritius	Bangladesh	Brazil	Denmark	Mexico	

Table no. 5.2.- Parties with registered captive breeding operations are located by region **Source: https://cites.org/eng/common/reg/e_cb.html, 2023**					
Africa **6 (53)** **11 %**	**Asia** **11 (38)** **29 %**	**Central and South America and the Caribbean** **6 (31)** **19 %**	**Europe** **8 (50)** **16 %**	**North America** **3 (3)** **100%**	**Oceania** **1 (9)** **11 %**
Senegal	Cambodia	Colombia	Germany	United States of America	
South Africa	China	Cuba	Italy		
Tunisia	Indonesia	Honduras	Russian Federation		
Zambia	Malaysia	Peru	Serbia		
	Philippines		Spain		
	Singapore		United Kingdom		
	Thailand				
	United Arab Emirates				
	Viet Nam				

Looking at the distribution of in total 513 registered facilities across the regions, the shares also differ by region. Asia (41%) and Africa (41%) account for the largest shares. The shares of North America and Central and South America and the Caribbean amount to 8 percent and 6 percent. The figure for Europe is 3 percent. Oceania only has one registered facility, which accounts for less than 1 percent.

If one compares the number of captive-breeding facilities located in the individual countries, the following results can be deduced:

The 35 countries with registered facilities can be divided, in a first step, into three groups. Tier one with 10 to 203 facilities (Table no. 5.3.). Tier two, with more than 1 and less than 10 facilities (Table no. 5.4.). Finally, tier 3, a group of countries with one registered facility each (Table no. 5.3.).

Table no. 5.3.- Number of registered operations by country (10 or more facilities) **Source: https://cites.org/eng/common/reg/e_cb.html, 2023**	
South Africa	203
Indonesia	63
Malaysia	62

Thailand	33
Singapore	31
United States of America	31
Cambodia	21
Canada	10
Viet Nam	10

In group 1, South Africa stands out as the country that has registered by far the highest number of captive-breeding facilities, more than 200. Most of them breed grey parrots (*Psittacus erithacus*). Apart from South Africa, there is only two countries with 50 or more registered facilities, Indonesia and Malaysia. For both, almost all facilities are producing specimens of Asian arowana (*Scleropages formosus*).

Thailand, Singapore, the United States and Cambodia each host 20 to 35 captive-breeding operations. Except for one facility, the United States only hosts operations breeding falcon species. Facilities in Cambodia and Thailand breed species of *Crocodylus* spp. In Singapore a number of species are bred. Most operations in Singapore are aquaculture operations producing *Scleropages formosus*. Canada and Vietnam each host 10 facilities. In Canada, registered operations almost exclusively breed falcons, in Vietnam only *Crocodylus siamensis*.

With regard to regional distribution, an African country has the top number of facilities. Followed by four Asian countries (and another Asian country at the end of this list). There are two countries from the North America region, and one from Central and South America and the Caribbean. Neither Oceania nor Europe is represented on this list.

Table no. 5.4. lists the countries, which host more than one and less than ten registered captive-breeding operations (group 2).

Table no. 5.4.- Number of registered operations by country (countries with 1 < x < 10 facilities)
Source: https://cites.org/eng/common/reg/e_cb.html, 2023

Colombia	6
Philippines	6
Spain	5

United Kingdom	4
China	3
Germany	2
Mauritius	2
Peru	2
Serbia	2

In group 2, there are four countries from Europe (Spain, United Kingdom, Germany, and Serbia), two from Asia (Philippines and China) and two from Central and South America and the Caribbean (Columbia and Peru) and one from Africa (Mauritius). Neither Oceania nor North America is represented on this list.

Table no. 5.5. shows the countries that have one registered captive breeding facility.

Table no. 5.5.- Countries with one registered facility **Source: https://cites.org/eng/common/reg/e_cb.html, 2023**	
Argentina	Italy
Australia	Mali
Bahrain	Mexico
Bangladesh	Russian Federation
Brazil	Senegal
Cuba	Tunisia
Czech Republic	United Arab Emirates
Denmark	Zambia
Honduras	

The remaining 17 countries registered one captive-breeding operation each. Six countries are from the CITES region Africa (Bahrain, Mali, Senegal, Tunisia, United Arab Emirates, and Zambia). The region Europe (Czech Republic, Denmark, Italy, and Russian Federation) and the region Central and South America and the Caribbean (Argentina, Brazil, Cuba, and Honduras) both count four countries with one facility each. From Asia and North America there is only one country with one registered facility each (Bangladesh and Mexico).

As mentioned above, the overwhelming majority of Parties do not have registered any captive-breeding facilities.

5.2.3. Species bred by registered operations

In total, almost 40 species (39) are bred in captivity in more than 500 registered operations (512). First, the number of species bred in the broad categories of birds, reptiles, fish, amphibia and mammals are described. Second, the number of registered operations that bred a particular species are focused on.

If one assesses the number of species, species bred by registered operations are mainly species of birds (20) and reptiles (9), and to a lesser extent fish species (4), amphibia (1) and mammals (1). The assessment is based on current data downloaded from the CITES website on 20 February 2023.

Looking at the number of species, the biggest group concerns bird species, mainly falcons. Table no. 5.6. shows the bird species bred in registered facilities.

Table no. 5.6.- Aves: Species bred in registered facilities
Source: https://cites.org/eng/common/reg/e_cb.html, 2023

Falco cherrug	*Leucopsar rothschildi*
Falco mexicanus	*Cacatua haematuropygia*
Falco pelegrinoides	*Cacatua moluccensis*
Falco peregrinus	*Cacatua sulphurea*
Falco peregrinus	*Eos histrio*
Falco rusticolus	*Amazona oratrix*
Falco tinnunculus	*Anodorhynchus hyacinthinus*
Tragopan caboti	*Guarouba guarouba*
Chlamydotis macqueenii	*Primolius couloni*
Chlamydotis undulata	*Psittacus erithacus*

The second largest group of species bred by registered facilities concerns reptiles, in particular species of the order Crocodylia. One tortoise species (*Astrochelys radiata*) is also bred in a registered facility. Table no. 5.7. lists the reptile species bred in registered facilities.

Table no. 5.7.- Reptiles: Species bred in registered facilities **Source: https://cites.org/eng/common/reg/e_cb.html, 2023**	
Alligator sinensis	*Crocodylus porosus*
Caiman latirostris	*Crocodylus rhombifer*
Melanosuchus niger	*Crocodylus siamensis*
Crocodylus acutus	*Astrochelys radiata*
Crocodylus niloticus	

Fish species only account for four species bred by registered facilities. However, this does not reflect the importance of the operations that breed *Scleropages formosus* because of the very high number of facilities. In addition, there is one species each of amphibia and mammalia. The fish, amphibia and mammals species bred in registered facilities are set out in Table no. 5.8.

Table no. 5.8.- Fish, amphibia, and mammalia: Species bred in registered facilities **Source: https://cites.org/eng/common/reg/e_cb.html, 2023**	
Acipenser brevirostrum	*Andrias davidianus*
Scleropages formosus	*Acinonyx jubatus*
Totoaba macdonaldi	
Pangasianodon gigas	

Taking into account in a next step, the number of registered captive-breeding operations that breed particular species, species captive-bred in registered breeding facilities can be divided in three groups: (i) species that are produced in the highest number of facilities (i) more than ten (in fact 22-205) (Table no. 5.9.); (ii) more than one operation and less than 10 (Table no. 5.10.), and (iii) species that are only captive-bred in one registered operation (Table no. 5.11.).

Table no. 5.9.- Species bred in 10 or more registered operations **Source: https://cites.org/eng/common/reg/e_cb.html, 2023**	
Psittacus erithacus	205
Scleropages formosus	151
Crocodylus siamensis	59

Falco rusticolus	48
Falco peregrinus	44
Crocodylus porosus	22

First the findings on the first group. The species bred by far by the highest number of registered facilities are *Psittacus erithacus* (205 registered operations) and *Scleropages formosus* (151 registered operations). In this group there are also two species of *Crocodylus* spp. *Crocodylus siamensis* (bred by 59 registered operations) and *Crocodylus porosus* (22), as well as two falcon species, *Falco rusticolus* (48), and *Falco peregrinus* (44).

Table no. 5.10.- Species bred in 1 < x < 10 registered operations **Source: https://cites.org/eng/common/reg/e_cb.html, 2023**	
Crocodylus acutus (7)	*Cycas siamensis (2)*
Crocodylus niloticus (3)	*Eos histrio (2)*
Falco cherrug (3)	*Falco mexicanus (2)*
Falco pelegrinoides (3)	*Falco tinnunculus (2)*
Pangasianodon gigas (2)	*Guarouba guarouba (2)*
Acinonyx jubatus 2)	

The second group of species, which are bred by more than 1 and less than 10 operations, encompasses, *inter alia*, another two species of *Crocodylus* spp. and one of *Alligator* spp., also another two species of falcons.

Table no. 5.11.- Species bred in one registered operation **Source: https://cites.org/eng/common/reg/e_cb.html, 2023**	
Acipenser brevirostrum	*Cycas siamensis*
Amazona oratrix	*Eos histrio*
Andrias davidianus	*Falco mexicanus*
Anodorhynchus hyacinthinus	*Falco tinnunculus*
Cacatua haematuropygia	*Guarouba guarouba*
Cacatua sulphurea	*Melanosuchus niger*

Caiman latirostris	*Primolius couloni*
Ceratostylis siamensis	*Totoaba macdonaldi*
Chlamydotis macqueenii	*Tragopan caboti*
Chlamydotis undulata	

There are a number of species that are only captive-bred in one operation each.

Table no. 5.12. shows the species that are bred in registered captive breeding operations that are outside the current (or former) range of those species.

Table nº 5.12.- Species bred outside their current (or former) range
Source: https://cites.org/eng/common/reg/e_cb.html, 2023 and https://speciesplus.net, 2023

Amazona oratrix	Australia
Anodorhynchus hyacinthinus	United States of America
Crocodylus niloticus	Tunisia
Eos histrio	Singapore
Falco cherrug	Spain
Falco cherrug	United States of America
Falco pelegrinoides	Germany
Falco pelegrinoides	Serbia
Falco pelegrinoides	United Kingdom
Falco rusticolus	Bahrain
Falco rusticolus	Italy
Falco rusticolus	Peru
Falco rusticolus	Spain
Guarouba guarouba	Philippines
Primolius couloni	United States of America
Psittacus erithacus	Philippines
Psittacus erithacus	Singapore

Most of the species bred in registered captive-breeding operations are hosted by a country that belongs to its current (or former) geographic distribution. The ratio is 64 percent of the number of breeding operations producing a particular species in a particular country. The following species are bred in captivity in a registered breeding operation outside the species' range.

A Table with all species bred in captivity in a registered operation can be found in Annex C (Table no. C.1). The Table indicates whether the species is bred in a range state or in a non-range state. The source used to determine the species' geographic distribution was SpeciesPlus (UNEP, 2023).

5.3. Commercial trade with captive-bred specimens from registered and non-registered facilities

In the following, trade data regarding commercial trade with captive-bred specimens from non-registered and from registered captive breeding operations is described and analysed. The data that is analysed was accessed at the CITES Trade Database, which is compiled by UNEP-WCMC for the CITES Secretariat and which can be freely accessed at no cost. The data is provided by CITES Parties. Trade data as reported by exporting countries often diverge in different magnitudes from trade data reported by importing countries. UNEP-WCMC provides, *inter alia*, the following explanations for these differences in its guide on using the CITES Trade Database (UNEP-WCMC, 2022):

- Not every Party manages to submit an annual report for each year.
- Some Parties provide trade data based only on permits as compared to other Parties that provide data based on actual import or export
- Importing and exporting Party may not report shipments in the same year, in particular if shipments occur in the year following the year in which the permit is issued, for example, at the end of the year.
- Some animals do not survive the transport

It is interesting to note that the CITES trade database includes roughly a similar number of transactions for transactions involving commercial trade of captive-bred specimens from non-registered facilities as compared to trade from registered facilities in the five-year period under investigation (2017-2021) (approximately 3150 vs. 4000). There is a difference of 25 percent. Since indirect exports from registered facilities were included in the survey but not from non-registered facilities, the number of transactions for

commercial exports from non-registered facilities would be significantly higher, if indirect exports were included. On this basis it is at least clear that exports from non-registered facilities play an important role, also compared to exports from registered facilities.

5.3.1. Trade with captive-bred specimens from non-registered facilities

As a starting point, it should be noted that in the five year period from 2017 to 2021 approximately 45 percent of CITES Parties have exported specimens of Annex I listed species at least once with the purpose code T and the code for origin C. The 82 countries (out of a total of 184 CITES Parties) concerned are listed in Annex A (table no. A.1.). The assessment is based on current data downloaded from the CITES Trade Database (https://trade.cites.org/) on 27 February 2023.

The Parties which have taken this approach cover all six CITES regions to a different degree (see Table no. B.1 in Annex B). In absolute numbers the regions are represented in the following order: Europe (33), Asia (22), Central and South America and the Caribbean (13), Africa (10), North America (2), and Oceania (2). In percentages of Parties with these exports (over five-year period 2017 to 2021) against the total number of Parties in the region, the order is the following: North America (67%), Europe (66%), Asia (58%), Central and South America and the Caribbean (42%), Africa (19%), and Oceania (22%).

Most countries that host at least one registered captive-breeding facility also had at least one commercial export of captive-bred specimens of Annex I species from a non-nonregistered facility during the five-year period (2017-2021) (codes C, T) (89 percent), with the exception of Brazil, Honduras, Tunesia and Zambia. This leaves 98 Parties (53% of all Parties) that have neither registered any captive-breeding facilities nor exported captive-bred specimens of Appendix I species for commercial purposes over the five year period 2017 to 2021.

In total, the exports of captive-bred specimens of Annex I species for commercial purposes from non-registered operations concern almost 140 species (137) For this assessment, only the transactions contained in the CITES Trade Database were used for which the country of origin is identical to the country of export. In other words, re-exports with specimens that originate in a third country were excluded from the assessment. This approach has been selected because, with regard to these transactions the exporting

country is the country that has the choice whether to allow only commercial exports of specimens of Appendix I species bred in its territory if the breeding operation is registered or whether to also allow exports from non-registered facilities in its territory. In the case of the EU, this approach has been applied by treating all EU Member States as one entity for this purpose, because trade within the EU internal market does not trigger obligations to issue export or import permits. In addition, rules on captive-breeding have been approximated within the EU to a large extent.

First, the number of species bred in the broad categories of birds, reptiles, fish, amphibia and mammals are described. Second, more detailed information on the exported species is provided.

The overwhelming part of export transactions relate to birds. They account for 88 percent of transactions with captive-bred specimens of species protected under Appendix I of CITES in the five-year period under investigation (2757 of 3150 export transactions). Mammals account for 8 percent (262 export transactions), reptiles for 4 percent (124 export transactions), and fish for less than 1 percent (7 export transactions).

5.3.1.1. Captive-bred birds from non-registered facilities

As to birds, the species subject to commercial exports of captive-bred specimens during the five-year period 2017 to 2021 were mainly live falcons. 1133 export transactions involved falcons and the number of live falcons exported amounted to 8127, as reported by importers. (Data provided by exporters indicates 38.675, but for many reporting countries this only refers to the specimens listed in the permits issued, not the number of specimens actually exported and imported.). Parrots (Psittaciformes) represented the second largest order in terms of export transactions (1477) as well as in numbers of living specimens (11.622 as reported by importers). Exports of specimens from other bird orders had much lower volumes.

The exported captive-bred falcons encompass the following species: *Falco jugger*, *Falco pelegrinoides*, *Falco peregrinus*, *Falco rusticolus*, and *Falco hybrids*.

The following 29 countries of origin were also exporting countries of falcons (in the case of EU Member States, alternatively, the specimens were exported from another Member State): Austria, Australia, Bahrein, Belgium, Bulgaria, Canada, Czech Republic, Germany, Denmark, Spain, France, United Kingdom, Greece, Croatia, Hungary, Ireland,

Italy, Netherlands, Poland, Peru, Portugal, Qatar, Romania, Serbia, Russian Federation, Slovenia, Slovakia, Ukraine, United States of America.

With regard to captive-bred parrots, which were exported almost exclusively as live specimens, the following species were exported: The highest numbers of transactions related to *Amazona oratrix* (235 transactions, 352 specimens as reported by importers, respectively 1138 as reported by exporters) primarily from South African, the Netherlands, Germany, and Belgium, *Ara macao* (180 transactions, 974 specimens as reported by importers, respectively 586 as reported by exporters), mainly from South Africa, Guyana, Spain, the Netherlands, and Indonesia, *Amazona auropalliata* (130 transactions, 347 specimens as reported by importers, respectively 600 as reported by exporters) primarily from Germany, Austria, Denmark, South Africa, and France, *Psittacus erithacus* (105 transactions, 5390 specimens as reported by importers, respectively 1556 as reported by exporters, yet it is questionable how importers can report higher numbers than exporters, the figures may not be correct or exporters may have missed to report) mainly from Azerbaijan, Democratic Republic of the Congo, Mozambique, Singapore, Syrian Arab Republic, and South Africa, *Guarouba guarouba* (99 transactions, 129 specimens as reported by importers, respectively 487 as reported by exporters) mainly from Brazil, Czech Republic, Germany, Denmark, Netherlands, Hungary, *Cyanoramphus novaezelandiae* (93 transactions, 3033 specimens as reported by importers, respectively 12745 as reported by exporters) primarily from Czech Republic, Belgium, the Netherlands and South Africa.

In addition, the following species are noteworthy because of transaction figures above 20 or higher volumes of exported captive-bred parrots: *Amazona leucocephala*, *Amazona vinacea*, *Anodorhynchus hyacinthinus, Ara ambiguous*, *Ara glaucogularis*, Ara hybrids, *Ara militaris* (77 specimens in one transaction from Guatemala as reported by exporter), *Ara rubrogenys*, *Cacatua moluccensis* (44 specimens in one transaction from South Africa as reported by exporter), Cacatua sulphurea, *Eos histrio* (500 specimens in one single transaction from Malaysia as reported by importer Indonesia), *Primolius couloni* (35 specimens in one transaction from Spain), *Probosciger aterrimus* (500 specimens in one single transaction from Malaysia as reported again by importer Indonesia).

The number of species from other orders with commercial exports of captive-bred specimens was much lower. Regarding waterfowl, Anseriformes, only one species is

concerned, *Branta sandvicensis*, but in the relevant period there was one significant export transaction from the Netherlands with 58 individuals, as reported by the exporter. Storklike birds, Ciconiiformes, were only exported from Switzerland in the period under investigation, in a low number of specimens belonging to the species *Geronticus eremita*. Equally, there is only one species of the order Columbiformes, doves and piegons, which was identified in the relevant period, *Caloenas nicobarica* (only one significant transaction amounting to 25 specimens from Bahrain). Gruiformes, crane-like birds, are affected with regard to six species, *Antigone vipio*, *Chlamydotis macqueenii*, *Chlamydotis undulata*, *Grus japonensis*, *Grus nigricollis*, and *Leucogeranus leucogeranus.* Larger volume exports of captive-bred specimens, however, only occurred in the five-year period under consideration relating to one transaction with *Chlamydotis macqueenii* from United Arab Emirates (330 living specimens as reported by the exporter).

Passeriformes, perching birds, were involved in the exports in respect of specimens of merely two species *Carduelis cucullate* and *Leucopsar rothschildi*. During the relevant five-year period, only the exports of captive-bred *Carduelis cucullate* reached higher levels of aggregated 120 live specimens as reported by the importers. Exporters, primarily the Netherlands, to some extent Belgium, and to a lesser extent Portugal, reported a volume of 579 live specimens.

Struthioniformes consists of only one single extant family, Struthio, the ostriches. Only one of two existing species, is concerned by the current investigation of captive-bred specimens, *Struthio camelus*. There were only exports of derivatives, 27 small leather bags from Romania produced from captive-bred specimens

Finally, with regard to penguins, Sphenisciformes, exports of captive-bred specimens from only one species, *Spheniscus humboldti*, occurred. Their volume was 13 live specimens, as reported by exporters, respectively, 66 specimens (mainly live specimens but also to a limited extent bodies and skin) as reported by importers. The specimen's origin was primarily Germany and the United Kingdom.

5.3.1.2. Captive-bred mammals from non-registered facilities

The large majority of transactions regarding captive-bred mammals deals with live animals. The highest number of transactions for this class concern four Primates, *Lemur catta* (50) mainly from Czech Republic, Spain, Germany, Hungary, France, United Kingdom and Austria (often exported via the Czech Republic), and from Argentina and

South Africa, *Leontopithecus chrysomelas* (22) mainly from the Czech Republic and Germany, and different other EU Member States (often exported via the Czech Republic), and Qatar, *Saguinus oedipus* (19) mainly from the Czech Republic and Germany (often exported via the Czech Republic), and *Varecia variegata* (14) mainly from the Netherlands, Czech Republic, United Kingdom, and other EU Member States (often exported via the Czech Republic).

In addition, three species from the orders Carnivora and Artiodactyla, also account for high transaction numbers. One is *Panthera tigris* (11) from Germany, Malta, Belgium, Italy, and other countries, such as Mexico, Pakistan, Ukraine, South Africa. For this species, half of the transactions concern bodies, skins and other derivatives, the other half concerns live animals. The same applies to *Panthera pardus* (11) with regard to the types of specimens traded (trade terms). The exported specimens' origin is from Belgium and a variety of other EU Member States. The third is *Oryx leucoryx* (11) mainly from United Arab Emirates, also from Qatar, with more than 70 percent live animals.

The transactions with the highest volumes relate to 168 live *Orcaella brevirostris*, an Asian dolphin species, exported from Taiwan/China, 40, 30, and 10 live *Oryx leucoryx* exported from the United Arab Emirates, 25 live *Addax nasomaculatus* exported also from the United Arab Emirates, and 11 *Panthera tigris* exported from Malta. 13 and 12 *Leontopithecus chrysomelas* were exported from Germany (via the Czech Republic) and *Lemur catta* were exported in higher numbers from Argentina (12), Germany (12 and 11, in both cases via the Czech Republic), South Africa (10) and Switzerland (9).

There were also exports of scientific samples (trade term "specimens"), but the actual volume was probably very small: 64 specimens of *Elephas maximus* from Sri Lanka and Cambodia. Further data on the units are not available in the CITES Trade Database, but probably the figure 64 does not refer to the number of specimens but to the volume in milliliter (ml). Another export of a scientific sample (45 ml) concerned *Panthera tigris* from Kazakhstan. In both cases, it is not excluded that a different purpose code than T might have been more appropriate.

With regard to the following 41 species, a lower number of trade transactions were identified:

Capra falconeri heptneri, *Nanger dama*, *Oryx dammah*, *Oryx leucoryx*, *Acinonyx jubatus*, *Ailurus fulgens*, *Speothos venaticus*, *Acinonyx jubatus*, *Caracal caracal*, *Felis nigripes*,

Herpailurus yagouaroundi, *Leopardus pardalis*, *Neofelis nebulosa*, *Panthera onca*, *Panthera pardus*, *Panthera uncia*, *Aonyx cinereus*, *Lutrogale perspicillata*, *Ailuropoda melanoleuca*, *Bettongia penicillata*, *Equus africanus*, *Equus grevyi*, *Tapirus indicus*, *Callimico goeldii*, *Callithrix aurita*, *Cercopithecus diana*, *Eulemur albifrons*, *Eulemur collaris*, *Eulemur fulvus*, *Eulemur hybrid*, *Gorilla gorilla*, *Hylobates lar*, *Leontopithecus rosalia*, *Macaca silenus*, *Macaca sylvanus*, *Microcebus murinus*, *Pan troglodytes*, *Pongo pygmaeus*, *Semnopithecus entellus*, *Symphalangus syndactylus*, *Varecia rubra.*

Transactions relating to these species involve the following 37 exporting Parties that were also countries of origin (for the EU the countries that were countries of origin were used as reference point): United Arab Emirates, Argentina, Austria, Belgium, Bahrein, Belarus, Switzerland, Cuba, Cyprus, Czech Republic, Germany, Denmark, Spain, France, United Kingdom, Hungary, Ireland, Italy, Japan, Cambodia, Kazakhstan, Sri Lanka, Republic of Moldova, Malta, Mexico, Malaysia, Netherlands, Pakistan, Poland, Qatar, Russia, Sweden, Slovakia, Taiwan/China, Ukraine, United States of America, South Africa.

5.3.1.3. Captive-bred reptiles from non-registered facilities

Specimens of reptiles exported included turtles (Testudines spp.) with the largest number of transactions (60). All the specimens were live animals, the largest transactions related to *Geochelone elegans* (274 from Germany, 159 from Slovenia, 91 from UK, 52 from Czech Republic) and *Malacochersus tornieri* (488 from Hong-Kong/China, 357 from Kenia, 97 from Slovenia). 28 transactions concern *Astrochelys radiata* and their aggregated volume amounts to 410 live specimens (from Mauritius, Slovenia, Germany, Spain and Switzerland). Higher volumes also occurred with regard to *Mauremys annamensis* (210 from the US). There were exports of *Pangshura tecta* from Germany (25) and smaller number of *Platysternon megacephalum*, *Pyxis arachnoides*, *Terrapene coahuila*, and *Testudo kleinmanni* from Germany (and for T. kleinmanni also from Italy), as well as a smaller number of *Chelonoidis niger* in a single transaction from Switzerland.

The second highest number of transactions (30) within Reptilia relates to the order Sauria and mainly concerns the family Iguanidae. The biggest transactions relate to *Cyclura cornuta* (110 live specimens from the Czech Republic). Within the family Iguanidae, most transactions concern specimens that originate from Austria (10 transactions, 2 of them via Netherlands) and Germany (5) and regarding the species *Brachylophus*

bulabula, *Brachylophus fasciatus*, *Brachylophus vitiensis*, *Cyclura cornuta*, *Cyclura cychlura*, and *Cyclura rileyi*. In addition, some specimens also originate in Spain, the Netherlands, and the Czech Republic. In addition, there were also several transactions relating to *Lygodactylus williamsi* (4 transactions with together 31 specimens from Germany and *Shinisaurus crocodilurus* (3 transactions with together 24 live specimens from Germany and Netherlands).

With regard to reptiles there were also 14 transactions relating to the order of Serpentes (all of them within the family Boidae): mainly specimens from the two species *Sanzinia madagascariensis* and *Boa constrictor occidentalis*, primarily from Germany, also from Switzerland, Denmark, Netherland, Slovenia, and the United Kingdom.

In addition, another 17 transactions within the class Reptilia concern species of the genus *Crocodylus* spp., *inter alia*, from Columbia, South Africa, Vietnam, Bangladesh, Namibia, and Italy. The largest volume came from Vietnam, 1000 live specimens in one single transaction, and from South Africa and Columbia, 1000 skins each, also in both cases in one single transaction. Another transaction concerned some 250 skin pieces from Bangladesh, a further transaction 150 skins from Namibia. The relevant species are mainly *Crocodylus acutus*, *Crocodylus niloticus*, *Crocodylus siamensis*, and less often *Crocodylus porosus*, *Osteolaemus tetraspis*, *Osteolaemus tetraspis*, and *Tomistoma schlegelii*.

5.3.1.4. Captive-bred fish from non-registered facilities

For fishes, the small number of transactions (7), yet partly with high volumes, all relate to *Scleropages formosus*, mainly from Indonesia and Singapore (500 kg, 400 live specimens from Singapore).

5.3.2. Trade with captive-bred specimens from registered facilities

The following section deals with commercial exports of captive-bred specimens from registered facilities (source code D and purpose code C). In this context, the data was described again with a focus on the countries in which the captive-bred specimens originated. In contrast to the assessment of exports from non-registered facilities, re-exports, from third countries, were also included. The reason for this approach is the focus to include all trades with specimens that originate from a registered facility (including parts and derivates that may only be manufactured in the first, second, or a later country of destination).

The overwhelming part of these export transactions relate to reptiles, mainly Crocodylia. They account for 70 percent of transactions in the five-year period 2017 to 2021 under investigation (2769 of 3938 export transactions). The share of birds amounted to 17 percent (667 transactions) and primarily concerns falcons. The percentage of fish comes in third place, 12 percent (489 transactions). The transactions relate almost exclusively to *Scleropages formosus.* Export transactions relating to Mammalia were very low in absolute numbers (11) and had a share below 1 percent.

The database contains a number of export transactions with the source code D and the purpose code T and the specimens' country of origin indicated as a country that currently does not host a captive-breeding operation for the relevant species listed in the CITES Secretariat's register (as of 10 March 2023). In these instances, the country of origin is marked with an asterisk (*) in the following text. This can have, in particular, the following reasons: (i) the relevant facility has been deleted from the list in the meantime, (ii) the relevant facility is not listed and the code D is not accurate.

5.3.2.1. Captive-bred reptiles from registered breeding operations

Exports of Crocodylia from registered captive-breeding operations account for the highest number of export transactions during the relevant time-period. The transactions primarily relate to two species, *Crocodylus porosus* (1266) and *Crocodylus siamensis* (1221). Exported specimens of *Crocodylus siamensis* were mainly from Thailand (924 transactions), Vietnam (251 transactions), and Cambodia (150 transactions). To a lesser extent specimens' origin was indicated as Spain*, France*, and United States of America*. By far the highest number of transactions with *Crocodylus porosus* concern exports of specimens from Thailand (640). Transactions with specimens from Malaysia (246)*, Philippines (242), and Singapore (98) were also significant. There were also exports of specimens from Afghanistan,* Australia,* Bangladesh, Colombia*, Spain*, Indonesia,* Papua New Guinea,* Sierra Leone,* East Timor,* Taiwan/China,* United States of America,* Zimbabwe*.

Apart from *Crocodylus acutus*, with 206 transactions (with specimens exclusively from Columbia), transactions with other species of the same order are involved only to a very limited extent, less than 25 transactions for *Alligator sinensis* (from China), *Caiman crocodilus apaporiensis* (from Venezuela*), *Caiman crocodilus fuscus* (one single transaction with specimens from Columbia), *Caiman crocodilus yacare* (one single

transaction with specimens from Paraguay*), *Crocodylus niloticus* (mainly specimens from Senegal, also from Mali, Thailand, Vietnam, Zimbabwe), *Crocodylus palustris, Crocodylus rhombifer* (from Cuba), *Melanosuchus niger* (one single transaction with specimens from Peru). In addition, a limited number of transactions (29) also concerns a single turtle species, *Astrochelys radiata* (primarily from Mauritius, single transaction from Mauritania* and Ukraine*).

Table no. 5.13. shows what specimens of Crocodylia originating from registered breeding operations were exported during the period of investigation.

Table no. 5.13.- Crocodylia: Commercial exports by registered operations (2017-2021)
Source: https://trade.cites.org (CITES Trade Database), 2023

Object in trade	Volume reported by importer	Volume reported by exporter	Unit	Number of transactions
Meat	1233413	1198479	Kg	43
Skin	276600	269413	Number	701
Live	126985	243241	number or kg	33
leather product (small)	211208	149752	Number	1360
Tooth	72442	93367	number or kg	28
(Scientific) specimen	54650	67090	kg or liter or ml or number	13
Skin piece	29656	58068	kg or number	97
Cosmetics	30806	30806	g or ml	2
Oil	5659	10363	kg or liter	24
Genitalia	0	5000	kg or number	1
Skull	1242	1282	Number	51
Garment	484	799	Number	212
Tail	0	605	number or kg	3
Side	0	500	Number	1
Bone	2186	464	kg or number	9
leather product (large)	1774	458	Number	100
Body	356	356	Number	34
egg (live)	0	50	number or kg	1
Trophies		25	Number	1

Carving	2	10	Number	3
derivatives (other than those reported in other sections)	0	3	kg or liter	2
Foot	0	2	Number	1
Jewellery	240	0	number or g	12
Skeleton	12	0	Number	2
Cloth	2	0	m2 or kg	1
gall bladder	1	0	number or kg	1

The specimens of Crocodylia are overwhelmingly meat, skins, live animals, and small leather products, such as watch-straps, handbags, belts, and wallets. For example, the volume of meat from registered captive-breeding operations during the five-year period 2017 to 2021 amounted to approximately 1,2 million kilogram (as reported by exporters and importers). There are also significant volumes of, *inter alia*, exported teeth, skin pieces and oil. Exports, *e.g.* of skulls, garments, tails, sides, bones, bodies, and large leather products, such as suitcases and briefcases, only accounted for smaller volumes.

5.3.2.2. Captive-bred birds from registered breeding operations birds

The number of export transactions with captive-bred birds from registered operation is the second highest in comparison to all classes, namely 667 transactions. They concern the following orders: Falconiformes, Psittaciformes, and, to a very limited extent Passeriformes,

Most of the transactions relate to falcons (order Falconiformes), to be precise, 464 transactions, but the highest number of specimens traded concerns grey parrots (*Psittacus erithacus*). They are the object of only 152 transactions, but almost 60000 (59768) live captive-bred birds were exported based on the figures provided by exporting countries. On the basis of the numbers provided by importing countries, 27000 (26927) live specimens were traded. In comparison, there were some 6200 (6178) live falcons exported as reported by exporters, respectively some 2200 (2176) as reported by importers. Table no. 5.14. shows the volume of live falcons as reported by importers and by exporters during the period of investigation.

Table no. 5.14.- Falconiformes: Commercial exports by registered operations (2017-2021)
Source: https://trade.cites.org (CITES Trade Database), 2023

Species	Volume reported by importer	Volume reported by exporter	Number of transactions
Falco rusticolus	1431	3641	276
Falco hybrid	487	2122	79
Falco peregrinus	228	388	97
Falco pelegrinoides	29	26	4
Falco jugger	1	1	2

The species concerned was primarily *Falco rusticolus*. Hybrid falcon was the second largest group of exported falcons.

For *Falco rusticolus* it may be useful to provide more detailed data with regard to the countries where the traded live birds come from and the respective volume of trade with these specimens (Table no. 5.15.).

Table no. 5.15.- *Falco rusticolus*: Commercial exports by country of origin (2017-2021)
Source: https://trade.cites.org (CITES Trade Database), 2023

Country of origin	Volume reported by importer	Volume reported by exporter	Number of transactions
US	637	1602	91
Denmark	237	700	20
United Kingdom	203	479	52
Canada	184	220	68
Germany	137	233	22
Spain	35	395	8
France / La Reunion*	5	0	1
Belgium*	2	0	1
Czech Republic	1	5	3
United Arab Emirates*	1	0	1
Austria*	1	2	2
Morocco*	1	0	1

Table no. 5.15.- *Falco rusticolus*: Commercial exports by country of origin (2017-2021) **Source: https://trade.cites.org (CITES Trade Database), 2023**			
Netherlands*	1	0	1
Qatar*	0	4	3

* indicating that there are currently no captive-breeding operations listed in the register as published by the CITES Secretariat as of 10 March 2023.

The highest number of live birds originates from captive-breeding operations in the United States. High numbers also come from Denmark, the United Kingdom, Germany and Spain.

Despite the fact that the CITES Trade Database does not provide details based on the species involved in the hybridization, it also seems helpful to provide more detailed data on the origin of exported birds for falcon hybrids in view of the high numbers of specimens (Table no. 5.16.).

Table no. 5.16.- *Falco* hybrids: Commercial exports by country of origin (2017-2021) **Source: https://trade.cites.org (CITES Trade Database), 2023**			
Country of origin	**Volume reported by importer**	**Volume reported by exporter**	**Number of transactions**
United Kingdom	250	1281	33
Czech Republic	205	0	4
Canada	11	6	6
Spain	9	478	6
Portugal	8	0	2
Germany	3	5	5
United States	1	297	21
Reunion / Frankreich	0	7	2

The country of origin ranking number one is the United Kingdom (with 250 to almost 1300 specimens exported), and, based on reports by exporting countries, Spain and

United States as number two and three, respectively, based on reports by importing countries, the Czech Republic as number 2.

Significant exports were also reported for *Falco peregrinus*. The highest numbers were recorded for specimens originating from the United States and Germany, in both cases about 70-110 live falcons (depending on reports by exporter or importer), and from the United Kingdom (50-60). The following exports are also noteworthy, based on the number of exported specimens as reported by exporters: exports from La Réunion / France (approximately 50), Spain (approximately 40) and Canada (approximately 10). Numbers from Denmark, Czech Republic, Austria*, Russia, Portugal* were not significant (below 10 birds, in most cases only 1).

Specimens of the other falcon species have the following countries of origin: *Falco pelegrinoides* were all from the United Kingdom (about 30 live birds), one live bird of *Falco jugger* was from Germany* and one from Italy*.

The highest number of captive-bred birds (from registered operations), which were exported in the five-year period 2017 to 2021, are grey parrots (*Psittacus erithacus*). Table no. 5.17. shows from which countries they are originating and in which volumes.

Table nº 5.17.- *Psittacus erithacus*: Commercial exports by country of origin (2017-2021)
Source: https://trade.cites.org (CITES Trade Database), 2023

Country of origin	Volume reported by importer	Volume reported by exporter	Number of transactions
South Africa	24162	57948	115
Azerbaijan	1449	0	7
Philippines	1217	1568	23
Singapore	45	142	5
United States	0	110	1

Overwhelmingly the captive-bred grey parrots bred in registered operations originate from breeding facilities in South Africa. Significant numbers of birds also come from registered operations in the Philippines. Exports from Azerbaijan* with codes D and T amounting to almost 1500 live grey parrots were also reported by importing countries (there were no reports by Azerbaijan or one of the other five exporting countries).

Other parrots (Psittaciformes) from registered captive-breeding facilities were also exported, although in much lower numbers than grey parrots. They belong to a number of different genera: *Cacatua* spp., *Amazona* spp., *Anodorhynchus* spp., *Ara* spp., *Cyanoramphus* spp., *Diopsittaca* spp., *Guarouba* spp., *Primolius* spp., and *Psittacula spp*.

In this group, the highest volumes were generated by two species, *Amazona oratrix* and *Guarouba guarouba*. There were 55 respectively 81 live specimens of *Amazona oratrix* (as reported by the exporting respectively the importing Party), which were traded in 7 transactions and which came from Australia (with one transaction relating to birds from South Africa). 16 transactions concerned *Guarouba guarouba,* with 94 exported live specimens reported by exporter and 68 by importer, almost all of them come from the Philippines, only one specimen is declared to originate from South Africa* (the export came from a third country).

The remainder of parrot transactions are mostly limited to one transaction by species and often do not involve more than 10 live birds, in many cases only one. There are four exceptions. 30 *Amazona auropalliata* came from South Africa* (as reported by the exporter, the importer reports 8). 16 *Cacatua moluccensis* from Singapore were exported, as reported by Singapore (the importer reported 15). 11 *Cyanoramphus novaezelandiae* came from Belgium* as reported by Belgium, with none reported by the importer. For *Cacatua sulphurea* there were 4 transactions primarily regarding specimens from Singapore (and one from South Africa*). The remaining exported parrots were *Amazona brasiliensis* (Germany)*, *Anodorhynchus hyacinthinus* (South Africa*), two Aras from South Africa* (*Ara macao*, *Ara rubrogenys*), and one Ara hybrid, also from South Africa*, and *Primolius couloni* (United States).

Finally, the order Passeriformes is also represented with one single transaction of 20 live captive-bred specimens of *Leucopsar rothschildi* from Indonesia (as reported by Indonesia).

5.3.2.3. Captive-bred fish from registered breeding operations

489 transactions concern the class Actinopteri and place it in third place of all transactions involving exports of captive-bred specimens from registered operations during the five-year period 2017-2021 (3938). Actinopteri's share amounts to 12 percent.

The transactions relate almost exclusively to *Scleropages formosus* (Osteoglossiformes). To a limited extent the two orders Acipenseriformes and Siluriformes are also affected

with one species each: *Acipenser brevirostrum* (Acipenseriformes) and *Pangasianodon gigas*.

Scleropages formosus were traded in 473 transactions during the relevant period. Almost all trades concerned live specimens (469). This freshwater fish is mainly used as an aquarium fish. The volumes of live fish traded amounted to 1,1 to 1,6 million specimens (1110890 as reported by importers and 1608955 as reported by exporters). In addition to the trade with live specimens, there was also one trade of fingerlings (10000). Furthermore, some trades were reported as "specimens", which means scientific specimens. The number of the trades was high (rounded: 150000, 130000 and 6500, all reported only by importers). Therefore, it is not clear if the code was used correctly with regard to these transactions (live specimens could mistakenly have been reported as "specimens"). Table no. 5.18. shows from which countries captive-bred live *Scleropages formosus* from registered operations are originating and in which volumes.

Table no. 5.18.- *Scleropages formosus*: Commercial exports by country of origin (2017-2021)
Source: https://trade.cites.org (CITES Trade Database), 2023

Country of origin	Volume reported by importer	Volume reported by exporter	Number of transactions
Malaysia	571652	905925	461
Indonesia	499276	639019	327
Singapore	38974	63388	590
Mozambique	300		1
Unknown		18	1
Seychelles		6	2

The origin of the live specimens of *Scleropages formosus* was primarily Malaysia and Indonesia, and to a lesser extent Singapore. There were also an extremely small number of single transactions that reported Mozambique*, Seychelles* and unknown (XX) as country of origin.

To a limited extent the two orders Acipenseriformes and Siluriformes are also affected with one species each: *Acipenser brevirostrum* (Acipenseriformes) and *Pangasianodon gigas*. 12 transactions concerned captive-bred *Acipenser brevirostrum* from Canada. Apart from 2 live specimens, there were, in particular, 12 kg of live (fertilized eggs), 2

skins, 6 kg of meat, and 21 kg of caviar. There were also 4 transactions relating to captive-bred *Pangasianodon gigas*, three concerned 120 live specimens from Thailand, and one 30 specimens of small leather goods, also from Thailand.

5.3.2.4. Captive-bred mammals from registered breeding operations

Exports of captive-bred mammals from registered operations are very limited. This applies with regard to the number of transactions as well as the number of exported specimens. They only involve three species, one species of the order Carnivora and three specie of the order Artiodactyla. All of the exported specimens are live specimens.

During the five-year period in question, there were exports of 14 live specimens of *Acinonyx jubatus*, as reported by exporters (8 as reported by importers), in 8 transactions. The eight live specimens came from South Africa. For the other three species, there was only one transaction each. As reported by importers, there were 2 specimens of *Addax nasomaculatus*, 13 *Oryx dammah*, and 11 of *Oryx leucoryx.* All of them originated in the United Arab Emirates*. (Exporters did not report any of the exports of these three species.)

5.4. Examples for registration procedures

In the following, five different examples for registration procedures are briefly presented. They differ in the outcomes of the procedures, in their duration, and in the complexity of the cases.

Two examples concern breeding operations, which were registered without objections by other Parties, therefore without assessment by the Animals Committee and without discussion at the Standing Committee. One is a recent case from South Africa, concerning *Psittacus erithacus*. The other case is older and concerns a falconry from Germany.

In another case that concerns a falconry (from Uzbekistan), the applicants have withdrawn their application (and Uzbekistan intends to resubmit in the future). Regarding a third falconry, again from Germany, dating from 1997, registration was refused.

The exceptional case of a large-scale Totoaba aquaculture facility in Mexico is also presented. The registration was very contentious and was in the end approved by a vote of the Standing Committee after an intense debate. Because of its complexity, the case is described in more detail than the other cases.

These cases are introduced by and large in the order of increasing complexity.

As a last example, from a slightly different procedural context, a case is presented that concerns the deletion of a breeding facility from the register.

5.4.1 Lowveld Parrot Breaders (Pty) Ltd, South Africa (grey parrots) (registered without objections)

This is an example for a breeding operation for *Psittacus erithacus* in South Africa. More than 200 operations for this species have been registered since 2002 to date.

No objections were raised against the registration of Lowveld Parrot Breaders (Pty) Ltd CITES Secretariat (Notification No. 2022/058, 25. July 2022, (CITES, 2022)) and the operation was entered into the registry after the time period for objections had expired on 20.10.2022. The species is endemic to South Africa and the breeding stock consists of birds from other facilities in South Africa that have already been registered.

5.4.2 Falconry Kurt Kilian (registered without objections)

The falconry of Kurt Kilian, founded in 1971, based in Mannheim (subsequently Rockenhausen), was registered on 14 October 1993 for the species *Falco peregrinus*. The register does not provide the date when the application was made. The operation was registered without any objections and the case was not discussed at the level of the Standing Committee or the Conference of the Party. The breeding stock was limited to birds bred in captivity in Germany. The annual production was indicated as 8-10 birds. Artificial insemination was indicated as one of the breeding methods used.

5.4.3 TUGAN Falconry Club Ltd., Uzbekistan (2022) (application withdrawn in context of SC meeting)

In 2022, the operation TUGAN Falconry Club Ltd. (Uzbekistan) applied for registration for two species, *Falco pelegrinoides* and *Falco peregrinus*. At a later stage the application was withdrawn, because issues raised by the European Union could not be resolved.

The application was submitted to the Secretariat on 12.12.1999. The Secretariat informed Parties in a Notification on 16.12.2019. (Notification, No. 2019/073, 16 December 2019 (CITES, 2019)). The European Union raised objections on 13.3.2020 requesting further information, in particular, regarding the founder stock of the operation and its ability to breed the two species to second generation. (SC74 Doc. 59.2, Annex 2 (CITES, 2022)). Uzbekistan provided additional information, but the European Union did not regard the requirements for registration to be met and therefore confirmed its objections on 28.7.2020. In particular, the EU referred to the fact that “the entire founder stock for both

species was obtained from the wild" and that its founder stock of five *Falco peregrinus* (2.3) and five *Falco pelegrinoides* (2.3), "was rather limited. It explained that it had not received any evidence that the operation had successfully bred any of the two species, let alone to second generation. (SC74, Doc. 59.2, Annex 2b, p. 1 (CITES, 2022)).

Subsequently, the Secretariat submitted the application and the EU's objection to the Animals Committee. In its view, the objections of the EU were (partly) well founded. It regarded the application as "premature but encourage[d] Uzbekistan to resubmit the application once the concerns raised have been adequately addressed." (SC74 Doc. 59.2 Annex 3, 3rd bullet) (CITES, 2022). The Animals Committee concluded that the applicants had only provided inconclusive evidence provided that the operation has successfully bred two generations of *Falco pelegrinoides.* So far, only one generation had been bred. With regard to *Falco peregrinus* the Animals Committee pointed out that no information was provided proving successful captive breeding of even a first generation).

Because the EU's concerns could not be solved (in the 30-day-period foreseen by Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002), the Secretariat submitted the issue to the Standing Committee (SC74, Doc. 59.2) (CITES, 2022). On the basis of informal discussions that took place on the fringes of the Standing Committee Meeting in Lyon, in particular between the delegation of Uzbekistan and the delegation of the EU, the host country withdrew the application when the issue was called. The delegation expressed their intention to resubmit an amended application in the future. (SC 74 SR, p. 114 (CITES, 2022).

5.4.4 Rejection of registration of a German Falconry (1997)

The German application for registration dates back to August 1993. It related to the breeding operation of falconry owned and controlled by three German individuals. It concerned two falcon species: *Falco rusticolus* and *Falco peregrinus*. At the time, the falconry was one of the largest falcon breeding facilities in the world. (CoP10, Doc. 10.69, para. 2-4 and Annex (CITES, 1997)). The breeding stock consisted of significantly more than 100 falcons. The annual production amounted to approximately 100-200 specimens (Notification No. 955, 6 February 1997, (CITES, 1997)).

Given the particular circumstances in the case, "an exceptionally thorough and lengthy investigation of the operation was conducted" before the application was submitted. "This involved obtaining advice and the carrying out of several on-site checks by the regional

CITES Management Authority of Lower Saxony, the German Scientific, Authority and government-approved experts in the identification of birds of prey."

Given some significant delays and in consultation with the Secretariat, the German Management Authority decided to investigate further. "[A]n additional check of the operation was conducted […] Again, the German Scientific Authority, the regional Management Authority of Lower Saxony, the German Federal Customs Investigation Agency and the Management Authority undertook a thorough investigation of all activities of the operation since 1993. No evidence was found during this investigation […] On 15 July 1996, the German Management Authority informed the Secretariat of the outcome of this additional review, stating that no evidence of any legal significance that might justify the withdrawal of the request for registration had been found […] and that it had no doubts about the bona fide of the breeding operation." (CoP10, Doc. 10.69, para. 2-4 and Annex (CITES, 1997))

It took more than three years after the application, until 6 February 1997 that the CITES Secretariat regarded the application as complete and notified it to the Parties.

The summary report of the 35th Standing Committee meeting notes that it "was agreed that the Secretariat should consult the Parties before registering an operation for a species for which another operation is already registered if it has doubts about full compliance by the unregistered operation with Resolutions Conf. 2.12 (Rev.) [(CITES, 1979] and Conf. 8.15 [(CITES, 1992)], or if it suspects that some Parties may object to such registration." (SC35 SR p.28 (CITES, 1995).

After the Notification, four Parties raised objections against the registration based on the fact that two owners of the falconry had been convicted in another EU Member State eight years before the Secretariat transmitted the Notification to the Parties for wildlife crimes (smuggling live falcons and falcon eggs). In addition, they were subject to investigations of wildlife crimes in Spain at the time of the Notification. (The Parties had been informed by the Secretariat in its Notification) (CoP10, Doc. 69, para. 5 (CITES, 1997).

The registration was debated in some detail in Committee I of the Conference of the Party (CoP10) and then rejected by a clear majority (10 in favour, 36 against). This decision was confirmed by the Plenary.

During the discussion in Committee I, a number of Parties expressed their concerns against the registration given the background of the application described above. Spain "expressed apprehension as to whether approval of this operation would threaten Spain's conservation efforts for *Falco peregrinus*. The delegation of Canada expressed sympathy with the views expressed by the delegation of Spain, but urged that a decision on this proposal be guided by the provisions of Resolutions Conf. 2.12 (Rev.) and Conf. 8.15 and not by issues extraneous to these Resolutions." There was some support for the position expressed by Canada. South Africa asked for assurance that the captive-breeding operation would be monitored by the German authorities. Zimbabwe and Uruguay pointed out that the species had a wide distribution with a significant size of some populations. Spain pointed out that *Falco peregrinus* was endangered in its territory. Uruguay also asked whether the German authorities could shut down the operation, if it violates the law in the future.

Israel pointed to the broader issue, as to "how CITES should deal with individuals or organizations with convictions for CITES-related offences, including whether CITES permits should be issued to them" and proposed to defer the decision on the particular registration until the broader issue was decided. This was opposed by Suriname. A temporary registration was proposed by as a compromise solution. The United States questioned the breeding success of the operation.

Several NGOs also spoke out against the registration, including a Germany NGO that "outlined some recent enforcement cases in Germany involving birds of prey, including two involving registered Appendix-I captive-breeding operations. He expressed the view that there were continuing enforcement-related concerns with the [applicant] and asked that its registration not be approved." (CoP10, Summary Record, Com I 10.3 (Rev.), 12 June 1997, Plen. 10.6 (Rev.), 19 June 1997 (CITES, 1997).

5.4.5 Earth Ocean Farms (*Totoaba macdonaldi*) Mexico (2022) (registered after intensive discussions at SC71 and SC74)

The registration of Earth Ocean Farms S. de R.L. de C.V. (Earth Ocean Farms), a captive breeding operation of *Totoaba macdonaldi* (Totoaba) in Mexico, is an exceptional case:

- The duration of the registration procedure (from application by Mexico to registration) exceeded four years.

- The fact-finding measures were very intensive and included a mission by the CITES Secretariat to the breeding facility.
- The link to the conservation of the critically endangered, in fact almost extinct Vaquita porpoise (*Phocoena sinus*) endemic to the northern end of the Gulf of California in Baja California also raised complex substantive issues. Illegal fishing of *Totoaba macdonaldi* with illegal gillnets endangers the very few specimens of Vaquita that have still survived.
- With regard to the trade in parts and derivatives of *Totoaba macdonaldi* the case also involved particular concerns regarding trade in Totoaba maw and swim bladders which resulted in a registration that was coupled with the commitment that swim bladders of Totoaba would not be traded but destroyed.

Totoaba macdonaldi (Totoaba) has been bred in captivity in different aquaculture operations in Mexico for 20 years for the production and marketing of meat. Seven facilities in Mexico are registered on a national level for the captive breeding of Totoaba (SC71 Inf. 2, p. 3, CITES, 2019)). Meat is already marketed domestically in Mexico. The application was the first time that attempts have been made to market the meat internationally (SC74 SR (summary record) – p. 112, (CITES, 2022)).

The applicant Earth Ocean Farms S. de R.L. de C.V. (Earth Ocean Farms) was founded in 2007 and started its operations in 2011. In 2012 it started to breed Totoaba. It obtained juveniles from two Research Centers, the Unidad de Biotecnología en Piscicultura of the Autonomous University of Baja California (UABC) in Ensenada and the Centro Reproductor de Especies Marinas del Estado de Sonora (CREMES) in Hermosillo. In addition, it obtained specimens from the wild, on the basis of a permit. (SC71 Inf. 2, p. 3-4 (CITES, 2019).

The application for registration was submitted on 17 April 2018 by Mexico to the CITES Secretariat. (SC74 Doc 59.1.1, para.4 (CITES, 2022). The Secretariat requested additional information from Mexico, and, after its receipt, issued a Notification to the Parties on 30 May 2018. (CITES Secretariat, Notification No. 2018/054, 30 May 2018 (CITES, 2018)). Mexico submitted additional information on 10 August 2018. Israel and the United States raised objections on 27th and 28th August 2018. (SC74 Doc 59.1.1, para. 5 (CITES, 2022).

The Animals Committee reached the conclusion that the specimens produced by the facility are genuinely captive bred and that the operation "largely fulfils the requirements for a registration" but raises a couple of further questions that it considers need to be addressed before registration, including the following issues:

- more precise data on productivity and expected future production volumes,
- information regarding the parts of *Totoaba macdonaldi*, which will be traded,
- inspection and monitoring procedures envisaged by Mexico to identify breeding stock and offspring and to exclude laundering specimens from the wild
- the conflicting goals of contributing to conservation by releasing captive-bred specimens to the wild vs. making it more difficult to identify specimens caught from the wild. (SC74 Doc 59.1.1, para. 7 (CITES, 2022)).

Mexico provided additional information (summary in SC71 Inf. 2 (CITES, 2019)) regarding the issues referred to above to the Secretariat and the objecting Parties, Israel and United States, but they upheld their objections.

Subsequently, the matter was submitted to three consecutive Standing Committee meetings. At the 71st meeting in Geneva in August 2019 the registration was discussed in some detail. No agreement was reached and the Standing Committee decided to await the results of an on-site visit of the CITES Secretariat and deferred the decision to the 73rd meeting. The meeting took place in May 2021 in a virtual format due to the COVID-19 pandemic. Because of the limited ability of a virtual meeting to sufficiently discuss and agree on complex and contentious matters, the 73rd meeting of the Standing Committee did not address this question but deferred it again. (SC74 doc 59.1.1, para. 10 (CITES, 2022)). Finally, the Standing Committee took a decision at its 74th meeting.

During this period Mexico provided additional information in accordance with Decision 18.293 regarding the protection of the Vaquita. (SC74 doc 59.1.1 para. 11 (CITES, 2022)). During this time, a mission of the CITES Secretariat was conducted to the breeding facilities of Earth Ocean Farm to verify the reproduction of second generation (F2) specimens. It should also be noted that Earth Ocean Farms went to great length to obtain the registration. In addition to submitting the required application for registration and answering additional information requests (some also in English, in addition to the text provided in Spanish as one of the official languages in CITES), it produced a short

documentary movie to explain the operation of the operation and it attended the Standing Committee Meeting in Lyon (SC74).

The registration was accepted by the Standing Committee at its 74th meeting in Lyon after a controversial discussion and on the basis of a vote, taking into account "the commitments made by Mexico" (SC74 SR, p. 114 (debate p. 112-114) (CITES, 2022)). Mexico had committed to destroy the swim bladders of farmed *Totoaba macdonaldi* "until Mexico, with the approval of the Standing Committee and interested Parties, establishes a secure process for their storage, marking and possible future commercialization under the continuous supervision of the competent Authorities." (SC74 SR, p. 113 (CITES, 2022). Earth Ocean Farms, the applicant, also committed to destroy the swim bladders of farmed specimens.

5.4.6 Hyacinth Macaw Aviary, Inc. (Anodorhynchus hyacinthinus) (deleted from register by SC)

Hyacinth Macaw Aviary, Inc., a captive-breeding facility based in Florida, United States, was registered in 2014. The Philippines had raised an objection after receiving the Notification regarding the breeding stock and the consistency of the documents provided (Notification 2013/050, 13 November 2013 (CITES, 2013)). There was some discussion about the legality of the breeding stock.

The United States had submitted information, data and documents (including an export permit issued by the CITES MA of Bolivia) showing that the birds of the current breeding stock were F1 and F2 offspring of birds caught from the wild. According to the documents, the birds belonged to a shipment of 60 birds that had been exported by a supplier of zoological gardens, based in the range state Bolivia, and imported by a supplier for bird owners, based in the United States in 1983, before the species was uplisted to Appendix I in October 1987. Previously, in 2012, the captive-breeding operation that applied for registration had been restructured and had kept only the birds for which they were in possession of documents showing their legal acquisition.

The case was referred to the Animals Committee, which had the impression the case should probably be able to be settled between the Parties and that concerns of the Philippines (which they described as "primarily of an administrative nature") should be able to be dissolved on the basis of further information provided by the United States (see SC65, Doc 35 (CITES, 2014). Since there was no agreement between the Parties

concerned, after they had received the Animal Committee's comments, the case went to a vote at the 66th session of the Standing Committee. The vote turned out in favour of the registration (six in favour, one against, eight abstentions). The summary record does not provide a detailed description of the discussion. The record shows that there were contributions from several Parties, but none by the range country Bolivia (SC65, SR p.18 (CITES, 2014)). The operation was registered on 17 July 2014.

Less than two months later, Bolivia addressed the CITES Secretariat raising concerns regarding the origin of the breeding stock and demanded the deletion of the operation from the register. The Secretariat explained the previous steps and content of the procedure that had led to the registration and suggested bilateral discussions between Bolivia and the United States. Since an agreement could not be reached, Bolivia upheld its concerns and the case was discussed at the 66th session of the Standing Committee in January 2016 in Geneva. (SC66 Doc 42.1 Annex 1, Annex 2 (CITES, 2016)).

In its letter, of 3 September 2014, Bolivia had pointed out that the export permit, allegedly from Bolivia, that was submitted in the context of the registration, was not valid. It is part of a number of documents that had been recalled and invalidated and the other CITES Parties were informed about the invalidation of CITES permits by a Notification and Parties were requested to reject them (Notification 224, 16 September 1982 (CITES, 1982)). In a subsequent Notification (Notification 246, 4 February 1983 (CITES, 1983)) Bolivia informed all Parties that the invalidation also included the documents with a named series of numbers (among them the permit relevant in the context of the breeding stock in this case), because these forms had disappeared from the offices of the Management Authority of Bolivia. (For a full account and the most relevant documents see SC66 Doc 42.1 (CITES, 2016)).

The Standing Committee decided to remove the operation from the register. The decision was taken by a close vote (5 in favour, 4 against, 6 abstentions). The Summary Record only recounts two points in the discussion. Firstly, it describes the statement by Bolivia that referred to the invalid basis for the export of the birds that formed part of the parental stock. Secondly, it gives an account of the United States's contribution, which referred to a period of 15 months, during which Bolivia did not communicate about the issue, recalled that the decision to register had been taken in line with due process rules and should therefore be upheld. (SC66 SR, p. 49 (CITES, 2016)).

5.5. Key documents with positions on registration as a requirement for the export of captive bred Appendix I specimens

There are a number of key documents at the level of CITES and at the level of the EU, which deal with issues of captive breeding and registration of captive breeding operations:

- Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022),
- Report by Animals Committee CoP11 Doc. 48 (CITES, 2000),
- Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002),
- Report by Animals Committee CoP13 Doc. 56.1 Annex (CITES, 2004),
- EU Guidance Document on Captive Breeding (EU, 2022).

Three key documents were discussed at CoP19 (2022):

- US proposal to extend scope of registration procedure (CoP19 Doc. 55),
- Pre-compliance procedure against the EU and its Member States (CoP 19 Doc. 29.1 (CITES. 2022), and
- Canada's Information Document CoP19 Inf. 13 (CITES, 2022) linked to earlier report of Secretariat SC70 Doc. 31.1 (CITES, 2018)

In the following section these documents will be assessed as to whether they contain a position on the issue whether registration is a requirement for the export (or re-export) of captive bred Appendix I specimens for commercial purposes.

5.5.1 Resolution Conf. 10.16 (Rev. CoP19) (CITES 2022)

Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022) sets out the requirements for specimens of animal species to qualify as "captive bred." In its operative part, the Resolution does not refer to the registration process as an additional prerequisite that specimens bred in captivity for commercial purposes would have to meet in order to be recognized as specimens bred in captivity. However, this does not necessarily imply that the Resolution would take the position that other Resolutions would be barred from including a recommendation not to accept captive bred specimens for commercial purposes if they have not been produced at a registered facility.

In its recitals, the Resolution does not mention the registration process for captive breeding facilities either. The Resolution refers to Article VII paragraph 4 and paragraph 5 of the Convention. In one recital it notes that "in accordance with Article VII, paragraph 4, specimens of Appendix-I species bred in captivity for commercial purposes shall be

deemed to be specimens of species included in Appendix II and that therefore they shall be traded in accordance with the provisions of Article IV." In the following recital the Resolution notes that "in accordance with Article VII, paragraph 5, the import of specimens of Appendix-I species bred in captivity not for commercial purposes that are covered by a certificate of captive breeding does not require the issuance of an import permit and may therefore be authorized whether or not the purpose is commercial."

On this basis, one cannot conclude that the Resolution would take a position on a requirement that specimens bred in captivity for commercial purposes would need to be bred at a registered facility in order to be eligible for commercial exports.

5.5.2 Report by Animals Committee CoP11 Doc. 48 (CITES, 2000)

CoP11 Doc. 48 (CITES, 2000) was prepared by the Animals Committee. It provides a summary of a frank discussion about the merits of the registration procedure. The Animals Committee "was in general agreement that the registration system [applicable at that time] was complex and difficult for Parties to implement." Some Parties held the view that "the information requirements [… were] in some cases excessive and time consuming" (CoP11 Doc. 48 para. 9 (CITES, 2000)). There was some discussion on the impact of "small-scale" vs. "large-scale" captive-breeding operations and whether to adopt a differentiated registration system that provides for a simplified process. However it became clear that impact on conservation does not necessarily correlate with the size of the operation and the economic value of its output (CoP11 Doc 48 para. 10 (CITES, 2000). Therefore, it is not only difficult to determine where to draw the line, but also difficult how to define the differentiating criteria. As we have seen above, the efforts by the Animals Committee to differentiate according to the status of the species, in particular by drawing up a list of "commonly bred species" did not bear fruit. It had not been possible to agree on such a list. Alternative options would have been to identify "species the breeding of which is particularly problematic, and/or species for which there is special conservation concern" (CoP11 Doc 48 para. 11 (CITES, 2000)). The summary also refers to the position of many range states that are opposed to "captive-breeding operations located outside the range State(s) being registered and 'legitimized' unless the operation in question is able to demonstrate" to the range states in question that "the original founder stock was obtained legally, *i.e.* in accordance with CITES and national legislation" (CoP11 Doc 48 para. 14 (CITES, 2000)).

Document CoP11 Doc 48 (CITES, 2000) also refers to concerns that do not relate to the benefits of a registration system, but to the impact of captive-breeding in general. In this context, the document also mentions a potential negative impact of ex-situ captive-breeding operations, they can increase demand in the consumer and the range states and thereby create an incentive for illegal trade and poaching in the range states (CoP11 Doc 48 para.15 (CITES, 2000)). Another issue is that captive-breeding operations can be abused for laundering specimens taken from the wild (CoP11 Doc 48 para.17 (CITES, 2000)).

5.5.3 Resolution Conf. 12.10 (Rev. CoP15) (CITES, 2002)

Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002) lays down the substantive requirements for the registration of operations that breed Appendix-I animal species in captivity for commercial purposes. The Resolution also sets out the procedure for the registration.

The Resolution recommends that "the exemption of Art. VII para. 4 should be implemented through the registration by the Secretariat of operations that breed specimens of Appendix-I species in captivity for commercial purposes" (para. 2). With regard to imports of captive-bred specimens of Appendix-I species for primarily commercial purposes (as defined in Res. Conf. 5.10 (Rev. CoP19) (CITES, 1985), the Resolution recommends that Parties shall restrict such imports "to those produced by operations included in the Secretariat's Register" and that Parties shall "reject any document granted under Art. VII para. 4 if the specimens concerned do not originate from such an operation …".

5.5.4 Report by Animals Committee CoP13 Doc. 56.1 Annex (CITES, 2004)

The Animals Committee identified the following issues of "perceived problems limiting the wider use of the registration procedure laid out in Res. Conf. 12.10" (CoP13 Doc. 56.1 Annex (CITES, 2004)):

- "Preparing the application is too complicated or complex, especially for small operations"
- "It is difficult to provide proof of legal acquisition of breeding or parental stock"
- "Concerns over laundered Appendix-I animal specimens getting into international trade"
- "Some Parties are allowing import of specimens of Appendix-I animal species under Article III, so registration is deemed as unnecessary"

- "National legislation of some importing countries prohibits the importing MA from identifying the purpose of import of Appendix-I species as commercial"
- "Commercial trade of Appendix-I listed animal species may stimulate poaching of the species"
- "There are not enough incentives for CBOs [captive-breeding operations] to apply for registration"

The assessment of the Animals Committee is based on the responses by twelve Parties, one NGO and one breeding facility to a Notification by the Secretariat which invited Parties, intergovernmental and nongovernmental organizations to answer the following questions with regard to the process for registering captive-breeding operations: (i) "perceived or actual problems that would limit or prevent the use of the registration procedure at national level," (ii) "experiences with the implementation of the registration process", and (iii) "unregistered operations that are breeding Appendix-I animal species for international trade" (Notification No. 2003/071, CITES (2003)). The Parties that provided responses were Canada, Czech Republic, Germany, Israel, India, Myanmar, New Zealand, Spain, the United Kingdom, and the United States of America. Responses were also submitted by the Species Survival Network (SSN) and Birds International Inc. and their full comments are attached in an Annex to the document AC20 Doc. 11 (CITES, 2004).

The Animals Committee also proposed solutions for each issue. It did not conclude that it would be best to delete the registration procedure altogether and to replace it by an assessment of the host country's Management Authority. Yet, this could not have been expected because it would have gone beyond the questions that the Animals Committee had been mandated to reflect on by the Conference of the Parties, as contained in Decision 12.78 (CITES, 2002), in particular, "to describe and analyse the problems that limit the wider use of the registration procedure" and to "provide recommendations to resolve those problems".

The Animals Committee suggests to do the following to address the identified problems: (i) facilitate the registration process (in particular a simplified application form), (ii) provide some level of assistance to the applicants (by Management Authority of host country or a support group of breeders and Government), (iii) provide incentives for captive-breeding operation to register (*e.g.* faster processing, lower fees for export

permits, formal certification of international registration), (iv) lower the requirements for documents providing sufficient proof for the legality of the breeding stock (in particular, "accept signed affidavits in lieu of actual copies of old or unobtainable documents", (v) increase enforcement to eliminate illegal trade, (vi) facilitate enforcement by providing more information on marking method applied by the individual captive-breeding operation, (vii) apply Res. Conf. 5.10 (Rev. CoP19 (CITES, 1985), and Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002) more strictly (*i.e.* no export of captive-bred specimens for commercial purposes (as defined in Res Conf. 5.10) unless operation is registered; examine international trade of Appendix I species for commercial purposes from non-registered operations.

5.5.5 EU Guidance Document on Captive Breeding (EU, 2022)

In August 2022, the EU Commission published a "Guidance document on live animals bred in captivity under the EU Wildlife Trade Regulations" (EU, 2022). The objective of the document is to "help EU Members States assess whether captive-bred specimens of species listed in the Annexes to the Basic Regulation meet the conditions for issuing the documents required for importing, (re-)exporting or internal trade" ((EU, 2022), p. 3). The guidance document aims "to ensure that EU Member States are consistent in their approach to implementing the rules and that they apply equivalent standards with regards to live animals bred in captivity" (EU, 2022), p. 3). The document applies to Appendix I/Annex A as well as Appendix II/Annex B species.

The document is not legally binding and does not provide authoritative interpretation of the EU rules (which is reserved to the European Court of Justice), but it reflects best practice in the application of the EU wildlife legislation by EU Member States (p. 4, EU, 2022)) and therefore provides a good understanding of how EU Commission and EU Member States interpret the rules in practice. The guidance document was drafted by the EU Commission, and then discussed thoroughly and developed further by the EU Member States in the EU Committee on Trade in wild fauna and flora, and finally endorsed by this committee.

The guidance document sets out how to assess the legality of the breeding stock (p. 5, point 3.2 (EU, 2022)) and the other criteria for specimens to qualify as "captive bred", in particular production of second generation off-spring (p. 7, point 3.3.2 (EU, 2022)). It

also contains specific sections on imports, internal trade within the EU internal market, and (re-)exports.

With regard to exports of captive-bred specimens the Guidance document does not limit exports for commercial purposes to captive-bred specimens that have been produced in facilities registered according to Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002). It only contains a general reminder that transactions with specimens that do not meet the criteria of non- commercial purpose codes must be qualified as commercial (purposed code T) and must meet the requirements for commercial transactions. The section on exports clearly does not contain any restrictions of exports of captive-bred specimens for commercial purposes to specimens from registered facilities. This is in line with the rules of the EU wildlife trade regulations, which do not foresee mandatory registration for issuing export permits in relation to captive-bred animal specimens.

5.5.6 Key documents on registration procedure discussed at Co19 (2022)

5.5.6.1 US proposal to extend scope of registration procedure (CoP19 Doc. 55)

At CoP19, the proposal by the United States to extend the scope of the registration procedure in different respects (CoP19 Doc. 55 (CITES, 2022) was not adopted. The proposal included, for instance, that changes in the products to be exported by a registered operation and made from specimens of the species for which the operation is already registered, would trigger a novel registration procedure for the operation (CoP19 Doc. 55 para. 11 (CITES, 2022)). There are instruments to delete an operation from the register, which can be initiated by the host country and by other Parties, if the change causes problems, *i.e.* if the operation no longer complies with the provisions of Res. Conf. 10.16 (Res. Conf. 12.10 (Rev. CoP15) point 5 g) h) i) (CITES, 2010), therefore, it is unnecessary to provide for a de novo registration procedure in every case, for example, if a captive-breeding operation of falcons simply extends its "product portfolio" from live falcons to falcon feathers.

The US proposal also contained an additional substantive requirement for the registration of a captive-breeding operation. It was proposed to extend the requirement that "the captive breeding operation will make a continuing meaningful contribution according to the conservation needs of the species concerned" to an additional element by adding "including the trade will not negatively affect efforts to combat illegal trade in the species or other CITES-listed species".

The European Union and its Member States had submitted an information document before CoP19 that argued that most of the proposed changes regarding the scope of the registration procedure should not be accepted, because they increase the burden for the captive-breeding operations, the host countries, the Secretariat, the Animals Committee and the Standing Committee without any real conservation benefit, given the procedural tools already in place (CoP19 Inf. Doc 50 para. 7 (CITES, 2022).

In their information document, the EU and its Member States also opposed the extension of the substantive requirement for the registration. They acknowledged the importance of the objective to "prevent illegal trade and to support its prosecution", but cautioned that "the registration of captive-breeding operations is not the appropriate place to promote more effective enforcement." The EU and its Member States stressed that "the criteria for registering captive-breeding operations should remain focused on the requirements for captive breeding set out in Resolution Conf. 10.16 (Rev. CoP19)." (CITES, 1997) While they conceded that "the requirement in point 5.i) of Resolution Conf. 12.10 (Rev. CoP15) (CITES, 2002) that the captive-breeding operation will make a continuing meaningful contribution according to the conservation needs of the species concerned already goes beyond this concept." They made clear that this requirement must not be extended. In addition, the EU and its Member States reminded the audience that the fact "that trade does not affect negatively efforts to tackle illegal trade is a standard base for CITES trade and therefore should not be considered as the fulfillment of the requirement of contribution to the conservation of the species." Finally, they pointed out that "when impact of legal trade on illegal trade is assessed, CITES Parties often come to very different results" and concluded that "this element is also not workable in practice as an additional requirement for registrations." (CoP19 Inf. Doc 50 para. 9 (CITES, 2022)).

At the CoP, in addition to the EU and its Member States, concerns were also raised by Canada, Botswana, Mexico, Senegal, South Africa, the United Kingdom, and Zimbabwe. The US proposal was supported by Israel, Mauritania, Senegal and Born Free Foundation. The CoP agreed to discuss the issues further at the Standing Committee (CoP19 Com II. Rec. 13 (Rev. 1)). The Standing Committee at its 76th session decided to establish an intersessional working group to deal with this issue (SC76 SR, point 5 (CITES, 2022).

5.5.6.2 Pre-compliance procedure against the EU and its Member States (CoP 19 Doc. 29.1 (CITES. 2022)

There is also a link to a pre-compliance procedure that concerns the practice of EU Member States to issue export permits for live captive-bred birds and reptiles (Appendix I) traded for commercial purposes (source code C and purpose code T) (CoP19 Doc. 29.1 para. 13-14) (CITES, 2022). A similar pre-compliance procedure is also conducted with regard to the United Kingdom. The EU is of the opinion that an assessment by CITES Management Authorities in the EU Member States whether individual exports meet the requirements for captive-bred specimens under Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022) is an equivalent to the registration procedure under Res. Conf. 12.10 (Rev. CoP15) (CITES, 2010). In its opinion, the EU's approach should be accepted as a stricter domestic measure (Art. XIV.1). At CoP 19 and the prior 75th meeting of the Standing Committee, the CITES Secretariat reported about on-site visits to Germany and Spain. The EU and its Member States stated that they welcomed the pre-compliance procedure because it provides an opportunity to review whether the EU position is in line with obligations pursuant to CITES. ("[t]he Secretariat's technical mission to Spain and Germany had provided a valuable opportunity to explain and demonstrate how the provisions for captive breeding outlined in Resolution Conf. 10.16 (Rev. CoP19) on Specimens of animal species bred in captivity are met and expressed their readiness to continue cooperating and provide information to the Secretariat as necessary.", SC75 Summary Records point 7.1, p.3) (CITES, 2022).

5.5.6.3 Canada's Information Document CoP19 Inf. 13 (CITES, 2022) linked to earlier report of Secretariat SC70 Doc. 31.1 (CITES, 2018)

Probably the most thorough account of the discussions in the intersessional working group on captive breeding issues in the intersessional period between CoP18 and CoP19 is the information document submitted by Canada to CoP 19 (CoP19 Inf. 13 (CITES, 2022)). It sums up the comprehensive input Canada had provided to facilitate the discussions, *inter alia*, in several detailed written statements, including Canada's analysis of policy assumptions in the Resolutions implementing trade in non-wild plants and animals and its proposals how to address the ambiguities and inconsistencies in the current Resolutions and the challenges in applying Article VII paragraphs 4 and 5. The complexity of the issues becomes apparent when Canada raises the question whether the resources are employed for the right priorities. One the one hand Canada states that in its

view “significant time and resources are being allocated both during CITES intersessional work and in trade between Parties to address specific (and varied) interpretations of these Resolutions and that these resources would be better allocated to address the conservation needs of animal species in the wild.”. On the other hand Canada “supports the continuation of the Standing Committee discussions as proposed in the draft decisions […].” And acknowledges that “current trade in specimens that are bred in captivity is much higher in volume and very different then the trade that existed in 1979, when Resolution Conf. 2.12 was adopted.” (CoP19 Inf. 13, para. 3, 7 (CITES, 2022).

CoP19 Doc. 53 (CITES, 2022) sums up the state of play of the working group’s discussions. It provided a first set of proposals for changes to Res. Conf. 10.16 (Rev. CoP19) (CITES. 2022), only some of which were adopted at CoP19 (CoP19 Com. II Rec. 15 (Rev.1), p.4), after the Secretariat had advised that “the issues in the present document are complex and merit further discussion before they can be adopted by the conference of the Parties” (CoP19, Doc. 53, p. 3 (CITES, 2022). No changes were made to the registration criteria or the registration procedure. It was also decided to continue the work on these issues and to re-establish the Standing Committee’s intersessional working group on captive breeding and to involve both the Animals Committee and the Plants Committee (CoP19 Com. II Rec. 15 (Rev.1), p.4-6, SC76 SR point 5., p.3) (CITES, 2022).

It is also useful to provide a brief account of the prior steps that led to the current state of play and to draw attention to the Secretariat’s report that was prepared for the 70th meeting of the Standing Committee. In its report, the Secretariat sums up the state of the discussions on several issues with regard to captive breeding and the registration of captive breeding facilities. The document’s title is “Review of ambiguities and inconsistencies in the application of Article VII, paragraphs 4 and 5, and related Resolutions” SC70 Doc. 31.1, (CITES, 2018).

The report contains a plethora of materials, thoughts and input by the Secretariat and by Parties. For example, in Annex 7 the Secretariat undertakes a detailed review of the applicable Resolutions and points to ambiguities and inconsistences. With regard to Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002), the Secretariat points out that “many Parties do not apply this Resolution” and that many captive-bred specimens of Appendix-I animals are exported from unregistered operations, but using purpose code ‘T’ for trade. During the period 2007-2016 there were 22,650 exports of this type involving 110

Appendix-I taxa. The main species involved were birds of prey and parrots." These findings are also mentioned in the main body of the report (SC70 Doc. 31.1, p. 7, para. 34 (CITES, 2018)).

Annex 8 contains comments received from Brazil, Canada, European Union, Mexico, New Zealand, Thailand, Environmental Investigation Agency (EIA), Dryland farmers in India, Global Eye, United States Association of reptile keepers. In Annex 1, The Secretariat endeavours to provide an integrated Resolution for the implementation of Article VII paragraphs 4 and 5 of the Convention.

The mandates that followed for the intersessional period after CoP18 contained a very substantial workload for the Standing Committee's working group, probably too much to handle. The mandates agreed on at CoP19 are less prescriptive.

In its conclusions, on a general note, the Secretariat stated that the Parties "have not determined the "underlying CITES policy assumptions" that may have contributed to uneven application of provisions of trade in specimens traded with source codes R, F, D, A and C in great detail."

Given the administrative burden for the Standing Committee, the Parties, the Animal and Standing Committee, and the Secretariat in the context of the registration procedures and the registers, the Secretariat proposed two alternative changes: As one option, "the registers should […] be made compulsory and enforced." As a second option, "the registers maintained by the Secretariat should be discontinued." "The responsibility for determining when Article VII paragraph 4 should be applied should be returned to the Parties". (SC70 Doc. 31.1, p. 7, para. 35 (CITES, 2018)

After what seemed to have been a controversial discussion, the Standing Committee was of the option that further discussion on this issue was necessary after CoP18 and decided, on the basis of recommendations by an in-session working group, draft decisions for CoP18 which foresee further work on this issue, including discussion of the recommendations by the Secretariat mentioned above. (SC 70 SR p. 48, CITES (2018)).

5.6. Specimens claimed to be captive-bred which are not

Two issues need to be separated when it comes to concerns with captive-bred specimens. First of all, there is a concern about laundering specimens illegally taken from the wild in operations breeding Appendix I species in captivity. Secondly, there is a more general

concern that is not necessarily linked to laundering, it includes other cases that may be connected to poaching or wildlife crime but goes beyond these instances. It relates more generally to concerns that specimens traded as captive-bred may not meet all the requirements of captive-bred specimens.

5.6.1 Laundering of specimens illegally taken from the wild

There is a widely shared concern that some specimens of Appendix I species in trade may originate from facilities which have not produced any or all specimens traded. One core problem is that some specimens traded as captive-bred may in reality be specimens illegally taken from the wild.

There are several possibilities for the modus operandi. For example in cases in which the captive breeding operation is situated in the area of distribution of the species in question, operators may take specimens from the wild without any permit and in violation of the local laws applicable. Operators may also pay third Parties to illegally harvest the animals for them. Similarly, the operators may have less of a role and less control over the particular modalities as to how the animals are extracted from their natural habitats. They may purchase them directly from poachers without any knowledge, for example, in which areas and by which means they obtain the animals. Operators of captive breeding facilities may also purchase them from traders who are not directly involved in the poaching.

Such specimens are then sold claiming they are captive-bred. Possibly the animals that have been extracted from their natural habitats are kept at the breeding facility for some time, however, for the operators this carries some risks. The animals taken from the wild may be infected with pests and these could spread to the other animals that are kept at the facility. Poached animals may also be sold directly without any delay. In the context of sales, mixing illegal with legal specimens may also be a modus operandi applied to conceal the illegal origin of some specimens.

The activity described above is in some aspects comparable to the modalities that are applied to hide the illegal origin of money that has been obtained by criminal activities. The term used is money laundering. The international watchdog in the area of money laundering is the Financial Action Task Force (FATF). It defines money laundering and describes its basic concept in its FAQs (FATF, 2023) as follows:

> "Money laundering is the processing of […] criminal proceeds to disguise their illegal origin." Its aim is "to 'legitimise' the ill-gotten gains through money

laundering. When a criminal activity generates substantial profits, the individual or group involved must find a way to control the funds without attracting attention to the underlying activity or the persons involved. Criminals do this by disguising the sources, changing the form, or moving the funds to a place where they are less likely to attract attention."

"In the initial - or placement - stage of money laundering, the launderer introduces his illegal profits into the financial system. This might be done by breaking up large amounts of cash into less conspicuous smaller sums that are then deposited directly into a bank account, or by purchasing a series of monetary instruments (cheques, money orders, etc.) that are then collected and deposited into accounts at another location.

After the funds have entered the financial system, the second – or layering – stage takes place. In this phase, the launderer engages in a series of conversions or movements of the funds to distance them from their source. The funds might be channelled through the purchase and sales of investment instruments, or the launderer might simply wire the funds through a series of accounts at various banks across the globe. This use of widely scattered accounts for laundering is especially prevalent in those jurisdictions that do not co-operate in anti-money laundering investigations. In some instances, the launderer might disguise the transfers as payments for goods or services, thus giving them a legitimate appearance.

Having successfully processed his criminal profits through the first two phases the launderer then moves them to the third stage – integration – in which the funds re-enter the legitimate economy. The launderer might choose to invest the funds into real estate, luxury assets, or business ventures."

Concerns that captive breeding operations may be used to launder illegal specimens taken from the wild in violation of the applicable law on nature conservation are expressed by many different actors, including the CITES CoP, the Animals Committee, many Parties and, for example, the specialized think tank and advisor on trade in wild species, the NGO TRAFFIC. The concern is raised for example in the following CITES documents:

- Res. Conf. 17.7 (Rev. CoP19) (CITES, 2016) on the review of trade in animal specimens reported as produced in captivity states in its 7th recital that "there is

growing evidence of cases of illegal trade in wild-caught specimens of CITES-listed species, through fraudulent claims that wild-caught specimens are captive bred".

- In addition, the Report "Selection of species for inclusion in the review of captive trade in animal specimens, Report following CoP18" produced by Traffic in the context of the implementation and assessment of Res. Conf. 17.7 (Rev. CoP19) (CITES, 2016) proposes the following modification of selection criteria for species-countries combinations for review in order to improve the process (AC31 Doc. 19.1 Annex, p. 33):

  "Of the 23 species/country combinations selected by Parties at AC29, nine did not feature in the selection analysis and instead were proposed by Parties or the Secretariat. Several related to concerns in relation to captive production or questions over the feasibility of breeding these species in captivity. On this basis, it appears that there may be a gap within the criteria and an increased focus on breeding biology within the methods may be warranted."

  "Incorporation of breeding biology in the selection process. For Resolution Conf. 17.7 (Rev. CoP18), taxa of high risk include those that are particularly difficult to breed in captivity or difficult to breed to second generation, as well as those that are particularly slow growing or slow to reproduce (as these may be more likely to be laundered). It would therefore be beneficial to take into account the breeding biology of a species when assessing whether the volume of trade for a particular taxon is 'significant' or not."

- The Animals Committee, in its report from 2000 on captive-breeding issues (CoP11 Doc. 48, para. 17 (CITES, 2000) pointed out that

  "commercial trade in specimens of Appendix-I-listed species derived from captive breeding operations, particularly those ex situ operations located in consumer countries, may have a negative impact on conservation. These operations could serve to 'launder' specimens obtained illegally from the wild (the first generation progeny derived from parental stock obtained illegally becomes effectively legalized unless such operations are subject to stringent controls)."

- In another key report of the Animals Committee (CoP13 Doc. 56.1 Annex, para. 3) (CITES, 2004), it reiterates the "Concerns over laundered Appendix-I animal specimens getting into international trade"

The concern is also very present in reports by the enforcement community, in particular, by UNODC. In its first edition of the World Wildlife Crime report (UNODC, 2016, p. 10) UNODC presents as one of its key finding that:

> "Case studies suggest that some wildlife farms, captive breeding operations, or even zoos may play a role in laundering illegally acquired wildlife."

In the 2nd edition of the World Wildlife Crime report (UNODC, 2020), the UN Agency explains the situation as follows:

> "In contrast to markets on which there is a complete prohibition, wildlife trafficking may involve goods that can be legal or illegal, depending on when, where, and how they were acquired. Like firearms, pharmaceuticals, or antiquities, the legality of this acquisition is demonstrated through a licensing system. Since an official document can transform millions of dollars of suspected contraband into millions of dollars of legitimate merchandise, a proportion of the "trafficking" of these goods may be laundered and proceed through the front door, with documents provided through fraud, forgery, or corruption."
>
> "Aside from evading interdiction, illegally sourced goods laundered using fraudulent documents can be introduced into legitimate commercial channels, availing themselves of legal demand. In this way, illegally sourced timber, fish, and other wildlife products find their way into mainstream retail outlets, and consumers who would never knowingly purchase contraband may nonetheless do so. Transnational trade has grown at a rate greater than the ability of the international community to regulate it, allowing a wide range of illicit merchandise to be laundered through a series of holding companies and offshore accounts. Wildlife products are no different, and the need for strict regulation and supply chain security is key to protecting threatened species."

The issue is also discussed in relation to specific groups of species or products. For example, in the chapter on reptiles, it is noted that:

> "Interviews with reptile traders around the world suggested that contraband reptiles may be laundered through captive breeding operations. International traders say that some suppliers will illegally source gravid females from the wild, so that they lay their eggs at their farm, and they then declare the offspring to be

captive-bred. “Niche” species, with very specific or lesser-known ecologies, diets and behaviours that make them” (UNODC, 2020, p. 75).

In its first edition of the report, UNODC hat addressed reptile skins, in particular the caiman farming industry in Columbia (p. 53-54):

> “The caiman farming industry in Colombia was initiated in 1987 and has been described as ‘extensive and sophisticated’. Aside from production quotas, the country has imposed skin size limits on exports to exclude wild-caught adults being exported as captive-bred origin, harvested contrary to Colombian law, suggesting some four million illegal skins have entered trade since that time.”
>
> “Nonetheless, crocodile trade experts have expressed concerns that farms were exaggerating their production capacity in order to secure large export quotas, and then filling these quotas with wild-caught caimans. Larger skins were allegedly trimmed to export length. In 2016, the IUCN Crocodile Specialist Group estimated 30% of the caiman exports from Colombia since 1990 were of wild origin, harvested contrary to Colombian law, suggesting some four million illegal skins have entered trade since that time.”

In the section on big cats, the report (in its 2nd edition) contains the following comments regarding cheetahs:

> “In 2014, experts suspected that some South African breeding facilities were laundering wild-sourced cheetahs as captive-bred. In 2016, CITES recognized that South African breeding operations had made significant strides in improving regulations, including requiring parental DNA as proof of captive-breeding for specimens to be exported as captive-bred. Since then seizures continue to suggest ongoing illegal trade but data is scarce on its extent and modus operandi.”

In the first edition of the report it also addressed the laundering issue in the context of agarwood (UNODC, 2016, p. 18):

> “The agarwood case study (Chapter 6) makes clear that cultivation of wild species can be complicated. Since international controls are designed to protect the wild, farming would appear to be one answer. But in some cases, such as agarwood, cultivated alternatives are technically difficult and expensive to develop. They may also deliver products deemed inferior to wild products in key destination

markets. In these instances, captive breeding facilities may be vulnerable to becoming laundering operations. These risks are particularly high in rapidly growing markets, where demand outstrips the licit supply capacity, such as agarwood."

"In the past, agarwood was sourced from old growth forests, from trees decades or even centuries old. The ageing of agarwood in its distinct environment was believed to give each sample its own unique scent profile. Recent growth in the scale of demand has decimated these old populations, and launched a large number of ambitious cultivation operations. But trees take time to grow and the technology of agarwood production remains incomplete. Some experts are sceptical about the current capacity to produce quality agarwood, and yet many tons are legally exported each year."

NGOs, such as TRAFFIC, have also worked on this issue and have identified laundering as a widespread problem in a number or reports. For example, in its report on captive breeding in Cambodia and Vietnam traffic dating back to 2008 TRAFFIC (Thomson, 2008, p. 5) identifies the following problem:

"challenges posed to and burdens imposed upon under-resourced agencies in charge of monitoring and controlling captive breeding operations due to the potential for laundering of wild animals"

In a recent report by Traffic Souteast Asia on birds from Indonesia sold in the Philippines based (Emerson *et al.*, 2022), *inter alia*, on a review of online advertisements, the following account is given:

"The export trade data from Philippines documents that most birds are sourced from captive breeding and further investigation is required to confirm whether this is true. Some "backyard" or non-DENR registered keepers are known to buy wild-caught birds to attempt breeding them and to sell the offspring to other enthusiasts and registered wildlife farms/zoos. Some registered wildlife farms/zoos have been reported to continuously and illegally purchase wild-caught birds from traffickers […] or unregistered captive-bred birds from backyard breeders, and declare them as part of their own captive breeding production […]. Export permits are then acquired to legally sell to international buyers (Sy, pers. obs.). This modus operandi to launder wildlife has been long known to occur in the country (Bennett,

> 2014; Sy et al., 2020), but no large exporting wildlife farms/zoos who are engaged in this illegal activity have been seriously sanctioned to date."

A similar report of Traffic (Shepherd, Stengel & Nijman, 2012) published in 2012 concerned captive breeding facilities in the Solomon islands:

> "Meanwhile the Environment Conservation Division (ECD) informed TRAFFIC researchers (in litt.) that although there were registered bird breeders in the islands, they were not breeding birds, only taking them from the wild. Furthermore, the ECD wrote: 'There are no breeding facilities, only some confusion with storing facilities. Most of the exported birds were captured and kept in holding sites only.' Given the official confirmation of a lack of suitable bird breeding facilities in the Solomon Islands, these data lead to the inescapable conclusion that large numbers of wild-caught birds have been laundered into the global wildlife trade through being declared as captive-bred. (p. vi, vii)

5.6.2 Specimens not meeting the requirements for captive-bred

In addition to the very serious concern of laundering wild specimens using captive-breeding operations, which involves a clear violation of CITES rules and will often involve the suspicion of a violation of criminal law or at least a regulatory or administrative offence, there is a more general concern that is not necessarily linked to laundering of specimens taken from the wild and may not even be connected to poaching or wildlife crime. It relates to circumstances, in which specimens traded as captive-bred may not meet all the requirements of captive-bred specimens. This covers situations, in which the legality of the breeding stock cannot be demonstrated. Documents may be missing. The origin of the breeding stock could also be illegal, for example poached and/or smuggled specimens. There may also other issues. For example, the operation has not produced offspring of generation F2 yet and may not be in a position, either, to demonstrate that it is able to do so.

Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022) mentions in its 6th recital that "trade in specimens declared as bred in captivity has increased over the years". It expresses the CoPs concerns that "this trade may in some instances be contrary to the Convention and to Resolutions of the Conference of the Parties, and in those cases may be detrimental to the survival of wild populations of the species concerned."

Res. Conf. 17.7 (Rev. CoP19) (CITES, 2016) provides for a review mechanism for "trade in animal specimens reported as produced in captivity". As set out in the 8th recital, one of the concerns is, *inter alia*, that "in some cases there are doubts as to the legal origin of the parental stocks of captive bred specimens including specimens that are bred outside their natural range". The 9th recital describes the review mechanism's objective as follows: "the intent of the Review […] is to ensure that such trade is conducted in accordance with provisions of the Convention and to identify remedial actions where needed to ensure trade is not detrimental to the survival of wild species and to advance the purpose and effective implementation of the Convention"

The Resolution foresees four stages of the procedure, in the first step, the Secretariat, possibly with the help of consultants, identifies species-countries combinations that necessitate further review. On the basis of annual report statistics and taking into account the breeding biology of the species, the identification is based on the following criteria, which may indicate for possible problems:

> i) Significant Increase: significant increases in trade in specimens declared as captive-produced (source codes C, D, F and R),
>
> ii) Significant Numbers: trade in significant numbers of specimens declared as produced in captivity,
>
> iii) Shifts in source codes: shifts and fluctuations between different captive-production source codes,
>
> iv) Reporting inconsistencies: inconsistencies between source codes reported by exporting and importing Parties for specimens declared as produced in captivity,
>
> v) Incorrect application of source codes: apparent incorrect application of captive production codes such as: 'D' for Appendix-I species that have not been registered in compliance with the provisions of Res. Conf. 12.10 (Rev. CoP15) on Registration of operations that breed Appendix-I animal species in captivity for commercial purposes,
>
> vi) Legal acquisition: trade from non-range States of specimens declared as produced in captivity with no evidence of lawful acquisition of parental breeding stock (*i.e.* no recorded imports),

vii) Specimens produced as captive produced (source codes C, D and F), where the species are known to be difficult to breed in captivity.

The subsequent steps involve consultations with the countries concerned, a review by the Animals Committee and by the Standing Committee, which also includes recommendations for the countries concerned, and finally monitoring and reporting by the Secretariat, If recommendations are not met, the Standing Committee decides on appropriate actions.

The EU Guidance document on captive breeding (EU, 2022) also spells out risk factors, which indicate that captive-breeding claims may not be genuine. The risk factors identified by the EU Guidelines partially overlap with the factors that are used in the review mechanism contained in Res. Conf. 17.7 (Rev. CoP19) (CITES, 2016):

- Sudden increase in number of specimens declared as captive-bred, in particular if immediately following a trade restriction applying to wild-caught or ranched specimens;
- Species concerned is known to be difficult to keep and/or breed in captivity, nevertheless, high volume of trade in specimens declared as captive-bred;
- Species concerned known to be difficult to breed to second generation, nevertheless trade in specimens declared as captive bred;
- Specimens claimed to be captive-bred are from non-range states, but no documentary evidence to demonstrate parental breeding stock was legally acquired;
- Facilities only recently established declare to have produced species in captivity that are slow to mature and with low reproductive potential;
- Specimens with advanced age, if, due to high costs associated with long duration of maintaining them, claims of captive-breeding are unlikely;
- Annual production level of facility exceeds that which one would expect based on facility's size of parental stock and reproductive potential of species concerned;
- Condition of specimens (*e.g.* heavy parasitic load, damage from predators) is not consistent with claim that they have been reared in a controlled environment
- Size of specimens (*e.g.* large variation in size) is not consistent with breeding details provided (*e.g.* sharing the same clutch or birth date);

- Doubts over legal origin of founder stock, particularly in countries outside of their natural range, which may have been acquired before the country became a Party to CITES;
- Any relevant outcome of the Review of trade in animal specimens reported as produced in captivity under CITES (Res. Conf. 17.7 (Rev. CoP19));
- Negative opinion by EU Scientific Review Group relating to imports of a species (source C, F or R) from a country (this information is available at Species+), or
- For EU CITES Authorities it is also possible to access information available in the EU Captive Breeding Database on captive-breeding facilities located in third countries to identify increased risk. The Database is managed by UNEP-WCMC on behalf of the EU. The EU provides this online tool to enable CITES authorities in the EU Member States to collaborate, to "coordinate and share applications for captive breeding, ranching and mariculture" The database is searchable, in particular by the name of the operation, the species bred, and by country. CITES authorities can include information on captive-breeding operations (UNEP-WCMC, 2023).

DNA testing can be helpful to establish parental lines of off-spring to specimens of breeding-stock. Regular inspections of breeding facilities may also be helpful to identify clues for laundering. Res. Conf. 12.10 (Rev. CoP15) (CITES, 1997) requires CITES Management Authorities, in collaboration with Scientific Authorities, "to monitor the management of each registered captive breeding operation under its jurisdiction" (Res. Conf. 12.10 (Rev. CoP15) point 5. g) (CITES, 1997)). On the use of isotope markers to differentiate between wild and captive reptile populations see van Schingen, *et. al.* (2016)..

5.7. Legal analysis: Do Articles VII.4/VII.5 CITES require registration of breeding operations as prerequisite for commercial exports of Appendix I captive bred specimens?

The Vienna Convention on the Law of Treaties provides guidance on the generally accepted rules of interpretation for public international law. Article 31 paragraph 1 provides that "a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose". (United Nations, 1969).

Two paragraphs in the Convention text, the fundamental legal basis for all Parties to CITES, address issues of captive breeding: Article VII paragraph 4 and Article VII paragraph 5.

5.7.1 Wording

Article VII paragraph 4 states that:

> Specimens of an animal species included in Appendix I bred in captivity for commercial purposes […] shall be deemed to be specimens of species included in Appendix II.

Article VII paragraph 5 states that:

> Where a Management Authority of the State of export is satisfied that any specimen of an animal species was bred in captivity […] a certificate by that Management Authority to that effect shall be accepted in lieu of any of the permits or certificates required under the provisions of Article III, IV or V.

The wording of neither paragraph mentions the term "registration" Therefore the wording does not provide an answer to the question whether a registration of a commercial breeding operation is required as a prerequisite for exports of Appendix I captive bred specimens. "The ordinary meaning forms only the starting point and requires supplementary criteria", but "it operates as a platform for all further interpretative efforts." (Herdegen, 2020, B 3. a).

5.7.2 Context

"The contextual approach (systematic interpretation) […] views a particular cause as an integral element of the agreement in question. This approach considers the connection of a clause with other parts of the agreement" (Herdegen, 2020, B 3. b).

Article VII contains exemptions and other special provisions relating to trade. For the paragraphs of Article VII other than paragraph 4 and 5, it is clear that they contain less strict rules that apply for particular situations provided certain conditions are met. They concern transit and transhipment (paragraph 1), pre-convention specimens (paragraph 2), personal or household effects (paragraph 3) and exchange of samples between scientists or scientific institutions (paragraph 6). The context therefore seems to suggest that paragraphs 4 and 5 should be interpreted in a way that provides for exemptions or other less stringent rules, not for the imposition of additional obligations.

However, this context argument does not rule out different interpretations. The heading of Article VII reads “exemptions and other special provisions relating to trade” The heading would be compatible with on the one hand exemptions and other provisions that lead to a facilitation of trade and a lowering of requirements, and on the other hand other special provisions relating to trade, that impose additional requirements and provide for a stricter treatment of trade.

Another context argument points in the other direction. Two exemptions in Article VII explicitly mention a registration procedure. The first one applies to scientists and scientific institutions and requires a registration by their Management Authority. The second one applies to travelling exhibitions. Applicants for this exemption must register full details of the specimens that are part of the travelling exhibition at the national level. In contrast, Article VII does not mention a mandatory registration procedure for commercial captive breeding operations.

As a preliminary conclusion, a context related interpretation is not conclusive, but there are more pointers against deducting a mandatory registration procedure from Article VII paragraphs 4 and 5.

5.7.3 Aim and purpose

On the basis of a natural reading of Article VII paragraph 4 and 5, that leaves subsequent practice aside, the aim and purpose of the provisions is to facilitate trade with captive bred animal species included in Appendix I.

Article VII paragraph 4 stipulates that captive bred specimens only have to meet the less strict requirements for species included in Appendix II. This means that for permits and certificates relating to imports, exports and re-exports it is not the requirements of Article III that apply, but those of Article IV. The “downgrade” applies to specimens that were bred in a commercial breeding operation. For example, Article III paragraph 3 c) provides that, the Management Authority of the State of import must be satisfied that the specimen is not to be used “for primarily commercial purposes”. This restriction does not apply to captive-bred specimens.

Article VII paragraph 5 seems to have the objective to provide less stringent rules for captive-bred specimens. In their case, it is sufficient to use a certificate of captive-breeding in lieu of permits or certificates required according to Articles III or IV or V.

5.7.4 Historical interpretation

According to Article 32 Vienna Convention on the Law of Treaties, "supplementary means of interpretation" can be employed, "to confirm the meaning resulting from the application of article 31", i.e. from the general rules of interpretation, or "when the interpretation according to article 31: (a) leaves the meaning ambiguous or obscure; or (b) leads to a result which is manifestly absurd or unreasonable". This includes in particular to take into account "the preparatory work of the treaty and the circumstances of its conclusion" (United Nations, 1969).

It seems that preparatory work relating to the negotiation of CITES has so for not been published. There is limited literature on the topic. According to Favre (1989, pp. 186-187), Article VII.4 was included in the Convention to avoid trade restrictions for an existing breeding industry for chinchillas, whose fur was traded globally. Breeding farms were located, *inter alia*, in Argentina. It seems breeding facilities were also located in the United States and in Canada. Favre (1989, p. 187) reports that:

> "[a]t the drafting stage of the final text of CITES, Argentina was concerned because the Parties wanted to place the wild chinchillas on Appendix I, yet they had a long established captive breeding operation which did not represent a threat to the wild populations. If the species were listed on Appendix I, the commercial breeding operation would have to be shut down as import permits would not be obtainable since it clearly was for a commercial purpose. […] To allow the commercial operation in Argentina to continue, and to allow the listing on Appendix I, Article VII(4) was drafted."

At the time, captive breeding of Appendix I species in general was very limited.

On this basis, the original intent of the provision was to facilitate trade. The historical context of the CITES negotiations does not provide an argument in favour of a mandatory registration system.

5.7.5 Resolution Conf. 12.10 as "subsequent practice" (Article 31(3) b) Vienna Convention on the Law of Treaties)?

Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002) carries the clear message that captive-bred specimens should only be exported for commercial purposes, if they originate from a captive-breeding facility that has been registered according to the Resolution. Has this

resolution modified the rules in Article VII paragraph 4 and 5 with the effect that the rules on registration have becoming legally binding?

In public international law, it is widely accepted that subsequent practice of the Parties can play an important role when interpreting international treaties. Article 31 paragraph 3 b) of the Vienna Convention on the Law of Treaties specifies that "any subsequent practice in the application of the treaty which establishes the agreement of the Parties regarding its interpretation;" shall be taken into account together with the context of the legal provision when interpreting an international agreement. Subsequent practice "becomes material if it expresses a common understanding of the treaty" in terms of establishing the agreement on its interpretation." It does not have to "be actively shared by all Parties". It is sufficient that "all Parties accept the practice with respect to the underlying understanding of the treaty." (Herdegen, 2020).

Res. Conf. 12.10 (Rev. CoP15) (CITES, 2010) has been adopted by the Conference of the Parties. It is fair to say that the Resolution reflects a common understanding of the Parties, that they "agre[e] that the exemption of Article VII, paragraph 4, should be implemented through the registration by the Secretariat of operations that breed specimens of Appendix-I species in captivity for commercial purposes." Yet, this is only an agreement that the Parties share the same intention. As is the case with other Resolutions, this provision of Res. Conf. 12.10 (Rev. CoP15), para. 2 (CITES, 2010) is not a common understanding of a legal obligation to this effect. In addition, the Resolution clarifies, that it is the CITES Management authority of each Party that has "the responsibility" to determine (on the advice of the Scientific Authority) "whether or not to apply the exemptions in Article VII, paragraph 4, for the export of specimens of Appendix-I animals bred in captivity for commercial purposes." Res. Conf. 12.10 (Rev. CoP15), para. 4 (CITES, 2010).

5.7.6 Conclusion

An interpretation of the Convention according to the recognized rules of interpretation (and including subsequent practice) has not provided a basis for the proposition that the Parties would be subject to a legal obligation to apply the registration procedure and to refrain from allowing exports of captive-bred specimens of Appendix-I species for commercial purposes unless they originate from facilities that have been registered according to the procedure laid down in Res. Conf. 12.10 (Rev. CoP15) (CITES, 2010).

5.8. Policy analysis – pros and cons of registration process

In an international framework, such as CITES, that is based on a legally binding Convention and legally non-binding Resolutions, policy considerations play an important role. Resolutions are an essential element in the CITES system and their role clearly exceeds the role that Resolutions play in other multilateral treaty systems where they would simply be regarded as an expression of a political will that is present at the time a Resolution is adopted. There is an expectation that Parties implement most, if not all Resolutions. In addition, the compliance mechanisms provide the CITES system with tools that are able to provide sufficient incentives for all Parties to comply with (most) Resolutions (most of the time) even though they are not legally binding. Therefore, in addition to the legal analysis, it is imperative to consider policy factors with regard to the issue as to whether registration of captive breeding facilities is the "one and only" road to commercial trade with captive bred specimens of Appendix I animal species.

First, this chapter focuses on the key question whether mandatory registration effectively reduces the risk that wild caught specimens are laundered as captive-bred specimens. Subsequently, the administrative burden for the main actors involved are outlined, *i.e.* the applicant (section 2), the CITES authorities of the breeding operation's host country (section 3), the Secretariat, the Animals Committee and the Standing Committee (section 4), and other CITES Parties (section 5). The administrative burden represents the registration system's cost block that has to be balanced against its possible advantages. Furthermore, the mandatory registration system is not assessed on a standalone basis but against the counterfactual of an assessment of captive breeding claims in the context of the procedure for the issuing of export permits for captive-bred specimens that originate from a non-registered facility.

5.8.1 Effective reduction of risk that requirements for captive breeding are not met or that wild specimens are laundered as captive-bred specimens

As set out in detail above in Section 5.6, in particular, two concerns about trade with captive-bred specimens are relevant in the context of the pertinent question of this thesis, whether registration should be a mandatory requirement: firstly, the risk that specimens illegally taken from the wild are laundered in operations breeding Appendix I species in captivity, and, secondly, the more general concern that specimens traded as captive-bred may not meet all the requirements of captive-bred specimens, for example because legality of the breeding stock cannot be demonstrated.

In the context of the policy discussion it is now important to analyse whether the current registration process as compared to the process of verifying the requirements for captive breeding in the context of individual permits is in a better position to address and reduce these risks.

5.8.1.1 Registration vs. individual permits – any added value of registration?

In substance, the assessment foreseen in the context of a procedure for issuing export permits is very similar to the assessment foreseen in the context of a registration procedure with regard to the main issue of the assessment, whether the requirements for captive-breeding are respected.

An important difference is that registration is an assessment that is conducted up-front and in view of a line of certificates of captive breeding (or, if this type of CITES documents is not implemented in the exporting country, expert permits) to be issued later, while the assessment applied in the context of an individual export permit is ad hoc, in a close timely proximity to the export.

This means that there may be less time pressure in a registration procedure. As a consequence, the longer time frame can help in practice to ensure a thorough assessment. However, in principle, if the requirements for captive-breeding have not been shown to be met, the CITES Management Authority should be equally firm and robust in its approach, even if this means that the breeders' or traders' original plans for exports cannot be implemented on schedule or not at all.

Another difference that counts as a positive effect of the registration system is that it includes a monitoring obligation for the host country and also encompasses inspections. If this obligation is implemented continuously and robustly, it can also make a contribution to ensuring that captive breeding facilities do not have an illegal intake of animals from the wild for their breeding stock. If operations are located in range states, this may be a significant risk factor. The positive delta is reduced to some extent by the fact that a number of Parties also conduct inspections and monitor breeders based on other provisions of their stricter domestic law. For example, in Germany there is a broad obligation to notify the current stock of all Appendix I animals (and beyond) held by commercial and private keepers to the local authority in charge of the protection of endangered species. This also applies to additions (by acquisition, new offspring etc.) and reductions (*e.g.* death, sale, loss, etc.).

A further difference concerns the scope of the substantive assessment. In the context of a registration procedure, two additional elements are covered. Firstly, the operation must make a continuing and meaningful contribution to the conservation needs of the species concerned. Secondly, it must be ensured that an appropriate and secure marking system is present. As pointed out above (5.1.3.3.), with regard to marking there is no significant difference in practice, because marking is also an issue with respect to the specimens concerned in the context of an export permit.

In respect of the requirements for captive breeding the following needs to be taken into account: whether an authority is able to detect laundered specimens or deficits with regard to the requirements of captive-breeding, for example, in relation to the legality of the breeding-stock, and whether an authority may be able to withstand pressure from breeders depends on many factors. In particular, two factors are relevant: the expertise and know-how of the Scientific Authority and the Management Authority, and the resources available to deal with the case load to assess complex cases with sufficient depth, and to uphold decisions in court. Depending on the legal, organisational, economic, and political context of exports of captive bred specimens and the issuing of CITES permits by the particular Party, the degree of independence of the CITES Management Authority in its decision-making in individual cases and the ability of breeders to influence the process might also play a role.

Some of these factors also depend on the quality of governance in the respective country, as well as the effectiveness and efficiency of its institutions. For example, the following factors play a role: importance of the rule of law, constitutional constraints, the set-up and organisation of administrative institutions, accountability, internal checks, transparency, importance of stakeholders of civil society, access of state institutions to well-trained staff, ability to retain staff, as well as access to training and capacity building.

Some factors may be specific to the particular species or the particular breeder. Other factors may depend on the economic relevance of breeding operations for the country's economy as a whole or for the economy in a regional or local community, depending on the importance attached to it by decision-makers.

It is clear that most of these factors do not play a direct role in the substantive criteria to be applied by the CITES authorities. However, in some instances they might have an impact on the outcome of a particular case.

A determination of the risk level of individual countries depends on the particular situation in each country and clearly goes beyond the objective and scope of this research project. However, one can use country specific corruption risk as an example to illustrate the framework in which the levels of risk levels can be assessed.

Vulnerability to corruption is an issue on which it is not possible to have precise and reliable data, but international indicators are available. Whether corruption risk plays a role when the assessment of captive breeding operations in the framework of the registration procedure or in the framework of an individual assessments in the context of an export permit are compared, is addressed below (5.8.1.2, 5.8.1.3., and 5.8.1.4.)

The vulnerability of countries' public sector for corruption is tracked internationally, for example by the Corruption Perception Index (CPI) (Transparency International, 2022), which is produced annually by the Non-Governmental Organization (NGO) Transparency International (the NGO has done so since 1995). Transparency International claims that CPI is the "the most widely used global corruption ranking in the world" (Transparency International, 2021), and this is probably true (most widely cited source for extent of corruption according to Homes, 2017). The index is based on 12 surveys (such as World Bank Country Policy and Institutional Assessment 2021, Bertelsmann Stiftung Sustainable Governance Indicators 2022) provided by other institutions which were published in the two years preceding the annual CPI. The coverage may vary from year to year. The surveys are based on perceptions of experts and business executives. 0 is the lowest possible score with the most perception of corruption and 100 is the highest possible score with no perception of corruption. It is clear that the index cannot measure the actual level of corruption, because it is based only on perceptions, but it still provides useful indications and is probably the best available instrument at this point of time.

The Global Corruption Barometer (GCB) is another Index by Transparency International. It is based on a survey by the NGO itself, with a standardized questionnaire, targeted at perceptions of a country's population on corruption. The coverage is lower than CPI's coverage, "only" approximately 100 countries, which still is a very significant number. It has been produced since 2003. It is published less frequently than the CPI, in subsequent regional, and even less frequent global editions. For example, the last global edition was published six years ago, in 2017 is based on approximately 160.000 interviews from 119

countries during the period from March 2014 to January 2017 (Transparency International, 2017).

For other factors, data is not as easily available, some are very specific and not tracked in other contexts, *e.g.* influence of particular breeders depends on country and may also vary depending on the species. Possibly a local expert of the field would be able to provide information on this aspect, but the information is not readily available, least outside the relevant country.

To sum up, most of these factors may have an impact on decision-making by the CITES Authorities, but this applies no matter whether the decisions are taken in the framework of a permit procedure or in a registration procedure. Therefore, if one took an isolated view of the assessment of exports at national level, one could get the impression that there is no relevant difference in the risk level.

However, despite the fact that national CITES Authorities play an important role not only with regard to permits but also with regard to the registration procedure, it has to be recognized that ultimately, decisions in registration procedures are taken at the international level, by the Standing Committee, if at least one Party raises an objection that cannot be resolved.

This point will be discussed in the next section and once this element is taken into consideration, it will be possible to draw a conclusion on the question whether the registration procedure provides added-value.

5.8.1.2 Impact of international decision-making process

The involvement of the CITES Secretariat and other Parties in the registration process increases the pool of know-how available to detect flaws in data and narrative of breeders and to avoid that risk factors are overlooked or down-played. This means that registration procedures can help to prevent false negatives (Type I Error), *i.e.* a finding that there are no grounds to reject the registration, because the requirements of captive breeding are fulfilled in a case, in which they are not. With regard to false positives (Type II Error), *i.e.* the registration is rejected, but in reality the requirements are met, the international level is not a corrective element, because national CITES authorities do not submit such applications to the Secretariat and the procedure stops at the national level.

In a national context, in which breeders might be in a position to exert undue influence, the registration procedure might also facilitate to counter this influence in light of the international scrutiny.

Whether this involvement is necessary or at least provides some added value depends on the quality of procedures applied in the host country of the breeding operation and on many factors regarding good governance and sufficient resources that have been discussed with a bit more detail above (see 5.8.1.1.). It should be noted that the question of resources is not just a factor of a country's GDP or its available public budget. It also depends on the importance attached to issues of biodiversity in general and protection of species in the country and on the priorities applied when available resources are allocated within a country and within the state administration. It is probably fair to expect that there will be cases with a delta, where international scrutiny can provide added value.

5.8.1.3 Possible reactions by importing counties

Importing countries also have an important role to play when it comes to preventing trade in laundered wild caught specimens that are declared as captive-bred or to use their influence when it is not clear whether specimens meet all the requirements to be qualified as captive-bred. This role is particularly effective, if the domestic regime for CITES imports provides for import permits, as a stricter domestic measure, in the case of captive-bred Appendix I specimens which are treated as Appendix II specimens. Importing countries can exercise these powers in the context of planned imports and they do not have to rely on the host country applying the registration procedure to exert their influence and make sure their concerns are addressed.

If risk factors apply, CITES Management Authorities can ask for additional information regarding breeding operations to make sure that captive-breeding claims are well based. If significant doubts regain, they can reject the import of captive bred specimens, in particular, if they come from operations that are not registered. Res. Conf. 12.10 (Rev. CoP15) provides that Parties should do so: "Parties shall restrict imports for primarily commercial purposes, as defined in Resolution Conf. 5.10 [(Rev. CoP19) (CITES, 1985)], of captive-bred specimens of Appendix-I species to those produced by operations included in the Secretariat's Register and shall reject any document granted under Article VII, paragraph 4, if the specimens concerned do not originate from such an operation …" (Res. Conf. 12.10 (Rev. CoP15) point 8.).

Relying on the Resolution, some CITES MAs take this approach and reject the import of captive-bred specimens that do not originate from registered breeding facilities (for example Norway). This can have significant effects. If significant target markets are closed and domestic markets do not generate sufficient demand or domestic market prices are not attractive, there is a strong incentive for commercial breeders with a certain scale to register their operation.

It is more complex to assert this pressure, if the CITES framework in the receiving country provides that an export permit suffices. In these cases, Management Authorities can still rely on national rules to control domestic trade and assess the legality of specimens in trade. If buyers cannot trade, this will also have an impact on demand for future imports.

If the host country implements the registration procedure, importing countries can also use the position of a Party to make sure their concerns are addressed in the context of the registration procedure.

Therefore, comparing the registration procedure (with a subsequent permit procedure) to a situation where only the permit procedure is used and the registration procedure is not implemented in the legal and institutional framework of a Party, applying the registration procedure is not necessary to provide the importing Party a platform to provide its know-how and experience and thereby contribute to preventing laundering of specimens taken from the wild by captive breeding facilities. However, for the importing country the registration procedure facilitates the process, because all Parties are potentially involved in the verification process. This can be helpful if know-how and/or resources are missing in the third country and they might therefore not be in a position to ensure that a reliable assessment of the risk factors can be applied to a particular import of captive-bred specimens.

5.8.1.4 Conclusion on impact

In order to conclude, it is important to keep in mind that the impact of applying the current registration system has to be assessed against the counterfactual, which is the individual appraisal of captive-breeding claims in (export) permit procedures. Provided the assessment of the captive breeding claims in the context of permit procedures were always and in all CITES Parties exporting captive-bred specimens thorough and diligent, based on a robust risk assessment and sufficient resources, and applied in the absence of other

hindering factors regarding good governance, the current registration procedure would not significantly improve the outcome of this core element of the assessment. However, it needs to be acknowledged that this is probably not always the case. In some individual cases there may even be a significant delta. Therefore, it is likely that the additional scrutiny adds an additional level of quality control to the assessment, at least in some cases.

In addition, the registration process, requiring continuing and significant benefit to conservation attaches to the assessment another demanding element. It might be appropriate to factor in that this element is not as firmly connected to the requirements set out in the Convention as the requirements to qualify as captive-bred.

5.8.2 Administrative burden and other costs for applicants

From the perspective of applicants, an important question is whether the registration process for captive breeding operations adds to or alleviates the administrative burden for the commercial use of captive-bred specimens, compared to the administrative burden linked to requesting permits for individual transactions coming from a non-registered facility.

5.8.2.1 Substantive test

5.8.2.1.1. Definition of captive breeding

Comparing the registration process and the procedure to issue export permits the substantive test is identical with regards to the requirements for captive-bred specimens produced by the captive breeding operation. In both instances the requirements of Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022) have to be met. In the case of export permits, it is apparent that the Resolution applies in the case of exports of captive-bred specimens. In the case of the registration procedure, Res. Conf. 12.10 (Rev. CoP15) (CITES, 2010) (para. 5. a)) refers explicitly to Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022) as a requirement for registration (for more details see above 5.1.1.3.2.).

5.8.2.1.2. Contribution to conservation

There are differences with regard to the requirement which applies in the context of the registration procedure to ensure that the captive breeding operation "will make a continuing meaningful contribution according to the conservation needs of the species concerned" (Res. Conf. 12.10 (Rev. CoP15), para. 1 j) (CITES, 2002)). This is part of the

registration process (see above 5.1.1.3.4.), but not of the procedure to obtain an export permit.

5.8.2.1.3. Marking

With regard to marking, in principle, there is no significant difference between the registration procedure and the procedure to issue export permits. Res. Conf. 10.16 (Rev. CoP19) recommends that "trade in a specimen bred in captivity be permitted only if it is marked in accordance with the provisions on marking in the Resolutions adopted by the Conference of the Parties and if the type and number of the mark are indicated on the document authorizing the trade". This applies to elephant tusks (of any size) and cut pieces with a certain size and weight (both 20 cm or more in length and one kilogram or more in weight) (Res. Conf. 10.10 (Rev. CoP18)), crocodilian skins (Conf. 11.12 (Rev. CoP15), caviar (from sturgeons or paddlefish) (universal labelling system pursuant to Conf. 12.7 (Rev. CoP17). This provision also applies to the recommendation in Res. Conf. 12.10 (Rev. CoP15) (para. 5 f) (CITES, 2010)) to establish a marking system for captive-bred specimens. As was outlined above (see 5.1.1.3.3.), even though this provision is not phrased as a condition, it still has an impact on registration procedures.

At the same time, quite a few Parties, such as all EU Member States, have established a marking obligation for captive-bred specimens of Appendix I specimens. In the EU, for instance, there is an obligation to mark captive born and bred birds as well as all living vertebrates (including captive-bred) according to Article 66 Regulation (EC) 865/2006 (EU, 2006). In the EU, export permits for Appendix I species are only issued, if the applicant has provided evidence that the marking requirement have been complied with. (Article 65 paragraph 4 Regulation (EC) 865/2006 (EU, 2006)).

5.8.2.2 Required information

When it comes to the information required the differences are limited. In both instances, all the information needed to make a finding with regard to captive breeding needs to be available to the decision makers. The information that is normally needed is set out in Annex 1 and 3 to Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002). The information includes, in particular, species bred, parental breeding stock (numbers, identification, sex, age), and proof of its legal acquisition. It also encompasses data on mortality rate, reproduction (breeding of at least two generations or husbandry methods capable of reliably producing second generation) and annual production. Furthermore, an

assessment of the anticipated need for additional specimens to augment the breeding stock is required, including their expected source. The required information also includes an indication of the types of products that will be exported as well as the marking methods employed, for breeding stock, offspring and products to be exported. Equally, information regarding the facilities that house the captive stock and offspring are required, as well as a description how it is ensured that animals are treated in a humane (non-cruel) manner. It is also foreseen that information is provided how the breeding operation contributes to the conservation of wild populations of the species. Finally, a description of the inspection and monitoring procedures applied by the CITES Management Authority. (For a full description see above 5.1.1.1.).

In the context of a procedure to issue export permits, most of the information set out for the registration procedure is also required. There are some elements however that are necessary in the context of the international registration procedure because they are not available to the other CITES Parties which decide whether or not to oppose the registration. However, in the context of a permit application, they are not. This applies in particular to information regarding inspection and monitoring procedures. The relevant CITES Management Authorities are aware of the procedures they apply. In addition, the permit procedure leaves more flexibility to the CITES Management Authority which information to request in a particular case, depending on its own familiarity with the operation from prior permit procedures and inspections, and depending on a risk assessment which takes into account, for example, how difficult it is to breed the species in question.

5.8.2.3 Design of procedures

The differences are significant regard the procedural steps. In the context of an application for an export permit, the requirements for specimens to be qualified as captive-bred are assessed by the CITES Management Authorities (with the advice by CITES Scientific Authority) of only one CITES Party, the exporting state. In most cases, the duration of the assessment procedure is moderate. For example, in EU Member states it is limited to one month (Art. 8 Abs. 3 Regulation (EU) 865/2006) (EU, 2006) provided that the application is complete and all required information is available. In many instances, the assessment is completed in an even shorter period, for example in many cases handled by the EU Member State Germany.

The registration procedure has quite a different design and stretches over a much longer timetable. It starts with an application to the CITES Management Authority in the country, where the breeding operation is located. As explained above (see 5.1.1.2.), the registration has to be submitted to the CITES Secretariat, is notified to all CITES Parties and can be opposed by any CITES Party within a time period of 90 days ("objection"), resulting in a review by the Animals Committee (within a further 60 days), and if the issue is not resolved between the objecting Party and the applicant's Party (and the applicant) within another 30 days, the matter is discussed at and decided by the Standing Committee in its next regular meeting.

The procedure can be described as international and multiparty. It is more complex and can take considerably longer. The Standing Committee meets once a year (and just before and just after a CITES Conferences of the Parties, but does not deal with registration issues at the meeting after the CoP). This means that, if a Party raises an objection to a registration, this can lead to significant delay. Objections occur regularly, which makes them significant, but in absolute numbers not in so many cases. In addition, it is possible that the matter cannot be fully addressed and decided at one meeting of the Standing Committee, but needs follow up, for example after the provision of further information that cannot be given on the spot or after the CITES Secretariat has conducted a fact-finding mission at the facility in question, if the Standing Committee asks it to do so.

Another aspect of the international registration procedure can also be regarded as an additional "cost factor", or more precisely, denied access to justice. Ultimately, the decision whether to accept a registration is taken by the Standing Committee. The Standing Committee is not a Court and the applicant does not have access to a Court to challenge decisions of the Standing Committee, because CITES does not establish its own proper court. Only States can challenge acts by states, or acts by an international organization through which states are acting (notwithstanding whether CITES is a subject of public international law itself). The applicant cannot challenge the rejection of a registration by the Standing Committee.

This has the effect that it cannot be guaranteed that the decision by the Standing Committee is only based on the requirements for registration that are explicitly set out in Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002) and Res. Conf. 10.16 (Rev. CoP19) (CITES, 2022). The applicant may also have a different view as to whether sufficient

information has been submitted to show that the requirements are met, or may have a different view on the correct interpretation of a particular requirement. As a consequence, the outcome of the procedure may in some cases be less predictable than in others. It also should be noted that, if the applicant's expectations are not met, a legal challenge of the Standing Committee's decision by the applicant is simply not foreseen in the CITES framework.

(An action by a Party against the decision of the Standing Committee, as an action of CITES or UNEP or ultimately the United Nations, or the Parties acting through the Standing Committee, before the International Court of Justice may be a theoretical possibility, but does not seem to be a feasible way to solve the applicant's issue within a reasonable time and with proportionate cost. The International Court of Justice would not be the right place to adjudicate on an administrative matter regarding rejection of registration, notwithstanding whether it has jurisdiction).

Currently, a rejected application for a registration, *de jure*, would not automatically hinder the issuing of an export permit. However, in practice, it seems that obtaining export permits would not be easy (unless the rejection of the registration was without reasonable ground, on which the national CITES authority could rely on when rejecting an export permit). In national systems normally access to justice is possible, also against rejections of export permits. Still, if fully implemented, a mandatory registration system would not leave room for issuing export permits.

It also needs to be taken into account that the registration procedure, when it is applied, does not replace the procedure to issue an export permit (or a procedure to issue a captive breeding certificate). Therefore, after successfully completing international registration, the procedure to issue an export permit (or a captive breeding certificate) still has to be completed. Therefore, in general a registration procedure for captive breeding operations is linked to an additional administrative burden.

However, completing a registration procedure can reduce the complexity, duration, and administrative burden of subsequent procedures to issue export permits (or captive breeding certificates). Registration can operate as an upfront effort to obtain the approval for the captive breeding facility. It may be sufficient to draw on the results of the prior assessment during subsequent procedures for export permits and consequently reduce the amount of information required and the scope of the assessment significantly. This can

be an advantage, if subsequently to a registration, a significant number of applications for export permits will be submitted. In particular, for a very large operation, and if the process goes smoothly, the registration may even facilitate the process and also work like a quality label with respect to third Parties (*e.g.* for issuing of import permits, if required in the importing country). Still, for smaller operations, and, in particular, for only occasional or one-off exports, the administrative burden of a registration procedure in addition to a procedure to issue an export permit will be more burdensome than one – but more elaborate – procedure to issue an export permit.

Therefore, the impact of a mandatory registration procedure on commercial or largescale breeders vs. hobby breeders can be very different. For large-scale breeders an upfront registration procedure can be beneficial, if it is clear that a higher number of applications for permits will follow, because the subsequent permit procedures would benefit from the completion of the registration.

The situation for hobby breeders is quite different. When they start the operation of a breeding facility it may be unclear whether they will have any exports later on (or any internal sales). If they export at all, it may be a singular event. Therefore, the additional burden of a registration procedure may not provide any benefits in the future. It may be interesting to note that, the when the first Resolution that created the Register (Res. Conf. 4.15) (CITES, 1983) was implemented, hobby breeders were not included in the registration process because they breeding operations were not regarded as commercial.

5.8.3 Administrative burden for CITES authorities in host country of breeding operation

The administrative burden for CITES authorities raises similar issues as the administrative burden for applicants, but there are also differences which are based on the different roles of applicants and CITES authorities.

5.8.3.1 Substantive test

As outlined above (see 5.8.2.1.1.), the substantive test is identical in the context of registration as well as in the context of the assessment of an application for export as far as the main requirement is concerned, that the specimens produced by the captive breeding operation fulfil the definition of captive-bred. See also above (5.8.2.1.2. and 5.8.2.1.3.) for the differences regarding contribution to conservation and the similarity of rules with regard to marking.

5.8.3.2 Required information

As outlined above, most of the information set out for the registration procedure will also be requested by the CITES Management Authority in the context of a procedure to issue export permits, but it has more flexibility to fine tune its requests for information. Depending on prior information from earlier applications by the same or other applicants in relation to captive bred specimens of the same or similar species, the Management Authority can adapt the amount of information it requires when it assesses an application for an export permit (on the basis of advice from the CITES Scientific Authority).

In contrast, the Management Authority has to provide all the information set out in Res. Conf. 12.10 (Rev. CoP15) Annex 1 (CITES, 2002) to the CITES Secretariat in the context of a registration procedure. As a rule, the information has to be provided by the applicant. But in practice, the Management Authority (assisted by the Scientific Authority) will have to assume a role to make sure that the information is complete, consistent and above the mark to meet the requirements for a finding of captive-breeding. The same applies to a language version of the application in an official language of CITES. In principle, it falls within the responsibility of the breeder to provide a language version that is sufficiently accurate and understandable. In practice, it may not always be easy for a Management Authority to avoid to invest a substantial amount of time to support the applicant or to complement the applicant's efforts beyond what is necessary to complete its own assessment of the captive breeding operation.

5.8.3.3 Design of procedures

The design of the registration procedure has an important impact on the role of the CITES Management Authority with jurisdiction over the location where the breeding operation is located. In Res. Conf. 12.10 (Rev. CoP15) paragraph 5 b) (CITES, 2002) the Parties resolve that

> "the first and major responsibility for approving captive-breeding operations under Article VII, paragraph 4, shall rest with the Management Authority of each Party, in consultation with the Scientific Authority of that Party"

During the assessment of the application for a registration the CITES Management Authority is primarily an institution in charge of reviewing whether the requirements for registration are met, in particular whether the operation meets the definition of captive-

breeding. The work during this phase is similar to the work required in a procedure to review applications for export permits.

However, even during this phase the Management Authority must be aware that the application for registration will be subject to scrutiny by the CITES Secretariat and the other Parties during the next steps of the procedure. In this phase, the Management Authority is still a decision maker, but it can only take the preliminary decision whether to submit the application for registration to the CITES Secretariat.

Then, after the submission of the application to the CITES Secretariat, the role of the CITES Management Authority evolves to merely the role of an institution that proposes the registration of the breeding facility, which is located within its territory. At this point, the pivotal role of decision-maker shifts to the Animals Committee, the Standing Committee and all the CITES Parties. The Secretariat plays an important role as facilitator and moderator. In this phase, the CITES Management Authority of the host state is identified with the application and finds itself in a position where the other players expect it to be able to explain and defend the application. This role commences, when the Secretariat may have questions regarding the application or may request additional information. In principle, such requests may just be transferred on to the applicant, but in practice the Management Authority will at least have to explain to the applicant what is required and possibly also why this might be required. If a registration is opposed by one or more other Parties, the role of defender or advocate for an application may encompass to reach out to critics to understand their concerns and to attempt to explain why the application does not in fact raise any issues or to discuss how any issues can be accommodated. If opposing Parties can not be convinced to withdraw their opposition, and if the issue is therefore discussed at the level of the Animals Committee and the Standing Committee, this requires a considerable amount of involvement and preparation by the Scientific Authority and Management Authority.

Comparing the administrative burden of the international registration procedure with the national procedure for the issuing of export permits, it is obvious that the administrative burden for the CITES Authorities is heavier. If other Parties oppose the registration, the administrative burden can increase to a very heavy workload.

There is also an alleviating effect of a prior registration on the workload connected to subsequent applications for permits. As outlined above, registration can operate as an

upfront effort to obtain the approval for the captive breeding facility. During subsequent procedures for export permits it may be sufficient to draw on the results of the prior assessment and consequently reduce the amount of information required and the scope of the assessment significantly.

However, with regard to registration procedures that are affected by opposition from other Parties that can later be overcome, this effect is minimal. In addition, more efforts during the registration procedure only pay out, if there are applications for export permits later on. In many cases of smaller breeders it is not obvious that this will occur. Exports may be rare or never happen at all. In addition, the first permit procedure with regard to a breeding operation will also generate data, facts, and experience that the host country's CITES Authorities can rely on later when subsequently additional applications for permits are submitted.

5.8.4 Administrative burden for CITES Secretariat and Committees

Another factor to be considered is the administrative burden for the CITES Secretariat, the Animals Committee, and the Standing Committee.

5.8.4.1 CITES Secretariat

Before the Secretariat transmits an application for registration of a captive breeding operation to all Parties, it checks whether the application is complete, *i.e.* contains all the required information. The Secretariat does not provide an assessment whether the requirements for registration are fulfilled. In its transmission note, the Secretariat regularly informs the Parties that:

> "The Secretariat's capacity to review registration applications is limited. In order to facilitate a timely review, Parties are requested to ensure that the applications they submit are complete and accurate. The Secretariat's role is primarily to verify that the required information has been provided" (see e.g. Notification 2022/058, 25 July 2023, Registration of operations that breed Appendix-I animal species in captivity for commercial purposes (South Africa, *Psittacus erithacus*, Lowveld Parrot Breaders (Pty) Ltd and Klein Nagaap (Pty) Ltd)) (CITES, 2002).

The Secretariat accompanies the subsequent procedural steps, in particular, it publishes the Notification regarding the application, refers the documentation to the Animals Committee, if a Party objects, forwards the comments of the Animals Committee to the Parties concerned, submits the application to the Standing Committee. In problematic

cases, the Secretariat may also conduct a fact finding mission, which requires the use of a significant amount of resources.

In general, complex cases can mean a heavy workload. A significant amount of simpler cases can also add up to a significant workload.

5.8.4.2 Animals Committee and Standing Committee

If Parties object and applications for registration have to be assessed by the Animals Committee, and, as the case may be, ultimately by the Standing Committee, this can add up to a considerable workload for the Committees. Given that their agendas are already packed with many items, their capacities are already stretched. Currently, only a minority of Parties makes use of the registration procedure. Should this change, and should usage increase (also in countries that have already used the registration procedure), this could pose capacity problems for the Committees.

5.8.5 Role of other CITES Parties in the registration process

Other Parties can also play a significant role in the registration process. Once the Secretariat has published a Notification, all Parties can review the core information provided about an application. If a Party would like to obtain more information, it can request to obtain a copy of the application.

On this basis, Parties are in a position to review the full application and make their own assessment, if they would like to do so, provided they have sufficient resources and choose to do so. This broadens the scrutiny of applications in addition to the review which takes place in the host country. If a Party raises an objection, this triggers further steps in the review process. In this case, Parties are required to provide information on the grounds that the objection is based on, as well as supporting evidence. The Resolution describes the requirements as follows: "objections may be made, […] and if they are fully documented and include the supporting evidence that has given rise to concerns" (Res. Conf. 12.10 (Rev. CoP15) Annex 2, point 2 (CITES, 2002)). Objections can be raised as to whether the breeding operation meets all the criteria for captive breeding, e.g. the legality of the breeding stock or the ability of the operation to generate offspring of at least the F2 generation.

If a Party has raised objections that can provide it with a strong position in the context of the further procedural steps. There are different steps in the procedure where the objection can be withdrawn or the concerns addressed if there is agreement between the Parties that

have concerns and the Party which is the host country for the captive breeding operation, in practice that involves also the applicant.

The point in time once the Animals Committee has provided its comments on the objection marks an important milestone in this context. At this point, the Secretariat forwards the comments to the Parties and "allows further 30 days for resolution of the identified problem(s)" (Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002) Annex 2 point 3 (CITES, 2010)). Subsequently, if the issues cannot be resolved, the Standing Committee deals with the issue.

Again, in the context of the Standing Committee's meeting, the Party that has raised the objection also plays a pivotal role.

In this context it also worth noting, that the stricter domestic measures applied by the EU for imports, which in the EU system always require import permits, also provides it with a somewhat similar role. Time and know-how of CITES authorities in the EU is invested in this task. At the same time, the additional scrutiny that is connected to this procedure is not always welcomed by exporting countries. Scrutiny from an international body, such as the Standing Committee, might be easier to accept. In the end, it is a Party that needs to come forward and invest the time and, if necessary, raise an objection.

5.8.6 Uncertainty as regards other grounds for rejecting a registration

It is not fully clear, on which concerns an objection may be based. There is no doubt that objections can be raised as to whether the breeding operation meets all the criteria for captive breeding. However, Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002) is not very precise on the issue whether or to what extent other concerns can also provide sufficient grounds to raise an objection. The Resolution provides that "[o]bjections can be made if they are directly related to the application or species under consideration."(Res. Conf. 12.10 (Rev. CoP15) Annex 2, point 2)

In practice, objections have been raised also on the ground that specimens of the species concerned have never been exported in accordance with range states' domestic law. It may be possible to bring this within the scope of point 2 "directly related to … species under consideration" (Res. Conf. 12.10 (Rev. CoP15), Annex 2, point 2). It needs to be recognized however that this is not a requirement under CITES. In the context of the Convention, legality means that specimens of the breeding stock (or their parents, grand-parents or earlier generations) had been imported with the required CITES documents

(for example from non-range-state third countries) or from range states before CITES came into force (pre-convention).

Some range states are not happy that their biological resources are used by other countries in the context of captive breeding for commercial purposes without sharing the benefits obtained with range states. This may be a valid concern, but CITES does not recognize this concern as a reason that requires Parties to restrict trade and there are no mechanisms in CITES to address issues of access and benefit sharing, such as are recognized for genetic resources in the context of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (United Nations, 2010), which implements access and benefit sharing obligations contained in the Convention on Biological Diversity (CBD).

Another issue that has been used as a ground for objections concerns doubts regarding the trustworthiness of a person who is in charge of managing a captive breeding facility or who owns it (see above 5.4.4.). A criminal record, in particular, if it relates to wildlife crime, is not a good basis for a breeding operation. However, neither Res. Conf. 12.10 (Rev. CoP15) nor Res. Conf. 10.16 (Rev. CoP19) define a level of trustworthiness, e.g. no criminal record or successful background check, as a requirement for registering a captive breeding operation or as a requirement for specimens that have been bred in captivity. In addition, there are no global standards how long a conviction should be kept in a register and may provide a basis for particular restrictions. It might also be difficult to reach consensus as to which crimes or which level of sanctions should trigger such restrictions. If, in addition to wildlife crimes, other crimes (or misdemeanours) should be regarded as sufficient, it appears difficult to establish common rules as to which crimes would be sufficiently related to justify the rejection of an application.

A rule whether and under which circumstances a criminal record has an impact on the registration procedure would be helpful. Currently, this element of the registration procedure could lead to some uncertainty, which can be regarded as a cost factor of the registration procedure. It is understandable that some people see a need to integrate this factor into the registration system, but it needs to be addressed explicitly and it is definitely not easy to find consensus on the details.

The unclear role that the origin of biological resources (and access and benefit sharing considerations) plays in the context of the substantial criteria whether or not to register a

captive breeding facility is also a problem. It would be difficult to include this concern into the explicit framework of the CITES registration procedure for captive breeding operations. It seems that the Convention (CITES) does not provide a legal basis to include this valid concern into the CITES framework.

The CBD might be a better place to address this issue. In cases that raise these concerns, the scope for uncertainty - as to whether an application that is otherwise in line with the requirements will be accepted – is currently high. This can be regarded as another draw-back of the current registration procedure, which is not shares by the individual permit procedure.

5.8.7 Balancing of pros and cons

The compass for the balancing of pros and cons linked to a mandatory registration system is whether this tool creates added-value with regard to a better protection of endangered species against extinction caused by trade related threats. The impact of a mandatory registration system in its current form was compared to the effects of an assessment in the context of the permit procedures (see preceding sections 5.8.1. to 5.8.6.).

The findings on the positive effects were significant with regards to quality control and extension of resources. Also, the registration system requires a system of monitoring and inspections which can help to ensure that captive breeding operations meet the requirements and comply with CITES rules. In addition, as another positive effect in the context of the registration system, the applicant also has to show a benefit for conservation created by the captive-breeding operation, even if that is an element that goes beyond the more general approach of the Convention, according to which it normally suffices to show that trade does not have a detrimental effect on the conservation of species.

On the other hand, it needs to be taken into account that the registration system comes with important costs with regard to administrative burdens for all the actors involved (see above 5.8.2. to 5.8.5.). An important element is also the possible delays that can be imposed on captive breeding operations by the international system and that can become very significant and burdensome, if one party objects and triggers additional steps of the procedure that can extend over more than year, in complicated cases even over several years (see above for some examples with different time lines 5.4.). Possibly, even worse than the delay, is the unpredictability of the duration and the outcome of the process (see also 5.8.6).

In addition, the analysis of existing registrations and a comparison with commercial exports of captive-bred specimens from non-registered captive breeding operations has also shown that the registration procedure seems to impose significant burdens that function as a disincentive. The vast majority of Parties have not registered any facilities. In fact, currently, only 35 Parties, that is 19 percent of all Parties to CITES, have registered at least one captive breeding operation (see above 5.2.2.). As indicated in Annex A. (Table no. A.1), there are many Parties with at least one export with codes C/T in 2017-2021 that also have registered at least on breeding operation (30 Parties, meaning 16 % of all CITES Parties and almost 40 % of all Parties with commercial exports of captive-bred specimens from non-registered facilities). Almost all parties which host a captive-breeding facility also had commercial exports of captive-bred specimens from non-registered facilities in the five-year period 2017-2021 (source code C and purpose code T). This applies to 32 out of 35 Parties with a registered facility in their country (see above Table no. 5.3). This means that even Parties that have experience with the registration procedure do not seem to register all the captive-breeding facilities that may have exports. This confirms that the registration procedure is not very attractive and may pose some problems.

On balance, based on the current design of the registration system, benefits do not seem to outweigh the disadvantages and costs imposed by registration. As a policy advise it seems to be warranted to reform the registration system and/or to reflect whether it is useful to expect all Parties to implement it. These follow-on issues will be shortly sketched out in the next section. A full analysis is not possible in the current context of this research paper. But these might be starting points for issues that deserve further reflection and research.

6. CONCLUSIONS

The assessment has shown, that CITES does not contain a legal obligation for Parties to implement a registration system for captive-breeding facilities. However, the CITES system relies heavily on Resolutions to develop and apply the framework, given that changes to the Convention are extremely rare and very difficult. Therefore, it needs to be taken into account that the compliance system goes beyond the black letter of the Convention and triggers factual pressures which can translate into very effective trade measures with significant economic effects.

With regard to the policy analysis, the investigation has shown that the registration system provides value added as to reducing the risk level regarding compliance with the captive-breeding definition, including avoiding laundering of specimens taken from the wild, in particular, in cases where a closer international scrutiny improves compliance.

On the other hand, the administrative burden imposed on applicants, Scientific and Management Authority of the host country, third Parties, Animals Committee, Standing Committee and Secretariat is very significant. In addition, costs that need to be incurred by the applicant, in particular for translations and possibly also for travelling expenses, are also considerable. In addition, the long time period required for a registration procedure that is not approved in the normal silence procedure, *i.e.* if no other Party objects, is probably the biggest obstacle for commercial trade with captive-bred specimens. Delay will often mean considerable deferral or loss of income from exports at a time when investment and operating costs already have to be covered. Collateral costs, should also be factored in. In particular, the amount of preparation and meeting time used up by the assessment of captive breeding operations at the level of the Animals Committee and the Standing Committee is significant in particular because the agendas are crowded with many more strategic issues that might have a stronger impact on the functioning and development of the CITES system.

As a final conclusion, balancing positive and negative effects of applying the current registration system a lot of caution is suggested regarding strengthening the de facto nature of the current system (and even more so with regard to the current proposals to extend its scope even further, and this also seems to be the reason why the Conference of the Parties delegated the proposals to AC, PC and SC for further reflection and assessment during the intersessional period following CoP19). In the author’s opinion, there is

probably more that counts against a mandatory registration system, at least in its current form.

A brief sketch of follow-up recommendations that go beyond the two core questions of this research project are added in the section on recommendations. They focus on options to improve the registration system and offer some addition thought for further investigation and research.

7. RECOMMENDATIONS

As follow-on suggestions based on the results of the current research project, and stretching beyond its core questions, four options for reform of the registration system are identified that may merit further thought. In addition, a number of ideas on other related topics are shared, which in the authors opinion might be worthy to be further investigated and researched.

7.1. Alternative options in lieu of a general mandatory registration system

As an alternative to a mandatory international registration system the following four options are proposed for further reflection.

7.1.1. (International) registration as a voluntary instrument

It is worth to consider a voluntary registration system. One option would be to continue with a registration procedure that remains open to all potential applicants. They would have the choice to apply for registration, but there would not be an expectation or an obligation to do so.

If this mechanism is not used by too many breeding operations, successful registration would continue to be useful to for countries that receive imports of specimens from breeding operations. They can rely on the scrutiny applied by the international registration system and do not have to make their own assessments to double check the results of the host country's assessment when its CITES Management Authority issues export permits. At the same time, if the number of registrations remain at a level that is manageable, it does not create too much of a burden on the CITES Secretariat, the Animals Committee, and the Standing Committee.

It can also be a useful and welcome tool for applicants with large-scale operations. For them, and their host CITES Authorities, it may be attractive to make the assessment of the breeding operation upfront, *i.e.* before a continuous line of applications for export permits are submitted. Using this option would reduce administrative burdens at least to some extent without closing off registration as a voluntary measure in situations where this could help to reduce administrative burdens inherent in the assessment of applications for export permits. At the same time, the international registration increases the acceptance of imports by third countries. This is another reason why voluntary registration may continue to be attractive for large-scale operations. However, as outlined above, delays and costs for large-scale operations can also become disproportionate and

prohibitive, given the need for upfront investment in facilities and operations before registration is possible and pending approval. Therefore, additional measures may be needed complementing a voluntary registration system.

May-be one of the most import (indirect) effects from the perspective of protection of endangered species is the following. The administrative burden for small-scale breeders is reduced. They are only obliged to demonstrate that they meet the requirements for captive breeding in the context of the process to obtain an export permit. If they only apply for permits every three to four years for a particular species and if their export volumes are small this is an important advantage. For small-scale breeders and hobby breeders, mandatory registration can in many cases impose a disproportionate burden and encompasses costs that they may not be able to shoulder. If mandatory registration would be implemented by all Parties, many small-scale breeders and hobby breeders would no longer be in a position to export specimens or, if they do not export themselves, their offspring would no longer be available for traders to be exported.

Such a change in the situation of production and supply (in the context of a mandatory registration system) could have negative consequences from the perspective of nature conservation. Depending on the particular situation of the different species affected and the structure of trade and demand, an unfortunate effect of limiting (sustainable) supply of captive-bred specimens could be that pressure on specimens from the wild increases, because, possibly, the demand might then be met by other suppliers who obtain their supplies from unsustainable sources (including illegal trade and poaching). Whether this effect can be expected and to what extent, depends on many circumstances that deserve further research. Sometimes an alternative chain of cause(s) and effect(s) is claimed. That supply creates demand and leads to more demand than the (sustainable) supply can satisfy. In this case, captive-breeding could have a negative impact. This is also a hypothesis that may deserve further research. Both theories could be correct for different species or different market conditions.

Admittedly, a voluntary registration system also has a disadvantage from the perspective of nature conservation. It foresees less scrutiny and oversight than a mandatory registration system. This reduces its positive impact to some extent. Yet, if limited to a voluntary registration system, possibly more Parties might be ready to implement it, because then it is clear that they would not have to apply it in all cases.

7.1.2. (International) registration as a tool in compliance procedures

Another option might be to use mandatory registration as a tool in compliance procedures. Compliance procedures are in place to make sure that CITES rules are fully implemented. If the rules on the export of captive bred specimens of Annex I species are not fully complied with, they are the instrument of choice to deal with this matter. Therefore, it seems that as a rule compliance procedures are better placed to deal with these issues than a mandatory registration system that applies to all Parties across the board.

However, mandatory registration systems could be integrated into the toolbox of compliance procedures. In this context they would be used as a specific instrument that can be used when the right approach is tailored to fit the needs of a particular compliance problem that needs to be addressed. This applies for example in the following situations. If problems are detected in particular regions, countries or with regard to specific breeding operations or species, the Standing Committee might consider to impose a mandatory registration system for a specific time period in the context of compliance procedures to address the issue. The application of such an obligation should be combined with appropriate capacity building measures.

7.1.3. National registration procedures

Another option would be to have national registration procedures. This cannot be adopted directly by CITES. But Res. Conf. 12.10 (Rev. CoP15) (CITES, 1997) can be amended to provide this option to Parties. It is important to note that the idea is not to add a second layer and have two cumulative registration obligations. The proposal is to move to a national system that would replace international registration.

The introduction of national registration systems might have to be complemented with capacity building measures. In addition, as a transparency measures, it would be useful to have a global information database, as in the case of plants, which contains basic information about the facilities that have been registered at a national level.

National registration procedures are not entirely new. For example, based on an internal survey conducted by the Spanish authorities in 2014, even for Annex B species, six Member States had a register of breeders (information received from Dr. Mercedes Núñez Román).

In the scenario of a national registration system, there is no administrative burden on the CITES Secretariat, the Animals Committee, and the Standing Committee. The CITES

Authorities of the host countries will need to conduct the registration procedure and the breeding operation must prepare an application, but for both actors the administrative burden is lower than in the alternative of an international registration procedure. If this instrument were adopted, it would bring the registration of captive breeding operations in line with the procedural design applicable to the registration of facilities for artificial propagation of plants. This has been suggested by the Secretariat in the past on a number of occasions, and has also received some support, but so far not enough to be incorporated into a fully fledged proposal, be adopted, and implemented.

The mandate that the CoP has issued for the Animals Committee and the Plants Committee at CoP19 (Decision 19.180 (CITES, 2022) regarding captive breeding issues (and artificial propagation issues) would leave some room to address this issue (see above chapter 1., where the main part of the decision's text is cited *verbatim*). Mandating both Committees, in the authors' opinion, implicitly places this issue on the agenda.

7.1.4. Changes in procedure of (international) registration

It could also be useful to explore how the procedure for registration of breeding operations can be reformed to reduce the burden on all actors involved. It is important to make sure that range states are also involved in this discussion. These positive effects need then to be balanced on the impact this could have on the effectiveness of the registration procedure in achieving its objective.

One element could be to be more precise on the grounds on which applications for registration can be challenged by other Parties. For example, these grounds could be limited strictly to the requirements for captive breeding as set out in Res. Conf. 10.16 (Rev. CoP19 (CITES, 2022)). This would increase predictability for applicants and also reduce the importance of the system's downside that it does not include access to a justice system with regard to decisions taken at the international level in the context of the registration.

Another important element to focus on should be the duration of the procedure, once an objection is raised. The need to provide information in one of the CITES languages is also a significant barrier for smaller scale breeders and hobby breeders from many countries where these are not official languages. However, it is almost impossible to fix this problem, if one does not abandon the concept of an international registration procedure.

In addition, it may be necessary to explore in more detail how the administrative burden imposed by the registration system can be alleviated without negative impact on the depth of its scrutiny. This is an important area, because the current registration system is not implemented by a majority of the Parties. A less burdensome procedure may even improve the effectiveness as compared to the current system, if it leads to more captive breeding facilities being registered and more Parties implementing a lighter less burdensome registration system.

7.2. Suggestions for further research

It might also be useful to consider the following four issues, which go beyond the scope of the current paper, but arose in its context and on the basis of the research:

- There is a considerable number of Parties that export for commercial purposes from facilities that are not registered (see above 5.3.2.). It would be interesting to find out what are the reasons for the Parties to adopt this policy. The reasons for the EU and its Member States are currently discussed in the context of a pre-compliance procedure (*i.e.* stricter domestic measures to obtain the same goal with different instruments). It would be interesting to learn more about the motivations of other Parties.
- On the pros and cons of an international registration system, it might be useful to conduct empirical work and to interview or involve CITES MAs, CITES SAs, applicants, NGOs and the Secretariat. The useful work of the Animals Committee that was soliciting views from Parties (see above 5.5.4.), lies too far back to make such a fresh exercise superfluous. In addition, participation could have been broader at the time (only 12 Parties responded). It might possibly be useful to specifically approach all Parties that exported specimens of Appendix I species with the codes 'C" and "T". It might be interesting to inquire, whether they have considered to request the operations to apply for a registration, and whether or not they implement (Res. Conf. 12.10 (Rev. CoP15) (CITES, 2002)), and what their motivations are. It might be equally useful to address Parties that do not accept imports that come with the codes 'C' and 'T' from non-registered facilities.
- A follow-up (short of a compliance procedure under Res. 17.7 please) might be useful for countries that export with the code "D". It might be useful to find out if a misunderstanding of the code is present or if there were just individual mishaps in the individual cases that the wrong code was chosen (statistical analysis showed

quite a number of exports with the wrong code, which was clear because in the country that was given as country of origin there was currently no registered operation for this species. However, there may be different reasons that lead to this finding. Possibly, there was a registered operation in the past, that is no longer in the register. In that case, the code is correct. It is also possible that the mistake happened at an earlier stage, for example during exports, and at the stage of the reexport, the code provided in the export permit was used. An editorial mistake in the data transmitted to WMCM could be another plausible explanation.

- If one were to consider more precise criteria in the context of an international registration system, one difficult issue to address in this context would be to define requirements for the "moral fitness" of people who own or operate a captive breeding operation for Appendix I specimens, if one wanted to introduce such a criterion (see above 5.4.4., for a case where the rejection of the registration was based on similar considerations, see also 5.8.6. for the discussion of the issue). It might be hard to find a consensus about the criteria for refusing this status. Possibly, violations against wildlife trade rules could be a good reference point, but to justify such a harsh restriction, which results in a considerable limitation of human rights, the violation should be serious enough and should not have happened too long ago in the past. This raises many intricate questions where to draw the line. A clear time limit on the relevance of transgressions for registrations would be helpful. Is three years sufficient? Or five years? Does it have to be a crime? Probably a misdemeanour type violation is not enough. What about the penalty level? Yet, rules and practices in sanctioning differ widely between criminal justice systems worldwide. It might seem obvious that it should be common ground that convictions must be the reference point and not suspicions. However, should ongoing investigations not be sufficient to trigger at least a suspension of eligibility for registration? Is any crime sufficient? Or how close does the violation have to be to illegal wildlife trade? These initial thoughts and questions might give a glimpse of the complexities and the difficulties to find a consensus.

Captive breeding is an intricate issue that deserves further research.

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ANNEX A

Table no. A.1.- Parties with at least one export with codes C/T in 2017-2021 (in alphabetical order) Source: https://trade.cites.org (CITES Trade Database), 2023

Argentina*	China*	Israel	Mozambique	Romania	Switzerland
Armenia	Colombia*	Italy	Namibia	Russian Federation*	Syrian Arab Republic
Australia*	Cuba*	Japan	Netherlands	Saudi Arabia	Thailand*
Austria	Cyprus	Jordan	Norway	Senegal*	Türkiye
Azerbaijan	Czech Republic*	Kazakhstan	Oman	Serbia*	Ukraine
Bahrain*	Democratic Republic of the Congo	Kenya	Pakistan	Singapore*	United Arab Emirates*
Bangladesh*	Denmark*	Kuwait	Papua New Guinea	Slovakia	United Kingdom*
Barbados	France	Lebanon	Peru*	Slovenia	United States of America*
Belarus	Germany*	Lithuania	Philippines*	South Africa*	Uruguay
Belgium	Guatemala	Malaysia*	Poland	Spain*	Uzbekistan
Brazil*	Guyana	Mali*	Portugal	Sri Lanka	Venezuela
Bulgaria	Hungary	Malta	Qatar	Sudan	Viet Nam*
Cambodia*	Indonesia*	Mauritius	Republic of Korea	Suriname	
Canada*	Ireland	Mexico*	Republic of Moldova	Sweden	

Parties that have registered at least one captive-breeding operation (as of 20 February 2023) are marked with an asterisk (*). Only current registrations are counted, not registrations that have been deleted from the register.

ANNEX B

Table no. B.1.- Parties with at least one export with codes C/T in 2017-2021 (by region)
Source: https://trade.cites.org (CITES Trade Database), 2023

Africa (10/53)	Asia (22/38)	Central and South America and the Caribbean (13/31)	Europe (33/50)	North America (2/3)	Oceania (2/9)
Democratic Republic of the Congo	Bahrain	Argentina	Armenia	Canada	Australia
Kenya	Bangladesh	Barbados	Austria	United States of America	Papua New Guinea
Mali	China	Brazil	Azerbaijan		
Mauritius	Indonesia	Cambodia	Belarus		
Mozambique	Japan	Colombia	Belgium		
Namibia	Jordan	Cuba	Bulgaria		
Senegal	Kazakhstan	Guatemala	Cyprus		
Singapore	Kuwait	Guyana	Czech Republic		
South Africa	Lebanon	Mexico	Denmark		
Sudan	Malaysia	Peru	France		
	Oman	Suriname	Germany		
	Pakistan	Uruguay	Hungary		
	Philippines	Venezuela	Ireland		
	Qatar		Israel		
	Republic of Korea		Italy		
	Saudi Arabia		Lithuania		
	Sri Lanka		Malta		
	Syrian Arab Republic		Netherlands		
	Thailand		Norway		
	United Arab Emirates		Poland		
	Uzbekistan		Portugal		
	Viet Nam		Republic of Moldova		
			Romania		
			Russian Federation		
			Serbia		
			Slovakia		
			Slovenia		

Table no. B.1.- Parties with at least one export with codes C/T in 2017-2021 (by region) **Source: https://trade.cites.org (CITES Trade Database), 2023**					
Africa (10/53)	**Asia (22/38)**	**Central and South America and the Caribbean (13/31)**	**Europe (33/50)**	**North America (2/3)**	**Oceania (2/9)**
			Spain		
			Sweden		
			Switzerland		
			Türkiye		
			Ukraine		
			United Kingdom		

ANNEX C

Table no. C.1.- Species bred in registered operations – inside or outside their current (or former) range
Source: https://cites.org/eng/common/reg/e_cb.html, 2023 and https://speciesplus.net, 2023

Species	Country	Range state
Acinonyx jubatus	South Africa	yes
Acipenser brevirostrum	Canada	yes
Alligator sinensis	China	yes
Amazona oratrix	Australia	no
Andrias davidianus	China	yes
Anodorhynchus hyacinthinus	United States of America	no
Astrochelys radiata	Mauritius	yes
Cacatua haematuropygia	Philippines	yes
Cacatua moluccensis	Singapore	yes
Cacatua sulphurea	Singapore	yes
Caiman latirostris	Brazil	yes
Caloenas nicobarica	Malaysia	yes
Caloenas nicobarica	Singapore	yes
Ceratostylis siamensis	Thailand	yes
Chlamydotis macqueenii	United Arab Emirates	yes
Chlamydotis undulata	United Arab Emirates	yes
Crocodylus acutus	Colombia	yes
Crocodylus acutus	Honduras	yes
Crocodylus niloticus	Mali	yes
Crocodylus niloticus	Senegal	yes
Crocodylus niloticus	Tunisia	no
Crocodylus porosus	Bangladesh	yes
Crocodylus porosus	Philippines	yes
Crocodylus porosus	Singapore	extinct in Singapore = former range state
Crocodylus porosus	Thailand	possibly extinct in Thailand = former range state
Crocodylus rhombifer	Cuba	yes
Crocodylus siamensis	Cambodia	yes
Crocodylus siamensis	Thailand	yes
Crocodylus siamensis	Viet Nam	yes
Cycas siamensis	Thailand	yes
Eos histrio	Singapore	no
Falco rusticolus x F. cherrug	Italy	hybrid=no

Table no. C.1.- Species bred in registered operations – inside or outside their current (or former) range
Source: https://cites.org/eng/common/reg/e_cb.html, 2023 and https://speciesplus.net, 2023

Species	Country	Range state
Falco cherrug	Czech Republic	yes
Falco cherrug	Spain	no
Falco cherrug	United States of America	no
Falco mexicanus	Canada	yes
Falco pelegrinoides	Germany	no
Falco pelegrinoides	Serbia	no
Falco pelegrinoides	United Kingdom of Great Britain and Northern Ireland	no
Falco peregrinus	Argentina	yes
Falco peregrinus	Bahrain	yes
Falco peregrinus	Canada	yes
Falco peregrinus	Czech Republic	yes
Falco peregrinus	Denmark	yes
Falco peregrinus	Germany	yes
Falco peregrinus	Peru	yes
Falco peregrinus	Russian Federation	yes
Falco peregrinus	Serbia	yes
Falco peregrinus	Spain	yes
Falco peregrinus	United Kingdom of Great Britain and Northern Ireland	yes
Falco peregrinus	United States of America	yes
Falco peregrinus	Italy	yes
Falco rusticolus	Bahrain	no
Falco rusticolus	Canada	yes
Falco rusticolus	Czech Republic	yes
Falco rusticolus	Denmark	yes
Falco rusticolus	Germany	yes
Falco rusticolus	Italy	no
Falco rusticolus	Peru	no
Falco rusticolus	Russian Federation	yes
Falco rusticolus	Spain	no
Falco rusticolus	United Kingdom of Great Britain and Northern Ireland	yes
Falco rusticolus	United States of America	yes
Falco tinnunculus	Canada	yes

Table no. C.1.- Species bred in registered operations – inside or outside their current (or former) range
Source: https://cites.org/eng/common/reg/e_cb.html, 2023 and https://speciesplus.net, 2023

Species	Country	Range state
Guarouba guarouba	Philippines	no
Leucopsar rothschildi	Indonesia	yes
Melanosuchus niger	Peru	yes
Pangasianodon gigas	Thailand	yes
peregrinus x F. cherrug	Italy	Hybrid = no
Primolius couloni	United States of America	no
Psittacus erithacus	Philippines	no
Psittacus erithacus	Singapore	no
Psittacus erithacus	Zambia	no
Scleropages formosus	Indonesia	yes
Scleropages formosus	Malaysia	yes
Scleropages formosus	Singapore	yes
Scleropages formosus	Thailand	yes
Totoaba macdonaldi	Mexico	yes