**Online illegal wildlife trade in Indonesia: strengthening the regulatory framework and law enforcement efforts**

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Supplementary Table 1. List of species advertised in monitored e-commerce

| No. | Species | Protected Status Under Law No. 5/1990(P.106/Year 2018) | CITES Appendix | IUCN Redlist |
| --- | --- | --- | --- | --- |
| 1 | *Acridotheres melanopterus* | Protected | - | CR |
| 2 | *Acridotheres tertius* | Protected | - | CR |
| 3 | *Acridotheres tricolor* | Protected | - | CR |
| 4 | *Cacatua alba* | Protected | II | EN |
| 5 | *Cacatua galerita triton* | Protected | II | LC |
| 6 | *Cacatua moluccensis* | Protected | I | VU |
| 7 | *Cacatua sulphurea citrinocristata* | Protected | I | - |
| 8 | *Capricornis sumatraensis* | Protected | I | VU |
| 9 | *Carettochelys insculpta* | Protected | II | EN |
| 10 | *Chalcopsitta duivenbodei* | Protected | II | LC |
| 11 | *Chalcopsitta scintillata* | Protected | - | LC |
| 12 | *Chitala chitala* | Non-protected | - | NT |
| 13 | *Chlamydosaurus kingii* | Protected | - | LC |
| 14 | *Chloropsis sonnerati* | Protected | - | EN |
| 15 | *Copsychus malabaricus* | Non-protected | II | LC |
| 16 | *Eclectus roratus* | Protected | II | LC |
| 17 | *Eos bornea* | Protected | - | LC |
| 18 | *Eos squamata* | Protected | II | LC |
| 19 | *Garrulax leucolophus* | Protected | - | LC |
| 20 | *Geokichla interpres* | Non-protected | - | NT |
| 21 | *Goura victoria* | Protected | II | NT |
| 22 | *Gracula religiosa* | Protected | II | LC |
| 23 | *Haliastur indus* | Protected | II | LC |
| 24 | *Helarctos malayanus* | Protected | I | VU |
| 25 | *Irena puella* | Non-protected | - | LC |
| 26 | *Leucopsar rothschildi* | Protected | I | CR |
| 27 | *Lonchura oryzivora* | Protected | II | EN |
| 28 | *Loriculus galgulus* | Protected | II | LC |
| 29 | *Lorius garrulus* | Protected | II | VU |
| 30 | *Lorius lory* | Protected | II | LC |
| 31 | *Neofelis diardi* | Protected | I | VU |
| 32 | *Panthera tigris* | Protected | I | EN |
| 33 | *Platylophus galericulatus* | Protected | - | NT |
| 34 | *Prionailurus bengalensis* | Protected | I/II | LC |
| 35 | *Pseudeos fuscata* | Protected | II | LC |
| 36 | *Psilopogon pyrolophus* | Protected | - | LC |
| 37 | *Psittacula alexandri* | Protected | II | NT |
| 38 | *Psittacula longicauda* | Protected | II | VU |
| 39 | *Psittinus cyanurus* | Protected | II | NT |
| 40 | *Psittrichas fulgidus* | Protected | II | VU |
| 41 | *Pycnonotus zeylanicus* | Non-protected | II | CR |
| 42 | *Trichoglossus euteles* | Protected | II | LC |
| 43 | *Trichoglossus haematodus* | Protected | II | LC |
| 44 | *Trichoglossus ornatus* | Protected | II | LC |
| 45 | *Varanus gouldii* | Non-native to Indonesia | II | LC |
| 46 | *Elephantidae* | Protected | I/II | - |
| 47 | *Bucerotidae* | Protected | I/II | - |
| 48 | *Casuarius sp.* | Protected | - | - |
| 49 | *Hystrix sp.* | Non-protected | - | - |
| 50 | *Lutra sp.* | Protected | I/II | - |
| 51 | *Manis sp.* | Protected | II | - |
| 52 | *Rhinocerotidae* | Protected | I/II | - |

Supplementary Table 1. List of code words used (represented by A, B, C, and so on) with a brief explanation in relation to the species in the column “Synonym”. The findings of advertisements were coded as (+) and derivative code words from the primary code words were coded as (\*).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Keyword (implicit) | Synonym | Bukalapak | Facebook Marketplace | Lazada | Shopee | Tokopedia |
| 1 | A | Product from mammals | + | + |  | + | + |
| 2 | B | Live birds | + |  |  | + | + |
| 3 | C | Product from mammals | + |  |  | + | + |
| 4 | D | Product from mammals | + |  | + | + |  |
| 5 | E | Live birds |  |  |  | + | + |
| 6 | F | Product from mammals | + | + |  |  |  |
| 7 | G | Product from mammals |  | + |  | + |  |
| 8 | H | Product from mammals |  | + |  |  | + |
| 9 | I\* | Live reptiles |  |  |  | + | + |
| 10 | J | Product from mammals |  | + |  |  |  |
| 11 | K | Live birds |  | + |  |  |  |
| 12 | L | Live birds |  | + |  |  |  |
| 13 | M | Live birds |  |  |  | + |  |
| 14 | N\* | Live birds |  |  |  | + |  |
| 15 | O\* | Live birds |  | + |  |  |  |
| 16 | P\* | Live birds |  |  |  | + |  |
| 17 | Q | Live birds |  |  |  | + |  |
| 18 | R | Product from mammals |  | + |  |  |  |
| 19 | S | Product from mammals |  |  | + |  |  |
| 20 | T | Product from mammals |  | + |  |  |  |
| 21 | U | Product from mammals | + |  |  |  |  |
| 22 | V\* | Product from mammals |  |  |  |  | + |
| 23 | W\* | Product from mammals |   |   |   |   | + |
| 24 | X\* | Product from mammals |  |  |  |  | + |
| 25 | Y\* | Product from mammals |  | + |  |  |   |
| 26 | Z\* | Product from mammals |  |  |  |  | + |
| 27 | AA | Live birds |  | + |  |  |   |
| 28 | AB | Live birds | + |  |  |  |   |
| 29 | AC | Product from mammals |  | + |  |  |   |
| 30 | AD | Product from mammals |  | + |  |  |   |
| 31 | AE | Product from mammals |  | + |  |  |   |
| 32 | AF | Product from mammals |  | + |  |  |   |
| 33 | AG | Product from mammals |  | + |  |  |   |
| 34 | AH | Product from mammals |  |  |  |  | + |
| 35 | AI | Product from mammals |  | + |  |  |   |
| 36 | AJ | Live reptiles |  |  |  |  | + |
| 37 | AK\* | Live birds |  |  |  | + |   |
| 38 | AL\* | Live reptiles |  |  |  | + |   |
| 39 | AM\* | Product from mammals |  | + |  |  |   |
| 40 | AN | Product from mammals |  |  |  |  | + |
| 41 | AO | Live birds |  |  |  |  | + |
| 42 | AP | Live birds |  |  |  |  | + |
| 43 | AQ | Product from mammals |  |  |  | + |   |
| 44 | AR | Product from mammals |  |  |  |  | + |
| 45 | AS | Product from mammals |  | + |  |  |   |
| 46 | AT | Product from mammals |   | + |   |   |   |

Supplementary Table 2. List of questions used during focus group discussions and expert interviews in Indonesia.

|  |
| --- |
| INSTRUMENT FOR FOCUS GROUP DISCUSSIONS AND EXPERT INTERVIEWS**ONLINE WILDLIFE TRADE IN INDONESIA:** **STRENGTHENING POLICIES AND HANDLING**  |
| **Objective 1: To identify the characteristics of illegal online wildlife trade networks in Indonesia**  |
| 1. How are wildlife traded online via e-commerce? (media/platform and modus operandi used, trade chains involved)2. What types of protected species are usually traded online using e-commerce platforms and what are the categories of use (for example: domestication, consumption, collection)? 3. How large is the online wildlife trade using e-commerce platforms compared to the conventional wildlife trade? Does it coincide with other types of transnational organized crime? 4. How are financial transactions conducted between buyers and sellers of protected species on e-commerce platforms (including the media used)?5. What have been the trends in online trading cases using e-commerce over the past five years? Was there a difference before and during the pandemic? |
| **Objective 2: To identify gaps in the existing legal framework in Indonesia in addressing online wildlife trade cases**  |
| 1. What are the legal bases governing the online trade in protected wildlife? Is it different from the conventional wildlife trade? 2. In terms of encouraging multidoor law enforcement, are there any regulations outside the realm of conservation that have been used to prosecute cases of online wildlife trade through e-commerce? 3. What is the range of punishments set for the perpetrators? Do they tend to be small compared to the benefits obtained? 4. How are the punishments for the perpetrators of the online wildlife trade cases determined? Have any layered articles been used? 5. What are the opportunities for the ITE Law and regulations related to Online Commerce (Presidential Regulation No. 80/2019 on Trading through Electronic Systems) to be used in the prosecution of cases of online wildlife trade through e-commerce?  |
| **Objective 3: Identify the factors that encourage and prevent efforts to address and prosecute cases of online wildlife trade by stakeholders**  |
| 1. How are cases of online wildlife trade handled? Is it the same as conventional cases? 2. How are cases of online wildlife trade prosecuted? Is it the same as conventional cases? 3. In practice, what factors drive the handling and prosecuting of cases of online wildlife trade? Is there a special team to investigate such cases? 4. In practice, what factors hinder the handling and prosecuting of cases of online wildlife trade? Do they have anything to do with presenting evidence in court?5. Are there any cases in which the handling and prosecution was conducted outside of the stages that should be conducted (special cases)?  |
| **Objective 4: Identify ways to strengthen the legal framework and national policies to tackle the rampant online wildlife trade**  |
| 1. How should online wildlife trade through e-commerce be regulated in national policies? Are the current regulations sufficient? 2. What are the weaknesses of the existing prevention and enforcement arrangements and systems? How can the amount of online wildlife trade through e-commerce be reduced? 3. What role does your agency play in the prevention and prosecution of cases of online wildlife trade through e-commerce? What efforts have been made? 4. How can coordination between parties be conducted in monitoring the online wildlife trade through e-commerce? Which parties do you think should be involved in monitoring the online wildlife trade? 5. How should law enforcement against e-commerce-based online wildlife trade be carried out from the seller to the buyer level?  |

Supplementary Table 3. A summary of analysed regulations which are related to species protection, trade and online transactions. (+): it is included as the scope of the regulations; (-): it is not included/not regulated.

|  |  |  |
| --- | --- | --- |
| No. | Regulations | Scope of Regulations |
| **Regulates protected species trade** | **Regulates commerce** | **Regulates online trade/transactions** |
| 1. | Law No. 5/1990 on the Conservation Act (UU 5/90) | + | - | - |
| 2. | Law No. 11/2008 on Electronic Information and Transactions (UU ITE or UU 11/2008) | - | - | + |
| 3. | Law No. 7/2014 on Trade (UU Perdagangan or UU 7/2014) | - | + | - |
| 4. | Government Regulation No. 7/1999 on Preserving Flora and Fauna Species (PP 7/1999) | + | - | - |
| 5. | Government Regulation No. 8/1999 on the Utilization of Wild Plants and Animals (PP 8/1999) | + | - | - |
| 6. | Government Regulation No. 80/2019 on Trade through Electronic Systems (PP 80/2019) | - | - | + |
| 7. | Decision of the Minister of Forestry No. 447/Kpts-II/2003 on the administration directive of harvest or capture and distribution of the specimens of wild plant and animal species (Kepmenhut 447/2003) | + | - | - |
| 8. | Decision of the Minister of Forestry No. P.19/Menhut-II/2005 on The Breeding of Wild Plants and Animals (Permenhut 19/2005) | + | - | - |
| 9. | Decision of the Minister of Environment and Forestry No. 86/2006 on the Determination of Benchmark Prices for Wild Plants and Animals Domestically and Abroad (PermenLHK 86/2006) | + | - | - |

Supplementary Material 1. Informed consent used in the focus group discussion and expert interviews abiding the ethical standards from Atma Jaya Catholic University of Indonesia.

**RESPONDENT’S INFORMATION SHEET**

**RESEARCH ON ONLINE WILDLIFE TRADE IN INDONESIA: STRENGTHENING THE REGULATORY FRAMEWORK AND LAW ENFORCEMENT EFFORTS**

You are invited to participate in *online-based wildlife trade in Indonesia: strengthening the regulatory framework and law enforcement efforts* research conducted by the Directorate of Biodiversity Conservation of Species and Genetics, Ministry of Environment and Forestry (Dit. KKHSG – KLHK) and supported by Wildlife Conservation Society Indonesia Program (WCS IP) through funding from DEFRA UK. Before taking part in this research, it is important that you understand why this research is conducted. Please take the time to read/ listen to the following information carefully. You can ask the researcher if anything is unclear or if you need further information. Please take the time to consider whether you want to take part in this research. Thank you for your willingness to read/ listen to this information.

The Directorate General of Conservation of Natural Resources and Ecosystems, Ministry of Environment and Forestry (Dirjen KSDAE – KLHK) of the Republic of Indonesia is collaborating with WCS IP in the framework of strengthening the conservation of biodiversity and conservation areas in Indonesia, especially in the implementation of conservation programs and management of natural resources that are relevant to wildlife as an integral part of Indonesia's natural heritage and socio-economic development. In this study, Dit. KKHSG – KLHK supported by WCS IP will conduct an in-depth study with regards to the analysis of online illegal wildlife trade characteristics and trace the loopholes in the policies addressing illegal wildlife trade. This study is conducted as an effort to improve biodiversity management by strengthening the legal framework as well as preventing and addressing cases of crimes against wildlife. This study is expected to serve as the basis for decision-making for policymakers and law enforcers in Indonesia in monitoring, handling and prosecuting cases of online illegal wildlife trade.

This study aims to (1) Analyze the characteristics of online illegal wildlife trade networks in Indonesia; (2) Analyze the factors that encourage and prevent efforts to handle and prosecute cases of online wildlife trade by stakeholders; (3) Analyze gaps in the existing legal framework in Indonesia in dealing with cases of online wildlife trade; and (4) Provide the recommendations of strengthening national legal and policy framework to tackle rampant cases of online wildlife trade.

This research will be conducted hybrid (online with face-to-face data collection conducted in Jakarta and/ or Bogor, according to the availability of the respondents). You will be asked about your views on information regarding the characteristics of online wildlife trade networks, policies addressing online illegal wildlife trade and experience in monitoring, handling and/ or dealing with cases of online illegal wildlife trade. The interview/discussions will take about one hour of your time.

The risk of taking part in this research is that you may feel uncomfortable discussing illegal wildlife trade or talking to outsiders, and the time spent for the interview will prevent you from carrying out other activities that are economically more useful.

There will be incentive or compensation for participating in this research, but you have the full right to choose not to participate in it. The indirect benefit of this research is the availability of a platform to strengthen efforts to monitor, handle and prosecute online wildlife trade cases stipulated in an effective legal framework that will help reduce the number of cases of online wildlife trade.

No names will be recorded. Information from you will be given numeric code. There will be no information that can be used to identify you. The results of this study will be used as policy recommendations for wildlife management, particularly in terms of preventing illegal wildlife trade. You have the right to gain access to information regarding the results of this research after it is completed by contacting the researcher via the address available below.

Your participation in this research is completely voluntary. If you choose not to participate or withdraw at any time, there will be no penalties, sanctions or loss of benefits. If you quit participating in the interview, the results of the interview will be discarded.

If you have questions related to this research, please contact:

Krismanko Padang

Directorate of Biodiversity Conservation of Species and Genetics, Ministry of Environment and Forestry

Manggala Wanabakti Building Block 7 - 7th Floor

Jl. Gatot Subroto, RT.1/RW.3, Tanah Abang, Central Jakarta 12190; Phone number: 0812-7865-4\*\*

**INFORMED CONSENT FORM**

I, the undersigned,

Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

hereby express no objection in taking part in the interview at the request of the researcher (name……………………………………..).

I understand that as a participant:

1. I have the right to refuse and terminate my involvement at any time;

2. I understand that my identity and all data that I provide will be kept confidential by the researcher and will only be used for research purposes;

3. I have the right not to share any information if I have reservation about it;

4. I understand that there are no harmful risks in the interview process and psychological test.

Researcher statement:

I……………………….., as research implementer, hereby state that I:

1. provide explanations to participants about the research;

2. understand and protect the rights of the participants;

3. will guarantee the confidentiality of data and identity of participants;

4. am willing to be contacted by participants if there are questions related to the research.

Respondent’s signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date (day/ month/ year): …..../..…../2022

Researcher’s signature : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date (day/ month/ year): …..../..…../2022

**Audio Recording Consent**

If you refuse to sign the form, but agree to participate in this research; your consent will be recorded by the interviewer.

I agree to be recorded: Yes \_\_\_\_\_\_\_ No\_\_\_\_\_\_