

Illegal Trade of Red Sand Boa in India

2016–2021



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The publication is an assessment of publicly available online open-source newspaper articles. Analysis within this report is to be interpreted with consideration to the variability in the availability and reporting of newspaper articles. An increase in media reporting of illegal wildlife trade incidents may be an indication of effective enforcement capacity.

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1. BRIEFING: AN ASSESSMENT OF THE ILLEGAL TRADE IN SAND BOA SPECIES IN INDIA

Incidents, Online Trade, And Demand

1.1 Purpose

This brief summarises an assessment of the illegal trade in sand boa species in India, with a focus on the red sand boa, *Eryx johnii*. Informed by an analysis of open-source, online, media articles, the brief aims to fill a knowledge gap regarding the growing illegal trade of and demand for sand boas in India. Time-bound recommendations are provided to address the online trade of sand boas and other reptiles.

1.2 Introduction

Taxonomic background and current protection status

Sand boas belong to the sub-family Erycinae, under the family Boidae, which consists of stout-bodied, burrowing, non-venomous snakes, commonly known as boas or boids. Erycines are found across North Africa, Europe, the Middle East, and South and Central Asia¹.

India is home to three species of boas², the common sand boa (*Eryx conicus*), the endemic Whitaker's boa (*Eryx whitakeri*), and the red sand boa (*Eryx johnii*) (Box 1). Of these three species, the red sand boa, also commonly known as the brown sand boa or Indian sand boa, is the most encountered boa species in illegal trade in India (Box 1). All three species are listed as '**Near Threatened**' by the International Union for Conservation of Nature (IUCN), with a '**decreasing**' population trend in most of their habitat ranges.

In India, sightings of red sand boas have reportedly declined by as much as 80% in some areas, principally due to overharvesting for the illegal wildlife trade, with the species being one of the most traded reptiles in India³.

Box 1: Practices And Myths Around Sand Boas

Globally, boa species are popular as 'starter' pets amongst reptile enthusiasts due to their docile nature and ease of maintenance. In India, the major drivers behind sand boa smuggling and trade, particularly the red sand boa, originate from superstitious connotations surrounding the species. It is commonly believed that red sand boas are auspicious, bringing fortune and wealth to their owners, as well as inducing rainfall in seasons of drought, fueling the demand for these animals as pets. There are also **unverified claims** that they possess iridium, an extremely rare element found in the Earth's crust⁸.

The snakes are used in traditional medicine as a remedy for a myriad of conditions like ageing, asthma, rheumatism, joint pain, HIV, cancer, and other ailments^{9,10,11}. In India, red sand boas are reportedly used in black magic and allied occult practices^{10,12}. However, red sand boa-associated myths are not unique to India. Media reports often mention superstition-driven demand from countries such as China, Japan, Malaysia and Singapore^{9,13,14,15}.

The red sand boa is often described with names such as 'double engine' and 'double-headed snake,' owing to its appearance resulting from its thick blunt tail. Tails of red sand boas are often **mutilated** in order to resemble the appearance of another head, to fit the narrative of the snakes being 'double-headed.'

The entire Boidae family, previously protected under Schedule IV of the Wildlife Protection Act (1972) of India, is now protected under Schedule II as per recent amendments to the act⁴. This prohibits the capture, hunting, possession, and sale of all endemic species of this family across India. All three species of sand boas found in India are listed under Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)^{5,6,7}, which prohibits the export of specimens without an export permit.

1.3 Methodology

To develop an overall sense of the trade, following a desk review of key literature, we collated and analyzed information on the illegal trade in sand boas in India from media reports, YouTube videos, newsletters, websites, social media pages, and information provided by enforcement agencies (Box 2). We also undertook informal discussions with

stakeholders who were knowledgeable about the illegal reptile trade in India. Findings specific to the red sand boa were prioritized.

Our quantitative analysis utilized RStudio Version 1.4.1106¹⁶ and QGIS 3.20.0-Odense¹⁷.

For some qualitative data, such as discussion notes or insights from other research, we employed a content analysis.

1.4 Findings

There is a significant and widespread occurrence of illegal online sand boa trade across the country.

We documented 172 unique media records involving illegal sand boa trade from January 2016 to December 2021 in India. Fifteen of these included sand boas alongside other wildlife.

Box 2: Data Collection

Our media scan was carried out using Python 3.10¹⁸ and included an Application Programming Interface (API) and Machine Learning methods.

First, a combination of keywords such as 'sand boa,' 'sand boa seized,' 'sand boa arrest,' and 'sand boa smuggle' were used to collect relevant media records of illegal trade in sand boa species from January 2016 to December 2021 using 'googlesearch¹⁹,' a third-party Python package. Keywords in two Indian languages, Hindi and Marathi were also entered in manual web searches. We scanned social media pages of law enforcement agencies like the Wildlife Crime Control Bureau (WCCB) and the Sashastra Seema Bal (SSB) to verify and supplement the records as seizures are often posted on these pages. Court judgements pertaining to the illegal trade of sand boas, from open-source resources such as the website Indian Kanoon (an Indian law search engine providing updated court notices and judgements), were also collected.

Second, we conducted additional data collection on the sale of sand boas from January 2021 to December 2021 on YouTube. Using an Application Programming Interface (API), which allows two different computer programs to communicate with each other, YouTube and Python were integrated to conduct automated searches on sand boa-related videos using specific keywords. We then used a Machine Learning protocol to identify and filter through these videos and specifically find advertisements for sand boas.

species, with 157 records talking only about sand boa species. One hundred and twenty-one of the 157 incidents documented seizures involving red sand boas. Several media articles peddled common misconceptions associated with the species.

We noted that the illegal trade in sand boas **largely involved live animals**, in contrast to other wildlife trafficking incidents that often include body parts and products. Traffickers are employing increasingly **inventive means of operation**, including concealment of boas inside stationery boxes, the use of postal and product delivery services and enlisting of minors to smuggle boas to avoid detection and surveillance.

Incidents of illegal sand boa trade were documented in 18 states and one union territory, covering 87 districts across India. The highest number was recorded in **Maharashtra** (59), often from urban areas such as the districts of Pune (11), Thane (9), Raigad (7), and Mumbai Suburban (5). The second highest number was recorded from **Uttar Pradesh** (33), often from regions in proximity to the international border with Nepal, such as the districts of Bahraich (8) and Lakhimpur-Kheri (7).

YouTube serves as a buyer-seller-interface for red sand boas in India, and sometimes acts as a gateway to facilitate trade via WhatsApp.

Box 3: Common Trade Interactions On Youtube

- Traders posted videos of sand boas on YouTube, with their phone numbers mentioned in the title and/or the descriptions.
- Potential customers contacted the sellers in the 'comments section' of the videos, with a few instances of sellers replying to the customers with additional information.
- Customers inquired about the length and weight of the sand boa, and whether sellers were available to travel with the boas to the locations suggested by the customers.
- Customers asked for the seller's contact information, shared their own contact details, and requested to shift to encrypted communication applications such as **'WhatsApp'** to carry forward conversations and link to online payment gateways.
- Customers actively and promptly interacted with sellers on newly posted videos, hinting at an active usage of such platforms for customers to identify prospective sellers.

Up to 200 videos advertising sand boas for sale on YouTube were retrieved during 2021. Many videos seemed to have originated from sellers in **Maharashtra** and **Telangana**. The geographic location of the sellers was identified based on YouTube comments, video descriptions, and the language used in the videos.

The comments section of the videos provided insight into buyer-seller interactions (Box 3). Importantly, we observed potential buyers and sellers sharing phone numbers to **initiate the trade of sand boas**.

1.5 Conclusions

Consistent with the opinions of subject matter experts, our media scan found that the demand for red sand boas in domestic markets of India has seen an upsurge in recent years.

Misinformation posted on online platforms, which reinforces the mysticism surrounding the species, as well as the **sensationalized language used** in media reports covering the illegal trade of sand boas, may inadvertently promote trade in these species.

The illegal trade of sand boas is likely prevalent across India, with concentrations in key localities such as **Maharashtra** and **Uttar Pradesh**, where traders mainly deal in live species. In Maharashtra, the instances of sand boa trafficking recorded in urban areas are higher than in rural areas, which suggests that the trade is being driven by young urbanites with greater expendable income, or that sand boa trade in rural areas is more commonly conducted offline. In Uttar Pradesh, the frequency of recorded incidents near international border points suggests that the **Indian sand boa trade could be linked to Nepal**, or that sand boas are commonly sourced from forested border regions.

Online platforms, offering anonymity to prospective buyers and sellers are being used increasingly for conducting illegal sales of sand boas. The usage of other online platforms remains poorly understood at present, but we can assume that such platforms also carry the risk of facilitating the trafficking of sand boas. The access to **end-to-end encrypted**

online communication applications, and an increased use of **online payment methods** provides a **low-risk environment** for wildlife traffickers.

1.6 Recommendations

Based on our understanding, we recommend the following to address the illegal online trade of sand boas and other reptiles:

Short-term:

- Local and international conservation organizations should **conduct formative research** to better understand the situation of the illegal reptile trade and demand, particularly in Maharashtra and Uttar Pradesh. Aside from researching country-wide value chains of threatened reptiles, this should explore the potential illegal wildlife trade nexus between India and Nepal and identify entry points for counter-wildlife trafficking interventions.
- Civil society, education, and conservation organizations should develop training programs to **increase the capacity** of and journalism students and **investigative journalists** to produce well-researched and impactful media stories on the illegal wildlife trade to **reduce misinformation on wildlife consumption** and **improve awareness of this issue**.

Medium-term:

- Law enforcement authorities and conservation organizations should develop **partnerships with YouTube, WhatsApp** and other communication or social media entities operating in India to raise the issue of the illegal wildlife trade. Discussions could focus on how social media platforms can **develop due diligence systems** to reduce the risk of inadvertently promoting and facilitating wildlife trafficking and how conservation organizations can best support these efforts.

Long-term

- The Government of India, conservation organizations and civil society partners should leverage the country's technological capabilities and resources
 - a. consistent cyber-patrolling to reduce the ease at which traffickers utilize online platforms and
 - b. country-wide behaviour change initiatives aimed at affecting society-level change, especially concerning the pet trade and mysticisms associated with species such as the red sand boa (*Eryx johnii*).

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Photo: Anirban Chaudhuri

2. ANNEXURE: ACTOR-BASED CRIME SCRIPT ON ILLEGAL TRADE OF SAND BOA SPECIES IN INDIA

Using data derived from open-source media records, we created a partial 'Crime Script' to identify the role of various actors facilitating the illegal trade of sand boas in India²⁰. Parallely, we attempted to determine how sand boas were sourced, transported and ultimately sold. In addition, we documented potential drivers behind this trade.

Individual media records were analysed and categorised into multiple 'activities' which were extracted from the details published about modus operandi, enforcement member and offender quotes, as well as journalist observations. Generalised statements about trafficking of wildlife into southeast Asian countries were not included in this assessment.

We focused on the activity of the 'Sale of Boas' for our analysis which included steps

such as targeting, promoting, and selling boas to customers. Since our assessment is a 'partial' crime script, we replaced interventions with potential information gaps. A subsequent detailed crime script will be carried out in a forthcoming assessment, to explore in-depth the functionings of this trade. A flowchart of the stages in this partial crime script can be summarised as:

- Sourcing of Boas
- Stockpiling of Boas
- Transport of Boas
- Sale of Boas (Activity)
- Use of Boas

Stage	Steps and Options	Spatial
Preparation and Pre-Activity	<p>Sourcing of Boas</p> <p>Harvester(s) collect boas from various habitats (opportunistically or intentionally)</p> <p>Harvester(s) directly sell boas to customer(s); harvester(s) take the role of the seller(s) (please refer to Activity Stage for steps and options) (OR)</p> <p>Harvester(s) stockpile boas until middle agent(s) or customer(s) are identified (OR)</p> <p>Harvester(s) contact and supply boas to middle agent(s)</p>	<p>Sand boa habitats</p> <p>Villages and rural areas</p> <p>Protected areas</p>
	<p>Stockpiling of Boas</p> <p>Middle agent(s) stockpile procured boas until seller(s) or customer(s) are identified</p> <ul style="list-style-type: none"> • Boas stored through various methods <p>Middle agent(s) occasionally involved in trade of other wildlife species</p> <ul style="list-style-type: none"> • Boas occasionally stored with other snakes (OR) other wildlife 	<p>Residence of middle agent(s)</p> <p>Protected areas</p>

Temporal	People	Information Gaps
Unknown	<p>Harvester(s) Opportunist(s) Snake charmer(s) Snake rescuer(s) Individual(s) involved in capturing snakes Individual(s) involved in illegal wildlife trade</p> <p>Middle Agent(s) Snake charmer(s) Snake rescuer(s) Individual(s) involved in capturing snakes Individual(s) involved in illegal wildlife trade Individual(s) with other occupations</p> <p>Customer(s)</p> <p>Indirect actor(s): Superstitious belief promoter(s) though creating demand for red sand boas Closed communication group(s) (in-person or online) through facilitating illegal sale of red sand boas Journalist and enforcement personnel (refer to section 5.)</p>	<p>Specific harvesting location(s) within sand boa habitats</p> <p>Harvesting technique(s) and/or specialised equipment to collect boas</p> <p>Influence of harvester(s) in creating demand</p> <p>Influence of middle agent(s) in creating demand</p> <p>Influence of middle agent(s) in incentivizing harvester(s)</p> <p>Incentives for harvester(s) to collect boas</p> <p>Other occupations of harvester(s)/ Middle Agent(s)</p> <p>Role of snake charmer/snake catcher communities</p>
Unknown	<p>Middle Agent(s) Snake charmer(s) Snake rescuer(s) Professional hunters and collectors Individual(s) involved in capturing snakes Individual(s) involved in illegal wildlife trade</p>	<p>Extent of stockpiling of boas</p> <p>Stockpiling technique(s) and/or specialised equipment</p> <p>Extent of captive breeding of boas</p> <p>Extent of selective capture/breeding of boas for preferred morphological features</p> <p>Extent of boa smuggling with other illegal wildlife trade</p>

Stage	Steps and Options	Spatial
	<p>Transport of boas</p> <p>Middle agent(s) travel to sell boas</p> <ul style="list-style-type: none"> • Typically from rural to urban areas • Through interstate or international borders, through various modes of transport • Concealment of boas during transport, through various methods <p>Middle agent(s) directly sell boas to customer(s); middle agent(s) takes the role of the seller(s) (please refer to Activity Stage for steps and options)</p> <p>(OR)</p> <p>Middle agent(s) contact and supply boas to seller(s)</p>	<p>Rural areas to urban areas</p> <p>Various modes of transport</p> <ul style="list-style-type: none"> • Public transport • Personal vehicles • Postal and courier services <p>Interstate travel</p> <p>International travel</p> <ul style="list-style-type: none"> • Travel to neighbouring countries
Activity	<p>Sale of boas</p> <p>Seller(s) advertise boas online or in public spaces</p> <p>Seller(s) select boas with preferred morphological features</p> <ul style="list-style-type: none"> • Seller(s) mutilate boas • Seller(s) artificially increase weight of boas <p>Seller(s) contact and sell to customer(s)</p> <ul style="list-style-type: none"> • Contact via in-person, telephonic, or online communication • Sale at domestic or international scale • Preference for customer(s) from urban areas • Specific targeting of customer(s) based on demand 	<p>Urban area(s)</p> <p>Public transport</p> <p>Public space(s)</p> <ul style="list-style-type: none"> • Road(s) • Market(s) • Pet shop(s) • Other(s) <p>Online platform(s)</p> <ul style="list-style-type: none"> • Social media • E-commerce • Other(s)
Post Activity	<p>Use of boas</p> <p>Customer(s) buy boas for:</p> <ul style="list-style-type: none"> - Superstitious beliefs - Black magic or occult practices - Reptile pet trade; Sand boas as props for 'selfies' 	<p>Domestic</p> <p>International</p>

Temporal	People	Information Gaps
Unknown	<p>Middle agent(s)</p> <ul style="list-style-type: none"> • Domestic transporter(s) • International transporter(s) <p>Seller(s)</p> <p>Customer(s)</p> <p>Indirect actor(s):</p> <p>Public transport sector worker(s) through facilitating illegal transport of red sand boas</p> <p>Enforcement personnel</p>	<p>Influence of time of travel unknown</p> <p>Preference for Illegal trade routes:</p> <ul style="list-style-type: none"> • Domestic/international • Modes of transport <p>Concealment technique</p>
<p>Festive occasion(s)</p> <ul style="list-style-type: none"> • Cultural festival(s) • Religious festival(s) 	<p>Seller(s)</p> <ul style="list-style-type: none"> • Domestic seller(s) • International seller(s) <p>Youth/Minors</p> <p>Snake charmer(s)</p> <p>Individual(s) involved in illegal wildlife trade</p> <p>Occult practitioner(s)</p> <p>Pet seller(s) (reptile/exotic wildlife)</p> <p>Individual(s) with other occupations</p> <p>Personal associate(s) with linkages to IWT/sand boa smuggling</p> <p>Customer(s)</p>	<p>Role of fraudulent schemes influencing illegal trade of boas</p> <p>Targeting and acquiring customer(s) to sell boas</p> <p>Extent of sale in domestic market</p> <p>Extent of sale in international market</p> <p>Preference of online platforms used for communication</p> <p>Mode of payment</p> <p>Demographic of domestic customer(s)</p> <p>Demographic of international customer(s)</p>
<p>Festive occasion(s)</p> <ul style="list-style-type: none"> • Cultural festival(s) • Religious festival(s) 	<p>Customer(s)</p> <ul style="list-style-type: none"> • Domestic customer(s) • International customer(s) 	<p>Influence of customer(s) in creating demand</p>

Demand Drivers of Boas

Superstitious beliefs

- Festive occasions
- Local or international myths

Black magic or occult practices

Reptile pet trade;
Sand boas as props
for 'selfies'

Sourcing of Boas

Harvester(s) collect boas from various habitats (opportunistically or intentionally)

Harvester(s) directly sell boas to customer(s)

(OR)

Harvester(s) stockpile boas until middle agent(s) or customer(s) are identified

(OR)

Harvester(s) contact and supply boas to middle agent(s)

Stockpiling of Boas

Middle agent(s) stockpile procured boas until seller(s) or customer(s) are identified

- Boas stored through various methods

Middle agent(s) occasionally involved in trade of other wildlife species

- Boas occasionally stored with other snakes
- (OR) other wildlife

Transport of Boas

Middle agent(s) travel to sell boas

- Typically from rural to urban areas
- Through interstate or international borders, through various modes of transport
- Concealment of boas during transport through various methods

Middle agent(s) directly sell boas to customer(s)

(OR)

Middle agent(s) contact and supply boas to seller(s)

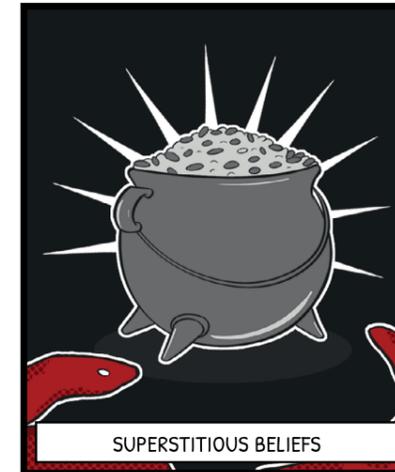
Sale of Boas

Seller(s) advertise boas online or in public spaces

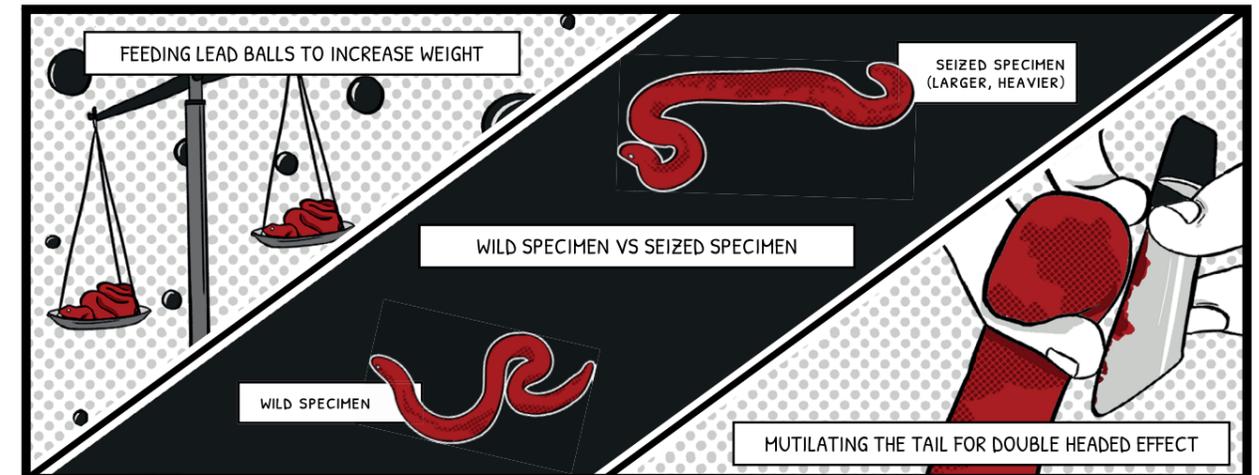
Seller(s) contact and sell to customer(s)

- Contact via in-person, telephonic or online communication
- Sale at domestic or international scale
- Preference for customer(s) from urban areas
- Specific targeting of customer(s) based on demand

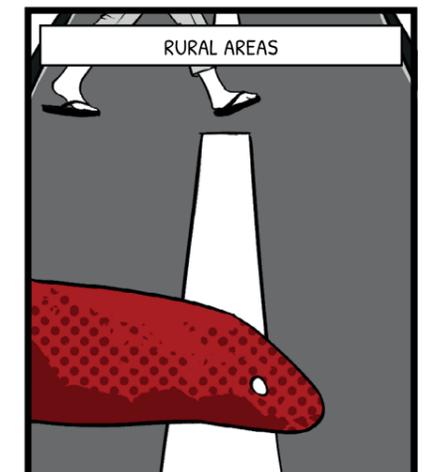
Drivers of illegal trade of red sand boas



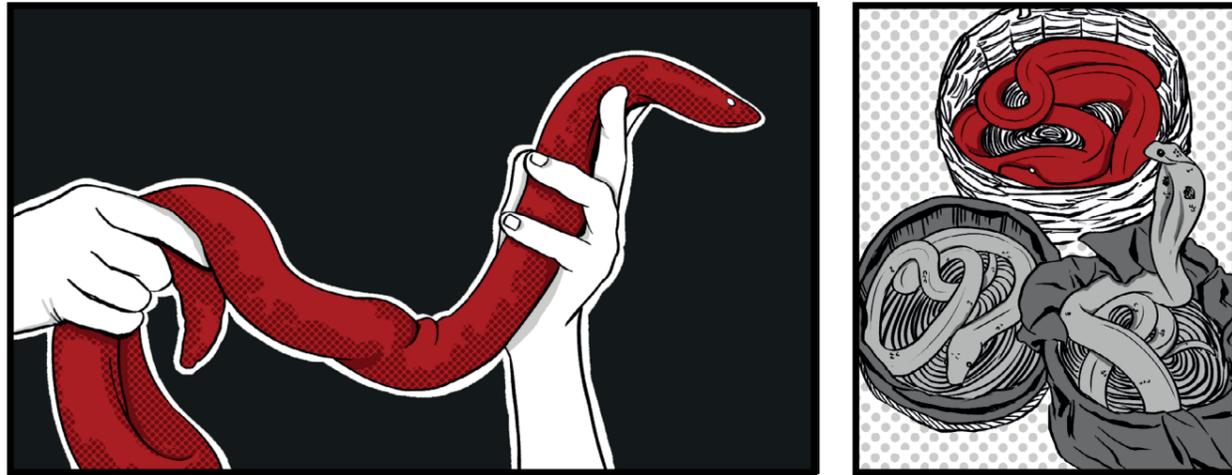
Preferred characteristics of red sand boas in illegal trade



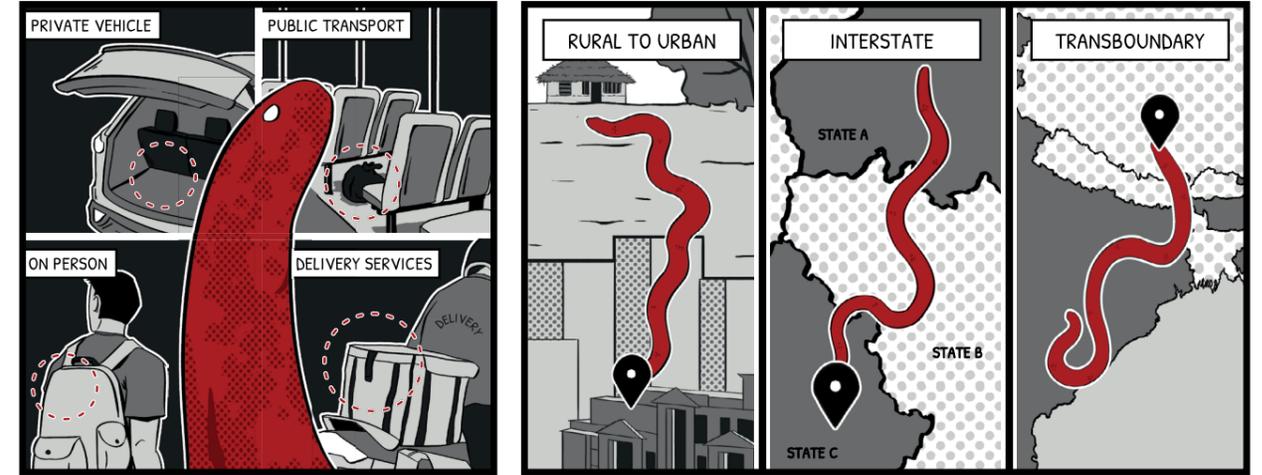
Sourcing of boas: habitats of red sand boas



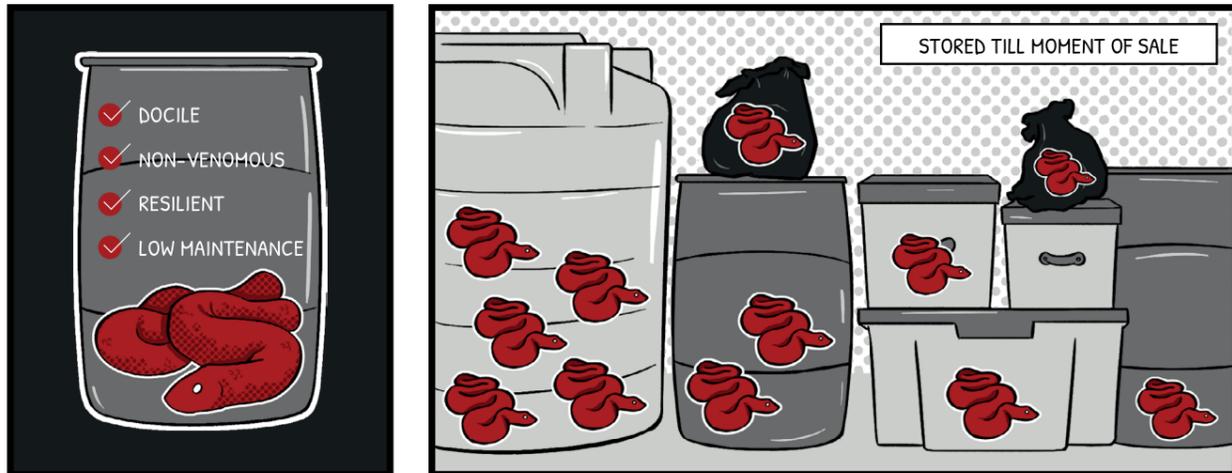
Sourcing of boas: Actors involved in capturing red sand boas



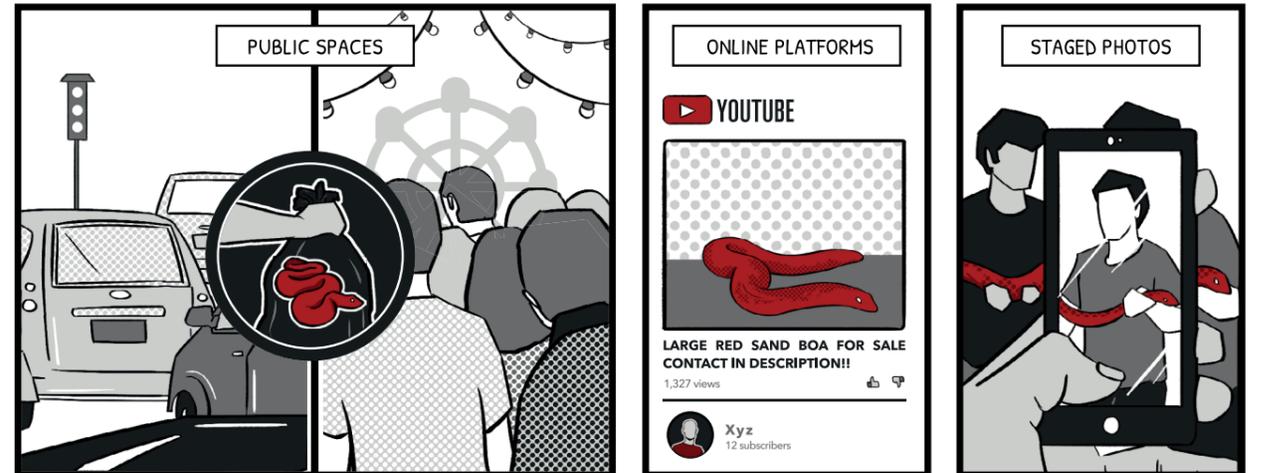
Transport of boas



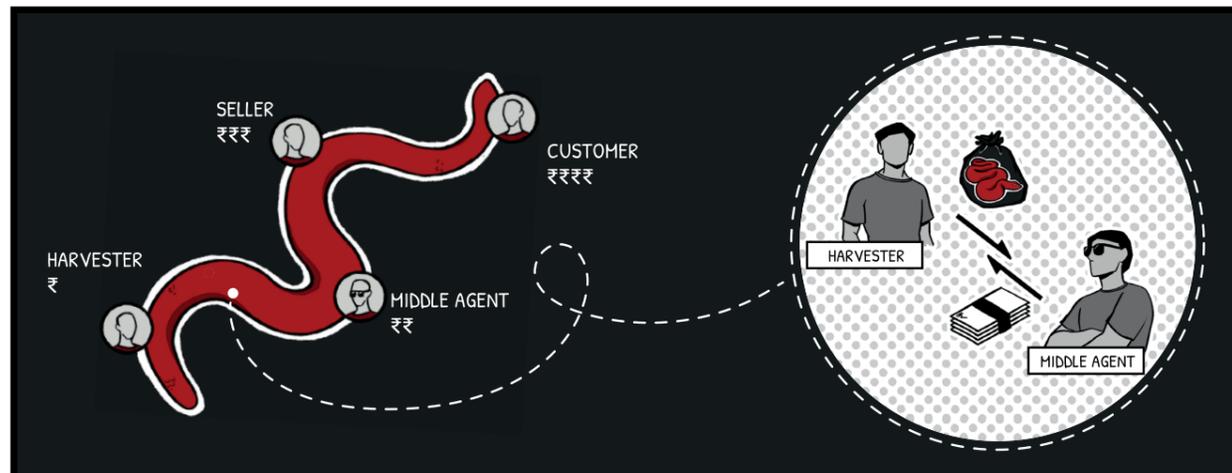
Stockpiling of boas



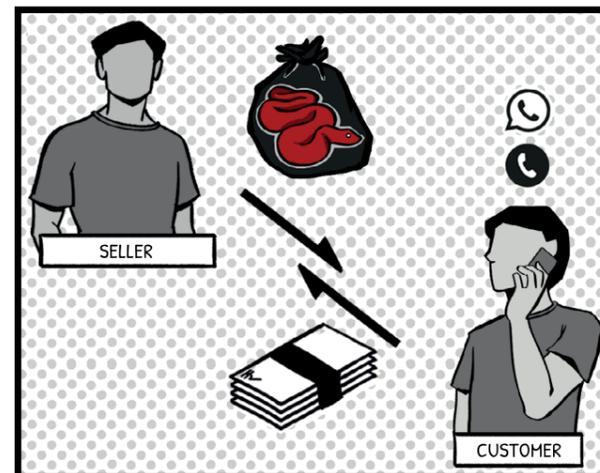
Sale of boas



Price dynamics of red sand boa in illegal trade



Communication for sale



Scale of sale

