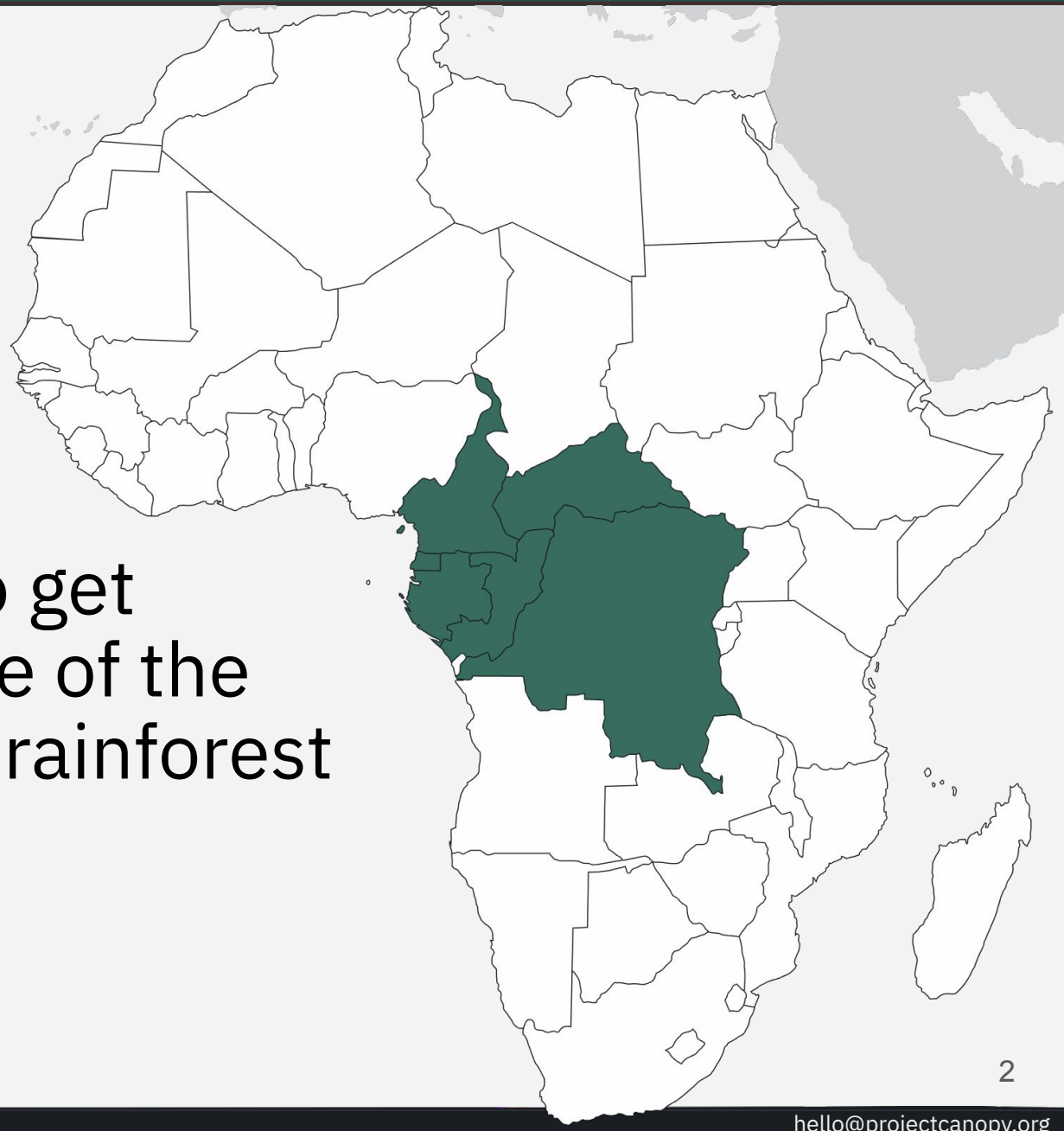
PROJECT CANOPY

Environmental Intelligence for Africa's Rainforest

9-May-2023 v1.6



The inability of organizations to get quality data and analytics is one of the greatest threats facing Africa's rainforest

Project Canopy is the solution

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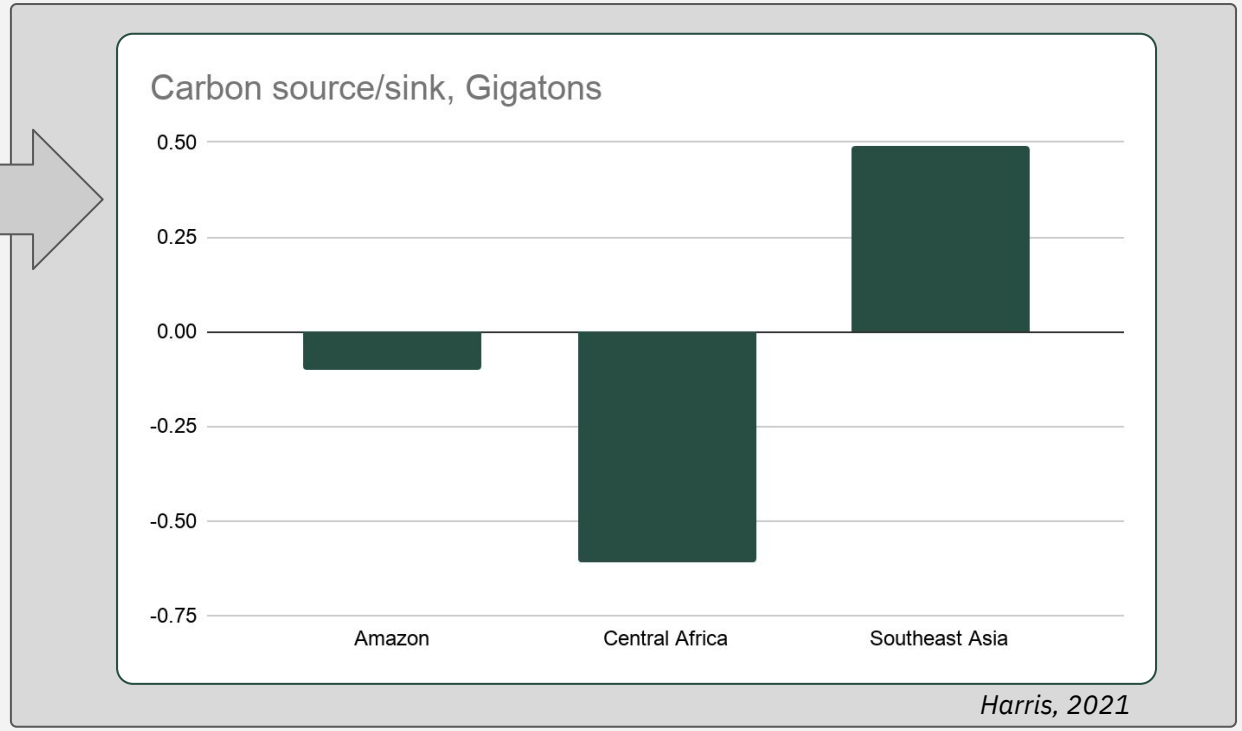
The Congo Basin is key to the fight against climate change

The world's second-largest tropical rainforest spans 2,500,000 km^{2}*

- It is also the last tropical forest carbon sink
- Current carbon store is >2 years' worth of global carbon emissions
- Occupies Cameroon, Central African Republic, Democratic Republic of Congo, Equatorial Guinea, Gabon, Republic of Congo



Harris, 2021

"If we lose the Congo Basin, we lose the fight against climate change."

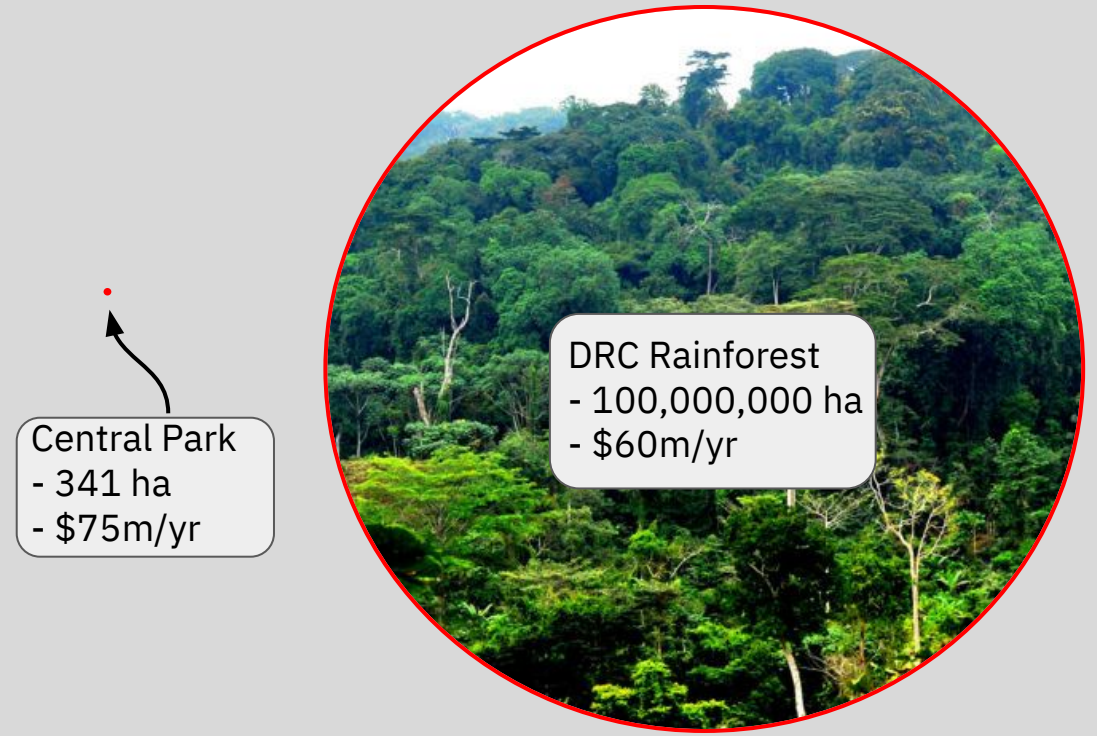
–Lee White, Minister of Environment, Gabon, June 2021

*See Sources slide for all citations

Can you save a rainforest when you're broke?

- Only 3% of international climate funding goes to Africa, and even less to the Congo Basin rainforest
- The DRC Ministry of Environment manages ~100m ha of rainforest with a budget smaller than New York City's Central Park: $60m vs $75m
- With such limited means, how can we support governments and communities to protect Africa's rainforest?

DRC 'manages' its rainforest with only $60/km²...



...while Central Park receives *$22 million/km²*

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With only €300m spent annually, conservation is failing

- The difficulty of making informed decisions is what prevents the conservation community from stopping the destruction of the rainforest
- Time, money, and expertise are needed to gather, analyze and communicate data, and many organizations lack these capacities
- Without good analytics, no one can identify how to make the most impactful conservation investments

Putting data at the heart of decision-making is the easiest, most cost-effective way to improve environmental work in the Congo Basin

What do you need to know to save the rainforest? ¯_(ツ)_/¯

Data is voluminous 2,500,000 km^2 of rainforest generates *a lot* of information

Data is scattered Hundreds of organizations work on the Congo Basin rainforest

Data is changing Humans are constantly studying – and modifying – the rainforest

Data is complex Satellite imagery, species databases, academic papers, trade flows, national and international laws, conservation project reports, land ownership contracts...

Examples

Which actors are the most responsible for deforestation and subsequent carbon emissions? Who are their consumers, funders, and owners? Do they follow national and international laws?

What was the impact of current and past conservation projects, programmes & policies on deforestation and defaunation? Are current efforts sufficiently resourced?

If science considers a species threatened, does it receive the necessary protection from national laws and international trade regulation? If not, where are the gaps?

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The result? A landscape of bad decisions & suboptimal policies

The difficulty of getting answers, in turn, results in suboptimal, even contradictory, policies

Without a common pool of data, coordination is resource-intensive and reduces decision-making agility

In fact, more than two-thirds of conservation efforts across all Africa require better policies to succeed *(Scullion, 2019)*

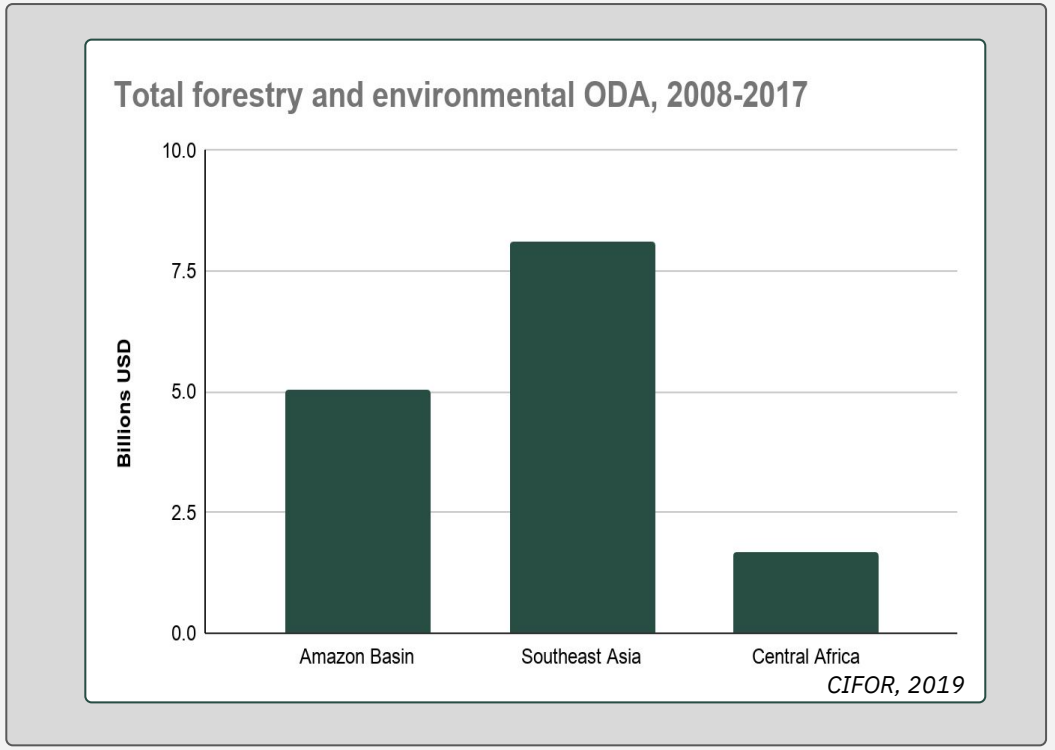
Examples

- Threatened species are not necessarily protected by national or international laws (*Project Canopy, 2023*)
- International development organizations subsidize companies logging illegally in the Congo Basin (*Global Witness, 2018*)
- Forest areas with high carbon density are insufficiently protected (*Dargie, 2018*)

Bad policies, in turn, lead to an underfunded sector

1. Decisions are not based on good data
2. Conservation outcomes suffer
3. Donors lose confidence that their money will be spent effectively
4. Much-needed funding goes elsewhere

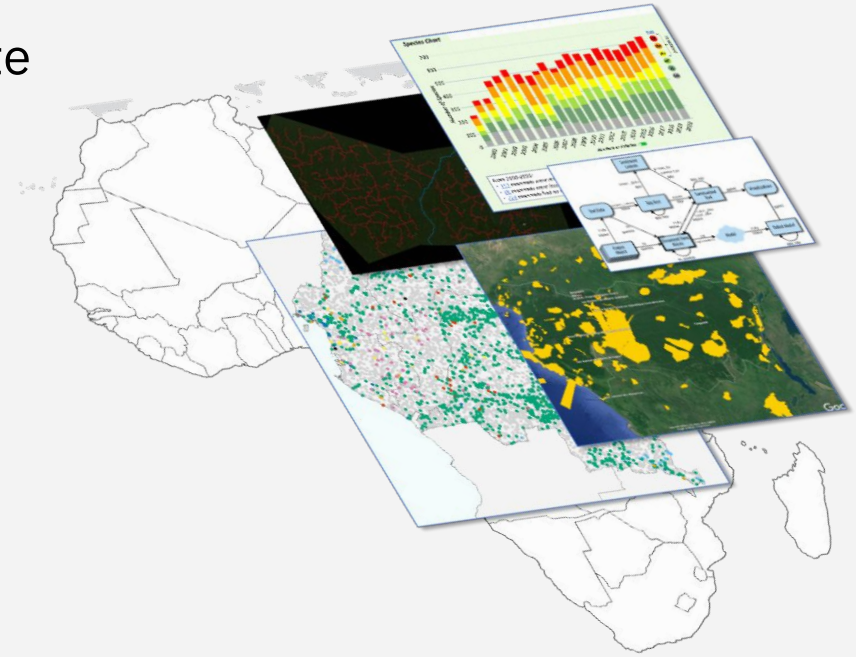
   ...and the cycle repeats itself



Only 11.4% of annual worldwide rainforest conservation funding is allocated to the Congo Basin

The Congo Basin rainforest needs *environmental intelligence*

- Imagine an accurate, complete and timely picture of the state of the rainforest and its main threats, where…
- Data is aggregated, summarized and communicated, while…
- New information is integrated in real time and put into context with existing information, and…
- Analytics are designed, executed and delivered based on environmental actors' needs



Imagine if evergreen answers were available
Imagine how much more powerful the solutions
Imagine how much more impactful the policies

We help environmental actors make better decisions

- We are a **data-driven non-profit,** engaging with environmental actors to provide them with the data and analytics they need
- This way, they can identify their most impactful conservation opportunities
- Better conservation outcomes will, in turn, lead international donors to increase funding across the region

1. We ask organizations what are the data and analytics they need
2. We provide rapid, evergreen solutions & integrate more datasets into our platform
3. We gain the best overview of the rainforest & the processes driving decision-making
4. We pivot to being an influencer, promoting evidence-based policies across the region

Project Canopy is a conservation multiplier

First, we solve shared analytical problems

We begin by engaging with the >100 orgs fighting to save the Congo Basin rainforest, asking them a simple question:

> ***“We have a team of GIS experts, data scientists, ecologists, legal experts, corporate investigators, information designers at our disposal.”***
>
> ***“How can we help?”***

We then provide them with the evergreen analytics they need to do their work

Our outputs go into strategic orientation, policy analyses, programme development, donor relations, public communications, and more

We ask organizations what are the data and analytics they need

- Specific problems are repeated across organizations, so one solution can be leveraged by many
- Solving hundreds of problems for dozens of actors exposes the most significant regional gaps and needs

We provide rapid, evergreen solutions & integrate more datasets into our platform

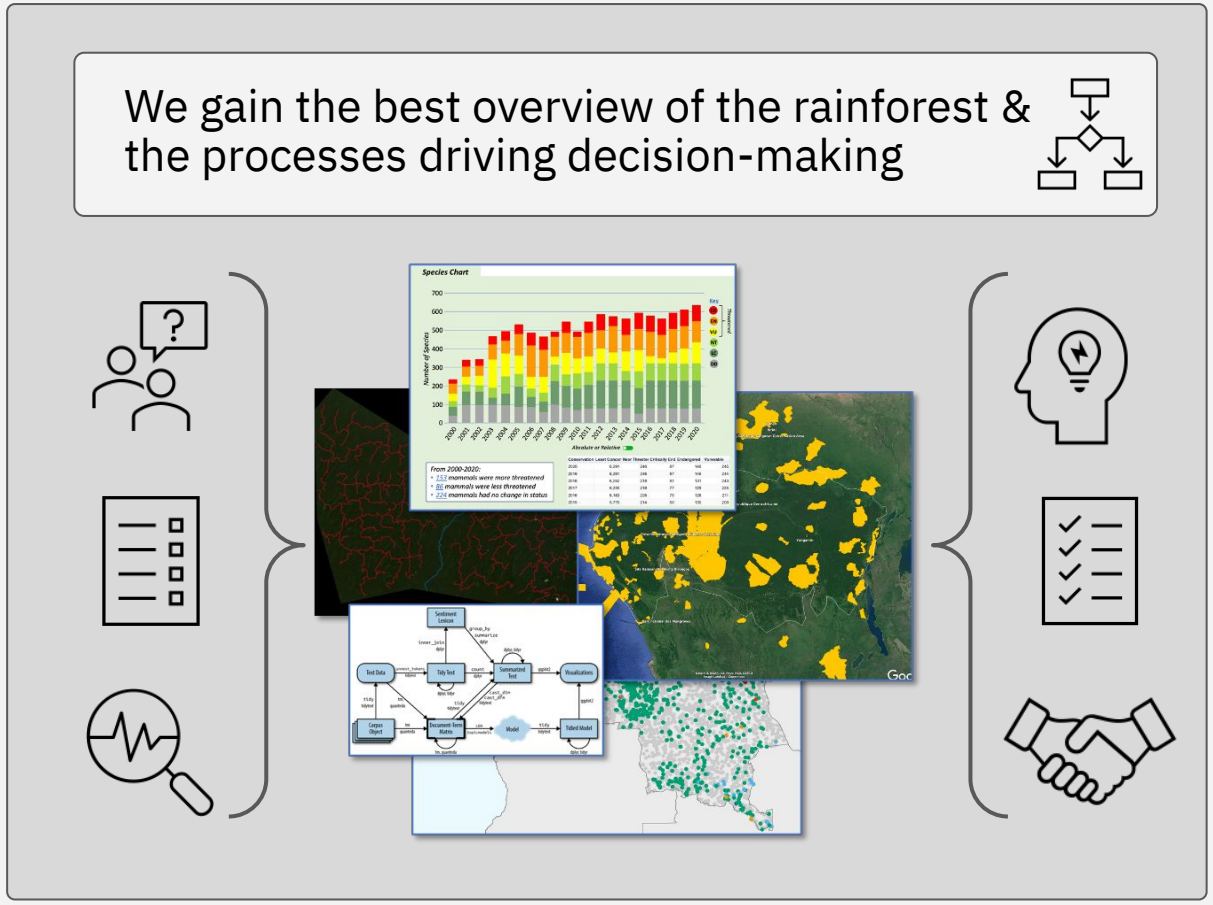
- We don’t write reports or do private consulting
- All data and analytics are integrated into our platform
- Organizations become incentivized to contribute their own datasets, reducing siloed knowledge

Second, we become a trusted center of expertise

As we solve problems for our audiences, we integrate new datasets into our platform. This leads to an unparalleled level of **expertise** on the rainforest

This expertise translates into **trust**: We are a neutral, reliable data broker, and the provider of environmental intelligence on the Congo Basin rainforest

At this point, organizations don't just come to us for data, they come to *rely* on us for data



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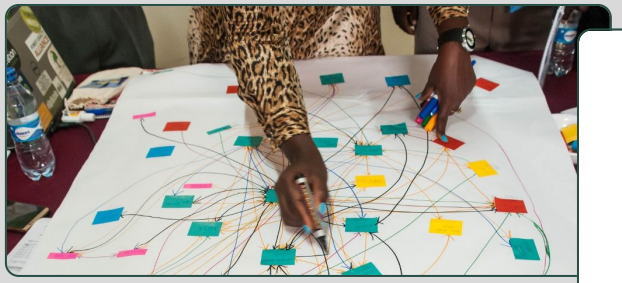
Finally, we use this social capital to influence policy

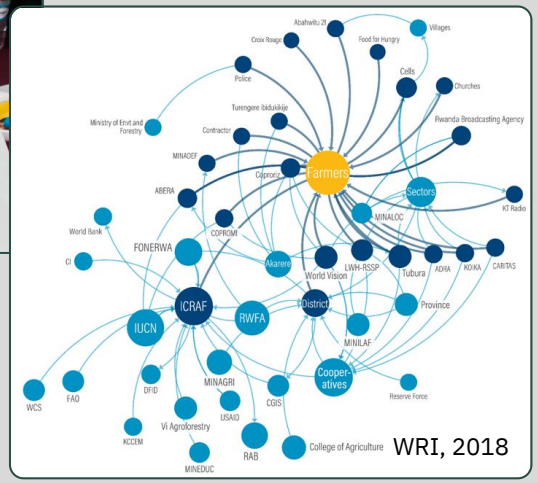
We will use our status to **pivot from a passive data provider to active participant** in the decision-making process

Our customer development gives us unparalleled insight into how best to influence policy

By **identifying key decision-making nodes**, **working with and supporting allies** in this space, and providing them with the data they need, *they* can best make the data-driven case for evidence-based policies across the system

We pivot to being an influencer, promoting evidence-based policies across the region





WRI, 2018

Who makes decisions?

What analytics do they need?

When do they need them, and how?

<u>This</u> is how Project Canopy brings about systemic, region-wide change

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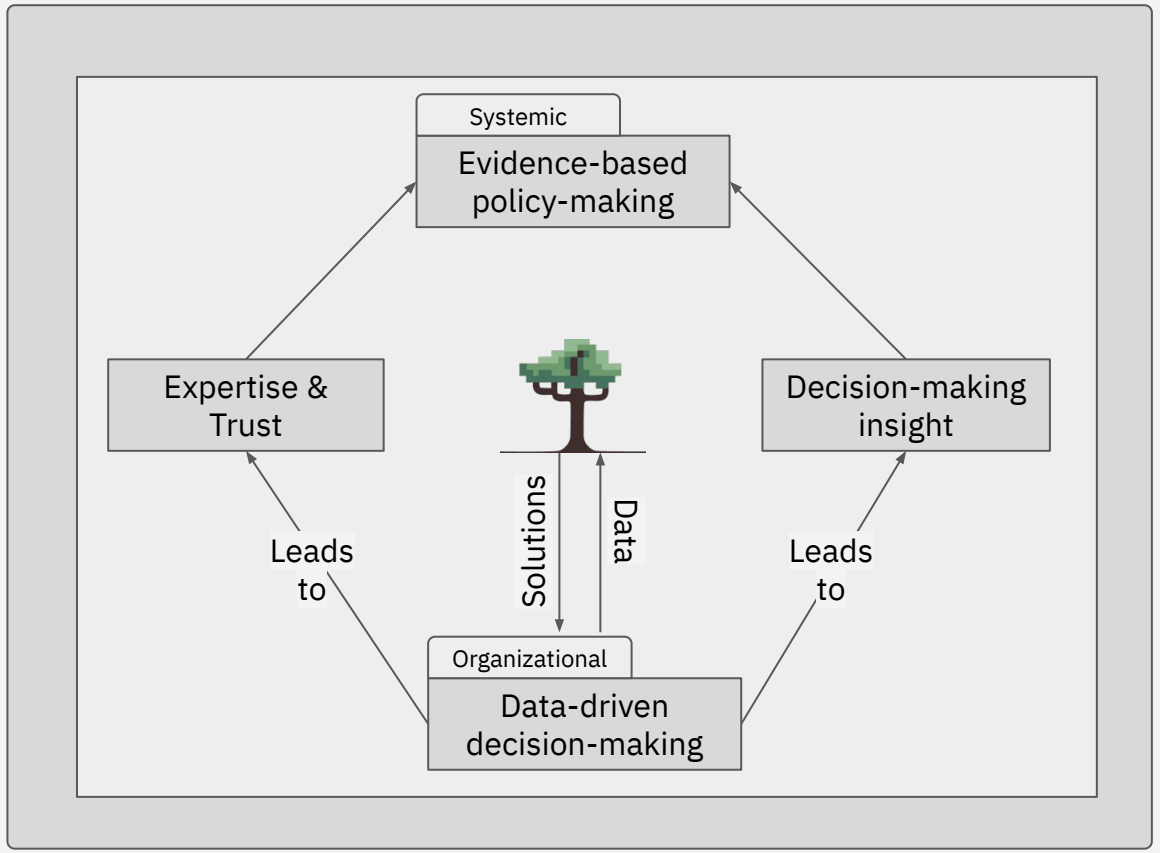
Project Canopy – Beyond the Congo Basin

Project Canopy is a **scalable process** which gathers, transforms, and communicates information so that organizations can make better decisions, and so that **policies become more scientific, more effective, and more evidence-based**

Scalability means Project Canopies can cover every major forest ecosystem, acting as a decisive multiplier for conservation outcomes

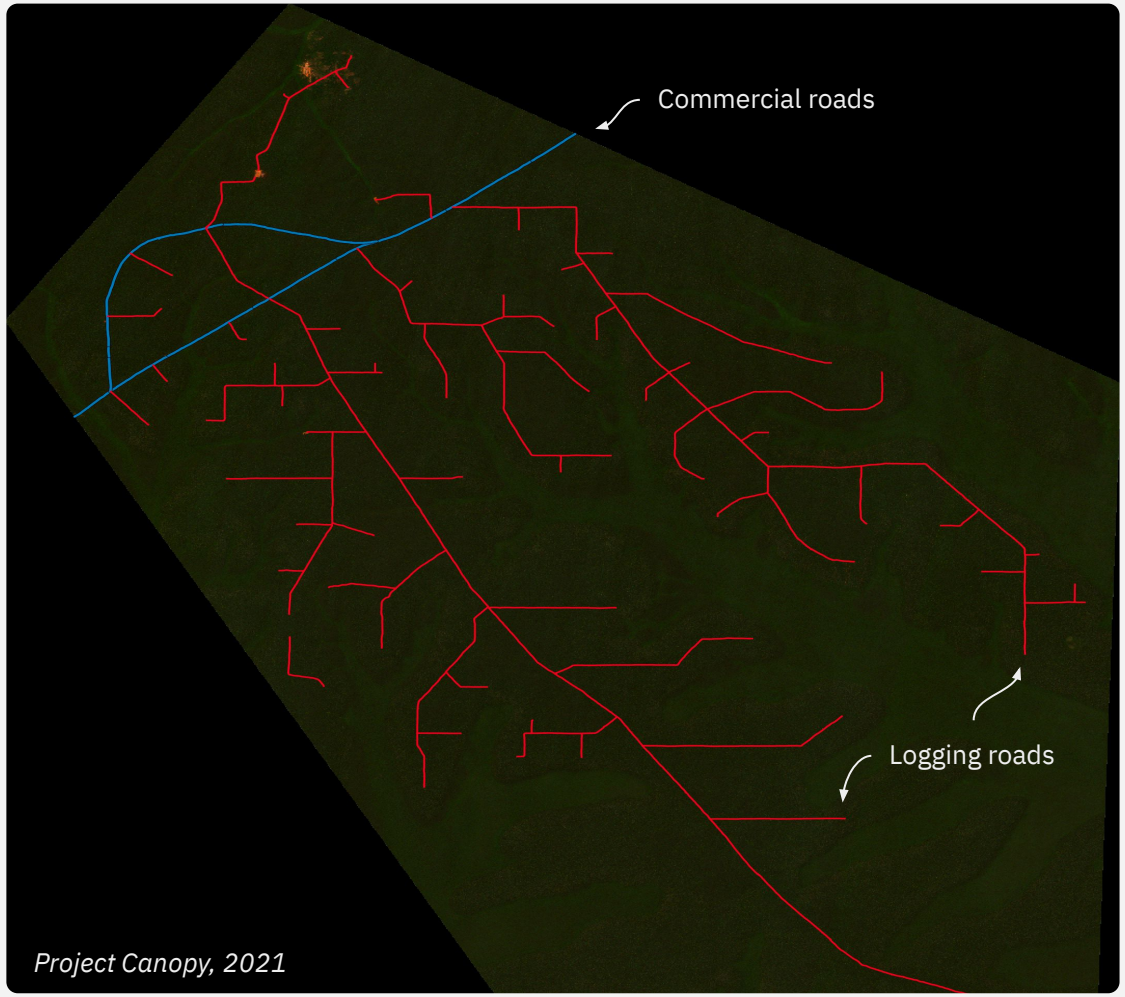
In turn, forests and their wildlife will prosper



And we are already building our prototypes

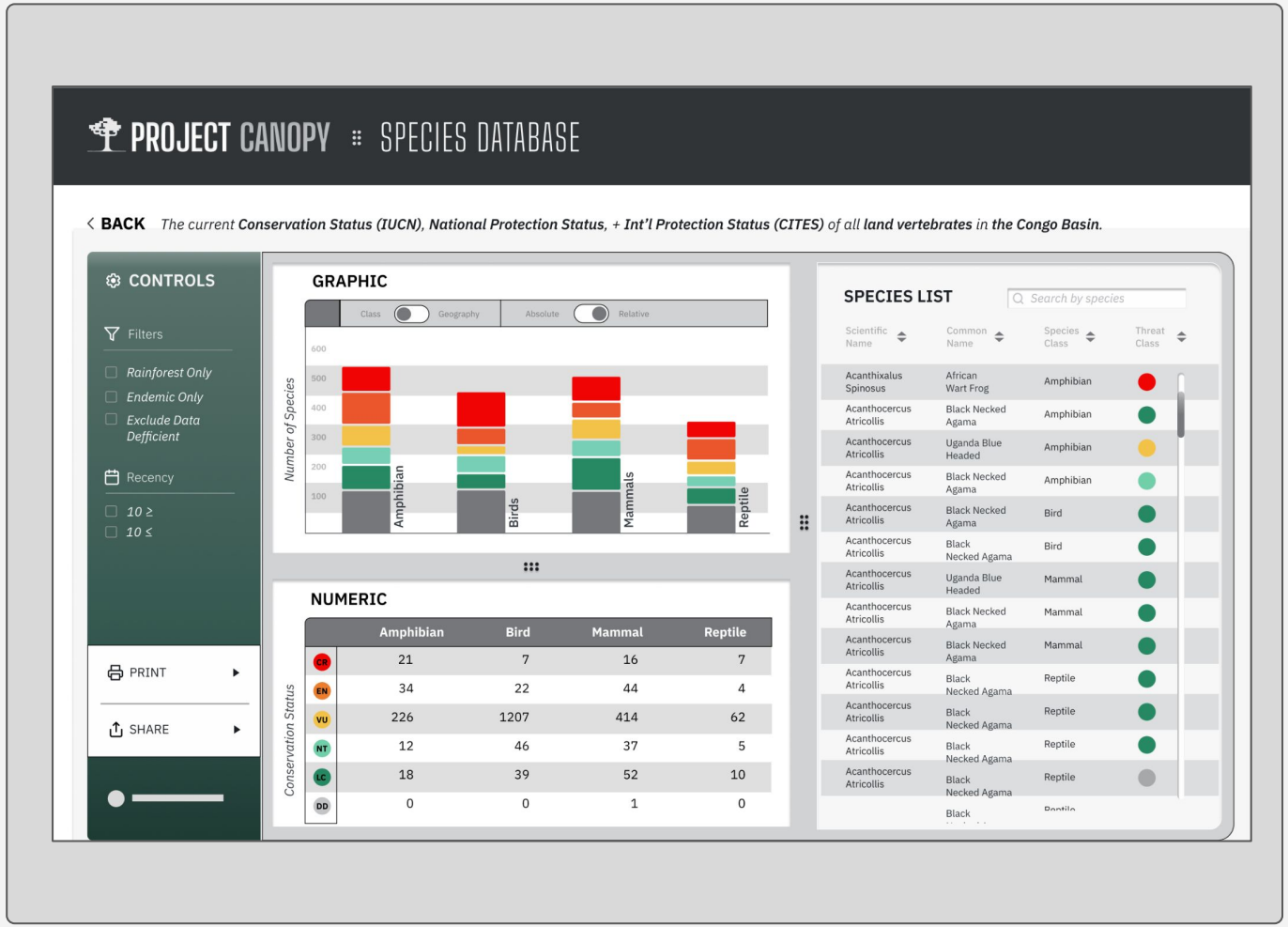
Using AI to track logging road construction

- Machine learning identifies signs of logging road construction over the entire Congo Basin rainforest
- Users specify an area of interest – for example, a national park or protected area – and receive notifications of activity with GPS coordinates
- Useful to independent forest monitors, CSOs, and law enforcement officials
- Estimated €1.32 million per year in savings across the sector, created *pro bono*
- Prototype delivery: 3Q23



Species platform for governments, campaigners

- Users can generate detailed lists of threatened and protected species
- We identify – in real time – the gaps between science, national and international laws
- Useful to governments, law enforcement, advocacy groups
- Estimated €84,000 in annual savings across the sector, created *pro bono*
- Prototype delivery: 3Q23



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These are the people we work for – from tiny NGOs to massive orgs

- A complex and fragmented conservation landscape
- Many actors operate in the region, and at different scales & levels of influence
- Knowledge is siloed
- Financial flows are uneven

Congo Basin governments perform state functions

Regional Orgs coordinate policy

Donors & Agencies provide the majority of funding

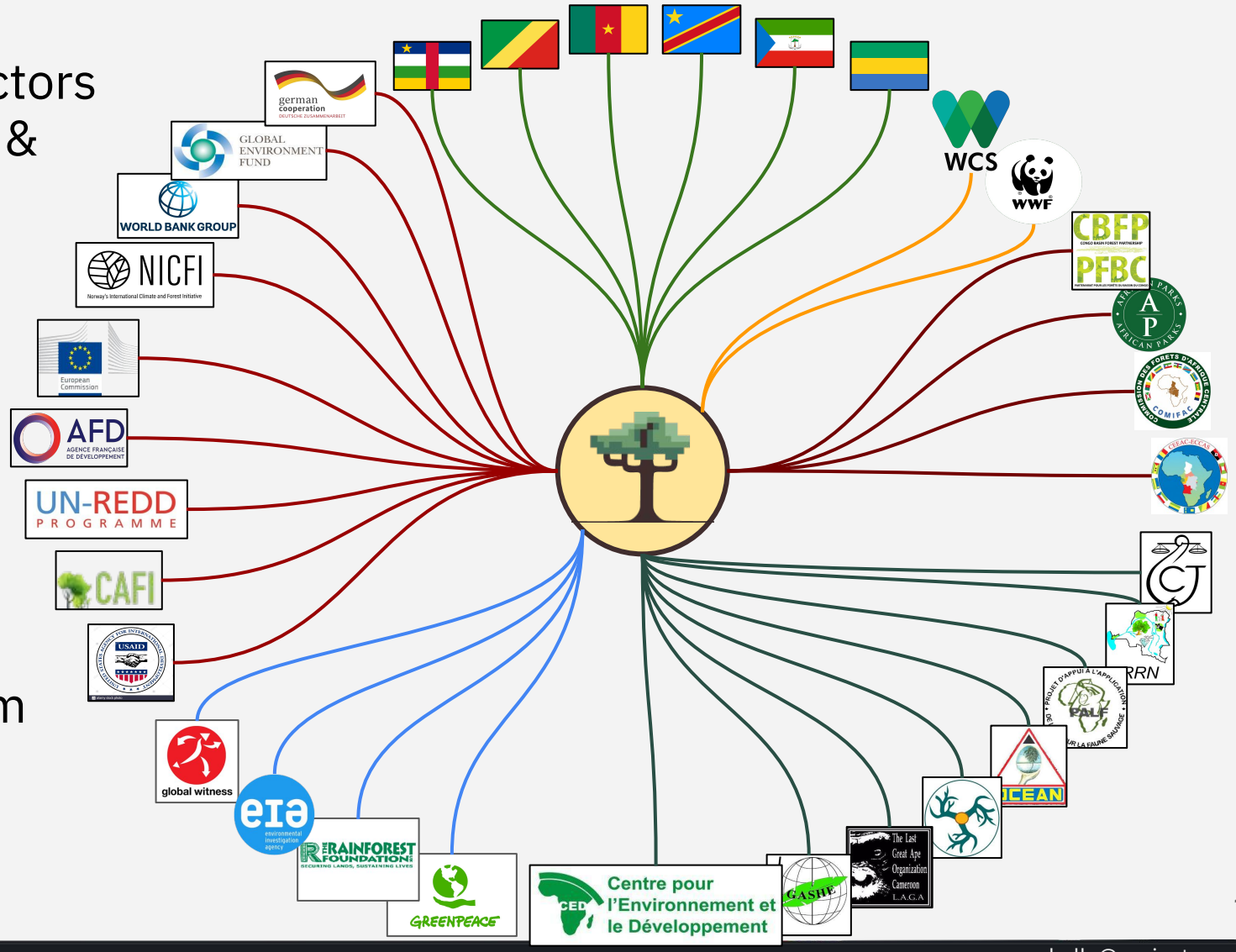
Campaigners hold other actors to account

INGOs provide technical expertise

Local NGOs do all the hard work on the front lines but are under-funded

Democratizing access to data by serving all actors equally

- Through Project Canopy, all actors have access to the same data & analytics
- Cash-strapped local CSO or wealthy donor?
  It doesn't matter
- Ties between actors are strengthened
- Innovation can now come from anywhere



A unique problem requires a unique solution

We are a novel player in the sector: a non-profit that acts like a technology startup

- Customer validation
- Tight feedback loops
- Rapid solutions deployment
- Process-based iteration

Our focus is on evidence-based policymaking. We use a science-driven approach to ask:

- What are the causes of deforestation, and what can be done about it?

Partnerships

SUBAK
SSRC
ELLIPSIS DRIVE
Omdena
EPFL ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE
data iku
CTFC

We are a vertical *specifically* addressing the Congo Basin

Combined expertise in the Congo Basin and technology

Jules Caron has lived and worked in the Congo Basin since 2012, working as a campaigner for organizations such as WWF, Global Witness, and Oxfam. He has sent elephant poachers to jail, prevented an expansion of DRC's logging sector, and ensured gender parity for CAR's Truth and Reconciliation Commission.

Misha Lepetic has 25 years of New York-based technology consulting experience in knowledge management across a number of industries, including the private sector (pharma, publishing, ed tech), nonprofits (HRW, IPPF), the United Nations, and startups. He and Jules have been friends since meeting in Bolivia in 1998.

Making Project Canopy a reality

Initially, we will operate as a non-profit

- Although we operate as a tech startup, we can only earn trust in the sector as a non-profit
- As we deliver results, we will draw our stakeholders into a **data cooperative framework**, where stakeholders contribute data and funds
- Only when all environmental actors have access to the same accurate, complete, and timely data and analytics is there a chance for systemic change
- Our initial funding ask is for **€500,000** to **€1.8 million** over 12-18 months, for different outcomes

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Questions answered after 12-18 months

1 €500,000 for 12 months

Scaling up the Logging Roads Tracker:

- Platform is 'live' (updates on a monthly basis)
- Identification of all major forest disturbances (slash-and-burn, agro-industry, mining, etc) to within 80% confidence rate
- Incorporation of biodiversity and carbon-stock data layers, and identification of high-conservation value areas
- Incorporation of analytics: Users select an area and time period and will be informed as to: 1) total area of forest cover loss, 2) relative contributor of each driver of deforestation, and 3) impact on biodiversity and carbon stocks

2 €1.8mln for 18 months

Includes Outcome 1 and:

- Further develop Species Database to identify drivers of defaunation
- Incorporation, analysis, and summary of all local and international environmental laws (+5,000 pages), allowing users to immediately identify the specific provisions of the texts they need
- Incorporation, analysis, and summary of all peer-reviewed articles on defaunation, deforestation, and carbon emissions
- Stakeholder mapping of all scientists studying the rainforest
- Stakeholder mapping of all conservation actors and projects of the previous 5 years
- Effective communications of Project Canopy across the region and internationally
- Translation of the platform into French

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When decision-makers have good data, the rainforest stands a chance

- We have less than 10 years to address and mitigate climate change
- Not saving the Congo Basin means the fight against the worst of climate change is lost
- The moment to start spinning up this flywheel is now
- **We have the tools, we have the team, and we have the network**
- The sooner we get funding, the sooner we will make an impact

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Supplementary slides

PROJECT CANOPY

Environmental Intelligence for Africa's Rainforest

Integrated data layers provide a unique, vertical view of the rainforest

State of the rainforest

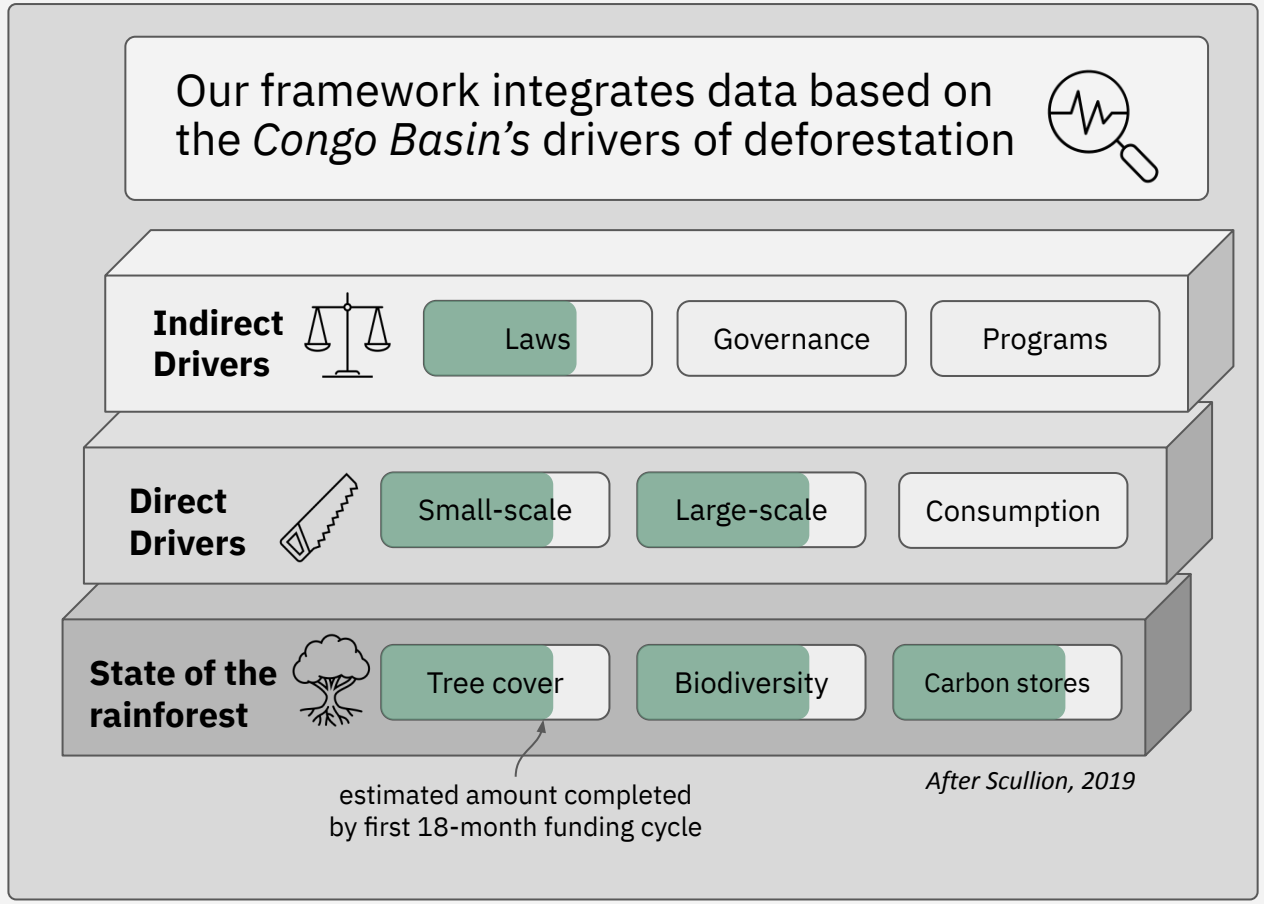
- What is the ecological state of the rainforest?

Direct Drivers

- What are the human activities (threats) harming the rainforest? These can be both small-scale (slash-and-burn agriculture), or large-scale (industrial-scale logging, agro-industry). Who owns these companies? Who funds them?
- Who are the consumers of forest goods?

Indirect Drivers

- What is being done to end the destruction of the rainforest?
- Do the laws address these drivers? Do sanctions act as a deterrent? Are these laws enforced?
- Do conservation programs address these threats?



Deforestation Tracker estimated cost savings model

We estimate that this approach is the equivalent of 12 years of specialist work, and shortens response time to illegal logging from 2-3 months to one week

- Expected users: local CSOs auditing timber concessions
- Expected policy improvement(s): Better implementation of the forest code
- Current costs:
  - Unit expense: One consultant surveying 40,000 km^2 for one year for one org = €10K
  - Multiply total concessions (441,514 km^2) based on this rate = €110K for all regional timber concessions
  - Multiply by how many orgs would benefit from this data, even if they cannot pay for it (assumes no knowledge sharing):
    - Every Congo Basin gov't (counts as 1)
    - WCS, WWF, Greenpeace, Rainforest Foundation, Global Witness, Transparency Int'l (6)
    - 1 civil society organization per country (counts as 1)
    - Dev agencies: AfD, EU, Norway, Germany (4)
  - **12 * €110K = €1.32mln savings per year across the region**

Species Protection Platform estimated cost savings model

We estimate that this integrated approach would save up to 150 days of specialist work across the entire region, with an ongoing maintenance cost of 1-2 days per year.

- Expected users: Governments, INGOs, Law enforcement authorities
- Expected policy improvement(s): Better protection of threatened species
- Current costs:
  - 120hrs / country = 600 hrs for 5 countries (N/A for EqG)
  - €140/day for specialist @ 75 days = €10,500
  - # orgs benefitting:
    - Every CB gov't (counts as 1)
    - 1 CSO per country (counts as 1)
    - WWF, WCS, +1 more INGO (3)
    - Niche orgs (species- and country-specific) (counts as 1)
    - CITES, IUCN (2)
  - **8 * €10,500 = €84K savings per year across the region**

Sources

- *Slide 3:*
  - Total carbon store in the Congo Basin: 46 Gt (Nasi, 2009) + (10 * 610 Mt/yr (Harris, 2021)) + 30 Gt (Dargie, 2018) = 82 Gt
  - Taking all greenhouse gases into account, Covey, 2021 now estimates that the Amazon is carbon positive
  - Chart showing rainforest carbon source/sink estimates calculated from Harris, 2021
- *Slide 4:*
  - Only 3% of international climate funding goes to Africa: World Bank, 2022
  - NYC Central Park funding: Central Park Conservancy; DRC Ministry of Environment budget: Personal communication
- *Slide 5:* On the importance of data for decision-making: Pullin, 2003
- *Slide 7:*
  - >2/3 of conservation efforts across all Africa require better policies to succeed: Scullion, 2019
  - Threatened species are not necessarily protected by national or international laws: Project Canopy, forthcoming
  - International development organizations subsidize companies logging illegally in the Congo Basin: Global Witness, 2018
  - Forest areas with high carbon density are insufficiently protected: Dargie, 2018
- *Slide 8:* Total forestry and environmental ODA, 2008-2017: CIFOR, 2019
- *Slide 13:* Social Network Analysis examples: WRI, 2018
- *Slide 25:* Threats framework based on Scullion, 2019