
Nature’s Numbers: Natural Capital Accounting

Building natural and social capital

1. The natural environment provides essential benefits to humans and non-human species which are key to our future survival and prosperity.

2. The inclusion of nature in our decision-making challenges much of today's economics.

3. Creating consistent or scalable metrics of the health of natural and social capital and for monitoring the Sustainable Development Goals

4. Assurance methods to underpin lending and investment by public and private institutions are urgently needed

5. There are few trusted agents to interpret the available data and understand the direction of change

Our community team

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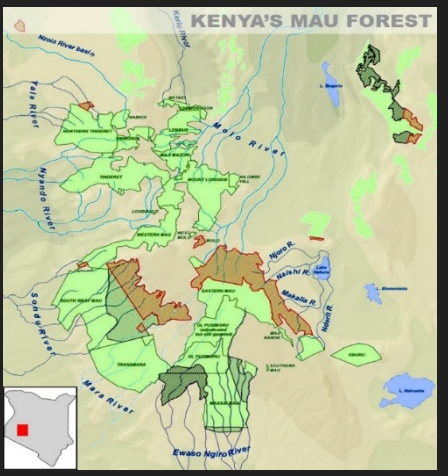
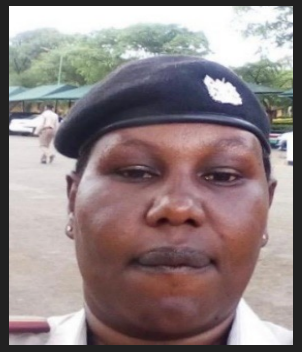
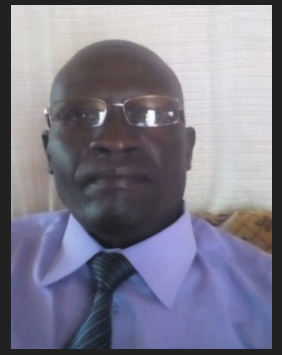
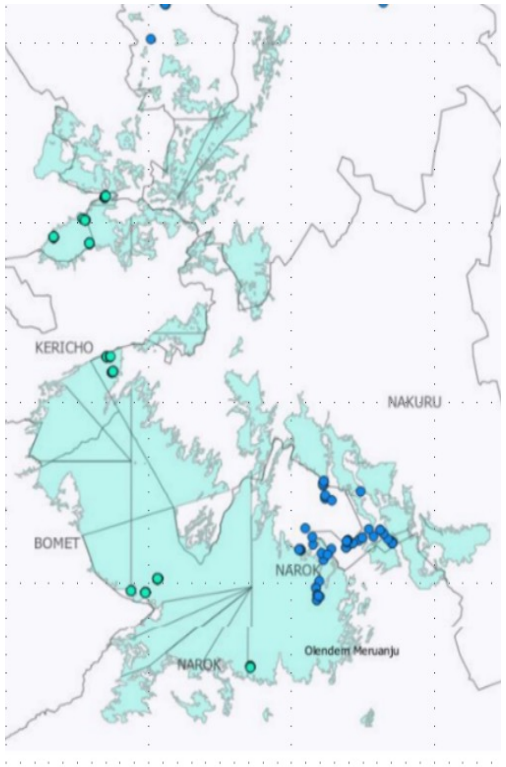




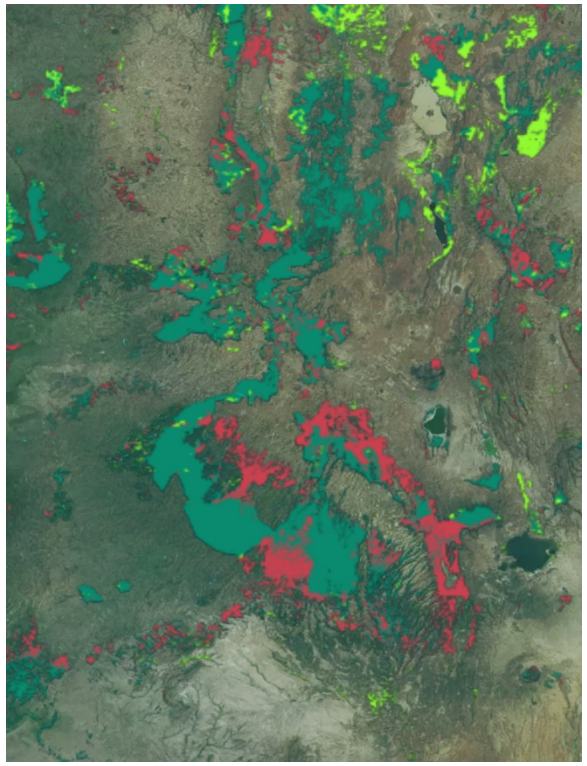


Our history

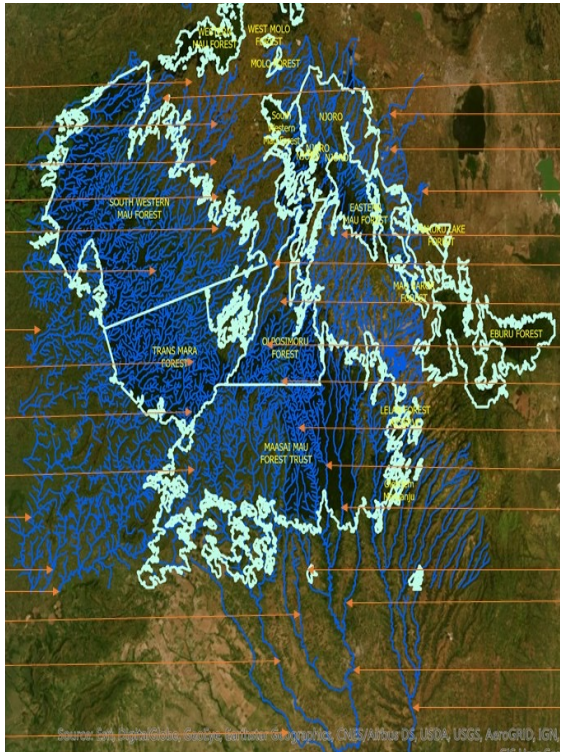
Mau Forest Complex Water Tower losses of forest cover and rivers



Forest cover:
500,000 ha 1960s



Forest cover:
240,000 ha 2019



Length of rivers:
7000km 1960s 4000km 2020

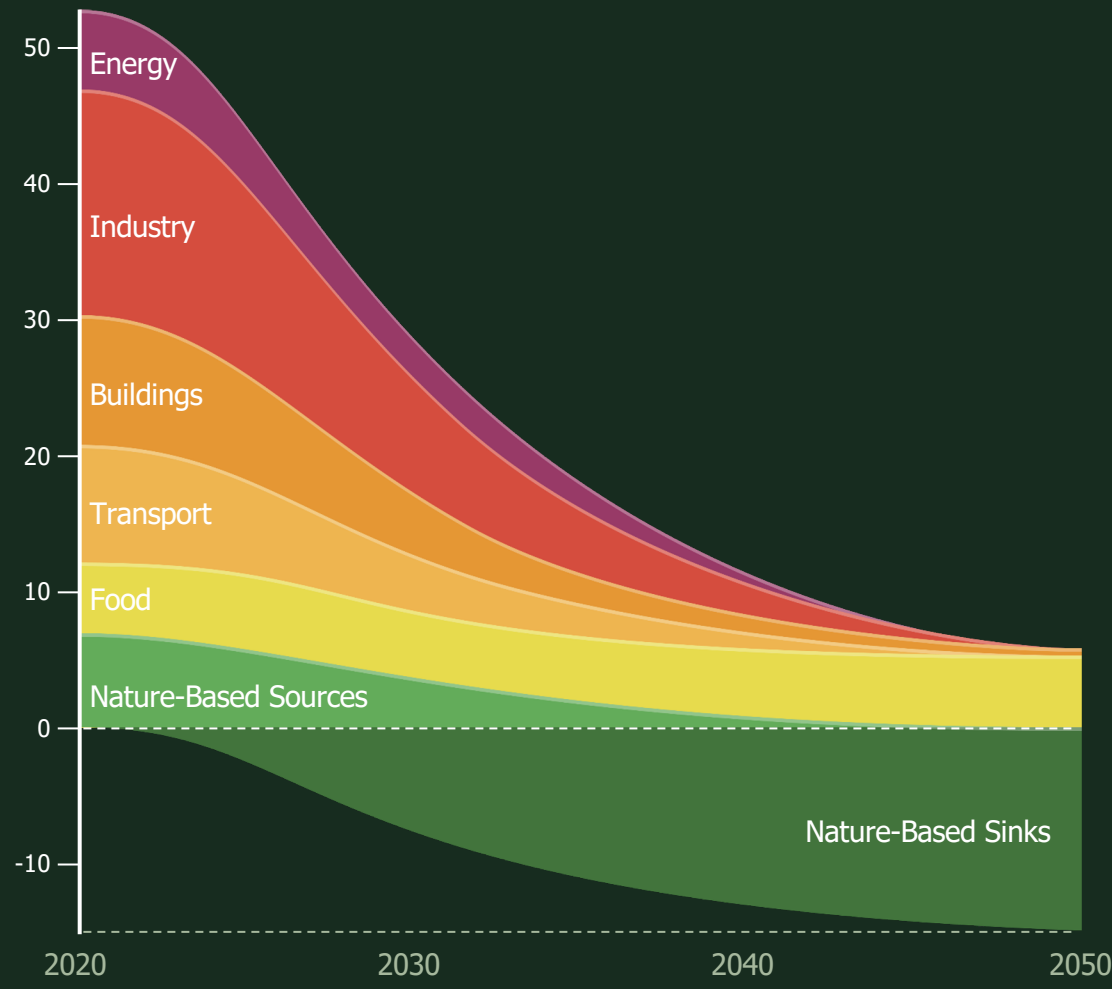
Context

Nature based solutions are critical

COP26 38. *Emphasizes* the importance of protecting, conserving and restoring nature and ecosystems to achieve the Paris Agreement temperature goal, including through forests and other terrestrial and marine ecosystems acting as sinks and reservoirs of greenhouse gases and by protecting biodiversity, while ensuring social and environmental safeguards

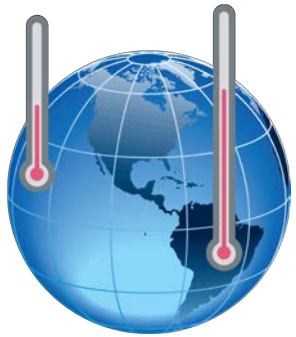
We need scalable, transparent, and actionable methods to achieve Net Zero Carbon, Biodiversity Net Gain and Sustainable Farming Livelihoods

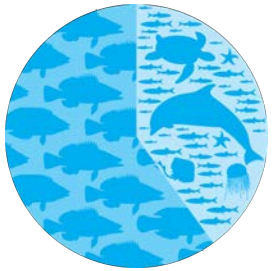
Nature-based solutions driven by land stewardship are critical and need to go hand-in -hand with technology to achieve mitigation and adaptation.

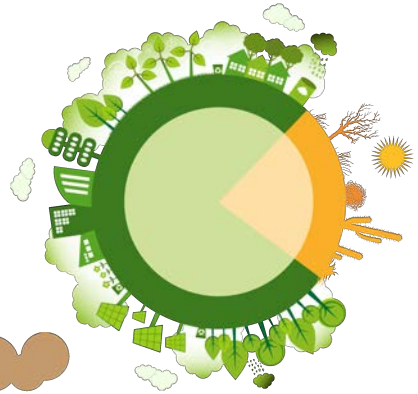


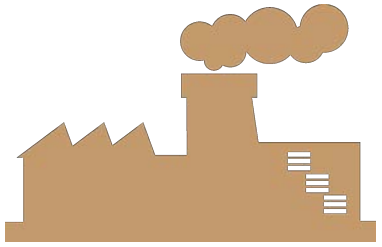
Source: Exponential Roadmap

CALCULUS OF NATURAL PROSPERITY







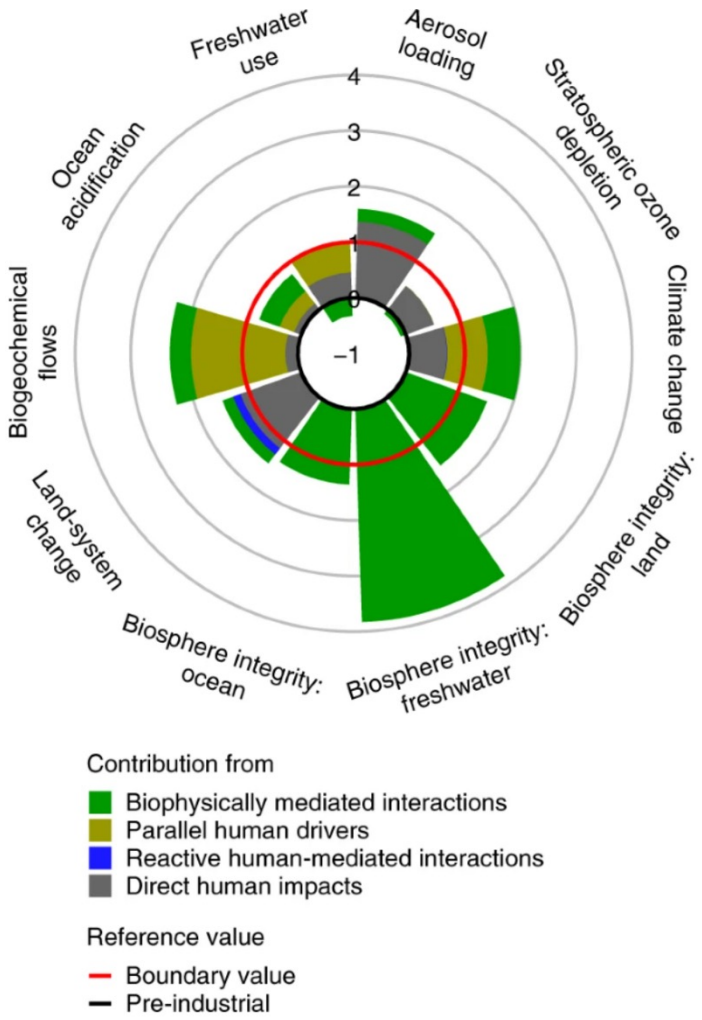


Health of natural and social capital

Consumption and production patterns and derived incomes and wealth

Distributional fairness and equity

Planetary boundaries - Defining parameters

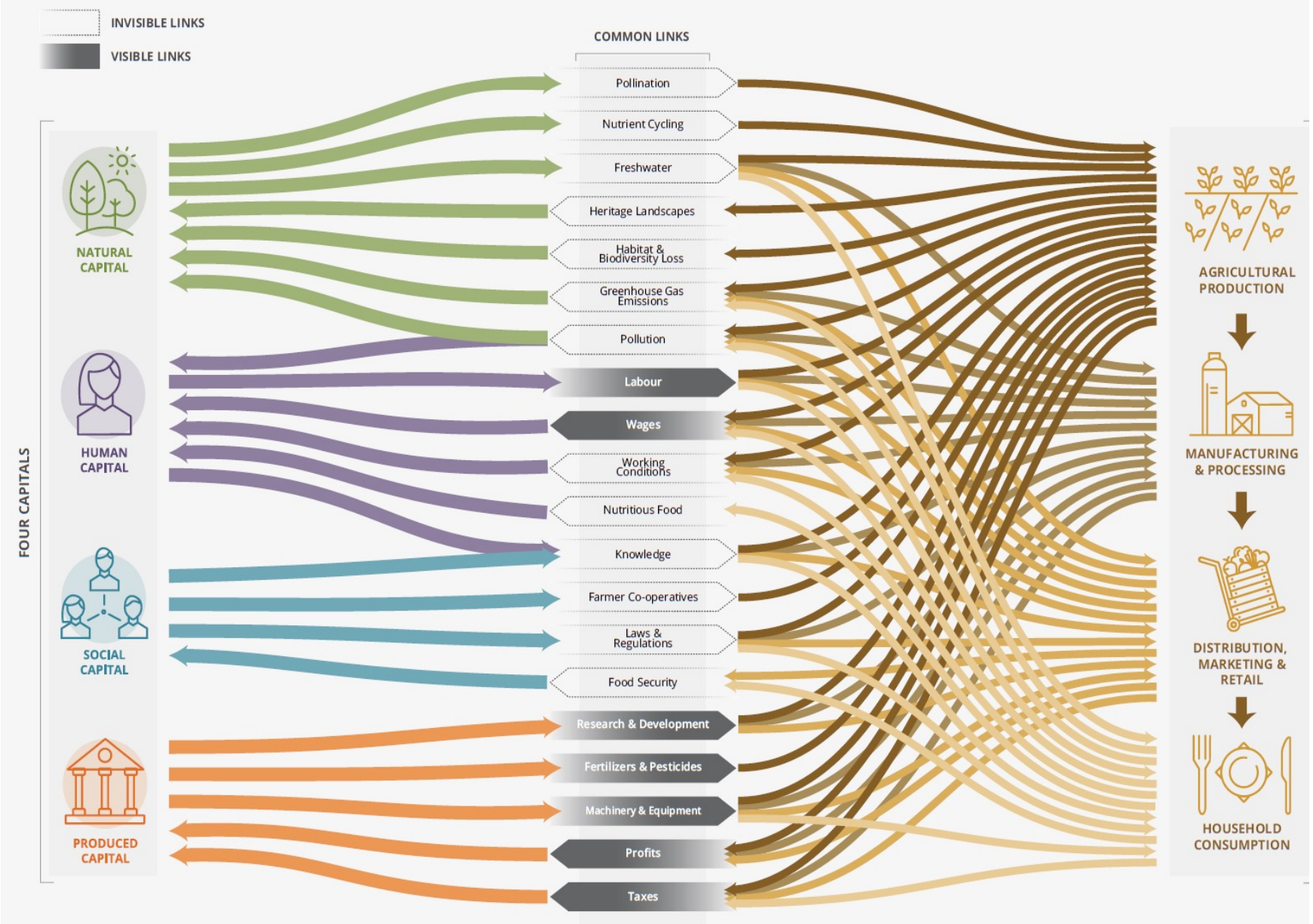


"Living within planetary boundaries means that global warming is stabilized at no more than +1.5°C, and natural systems are protected, restored and used sustainably. It also means that societies have developed sufficient adaptive capacity to build and maintain resilience in a healthy and regenerative Earth system."

wbcsd

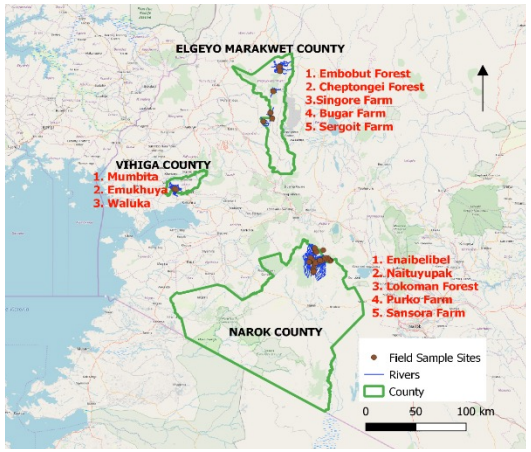
Source: Lade, S.J., Steffen, W., de Vries, W. *et al.* Human impacts on planetary boundaries amplified by Earth system interactions. *Nat Sustain* **3,** 119–128 (2020). https://doi.org/10.1038/s41893-019-0454-4

Capitals framework



Our knowledge

Mau Mara Cherangani natural prosperity research

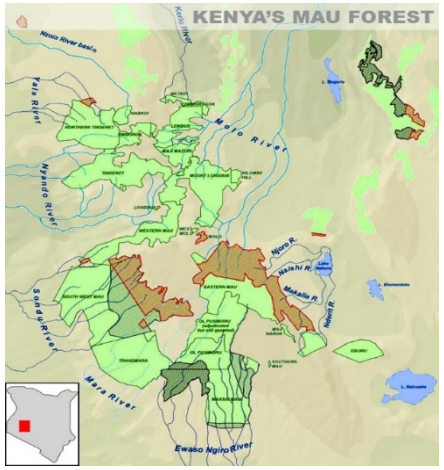








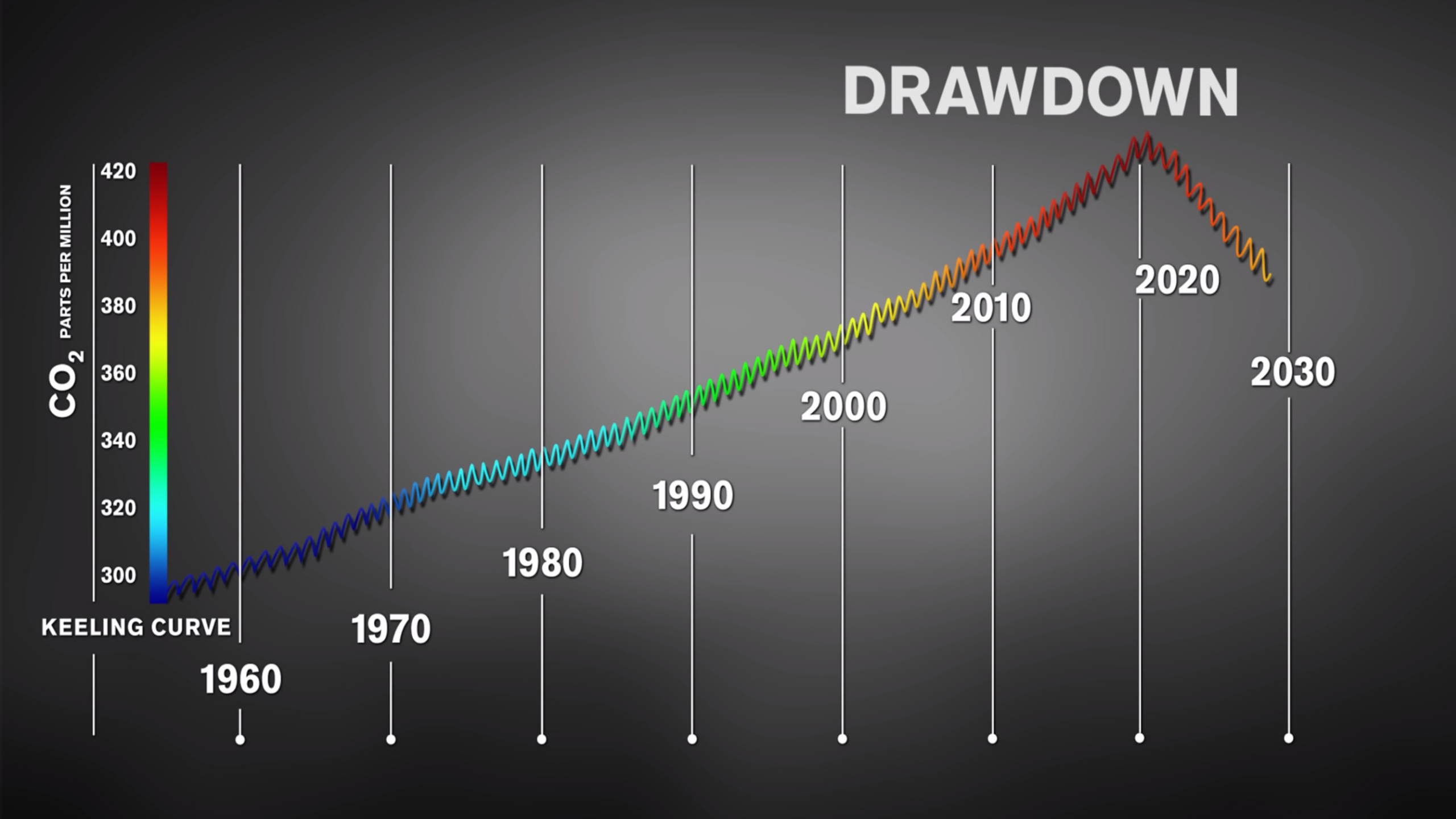
Regenerative Agri-forestry



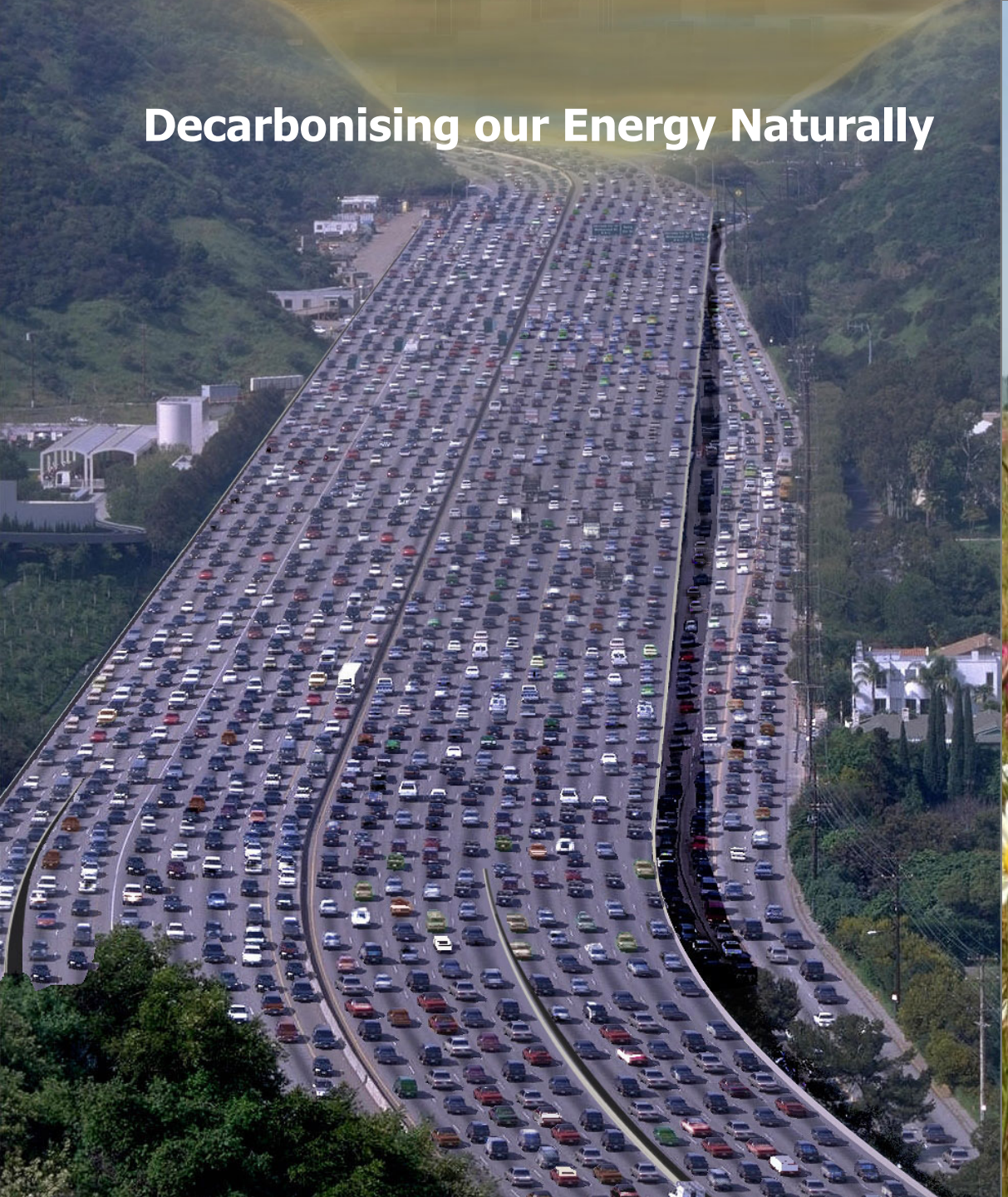

Landscape restoration



Clean affordable energy


DRAWDOWN
CO_2 PARTS PER MILLION
420
400
380
360
340
320
300
KEELING CURVE
1960
1970
1980
1990
2000
2010
2020
2030

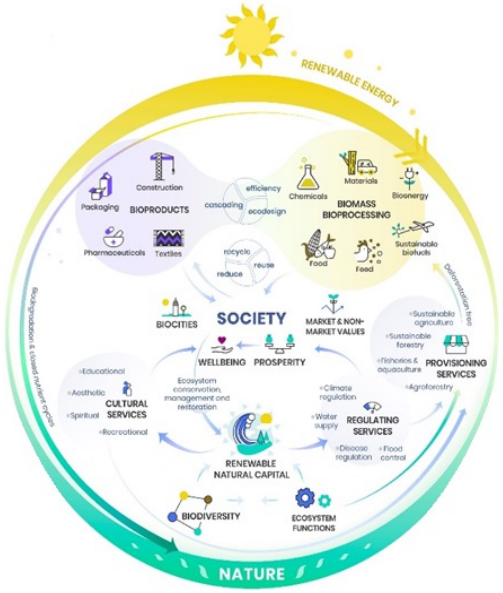
Decarbonising our Energy Naturally



Our future

Energy and environmental impacts: shifting to value added products

2m tonnes/year of firewood extracted for domestic use

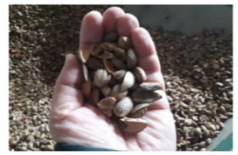


Circular bio-economy














Changing agriculture

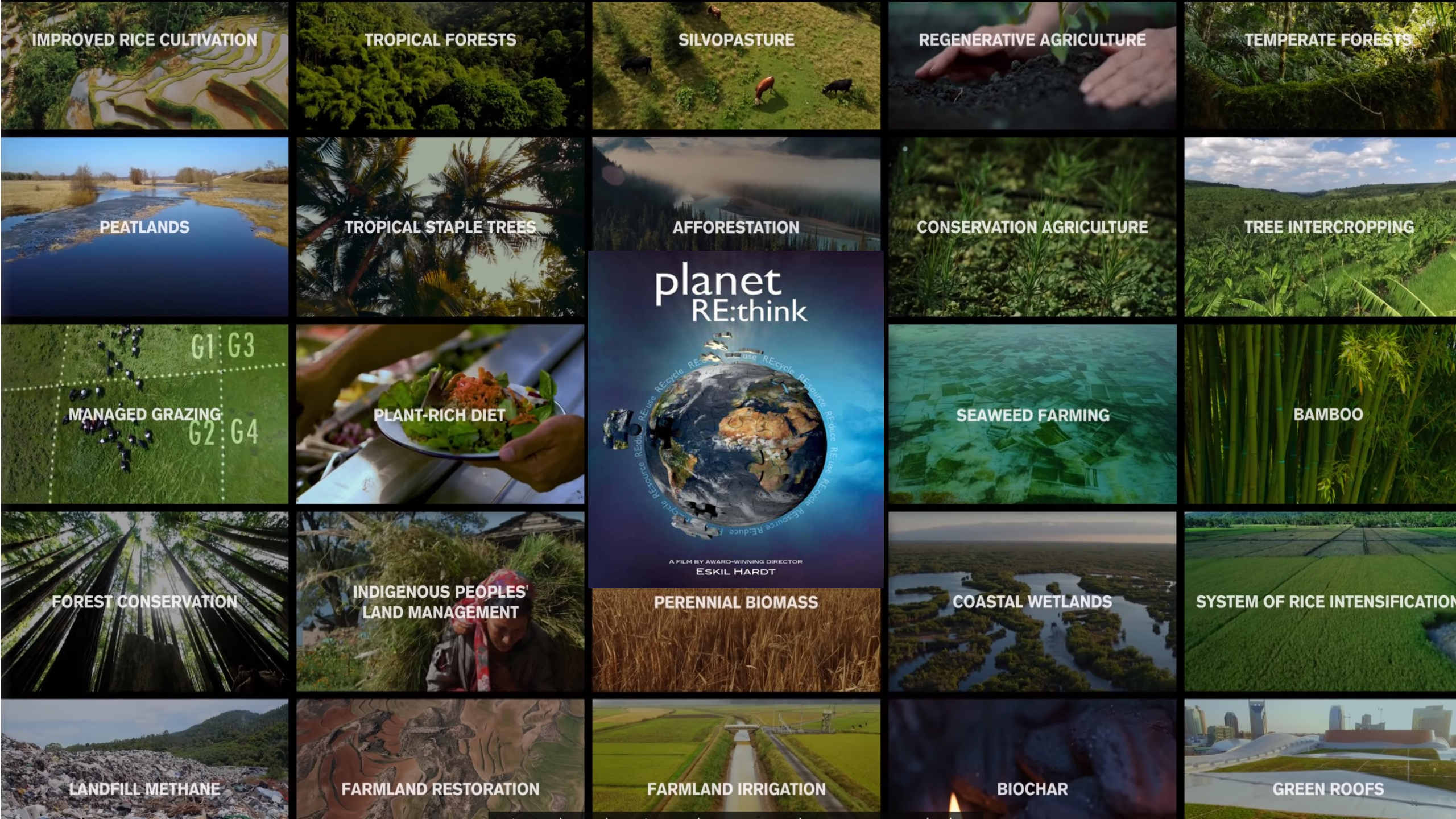
Our agri-forestry

Agriculture: clean water and healthy soils

Land clearance for agriculture is accelerating

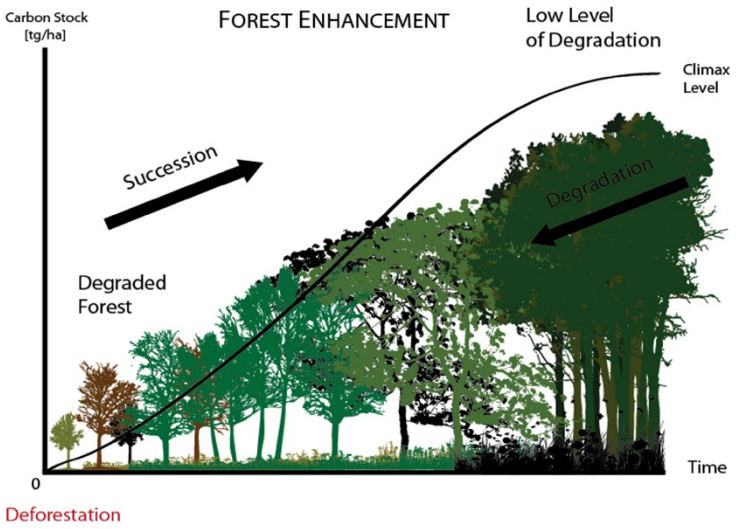
90% of farmers disposing of waste chemicals into rivers streams and pit latrines

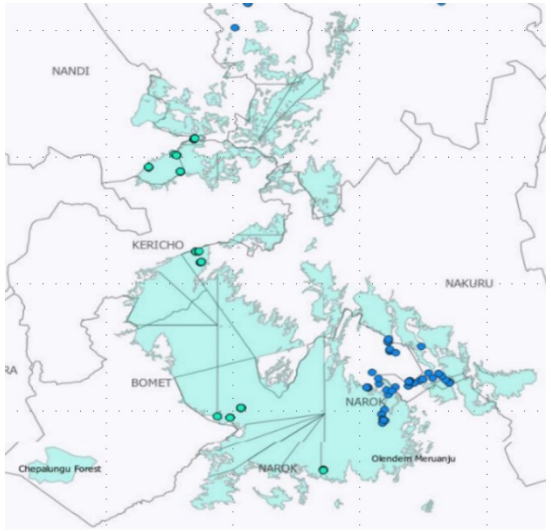
Protecting ecosystems


IMPROVED RICE CULTIVATION
TROPICAL FORESTS
SILVOPASTURE
REGENERATIVE AGRICULTURE
TEMPERATE FORESTS
PEATLANDS
TROPICAL STAPLE TREES
AFFORESTATION
CONSERVATION AGRICULTURE
TREE INTERCROPPING
G1 G3
MANAGED GRAZING
G2 G4
PLANT-RICH DIET
planet
RE:think
A FILM BY AWARD-WINNING DIRECTOR
ESKIL HARDT
SEAWEED FARMING
BAMBOO
FOREST CONSERVATION
INDIGENOUS PEOPLES' LAND MANAGEMENT
PERENNIAL BIOMASS
COASTAL WETLANDS
SYSTEM OF RICE INTENSIFICATION
LANDFILL METHANE
FARMLAND RESTORATION
FARMLAND IRRIGATION
BIOCHAR
GREEN ROOFS

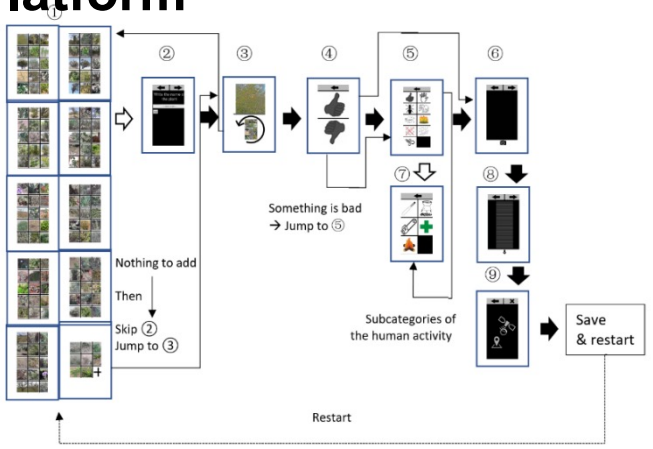
Our research

Community mapping of forest ecosystem health and indigenous trees

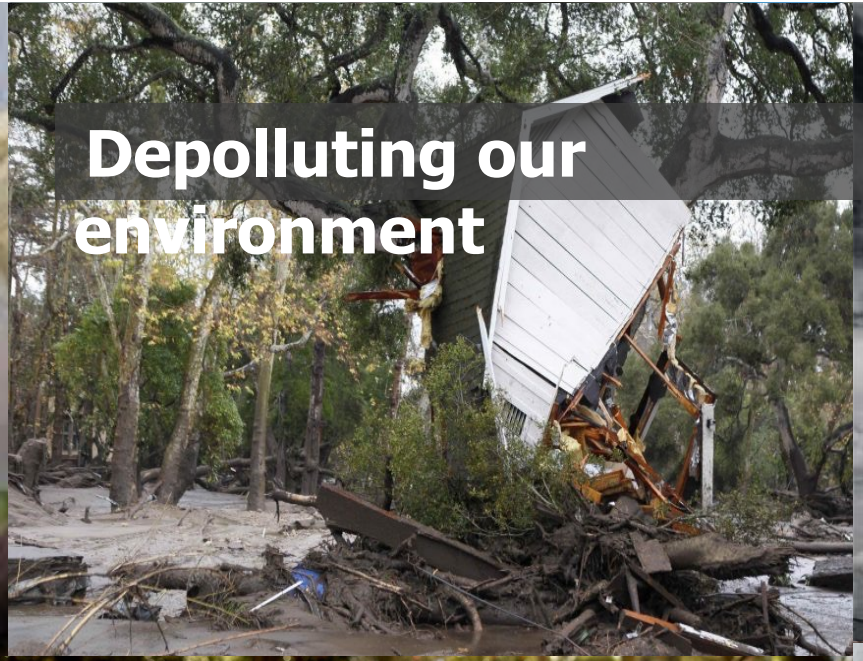




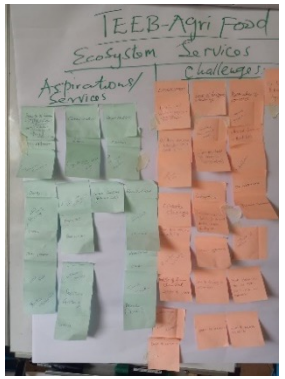
Mobile Data Platform

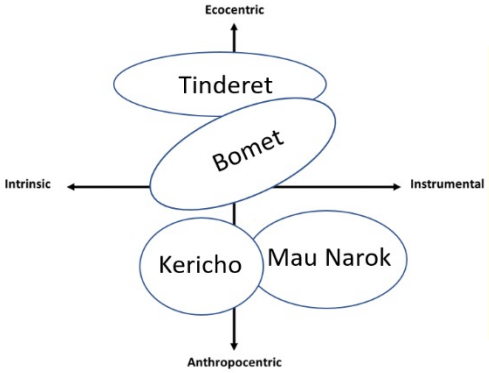


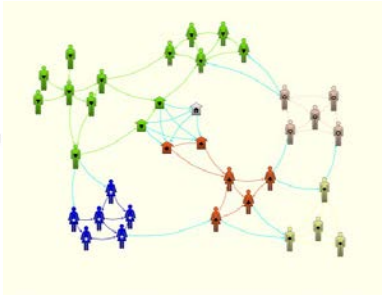
Depolluting our environment

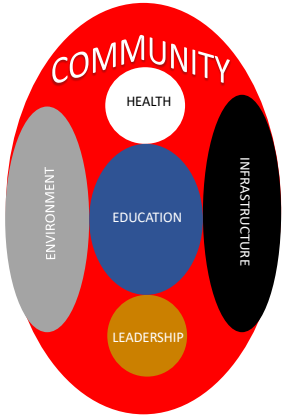


Community prosperity and social capital in the Mau Maasai Mara









Our Solution

Making informed decisions using natural prosperity

Understanding land in context

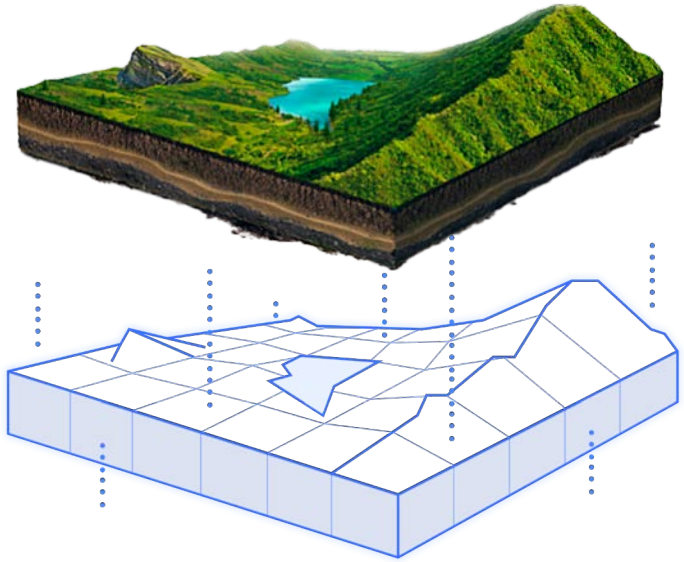
Using multiple types of quality assured, locally relevant, validated geophysical and remote sensing data.

Classifying land scientifically based on its unique context and characteristics.

Deriving natural capital health indicators completely remotely and at scale using our proprietary methodology.

Accurately measuring:

- CURRENT STATE OF YOUR LAND
- REALISABLE POTENTIAL
- FUTURE SCENARIOS (coming soon)



Data cube + systems dynamic model

Providing actionable insights

Accurate and scalable baseline with over 90% accuracy vs soil sampling

Granular information and monitoring at 10m² resolution

Completely new contextual insights and benchmarking at scale and over time

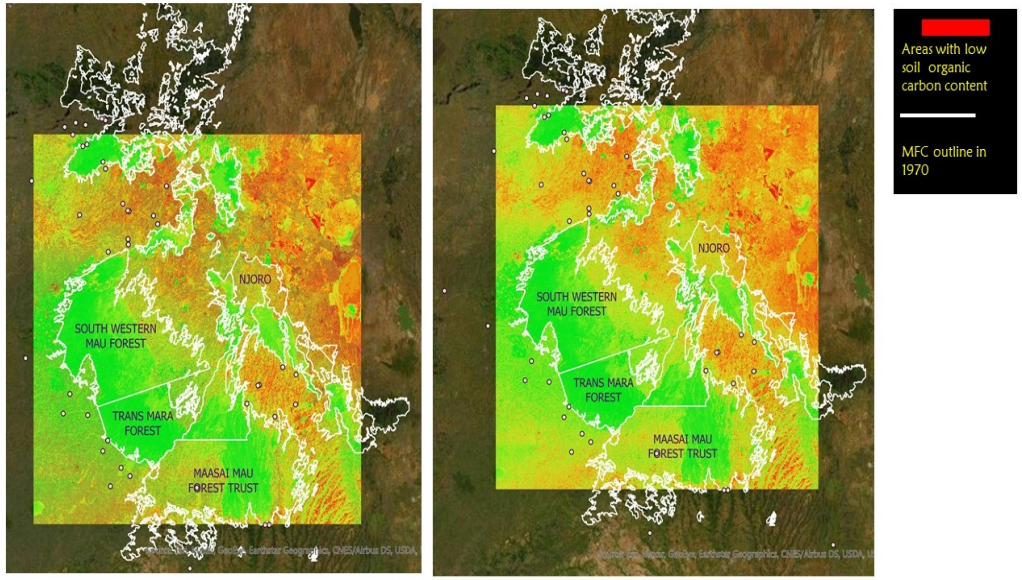
The Challenge

Measuring the health of natural capital: example of soils

- Soil Organic Carbon measurement platform built for all soils and ecosystems
- Scalable and consistent monitoring with a high degree of granularity
- Contextual and time series analysis of each natural asset

GREY AREAS DEPICT AREAS THAT ARE POPULATED– TARGET FOR FOREST GARDENING

CARBON MAP DEPICTING AREAS HIGHLY AFFECTED THROUGH ORGANIC CARBON LOSS IN RED – TARGET FOR CARBON FARMS



Our Response

Mau Mara Community Natural and Social Capital Programme

- More than 100,000 households across the Mau Forest Complex and Maasai Mara engaged
- Built for local livelihood creation and land restoration based on regenerative agri-forestry and indigenous knowledge
- Scalable, transparent and consistent monitoring with a high degree of granularity
- Contextual and time series analysis of each natural asset – trees, soils, biodiversity and water - for tracking progress

Community-led Landscape Restoration of the Mau Forest & Maasai Mara

Building Natural Prosperity

Natural and Social Capital Investment Platform

1 Relevant for multiple policies including:
Forest Restoration REDD+
Carbon Sequestration Net Zero Emissions
Indigenous Medicines Biodiversity Net Gain
Improving Livelihoods ESG
Natural Capital SDGs

2 Different financial instruments
CDM and regulated carbon schemes
Payment for Ecosystems Services
Green bonds
Voluntary Carbon Markets