
# Protecting East Africa's Natural Capital
## *The cost of inaction*

Nick Oguge, Chief of Party, Environmental Incentives
September 30, 2021

*This presentation was produced for review by the United States Agency for International Development.*
*It was prepared by Environmental Incentives and Anchor Environmental Consulting for the Economics of Natural Capital in East Africa Project*

# AGENDA

- Project overview
- Key findings
- What's at stake
- Towards an action plan
- Next steps
- Q&A

PHOTO: JASON HOUSTON FOR USAID

# PROJECT OVERVIEW

Credit: Matthew Erdman for USAID

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# GOALS

- Assess the **economic value** of some of East Africa's most important natural landscapes – to the region and to the world
- Demonstrate **how failing to protect these landscapes will cost the region billions** and impact economic and human well-being in coming decades
- Engage stakeholders at every level in using this data to develop a **transboundary, cross-sectoral action plan** to protect our shared natural wealth

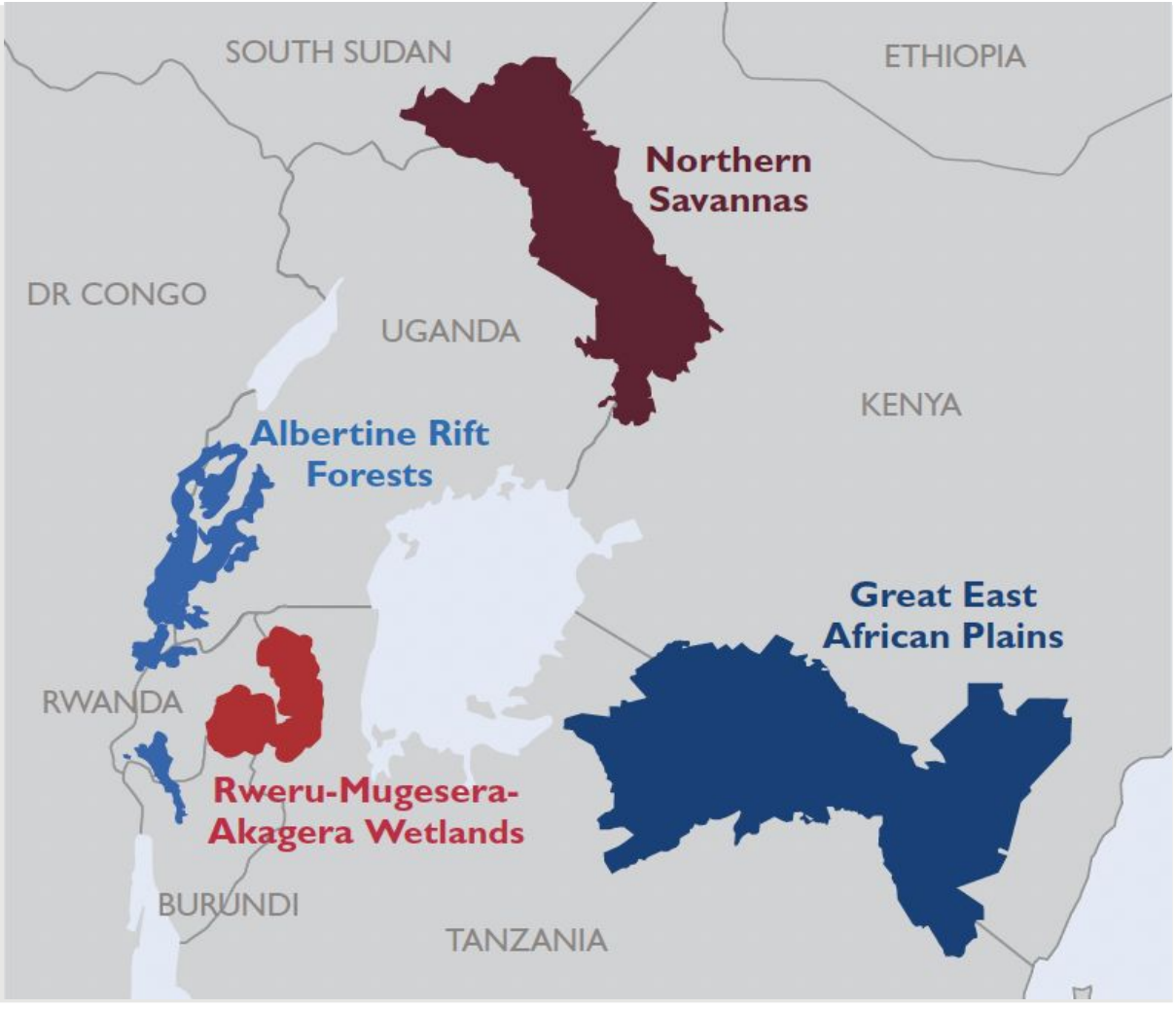
Credit: Jason Houston

# FIRST-EVER LANDSCAPE LEVEL ASSESSMENT

- Landscape-level study fills key evidence gap
- Nature doesn't conform to political boundaries
- Yet nations' economies and well-being share mutual dependence on keeping transboundary landscapes intact

# THE FOUR LANDSCAPES

(prioritized by the EAC and Partner States)



# ASSESSMENT APPROACH

- The System of Environmental Economics Accounting - Experimental Ecosystem Accounts (SEEA EEA; UN 2014).
- Produces internationally comparable statistics
- Not an accounting exercise but aligns with the building blocks of Natural Capital Accounting (NCA)

**SEEA Ecosystem Accounting (SEEA EA)**

Final draft (as adopted by the UN Statistical Commission in March 2021): English

# THE APPROACH HAS POLICY VALUE

Compatible with and can contribute to natural capital accounting in East Africa.

CAPITALS COALITION

## Africa NCA implementation initiatives

WEST AFRICA CAPITALS COALITION

NCA projects are being implemented in more than 33 countries in Africa including: Benin, Botswana, Code d'Ivoire, Egypt, Ethiopia, Kenya, Liberia, Madagascar, Mauritania, Morocco, Nigeria, Rwanda, Sao Tome and Principe, South Africa, Senegal, Uganda, Zambia

African Countries are at different stages of NCA/SEEA implementation: **Stage I:** compilation – compiled at least one account (consistent with NCA/SEEA) over the past five years; **Stage II:** dissemination – compiled and published at least one account within the past five years; and **Stage III:** regular compilation and dissemination – regularly publishes at least one account.


Source: UNSD SEEA Africa, 2020

Convener

natural eco capital

# ASSESSMENT EVIDENCE USEFUL FOR MAINSTREAMING NATURAL CAPITAL INTO REGIONAL DEVELOPMENT FINANCE


- African Development Bank (AfDB) and the Green Growth Knowledge Partnership (GGKP).
- Aims to mainstream natural capital approaches in African development finance.

# VALUATION BASED ON NINE ECOSYSTEM SERVICES

## Provisioning services

Harvested wild resources

Livestock production

## Cultural services

Biodiversity existence

Nature-based tourism

## Regulating services

Water quality amelioration

Crop pollination

Water flow regulation


Carbon storage

Erosion control

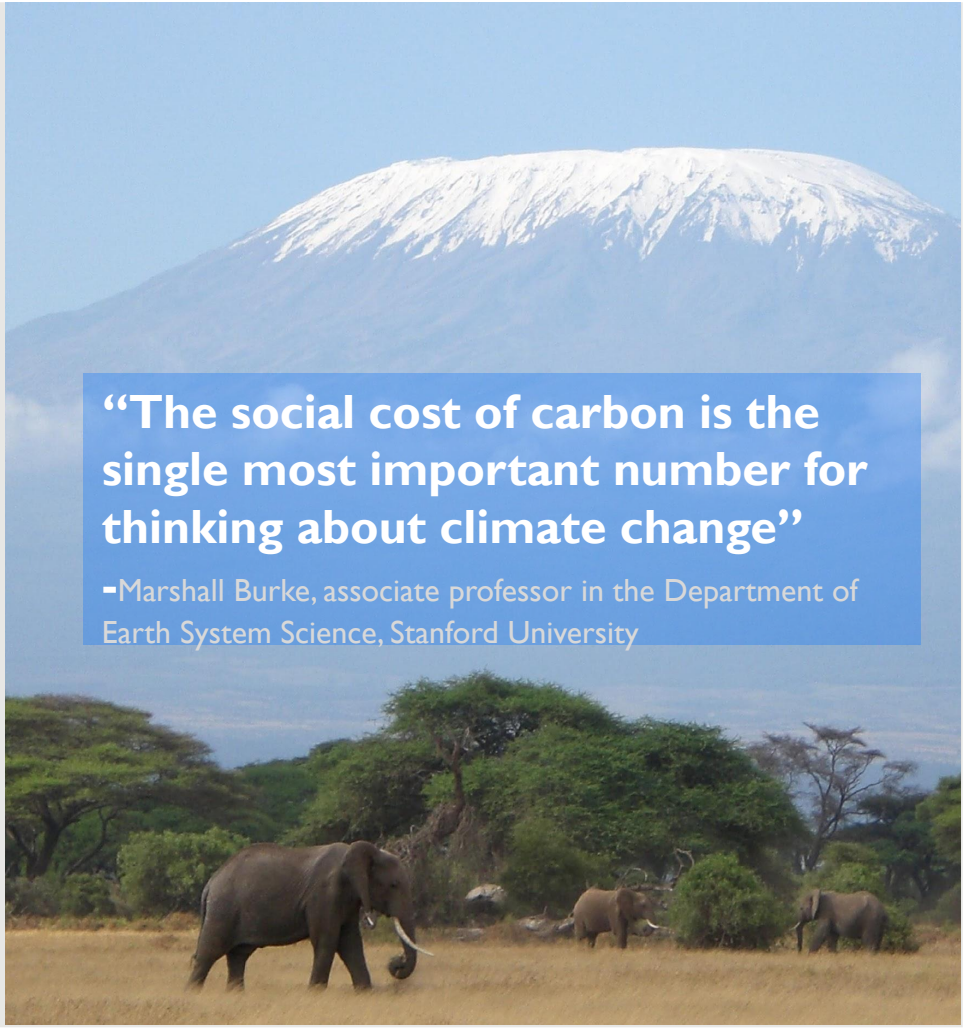
# ECOSYSTEM SERVICES QUANTIFICATION

- Flow regulation
- Soil erosion control
- Water quality amelioration

# SOCIAL COST OF CARBON ESTIMATED

SCC estimates the damages that would be incurred under climate change.

- Socioeconomic predictions
- Climate projections
- Benefits and costs
- The discount rate




Kilimanjaro-Amboseli, credit: Adam Henson

# SOCIAL COST OF CARBON

- SCC estimates the damages that would be incurred under climate change.
- These are typically estimated in terms of **changes in GDP**, a directly compatible measure for ecosystem accounting.

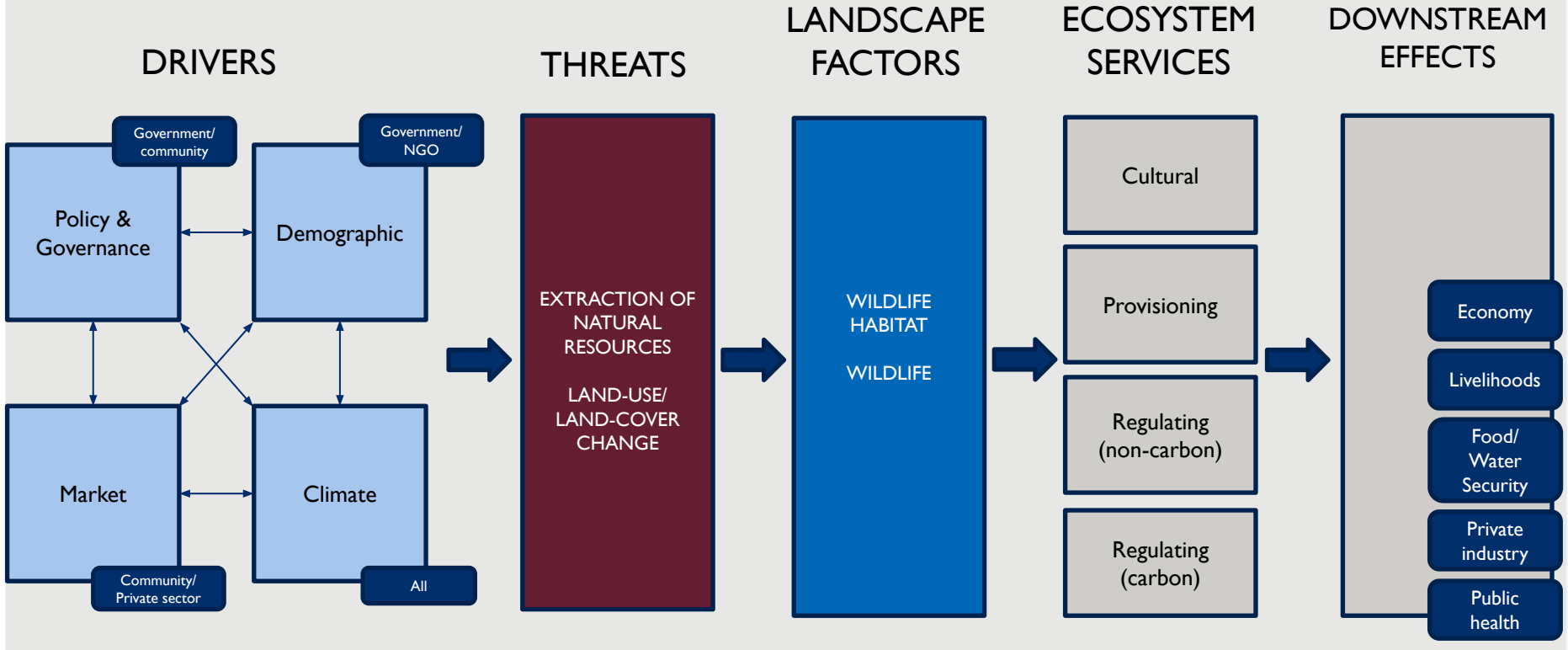
Kilimanjaro-Amboseli, credit: Adam Henson

# SCC CAN BE MONETIZED FOR POLICY DECISIONS

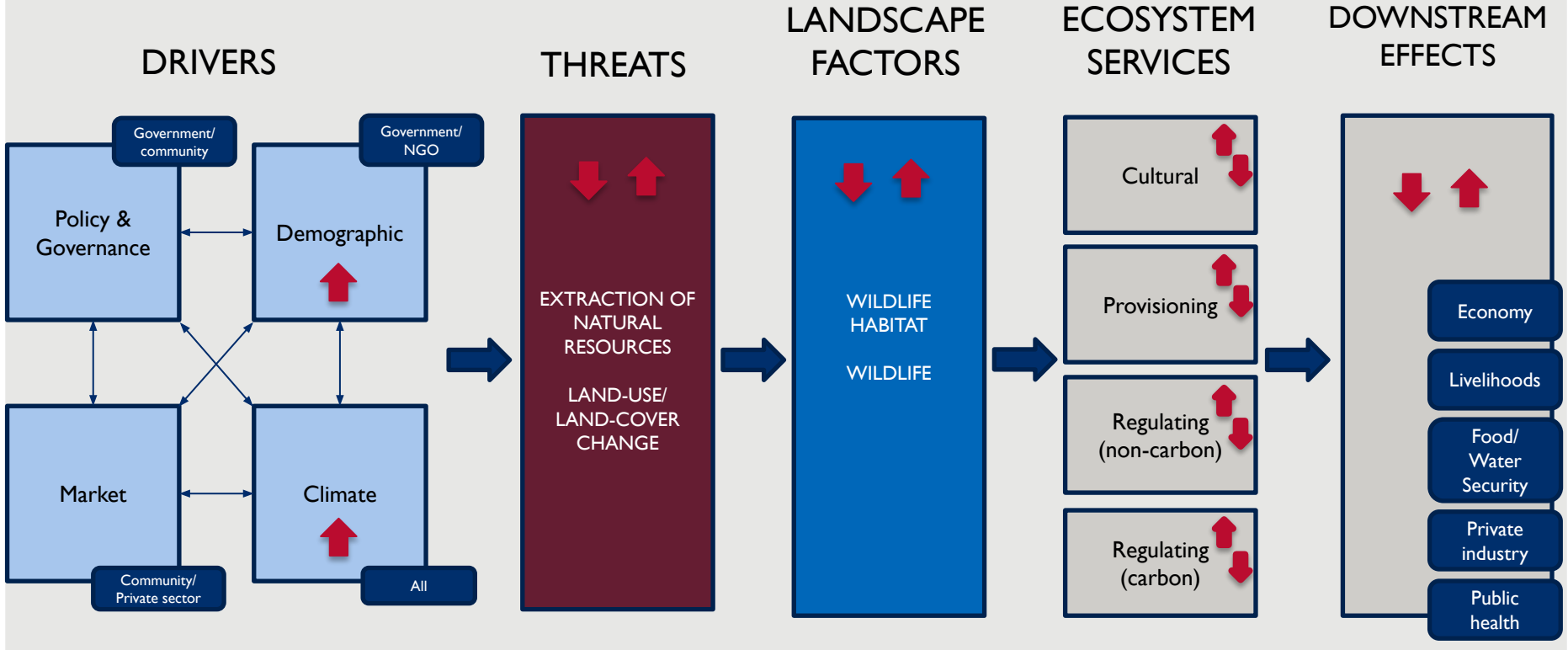
- Regulation on energy in a country cost $500 million
- To cut 1000 MtCO2
- SCC rate of $0.61 tCO2
- Benefits= (1000 $MtCO^2$ x $0.61) =$610 million
- $110 million more than investment cost
- POLICY JUSTIFIED

Kilimanjaro-Amboseli, credit: Adam Henson

# MODEL USED FOR ANALYSIS AND STAKEHOLDER ENGAGEMENT



# MODEL USED FOR 2050 PROJECTIONS UNDER BUSINESS AS USUAL



# KEY FINDINGS

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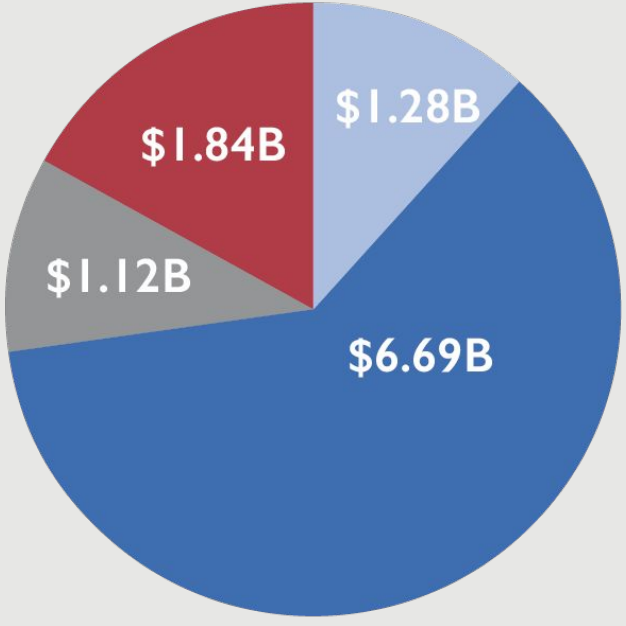
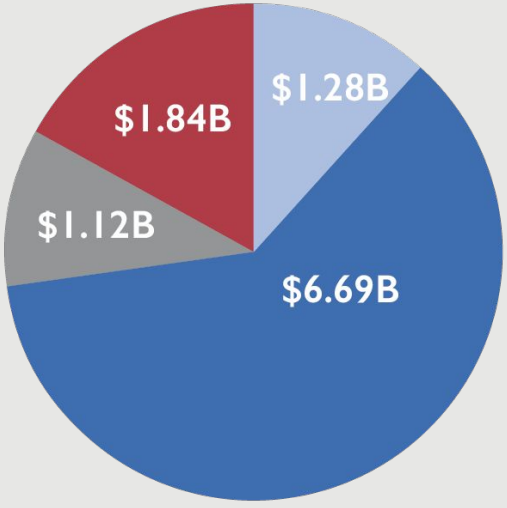
Credit: Matthew Erdman for USAID

# LANDSCAPES' TOTAL VALUE TO REGION: **$10.9 BILLION**




- Cultural services
  1.28 billion/yr
- Regulating services
  $6.69 billion/yr
- Carbon storage
  $1.12 billion/yr
- Provisioning services
  $1.84 billion/yr

*All values are in U.S. dollars for 2018*




**Tourism only 11% of value** ($1.2 billion)

**Regulating services *72% of total value:*** ($7.81 billion)

- Water flow regulation: $1.52 billion
- Water quality amelioration: $2.1 million
- Preventing soil erosion: $4.40 billion
- Crop pollination $773 million
- Carbon storage: $1.1 billion *(avoided costs of damage from climate change)*

# INSIGHTS

Tourism is still critical to both the local economy and global perceived value

Tourism revenue (2018): $1.2 billion

**Jobs: 786,663**
*(34,703 in Burundi, 325,034 in Kenya, 76,980 in Rwanda, 315,260 in Tanzania, and 34,686 in Uganda)*

Untapped revenue from consumer willingness to pay: $1.5 billion

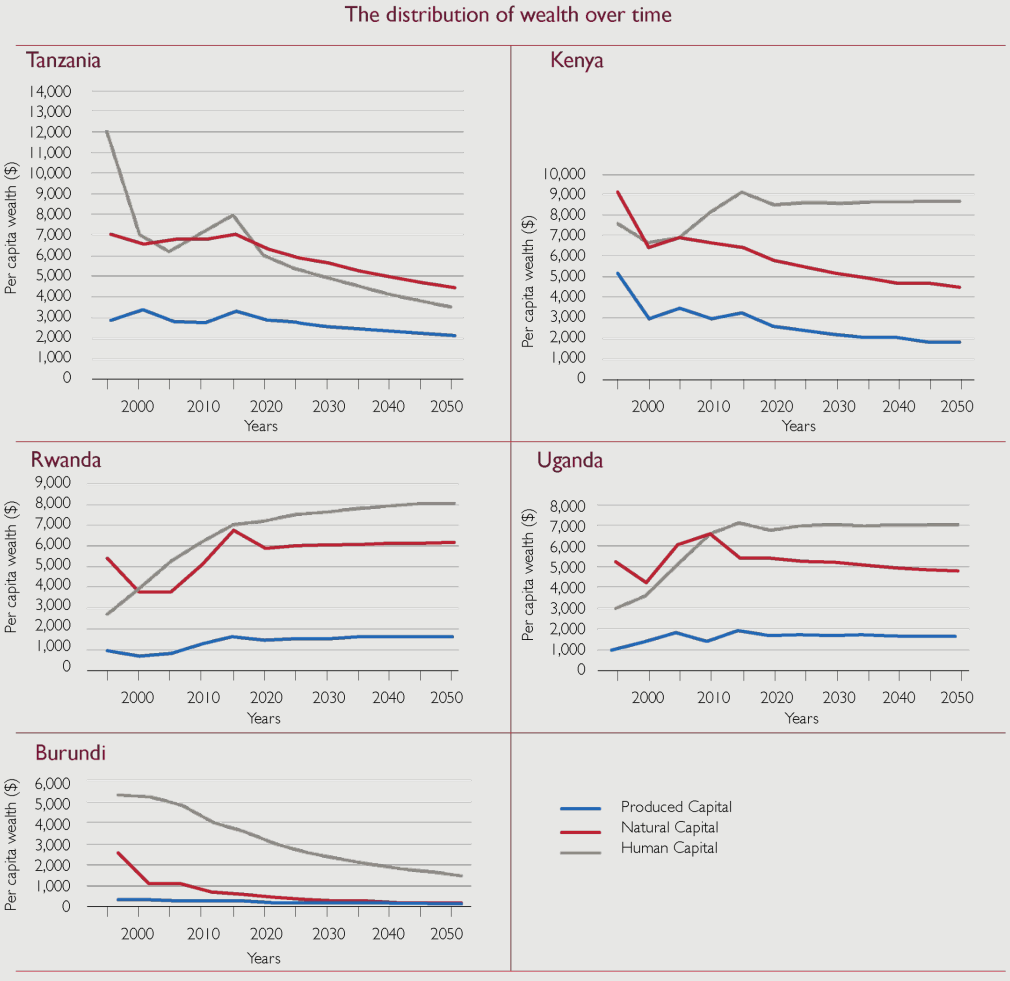
# INSIGHTS

Keeping landscapes intact also key to pastoral and agricultural livelihoods

**Tourism + livestock production + resource harvesting – total contribution to GDP**:

- Burundi: 3.8%
- Kenya: 3%
- Rwanda: 9%
- South Sudan: 9%
- Tanzania: 7%
- Uganda: 9%

Per capita value of natural capital is on the decline, also reflected on the decline in produced capital



# INSIGHTS

Global value is exponentially greater, offering potential funding opportunities for regional development

# WHAT'S AT STAKE

Credit: Matthew Erdman for USAID

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## TOP THREATS

1. Unsustainable land use

2. Over-extraction of resources

3. Triple threat of COVID, climate, and conflict

## STRESSES ON NATURAL ENVIRONMENT

4. Degradation of vegetation and soils

5. Decline in habitat quality and connectivity

6. Decline in freshwater quality, quantity, and flow

7. Decline in wildlife diversity

## IMPACT ON ECOSYSTEM SERVICES

8. Tourism revenue declines

9. Regulating capacity declines; cost to mitigate damages rise

10. Decline in harvestable resources

## IMPACT ON ECONOMIC AND HUMAN WELL-BEING

11. Job losses, livelihoods diminished

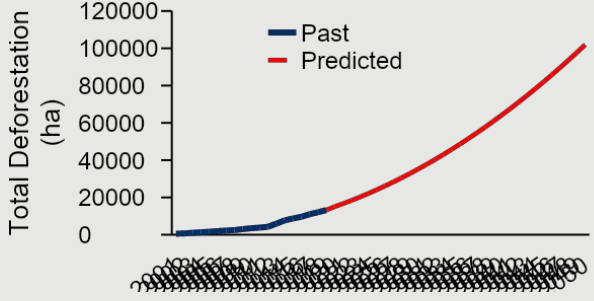
12. Food and water scarcity increases

13. Negative health impacts grow

# THE ALBERTINE RIFT FORESTS: A BUSINESS AS USUAL SCENARIO

- **More resilient tourism model** (high-end, low impact).
- Up to **89,000 ha of forest** (15%) could be lost by 2050. (Deforestation prevalent even within protected areas)
- 1.3% decline in sediment retention, worth $8 million in annual storage/restoration costs
- 3.1% decline in baseflow, with an annual replacement cost of $13 million
- 390% increase in phosphorus export, potentially impacting the Albertine Rift Valley Lakes and Lake Victoria, with annual treatment cost of $338,000.

Credit: WWF (independent.co.ug)



# INVESTMENT IN PROTECTED AREAS: 1000% DEFICIENT IN AFRICA

- Wildlife habitats under pressure from governments, corporations, and communities pursuing development, business and livelihoods.
- Inadequately protected parks suffer ecological degradation, losing valuable habitats and charismatic species – reducing ecosystem services (including potential to supply adequate water or generate tourism revenue).
- Adequate management of protected areas in Africa, will require investment up to **$2,000/Km$^2$** annually.
- Only **$200/Km$^2$** is availed.
- Private sector contribution only 14%.

Lindsey et al., 2018

Credit: Kathleen Flower

# TOWARDS AN ACTION PLAN


Credit: Matthew Erdman for USAID

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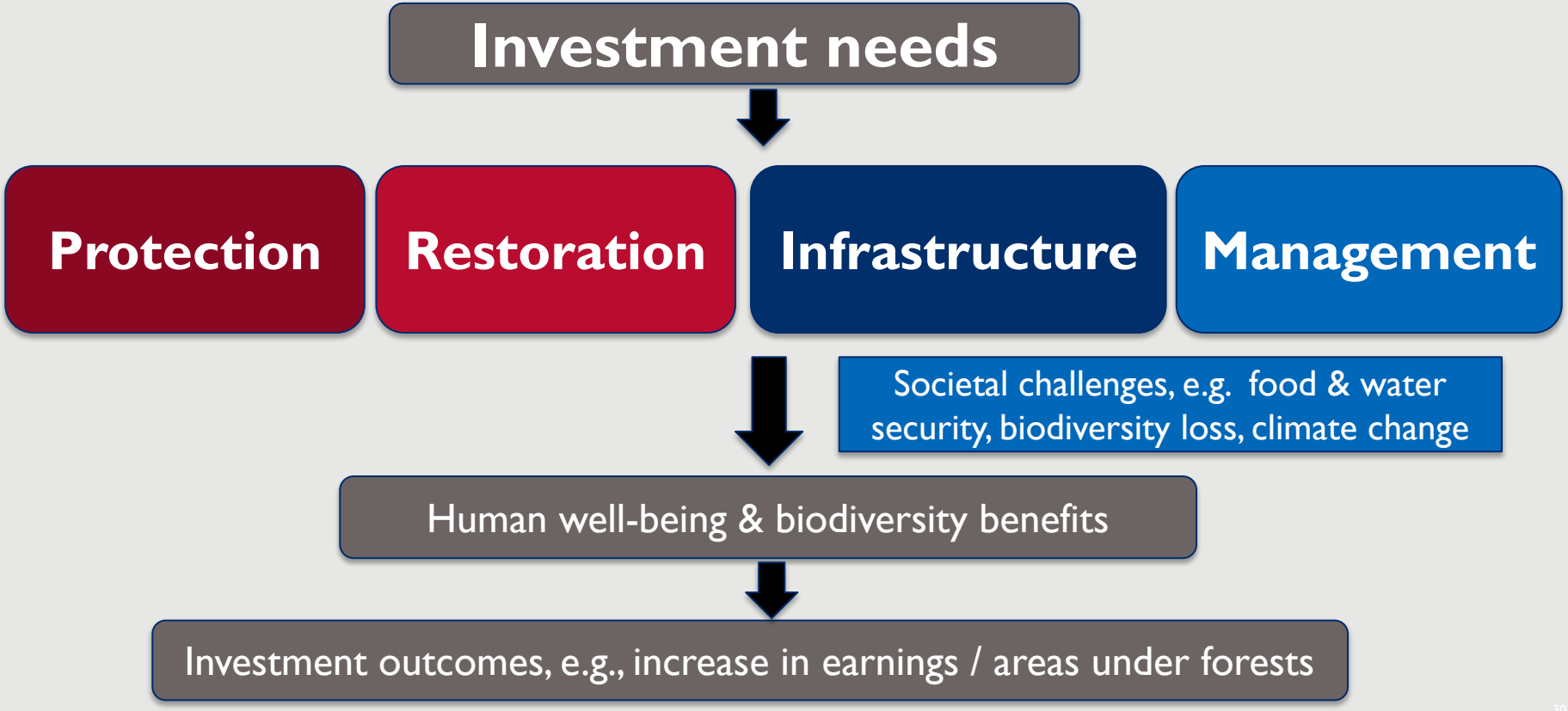
# TO IMPROVE INVESTMENTS IN NATURAL CAPITAL

- A shift in investment decisions, e.g., *ecological fiscal transfer*
- A revolution in planning, e.g., *lower barriers and associated risks to investment in biodiversity-friendly sectors*
- Harness private sector resilience, e.g., build financial vehicles such as *blending public and commercial finance*
- A revolution in understanding among all stakeholders, e.g., *awareness creation*
- Innovative implementation strategy, *e.g., investing in Nature-based Solutions*

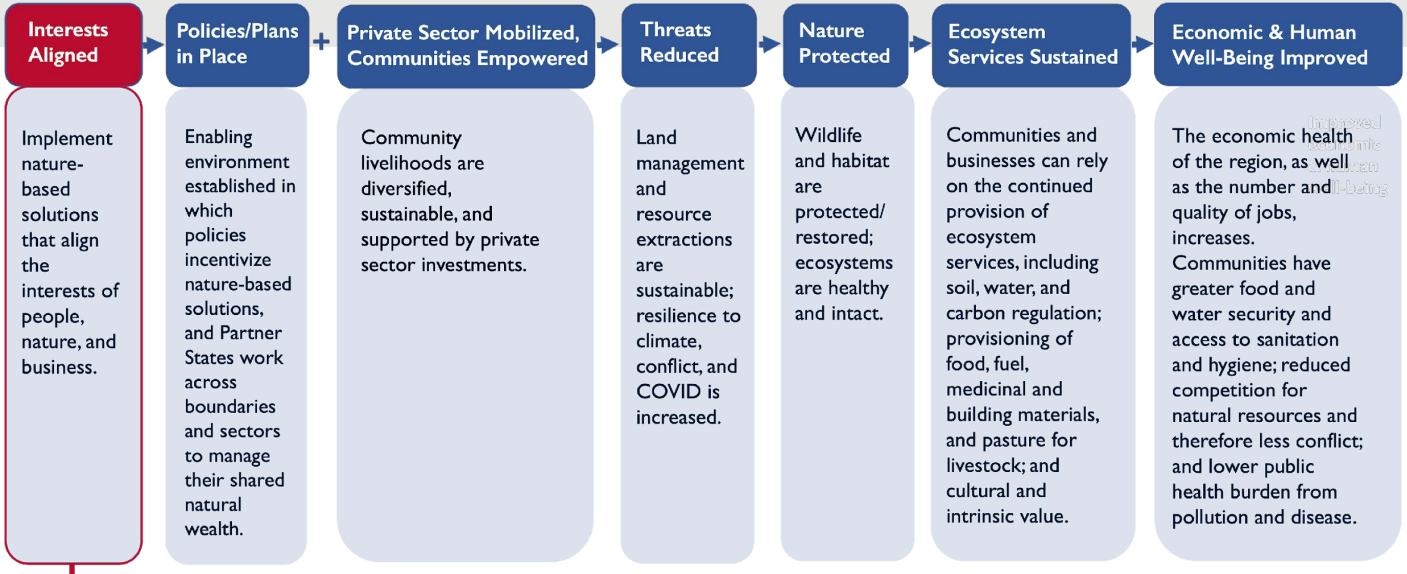
Credit: Kathleen Flower

# A CASE FOR NATURE-BASED SOLUTIONS



# THEORY OF CHANGE

This theory applies to all four landscapes, which face similar threats and share the need for solutions that benefit people, nature, and business.




## STRATEGIC APPROACH AT EACH LEVEL

The strategic approach driving this theory of change – implementing nature-based solutions – will look different at the regional/transboundary, national/sub-national, and community levels.

- **Regional/transboundary level:** Harmonize transboundary management plans to capture interests of different partner states and sectors for sustainable use of natural resources.
- **National/sub-national level:** Identify and enhance public-private partnerships that incentivize the integration of biodiversity conservation into sub-national development plans to conserve natural infrastructure.
- **Community level:** Empower communities to manage natural resources through sustainable enterprises and activities that are supported by innovative private sector financing models.

Interests Aligned

Implement nature-based solutions that align the interests of people, nature, and business.

**The strategic approach driving our theory of change (at left) offers three potential intervention options:**

1. Harmonize transboundary management plans to capture interests of different partner states and sectors for sustainable use of natural resources.

2. Identify and enhance public-private partnerships that incentivize the integration of biodiversity conservation into sub-national development plans to conserve natural infrastructure.

3. Empower communities to manage natural resources through sustainable enterprises and activities, supported by innovative private sector financing models.

Examples

## Albertine Rift Forests

**Potential enterprises**
sustainable silvoarable agroforestry with non-timber forest products * handicrafts * mushroom * apiary * dairy * renewable energy * eco- and cultural tourism + PES + savings & loans

**Potential funding models**
- Livelihood Funds
- Green Gigaton Challenge (GGC)
- Green Climate Fund-private sector facility

## Great East African Plains

**Potential enterprises**
sustainable silvopasture * apiary * eco- and cultural tourism * handicrafts * renewable energy * sustainable charcoal production + Biobanking (focus on endangered habitats and species) + savings & loans

**Potential funding models**
- African Enterprise Challenge Fund (AECF)
- Mirova

## Rweru-Mugesera Wetlands

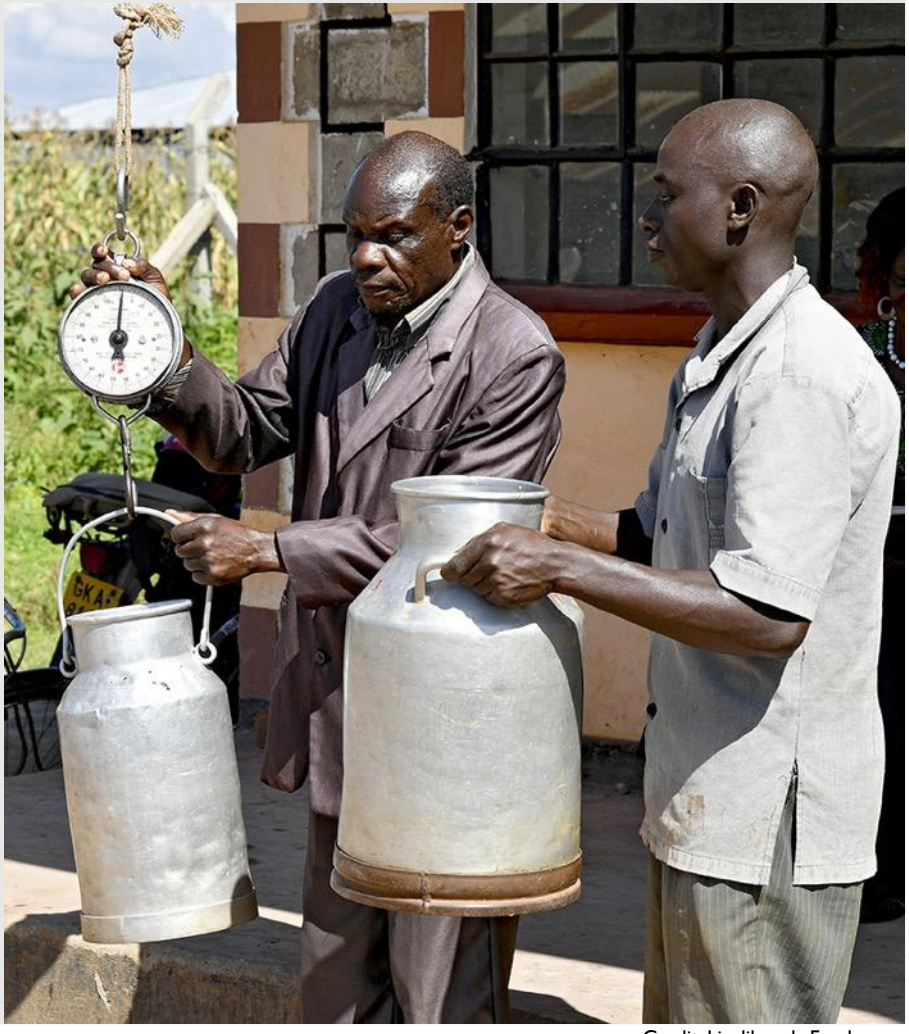
**Potential enterprises**
Sustainable agribusinesses * eco-friendly fish processing * handicrafts, renewable energy * and eco- and cultural tourism + Wetlandbanking + savings & loans

**Potential funding models**
- African Enterprise Challenge Fund (AECF)
- Mirova

# CASE STUDY: MT ELGON LIVELIHOOD FUND

- Developed in 2016 to combat deforestation and unsustainable agricultural practices, while boosting local economy.
- Focus: agricultural productivity, dairy value chain development, and conservation:
  - training 30,000 farmers on 35,000 ha of land with sustainable land management practices,
  - supporting 15 cooperatives with various tasks on the ground.

- **Overarching goal: create sustainable supply chain that will be linked to East Africa's primary dairy company, *Brookside Dairy*.**



Credit: Livelihoods Funds

# NEXT STEPS

Credit: Matthew Erdman for USAID

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# STAKEHOLDER CONSULTATIONS

- EAC
  - Secretariat
  - Multi-sectoral committees
  - LVBC
- Partner Sates
  - Inter-Ministerial Policy Platforms
- Private Sector
  - EABC
  - EATP
  - EADB
- Partners: Development & Thought Leadership
- Umbrella Community Associations

Credit: Timothy Reed

PHOTO: NORTHERN RANGELANDS TRUST

NICK OGUGE
CHIEF OF PARTY

ENVIRONMENTAL INCENTIVES

noguge@enviroincentives.com

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# OPPORTUNITIES FOR PRIVATE SECTOR INVESTMENT

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Handicrafts, Bwindi, Uganda credit: Jason Houston, USAID

# SCALING UP NATURE-BASED SOLUTIONS

- Investment that transitions businesses to carbon-neutral nature positive economy, e.g., agtech
- Unlocking new revenue streams by creating new markets for NbS, e.g., diversification in agrifood
- Support emerging markets and investment returns, e.g., foodtech
- Scale up and monitor investment, e.g., regenerative land uses such as afforestation *£1 ($1.39 ) invested is projected to generate £2.79 ($3.87) of economic and social benefits (through carbon sequestration, recreation, air pollution removal and timber and biofuel production, and biodiversity support).*

The economic costs and benefits of nature-based solutions : Nature-Based Solutions Initiative (naturebasedsolutionsinitiative.org)

# WHAT ARE THE INVESTMENT OPPORTUNITIES?

- Climate-smart agriculture
    - Forestry, livestock, fisheries
- Sustainable tourism
- Energy
- Water
- Payments for ecosystem services, e.g., carbon markets
- Biodiversity offsetting
- Green infrastructure

Credit: Tine Frank, USAID

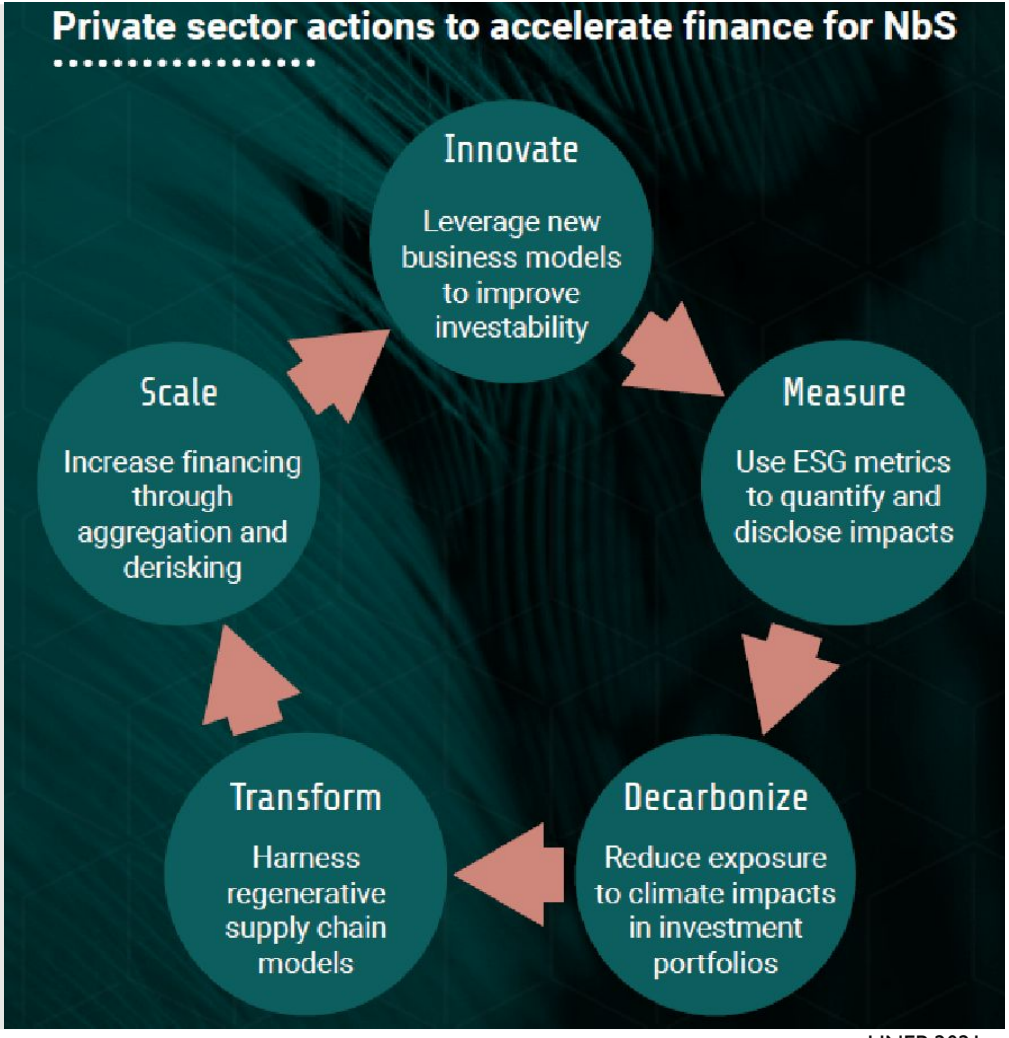
# CLIMATE-SMART AGRICULTURE

- Climate-smart (low carbon) agriculture is an integrated approach to managing landscapes—cropland, livestock, forests and fisheries -that address the interlinked challenges of food security and climate change.
- It offers unique opportunities across the value chain to address **poverty reduction and food security**.
- Globally, agriculture and food (agrifood) is a $7.8 trillion industry and employs 40-65% of Africa's labour.
- The food industry is expected to clock $1 trillion by 2030 in Africa (AfDB, 2017)
- The sector is being transformed by climate change, population growth, resource constraints, and consumer demands—that then form growth catalysts and investment opportunities in agtech and foodtech.

# INVESTMENT INNOVATIONS

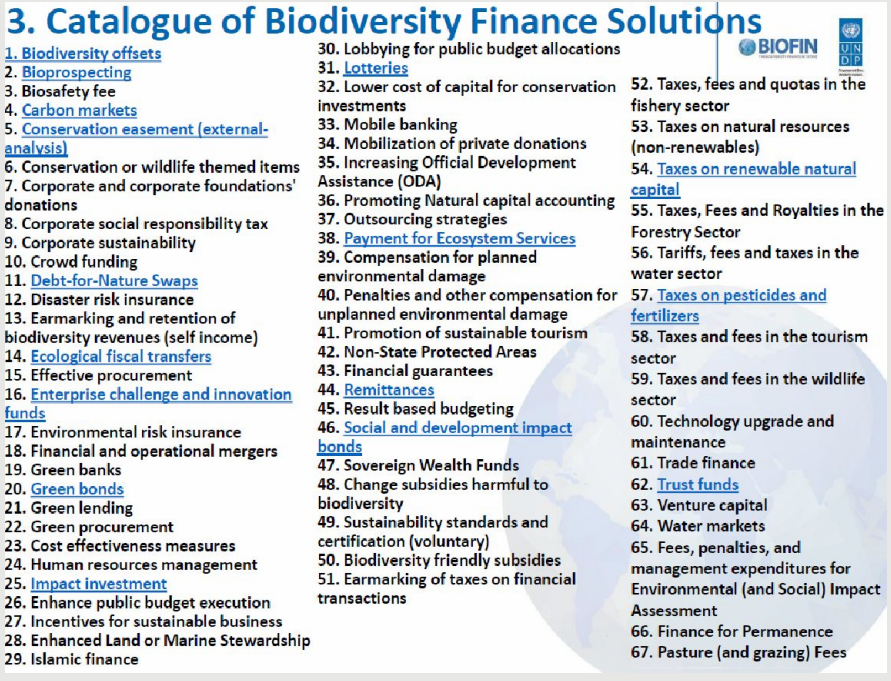
**To support nature-base solutions, investments in natural capital will need:**

- Commercial viability to complement philanthropy and grants
- Nature as an opportunity (not constraint) in the investment rationale
- Demonstrate impacts to society and environment aside financial returns




UNEP 2021

# FINANCING MECHANISMS



## 3. Catalogue of Biodiversity Finance Solutions

BIOFIN

1. Biodiversity offsets
2. Bioprospecting
3. Biosafety fee
4. Carbon markets
5. Conservation easement (external-analysis)
6. Conservation or wildlife themed items
7. Corporate and corporate foundations' donations
8. Corporate social responsibility tax
9. Corporate sustainability
10. Crowd funding
11. Debt-for-Nature Swaps
12. Disaster risk insurance
13. Earmarking and retention of biodiversity revenues (self income)
14. Ecological fiscal transfers
15. Effective procurement
16. Enterprise challenge and innovation funds
17. Environmental risk insurance
18. Financial and operational mergers
19. Green banks
20. Green bonds
21. Green lending
22. Green procurement
23. Cost effectiveness measures
24. Human resources management
25. Impact investment
26. Enhance public budget execution
27. Incentives for sustainable business
28. Enhanced Land or Marine Stewardship
29. Islamic finance
30. Lobbying for public budget allocations
31. Lotteries
32. Lower cost of capital for conservation investments
33. Mobile banking
34. Mobilization of private donations
35. Increasing Official Development Assistance (ODA)
36. Promoting Natural capital accounting
37. Outsourcing strategies
38. Payment for Ecosystem Services
39. Compensation for planned environmental damage
40. Penalties and other compensation for unplanned environmental damage
41. Promotion of sustainable tourism
42. Non-State Protected Areas
43. Financial guarantees
44. Remittances
45. Result based budgeting
46. Social and development impact bonds
47. Sovereign Wealth Funds
48. Change subsidies harmful to biodiversity
49. Sustainability standards and certification (voluntary)
50. Biodiversity friendly subsidies
51. Earmarking of taxes on financial transactions
52. Taxes, fees and quotas in the fishery sector
53. Taxes on natural resources (non-renewables)
54. Taxes on renewable natural capital
55. Taxes, Fees and Royalties in the Forestry Sector
56. Tariffs, fees and taxes in the water sector
57. Taxes on pesticides and fertilizers
58. Taxes and fees in the tourism sector
59. Taxes and fees in the wildlife sector
60. Technology upgrade and maintenance
61. Trade finance
62. Trust funds
63. Venture capital
64. Water markets
65. Fees, penalties, and management expenditures for Environmental (and Social) Impact Assessment
66. Finance for Permanence
67. Pasture (and grazing) Fees

**Forest Resilience Bond** (FRB): finance instrument that enables the US Forest Service to restore forests.

- **Blended finance** for nature where public finance institutions (including government donors, DFIs and sovereign Funds) provide de-risking (change risk/return profile) capital on a bigger scale.
- **Fresh water availability**
  - **Project finance** – for water infrastructure like treatments plants/bottling
  - **Green Bonds** – to raise capital for water infrastructure to supply urban areas
  - **Asset finance** – for water efficient equipment in irrigation agriculture
- **Agrifood**
  - The economics of FoodCuisine: AfDB's digital platform with linkages to finance streams.

- End by thanking them and asking for input
- We may be sharing the draft action plan with some of you directly and we look forward to continuing to keep you up to date ….

Tourism is still critical to both the local economy and global perceived value

Tourism revenue: $1.2 billion

**Jobs: 786,663**
*(34,703 in Burundi, 325,034 in Kenya, 76,980 in Rwanda, 315,260 in Tanzania, and 34,686 in Uganda)*

Untapped revenue from consumer willingness to pay: $1.5 billion

# Projected impact on tourism under BAU

I will pull some key data points from the Situation models in the synthesis report related to downstream impact on tourism

# INVESTMENT OPPORTUNITIES

- P/S -support communities to build farm and forest resilience to climate change by enhancing investment in agricultural knowledge and innovation, diversified production systems, microfinance & insurance, input supply, and women and youth focused value chain development. (what it means and how it can create jobs, revenue, how it can be financed?, maybe combine with agroforestry?, touch on adaptation to climate change)
- Funding opportunities –The economics of FoodCuisine: AfDB's digital platform with linkages to finance streams

# PROJECTED INVESTMENT NEEDS

- Globally, USD 133 billion/year currently flows into NbS
  - public funds making up USD 115 billion/year (86%) invested by national governments into protection of biodiversity and landscapes.
  - Private finance USD 18 billion/year (14%).
- Investment in NbS ought to at least triple in real terms by 2030 and increase four-fold by 2050 if the world is to meet its climate change, biodiversity and land degradation targets.
- Or a future annual investment rate of USD 536 billion.
- In Africa, protected areas are the cornerstone for conservation and require $1,000 to $2,000/km2 per year for effective managing, yet they only receive $200/km2 per year on average (Lindsey, et al., 2018).

# WHY INVEST IN NATURE-BASED SOLUTIONS AND CONSERVATION ACTIVITIES?

- Lower operational costs
- Unlock new revenue streams
- Increase producer and consumer engagement
- Provide landscape level environmental goods and services, e.g., in afforestation £1 invested is projected to generate £2.79 of economic and social benefits (through carbon sequestration, recreation, air pollution removal and timber and biofuel production, and biodiversity support).

The economic costs and benefits of nature-based solutions : Nature-Based Solutions Initiative (naturebasedsolutionsinitiative.org)