#GGKPWEBINAR

MEASURING NATURE'S CONTRIBUTION

HOW NATURAL CAPITAL WILL TRANSFORM THE ECONOMIC RECOVERY

6 OCTOBER 2020, 15:00 -16:30 CEST

GREEN GROWTH
Knowledge Partnership

2020
#GGSD
Forum

25-26
November

Securing natural capital:
Resilience, risk management and COVID-19

OECD

Natural Capital Project: An overview of research to date

GREEN GROWTH
Knowledge Partnership

Professor Paul Ekins, Co-Chair,
Natural Capital Working Group

Papers commissioned and published

https://www.greengrowthknowledge.org/working-group/natural-capital

- *Data*
- Ross, A., Vause, J. and Leach, K. 2020 'Natural Capital Platforms and Tools for Green Growth Planning', WCMC, Cambridge
- *Metrics*
- Fairbrass, A., Mace, G., Ekins, P. and Milligan, B. 2020a 'Measuring nature's contribution to economic development: Towards a framework of indicators for national natural capital reporting', University College London
- Markandya, A. 2020 'Natural Capital and the SDGs', Basque Centre for Climate Change, Leioa, Spain
- *Policy*
- Fairbrass, A., Ekins, P. and Milligan, B. 2020b 'Recognizing Natural Capital in Policy Frameworks for Green Growth', University College London
- Fairbrass, A., Hua, J., Ekins, P. and Milligan, B. 2020c 'Practical Policy Use Cases for Natural Capital Information: A review of evidence for the policy relevance and impact of natural capital information', University College London

Natural Capital Platforms and Tools for Green Growth Planning (1)

GREEN GROWTH Knowledge Partnership

Desirable characteristics: *Relevance*; *Accessibility*; *Transparency*; *Flexibility*

Gaps in information	Gaps in user uptake
Lack of datasets relating to ecosystem service flows/benefits	Lack of ability to integrate learning from previous natural capital assessments into platforms and tools to aid future efforts
Lack of outputs directly related to international commitments	Lack of interoperability between platforms and tools
Missing natural capital asset datasets	Lack of capacity to understand and interpret the data and models
Lack of information about sector dependencies on natural capital	Limited use of natural capital language
Lack of capacity to interpret big data	

Natural Capital Platforms and Tools for Green Growth Planning (2)

GREEN GROWTH Knowledge Partnership

Recommendations on gaps in information	Recommendations on gaps in user uptake
Incorporate socioeconomic datasets into natural capital data platforms and tools	Promote interoperability between platforms and tools, and re-usability of outputs and models
Link data to indicators for reporting against international commitments	Increase capacity to use public domain data platforms and tools
Define outstanding data needs	Link platforms and tools with natural capital frameworks and a common natural capital data language
Engage with providers of big data	
Support scaling up of artificial intelligence	

Measuring nature's contribution to economic development: Towards a framework of indicators for natural capital reporting (1)

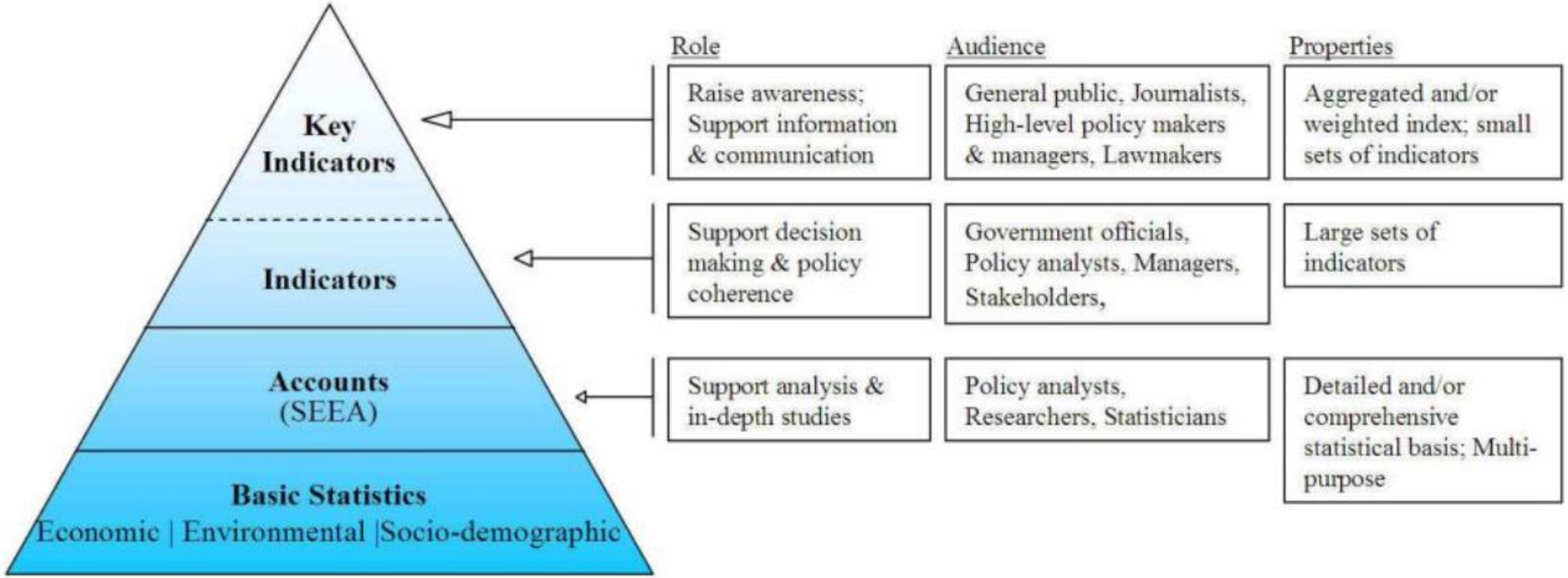
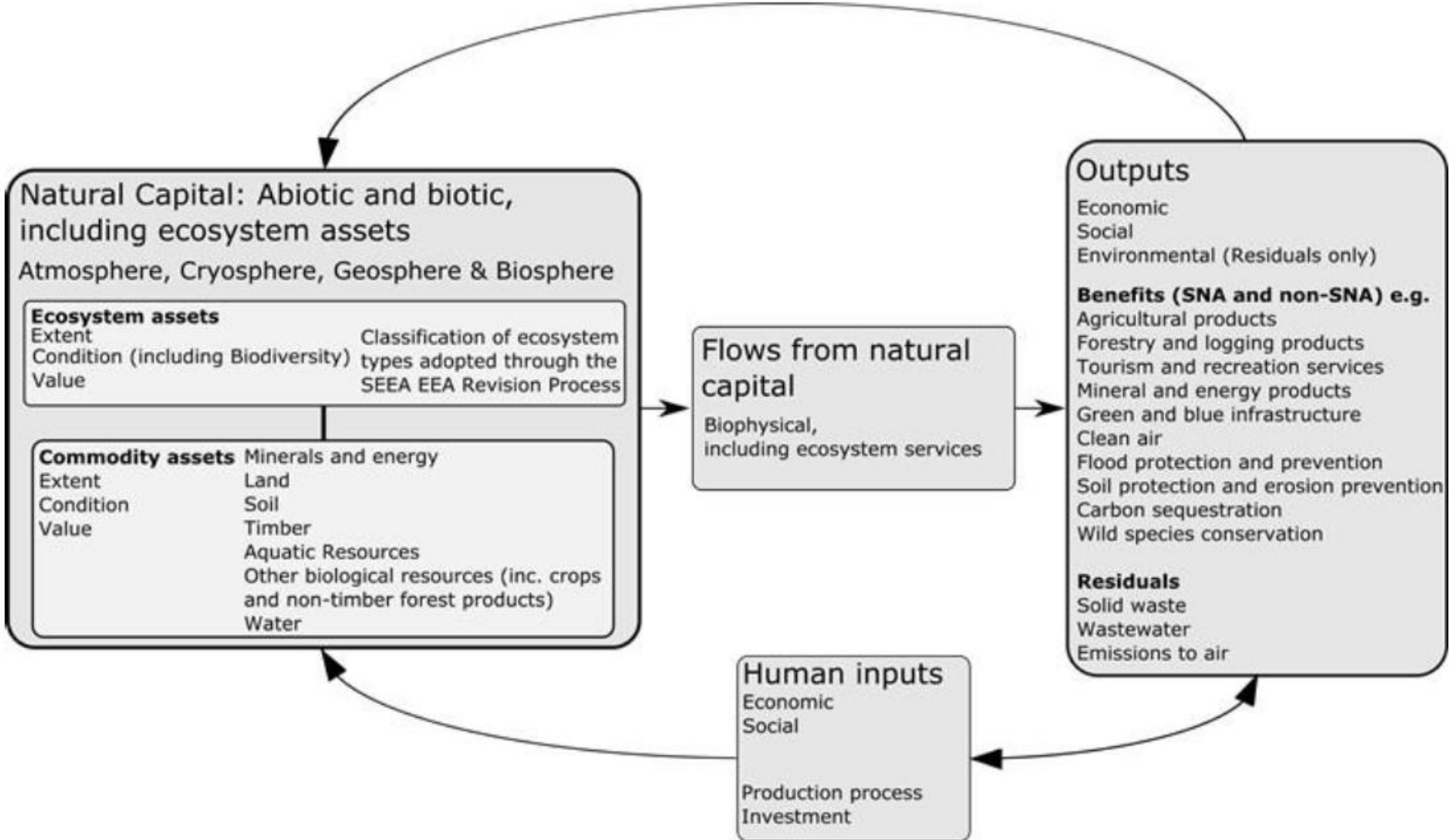


Figure 1: Information Pyramid
Source: Fairbrass et al. (2020a), citing https://unstats.un.org/unsd/envaccounting/ceea/meetings/UNCEEA-8-9.pdf

Measuring nature's contribution to economic development: Towards a framework of indicators for natural capital reporting (2)

GREEN GROWTH Knowledge Partnership

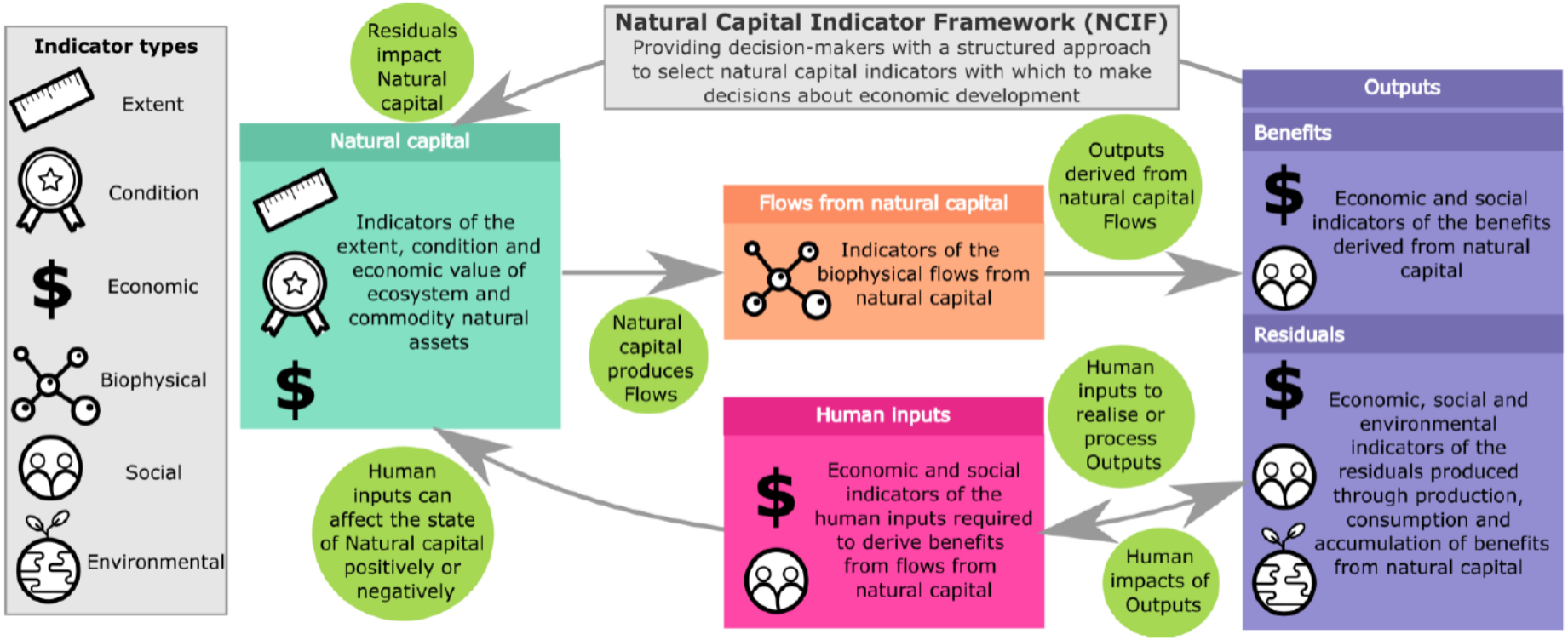


Measuring nature's contribution to economic development: Towards a framework of indicators for natural capital reporting (3)

GREEN GROWTH Knowledge Partnership

Next steps

- Bids into research programmes to make the framework operational



- Publication of framework in *Ecosystem Services* (forthcoming)

Natural Capital in Policy Frameworks for Green Growth (1)

GREEN GROWTH Knowledge Partnership

- Many organisations have developed policy frameworks for green growth which use the concept of natural capital:
  - OECD, World Bank, UNEP, GGGI, AfDB, UNDESA, TERI, K-Water Institute and World Water Council, Natural Capital Coalition, Partners for Inclusive Green Economy
- Typology of policy options
  - Policy and planning; Regulatory; Finance and investment; Operational; Technical

Natural Capital in Policy Frameworks for Green Growth (2)

GREEN GROWTH Knowledge Partnership

An integrating Framework for analysis

1. An overarching goal of recognizing the environment as a capital asset, which provides flows of benefits to human society and the economy

2. The components of natural capital – ensuring the elements of natural assets, flows, human inputs into the environment and outputs are considered

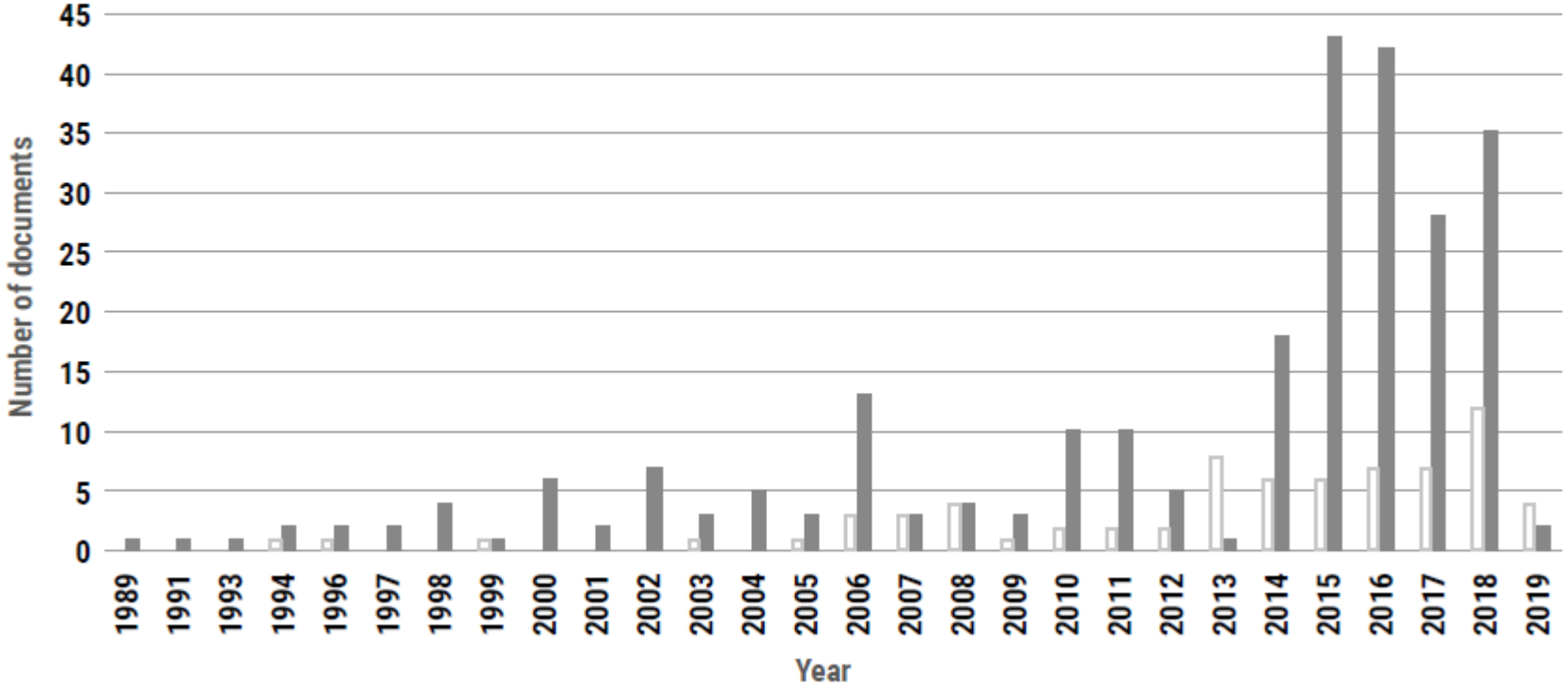
3. Policy elements – ensuring that a comprehensive and appropriate suite of policy instruments are considered

Use of Natural Capital Analysis in Policy: Publications

GREEN GROWTH Knowledge Partnership

A literature search identified 340 documents reporting on how natural capital had contributed to decision-making

Figure A1. Bar chart of number of documents reporting national natural capital information case studies over time. The number of documents published in each year is shown for grey (filled bars) and academic (white bars) literature.



Use of Natural Capital Analysis in Policy: Findings

GREEN GROWTH Knowledge Partnership

- A natural capital approach has been applied in some way to decision making in 22 countries, most often in relation to ecosystems [117] and using natural capital accounting [78]. However, **only 2 papers** actually reported on the policy impact of the use of natural capital information in decision-making.
- Papers were classified according to:
  - Type of government decision (policy and planning [22 papers], regulatory [6], related to finance and investment [18], operational [7], technical [67])
  - Type of natural capital metrics and data
  - Type of natural stocks, flows and associated human activities
- Further criteria developed during Stanford Workshop
  - Impact potential and impact pathway
  - Involvement of stakeholders
  - Scalability
  - Strength of narrative and its communication

Use of Natural Capital Analysis in Policy: Conclusions

GREEN GROWTH Knowledge Partnership

- The impact of natural capital information on government decision-making is currently profoundly under-reported, so that there is an acute knowledge gap in relation to the specific impact(s) of natural capital indicators on decision-making.
- The public evidence base is dominated by reports of opportunities for impact, but there is much less evidence of realised impact reported, and the specific administrative or policy contexts in which impact is realised.

Use of Natural Capital Analysis in Policy: Recommendations

GREEN GROWTH Knowledge Partnership

- Encourage all producers of natural capital information to publicly report, where possible and appropriate, their specific impacts on decision-making.
- Support efforts to fill the knowledge gap in relation to the impact of natural capital indicators on decision-making.
- Build on the assessment criteria to develop guidance on “reporting adequacy criteria” for natural capital impact case studies.
- Collaborate with the UN Statistics Division on a review of natural capital use cases that builds on the work presented here and UNSD’s ongoing work on expanding the evidence base of SEEA case studies that demonstrate policy impact.

Thank you

p.ekins@ucl.ac.uk

GREEN GROWTH
Knowledge Partnership

IMPLEMENTING THE SEEA ECOSYSTEM ACCOUNTING IN LIBERIA: A MULTI-INSTITUTIONAL EFFORT IN MAPPING, PILOTING AND EXPLORING POLICY APPLICATIONS

Rosimeiry Portela, Ph.D.

Sr. Director

Moore Center for Science

CONSERVATION INTERNATIONAL

© CI LIBERIA

THE UN SYSTEM OF ENVIRONMENTAL ECONOMIC ACCOUNTING (SEEA)

- The statistical framework to measure the environment and its interactions with economy
  - Two complementary approaches aligned with SNA:
    - SEEA Central Framework: Environmental assets/individual resources used in the economy and return to environment
    - SEEA Ecosystem Accounts: Ecosystems /services they provide to economic and human activity

PROGRESS IN THE IMPLEMENTATION OF THE SEEA ECOSYSTEM ACCOUNTING

Hein et al., 2020.
Science, 367: 514-515

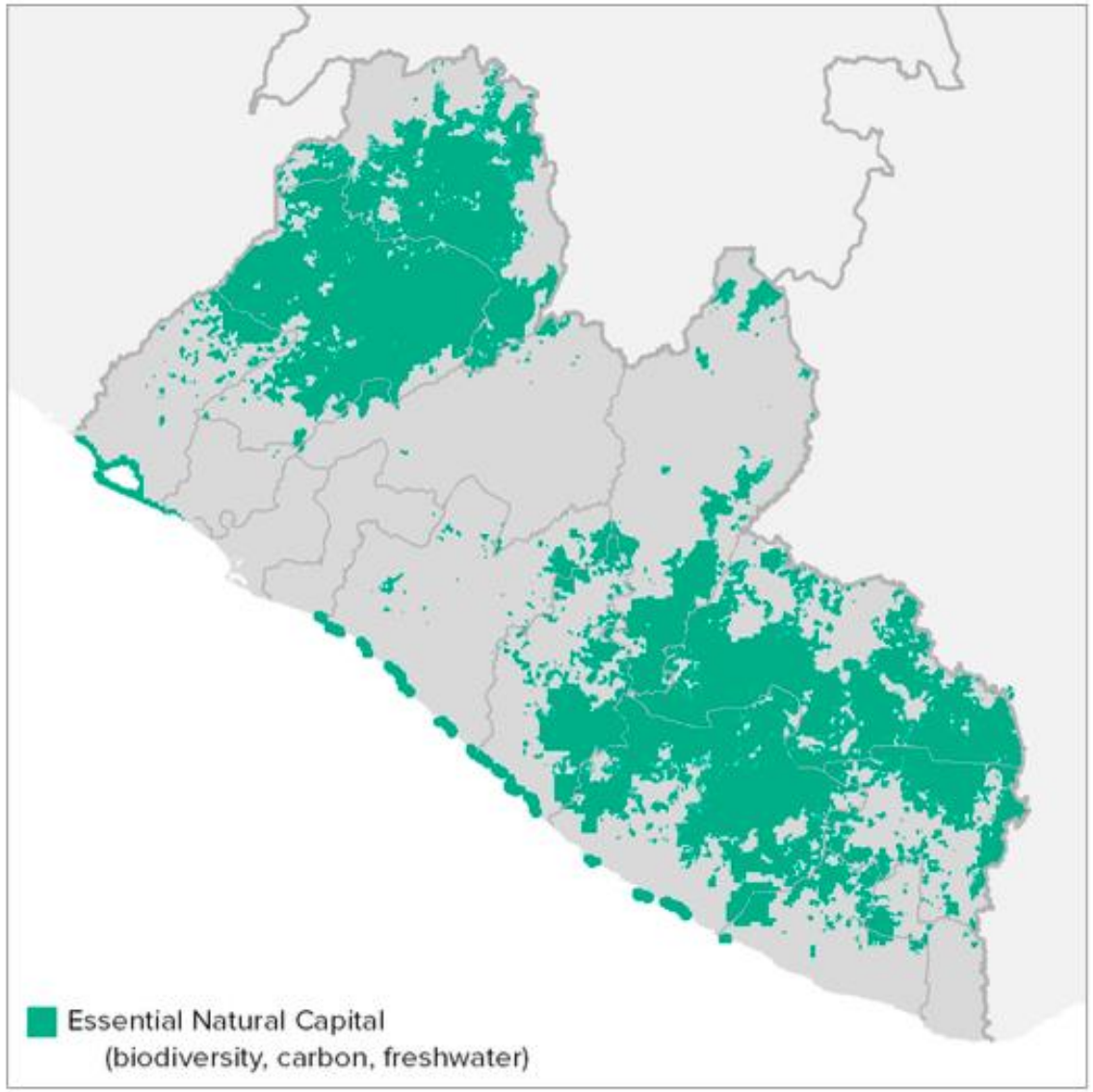
Liberia

SIERRA LEONE
GUINEA
COTE D'IVOIRE
LIBERIA
Voinjama
Lofa
Gbarpolu
Cape Mount
Robertsport
Bomi
Margibi
Kakata City
Montserrado
Monrovia
Bong
Gbarnga
Ganta
Nimba
Bassa
Buchannan
Rivercess
Grand Gedeh
Zwedru
Cestos City
Sinoe
River Gee
Greenville
Grand Kru
Maryland
Harper City
50 km

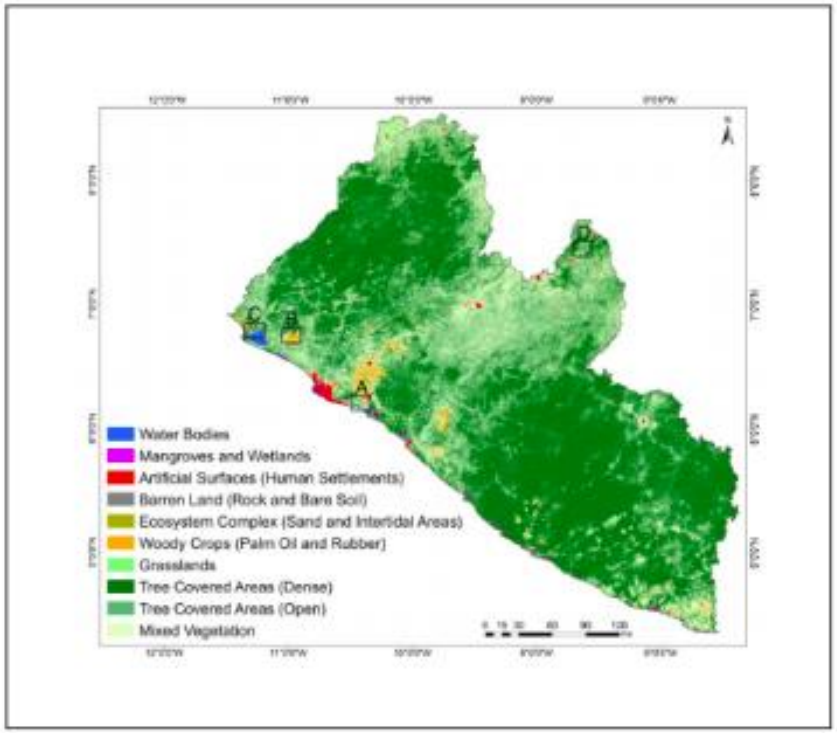
FROM ASSESSMENT: MEASURING ESSENTIAL NATURAL CAPITAL…

People's dependency on nature for food security, livelihoods, climate resilience

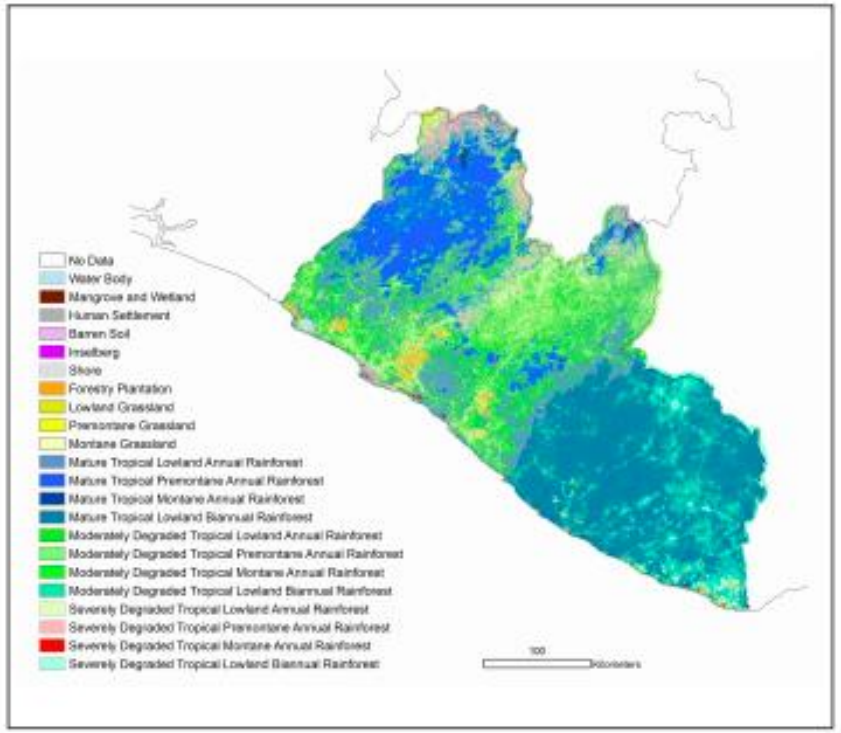
- Most essential natural capital still intact but mostly unprotected
- Multitude of management strategies for a more sustainable development
- Coarse national-scale priorities vs. finer scale data
- Need to measure nature's contribution to the economy



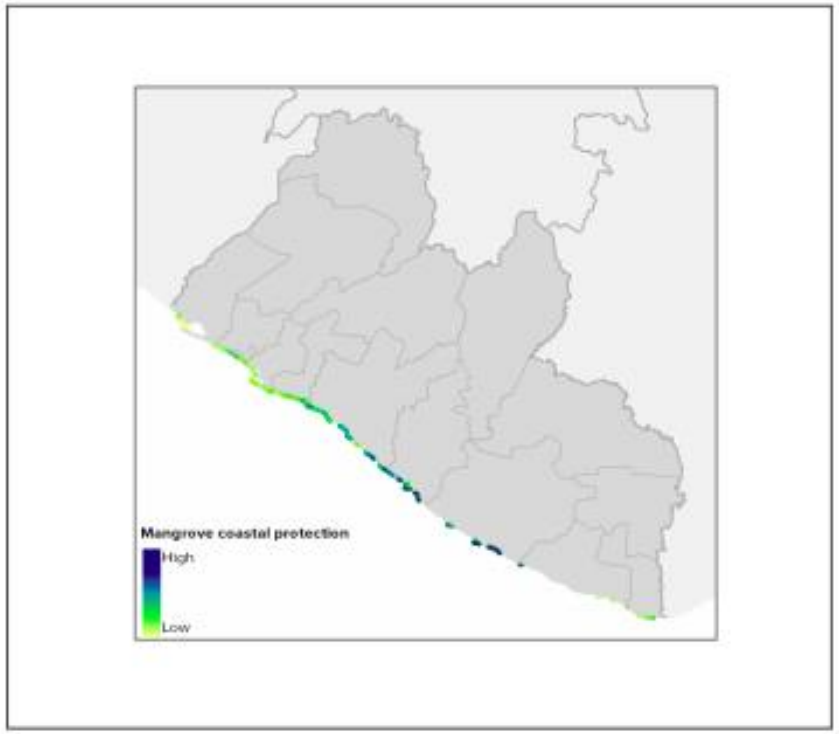
...TO ACCOUNTING: IMPLEMENTING ECOSYSTEM ACCOUNTING



Land Account



Ecosystem Extent Account



Ecosystem Services Account
(GEF-NCA Mangroves)

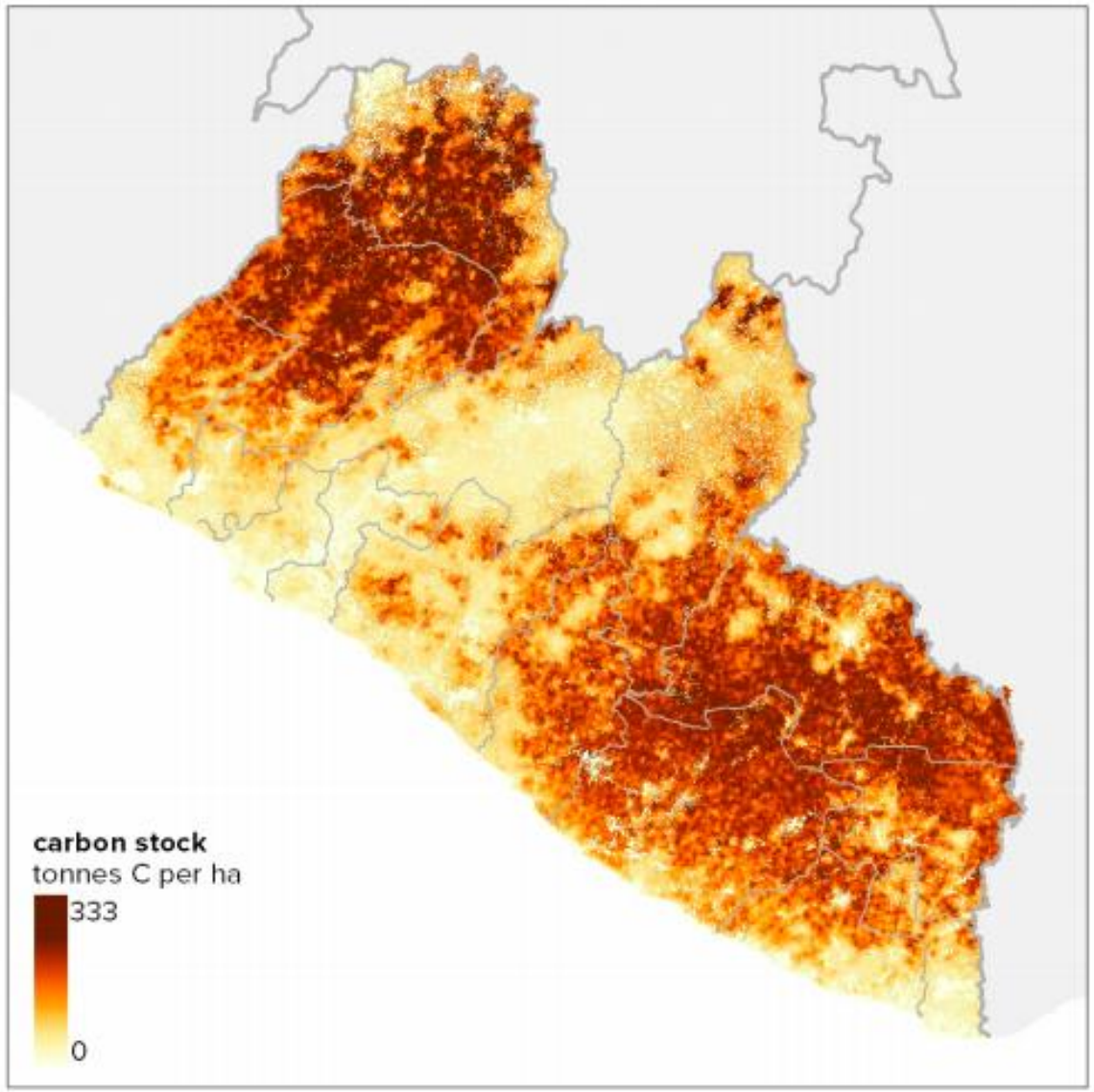
INITIAL POLICY APPLICATIONS OF ECOSYSTEM ACCOUNTING IN LIBERIA

Revision of Liberia's Nationally Determined Contributions (NDCs)/UNFCCC Paris agreement:

- Measuring sectoral contributions of CO2 emission and sequestration
- Supporting design, planning and monitoring of NDC targets, activities and indicators
- Measuring co-benefits and human wellbeing

And beyond...

- Reporting, legislation, impact assessment, spatial planning

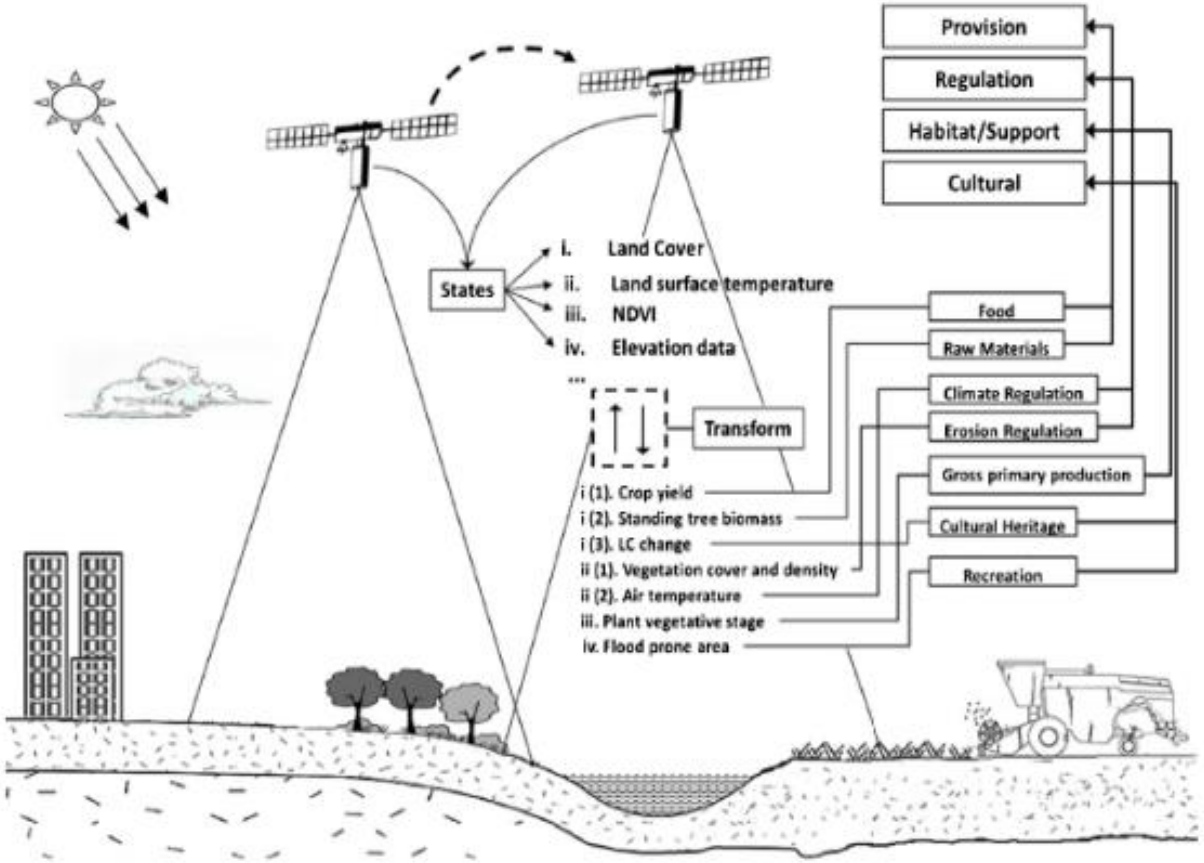


Avitabile et al. 2016.
Global Change Biology 22:1406–1420.

MOVING FORWARD: TOWARDS GLOBAL ADOPTION OF SEEA EA

- Advancing guidelines:
  - Adoption of EA as statistical standard (03/2021)
- Advancing methods and tools:
  - Global databases for SEEA accounts
  - The GEO Earth Observation for Ecosystem Accounting (EO4EA):
    - Ecosystem Accounting-Ready Data (EARD)
- Advancing capacity:
  - Country-led efforts supported by multilaterals, research organizations, foreign aid, etc. tailored to priority polices

Remotely sensed data into ecosystem services values and flows.



De Araujo Barbosa et al., 2015. Ecological Indicators 52: 430-443

THANK YOU
ROB MCNEIL

Tracking natural capital changes needed to meet the SDGs: Case study from India

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Development Alternatives
bc3 BASQUE CENTRE FOR CLIMATE CHANGE Klima Aldaketa Ikergai Sustainability, that's it!
GREEN GROWTH Knowledge Partnership

Case Study Area: Bundelkhand

Environmental

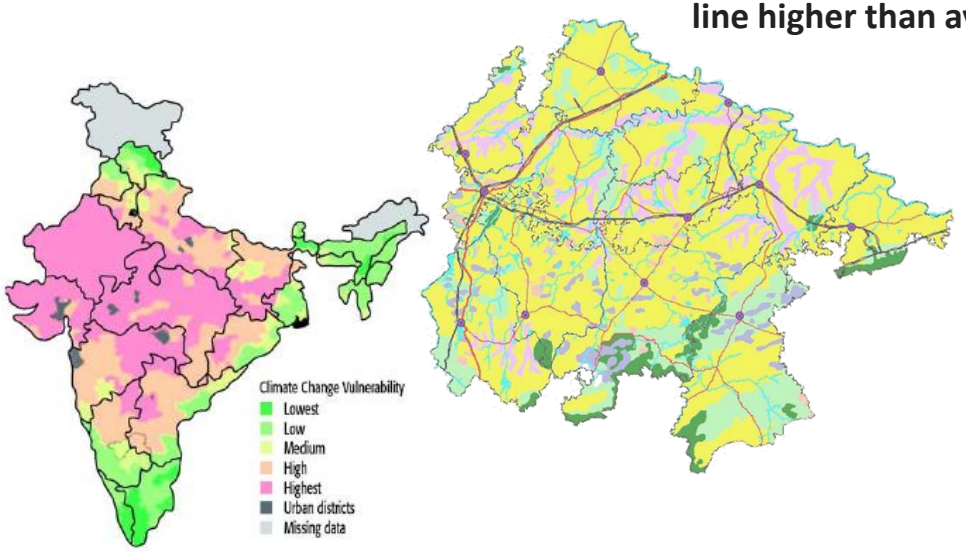
- Reduced precipitation
- Reduced water table
- Shift in monsoon period by 55-60 days, from mid June to mid August

Social

- Seasonal Migration rate in Bundelkhand is 39.4%
- HDI rank is amongst the lowest in the country. HDI of 0.594 compared to India average 0.663
- Child malnourishment
- Farmer suicide
- Population below poverty line higher than average

Economic

- Per capita income is 50-55% lower than the national average
- 67% population is in agriculture ~77% of those are small and marginal
- Small and fragmented size land holdings



Note: Reprinted with permission.

Development Alternatives work on building sustainable ecosystems

Sustainable agriculture

- Crop diversification and Integrated Farming systems
- Climate resilient agricultural practices
- Farmer producer organisations
- Cluster development-organic agriculture

Watershed Development

- Soil water conservation
- Participatory net planning
- GIS based planning

Climate adaptive planning

- Awareness generation
- Climate adaptive decentralized planning at panchayat and district level

Natural Ecosystems

- Conservation in Arid and semi arid region and Himalayan ecosystems
- Biodiversity conservation
- Afforestation

Outreach and awareness through rural communication media

Capacity Building and Training

Research

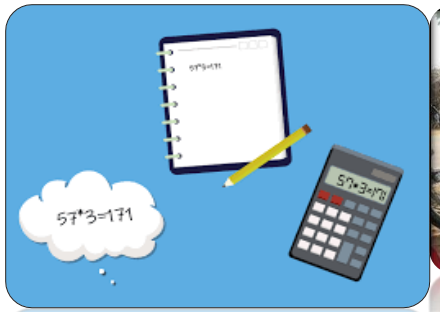
INTRODUCTION TO THE PROJECT

Valuing land as a function of how it is used.

By estimating the value of ecosystem services, the augmented value of natural capital i.e. land, air, water and biodiversity was estimated as a function of how the land was used and managed.

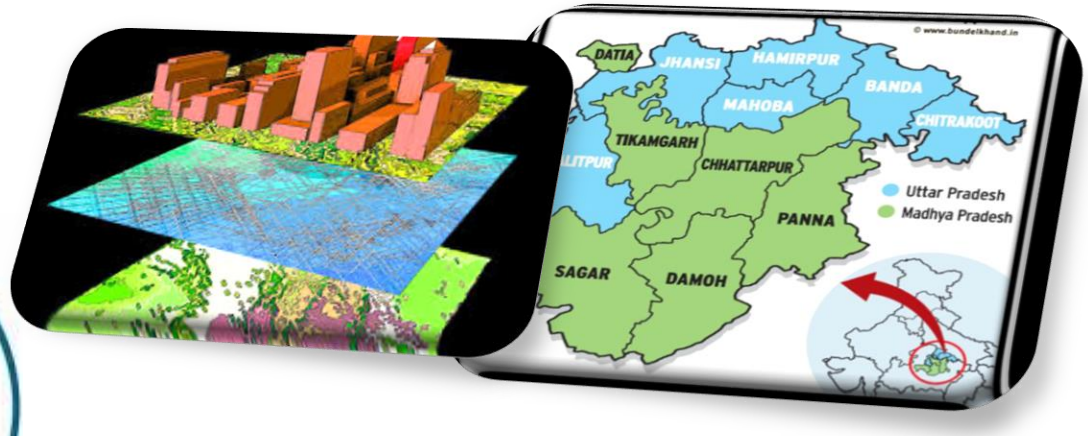
Out of the 187 villages where Development Alternatives has intervened, a comparison was made between changes in ecosystem services in a subset of those against a control group-

ELD METHODOLOGY ADAPTED TO LOCAL CONTEXT



Primary and Secondary Research

GIS based mapping



InVEST

integrated valuation of ecosystem services and tradeoffs

Tools and economic valuation

RESULTS: TRADITIONAL BENEFIT COST

- Two assessments: one based on traditional cost benefit analysis, other on a capitals approach.
- Benefits valued included crop and livestock incomes, timber and non-timber forest products, biodiversity, carbon sequestration.
- Traditional approach found very high benefit to cost ratios from the remediation with biodiversity and carbon benefits accounting for an important part of the benefits.

RESULTS: CAPITALS APPROACH

GREEN GROWTH Knowledge Partnership

- Natural capital increase was over 100 times financial investments
- Social capital was evaluated qualitatively. Study found less outmigration and stronger social institutions in interventons areas.
- Program contributed to national SDG of: (a) 7-10% revival of representative ecosystems and (b) 5% increase in agricultural production systems at very modest cost.
- Capitals approach allows for assessment of cost effectiveness of measures in achieving target increases in natural capital as set in the SDGs.
- SDG targets can be translated into a natural capital target.