

ECOSYSTEM ACCOUNTING AND CASE STUDY IN PERU

GDSA NCA Workshop
June 23, 2016
Nairobi, Kenya

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Moore Center for Science at
Conservation International

CONSERVATION
INTERNATIONAL



OUTLINE

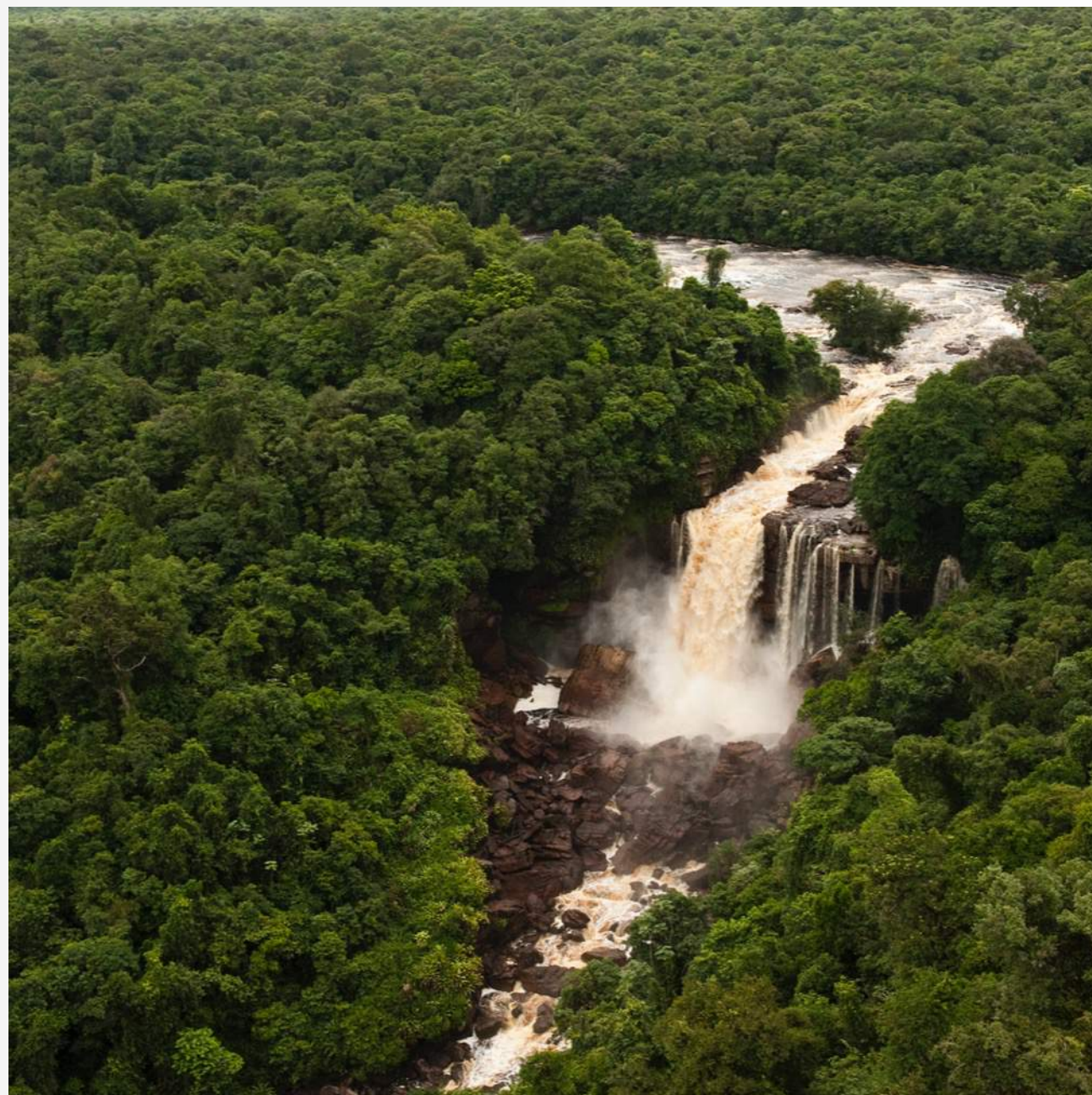
- Introduction/Problem Statement
- The SEEA Experimental Ecosystem Accounts
 - What it is, key characteristics, how it relates to Central Framework, components and processes
- Piloting Experimental Ecosystem Accounting in San Martin, Peru: The Ecosystem Valuation and Accounting (EVA)
 - Key accounts, supply and use
 - Main findings, the way forward, recommendations and lessons learned
- A Word on the Natural Capital Protocol



INTRODUCTION

IGNORING NATURE JEOPARDIZES PROSPERITY

Economies and societies need nature to thrive.



Impacts and dependencies are ignored

As a result we are losing the natural capital that humans depend on



CURRENT SYSTEMS ARE INADEQUATE

- Every country follows a system of national accounts and every business relies on a balance sheet
- However, they largely omit the benefits from nature
- What we need is to capture and integrate the contribution of nature into the systems that countries and governments use to really make decisions





NATURAL CAPITAL ACCOUNTING

- Measures the value of ecosystems (stocks) and the services they provide (flows)
- Integrates this information into the accounting systems that government and business already use to make decisions
- Provides a more complete view of a country's assets

ECOSYSTEM ACCOUNTING

SEEA EXPERIMENTAL ECOSYSTEM ACCOUNTING (SEEA EEA)

- An integrated accounting framework for ecosystem stocks (assets) and flows (services)
- Measures the contributions of ecosystem to economic and other human activity
- Takes a detailed spatial approach (geography and statistics)



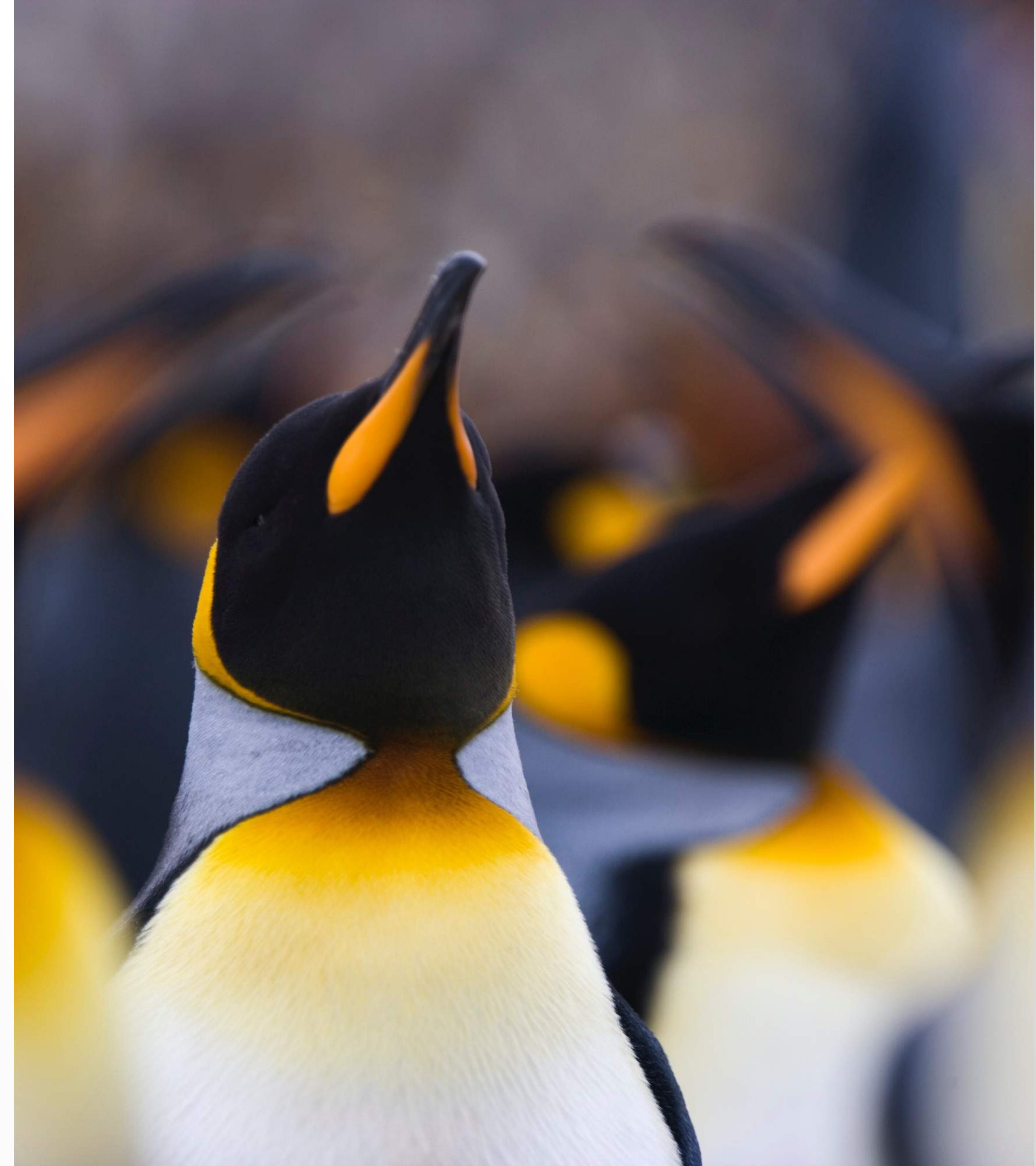
SEEA EXPERIMENTAL ECOSYSTEM ACCOUNTING (SEEA EEA)

- A synthesis of current knowledge on ecosystem services, ecosystem condition and related concepts
- “Experimental” because significant measurement challenges remain and further testing of concepts is needed



ECOSYSTEM ACCOUNTING

- **Ecosystem Assets:** Spatial areas containing a combination of biotic and abiotic components and other characteristics that function together
 - Measured as extent (area) and condition (indicators)
- **Ecosystem Services:** The contribution of ecosystems to benefits used in human and economic activity
 - Measured as stock and flows (biophysical and monetary units)



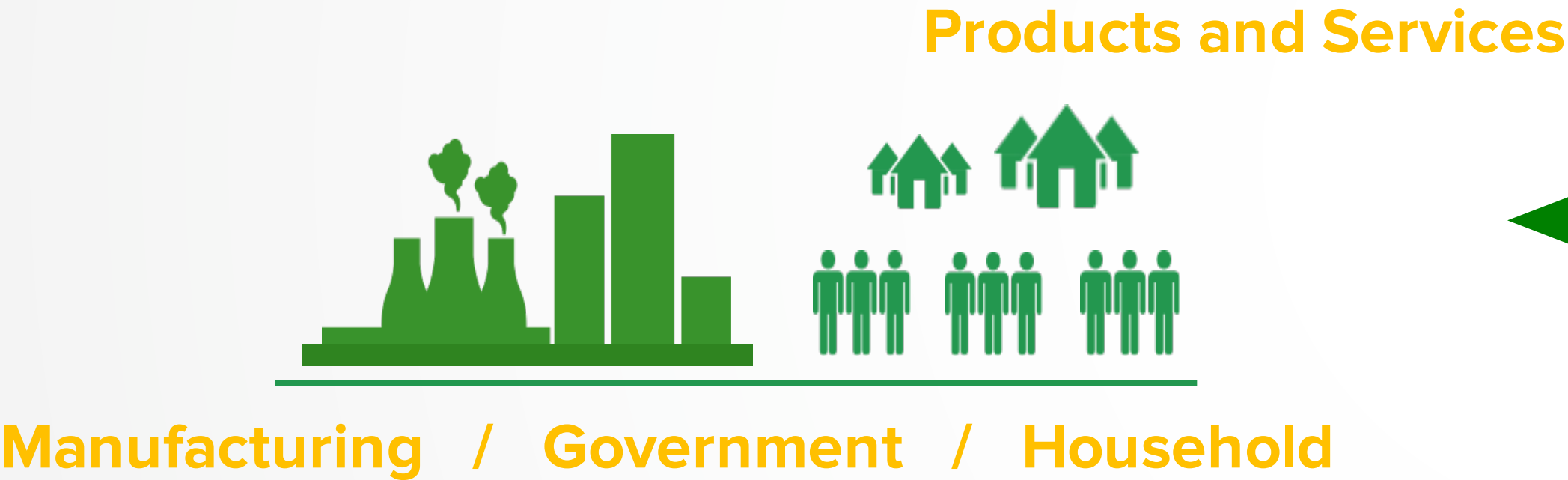
CHARACTERISTICS OF EEA

- Inherently spatial and thus allow easy links to policy and decision making
- A long term monitoring tool that can help understand:
 - Status and health of ecosystems over time (degradation)
 - Benefits derived from ecosystems to different types of beneficiaries
 - Trends in the capacity to derive benefits and how this is changing
 - Understanding of the drivers and actors of change.



CENTRAL FRAMEWORK AND ECOSYSTEM ACCOUNTS

System of National Accounts



Central Framework

Water
Carbon
Land
Soil
Timber

Aquatic,
Biological,
and Water
Resources

Ecosystem Accounting

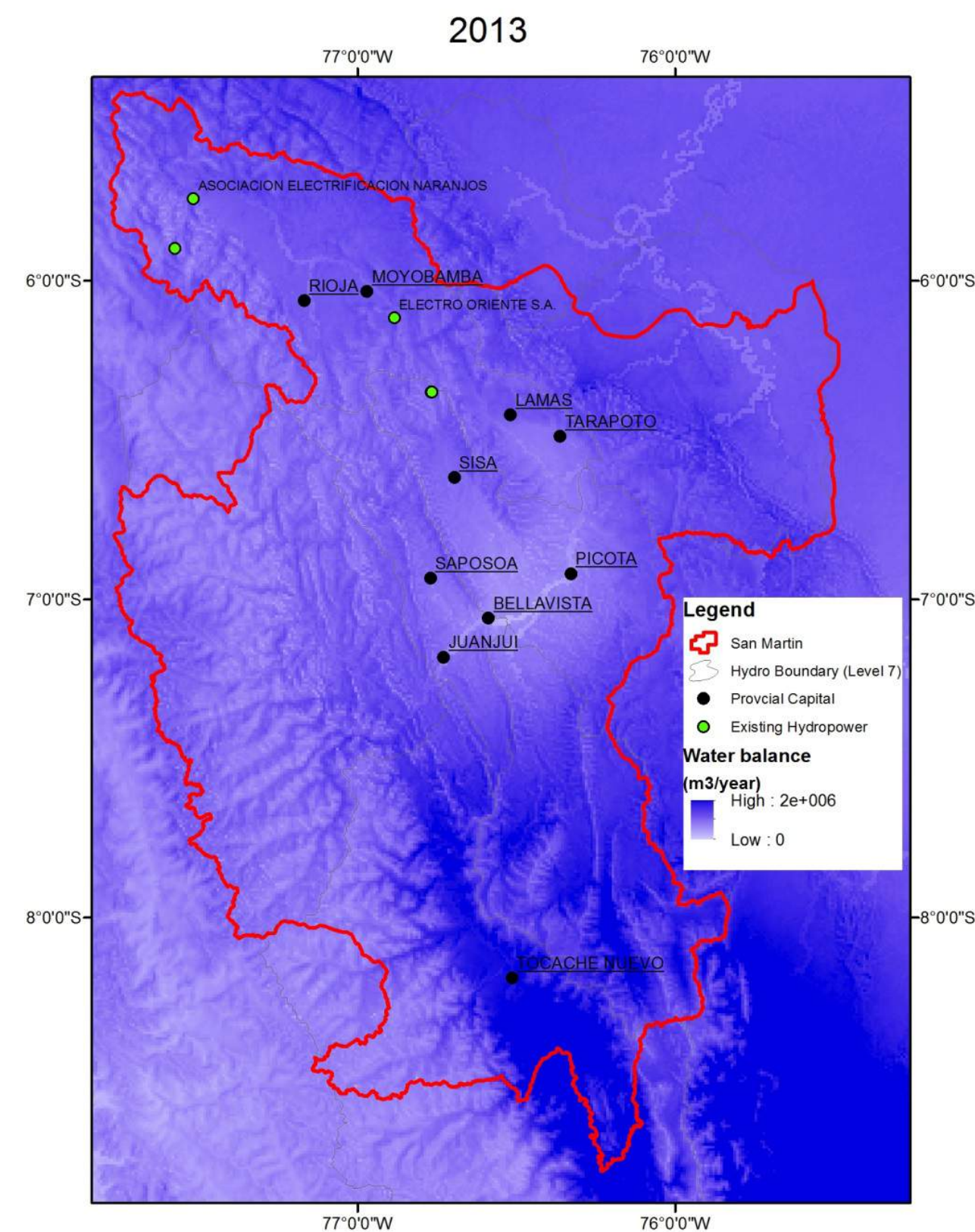
Sources + Flows
from Nature

Ecosystem Extent
Condition
Ecosystem Services
Supply and Use
Capacity
Biodiversity

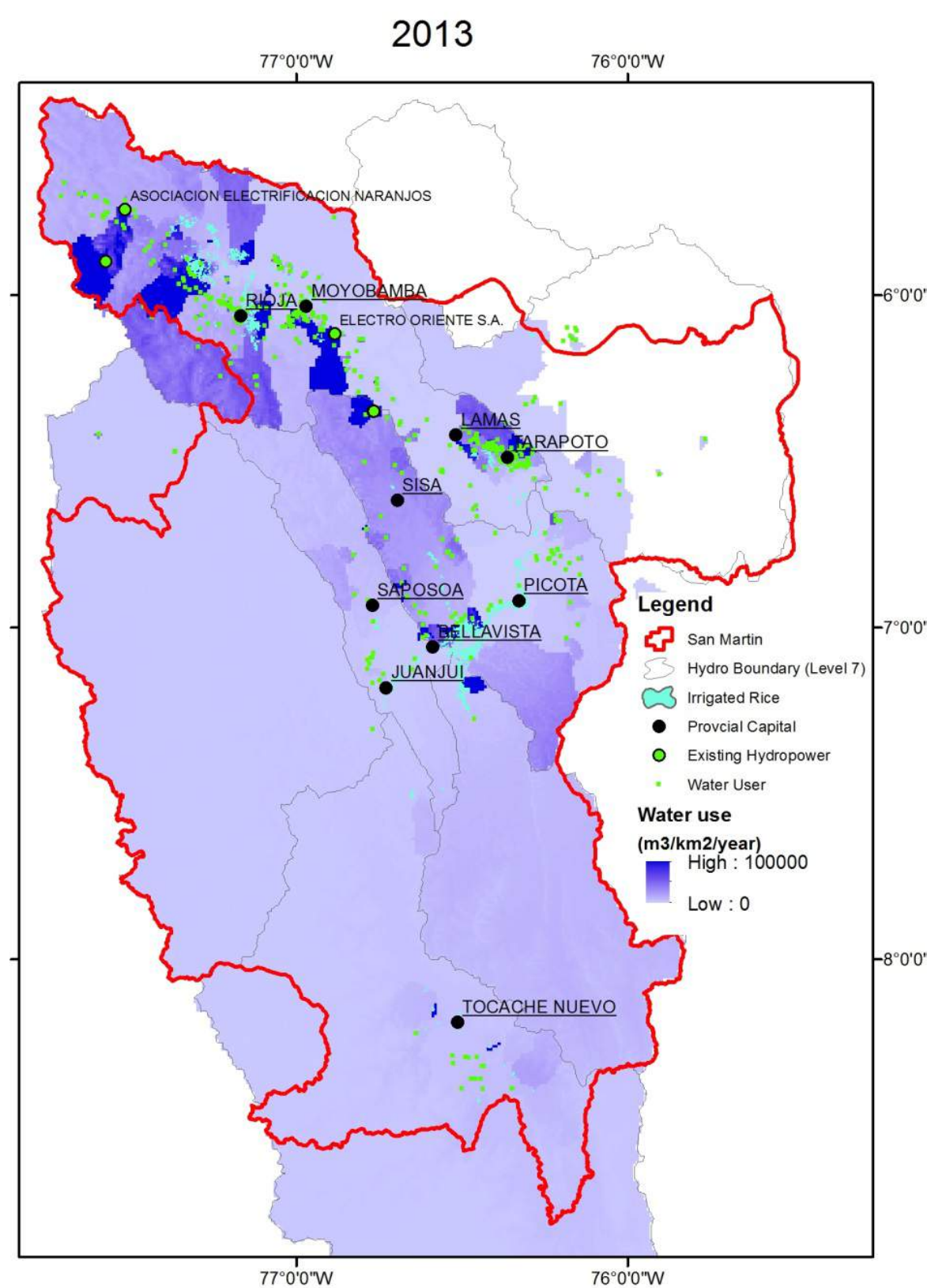


CENTRAL FRAMEWORK AND ECOSYSTEM ACCOUNTS

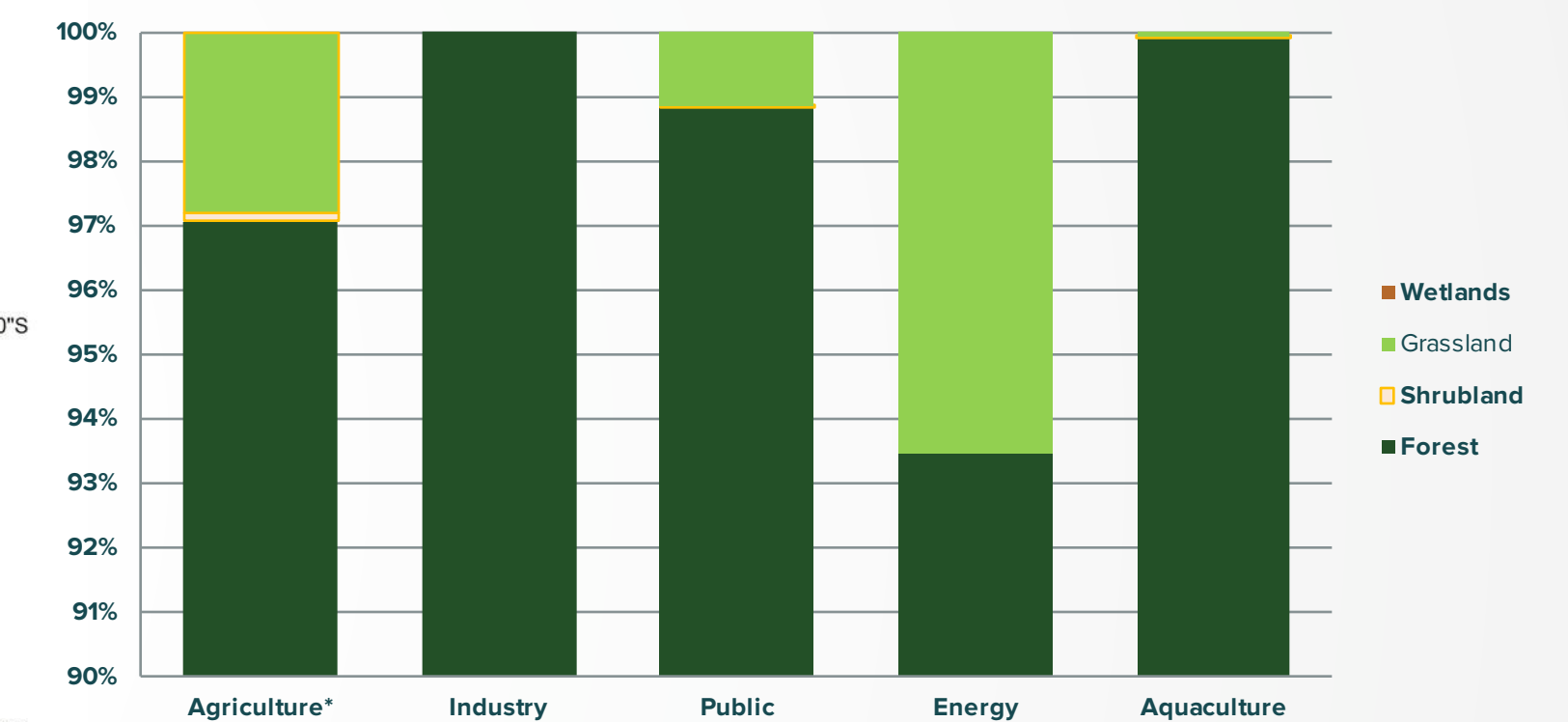
Annual water supply
(m³/km²/year)



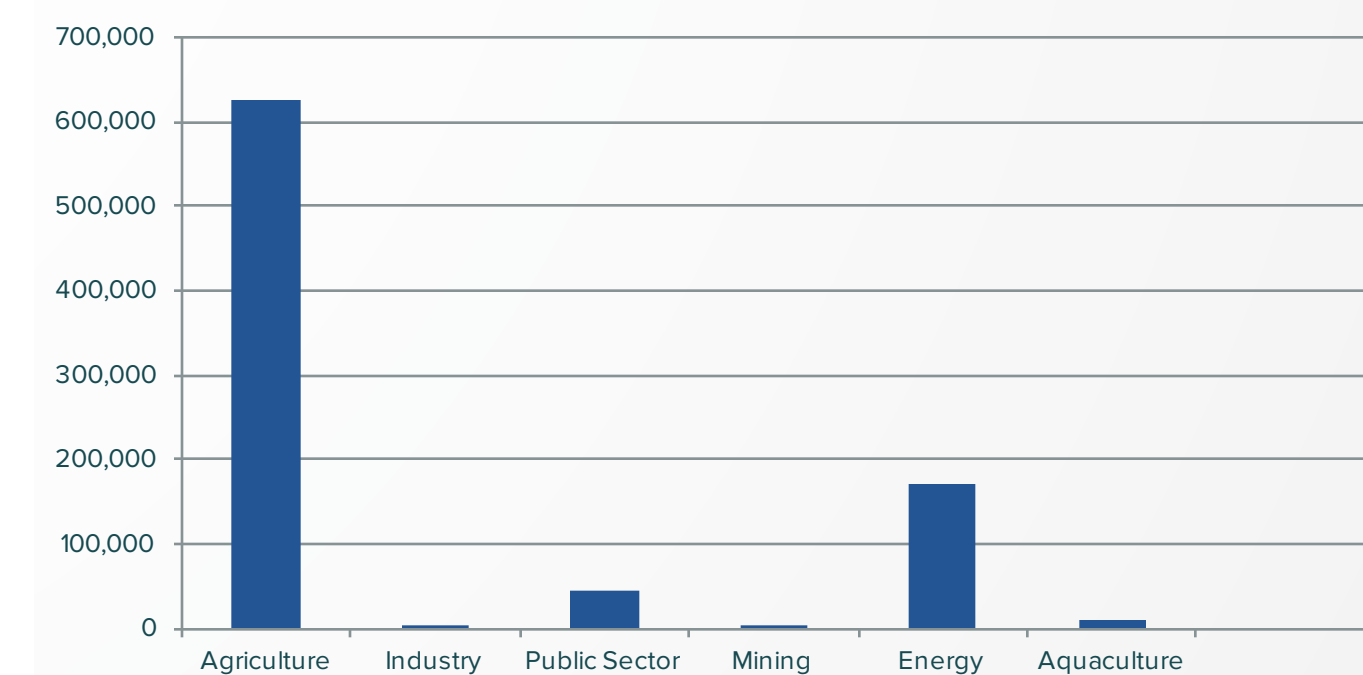
Annual water use
(m³/km²/year)



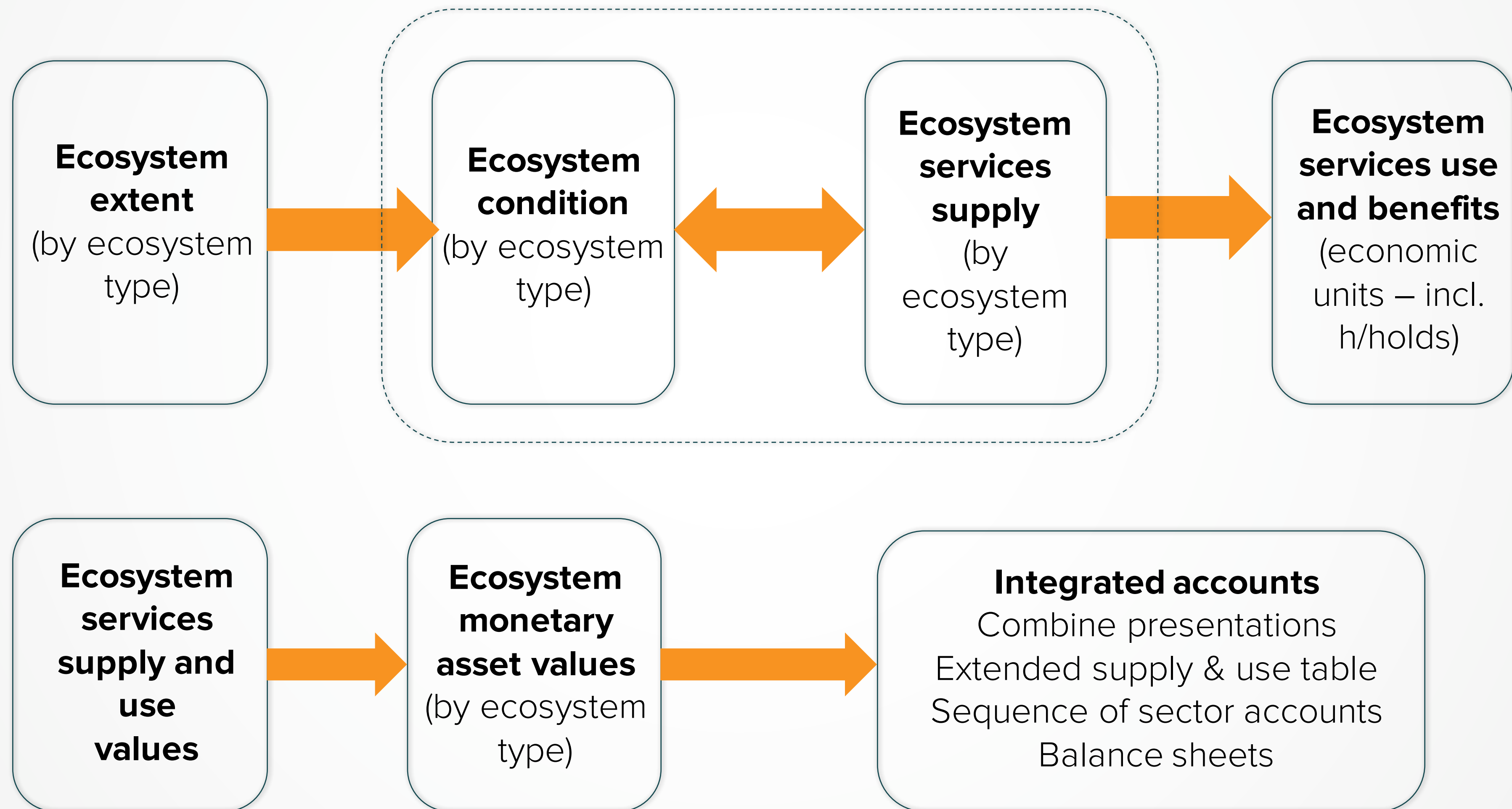
Water Supply-Use San Martín, Peru, 2013



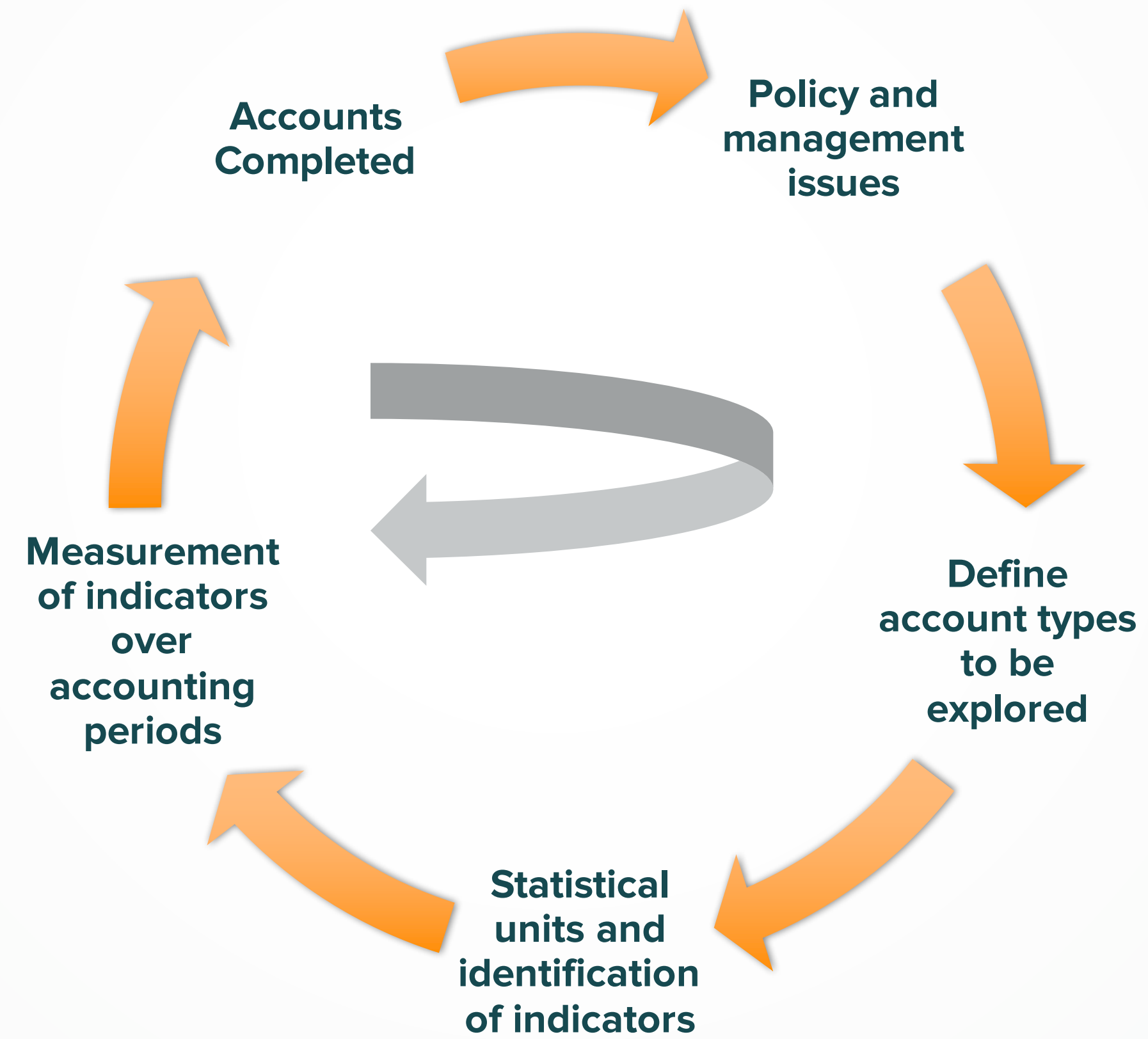
Water Use (T m³/year)



COMPONENTS OF ECOSYSTEM ACCOUNTING



PROCESS STEPS IN ECOSYSTEM ACCOUNTING



CASE STUDY: PERU



SAN MARTIN, PERU

KEY ECOSYSTEM ACCOUNTS

Ecosystem Accounts	Description	Type of Account
Ecosystem Extent	Records statistics on the area of ecosystem distributions over an accounting period.	Primary
Ecosystem Condition	Records statistics on the characteristics that reflect the condition or quality of an ecosystem.	Primary
Ecosystem Services Supply and Use	Records ecosystem services flows from the ecosystems (i.e. its supply) and flows to beneficiaries (i.e. its use). Measurements are in physical and where appropriate monetary values.	Primary
Extended Supply and Use Table	The aim of extended supply and use table is to embed the measures of ecosystem service flows into the SNA Supply Use Table	Primary
Biodiversity	A cross cutting account that records statistics independent of different ecosystem types on biodiversity values. It is a standalone account but also used as input for the ecosystem condition account.	Thematic
Carbon	Contains information on the stocks and flows of carbon within ecosystems	Thematic
Water	Contains information on the stocks and flows of water including inter-ecosystem flows	Thematic

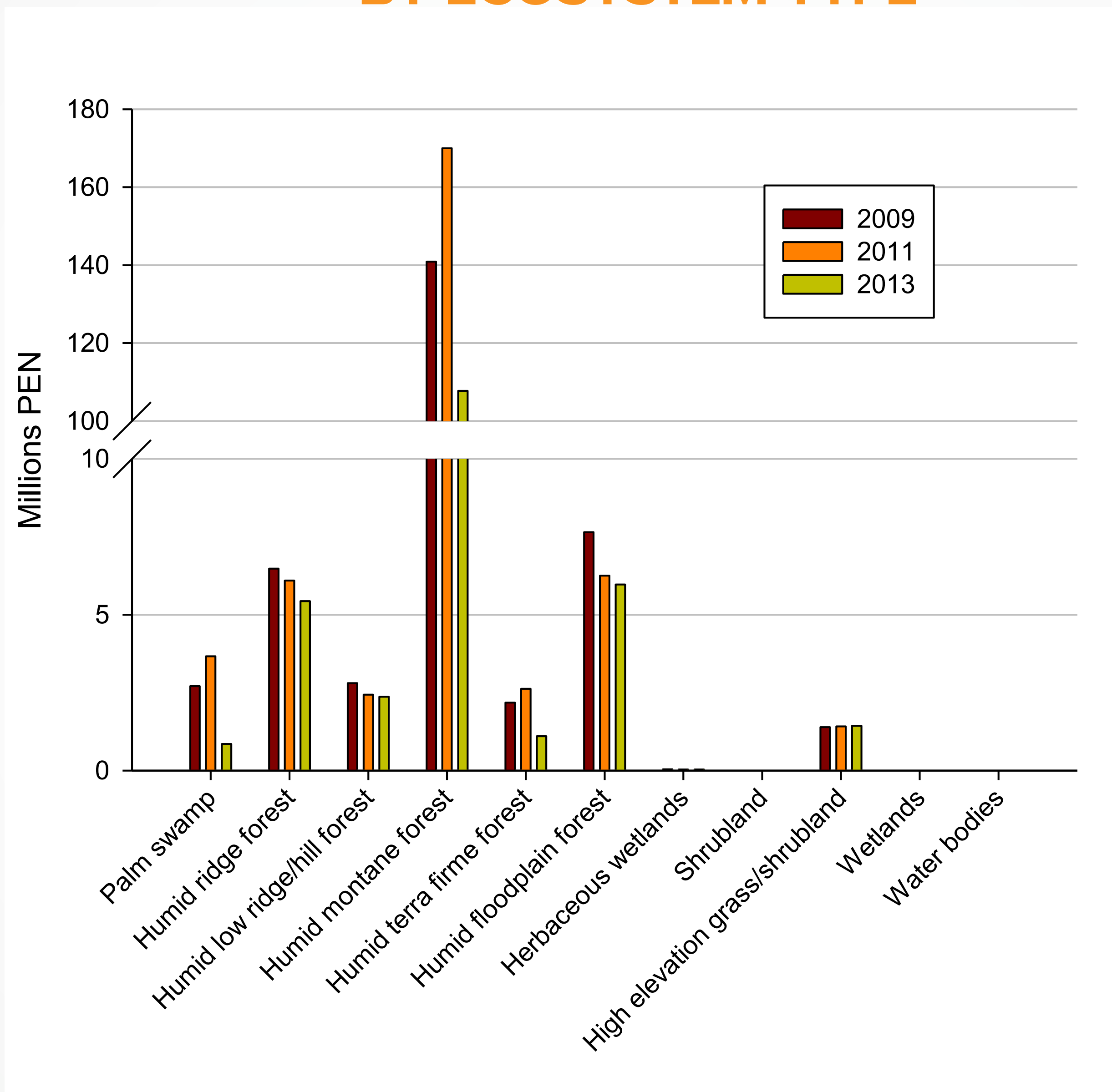


SUPPLY AND USE

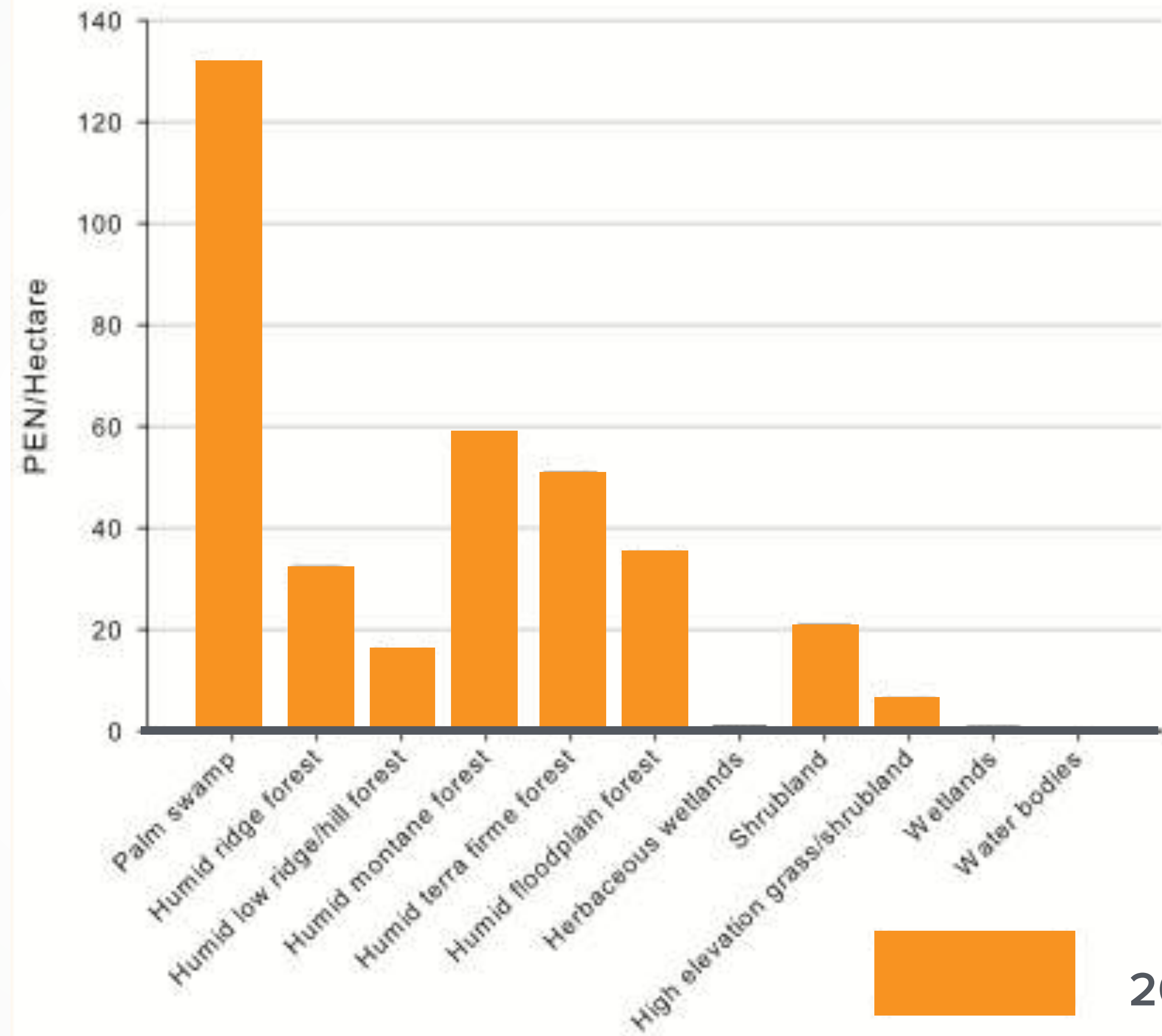
Ecosystem services	Goods/benefits	Beneficiaries
Water provision, flow regulation and water purification	Potable and non-potable water, drought and flood attenuation, prevention of erosion and sediment retention.	Public sector (water supply for domestic consumption); Agriculture (rice irrigation); Aquaculture; Energy production (hydropower); Mining industry, Recreation.
Provision of natural forest products	Timber, non-timber forest products (NTFP), wild food, ornamental and medicinal resources	Food subsisters (rural poor, farmers, other wild food extractors); Foresters; Building material subsisters (rural poor, farmers); Industry (pharmaceutical and orchid growers).
Climate regulation	Carbon storage and sequestration	Global and local beneficiaries
Pollination	Pollination of natural and cultivated crops	Farmers.
Cultural services	Recreation, inspiration, education, spiritual rituals, art and photography	Tourists operators (ecolodges, hotels, indigenous communities)



ESTIMATED ECOSYSTEM SERVICE FLOWS (PEN) BY ECOSYSTEM TYPE



HIGH VALUE ECOSYSTEMS



CONTRIBUTION OF ECOSYSTEMS TO THE REGIONAL ECONOMY WAS ESTIMATED AS 191 MILLION PERUVIAN SOL (ABOUT US\$58 MILLION), WHICH WOULD REPRESENT THE EIGHTH BIGGEST SECTOR IN SAN MARTÍN.

8TH OUT OF 32 SECTORS





Available on the WAVES Knowledge Center [here](#)

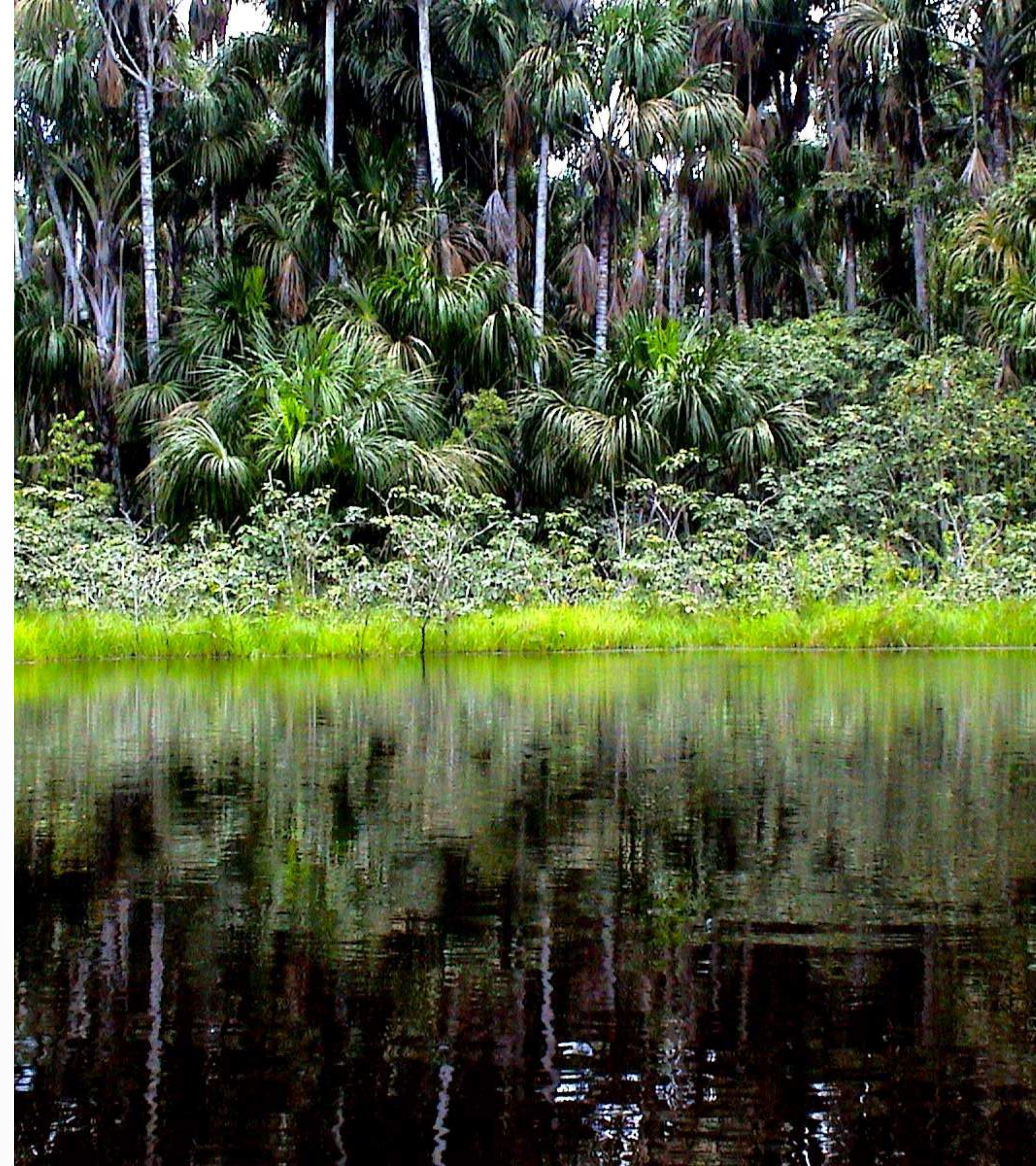
POST ACCOUNT POLICY APPLICATIONS

Index and indicators to make decisions

- Ecosystem Benefits Index (EBI)
- Environmental Performance Index (EPI)

Indicators and analyses for specific sectors

- Ecotourism
- Rice and Palm Swamp
- Hydroenergy



RECOMMENDATIONS & LESSONS LEARNED 3

- Follow SEEA ecosystem accounting framework guidelines
- Formalize institutional arrangements and leverage strong partnerships
- Utilize multi-disciplinary teams and expertise
- Ensure accounts are developed to inform key policies and decisions
- Ensure time and resources for post account applications
- Maintain a research component
- Develop extent, condition and biodiversity accounts nationally, and build ecosystem services supply and use accounts at the region level
- Data



A low-angle shot of a dense forest with sunlight filtering through the canopy, creating a bright, ethereal atmosphere. The text is overlaid in white, bold, sans-serif font.

NATURAL CAPITAL PROTOCOL

TRANSFORMING THE FUTURE OF BUSINESS + MARKETS



NATURAL CAPITAL PROTOCOL

DRAFT APPAREL SECTOR GUIDE

IMPORTANT: please read

v0 (version zero) of the Apparel Sector Guide is an early draft and is not complete. As we work towards a final version in July 2016, we welcome your involvement through a consultation to improve and strengthen the guide.

The consultation will run until 26 February 2016. To find out how to take part visit: <http://www.naturalcapitalcoalition.org/consultation>.

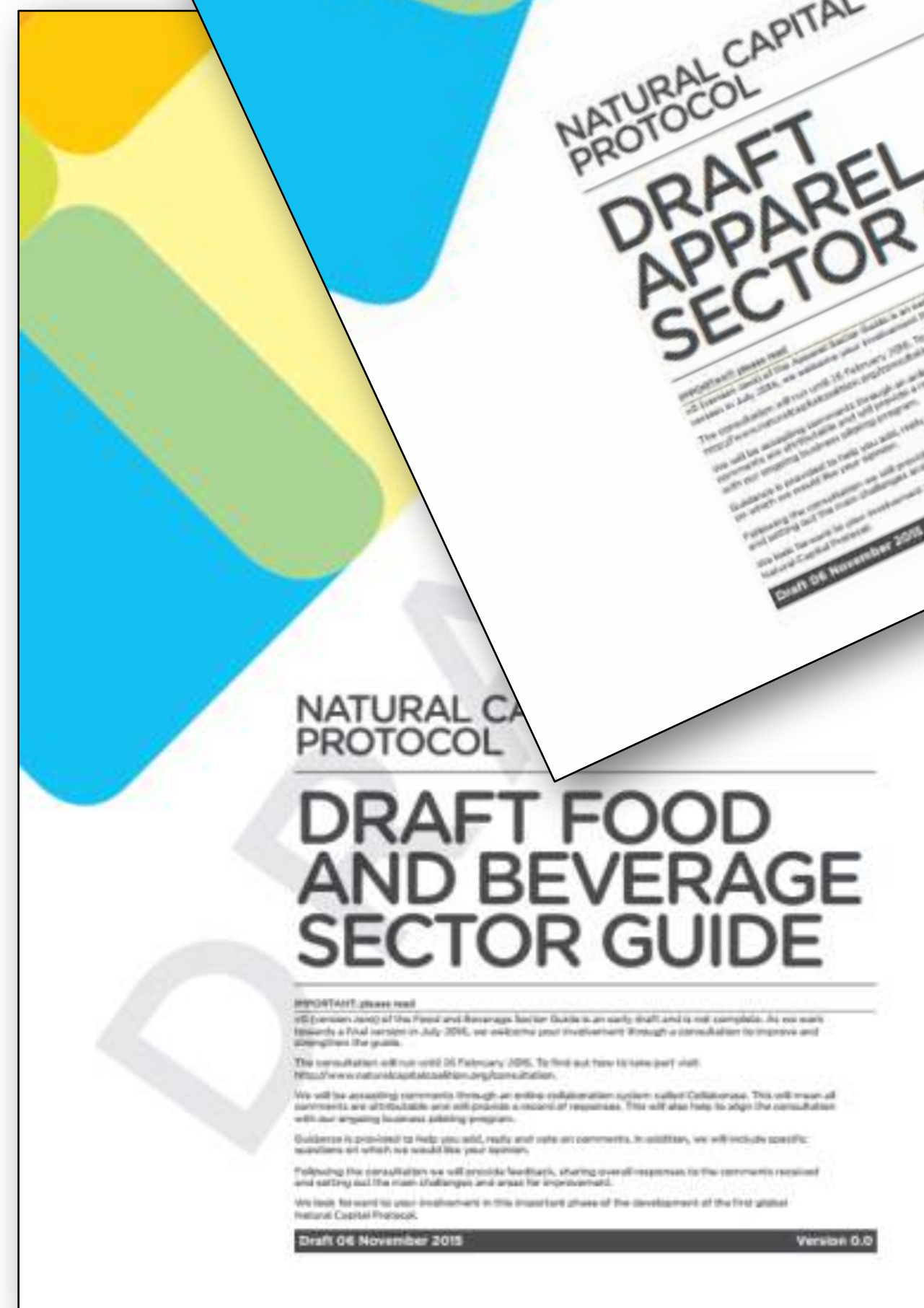
We will be accepting comments through an online collaboration system called Collaborase. This will mean all comments are attributable and will provide a record of responses. This will also help to align the consultation with our ongoing business piloting program.

Guidance is provided to help you add, reply and vote on comments. In addition, we will include specific questions on which we would like your opinion.

Following the consultation, we will provide feedback, sharing overall responses to the comments received and setting out the main challenges and areas for improvement.

We look forward to your involvement in this important phase of the development of the first global Natural Capital Protocol.

Draft 06 November 2015



NATURAL CAPITAL PROTOCOL

DRAFT FOOD AND BEVERAGE SECTOR GUIDE

IMPORTANT: please read

v0 (version zero) of the Food and Beverage Sector Guide is an early draft and is not complete. As we work towards a final version in July 2016, we welcome your involvement through a consultation to improve and strengthen the guide.

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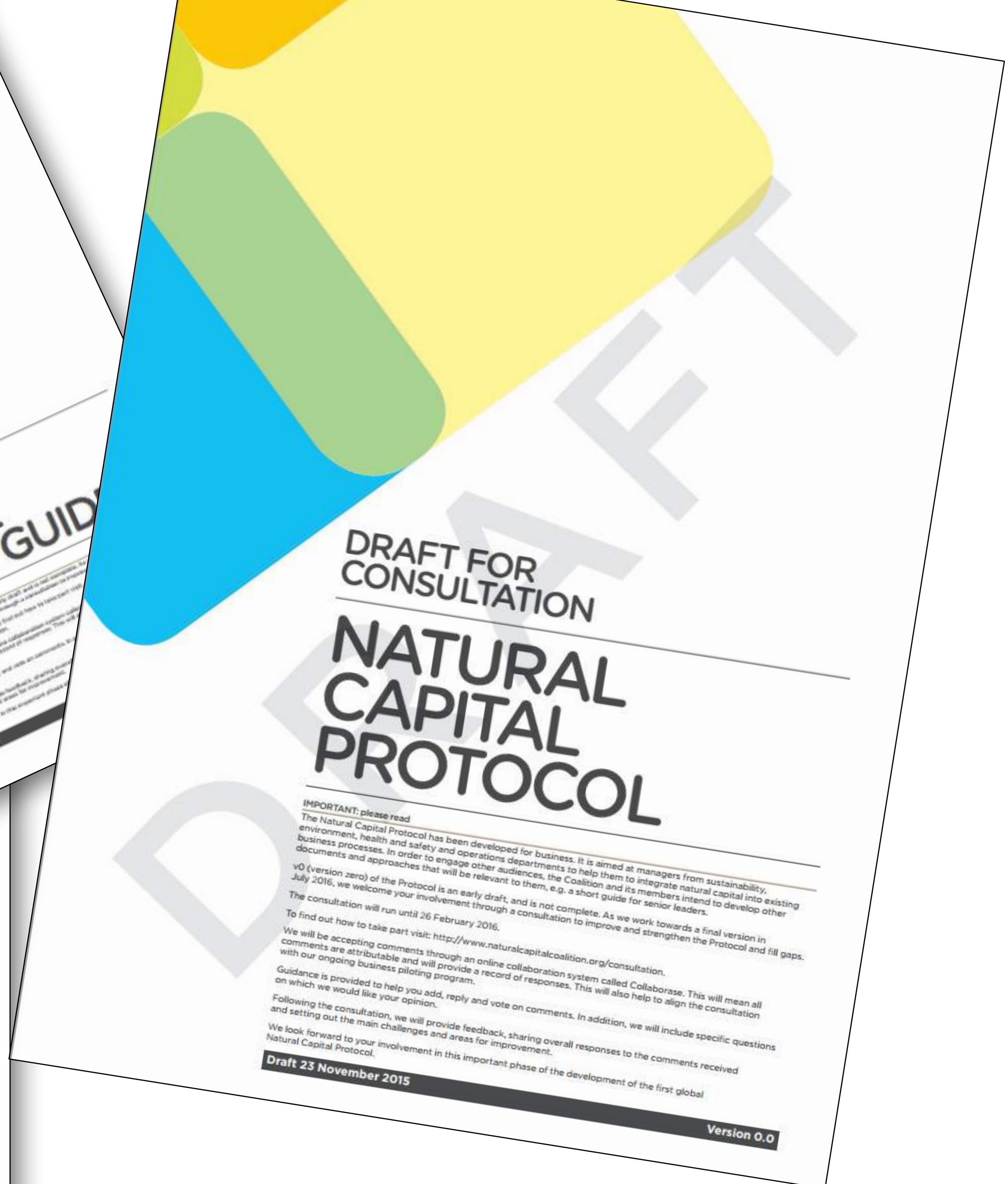
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Draft 06 November 2015

Version 0.0



DRAFT FOR CONSULTATION

NATURAL CAPITAL PROTOCOL

IMPORTANT: please read

The Natural Capital Protocol has been developed for business. It is aimed at managers from sustainability, environment, health and safety and operations departments to help them to integrate natural capital into existing business processes. In order to engage other audiences, the Coalition and its members intend to develop other documents and approaches that will be relevant to them, e.g. a short guide for senior leaders.

v0 (version zero) of the Protocol is an early draft, and is not complete. As we work towards a final version in July 2016, we welcome your involvement through a consultation to improve and strengthen the Protocol and fill gaps.

The consultation will run until 26 February 2016.

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ACKNOWLEDGEMENTS FOR PERU PROJECT

CI EVA Team:

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Rosimeiry Portela (co-PI)
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Ivo Encomenderos
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Miro Honzak
Piyali Kundu
Trond Larsen
Kim Reuter
Ana Maria Rodriguez
Claudio Schneider
Lucho Espinel
Max Wright

Peru Govt:

MINAM
ARA
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ANA
INEI

Clark Labs:

Stefano Crema

UQ:

Jane McDonald

CSIRO:

Simon Ferrier
Tom Harwood
Andrew Hoskins
Justin Perry
Kristen Williams.

Wageningen University

Lars Hein

UNSD

Carl Obst
Alessandra Alfieri

World Bank WAVES

Glenn-Marie Lange



The image features a dense, tangled mass of bright orange-red, hair-like structures, possibly a type of coral or a large, tangled plant, set against a deep blue background. The text "THANK YOU" is overlaid in a large, white, sans-serif font, centered horizontally and slightly above the middle vertically. The overall composition is abstract and visually striking due to the high contrast between the vibrant orange-red and the deep blue.

THANK YOU