WAVES

WEALTH ACCOUNTING AND THE VALUATION OF ECOSYSTEM SERVICES

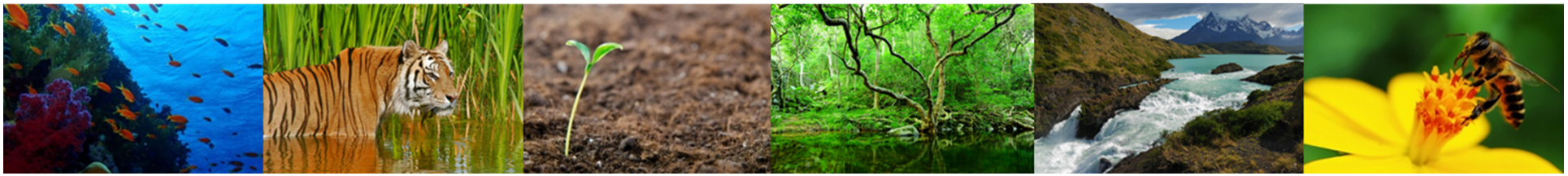
The need for Natural Capital Accounting

Presentation to the Ministry of Foreign Affairs of The Netherlands

The Hague, 24th July 2014

Juan-Pablo Castaneda S.

Environment and Natural Resources Global Practice, The World Bank



Outline of the presentation

1) Background on Natural Capital Accounting (NCA)
2) Where has NCA been most useful?
3) What is the role of WAVES?
4) WAVES progress and some lessons

1. Background on NCA

"What we measure affects what we do;
and if our measurements are flawed, decisions may be distorted."

Stiglitz, Sen and Fitoussi (2009)

GDP does not measure…

Wear and tear and depreciation resulting from using produced assets like factories, roads, and bridges.

Loss of natural areas that provide ecosystem services to the economy, like pollination.

Extent to which renewable resources like forests and fisheries are being depleted.

Depletion of minerals and mineral fuels.

Future losses resulting from greenhouse gas emissions – sea level rise, extreme weather, and agricultural losses.

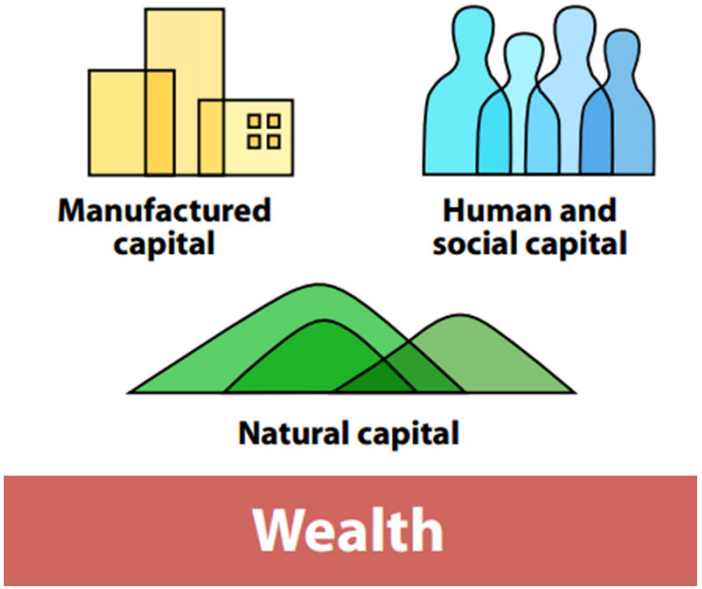
Future economic losses when pollution leads to premature deaths and chronic disease.

Towards better measures of wealth

We don't judge a company solely on the basis of its income statement, we look at both income and balance sheet.

- Increasing assets (wealth) support long-term growth.
- In the short term, income can appear to grow by liquidating assets, but this undermines long-term growth.

Economic development is a process of building wealth and managing a portfolio of assets



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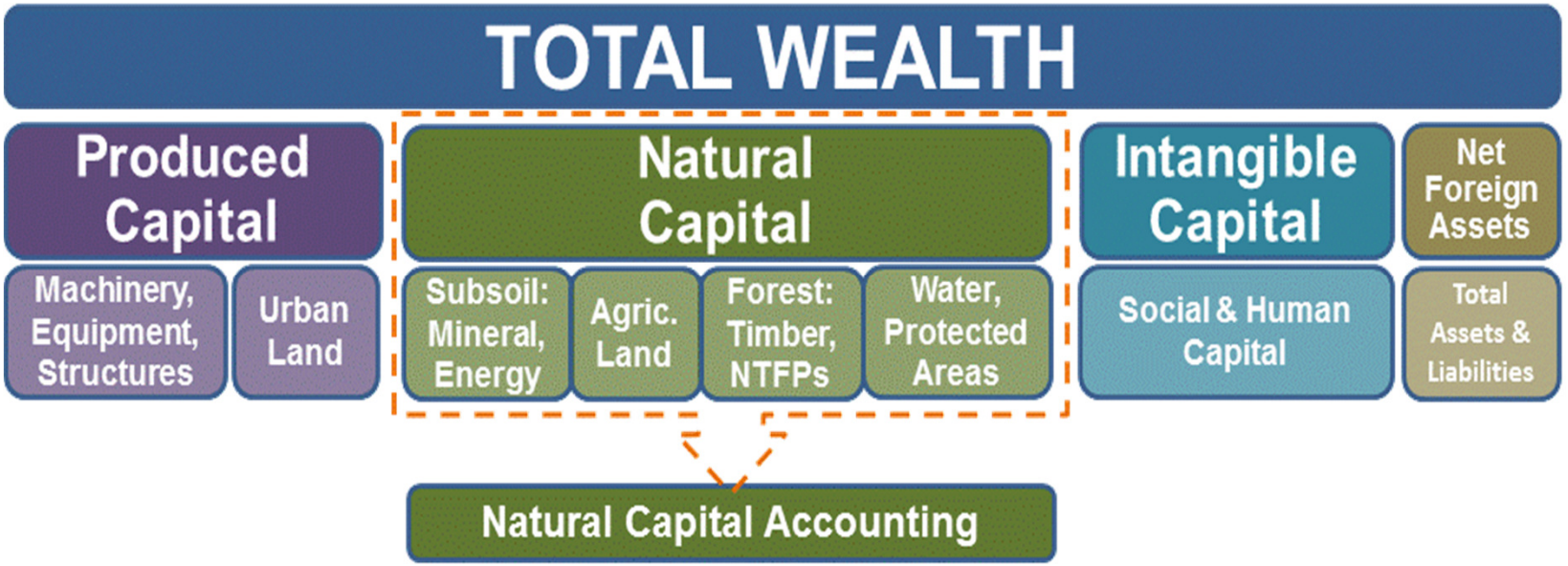
Where does NCA focus?

- The source of income and well-being is wealth, broadly defined to include: Manufactured capital, Natural capital

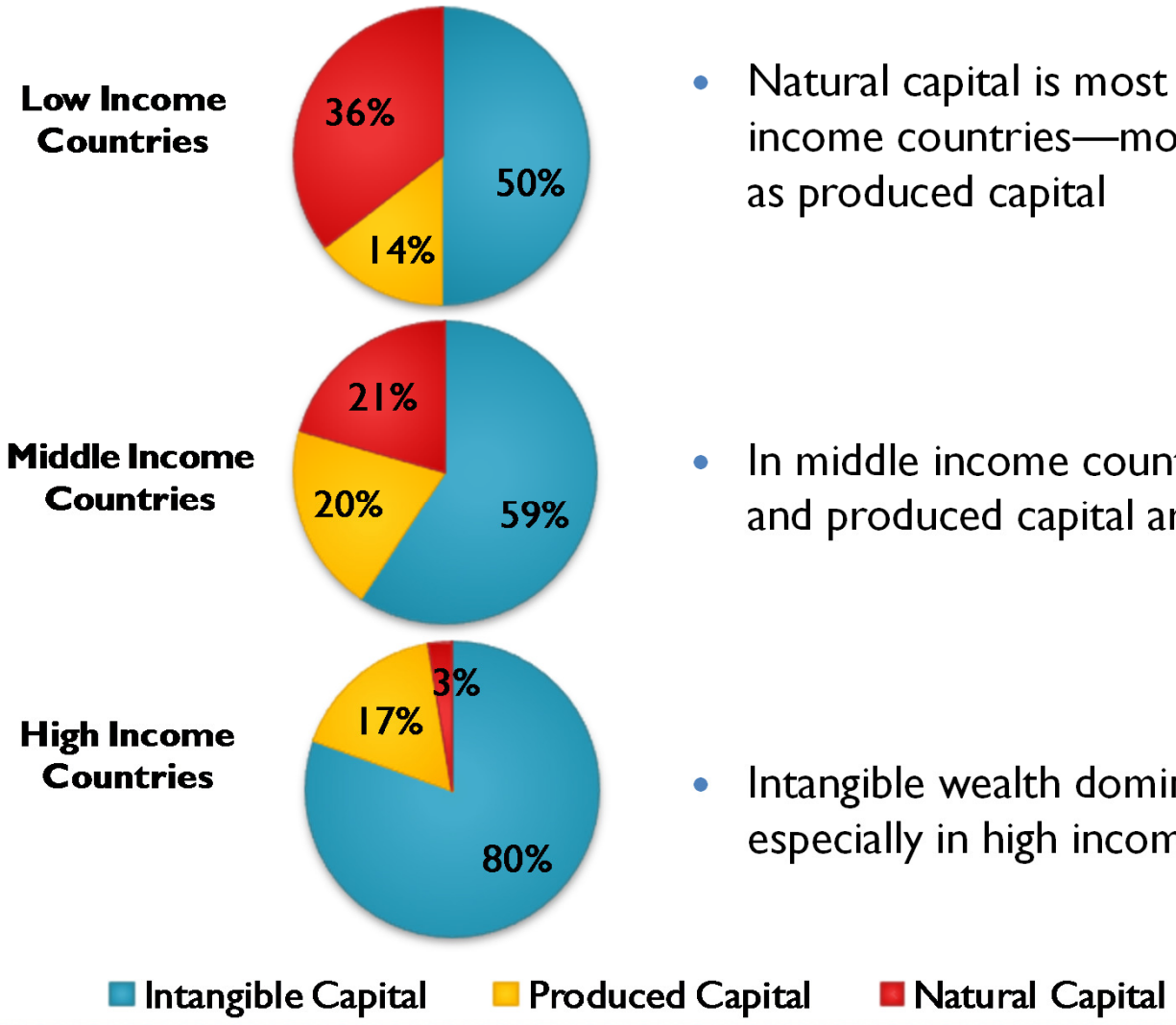
'Intangible' capital – net financial assets, human capital and social capital

- NCA focuses on the part of total wealth that comes from mineral, energy, agricultural, soil, timber, and water assets



Why is natural capital important?

Shares of comprehensive wealth, by income class, 2005



- Natural capital is most important in low income countries—more than twice as large as produced capital
- In middle income countries natural capital and produced capital are roughly equal
- Intangible wealth dominates in all countries, especially in high income countries

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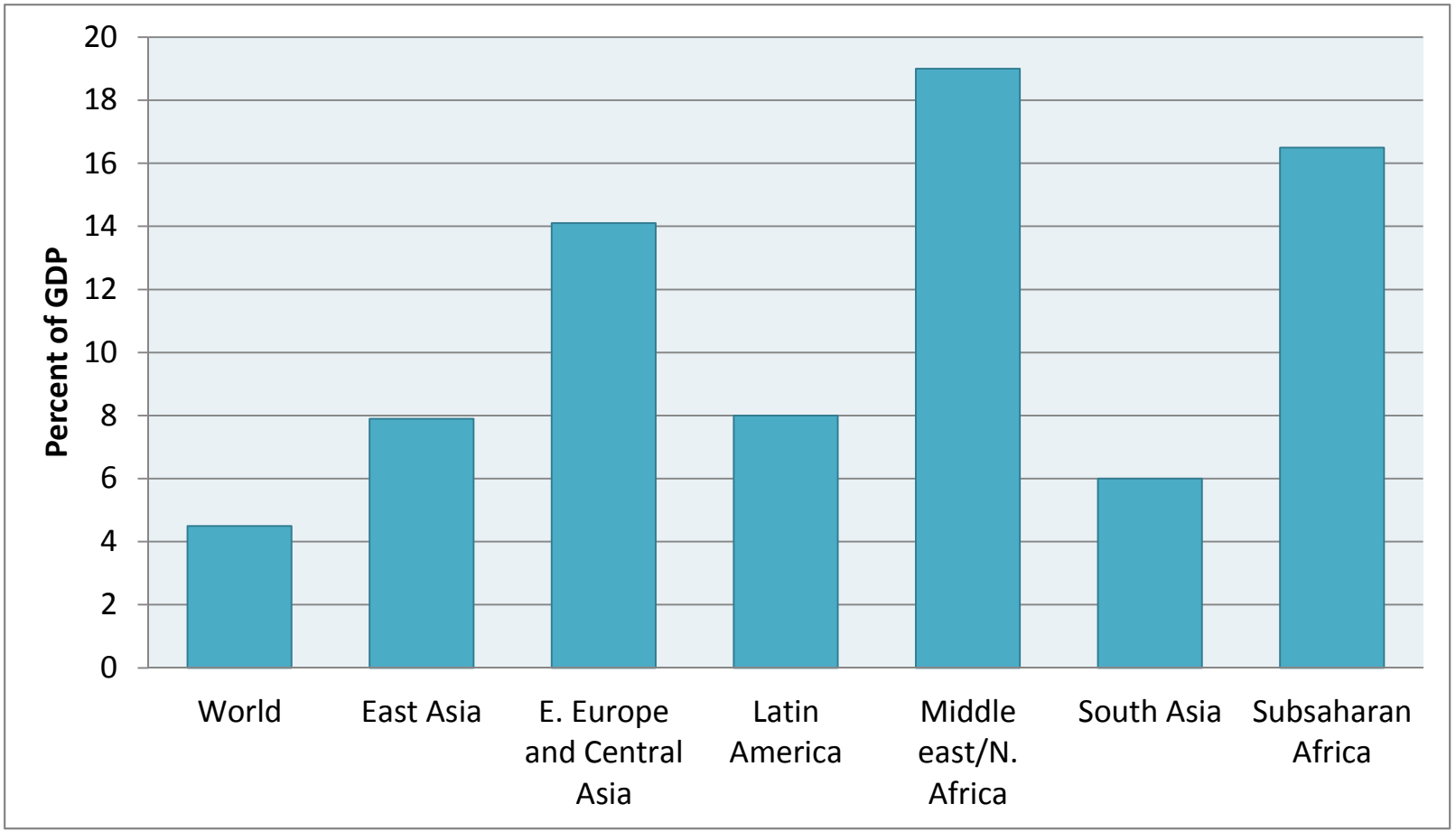
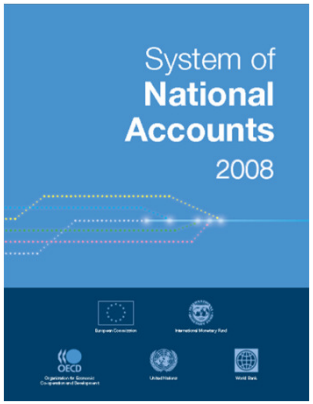
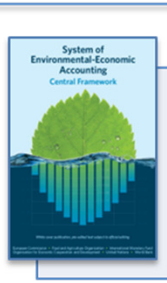
Why is natural capital important?

Natural resource rents are a major source of income



What is the methodology for NCA?

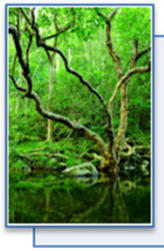




Part 1. SEEA-Central Framework

Adopted by UN Statistics Commission as International Statistical Standard in February 2012

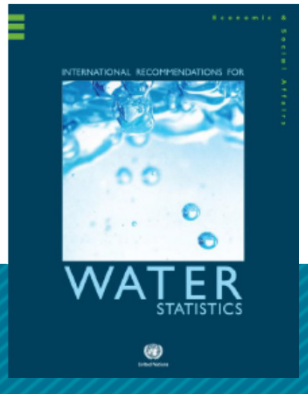
Part 2. SEEA Experimental Ecosystem 2013

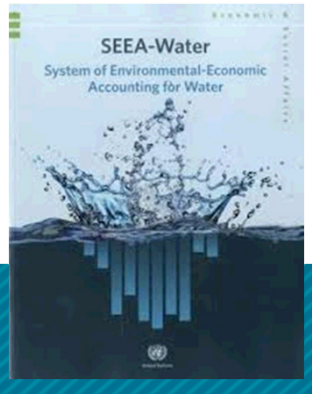


Part 3. SEEA Applications and Policy Uses

2013

- Energy
- Land and Ecosystems
- Forest
- Fisheries
- Water





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2. Where has NCA been most useful?

1. **Indicators:** for monitoring sustainable development
2. **Water accounting**: managing a scarce resource
3. **Energy and air pollution**: cleaner, more efficient production
4. **Stocks of minerals & energy**: managing resource rents for long term growth
5. **Land and ecosystems:** balancing the needs of tourism, agriculture and other uses

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What are the main uses of NCA?

Scorekeeping

Better indicators for **monitoring sustainable development:** Wealth and Adjusted Net Savings

Management

Better tools for **managing natural capital to promote growth and poverty reduction**

- Weighing tradeoffs of land use
- Prioritizing investments in forest resources management, protected areas

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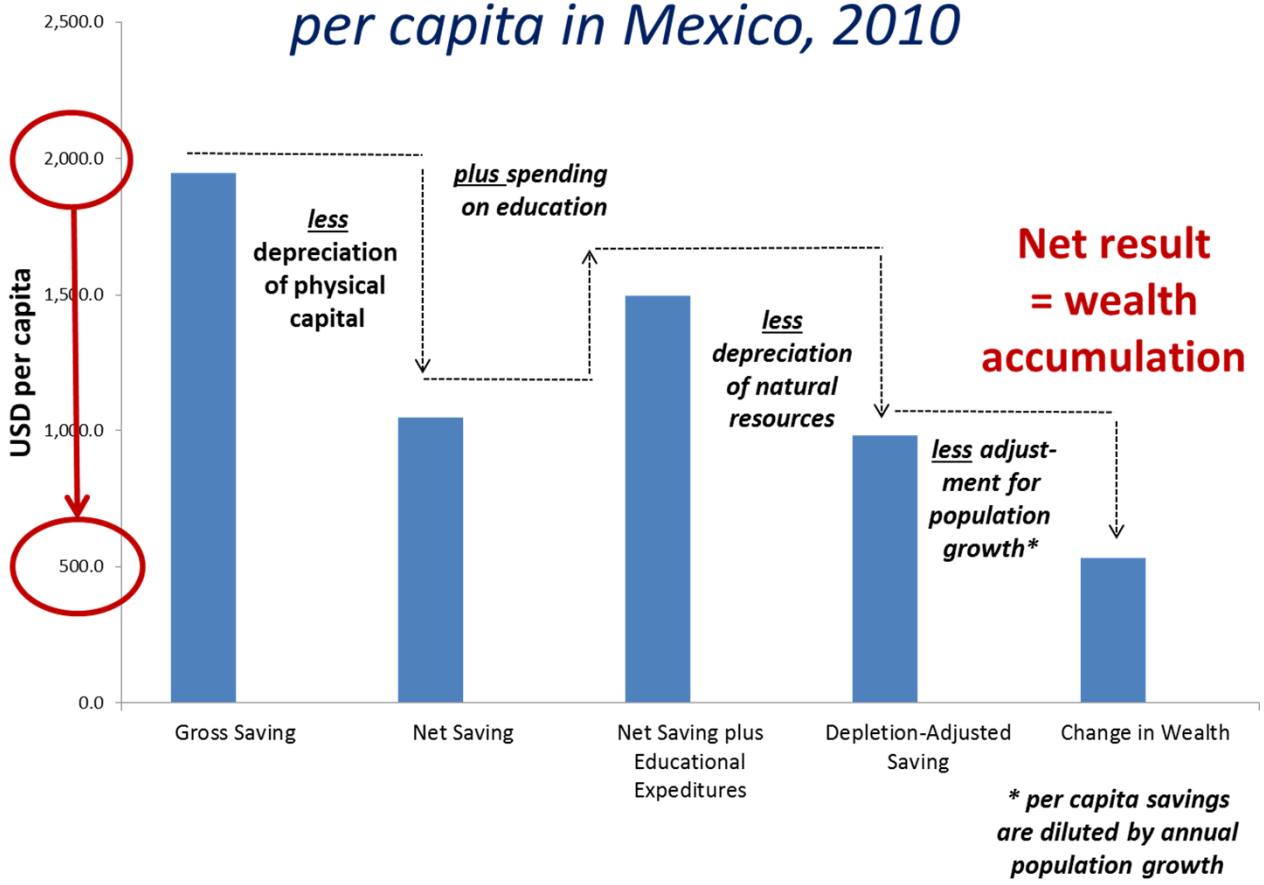
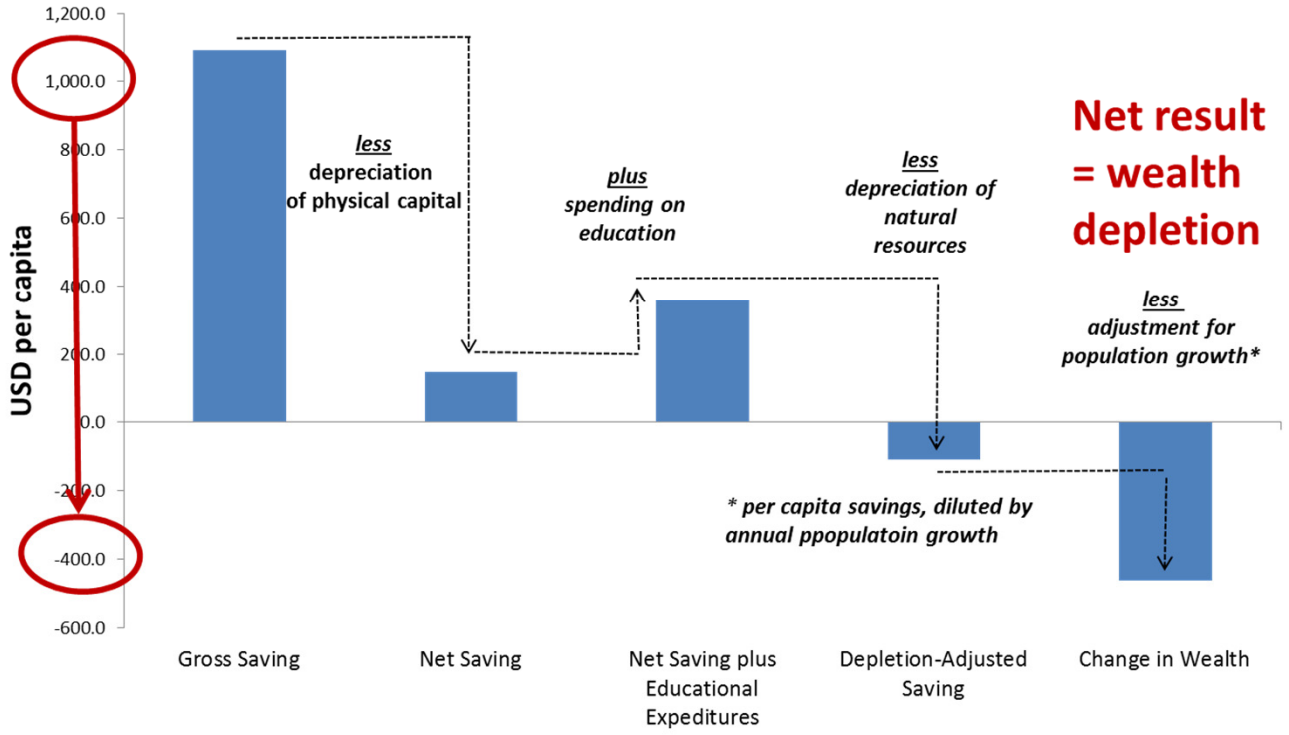
Indicators of sustainability: A positive result

Example 1: Calculating changes in total wealth per capita in Mexico, 2010



Indicators of sustainability: A negative result

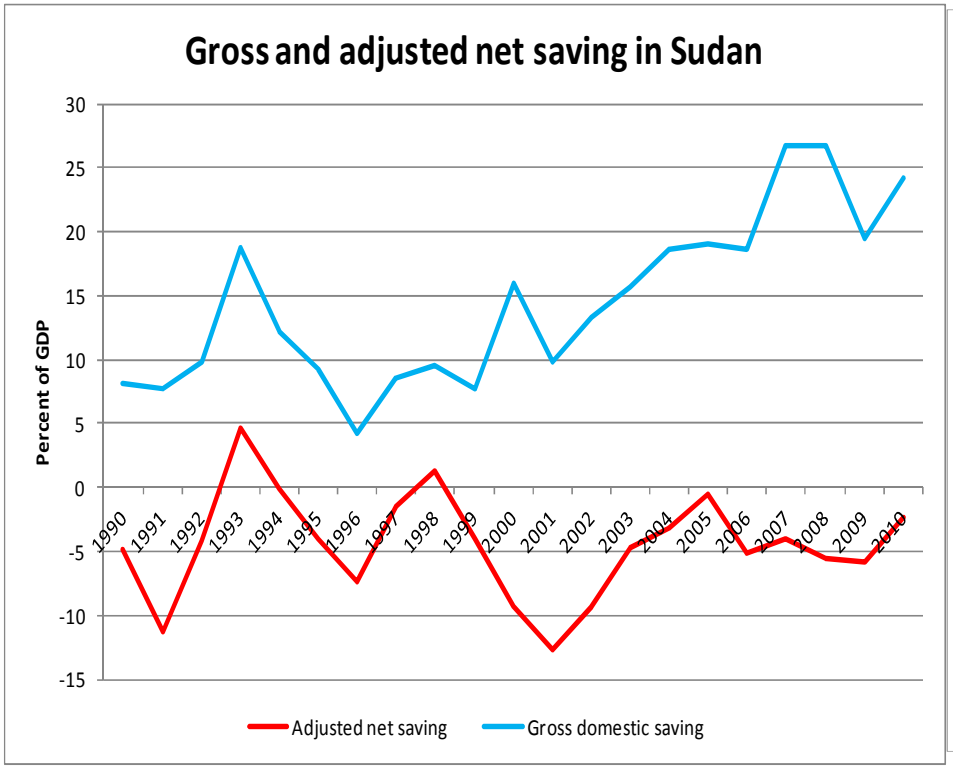
Example 2: Calculating changes in total wealth per capita in Colombia, 2010

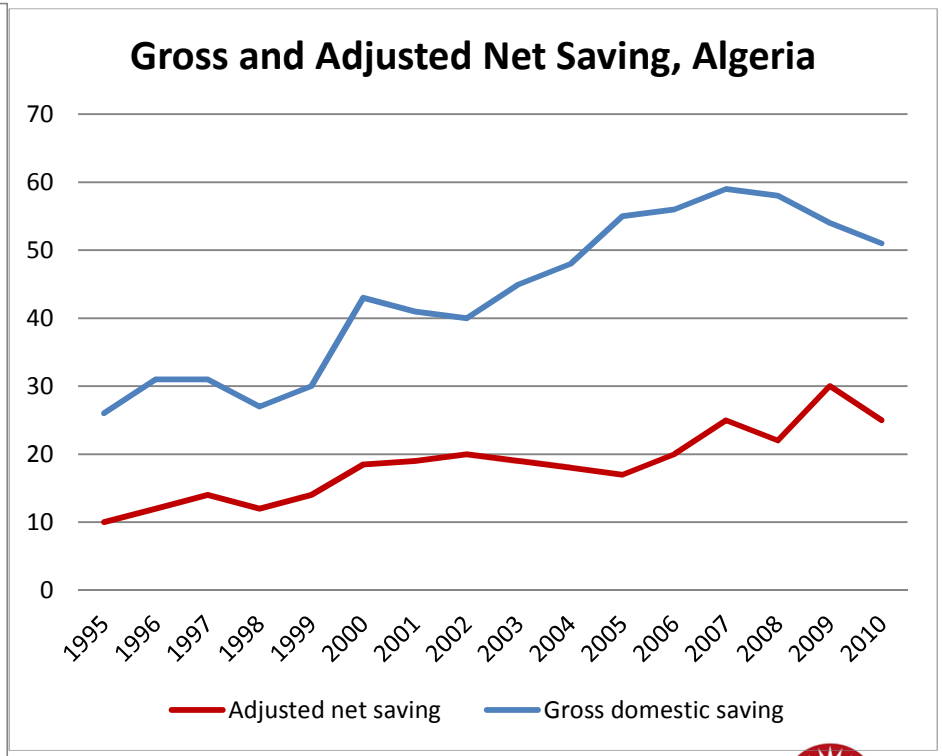


Indicators of sustainability: Trends

SUDAN, finding oil boosted gross saving, but not enough to offset depletion of oil…ANS is negative

ALGERIA: Public + private savings more than offsets depletion. ANS is positive





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Indicators of sustainability: Policy implications

1. Increase the level of savings

2. Improve the quality of physical/built capital (with longer economic lives)

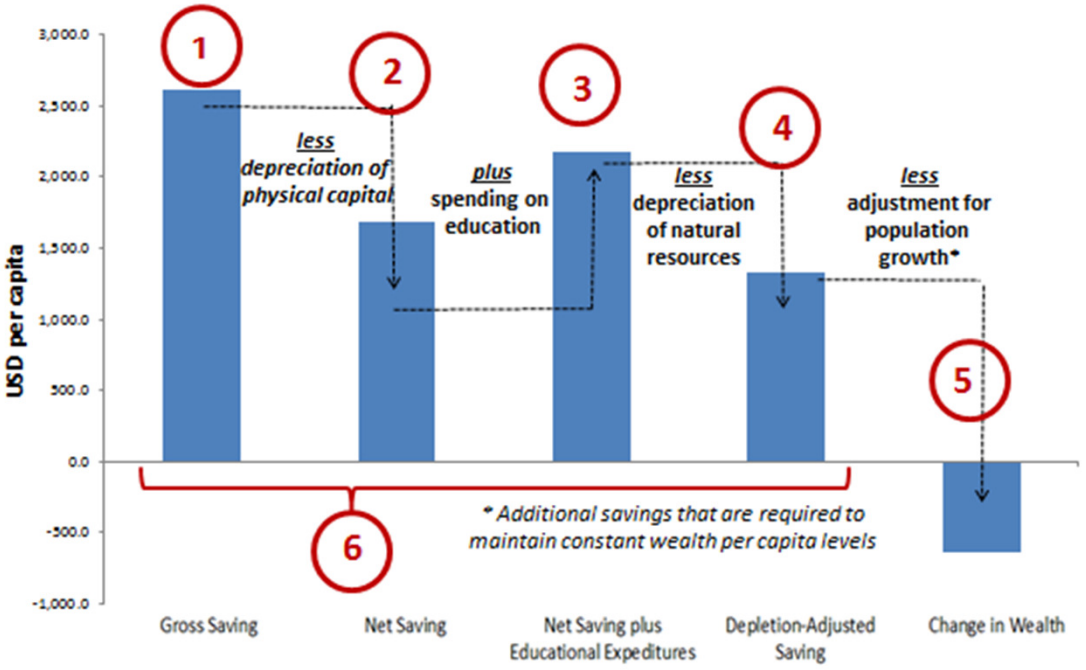
3. Increase spending on education and innovation

4a. Invest in the quantity of natural capital (some new resources, such as in mining and fossil fuels, can be discovered and the stock expanded)

4b. Invest in the quality of natural resources (such as land)

5. Higher population growth rates dilute a country's total wealth.

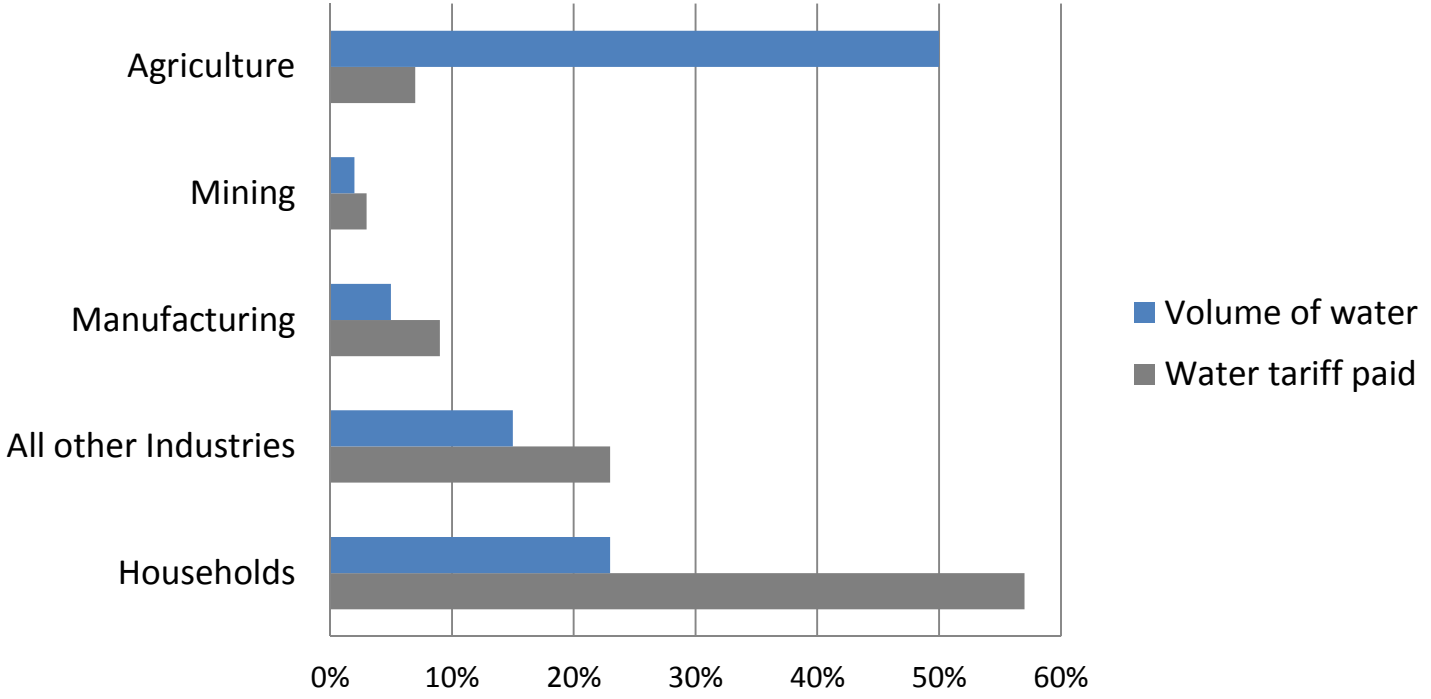
6. Increase total factor productivity



Water accounts - Australia

Are scarce water resources in Australia allocated efficiently?

Monetary vs. physical use of distributed water in key sectors, 2008-9 (Australia)



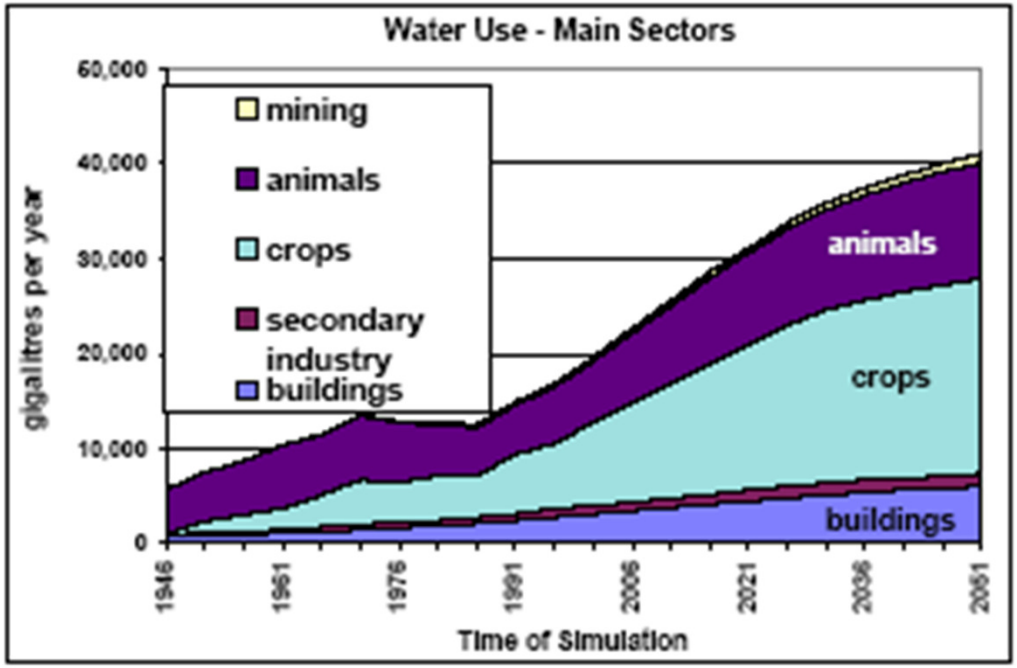
Water accounts - Australia

Projecting future water demands - Australia, 2050

How is this done?

Economic models that include water use accounts

- Simplest models are Input-Output models
- More complex models include simulation, programming & CGE models



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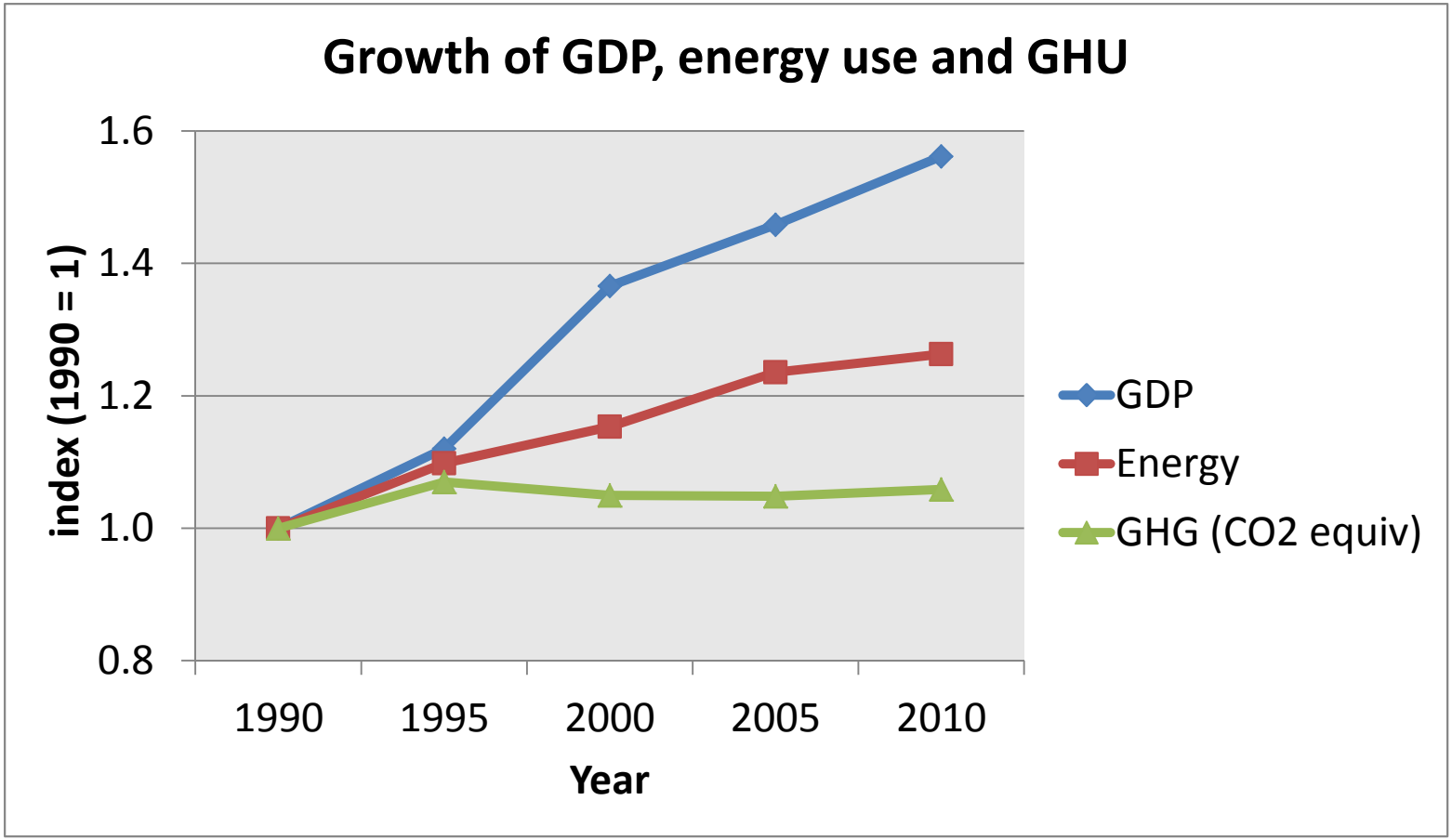
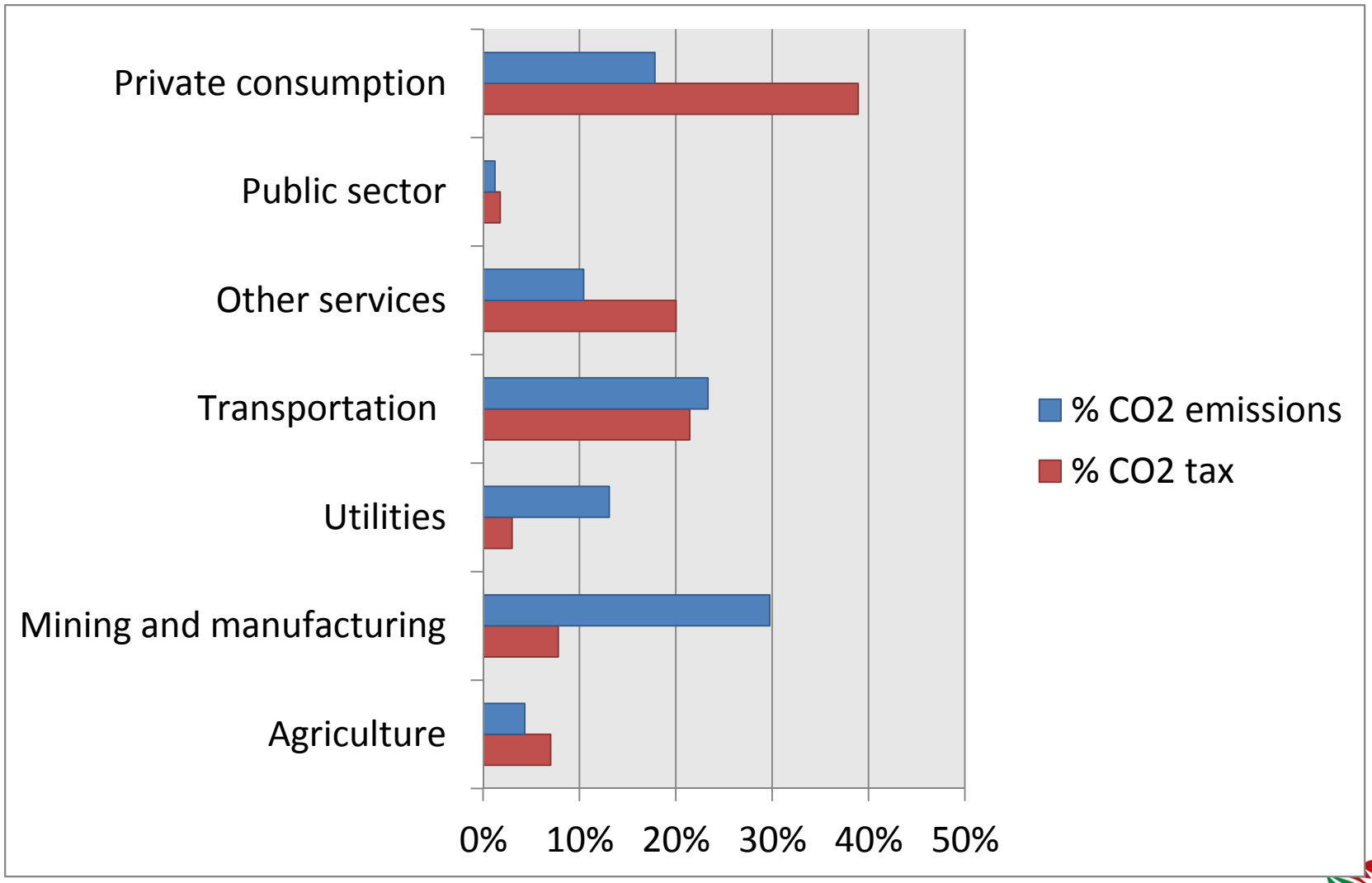
Energy accounts - The Netherlands

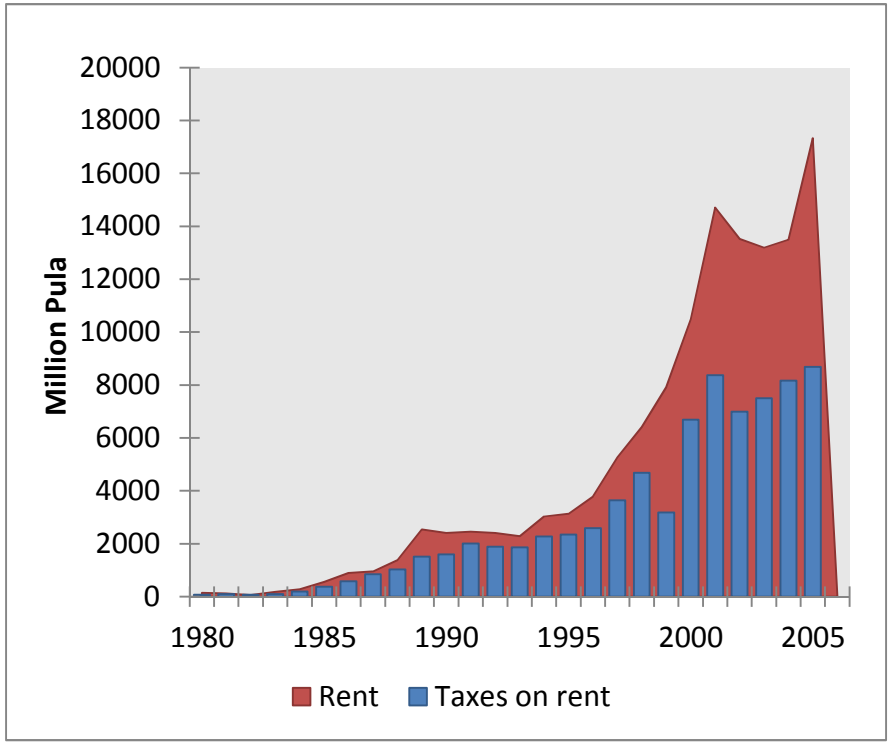


Emission accounts - Sweden



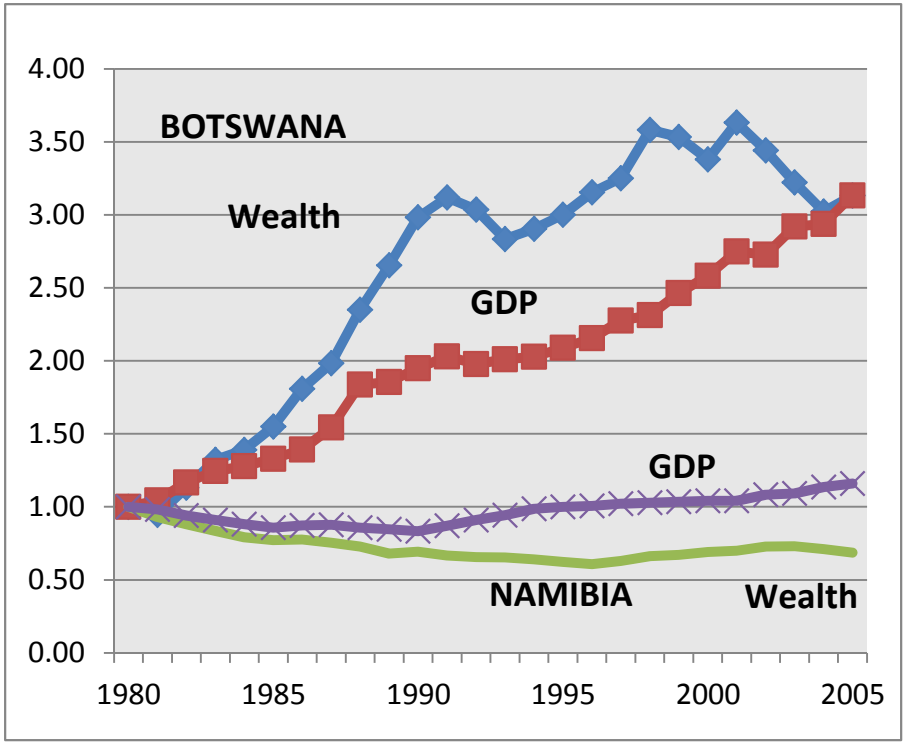
Mineral accounts - Botswana

1. Govt. recovers mineral revenues/rent



2. Investment of mineral revenues build wealth and income

(index of real, percapita growth in wealth, GDP)



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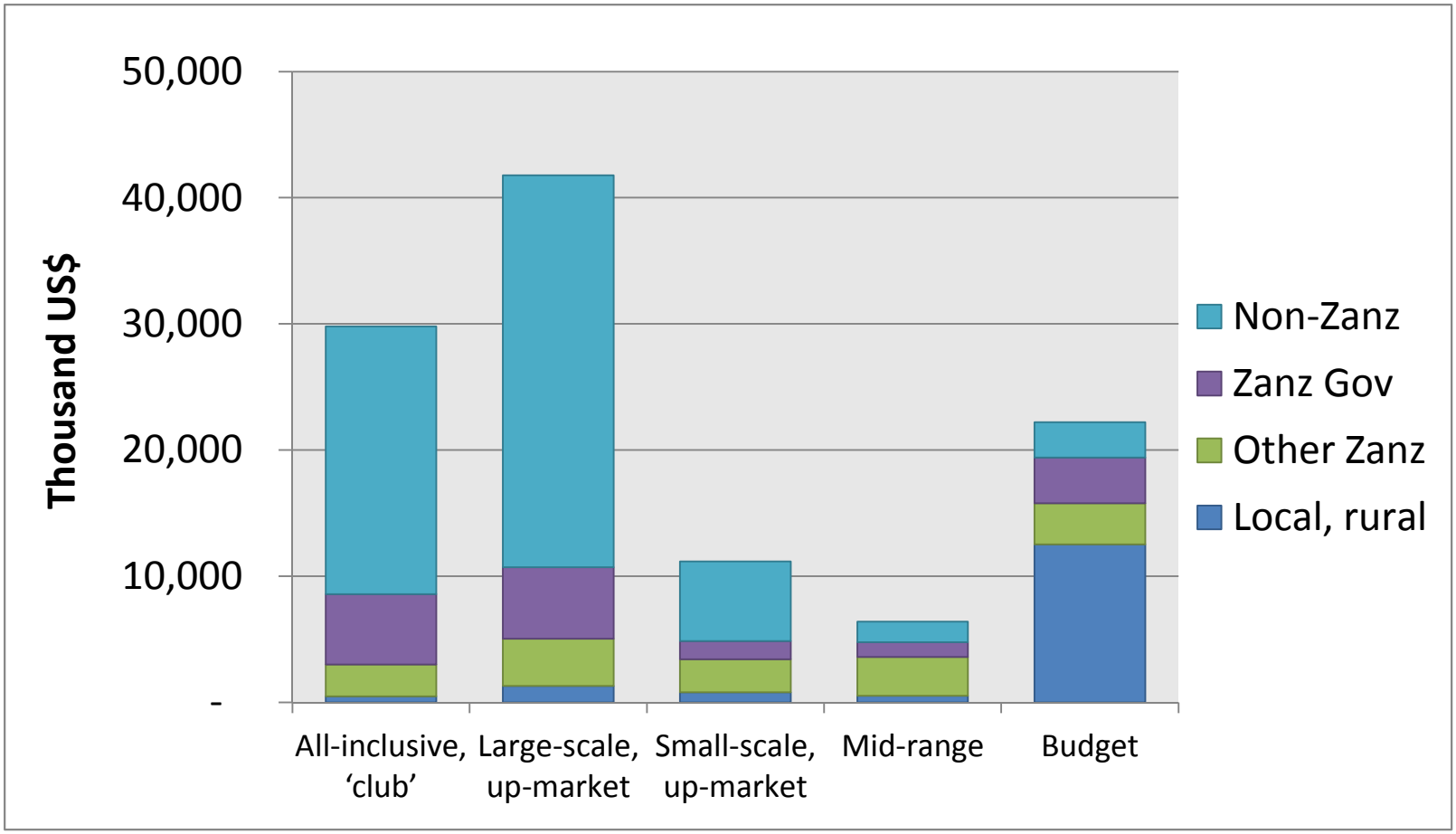
Land and ecosystem accounts – Zanzibar

Who benefits from different types of tourism in Zanzibar?



Land and ecosystem accounts - Australia

Protecting Australia's Great Barrier Reef

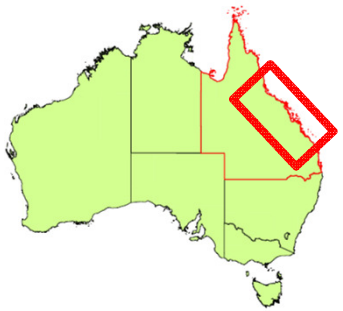
Major asset, source of income and jobs from:

- **Tourism**
- **Fishing industry**

National icon—symbol of Australian identify

Coral reef managed well (protected from overfishing, overuse by tourism)

BUT,
Major threats from on-shore activities—sediment, pollutants (phosphorus, nitrogen) mainly from Agriculture



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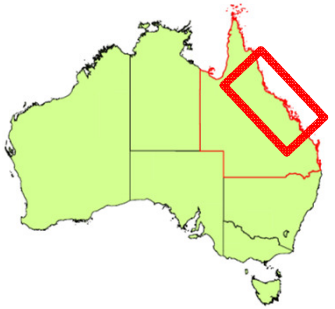
Land and Ecosystem accounts - Australia

Ecosystem Accounts for the Great Barrier Reef Catchments

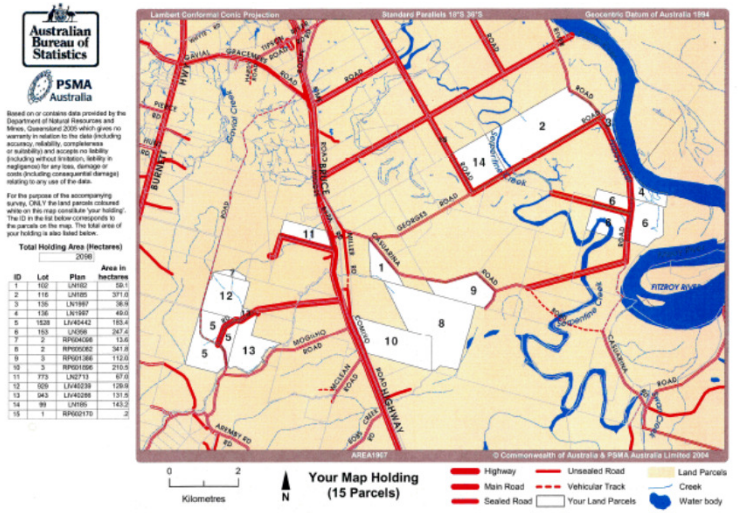


Manage watershed by linking agricultural practices and land use, jobs & income to water quality (sediment, chemicals), impact on GBR.

→ Assess

- costs to the reef from current land use (impact on fishing, tourism)
- economic impact of alternative land uses (agriculture jobs, income)

Disaster management tool: After floods in 2009, accounts provided immediate tool for assessing economic impact & future vulnerability



Survey forms included maps of individual land parcels

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3. What is the role of WAVES?

WAVES is a global partnership *that aims to mainstream Natural Capital in development planning and national economic accounts in support of sustainable development.*

WAVES aims to…

1) Help countries adopt and implement accounts that are relevant for policies and compile a body of experience;
2) Develop ecosystem accounting methodologies;
3) Establish a global platform for training and knowledge sharing; and
4) Build international consensus around natural capital accounting.

Who are our partners?

- Core implementing countries
- Contributing Donor Partners
- Participating Partners

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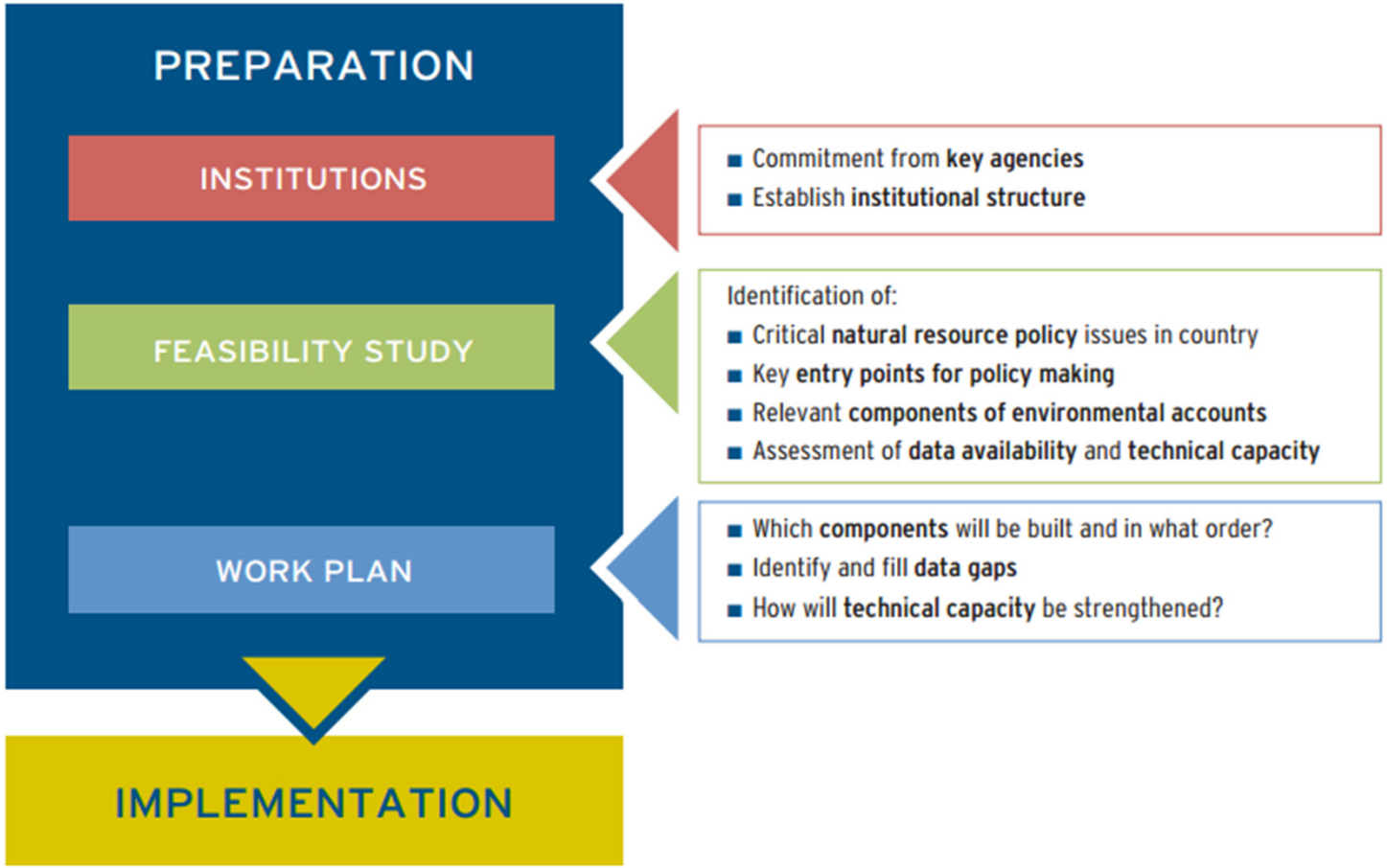
How WAVES is implemented in countries?



4. WAVES progress

7 key aspects

1. The number of countries are growing

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2. First results

WATER USE AND SUPPLY

FIGURE WATER SUPPLY BY NATURAL SOURCE

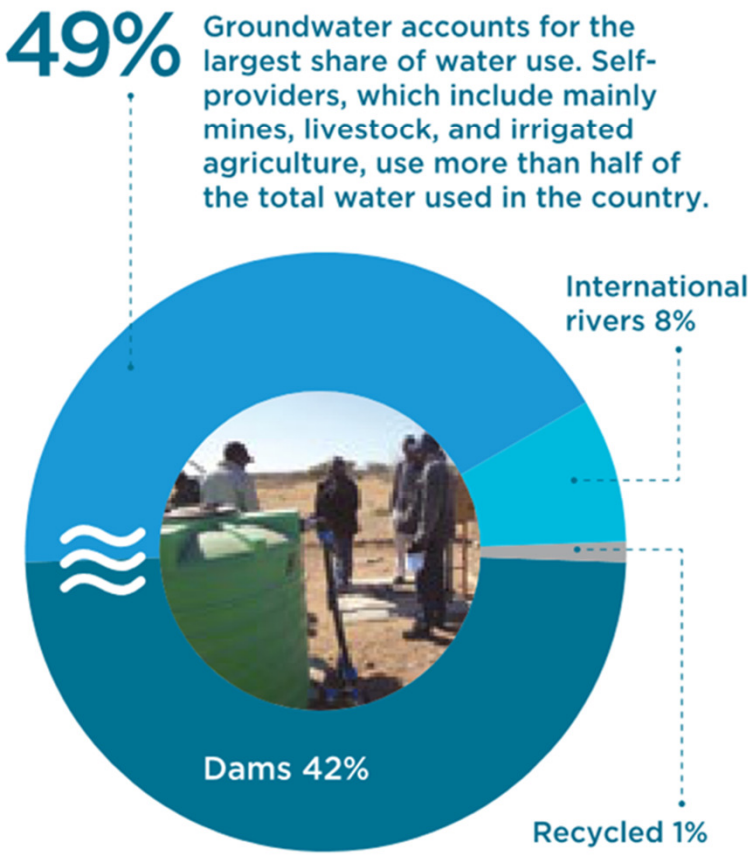
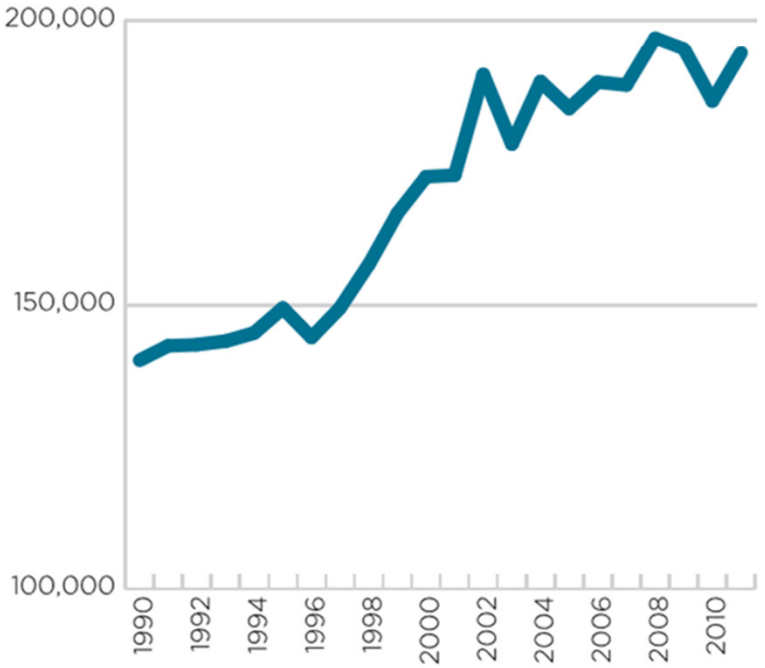


FIGURE LONG-TERM TREND IN WATER USE IN BOTSWANA (000 M^3)



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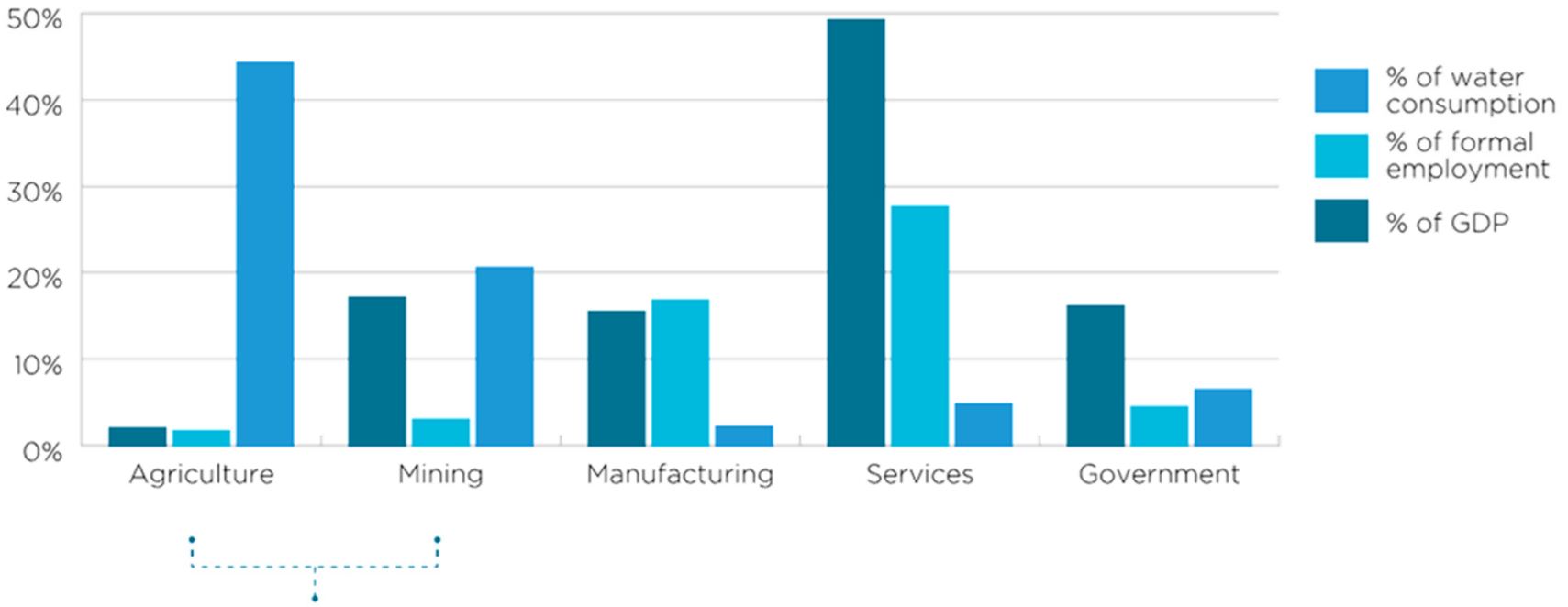
2. First results

FIGURE SECTOR SHARES IN WATER USE, GDP, AND FORMAL EMPLOYMENT, 2011

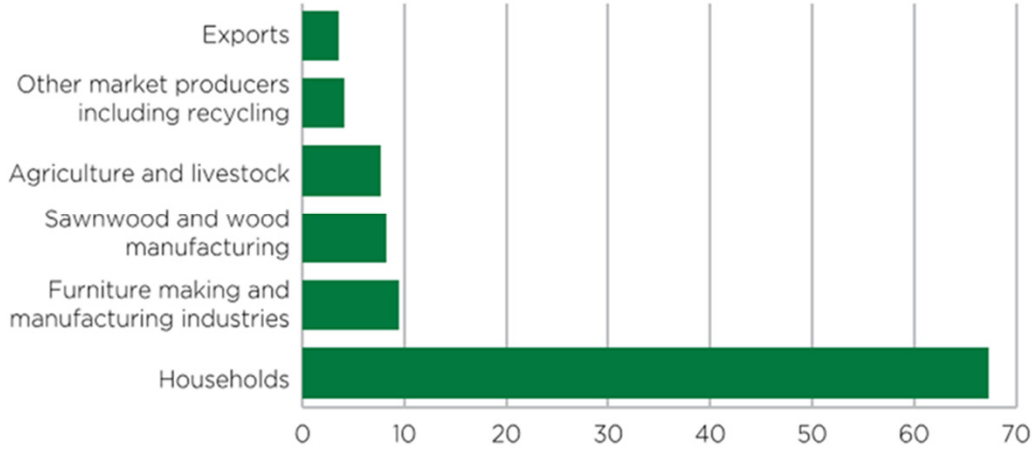


The agriculture sector (livestock and irrigation) is the highest water user (43 percent), followed by households and the mining sector. Agriculture is the major user of water, but it is a low contributor to GDP and formal employment. However, agriculture supports a large share of informal employment, providing a critical social safety net. By contrast, mining uses less water but contributes significantly to GDP.

2. First results

FOREST USE AND USERS

FIGURE FORESTS SUPPLY BY NATURAL SOURCE



Guatemala's households use more than 67 percent of the national forest assets, which include timber, non-timber forest products, and wild animals. Ninety-two percent of the total use from households is for fuel wood, to meet basic needs such as cooking. Intermediate consumers use forest products for the production of other materials, and the country's fledgling forestry industry exports some products.

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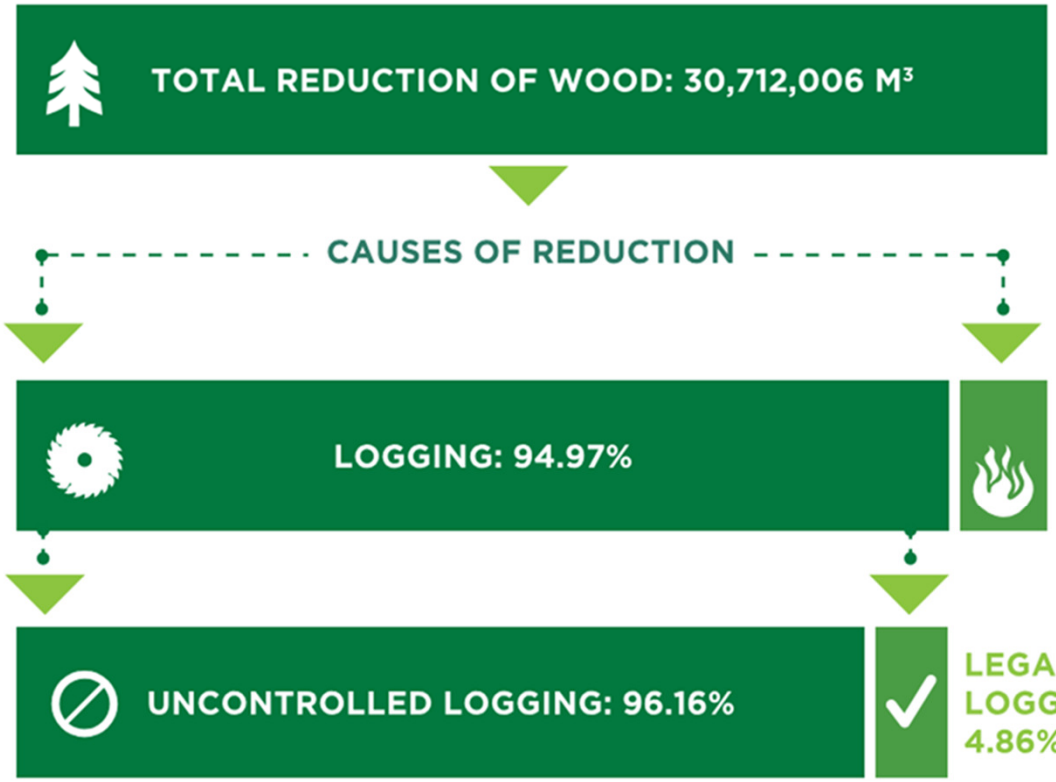
2. First results

LOGGING OF FOREST ASSETS

FIGURE . REDUCTION OF FOREST ASSETS (M3), 2006



Logging is responsible for almost 95 percent of the total reduction in Guatemala's forest stock, with the remaining 5 percent attributed to forest fires, disease, and natural tree deaths. There is a huge problem of illegal and uncontrolled logging, since more than 96 percent of the total is not controlled.

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3. Global engagement

- Post-2015 Development Agenda
- Working with partners
- Communities of Practice
- Regional trainings and technical meetings
- Working with the private sector

Natural capital protocol

TEEB Poverty Environment Initiative European Space Agency UNEP
UNDP International Union for Conservation of Natu
INTERNATIONAL INSTITUTE FOR ENVIRONMENT AND DEVELOPMENT
AUSTRALIAN BUREAU OF STATISTICS Ecosystem Services for Poverty Alleviation's Green Gro
Conservation International The Nature Conserva
GLOBE
The Natural Capital Coalition UNCEEA UN STATISTICS DIVISION GIZ
World Resources Institute

4. Progress on developing methodologies

- Field testing ecosystem accounting
- Compiling policy applications
- Training and capacity development in forest ecosystem accounting

5. Integration of Wealth accounting in WB operations

- Wealth indicators
- Working through Development Policy Loans (DPLs)

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6. Communicating NCA

Since the newsletter's launch, both the number of visits—and visitors—to the WAVES website doubled compared to the previous year. Over the past year, we had **28,500 visits and nearly 75,000 page views** (March 2013–March 2014).

iied International Institute for Environment and Development

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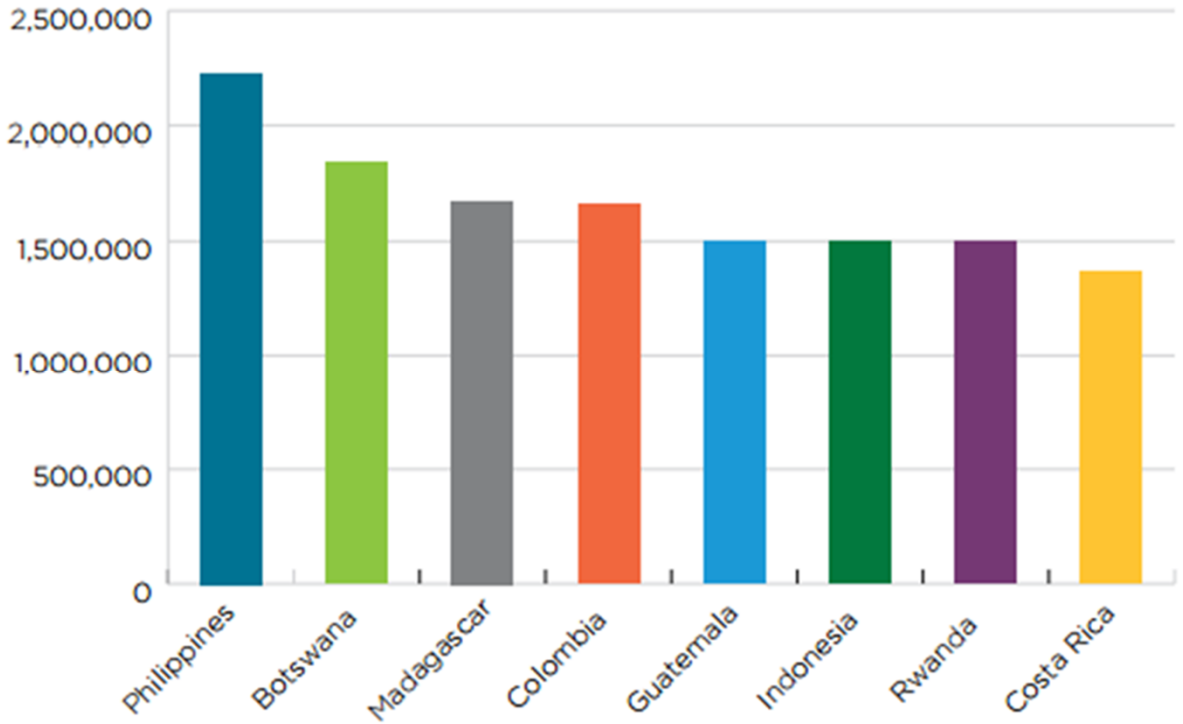
7. Looking ahead

- Increasing Core Implementing Countries
- Developing Communities of Practice



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jpcastaneda@worldbank.org

MAKING WAVES

If you are interested in sharing your experience in natural capital accounting, or in learning more about how to implement it, we would love to hear from you. Please contact waves@worldbank.org

Find out more about WAVES at www.wavespartnership.org

Available in Spanish at www.wavespartnership.org/esp

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