Natural Capital

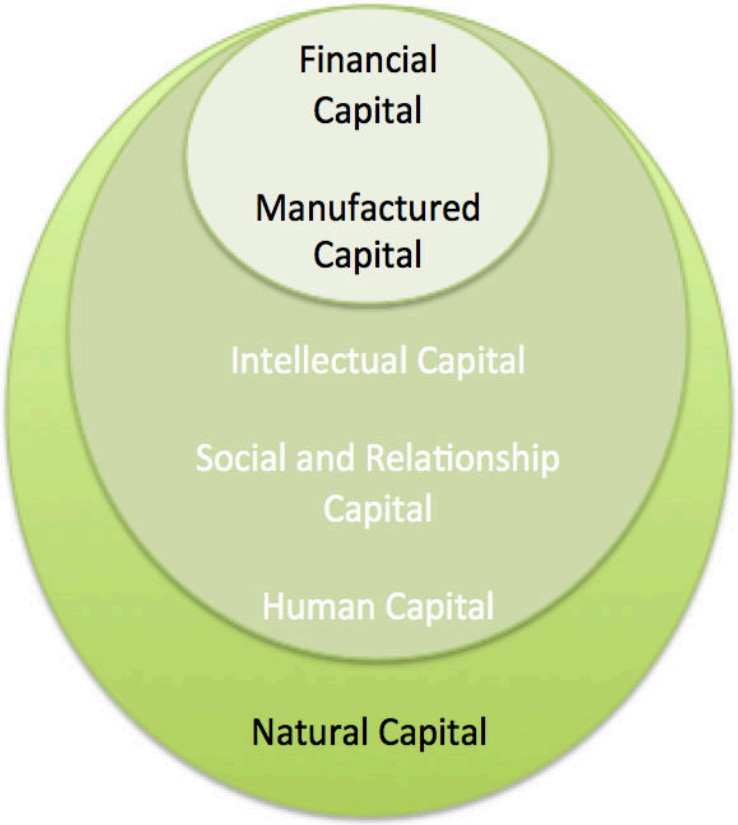
-

of development projects in Uganda

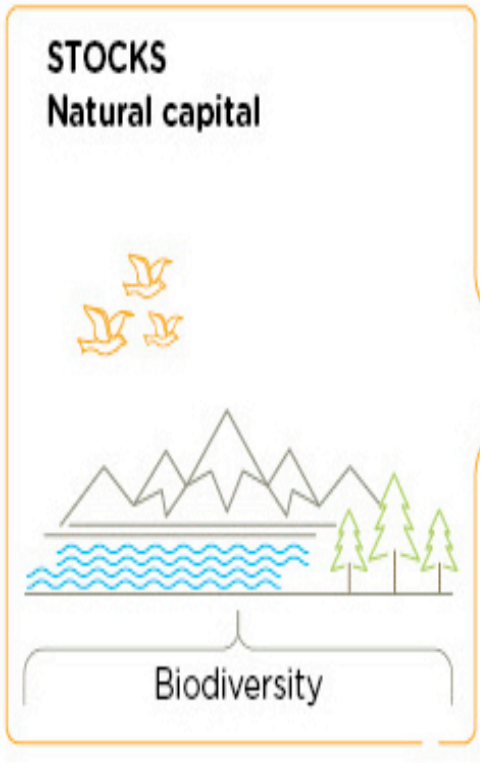
7th March 2018

Julia Baker

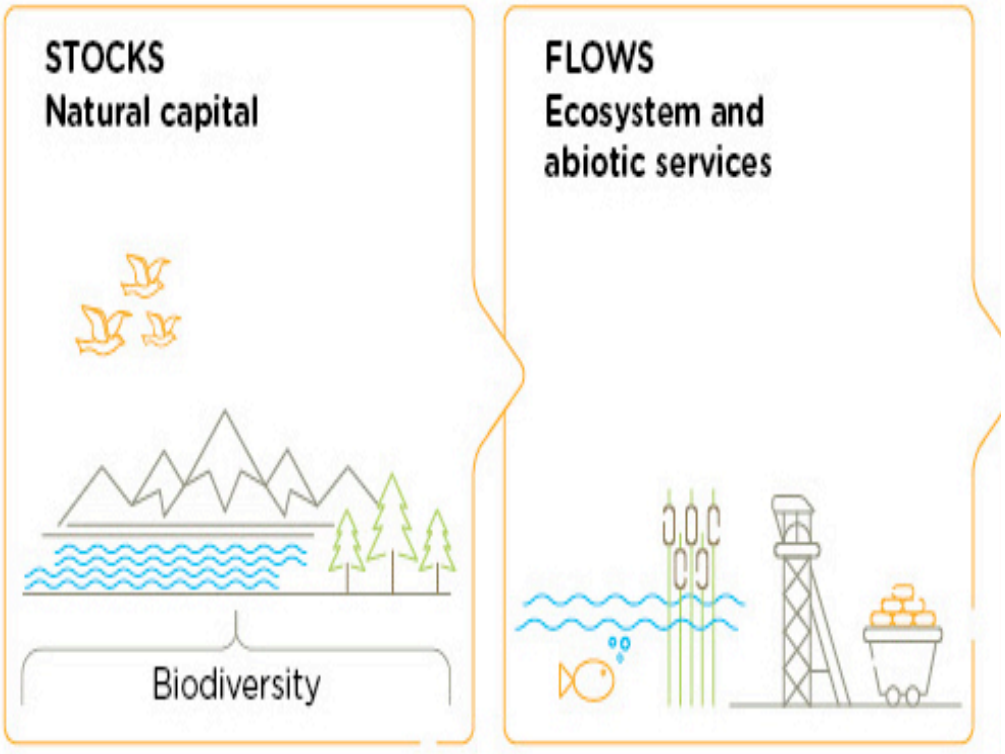
What is Natural Capital?



Underpins all other types of capital, as well as our economy

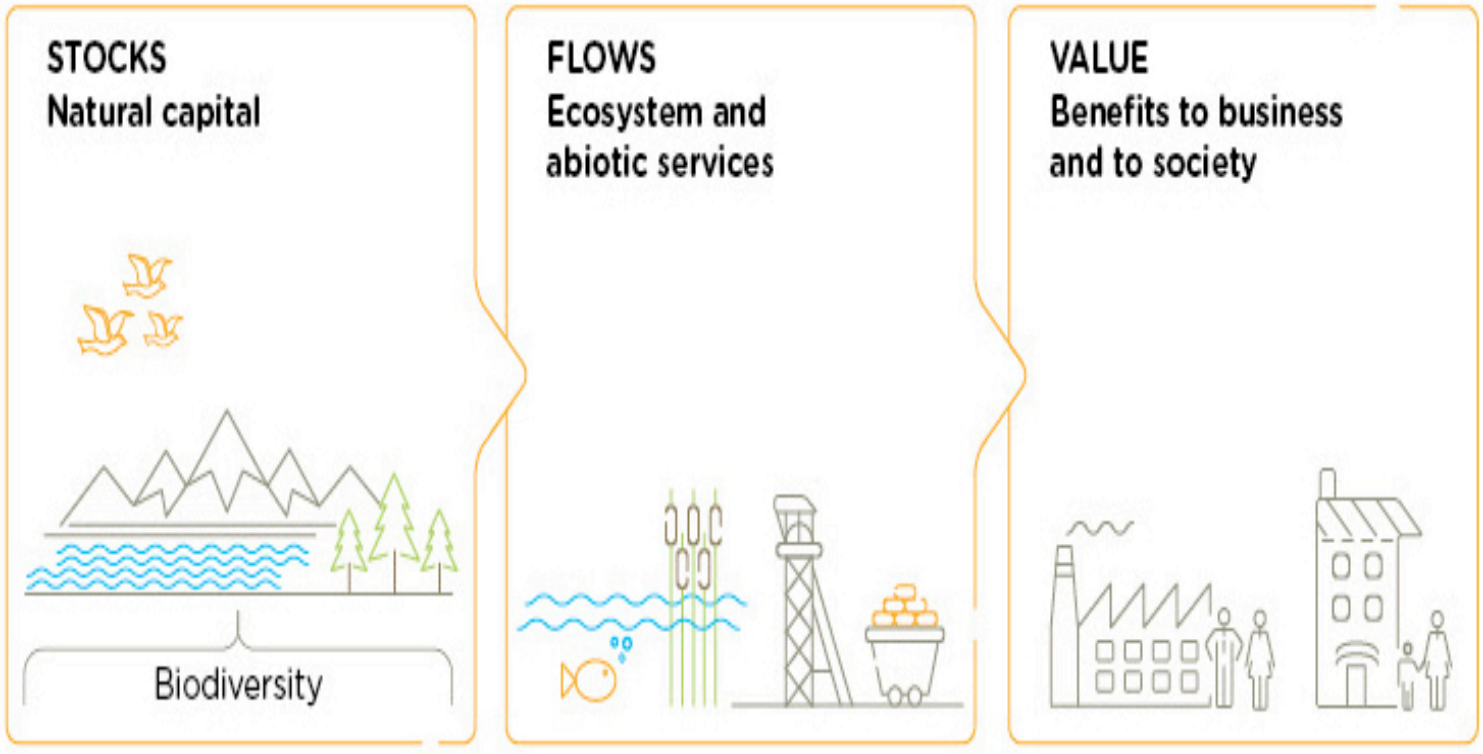


- **Assess & measure as ‘stocks’**
- **Stocks comprise living elements e.g. wetlands**
- **And non-living elements e.g. minerals**
- **Biodiversity is just one component**



Stocks generate flows called Ecosystem Services

Climate control, flood regulation, disease control



Ecosystem Services provide various benefits for people

Food, fibre, water & fuel

Cultural values

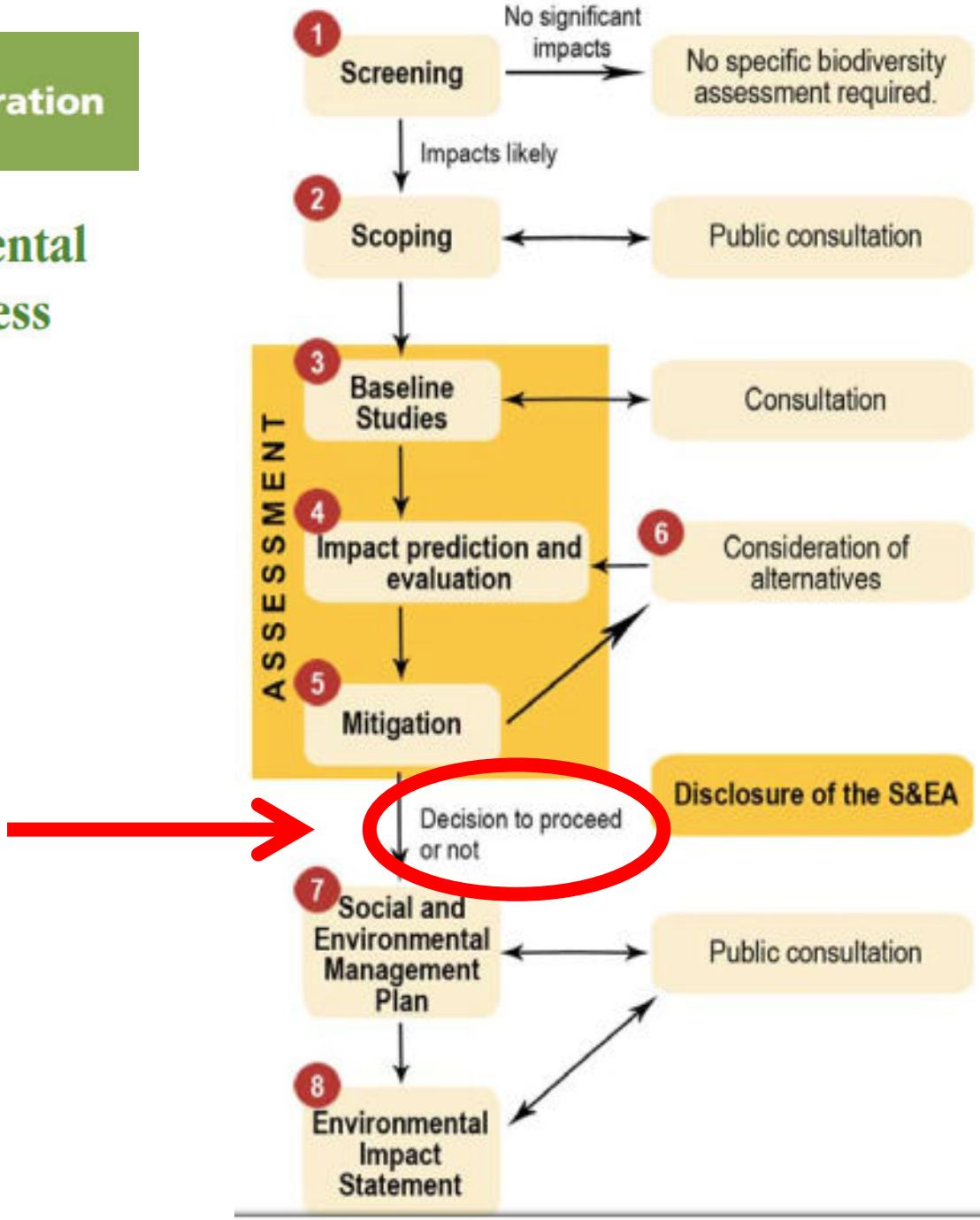
what's the Problem?

Not all benefits are fully assessed or quantified

True costs & benefits from major infrastructure projects?

IFC International Finance Corporation World Bank Group

The Social and Environmental Impact Assessment Process

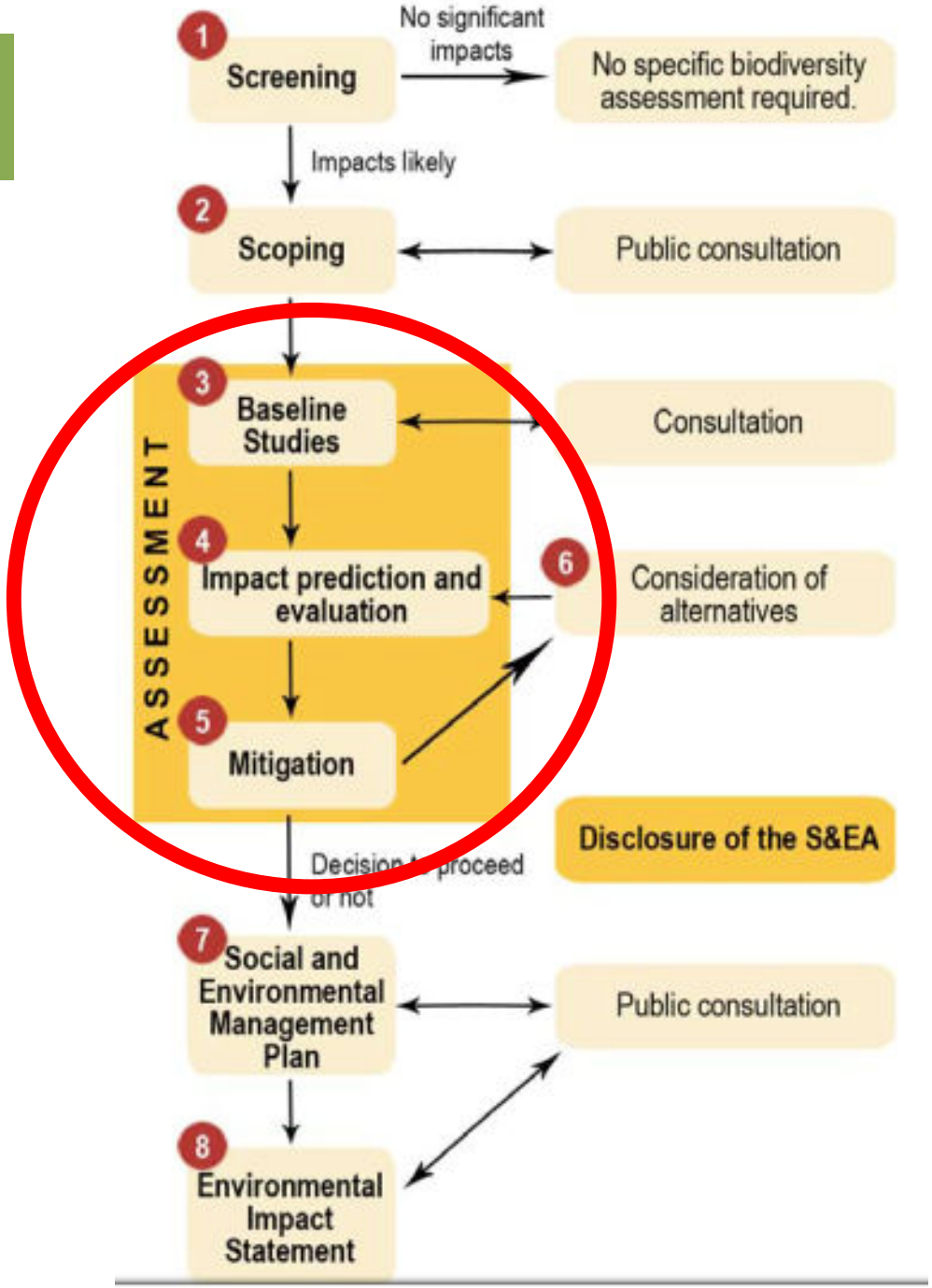


Economic & social benefits outweigh the loss of nature

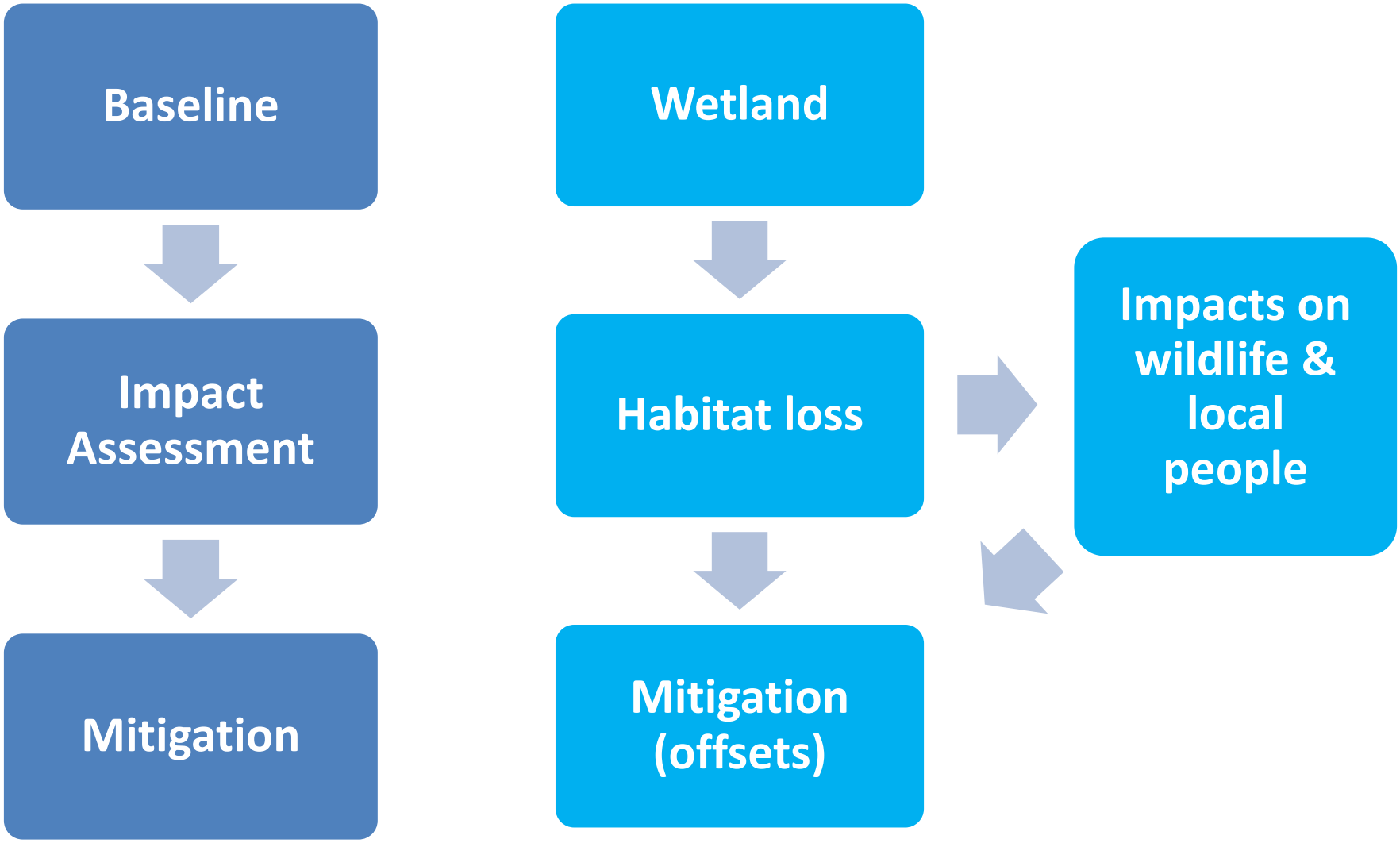
But we are not measuring the economic & social benefits from nature

IFC International Finance Corporation
World Bank Group

The Social and Environmental Impact Assessment Process



Env and Social
Impact Assessment



NATURAL CAPITAL
and why it matters

Baseline

Impact Assessment

Mitigation

Wetland

Habitat loss

Mitigation (offsets)

Impacts on wildlife & local people

Air quality, climate regulation, flood control, water regulation &…

New Vision UGANDA'S LEADING DAILY

Tuesday,March 06,2018 17:23 PM

The African Development Bank Group (AfDB) has approved $253 million of loans to the Governments of Kenya ($147.3 million) and Uganda ($105.7 million) for the upgrading of a 118km road section connecting the two countries as well as the construction of the a 32km Eldoret town bypass in Kenya.

Uganda releases procurement notice fo 78.5km road upgrade project

Posted by Anthony Davis | Date: July 28, 2017

Photo Credit To ANGDavis Associates L

Economic & social benefits outweigh the loss of nature?

We <u>are</u> measuring the economic & social benefits from nature


Understand true costs & benefits
Improve decision-making
Balfour Beatty
Uganda's development will be genuinely sustainable & fair

A Natural Capital Forum for Uganda?

- Roundtable discussion August 2017
- **Interest!**
- Best as part of an existing committee (e.g. Top Policy)
- **But need case studies on Natural Capital accounts of development projects in Uganda**

Natural Capital case study

How apply a Natural Capital Account?

What the benefits are to Government, investors, lenders, ESIA consultants & contractors?


WE
DELIVER

Experimental Ecosystem Accounts for Uganda

Research Article

Total Economic Value of Wetlands Products and Services in Uganda

Feasibility Study for Biodiversity Accounting in Uganda

Ugandan Natural Capital Case Study

- Natural Capital account of:
  - Biodiversity loss only - not full NC account
  - Construction stage – not the full project lifecycle of operation & decommission

- One approach to construct Natural Capital accounts

- Financial values of benefits, not of biodiversity

Construction of a sugarcane factory & associated activities

2500 hectare loss of wetland

Ecological baseline

Env and Social
Impact Assessment

- Various plant species including Papryus
- Birds including globally endangered species such as the Shoebill stork
- Fish

Social baseline

Env and Social Impact Assessment

- International: climate regulation
- National: flood control
- Local communities:
  - Domestic clean water supply
  - Cattle grazing
  - Fishing
  - Cultural sites

Social baseline

NATURAL CAPITAL
and why it matters

- **International: climate regulation**
- **National: flood control**
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Natural Capital Baseline

	US$ per ha per year	
Climate Regulation		
Flood Control		

Karanja et al, 2001

Natural Capital Baseline

	US$ per ha per year	
Climate Regulation	265	
Flood Control	7240	

Karanja et al, 2001

Natural Capital Baseline

	US$ per ha per year	2500 ha wetland loss
Climate Regulation	265	-662,500
Flood Control	7240	-18,100,000

Karanja et al, 2001

Social baseline

NATURAL CAPITAL
and why it matters

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Social baseline

NATURAL CAPITAL and why it matters

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Natural Capital Baseline

Domestic Clean Water Supply	2500 ha loss of wetlands
N. households depend on water supply	9000

Natural Capital Baseline

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Water use per year m^3	197,100

Natural Capital Baseline

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Water use per year m^3	197,100
Market price per m^3	2 US$
Kakaru, 2013	

Natural Capital Baseline

Domestic Clean Water Supply	2500 ha loss of wetlands
N. households depend on water supply	9000
Water use per year m^3	197,100
Market price per m^3	2 US$
Gross annual cost	394,200 US$

Kakaru, 2013

Social baseline

NATURAL CAPITAL and why it matters

- International: climate regulation US$ 662,500
- National: flood control US$ 18,100,000
- **Local communities:**
  - **Domestic clean water supply US$ 394,200**
  - Cattle grazing
  - Fishing
  - Cultural sites

Social baseline

NATURAL CAPITAL and why it matters

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- National: flood control US$ 18,100,000
- **Local communities:**
  - Domestic clean water supply US$ 394,200
  - **Cattle grazing**
  - Fishing
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Natural Capital Baseline

Pastures	2500 ha loss of Wetlands
N. cattle grazing	3300

Natural Capital Baseline

Pastures	2500 ha loss of Wetlands
N. cattle grazing	3300
Average value of pasture consumed per day per animal	*Cost of leafy feeds farmers would have to buy if wetland pastures not available*

Natural Capital Baseline

Pastures	2500 ha loss of Wetlands
N. cattle grazing	3300
Average value of pasture consumed per day per animal	US$ 0.2

Natural Capital Baseline

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Average value of pasture consumed per day per animal	US$ 0.2
Cost per day for all cattle	US$ 660

Natural Capital Baseline

Pastures	2500 ha loss of Wetlands
N. cattle grazing	3300
Average value of pasture consumed per day per animal	US$ 0.2
Cost per day for all cattle	US$ 660
Total cost per year	US$ 240,900

Social baseline

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  - **Cattle grazing US$ 240,900**
  - Fishing
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Natural Capital Baseline

Fish spawning grounds	2500 ha Loss of Wetlands
Estimated per ha per year	US$ 6.3

Natural Capital Baseline

Fish spawning grounds	2500 ha Loss of Wetlands
Estimated per ha per year	US$ 6.3
Total gross cost per year	US$ 15,750

Can also assess financial value of fish caught

Social baseline

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- **Financial values associated with tourism?**
- **Not appropriate to assign financial values to all ecosystem services**
- **Still fully assess as part of a Natural Capital account**

Social baseline

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Construction of a sugarcane factory & associated activities

Significant local job creation & boost to national economy

2500 hectare loss of wetland

Offset to achieve No Net Loss

Economic & social benefits outweigh the loss of nature

Use Natural Capital Accounts to design sustainable & fair No Net Loss

Natural Capital Accounts - Benefits

Governments

- Make the right decisions to balance national economic development with local needs

Investors & lenders

- Set & achieve sustainability requirements

ESIA Consultants

- Improved impact assessments & mitigation design

Contractors

- Build sustainable & fair infrastructure

- Research on financial values of Uganda's wetlands
- But anecdotal, different methods, dated, not part of a formal NC Account
- Useful illustration but need to establish data

ICCS
Interdisciplinary Centre for Conservation Science

Uganda's Natural Capital Forum?

- What type of Forum could be useful (e.g. part of an existing committee)?
- Is there interest in being involved?
- Who would chair the Forum and who would be members?
- What would encourage uptake of Natural Capital approaches - more case studies? Presentations from international NC experts?
- If a Forum would be useful, what are the next steps to establish the Forum?