Natural Capital Accounting: Bringing the Value of Ecosystem Services into National Economic Accounts

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Vulnerability/Resilience index vs Natural Capital Accounting/Economic assessment

One approach to resilience index:



NCA/economic analysis: Follow the value chain

Economic valuation:

- 1. Value of
- production (catch),
- costs of fishing,
- net income (value of catch –costs)
- distribution of net income: fisheries, boat owners, etc local vs non-local
- 2. Apply valuation to the value chain

Income & employment in the fishing valuechain, Zanizbar



Employment

FISHERS		Sub-total				
	Auctioneers	Retailers	Wholesalers	Prim. Proc.	Sec. Proc.	fishing- related
34,269	260	946	752	206	770	2,934

Natural Capital Accounting (NCA) promotes sustainable development by mainstreaming the value of natural capital in national economic



accounts

Why national economic accounts/GDP?

• GDP is the most widely used information to judge economic performance

NCA is useful for env/natural resource agencies, local decision-making but also, **NCA targets macro-economic policy**

- Ministry of Finance, controls budget
- National Development/Planning Agencies, coordinate policies across sectors that affect development/coastal resilience—such as trade, infrastructure, energy and transport

NCA--getting traction with Finance and Development Ministries:

Use the tools they are familiar with

- Macro indicators like GDP, Balance of Payments, Govt Operating Balance, employment and poverty,
- Value ecosystem services in a way consistent with national accounts

→ Macroeconomic performance: not only "Is GDP growing?", but "Is GDP growth sustainable in the long term?"



NCA--getting traction with Finance and Development Ministries: Address their priorities

1. Fiscal policy issues:

- How much does natural capital contribute to govt revenue/operating balance now,
- What is lost through poor management
- How much could revenue increase through better management
- How much could govt **reduce fiscal costs** from storm damage through better management?



NCA--getting traction with Finance and Development Ministries: **Address their priorities**

2. Job creation/Poverty reduction:

- How much better mgmt. of natural capital **increases govt revenues available for poverty reduction**/social spending (education, health, housing, etc)?
- How much would jobs & income increase w/ better mgmt.?
- Who wins/loses from policy reform?

3. Investment (public & private)

- How much to invest in managing natural capital, including disaster recovery?
- How to design **policies to mitigate impacts** on those who may lose under alternative policies?



How do we do natural capital accounting?



What countries are doing NCA?



Valuing ecosystem services for NCA: combining 2 approaches

TOP DOWN: start from national level information and distribute spatially to link with ecosystems/natural resources

Key: sufficiently detailed geographically for national/regional decisions, e.g., setting overall standard for coastal protection service & priority areas for coastal protection

BOTTOM UP: start from sub-national, local area to generate more detailed information

Key: useful for designing specific, local interventions to deliver 'service standard.'

Provide information in a form that can be 'nested', put in larger decision making context: national, coastal zone, watershed, administrative region



Valuing ecosystem services for NCA: Market vs non-market goods and services

MARKET/NEAR MARKET: can start from economic value and work back to biophysical resources (fisheries, tourism, timber harvest)

- Value of product, net income generated by product (e.g., fish minus cost of fishing), distribution (who gets what share)
- Consider value chain (fishing, fish processing, wholesale/retail activities; Jamaica tourism satellite accounts)

NON-MARKET, such as coastal protection: start from biophysical modeling

- Generate an estimate of ecosystem services
- Estimate value of ecosystem benefits, and distribution among stakeholders

Valuation methods for local CBA/project analysis not always the same as valuation for national economic accounts

SOCIAL VALUES and perceptions also important

Valuing ecosystem services for NCA: Information that is 'Fit for Purpose'

Identify information needed by defining

1. PURPOSE OF VALUATION—WHAT DO YOU WANT TO DO WITH INFORMATION?

- Information needed to make local decision, design project
- Scenario analysis
- Process of generating community support

2. MAIN ISSUE(S)—WHAT IS THE 1 DRIVING ISSUE?

- Fisheries management, conflict w/MPAs
- Development vs coastal protection, fishing

3. SCENARIOS—THINKING THROUGH THE FUTURE

• What might be the socio-economic impact of changes?

4. RESOURCES AVAILABLE—WITH LIMITED RESOURCES, WHAT TO FOCUS ON?



Capturing broader socio-economic benefits: who are the major stakeholders? Match stakeholder characteristics to:

- How they use coastal natural capital,
- Economic benefits/livelihood dependence,
- (Dis)incentives for sustainable management,
- Potential benefit/vulnerability to policy reform

Example: Who are the stakeholders for coastal resilience in Zanzibar?

Local beneficiaries:

- 1. Villagers in coastal areas (tourism, fishing and seaweed farming
- 2. Urban Zanzibaris in urban business (tourism and some fishing)

Zanzibari, but not local, beneficiaries:

- 3. Urban Zanzibaris in rural areas (tourism, fishing, seaweed)
- 4. Zanzibari government (taxes, fees)

External, Non-Zanzibari beneficiaries:

5. Mainland Tanzania or other countries, mainly tourism

Gender dimension is important!



Macro-economic benefits from coastal ecosystem in Zanzibar

		Foreign			160,000	□ Non-Zanzibaris □ Zanz Gov.		
	Share of GDP	exchange earnings	Employment	Share of investment	140,000 -	■ Zanz, not local ■ Local communiti	ies	
1. Provisioning services								
Seaweed farming	0.4%	2,397	16,422		\$			
Fishing**	6.2%		37,203	1%	ם 100,000 - ד פ			
Mangrove harvesting			unknown		onsal 00,08 0			
2. Recreation & tourism services	23.6%	184,929	9,351 +	76%	me, th			
Total value	30.2%	187,326	62,976 +	77%	60,000 - 5 			
Education & research, Regulating services: Wastewater assimilation, Shore protection					40,000 -			
Value unkno	wn but likely to	be significa	nt		20,000 -			
						Provisioning To	urism	All marine services

Contested Terrain:

Public access to usable (sandy) shoreline in Zanzibar



Length of sandy beach is 109 km.

NCA and related coastal/marine management initiatives

 NCA: emphasis on economic perspective
Marine Spatial Planning (MSP): emphasis on biophysical perspective, especially fisheries
Integrated Coastal Management (ICM): emphasis on institutions and governance

BLUE ECONOMY: combines NCA, MSP, ICM