

A COMPARATIVE STUDY OF THE VALUE OF ECOSYSTEM SERVICES

SOUFRIERE, ST. LUCIA
THE KALINAGO TERRITORY, DOMINICA

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Addressing the Challenges of Poverty and Inequality
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 - The Kalinago Territory, Dominica
- Assessing the conditions and trends of the ecosystem services
- Brief Introduction to the Proposed Valuation Aspect of the Ecosystem Services

POVERTY-ENVIRONMENT RELATIONSHIP

- The Brundtland Report (1987) refers to relationship between poverty and the environment:
- “Poverty is a major cause and effect of global environmental problems. It is therefore futile to attempt to deal with environmental problems without a broader perspective that encompasses the factors underlying world poverty and international inequality.
- ...poor people are forced to use environmental resources to survive from day-to-day, and their impoverishment of their environment further impoverishes them, making their survival ever more difficult and uncertain.”

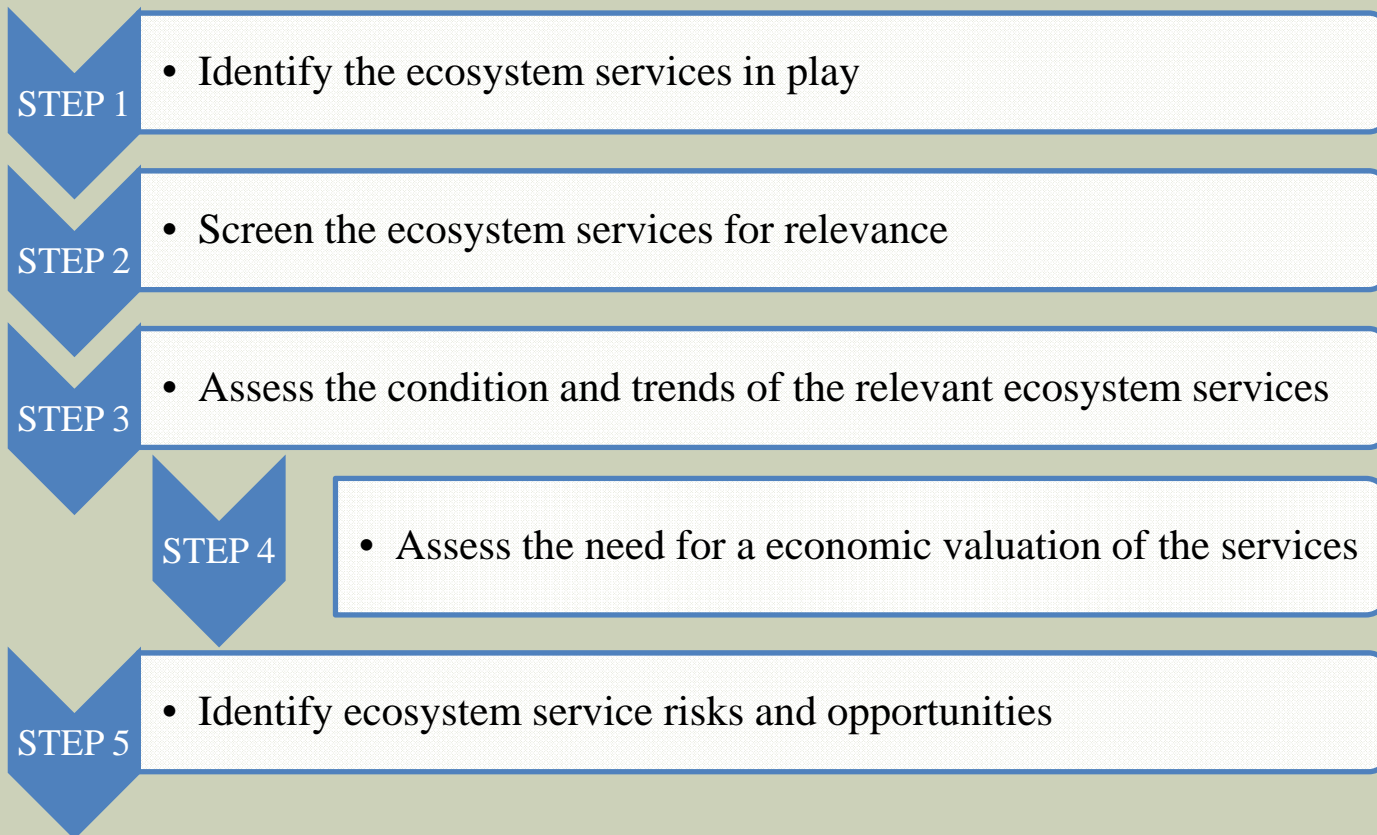
CARIBBEAN REALITY – POVERTY & ENVIRONMENT

- Poverty in the Caribbean ranges a low of 9.3% in Bahamas to a high of 65% in Haiti.
- St. Lucia and Dominica - 28.8% based on Poverty Assessments
 - SOUFRIERE, ST. LUCIA – 42.5%
 - THE KALINAGO TERRITORY, DOMINICA – 49.8%

According to the Global Environment Outlook (2012):

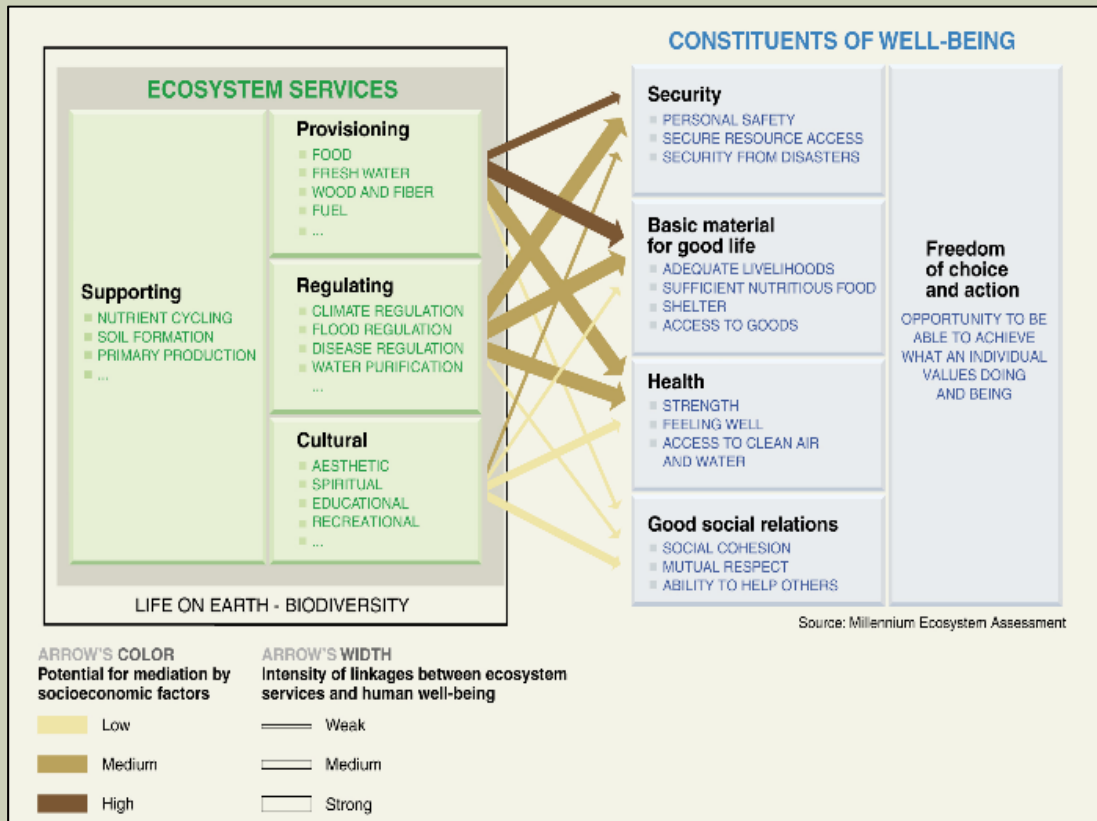
- *“Coastal infrastructure, urbanization and tourism and land-based pollution are significant pressures on coastal and marine ecosystems.*
- *The rise in sea level due to climate change and the increasing frequency of El Niño/La Niña phenomena are also affecting coasts and changing coastline dynamics, ecosystem health, rainfall patterns and river flows, as well as damaging infrastructure.”*

ECOSYSTEM SERVICES APPROACH:



Adapted from Ranganathan, J., C. Raudsepp-Hearne, N. Lucas, F. Irwin, M. Zurek, K. Bennett, N. Ash and P. West. (2008) Ecosystem Services: A Guide for Decision Makers. World Resources Institute.

STEP 1&2: WHAT IS THE RELATIONSHIP BETWEEN HUMAN WELL-BEING AND ECOSYSTEM SERVICES?



Provisioning Services:

- all the products that are derived from ecosystems

Regulating Services:

- benefits acquired from the regulation of ecosystem processes

Cultural services:

- the non-material benefits that are obtained from ecosystems (spiritual enrichment, recreation and aesthetic experiences)

Supporting Services:

- necessary for the production of all other ecosystem services that are indirect or occur over extended periods of time.

Source: WRI (2008)

FINDINGS:

LINKAGES BETWEEN ECOSYSTEM SERVICES AND HUMAN WELLBEING: RESOURCE DEPENDENCE

TOURISM

**Soufriere:
Pitons Management Area**

**136 households in
Soufriere engaged in
Tourism**

**Kalinago Territory:
The Carib Model Village**

**Direct Employment for
more than 20 Kalinago
residents**

AGRICULTURE

**Soufriere:
Permanent Crops
bananas, plantain**

**46% of holdings earn
over 50% of their income
from Agriculture**

**Kalinago Territory:
Crop production - Copra,
Banana, Cocoa**

**Approximately 400
individuals engaged in
farming**

FISHING

**Soufriere:
Important economic
activity**

**Fishers from
communities of
Palmiste, Fond Bernier
and Baron's Drive**

**Kalinago Territory:
12 fishing vessels
registered among 10
boat owners at the MFC
to the Carib Territory**

FINDINGS:

LINKAGES BETWEEN ECOSYSTEM SERVICES AND HUMAN WELLBEING: HUMAN HEALTH IMPACT

- **Access to water:**

- **STL: 13.5%** of the poorest quintile utilise public standpipe

- **Soufriere, 13.5%** source water from public standpipe

- **Access to sanitation:**

- **STL: 57.8%** of the poorest quintile utilise pit latrines

- **Soufriere:23%** use pit latrines

- **Access to water:**

- **DOM: 42.2%** of the poorest quintile utilise public standpipe

- **KT: 66.6%** had no pipe borne water connection

- **Access to sanitation:**

- **DOM: 52.5%** of the poorest quintile utilise pit latrines

- **KT: 88.3%** have no flush toilet facilities

FINDINGS:

LINKAGES BETWEEN ECOSYSTEM SERVICES AND HUMAN WELLBEING: VULNERABILITY TO NATURAL HAZARDS

SOUFRIERE

At least 25% of the Soufriere Valley is at Sea Level. There are 21 settlements scattered in the hilly interior and on mountain ridges

THE KALINAGO TERRITORY

4th National Report to the Convention on Biological Diversity (2009) the Carib Reserve has been listed as priority for landslides vulnerability

STEP 3: CONDITION AND TRENDS OF THE RELEVANT ECOSYSTEM SERVICES

■ Ecosystem Services Conditions:

- Poor agricultural practices and deforestation

Soil Erosion and Soil Degradation

- Indiscriminate solid and liquid waste disposal

Poor water quality and aquatic life

■ Drivers of Change:

- Deforestation for agriculture, housing, development projects
- Climate Change – intensity and frequency of natural events
 - Governance Changes – SMMA, SRDF, Carib Council

PRELIMINARY CONCLUSIONS

- **Ecosystem Services are vital to Human Wellbeing especially the poor: Resource Dependence**
 - Source of livelihoods
 - Subsistence
- **Ecosystem Services are being affected by human activities:**
 - **Soil erosion and degradation due to deforestation for infrastructure, agriculture etc.**
 - **Water quality being affected by pollution due to improper waste disposal, sedimentation of rivers**
- **Ecosystem degradation occurs due to actions of both poor and non- poor**

STEP 4: ASSESS THE NEED FOR AN ECONOMIC VALUATION OF THE SERVICES AND VALUE SERVICES ACCORDINGLY

- **Direct use values** are those ecosystem services that are directly used for consumptive (e.g. harvesting of food products) or non-consumptive purposes (enjoying recreational amenities).
- **Indirect use values** are those ecosystem services that are used as intermediate inputs for production of final goods and services to humans.
- **Option values** are values that people may not be deriving any utility from, but the “ecosystem still hold value for preserving the option to use such services in the future.”

Source: Secretariat of the Convention on Biological Diversity (2001)

DIRECT USE VALUES
Timber
Fuel wood/charcoal
NTFPs
Genetic Information
Agricultural
Pharmaceutical
Recreation/Tourism
Research/education
Cultural/religious
INDIRECT USE VALUES
Watershed Functions:
Soil conservation
Water supply
Water Quality
Flood/Storm Protection
Fisheries Protection
Global Climate:
Carbon Storage
Carbon Fixing
Biodiversity
Amenity (Local)
OPTION VALUES
EXISTENCE VALUES
LAND CONVERSION VALUES
Crops
Grassland
Agri-business
Aquaculture
Agroforestry

VALUATION METHODOLOGIES FOR ECOSYSTEM SERVICES

	ECONOMIC VALUES	METHODOLOGY
DIRECT USE VALUES	I. Timber	Benefit Transfer Market Price
	II. Non-Timber Forest Products	Benefit Transfer
	III. Agriculture	Market Price
	IV. Recreation/Tourism	Market Price; Benefit Transfer
INDIRECT USE VALUES	I. WATERSHED FUNCTIONS:	
	<ul style="list-style-type: none"> - Water Supply - Fisheries Protection - Flood/Storm Protection 	<ul style="list-style-type: none"> - Market Price - Market Price - Replacement Cost
	II. GLOBAL CLIMATE:	
	<ul style="list-style-type: none"> - Carbon storage 	<ul style="list-style-type: none"> - Benefit Transfer

THANK YOU