

ENVIRONMENTAL SERVICE MARKETS: From Theory to Action

A Step-by-step Outline of the Creation of an Environmental Services Market

By

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STEP 1: ASSESSMENT

A. General National and Local assessment

1. Geographical

The geographical data for the region outlines the scale of the proposed market

- a. Country/State/Region/Town
- b. Population affected by/involved in project
- c. Land coverage of project (km²)
- d. Climate (*i.e. tropical, temperate, etc*)

Data collection should also include seasonal disparities which affect local life and

the availability of natural resources

2. Topographical (*select all that apply*)

This data not only affects the potential natural resource availability of the region, but also speaks to transportation possibilities/problems, etc.

- a. Coastal
- b. Mountain
- c. Plains
- d. Jungle
- e. Desert
- f. Forest
- g. Steppe
- h. Other (*please specify*)

3. Social/Cultural

a. Religion

b. Land tenure

(i.e. Is land owned by state, municipality, family, no one and how is it transferred?)

c. Social hierarchy or structure

(i.e. Who holds power in community: men, women, groupmen, clergymen, doctors, etc)

d. Local traditions

(Ceremonies, customs that relate to resource allocation/use/perception)

e. Development indicators of affected/participating population

i. Socioeconomic status

ii. Local Average Family Income

iii. Literacy Rates

iv. Average birth rate

v. Death % environmentally-related disease (*i.e. cholera, malaria,*

etc)

vi. Illness % environmentally-related disease (*i.e. malnutrition,*

asthma)

vii. Access to clean drinking water

- viii. Access to sanitation
- ix. Other (*specify*)
- 4. Environmental
 - a. Local levels of environmental degradation
 - b. Potential for conservation/preservation
 - c. Local perception of environmental resources-cultural (*i.e. trees seen as sacred objects, water is used for baptisms, land used for rights ceremonies, etc*)
 - d. Local perception of environmental resources-practical (*i.e. reefs are primary source of fish, lumber is needed for fuel & housing, freshwater for life, irrigation, animals, etc.*)
- 5. Political
 - a. International
 - i. laws concerning local resources (*i.e. transboundary water laws, international fishing legislation, endangered species acts, etc*)
 - ii. international relations-relevant partnerships, disputes, wars, etc.
 - b. Domestic and Local
 - i. Legitimacy of political authority
 - ii. Institutional capacity
 - iii. Municipality capacity in relation to natural resources
 - c. Local governance
 - 1. Level of decentralization and citizen participation
 - 2. Level of local legitimacy and capacity
- 6. Economic
 - a. Local development indicators
 - b. Diversity of existing markets

STEP 2: NATURAL RESOURCE EXAMINATION

A. Principal environmental resources (all that apply)

- 1. Forest
- 2. Marine
- 3. Aquatic
- 4. Biodiversity (flora, fauna)
- 5. Solar
- 6. Wind
- 7. Other (*specify*)

B. Nature of resource(s)

- 1. Limiting factors
- 2. Allocation
- 3. Access
- 4. Availability
- 5. Determination of resource setting
(*i.e. is water source interboundary, who is upstream/downstream, are species transient or specific to region, etc*)
- 6. Natural Resource governance

a. Open Access: Resource is available without restrictions on user, amounts/allocation, or maintenance

b. Common Property: There is a specified management group who determines the rules and participants, these members have right and duties

for usage and maintenance, hold rights, but others may use under the guise of set regulations

c. Private Property: Resource is owned by group or individual. Set rules and regulations, and users.

d. State Property: Resource is controlled by the State (acts as a representative for the resource) and users must abide by set access and use rule set by the State.

7. Current Uses

a. Who uses resources?

b. Who officially manages resources?

c. Who are the unofficial/local managers of resources?

4. Potential Uses

5. Conservation/Preservation/Restoration Possibilities

C. Allocating value to natural resources

1. How to measure the incremental revenue from improved environmental conditions

2. Data from other projects for allocation of value to applicable local resources

C. Principal environmental services (all that apply)

1. Fishing

2. Tourism

3. Water Quality

4. Water Allocation

5. Agriculture

6. Animal Husbandry

7. Medicinal Botany

8. Artisan

9. Energy

10. Other (*specify*)

D. Existing quantification of environmental services

1. Data sets collected previously, and/or regularly, which may allow quantification

a. Income generated from services

b. Amount of resources exploited for said resources

2. Ecological conditions which provide these services

a. Land use

b. Human/nature interactions

c. Pressures (environmental, governance, cultural, external)

d. Educational/local knowledge

3. Current benefits to local population (economic, social, environmental, etc)

(If managed more environmentally, provide and increase/improvement in local environmental services?)

4. Existing Payments for Environmental Services in the country

STEP 3: STRUCTURE AND CONSIDERATIONS

A. Main project activities

1. Project target group

2. Main problem(s) to be addressed by project (*scope and magnitude*)

3. Main objectives of project and relevant aspects of human development (*all that apply*)

- a. Citizen participation
- b. Cultural diversity
- c. Decentralization
- d. Economic
- e. Education
- f. Energy
- g. Environmental
 - I. Conservation
 - ii. Restoration
 - iii. Preservation
 - iv. Quality
 - v. Allocation
- h. Gender equality
- i. Justice and Citizen Security
- j. Health
- k. Human rights & protection of vulnerable groups
- l. Institutional capacity
- m. Local governance
- n. Natural disaster prevention
- o. Planning-urban, rural and regional
- p. Resource management (biodiversity, vegetation, fauna, water, sanitation, etc)
- q. Social Inclusion
- r. Technical development
- s. Transportation
- t. Other (*specify*)

2. What currently used best practice models are applicable?

- a. Location
- b. Participants
- c. Time period
- d. Specifics of models

B. Other projects / local initiatives in the project area

1. Local acknowledgement of projects (successes/failures)
2. Domestic/regional/other acknowledgement of projects (success/failures)

C. Proposed market structure

1. Scale (*local, regional, and national, international*)
2. Applicable institutional components
3. Applicable regulatory components
4. Components of supply and demand of region
 - a. What local needs are being addressed by the project?
 - b. What are some existing alternatives to proposed markets?
 - c. How do the costs of proposed services compare with existing services?
 - d. Is there current local demand for proposed services?

D. Existing applicable technology of region (*i.e. hydropower, tractors, irrigation canals, etc*)

E. Potential applicable technology of region (*i.e. existing global technology that could potentially benefit the project-GIS, Water purification systems, Solar panels, etc*)

1. Potential for maintaining and operating external technology
 - a. Education levels of providers and participants
 - b. Local acceptance of external knowledge/technology
 - c. Costs for buying/maintaining technology
 - d. Local applicable resources (human/natural)
2. Lack of local alternative methods/technologies to solve problem

F. Funding

1. Financial resources (*i.e. governmental, donations, private sector, corporations, local, etc*)
2. Funding mechanisms
(*i.e. in-kind contributions, technical support, currency, matching funding, investment, seed, etc*)
3. Funding management
 - a. Who will manage economic input/output?
 - b. Where are funds stored? (*i.e. bank, local household, corporation, etc.*)
4. Use of funding (*i.e. funding distribution and allocation to specific section/participants*)

G. Sustainability

1. Working definitions of sustainability
 - a. From <http://www.wordiq.com/definition/Sustainability>:
Sustainability is an economic, social, and ecological concept that is somewhat controversial. It is intended to be a means of configuring civilization and human activity so that society and its members are able to meet their needs and express their greatest potential in the present, while preserving biodiversity and natural ecosystems, and planning and acting for the ability to maintain these ideals indefinitely. Sustainability affects every level of organization, from the local neighborhood to the entire globe. Put in simpler terms, sustainability is providing for the best for people and the environment both now and in the indefinite future.
 - b. The **Food & Agricultural Organisation** (FAO):
Sustainability concerns one of the most fundamental questions for technical cooperation: will the benefits and results achieved through the project be maintained and enhanced by the ultimate end-users and their community, based on their own commitment and resources, after the termination of the external assistance? The question entails a complex analysis of aspects related to this broad concept, including the acceptability and use to be made of project outputs and results by the intended groups targeted their capacity to maintain the results, and the institutional and policy environments to enable them to do so.
 - c. **Worldwatch Institute, Brundtland Report** (1987):
(Sustainability is) *Meeting the needs of the present generation without compromising the ability of future generations to meet their needs.*
2. Types of sustainability
 - a. **Institutional sustainability**: *i.e. can the strengthened institutional structure continue to deliver the results of the technical cooperation to the*

ultimate end-users? The results may not be sustainable if, for example, the planning unit strengthened by the technical cooperation ceases to have access to top-management or is not provided with adequate resources for the effective performance after the technical cooperation terminated;

b. Economical and financial sustainability: *i.e. can the results of the technical cooperation continue to yield an economic benefit after the technical cooperation is withdrawn? For example, the benefits from the introduction of new crops may not be sustained, if the constraints to marketing the crops are not resolved. Similarly, economic (distinct from financial) sustainability may be at risk, if the end-users continue to depend on heavily-subsidized activities and inputs.*

c. Environmental sustainability: *i.e. are the benefits to be generated by the technical cooperation likely to lead to a deterioration in the physical environment (thus indirectly contributing to a fall in production) or well-being of the groups targeted and their society? (from <http://www.wordiq.com/definition/Sustainability>)*

3. Is the project self-sustaining?

- a. Creates jobs
- b. Generates capital
- c. Uses natural resources sustainably
- d. Implements long-range resource management practices
- e. Works within existing cultural knowledge and tradition
- f. Uses technology that is appropriate to region
- g. Promotes education concerning importance of local natural resources
- h. Is accepted as positive addition to regional markets/life
- i. Is acknowledged as positive by political/institutional/citizen base
- j. Generates interest in market/project
- k. Takes an interdisciplinary approach to resource conservation/restoration/preservation
- l. Takes advantage of local human resources
- m. Is multifaceted and flexible in nature
- n. Components of project are well-understood by participants and those affected
- o. Can be monitored for quantitative and qualitative success/failure
- p. Improves state of local natural resources
- q. Is well documented

H. Time Allotment

1. Traditional forecasting relating to environmental resources in the region (*i.e. do farmers plan for a 10-year cycle or are the silviculturists who plan on a 100-year cycle, or fisherman who don't forecast future fish populations, etc*)
2. Ideal forecasting/are there inherent cycles for relevant natural resources (*i.e. life cycle of flora and fauna, affecting weather patterns of region-monsoon, common natural disasters-water availability and local replenishment cycles, etc*)
3. Estimated start date for project and end date (if applicable)

STEP 4: PARTICIPANTS

A. Service users and providers

1. Who are the potential participants (*political, institutional, citizens, etc*)

- a. Name of participants
- b. Sector
 - i. Public
 - ii. Private
 - iii. Civil society
 - iv. Community
 - v. International cooperation organizations
 - vi. Others (*specify*)
- c. Roll of participants
 - i. Service providers
 - ii. Service users
 - iii. Other (*i.e. consultants, experts, etc.*)
- d. Resources participant brings to the project (*all that apply*)
 - i. Technical
 - ii. Financial
 - iii. Political
 - iv. Institutional
 - v. Educational
 - vi. Manpower
 - vii. Other (*specify*)
- e. Contact information for participants
 - i. Name
 - ii. Address
 - iii. Telephone
 - iv. Fax
 - v. Email
- 2. Linking users and providers
 - a. Existing links
 - b. Potential for direct agreements between users and providers
 - c. Possible intermediary institutions
- 3. How to involve the private sector in market
 - a. Methods to address trans-boundary environmental issues
 - b. Methods to link communal sellers with private buyers
 - c. Methods of identifying the beneficiaries of improved environmental conditions
 - d. Minimum conditions required to put a successful system in place
 - e. Other components that would make project a realistic option in region

B. Other applicable participants

STEP 5: METHODOLOGY

A. Development strategies utilized in respect to the application of the project (*all that apply*)

1. Legal and Institutional
2. Economic and financial
3. Resource management
4. Citizen participation and empowerment
5. Sustainability
6. Capacity development

7. Cooperation between municipalities/participants
8. Technology
9. Sustainable use of natural resources
10. Environmental preservation/conservation
11. Cross-cultural cooperation
12. Recreation/enjoyment
13. Other (*specify*)

B. Incentive mechanisms for environmental resource conservation (*all that apply*)

1. Environmental taxes and subsidies
2. Tradable permits and credits
3. Environmental accreditation
4. Eco-labeling
5. Performance bonds
6. Credit and Tax Incentives
7. Cost-recovery tariffs
8. Deposit-refund systems
9. Resource use charges
10. Usage charges (*i.e. charges on natural resource exploitation, water charges for use and pollution, etc*)
11. Conventional taxation
12. Self-organized private deals
13. Public payment schemes
14. Ecotourism
15. Education
16. Other (*specify*)

STEP 6: MONITORING & EVALUATION

A. Monitoring impact of project

1. Predicted outcome of project
2. Methodologies used
 - a. Supporting documents
 - i. Laws
 - ii. Regulations
 - iii. Case studies
 - iv. News reports
 - v. Other (*specify*)
 - b. Capacity modules
 - c. Terms of reference
 - d. List of working groups
 - e. Applied technology
3. Qualitative and quantitative data collection
 - a. Preliminary data collection concerning natural resources
 - b. Continuing monitoring of natural resource components
 - i. Limiting factors
 - ii. Allocation
 - iii. Access
 - iv. Availability

- v. Determination of resource setting
(*i.e. is water source interboundary, who is upstream/downstream, are species transient or specific to region, etc*)
- vi. Natural Resource governance
- v. Current Uses
 - Who uses these resources
 - Who officially manages these resources
 - Who are the unofficial/local managers of these resources
- vi. Potential Further Uses
- viii. Conservation/Preservation/Restoration Possibilities
- c. Cycle of data collection (*Yearly, quarterly, monthly, weekly, etc*)
- d. Continuing monitoring of local human development indicators
 - i. Socioeconomic status
 - ii. Local Average Family Income
 - iii. Literacy Rates
 - iv. Average birth rate
 - v. Death % environmentally-related disease (*i.e. cholera, malaria, etc*)
 - vi. Illness % environmentally-related disease (*i.e. malnutrition, asthma*)
 - vii. Access to clean drinking water
 - viii. Access to sanitation
 - ix. Other (*specify*)
- e. Continuing monitoring of market development
- f. Lessons learned (*successes, failures, suggested changes, etc.*)
- g. Parties responsible for data collection
- 4. Comparison of base data to ongoing monitoring
- 5. Response to project
 - a. Providers
 - b. Service users
 - c. Political
 - d. Institutional
 - e. Other (*specify*)

STEP 7: DUPLICATION AS BEST PRACTICE

A. Replication of the project

(How to mainstream the development of environmental services into strategies and operations relating to rural poverty alleviation and natural resources management beyond the niche opportunities presently being exploited)

1. What are the opportunities in other regions, states, countries?
2. How can approaches cover simultaneously global issues and diverse opportunities (*Such as carbon sequestration and carbon storage, while likewise addressing local issues such as water rights, etc.*)
3. What are the primary purposes for replicating the project?
4. When and how can the project be replicated (*i.e. How long will it take to transfer knowledge, etc*)
 - a. What capacities are available to transfer knowledge of project?
 - i. Technical
 - ii. Financing
 - iii. Legal institutions
 - iv. Administration

- v. Local participants ability to transfer knowledge (*i.e. word-of-mouth, travel, telecommunications, etc*)

B. Press relating to project