The role of natural capital in development planning and investment

Pierre Jacquet (AFD)

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Outline

- The comeback of nature, with a revenge
- Is sustainable development a valid concern in today's economic crisis?
- What are some of the challenges to overcome?
- What role for multilateral and bilateral donors?

The comeback of nature

- Developed countries' growth and development has created the illusion that nature was a « free » good : ever abundant enough, no scarcity, no value.
- Scientific knowledge has amply documented the limits to such growth
- But this knowledge has not translated yet in planning for economic development and growth
  - Lack of proper, well accepted indicators
  - Need to displace existing indicators (such as GDP)
  - Need to define trade-offs and priorities: how to trade-off, for instance, between investing in education and investing in renewable energies in a context of scarce budgetary resources?
- Role of Science and of Civil Society in changing and shaping perceptions, value systems, priorities

Climate change and development

- Need to integrate climate change and development
  - The growth process impacts on climate change
  - Climate change impacts on the growth potential and on poverty
  - Poverty also impacts on climate change (deforestation…)
- Adaptation and mitigation
  - Mitigation requires collective action, involving North and South. Role of Asia
  - Adaptation should be made synonymous with development : a development process that does not include the impact of climate change is unsustainable and should not be pursued or encouraged. Allowing people and structures to adapt to climate change is an inescapable aspect of any sustainable development process. Asia primarily concerned !

Biodiversity and development

- Unprecedented loss of biodiversity (in modern times)
- Need to better understand the value of biodiversity, which goes well beyond protecting diversity for its own sake.
- Focus on ecosystems and services provided by ecosystems.
- Document link between biodiversity and people's livelihoods.
- Reassess productive processes to understand the role of nature and biodiversity as a factor of production.
- Examples: protecting water basins, restoring soil biodiversity through agro-ecological, no-till methods, understanding the chain of pollution, etc…
- On all these issues, Asia can and needs to play a leading role.

Where are we?

- There is limited, though growing, recourse to environmental economic analysis. It informs and improves decision making. Attitudes are gradually changing
- To influence decision making, several concurring factors need to be mobilized.
- To influence finance ministers, quantify costs !
- Align messages with policy-makers' priorities, adapt them to various groups (parliamentarians, line ministries, civil society, etc.)
- There are pragmatic, win-win approaches, based on simple arguments and calculations
- Economic analysis is one instrument, to be associated with other instruments (scientific, institutional, social, political analysis)
- Data and statistics matter: need for data collection, accessibility and improvement
- International partners can help, notably bilateral and multilateral donors: shape incentives, provide financial and technical support, build capacities…

Source : Drakenberg, O. et al. (2009), "Greening Development Planning: A Review of Country Case Studies for Making the Economic Case for Improved Management of Environment and Natural Resources", OECD Environment Working Papers No. 5, OECD publishing,

Examples: measuring natural wealth

- A country wealth is made of the stock of its human, physical, social, institutional and natural capital.
- Economic theory has largely been based on physical, and more recently human and partly institutional capital.
- Attempts (Hamilton and others) at measuring natural capital and genuine savings
- Example : recent study in Mozambique, suggested that genuine savings was -14% of GDP (equivalent to 1% of the stock of natural wealth), suggesting that total national wealth is declining and that the development path is not sustainable. Similar studies conducted for Uganda have reached an “adjusted net savings) of -9,5% of GDP
- Such studies should be further developed. They are based on debatable assumptions (as all models), but they can inform the policy debate and highlight trade-offs.

Country study : Lao PDR

- Lao PDR has undertaken a pioneering National biodiversity strategy and action plan, giving a key role to economic aspects, with technical support from IUCN (2002).
- Non-timber forest products (food, medicine, building material, fodder) account for about half of rural household subsistence and income (i.e. much more than commercial timber)
- Poorer households depend on non-timber products for a larger proportion of their income than richer households : protecting biodiversity is pro-poor
- 75% of GDP is derived from sectors based on, or dependent on biodiversity
- 92% of the national workforce is employed primarily in such sectors.

Indonesia's example

- Indonesia hosts 10% of all humid tropical forests. Exceptional reservoir of biodiversity.
- One of the highest rates of deforestation and tropical forest degradation in the world. Indonesia has become the third CO2 emitter (behind US and China). Huge stake for climate, for sustainable development and people's livelihoods.
- Current management is not sustainable. Several challenges: fight against illegal logging, restructuring wood industry (overcapacity against decline in natural resource availability), promote re-forestation, strengthen administrative controls along with decentralization, solve land conflicts…
- Major component of the Indonesian gvt Climate change policy, supported by Japan and France through the Climate change program support. Monitoring through a "policy matrix" with agreed goals on forest management.
- Indonesia also actively involved with the REDD initiative.

Is SD relevant in the global crisis?

- Unqualified yes
  - The crisis itself is a symptom of unsustainable development
  - Massive potential job losses threaten backlash against firms and markets
  - Consumers everywhere have demands on environmental and social protection, in reaction to what is perceived as a failure of earlier growth patterns
  - Short-term/Long term trade-off : responding to the trade-off by forgetting longer term issues is an illusion
    - Example: 25 year-horizon Calculations in Indonesia : (1) pursuit of current forestry exploitation: short term benefits, long term costs ,vs. (2) sustainable exploitation, with restructuring, temporary cut in industrial production, improvements in governance : (2) is the winning scenario, allowing for 30% increase in global sector value, 60% decline in forest degradation, 18% increase in jobs (not counting REDD benefits).
  - The crisis means hard times, but there will be an end to it. Only “sustainable” economies will thrive in the post-crisis world (not only in a static “sustainable development” dimension, but also with respect to innovative capacity and dynamism
- But…
  - Need for adequate and massive policy responses to the crisis
  - Need for policies oriented toward promoting sustainable development (“Green new deal”)
  - Need for policy support to social and environmental responsibility in the private sector
  - Potential role for development agencies.

Challenges with sustainable development

- Taking the future into account: how to do so, how to compare future costs and benefits to present benefits and costs ? How to frame the trade-off between present and future?
- Uncertainty
- Collective action

Time dimension

- Two broad reasons why future should be discounted
  - Pure time preference
  - We are getting richer, so that a given increase in income provides less additional utility over time
- How to estimate these parameters
  - Individual vs. Social
  - Results very sensitive to actual figures
- Should discounting be exponential? (Or should we consider that, after a given date in the future, all subsequent events will be discounted at a constant rate, whatever the date of occurrence?)
- What is the proper social discount factor? This involves economics, ethics, politics, psychology…Sustainable development is at core a social and political process, not a set of scientific prescriptions.

Uncertainty and irreversibility
The theory of option value

- Under uncertainty, waiting may have a value because as time goes, new knowledge can better inform decisions
- With the possibility of irreversible events, the « option value » approach gets broader. Acting now can also have value if it allows to keep options open for the future by avoiding an irreversible event
- Climate change, fight against the loss of biodiversity…
- How does scientific and/or technical progress work ?
  - It is not exogenous and neutral
  - Policies may impact on the direction that technical progress takes
  - So that acting now increases the chances that technical progress will provide solutions.

Biases and parochial interests

- Size : should an event be discounted differently if it affects a smaller number of people ?
- Discount rates may vary across populations of different sizes
- How to address relative scarcity? Should we care more about protecting the scarce and threatened or about protecting the current stock?
- Human mind limited: sequential (rather than universal) action more typical. At each point in time, imperfect information results in focusing on a few issues deemed more important than others. This choice is considerably biased by (1) lack of information (2) lobbying (3) Exposure to natural catastrophes (4) Herd effects
- Yet, no single truth; action needed in a number of sectors. How to think about trade-offs ? The setting of priorities ?

A collective action problem

- Results of one's own action depend on those of others: prisoner's dilemma situation
- This problem has local, national, regional and global dimensions.

How can economists better help?

- Environmental accounting
- Expand national accounting
- Evaluations
- Join forces with others : the « 4 D's » of Summers and Zeckhauser (2008)
  - Discounting : how to discount the future ?
  - Disaster : knowledge about possible future events
  - Distinction : how to choose between alternative approaches and instruments ?
  - Decision analysis
- Economists are useful for (1) and (4); Scientists for (2); Psychologists and philosophers for (1) and (3). For decision to not be partial and incomplete, all 4 dimensions must be taken into account.

How to measure the value of the environment

- Market-based valuation methods : observed market value, productivity approach (e.g. value of land degradation through the decline in income from agricultural production), cost-based methods (e.g. cost of soil degradation through cost of compensating fertility loss with fertilizers.
- Surrogate market-based valuation methods: hedonic prices, travel costs, defensive expenditures (e.g. costs of bsoil erosion through investments by farmers in terraces…), cost of illness.
- Non-market based valuation methods: contingent valuation method (estimating willingness to pay through surveys), choice modeling (uncovering individual preferences through presenting individuals with options that they have to rank or score.
- Borrowing values from existing studies…

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Other methods

- Ecological Footprints (both in developed and in developing countries)
- Various indicators
  - Economic values
  - Environmentally adjusted GDP
  - Genuine savings, adjusted savings…
- Need for a synthetic indicator, while sustainable development issues cover a wide range of concerns and activities.
- Working group set up by the French President to suggest and assess new indicators. Report expected shortly.

What can development finance institutions do ?

- Sustainable development issues have substantially altered the way one thinks about development
- Documenting win-win situations. More generally, support learning process, in partnership with local and international NGOs such as WWF.
  - Example : Critical Ecosystem Partnership Fund.
- Catalyzing longer-term policy making (use of subsidies, concessional lending…)
- Act as drivers of local and global (North/South) collective action