

Meso studies help to answer questions such as

- What are the economic benefits for an urban community or a sector to act in favour of the environment?
- What is the share of an urban community in the national degradation of the environment?
- What would happen if the price of water increased? If there is an influx of tourists?
- How will the urban community evolve environmentally in the future?

The Aqaba context

Aqaba has a narrow sea shore which many different actors interact. In particular, two important economic activities seem to be in competition: industry and port and tourism. The ecological footprint of these activities and their consequences are inevitably important. Thus, an environment-economic assessment of the activities of Aqaba would help the ASEZA (Aqaba Special Economic Zone Authority) to take the most profitable decisions for the well-being of the population and the environment.

Main results

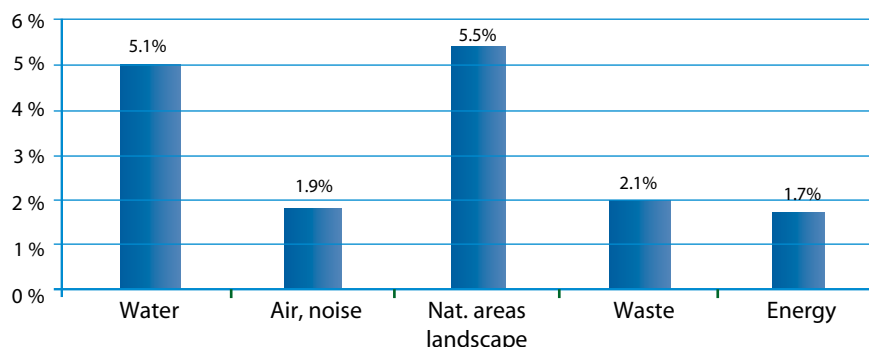
The aggregated damage costs (11.15%) and inefficiency costs (5.10%) of Aqaba amount to 16.25% of Aqaba GDP, which represent almost JOD 65 million. The most concerned environmental domains are landscape (5.5% of the Aqaba GDP) and water (5.07%). Thus, natural capital is the most damaged economic category.

Landscape has been highly valued because Aqaba is not only an industrial zone, but also a tourist resort, which is about to undergo significant development. As tourists are demanding "pure" landscapes, cohabitation with an industrial zone is not really welcomed.

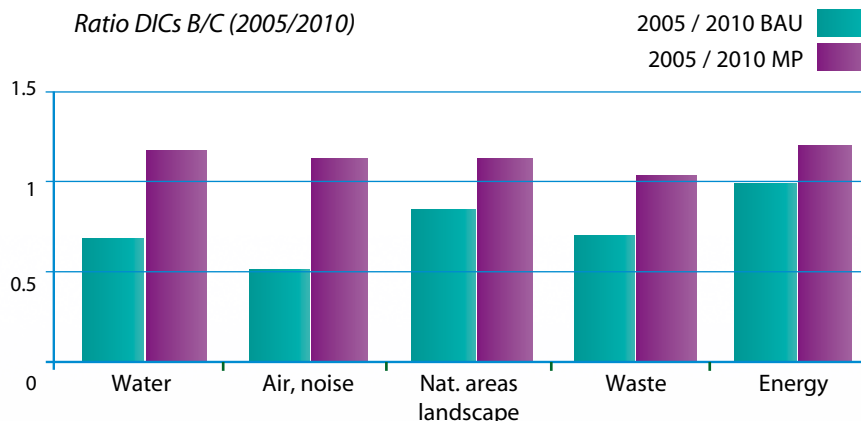
Damage to water is highly valued because the fossil nature of the water table causes competitive use and overuses of the resource, particularly from the phosphate industries. Preservation of water is thus deemed necessary.

In order to seize the future of Aqaba, two prospective scenarios are constructed, according to two contrasted pictures. The "Business as Usual" (BAU) scenario assumes a normal development path for Aqaba, while the "Master Plan" (MP) scenario takes for granted that corrective measures will be implemented to improve the environmental situation.

% GDP *Damage and Inefficiency Costs by Environmental Domains – Aqaba*



Ratio DICs B/C (2005/2010)



The DICs for 2010, according to the BAU scenario would reach 22% of the Aqaba GDP. Alternatively, if the MP scenario is implemented and realized, the total DICs would amount for 14.5%, namely a reduction of the environmental degradation compared to 2005, for all environmental domains. In total, the net environment-economic benefit of implementing the MP would reach approx. JOD 47.7 million.

The trade-off between port activities and tourism reflects the challenges that Aqaba faces: developing industry leads to important pressures on water, while developing tourism requires the preservation of landscapes and shores.

The analysis' main conclusion is that if, and only if, the assumptions underlying the MP scenario are carried out, the latter will lead Aqaba to a balanced environment-economic development comprising a large economic output and a much better well-being due to an improved environmental quality.

Positioning

By comparing Aqaba to the national context in 2005, the contribution of the urban community to the national GDP is 5.7% whilst its contribution to environmental damages accounts for 5.8%. In 2010 according to the MP scenario, the contribution to the national GDP will be 6.2%, while the contribution to the national damages would level at 4.1%.

Environment-economic indicators

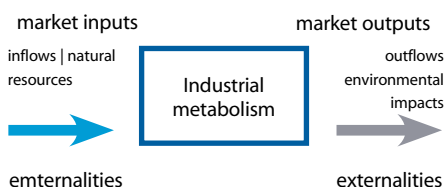
Urban community, Aqaba, Jordan

What is meso

A MESO study is the economic assessment of the environmental degradation at the level of an economic sector or an urban community. It focuses on connecting micro (unit) and macro (country) evaluations on a middle (sector) – MESO level. The objectives of MESO studies is to seize and measure the importance of material flows and transformations of the industrial or urban metabolism and translate them into economic monetary terms, into environmental degradation costs (costs of damages and inefficiencies). Then, these costs are related to the value added or the GDP of the studied body. The evolution of these costs overtime can then be further assessed.

An innovative methodology

The assessment of environmental degradation requires different stages of analysis. The urban community is seen as a “living body”; that is to say, through its activities, the urban community ingests, transforms resources, produces goods, and generates discharges, thus putting pressure on eco-systems.



Data collection of an urban community requires grasping a broad prospect of the economic activities of the community in terms of production, resource and environmental flows. Data is collected at the borders of its territory: the inputs needed to run a city (water, energy, primary products, etc.) and the outputs discharged (solid, liquid and gas).

The analysis concentrates on the costs of environmental degradation and the costs of inefficiencies. The procedure for evaluating them consists in placing monetary values on the direct, known and clear consequences of the impacts of economic activities on the environment. It is often carried in two main steps: environmental diagnosis (quantitative) and economic evaluation (monetary). Economic valuation methodology and techniques are used.

The results are then allocated to seven environmental domains (water, air, noise, natural areas and landscape, waste, energy, global environment) and three main economic categories (health | quality of life, natural capital, inefficiencies in resource use). They are expressed as fractions of the value added of the urban community as well as in absolute terms.

Finally, **prospective scenarii** are run in order to assess the evolution of environmental damage and economic inefficiencies over time. The results of the prospective are given as ratios. A B/C ratio > 1 (B/C < 1) means that the DICs have decreased (increased) between now and the year chosen for the prospective.

COSTS OF DAMAGES (CD)

Costs of environmental damages are a loss of well-being, from an economic point of view, for a community or a country. It could be the consequence of health impairment, loss of revenue, or losses of environmental services.

COSTS OF INEFFICIENCIES (CI)

Costs of inefficiencies are the economic consequences of mismanaged use of natural resources, e.g. loss of water through leakage or wastage of energy.

PROSPECTIVE SCENARI

The implementation of a MESO Profile for the future of a community according to a decided or a fictive strategy allows the decision-makers to obtain information about what can happen in 5 or 10 years from now.

Reference study

Pillet G., Zein K., Maradan D., Daguet S., Qaddoura A., Semlali M. (2006), Comparative MESO-economic analysis of environmental costs and benefits in Aqaba, Jordan (2005-2010), Report, Main Results.

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