Evaluation méso-économique des coûts et bénéfices environnementaux

تقييم اقتصادي لتكاليف البيئة ومنافعها

Meso-economic appraisal of environmental costs and benefits

Regional Symposium
Damascus
5–7 June 2005

Summary | Compte rendu

Ecosys® Geneva

- Methodology, Main Results, Perspectives
- Industry and Urban Communities in Arab Countries

Program

5 June 2005

Opening Ceremony
under the patronage of H.E. Minister of Industry in Syria

6 June 2005

Background & Methodology
Prof. Gonzague Pillet, Ecosys
Dr David Maradan, Ecosys

Meso Studies Vs. Macro Environmental Policies
Mohamed Maktit, Morocco

Cement sectors
Mohamed Meknassi, Algeria
Ali Salem, Tunisia
Ali Saada, Libya
Anas Al-Samsam, Syria
Abdellah Ikasarghid, Morocco

Power generation sector
Prof. Gonzague Pillet, Ecosys

Urban communities
Nart Bakir (Irbid), Jordan
Lahcen Tantani (Agadir), Morocco

General discussion
Karim Zein, SBA

7 June 2005

Sensitivity analyses & Benchmarking
Prof. Gonzague Pillet, Ecosys

Parallel thematic group works
Karim Zein, SBA

Next steps and new perspectives for meso-economic analysis
SDC, AUCBM, Ecosys & SBA

Introduction

The regional workshop **Meso-economic appraisal of environmental costs and benefits** took place in Damascus from 5 to 7 June 2005.

Its principal objectives were twofold. First, the workshop aimed to present the framework and the results of meso-economic studies. The second objective was prospective as it addressed the future needs and the particular concerns of the participants towards meso-economic analyses and results.

This summary is composed of five sections. The first section gives a brief overview of the origin of the meso-economic program. The second and third sections are related to the two workshop objectives. Section 4 addresses the concerns of the participants. A final section sets meso perspectives. The list of participants is attached.

The Meso Regional Symposium was officially opened June 5, 2005 by H.E. Ahmad Al-Rousan, AUCBM Secretary General, H.E. Jacques de Watteville, Ambassador of Switzerland, Dr. Annick Tonti, Head of MENA Region, SDC, and Dr. Mohammed Soumak, Ministry of Industry Under Secretary, Syria.

Résumé

Le Symposium régional **Evaluation méso-économique des coût et bénéfices environnementaux** s'est tenu du 5 au 7 juin 2005 à Damas.

Ce Symposium poursuivait deux objectifs. Il s'agissait, premièrement, de présenter les résultats de études de cas réalisées jusqu'alors. Le second objectif était prospectif. Il s'agissait de faire le point sur les besoins et les souhaits des participants à l'égard des études méso-économiques à venir.

Le présent compte-rendu comporte cinq sections. La section 1 traite des origines du programme méso-économique. Les sections 2 et 3 précisent le cadre d'analyse et les résultats méso. La section 4 adresse les besoins des participants. La section 5 fixe les perspectives du programme méso. Une liste des participants est annexée.

Le Symposium régional a été officiellement ouvert le 5 juin 2005 par S.E. Ahmad Al-Rousan, Secrétaire Général d'AUCBM , S.E. Jacques de Watteville, Ambasseur de Suisse, Dr Annick Tonti, Chef de la division MENA, DDC et Dr Mohammed Soumak, représentant du Ministre de l'Industrie de Syrie.

1

Origin of the meso-economic program

Macro-economic studies in the Middle East and North Africa Region estimated the costs of environmental damages and economic losses up to 5.8% of the Gross National Product (GDP).

At a micro-economic level, studies put emphasis on "Good Housekeeping" and environmentally sound measures and actions.

Therefore, on the one hand, there are environmental damage costs at the level of a country and, on the other hand, individual expenses for environmental management at the level of a firm. Then, what about the level of an economic sector or an urban community? Neither one nor the other approach highlights the status of an economic sector. For example, what is the part of the cement sector in the national degradation of the environment? In return, what are the economic benefits for a given sector to act in favour of the environment?

These issues shape the origin of the meso programme, which focuses on connecting micro and macro evaluations on a middle (meso) level.

A first set of meso-economic studies of environmental costs and benefits is concerned with cement industry in Algeria, Syria, Libya, and Morocco as well as with urban communities in Jordan (Irbid) and Morocco (Agadir).

2

Meso-economic Framework

The first objective of the workshop was to introduce the methodological framework and to share the results of the meso-economic studies.

For this purpose, the two first lectures explained the theoretical and methodological background of the meso-economic studies. The introduction given by Prof. Gonzague Pillet (Ecosys Geneva and University of Fribourg) assessed the need of economically appraising environmental costs and benefits in order to orient actions toward the cleaning up of the past and the building of the future. It also presented the general evidence on the costs of environmental damages and the costs of remediation both at the macro and meso-economic scale.

Environmental damages in European Countries in the eighties were explained (Tab. I) in order to put in better perspective macro results in Arab Countries (Tab. II).

Table I – Environmental Damages in European Countries back to the Eighties

Countries	Year	% GDP	Sources
Germany	1984	3 to 6.5%	Wicke 1986
France	1983	3 to 4%	Secr. of State 1984
Switzerland	1985	3.2 to 5.2%	Pillet 1988

Source: Pillet, G., *DISP 105*, ETHZ, 1991

Table II – Environmental Damages Costs (DC) in Arab Countries, 2003

Countries	DC in % of GDP
Algeria	3.60%
Egypt	4.80%
Jordan	2.80%
Lebanon	3.40%
Morocco	3.70%
Syria	3.50%
Tunisia	2.10%

Source: World Bank, 2003

The **spirit** of the meso-economic approach, according to Prof. Pillet, can be ultimately apprehended with a view on the **metabolism** of either industrial or urban communities transforming and dissipating natural resources at the interface between environmental and economic systems (Fig. 1).

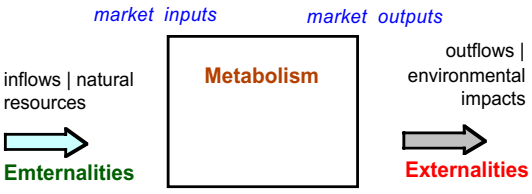


Figure 1 – Metabolism at the interface of environmental and economic systems

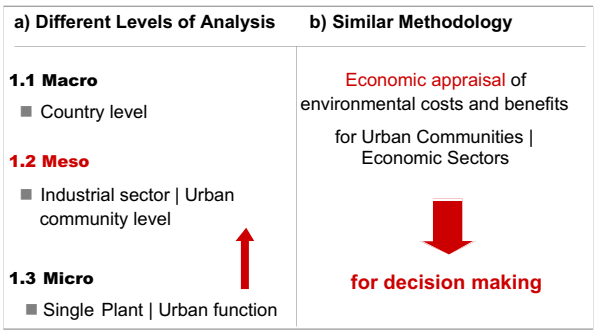


Figure 2 – Analytical levels

The second lecture by Dr. David Maradan (Ecosys Geneva and University of Geneva) presented the methodology underpinning meso-economic studies (Fig. 2). It therefore indicated the principal steps of analysis and defined the notion of costs of damages and inefficiencies and costs of remediation (Fig. 3).

The lecturer illustrated the theories and techniques that allowed the participants to grasp economically (i.e., with monetary units) the losses of well-being due to environmental degradation and the cost of avoiding such losses. It also explained why the economic appraisal of those costs constitutes a powerful decision-making tool as it allows to set environment-economic priorities either by environmental domain or economic categories.

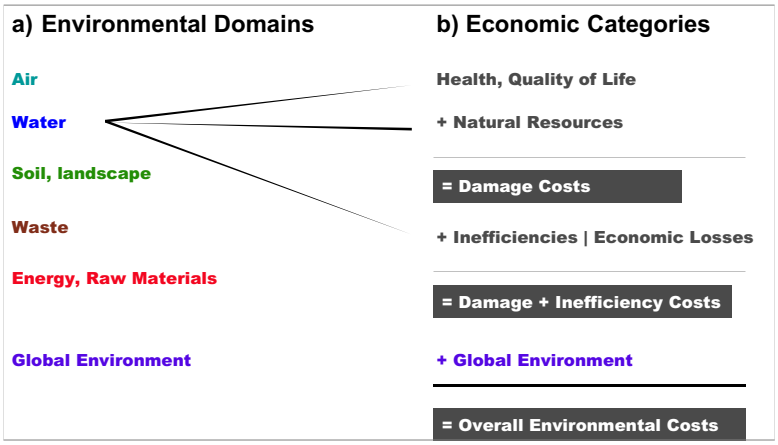


Figure 3 – Categories of analysis

3

Meso-economic Results

The workshop continued with several lecturers presenting different aspects of the meso-economic results. Those concern Algerian, Libyan, Moroccan and Syrian cement sectors, power generation using fossil fuels in the region and to two urban communities.

3.1 Meso studies Vs. Macro Environmental Policies

First, Mohamed Maktit, from the Moroccan Environmental Agency (MATEE), described the evolution of the environmental awareness in the Arab and Moroccan governments. It is recognised that uncontrolled human activities are seen as impacting heavily on environment and humans. For public authorities, monetary evaluations of environmental impacts are powerful tools to make priorities and decisions appropriately.

> • Conscient de l'importance des études méso-économiques, en tant qu'outil d'aide à la décision, le MATEE compte généraliser ces analyses économico-environnementales pour les plus importants secteurs économiques au Maroc;
> • L'Objectif de cette action est d'aider les secteurs concernés dans leurs choix stratégiques pour faire face aux problèmes environnementaux et aux défis du développement durable;
> • Ces études seront élaborées pour chaque secteur concerné suivant des séries chronologiques et ce pour pouvoir suivre les tendances en terme de préservation de l'Environnement et en terme des engagements desdits secteurs en faveur du développement durable.

During his presentation, M. Maktit highlighted the link between the meso-economic studies and the setting of environmental policy in Morocco. Following the creation of a department dedicated to environmental protection in 1992, the costs of degradation of the Moroccan environment were estimated at 8.2% of GDP. This first economic assessment of the environment encouraged the government to take action and improve its environmental policy by integrating environmental regulation, monitoring, solutions, and citizen ownership of the Moroccan environmental programme. In 2000, a re-evaluation of the costs of environmental degradation proved the success of the implementation of their national environmental programme and estimated the costs at 3.7% of GDP.

Morocco has already hosted three meso-economic studies, the cement and the electricity sectors and the Greater Agadir municipality. In that perspective, the Moroccan Environmental Agency would like to carry out meso-economic analyses of the major economic sectors of the Moroccan industry in order to give them strategic tools to improve the environment and respect their commitment towards sustainable development. The Moroccan Environmental Agency would be trained to replicate the meso-economic studies.

Mohamed Meknassi, Ali Salem, Ali Aboussada, Anas Al-Samsam, and Abdellah Ikasarghid presented the meso-economic profiles of the Algerian, Tunisian, Syrian, Libyan and Moroccan cement sectors, respectively. The priorities for environmental protection appeared to be consistent across different national sectors, the categories of “air” and ”energy and inefficiencies” stepping out in each case.

3.2 Algerian cement meso profile

Mohamed Meknassi, from Entreprise des Ciments et Dérivés d’Ech-cheliff, introduced the cement sector in Algeria. In 2004, there were twelve public cement factories and one private cement factory producing altogether more than 13 million tonnes of cement. Environmental degradation due to the activities of the Algerian cement sector was equivalent to 18.6% of the VA of the sector. The ratios benefit/costs were significantly important for the environmental domains Energy and Material, Air and Wastes. Those are the priorities according to the meso-economic analysis of the Algerian cement sector (Fig. 5). Confronting those to the national priorities, the Algerian cement sector was able to set a precise action plan towards a better inclusion of sustainable development matters in their policy. For the years 2004 and 2005, the Algerian public cement factories allocated 16 million Euros for the protection and preservation of environment.

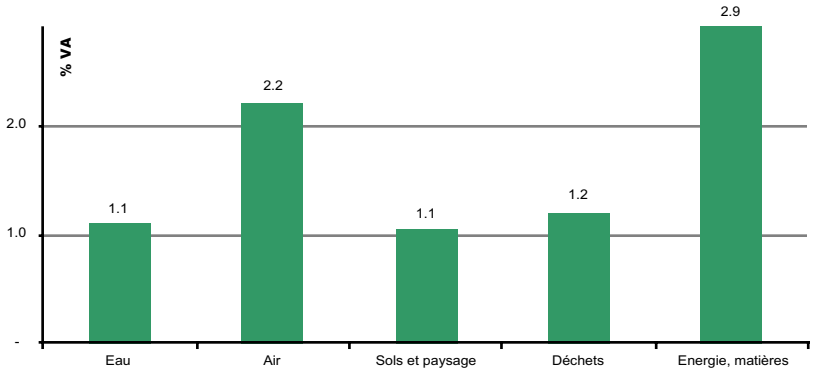


Figure 5 – Meso-economic Benefit/Cost Ratios | Algerian Cement Sector

Profil Méso – Algérie, Secteur du ciment. Ecosys-SBA-DDC-AUCBM. Damas, juin 2005, 2pp.

3.3 Tunisian cement meso profile

Ali Salem, from Ciment de Bizerte, presented the environmental commitment of Tunisia and the role of the cement sector. The meso-economic analysis of the Tunisian cement sector enabled to prioritise the investments of the sector for the protection of the environment. The meso-economic profile of the Tunisian cement sector estimated the costs of environmental damages and inefficiencies at 18.6% of the sector’s VA for the year 2001 whereas it would only need 10.2% of the VA to mitigate the degradation. Almost 60% of the degradation are due to inefficiencies in the use of resources. This is, the highest potential for savings is situated in an improved management and use of energy and raw materials. Following the meso-economic analyses, the cement manufacturers were reinforced in their decision to preserve the environment and invest in the improvement of air emissions. See Fig. 6.

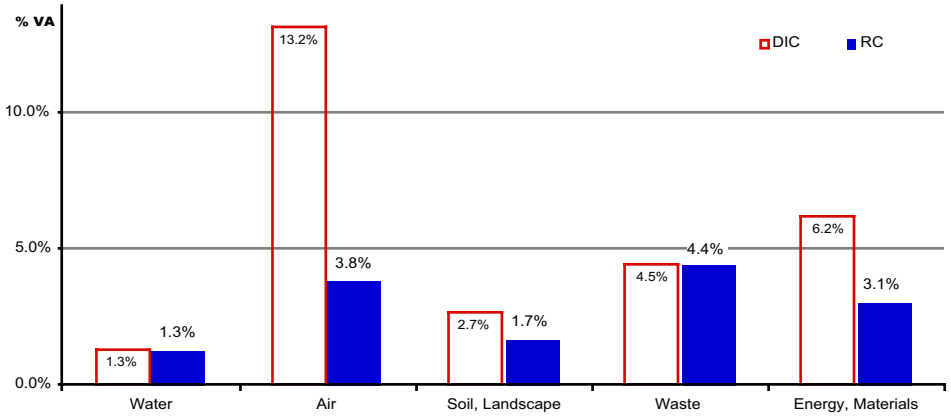
- **Bénéfices apportés par l'étude**
  L'étude a permis de quantifier l'impact de l'activité de production de ciment sur l'environnement par l'introduction d'outils de mesures tels les CDI et CR.
- **Utilité des évaluations économico-environnementale**
  Ces évaluations sont très utiles dans la mesure où elles permettent de mesurer les dommages et de les comparer aux coûts de remédiation correspondants afin de sensibiliser davantage et fournir des données d'aide à la décision pour la réalisation d'investissements de protection de l'environnement
- **Décisions prises**
  Ces études permettent de sensibiliser et convaincre de la rentabilité de la prévention de la pollution et de la sauvegarde de l'environnement
  Le secteur cimentier conscient de l'impact de son activité sur l'environnement et en application des dispositions légales et réglementaires a déjà réalisé des investissements pour l'amélioration des rejets atmosphériques qu'il y a lieu de renforcer.

Profil Méso – Tunisie, Secteur du ciment. Ecosys-SBA-DDC-AUCBM. Damas, juin 2005, 2pp.

Figure 6 – Benefits from Meso Studies | Tunisian Cement Sector

3.4 Libyan cement meso profile

Ali Salem Abusaada, from the Arabian Cement Co., introduced the Libyan cement sector and the results of the meso-economic profile. There are 6 production sites for 6.6 million tonnes of cement produced. The impact of the production of cement on the natural and social environment in Libya is important. According to the meso profile of the Libyan cement sector, the overall environmental degradation was estimated at nearly one third (27.8%) of the sector's value added (VA) in 2003. More than 60% of the degradation is due to damages to natural and social environment (17% of the VA) of which Air has the biggest share (13.2%). Still, inefficiencies in the use of resources are also significant and deserve some attention. The loss of profit in the management of resources is estimated at 10.9% of the sector's VA. This represents an interesting potential of savings that would benefit both the environmental image of the company and its expenses (Fig. 7). The meso profile of the Libyan cement sector revealed the priorities for environmental management firstly to air, then energy and materials, and landscape.



Meso Profile – Libya, Cement Sector. Ecosys-SBA-SDC-AUCBM. Damascus, June 2005, 2pp.
also in arabic.

Figure 7 – Damage and Inefficiency Costs Vs. Remediation Costs | Libyan Cement Sector

3.5 Syrian cement meso profile

Anas Al-Samsam, from GOCBM, introduced the Syrian cement sector and the results of the meso-economic profile of environmental costs and benefits. The evaluation of the costs associated with damages, inefficiencies and remediation shows primarily a strong rate of inefficiencies in the use of materials and energy: about 12% of the value added of the cement sector, equivalent to approximately USD 17 million (Fig. 8).

Environmental damages were estimated at 10.9% of the value added of the sector; they relate mainly to air (in the first place), soil and landscape (in the second place). At the level of individual units, these damages are between 1.3% and 9.2% of the VA depending on the significance of atmospheric emission control and the quality of landscape restoration. Dust emanating from cement plants in Syria constitute the main air pollutant and contributes to respiratory diseases that affect both employees and neighbouring communities. Nevertheless, lost materials are not all found in the ambient air; a large quantity of waste is stockpiled before eventual disposal in landfills either on the premises or at the quarry site.

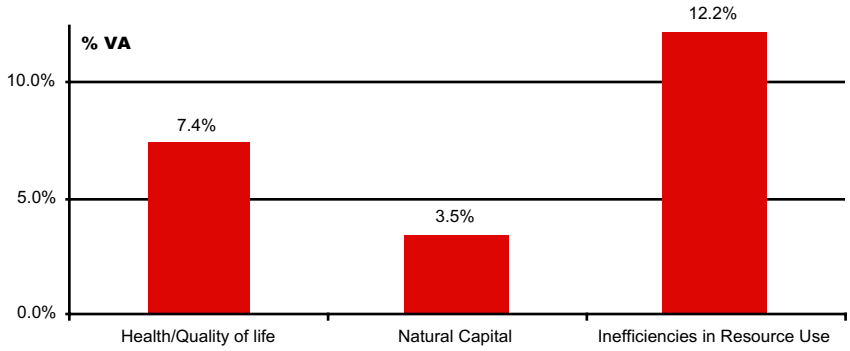


Figure 8 – Damage and Inefficiency Costs by Economic Categories | Syrian Cement Sector

Together, the costs of damages and the costs of inefficiencies correspond to approximately 23% of the sector's VA (regardless of the global environment). Costs associated to the global environment (emitted CO_2) were estimated at more than 8% of the sector's value added. The costs of remediation were estimated at more than 11% of the sector's VA (excluding global environment), that is, slightly less than half the costs of damages and inefficiencies. The average benefits/costs ratio (B/C) is on average slightly higher than 2. It is close to 3 in the case of inefficiencies in the use of materials and energy, and just above 2 for air.

Meso Profile – Syria, Cement Sector. Ecosys-SBA-SDC-AUCBM. Damascus, June 2005, 2pp.
also in arabic.

3.6 Moroccan cement meso profile

Abdellah Ikasarghid, from Professional Association of Cement Manufacturers (APC), presented the Moroccan cement industry together with Karim Zein, from SBA. The Moroccan cement sector is divided between four international groups (Lafarge Maroc, Ciments du Maroc, Holcim Maroc and Asment Témara) totalling 9 factories and a production capacity of 11 million tonnes a year. They are united under one banner called APC. In 1997, the APC and the Moroccan environment agency signed a voluntary convention regulating the cement sector's environmental and quality upgrading. The meso-economic analysis of the cement sector was carried out for the year 2003. Thus, the meso-economic profiles of the cement sector have been "comparative" for the years 1997 and 2003, reflecting the environmental performance of the sector before and after the upgrading.

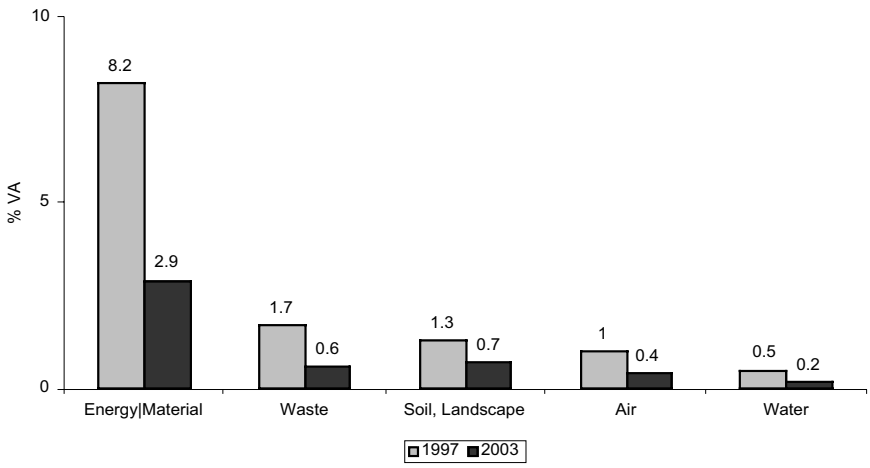


Figure 9 – Damage and Inefficiency Costs by Economic Categories
Morrocan Cement Sector, 2003 Vs. 1997

The environmental degradation caused by cement production has considerably been reduced thanks to technical and managerial improvements undertaken since 1997. In 1997, costs of damages and inefficiencies were estimated at 12.7% of the sector's VA and 4.7% in 2003 (Fig. 9). The estimated costs for each environmental domain were levelled off. By comparing the sector to the national economy, the contribution of the Moroccan cement sector to the national value added (GDP) appears to be 1.2% in 2003 whilst its contribution to environmental damages is 0.4%.

Profil Méso – Maroc, Secteur du ciment. Ecosys-SBA-DDC-AUCBM. Damas, juin 2005, 2pp.

3.7 Power generation meso-economic analysis

In its second lecture of the day, Prof. Pillet considered the meso-economic analysis of fossil fuel power generation sectors. In that case, actions towards the improvement of the health and quality of life as well as in the reduction of inefficiencies seemed to be the most beneficial from the economic-environmental point of view.

As shown **in principle** on Fig. 10, changes for a better environment completed between the years 2005 and 2010 should stimulate significant benefit/cost ratios with benefits ranging up to 3 times the remediation costs whilst remediating to the natural patrimony (water, land-scape) staying costly.

In absolute terms, the larger economic benefit is in reducing inefficiencies (millions of USD over a five year pay-back period).

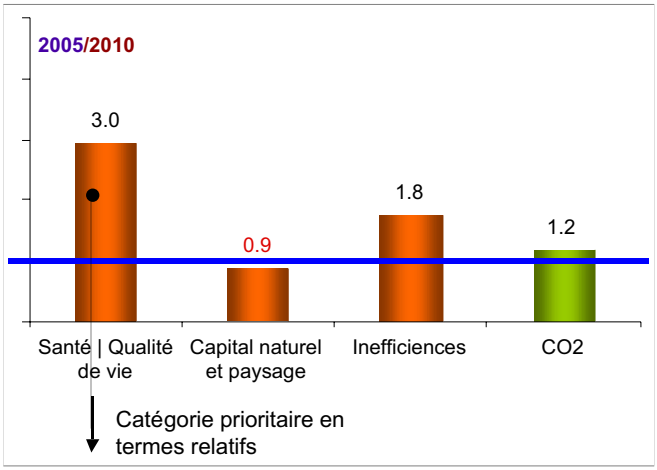


Figure 10 – Beneficial environmental improvements in the case of fossil fuel power generation

Nart Bakir for Jordan and Lahcen Tantani for Morocco ended the first day by shedding light on the meso-economic profiles of the urban communities of, respectively, Irbid and Agadir.

3.8 Meso-economic profile of an urban community: the Greater Irbid (Jordan)

The territory of the Greater Irbid is a wide area in which many different actors interact. The ecological footprint of half a million inhabitants is inevitably important. Production of food, goods and services is necessary to make this system work. Thus, an environment-economic assessment of the activities of the Greater Irbid is a great help for the mayor and its team to take the most profitable decisions for the well-being of the environment and the citizens.

According to the meso profile of the Greater Irbid, the costs of damages to the natural and social environment of the Greater Irbid are much higher than the costs of inefficiencies in the use of resources (respectively 9.1% and 3.1% of the city's value added (VA) in 2002). It is obviously the population that pays the highest price of the environmental degradation, but it is also the main emitter of pollution. Over-pumping and over consumption of water, air pollution and noise due to traffic, congestion, generation of waste are produced by the burdensome way of living of the population (Fig. 11).

In the light of these results, the Greater Irbid should try to aim at improving and protecting households as they are the main actors concerned when causes and consequences are linked. Indeed, they accound for 75% of the total damages and inefficiencies of the Greater Irbid. Thus, they should also be actors of the environmental improvement.

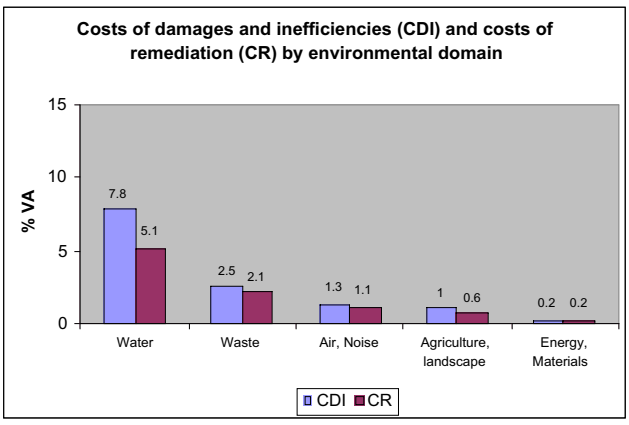


Figure 11 – Costs of Damages and Inefficiencies (CDI) and Costs of Remediation (CR) | Greater Irbid, Jordan

Meso Profile – Jordan, Greater Irbid Urban Community. Ecosys-SBA-SDC. Damascus, June 2005, 2pp.

3.9 Meso-economic profile of an urban community: the Greater Agadir (Morocco)

For the Greater Agadir, the most problematic areas are the use and consumption of water (4.4% of the VA) and the littoral (3.4% of the VA). They are reflected both in the costs of damages and inefficiencies. In total, they constitute 75% of environmental degradation, mainly through threats to natural capital. One other major threat to the natural capital is sewage water rejected either to the natural environmental, to the sea, or to the rivers (oueds).

An urban community is always humming and buzzing with life. Mobility is a major stake of a city. One needs the freedom to get around. However, it provokes air pollution, indoor and outdoor. Again, the air issue is linked to public health and quality of life (2.5% of the VA). The air quality is highly impaired by transport, especially the congestion due to private cars. Moreover, this causes noise, which is often considered as a major drawback of a city.

Remediation costs account for 12.5% of the value added (against 16.2% of VA as damage and inefficiency costs). Benefit/cost ratios are high for Energy and Material, Littoral, and Water.

The main actors concerned when causes and consequences are linked are households, tourism and industry (Fig. 12).

» Profil Méso – Maroc, Communauté urbaine du Grand Agadir. Ecosys-SBA-DDC. Damas, juin 2005, 2pp.

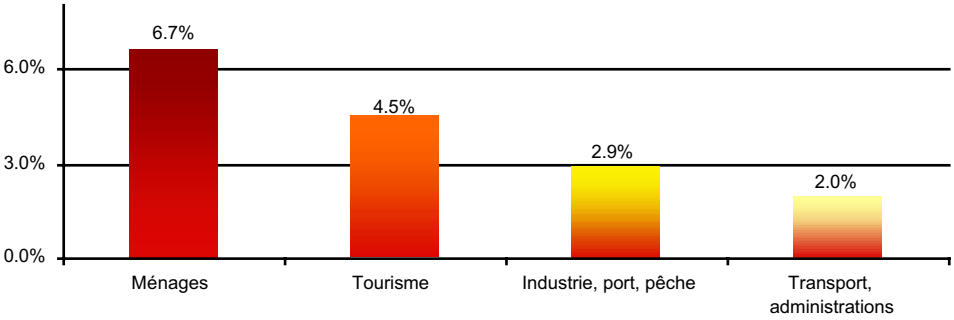


Figure 12 – Main actors concerned when causes and consequences are liked (% VA) Greater Agadir, Morocco

4

Principal Concerns and Future Needs of the Participants

The second day of the workshop was mainly devoted to the second objective: consolidation of the understanding of the meso-economic framework by the participants in order to better apprehend their concerns and future needs. The session was thus organized according to differ-ent parallel thematic group works managed by Karim Zein (SBA, Lausanne).

The transition between the formal presentation of day one and the group works of day two was facilitated by the lecture of Prof. Pillet that aimed at comparing the results across the whole meso-economic programme (across sectors, countries and time). It also aimed at tracking meso and macro-economic environmental performance over time. This lecture also insisted on the numerous difficulties that one may face when comparing the results. In short we have, on the one hand, damage costs at cement sectors level which are expressed in percents of the VA of each sector, and, on the other hand, damage costs at the level of countries that are expressed in percents of GDP. Yet, individual countries differ, individual cement sectors also differ, …(see Fig. 13).

Then, how do we cross-compare diverse cement sectors within a variety of countries?

This goes through sharing common definitions (VA, GDP), comparing DCs between different cements sectors in different countries using a same VA to Turnover ratio for all countries (e.g., 45%), comparing meso-economic performances using common VA/GDP ratios and, moreover, cross-comparing meso environment-economic performances and macro environment-economic performances; i.e. meso DCs in percents of macro DCs together.

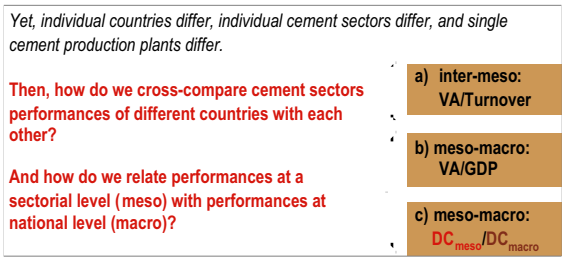


Figure 13 – Setting cross-comparisons of interest

Indeed, the ultimate question is: do cement and other economic sectors contribute more to national GDPs or DCs? Fig. 7 brings together contributions to GDPs and to DCs for economic sectors in different countries.

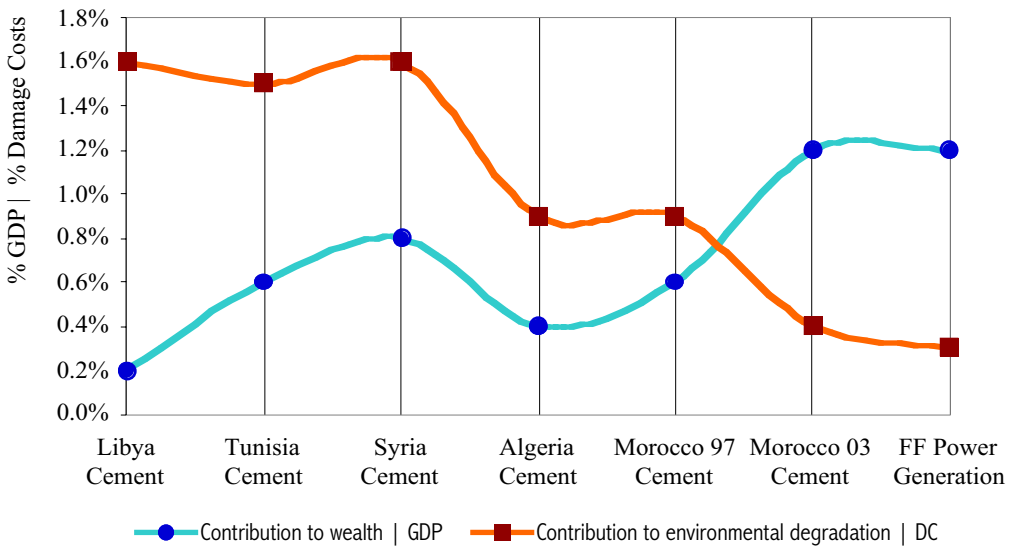


Figure 14 – Cross-comparing contributions of economic sectors to both economic wealth (GDPs) and National environmental degradation (DCs)

Then, the group works addressed four different issues. Participants of Groups 1-3 were asked to solve a problem composed of a mix of technical as well as conceptual notions (presented during the workshop). One group focused on the cement sector, a second on the urban communities while a third aimed at establishing action plans based on the meso-economic profiles. On this latter subject, various experiences were exposed and propositions were made. This group also addressed the problematic of the timing of the action plan.

Group 4 collected and formulated the future needs toward the meso-economic programme. The discussion clearly showed the desire and need of the participants for building their knowledge and capabilities in environmental economics. In this respect, it seems that more work has to be done in transmitting and explaining the information so that environment-economic appraisals may be built directly and regularly by the persons concerned within concerned institutions.

The Workshop ended by a plenary session where the results of each group were discussed. Finally, the potential next steps and new perspectives for Meso-economic Analyses have been explored.

5

Meso Perspectives

The perspectives for the development of the meso-economic analyses were centered around four themes: data, capacity building, partnership and institutional framework, implementation and resource management.

5.1 Data

The quality of the collected data is capital. There is a need for having reliable data at the local level to maintain and improve the accuracy of the meso-economic analyses. In that respect, here are the recommendations:

- set an adequate system for the collection and handling of the data;
- create a database of all the meso-economic results and benchmarks.

5.2 Capacity building

There is an urgent need to share the techniques and calculation methodology of meso-economic analyses for different audiences. The political audience needs to be sensitised and familiarised to the ins and outs of the project. The technical audience needs training to be able to disseminate the concept and replicate the studies. In that respect, here are the recommendations:

- organise special sessions for decision-makers;
- run focused training programmes for technical resource people;
- follow up application of methodology;
- give advice and recommendations for improvement;
- develop meso profiles for communication.

The support of SDC was highly acknowledged and deemed necessary until the capacities for replication are sufficiently developed at national and local level. Maybe, local or Arab funds will be called for if necessary.

5.3 Partnership and institutional framework

For the success of the dissemination and replication of meso-economic methodology, partnerships of different kinds with different actors are essential. In that respect, here are the recommendations:

- partnership among municipalities within one country and among countries (Inter and Intra);
- establish focal points within ministries;
- establish modalities of work and partnership between ministries, universities and research institutions;
- establish long term team of experts.

Thus, the creation of various networks is recommended.

5.4 Implementation and resources management

In the research of new activities for meso-economic studies, improvement in environmental domains and performance were highlighted. In that respect, here are the suggestions:

- Oil and water are not sustainable resources; it is necessary to look for alternative resources and minimise inefficiencies;
- Use of alternative energies should be investigated to reduce pressure on natural resources;
- The awareness sessions should give solutions to sectors and municipalities of potential ways to improve performance like cleaner production and hazardous waste management;
- Waste or raw materials exchange to facilitate and improve trade among industries.

Conclusions

The regional symposium on meso-economic appraisal of environmental costs and benefits ended on a positive and encouraging note for the building and strengthening of Arab cooperation. The concept of meso-economic methodology has spread around the Mediterranean.

It is now important to gather knowledge and experiences in a more structured way in the form of a regional inter-Arab network. This will enhance the sharing of information and the local appropriation of the meso-econmic programme. The ideal outcome for the middle term is to set groups of Arab experts to:

- constitute a regional team of experts;
- follow up with methodological aspects;
- follow up with applications;
- continue with the partnership with Ecosys-SBA in the Arab countries, with supports from AUCBM and SDC as well as from other institutions, to be found.

Delegate List of the Regional Symposium

Name	Family Name	Organisation	Country
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Meso-economic appraisal of environmental costs and benefits

Regional Symposium Damascus 5–7 June 2005

Evaluation méso-économique des coûts et bénéfices environnementaux

Summary | Compte rendu

Swiss Agency for Development and Cooperation

SDC plays a key role in sustainable developement and cooperation in the Mediterranean basin, prevention of environmental damages and transfer of environmental knowledge and good practices. SDC is the main support of the meso-economic studies.

Arab Union for Cement and Building Materials

Inter-Arab international organization, affiliated to the General Secretariat of the Arab League and the Council of Arab Economic Unity.
Aims at developping and supporting technical, industrial and commercial relations, and co-ordinating industrial activities.

Ecosys® Inc.

Ecosys® applies Environmental Economics by appraising environmental damage, resource inefficiency, and remediation costs in monetary units; i.e., by assessing the severity and magnitude of environmental degradation, and deriving rationale for priority setting for environment-economic action.
Founded 1988.

Sustainable Business Associates

SBA is an international NGO working to engage industrialists in eco-efficiency and cleaner production with the aim of minimising environmental impact and improving business productivity. SBA is active since 10 years in the Arab countries in the framework of the Swiss and European cooperation in Mediterranean.

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