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POLICY ELEMENTS FOR THE TRANSFER OF ENVIRONMENTAL TECHNOLOGY FOR THE IMPLEMENTATION OF SAP/NAPS

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One of the pillars of the implementation of the NAPs is integrated pollution control with emphasis on cleaner production concept and tools. While its technical aspects have already been tackled by MED POL and CP/RAC in the framework of GEF project, the issue of the acquisition by the national SAP stakeholders of the necessary technology to perform pollution reduction is still considered critical. While pollution reduction technology is controlled, in general, by the private sector, stakeholders in developing countries don't have, in most cases, the adequate human, institutional, legal and financial resources to acquire such technology. There is therefore a need to develop a policy and a mechanism to ensure the **transfer of technology** and know how and consequently to facilitate the implementation of the NAPs among Mediterranean countries.

During the 2004-2005 biennium, the MED POL Secretariat has worked on the above issue and has prepared the present document which could work as a guide for future initiatives in the region. The document is brought to the attention of the National Coordinators for review and possible follow-up.

1. Introduction

Under the provisions of the Strategic Action Programme (SAP) to address Land Based Sources (LBS) of pollution, the need to prepare a policy document was recognized in order to identify policy elements, mechanisms and instruments, to facilitate the transfer of adequate environmental technologies to the industrial sectors in developing Mediterranean countries. As a result, the present document was prepared by the Secretariat with the assistance of a regional expert.

This document has takes into account the Integrated Pollution Control (IPC) principle, emphasizing on cleaner production (CP) concept and tools, as well as the potential lack of proper human and financial means. It has been conceived to facilitate the implementation of National Action Plans (NAPs) and Sectoral Plans (SPs) under preparation.

Due to the complexity of the matter, this document is considered as a support tool in the decision-making processes for the effective implementation of SAP, through NAPs and SPs. It attempts to draw a global pathway for implementation, but it does not constitute a detailed development of the actions that should be done. The document deals with Industries as a synonym for economic activities, and the prospected companies are not only constrained to the industrial sector.

According to the principles of the Strategic Action Programme (SAP) in order to abate the pollution generated by economic activities, Cleaner Production (CP) is considered to be one of the key priorities.

In this sense, the National Action Plans and Sectoral Plans under SAP also give the highest relevance to the prevention of the industrial pollution through CP. Cleaner Production summarizes the concept of "pollution prevention at source" as the result of the principle of "prevent better than treat". CP is a strategy, which continuous application to allow an effective, permanent and economically feasible industrial pollution reduction. Several MAP units (and among them MEDPOL and CP/RAC) have contributed to the diffusion of CP methodologies and tools throughout the Region by means of the publication of reports, guidelines, case studies, technological databases and other instruments.

In spite of such effort, cleaner production approach has not been widely adopted by the economic actors of the Region, due to the severe implementation barriers encountered. These barriers will be discussed in later sections. This circumstance not only affects the

preparation of NAPs and SPs and their implementation, but it also hinders the fulfilment of the environmental targets and compromises assumed by the countries. The promotion of Cleaner Production methodologies and tools requires the coincidence of several critical factors:

1) The political will of the concerned Administrations, which should result in the development and implementation of related policies. This specifically refers to the legal framework required and its regulatory development (permits, declarations, reporting, inspectorate, compliance & enforcement, etc.) as well as the competencies co-ordination among the different levels (state, province, municipality, river basin, etc.) and the establishment of the priorities, objectives and required strategies.

   This necessary requirement has been already emphasized in previous reports and it has to be take seriously taken into consideration by the different ministries involved, in addition to the environmental authorities (i.e. industry, development, economy, etc.). This harmonization would certainly require in most of cases a consensus among the different authorities involved.

2) A clear definition of what is understood and recognized as Cleaner Production and the consequences of pollution reduction at source (CP). This means avoiding the implementation of technologies that –under an assumption of be "cleaner"- should transfer pollution from one media to another, or the ones that are obsolete or not really appropriated to the conditions, needs and capabilities of the industries.

3) The existence of information about pollution generation (i.e. substances, sectors, company-size, quantities, etc.) The existing monitoring capacity will allow the identification of the obtained results, as well as the mistakes made and the tools needed to enhance the whole process of reducing pollution.

   Highly related with monitoring capacities can be considered the need of technical control tools (laboratories, control stations, etc.) and their related capacities.

4) Capacity to identify opportunities and to analyse technical and economic feasibilities. Through methodologies, guidelines, information, assessment, technical capacity building, databases, etc.

5) The existence of suitable legal, technical and economic instruments to motivate industries, balancing preventive and punitive, suasive and dissuasive actions.

6) The existence of technical and financial mechanisms to grant access to the right knowledge and its efficient use. This implies:
   a) Technology transfer
   b) Capacity building
   c) Research & Development

7) The promotion of a standard of environmental awareness related to CP. Through information tools, voluntary agreements, etc.,

8) The implementation of an integrated approach that avoids the pollution transfer amongst various compartments. Through a combination of different tools related to permit systems, integrated pollution control, identification of adequate technologies and techniques, capacity building in both, administration and industries, etc.

Here again a question mark appears when thinking on global recommendations, as the diverse competencies structure among and throughout the MAP countries and the inexistence of regional mandatory framework rules (beyond the compromises assumed through the Protocols), weakens the feasibility of a true implementation of the recommendations appearing in a the MAP documents.

All the issues we have put forward are interlinked and some have been deeply treated by various MAP units and programmes[1]. However, there are some other issues that require identification, real impulse and implementation.
Among them, we consider the relation between the integrated pollution control approach and the mechanisms to ease the access to the appropriated technology and know-how.

[1] i.e. through MAP Technical Series #140 & # 150 for inspection systems and compliance & enforcement; CP/RAC sectoral CP guidelines; PAP/RAC on economic instruments, etc.

2. Integrated Pollution Control (IPC)

IPC can be defined as “a procedure whereby all major emissions (substances and the concerned processes) from industry to land, air, and water are considered simultaneously and not in isolation, to avoid situations in which one control measure for one medium adversely affects another”.

In many cases, it applies to complex production processes that are the most potentially contaminating ones.

The main objectives of IPC are:

- To prevent or minimise the release of prescribed substances and to render harmless any such substances which are released
- To consider the various material releases from industrial processes to all media, in the context of the combined effects on the environment as a whole,. This enables a holistic assessment approximation.

It has the following additional aims:

a. to streamline and strengthen the regulatory system, clarifying the roles and responsibilities of regulatory authorities, and the companies they regulate;
b. to provide for a "one stop shop" on pollution control for the most seriously polluting processes;
c. to produce a transparent system that is accessible and easy to understand and clear and simple in operation
d. to ensure that the system will respond flexibly, both to changing pollution abatement technology and to new knowledge on the effects of pollutants;
e. to provide the means to fulfil international obligations relating to environmental protection.

Before an IPC system is established, the releases of polluting substances from industry are – in most cases- regulated separately according to the recipient environmental compartment. The establishment of an IPC system is directly related to the way authorisations and permits are granted and is part of the global enforcement & compliance system.

The system is based on a single permit and sectors processes and substances subjected have to be previously identified.

The permit contains the conditions that the industry has to comply with (expressed in technological terms – i.e. a requirement to employ specified hardware- or described in terms of emission standards).

The IPC system, which gives priority to cleaner production options (understood as feasible pollution prevention at source) in the permit/authorisation stage, drives directly to the concept of integrated pollution prevention and control.

The system is based on the efficient use of water, energy and materials, the feasible avoidance of hazardous materials or wastes, waste minimisation and the limitation of emissions to water and the atmosphere. Other environmental vectors, as noise or vibrations are also considered.

The implementation of IPC system requires a large effort from the involved authorities, in terms of time and resources. In addition, there is a need to solve several kinds of problems

as the distribution of competencies, regulatory or legal adjustments, and preparation of the adequate personnel to bring about the system. However, the main one is the determination – on a basis of equity and effectiveness- of the limits and conditions for each of the sectors/industries or substances regulated.

The experiences of the IPC implementation examples show how difficult it is to implement the system and the amount and variety of elements that have to be combined to make it successful.
The IPC system is valid for large industrial sectors (or key sources of contamination) but we cannot forget the reality of the existence of a large array of Small and Medium Enterprises (SME). For the majority of the industrial network in the Mediterranean Region, lighter alternative system should be devised, in coherence with the principles of IPC.

The development of an IPC system facilitates the control of the most relevant sources of contamination The consequence is the requirement for the implementation of technologies and procedures to achieve the prescribed limits.

The implementation of an IPC system needs time and this has to be done in a stepwise fashion by using complementary tools that take into consideration the different implementation speeds for new and already existing industries.

3. Technology transfer. Knowledge transfer.

A restricted number of industrialized countries provide most of the world's technological innovation. Some developing countries are able to adopt these technologies in production and consumption. The remaining part is technologically disconnected, neither innovating nor adopting foreign technologies. In the Mediterranean Region we cover the full spectrum from Innovators to Technology Isolators, through a range of diverse Technology Adaptors.

Technology Transfer is at the intersection between business, science, engineering, law and government.

It includes a range of formal and informal collaborations between technology developers/owners and technology seekers. Some of the mechanisms that make technology transfer possible include joint research, cooperative agreements, licensing, technical meetings, trade shows, and information dissemination.

Broadly speaking, technologies are classified depending on their degree of innovation in three main categories: established, innovative and emerging. Each one[2] offers different levels of risk in the process of adoption, adaptation and implementation. For the purpose of this work we will chiefly concentrate on established technologies

It is important to underline that the term "technology" not only refers to technical devices and equipment (the so-called "hard" technology), but also to the notion of "soft" technology, that is, technological information or know-how going far away from the simple instructions for the use of machinery. Due to that, some authors prefer the use of the word "techniques".

[2] **An Emerging Technology** is an innovative technology that currently is undergoing bench-scale testing, in which a small version of the technology is tested in a laboratory. An **Innovative Technology** is a technology that has been field-tested and applied at a site, but lacks a long history of full-scale use. Information about its cost and how well it works may be insufficient to support prediction of its performance under a wide variety of operating conditions. An **Established Technology** is a technology for which cost and performance information is readily available. Only after a technology has been used at many different sites and the results fully documented is that technology considered established.

This knowledge is brought about both through research and innovation, that is, through moving ideas from invention to new products, processes and services in practical use, and through a complex and often quite costly process involving learning from others.

It has to be underlined that not all the cleaner techniques are under patent protection. A large portion are free available and then the accent must be placed on the capability of knowing their existence and increasing the capacity for their proper use. The role of governments and institutions becomes crucial, as it is the proactive participation of the several stakeholders involved, from industrial sectors and associations to NGO's or the scientific world.

It is broadly accepted that technology transfer process takes time and requires several tools to ensure its effectiveness. Ultimately, users of a new technology must do something different from what they have done in the past. They must change their behaviour patterns. A consequence of this is that it cannot be expected that the recipients will respond to new technology quickly.. Also, it is human nature to resist ideas, especially those originating from outside of the organization. A clear consequence is that technology transfer requires time, patience and opportunities to experiment (become familiar with) a new technology. It also requires a clear leadership from the company management in order to be implemented and overcome the cultural resistances within the organisations.

Nevertheless, it is stated that the use of the diverse tools and actions creating the adequate environment for the introduction, implementation and acceptance of the preventive approach to the industrial pollution subjects, creates a dynamics that grows and accelerates the achievement of positive results.

Several actions can be done (and are explained below through the document and its conclusions) to promote the incorporation of new and cleaner technologies and techniques into the industrial culture.

Some of those actions are legal or regulatory, others focus on the spreading of the opportunities arising from a more proactive relation between companies and the environment. In addition, a group of actions or tools can be done to allow industries to identify the trends and their related needs (investments, organisation, training, etc.) or the financial tools that make available the implementation of those technologies, particularly in the case of sme's.

But the first message that has to be transmitted to the economic sectors is that on those cleaner approaches (cleaner procedures, cleaner processes, cleaner products) is where the sustainability (economic, social, environmental) of the companies, is based on.

Through those diverse actions –promoted or supported by governments together with international institutions- the adaptation to the new scenario can be faster, and more effective, than just relaying on market changes.

Technology Transfer Activities include:

- Technology assessment
- The processing and evaluation of technology contents;
- Patent application;
- Technology marketing;
- Licensing;
- Protecting the intellectual property arising from research activity; and assisting in creating new businesses and promoting the success of existing firms.
- Capacity building activities

The European Commission[3] states that the developing countries potentially receiving the technological transfer have an active role to play. Key conditions for a proper reception are highlighted to be good governance; stable, transparent and predictable regulatory frameworks; and the protection and enforcement of intellectual property rights.

According with the report, the absorption capacity of the beneficiary country is also a key element. This is limited by the quality of the education system, the existing infrastructures and the characteristics of the production system or the effectiveness of the banking system.
Developing countries must also take responsibility for ensuring lasting effects from technology transfer. This should be done by developing the capability of local workers to adapt technologies, upgrade them and eventually to reach a higher grade of technological autonomy.

The paper also suggests that developed countries can also facilitate business partnerships by establishing incentives, financial and non-financial, for national companies to identify potential partners in developing countries.

Because the enthusiastic support of potential local technology recipients or suppliers is a true prerequisite for project success, the importance of identifying all relevant local partners and stakeholders cannot be understated. Among them: technology recipients, technology suppliers, sponsoring agencies, governmental authorizer or financial institutions.

Stakeholders can also be important for a number of other reasons. Often, stakeholders are important simply because their cooperation or specific action is essential during one or more stages of the project.

4. Changing patterns

The implementation of any new scenario that provokes changes on the daily routines (as the achievement of SAP targets will demand) needs from a strategic tactical approach.
It requires that new technologies are accepted, installed, and used in the long term by thousands of enterprises in multiple economic sectors.

Furthermore, practical experience from the implementation of International Protocols indicates that these specific enterprises have to be identified and the proper signals (regulatory or economic) have to be given so that they decide to use the technology. In addition, the cooperative participation of technology suppliers, financiers, host-country governments, regulatory bodies, scientific community and other stakeholders is also required for success.

As an example, we will describe the experience and lessons learned from the implementation of Montreal Protocol, which are resumed here because of the similarities with the situation that we may encounter in the Mediterranean Region in the process of the SAP implementation.

- Address critical stakeholder needs
  Understand what motivates each stakeholder to become part of the programme and remain involved in the programme, giving importance to the adaptation of technologies to local circumstances (including training of local technicians) making the related stakeholder (in our case industries, their management, technicians and workers) really aware of the potential long term advantages.

[3] EU BUSINESS Facilitating technology transfer to developing countries - Commission report

It is also important to remember –in a case where the actions must be carried on several countries- that the simple duplication of a successful project does not ensure the success in the neighbour one, even when talking about similar industrial sectors..

- Reflect strong institutional competencies in recipient country
  The successful transfer of environmental technologies requires recipient countries to have in place the required institutional resources and competencies.
  Traits that affect the success of technology transfer efforts include staff organization, competences, political shrewdness, and willingness and ability to deal with other actors in the public and private sectors.

- Do not go against market forces
  Available evidence indicates that market forces play a key role in technology transfer programs. Companies exporting to developed countries are perfectly aware of the technological and environmental requirements (import regulations and/or customer specifications), not only referred to the delivered product conditions, but also to the environmental conditions of the manufacturing stage.

  Economic considerations also tend to drive the long-term sustainability of technology transfer projects. Only in situations where long-run cost savings (including maintenance and updating costs) persist can enterprises be expected to maintain the technology over time.

- Channel the required information in an effective fashion
  In many developing countries, governments are unable or unwilling to put policies in place to make current practices significantly more expensive or the installation of the new technology significantly less costly (subsidized prices for water, energy or specific raw materials are an example).

  On the other hand, enterprises often prefer to continue using known technologies and are reluctant to replace their current processes. In this context, the competing claims made in the marketplace by both current suppliers and vendors of alternative technologies can confuse companies.

  Among the information that companies must receive we may state:

  - Clear near-term and long-term price signals for current and new technologies (and the concerned inputs)
  - Data on the availability and technical and financial details of alternatives
  - Information about the availability of potential project financing.

- Recognize that technology transfer takes time
  Agencies and individuals responsible for complying with the Montreal Protocol face a complex challenge. The same is true of many efforts to implement new environmental technologies in developing countries. With limited resources, these actors must foster difficult technological transformations in diverse economic sectors. To do so successfully, they must overcome an array of technical, institutional, economic, and political constraints at the national and international levels.

  Furthermore, they must do so amidst many additional complications. This may include, for example, priority given to other critical social policies, varying levels of regulatory support, limited institutional capacity, sparse technical and economic data, or lack of local experts familiar with the latest developments in new technology.

Accordingly, an impatient emphasis on quick results during project planning may, at best, lead to disappointing results and, at worst, may lead to a failure to build strong relationships with and among key stakeholders that are a prerequisite to project success.

- Take a flexible and opportunistic approach during implementation
  The difference between failure and success lays most of cases on the ability to adapt the implementation of the managerial changes that are involved in technological changes, to the shifting circumstances both, to accelerate the process when the opportunity appears or to reduce speed if there are reliable signals of social or economic realistic problems.

  In order to respond to this challenge there is a need for a reliable information system and a good preparation of the implementation team.

- Resort to a complete and broad set of implementation tools.

  This is done by combining legal and regulatory tools with the development of capacities and skills among the civil servants. In addition, there have to be measures to provide the technical means (laboratories, monitoring instruments, information tools, etc.) to facilitate the follow-up. It is also very important to develop information campaigns and technical advice to companies and other stakeholders. It is also critical to involve scientific and financial community and take real measures to improve capacity building by creating complementary information tools.

5. Barriers

Several barriers (arising at each stage of the process and varying according to each specific national/sectoral context) restrict or constrain success on environmental technologies implementation and transfer. They arise not only from the transfer process and negotiations or due to financial reasons. There are barriers directly related to the cultural-change process that is needed for all the actors (governments, companies, finance institutions, stakeholders, etc.)
Governments can promote technology transfer by reducing the barriers that are associated with each of these elements of an enabling environment.
Among those multiple barriers, we can mention[4]:

- Lack of internalisation of environmental and social costs;
- Poor macroeconomic conditions, which could include underdeveloped financial sector, high import duties, high or uncertain inflation or interest rates, uncertain stability of tax and tariff policies, investment risk;
- Low private sector involvement because of lack of access to capital, in particular inadequate financial strength of smaller firms;
- Low, often subsidised conventional energy prices resulting in negative incentives to adopt energy saving measures and renewable energy technologies;
- Lack of markets for environmental sound technologies because of lack of confidence in economic, commercial or technical viability, lack of manufacturers, lack of consumer awareness and acceptance of such technologies;
- Lack of supporting legal institutions and frameworks, including codes and standards for the evaluation and implementation of environmentally sound technologies;
- Difficulties to identify and make available technologies that are in the public domain;

[4] Selected from: Methodological and Technological Issues in Technology Transfer : A Special Report of the Intergovernmental Panel on Climate Change. Other authors practically coincide on the list.

- Insufficient human and institutional capabilities;
- Inadequate vision about and understanding of local needs and demands;
- Inability to assess, select, import, develop and adapt appropriate technologies;
- Lack of data, information, knowledge and awareness, especially on "emerging" technologies;
- Lack of science, engineering and technical knowledge available to private industry;
- Insufficient local R&D and inadequate science and educational infrastructure disconnected from industrial needs;
- Inadequate resources for project implementation;
- High transaction costs;
- Lack of access to relevant and credible information on potential partners

Each of the precedent barriers could merit an explanatory paragraph about their causes and the way to challenge them.
There is no pre-set answer to enhance environmental technology transfer and implementation. The identification, analysis and prioritisation of barriers to be reduced should be country based. It is important to tailor action to the specific barriers, interests and influences of different stakeholders in order to develop effective policy tools.
As many as the existing barriers could be identified and reduced, more effective will be the implementation of adequate technologies and, as a consequence, the reduction of the pollution in a sustainable and efficient way.

Despite the country based approach, the role of institutions like MEDPOL becomes crucial as it can help in a definitive way to:

- help to identify the barriers present on each case
- provide advice for the structural changes needed to reduce/eliminate such barriers
- identify experts in specific areas
- provide technical instruments to be used by national authorities
- generate capacity building instruments
- integrate and distribute relevant information among the countries
- create efficient networks among the concerned stakeholders
- convoke potential partners for financing projects

6. Policy elements

There is a permanent interaction between global, regional, national, sectoral or even company-based policies, aims, capacities or possibilities.
The following table exhibits an example of how a global principle (the environment-development integration) can be spitted into general policies (“modernization” and “competitiveness”, following the example) or particular ones (creating the conditions in industries or the capacities in the environmental authorities) that result in specific tools or mechanisms able to give the correct answers.
The combination of all those elements has to allow reaching the objectives issuing from the initial principle.

PRINCIPLE →

The **integration of development and environment** through:

POLICIES; TOOLS & MECHANISMS →

- the **modernization** of industrial sectors and the enhancement of their **competitiveness**, achieving:
  - the **better use of natural resources and energy**
  - the **improvement** of public and private institutions **efficiency:**
    - **creating the environment** for companies to
      - **identify the benefits of a proactive approach**
      - **adopt** cleaner production and eco-efficient technologies and techniques, through:
  - making available the **knowledge and feasibility** of the appropriate technologies and techniques
  - facilitating the **access** to those techniques, their **adaptation** to local conditions and the improvement of the **capacities** needed to use them in an efficient manner.
    - **creating/modifying the political and administrative framework conditions,** to:
      - achieve an accurate, comprehensive and integrated enforcement mechanisms
      - promote the implementation among industries, of policies, tools and mechanisms like:
        - Utilities saving programs
        - Cleaner production, Industrial ecology, etc.
        - De-materialization, de-carbonization, etc
      - reinforce the administration capacities
      - improve local r&d
      - promote the use of the information technologies
      - promote de bi-directional technologies transfer
    - **developing mechanisms** (financial, economic, organizational) which combination can ease the achievement of the precedent objectives, policies, and tools implementation

OBJECTIVES → Contributing, all together and among others, to:

- the consecution of an **effective protection** of the environment
- the sustainable and sustained **development** of the society
- the **quality of life** improvement
- the building of solid **expectations** for future generations
- the fulfilment of international **commitments**

The case of **SME** has a particular relevance. Not only the percentage of SME in the countries of the Region asks from a particular attention, but their characteristics make this group specially sensible and weak in a scenario that introduces new rules to effectively abate industrial pollution.

Most of the measures and tools already mentioned are easier to implement in big companies, as also it is the control from authorities. SME need flexible tools that, without lessen rigour, allow a flexible accommodation to mew requirements.

To that effect complementary conditions are needed for, among other:

- facilitating the knowledge of feasible alternatives to current processes and the instruments that industries can use to improve efficiency
    - SME are more fragile to inappropriate technologies
- facilitating the access to information or promoting information networks (via internet)
- encouraging SMEs to benefit from local training and increase the managerial expertise incorporating environment as a
- create local networks for applied r&d in connection with local universities and scientific institutions
- introduce specific financial and other incentives to encourage enterprises to invest and/or to receive external capital for project related with ecoefficiency.
    - helping in the portfolio preparation
- enhance incentives for partnership and access of sources of advanced technologies and knowledge

The role and actions of the different technical groups described above gains importance and strategic weight when referring to SME.

7. Elements of Transfer mechanisms

Once enterprises have adopted the low-cost/no-cost technological options, they will not be able to go much further unless they acquire new knowledge or undertake research and develop environmentally friendly and sustainable cleaner technologies and/or they transfer and implement such technologies.

Transfer mechanisms should vary direct investment, licensing, joint ventures, government assistance, R&D co-operation, etc.

About the effects (positive or negative) of governmental participation in technology transfer negotiations there are examples on both directions but when the motivation of the technology acquisition is fulfilling new regulations or when the recipients are SME's, government participation appears as a positive factor.

Similar comments can be done when considering the appropriateness of the technology. In this case the existence of technical independent bodies that could evaluate the technology will be extremely interesting, in particular when talking about SME's recipients.

7.1 North-South

Article 66.2 of the TRIPS Agreement (Trade-Related Aspects of Intellectual Property Rights), for example, stipulates that: "**developed country Members shall provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to least developed country Members in order to enable them to create a sound and viable technological base**".

It is not the case of this paper –but it has not to be forgotten in detailed future studies- of analyzing all the different considerations included in the technology transfer from developed countries to developing ones.

Among them, all the situations related to the property rights (patents) or the needed capacities development in the recipient countries in order to adopt and develop the acquired/transferred technologies.

7.2 South-South

Is in the south-south (developing-developing) case when the existence of tools linking the knowledge appear as relevant.

The role of a regional institution (as MAP/MEDPOL is) can create the communication channels to make available to the other countries the knowledge created in the same area that, consequently, fulfils better the particular and common requirements (geographical, structural, entrepreneurial, social, etc.)

The creation of a regional technical unit (combining expertise, information technologies, databases, etc.) can be an effective clearing mechanism generating the relationship and promoting the so many times desired “Mediterranean bats”.