



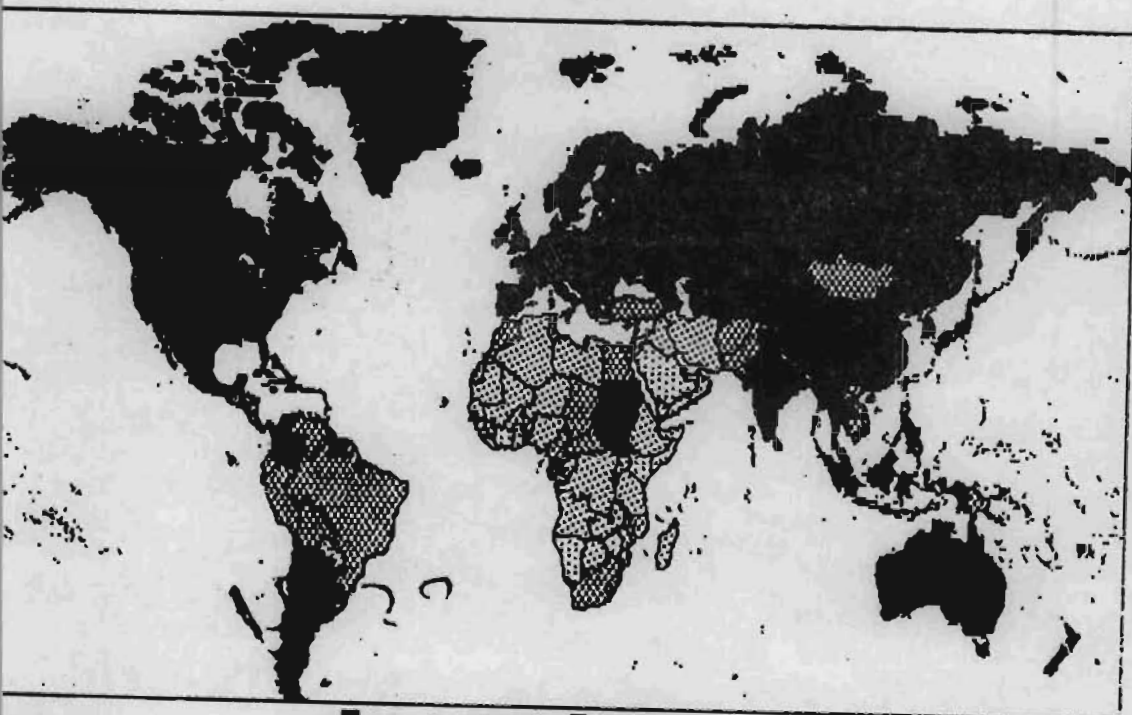
دار المنظومة
DAR ALMANDUMAH
الرواد في قواعد المعلومات العربية

Cooperation in science and technology : perspectives for the western mediterranean	:العنوان
المجلة المغربية للاقتصاد والقانون المقارن	:المصدر
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Carte 14

VITESSE DE DOUBLEMENT DE LA POPULATION (en années)

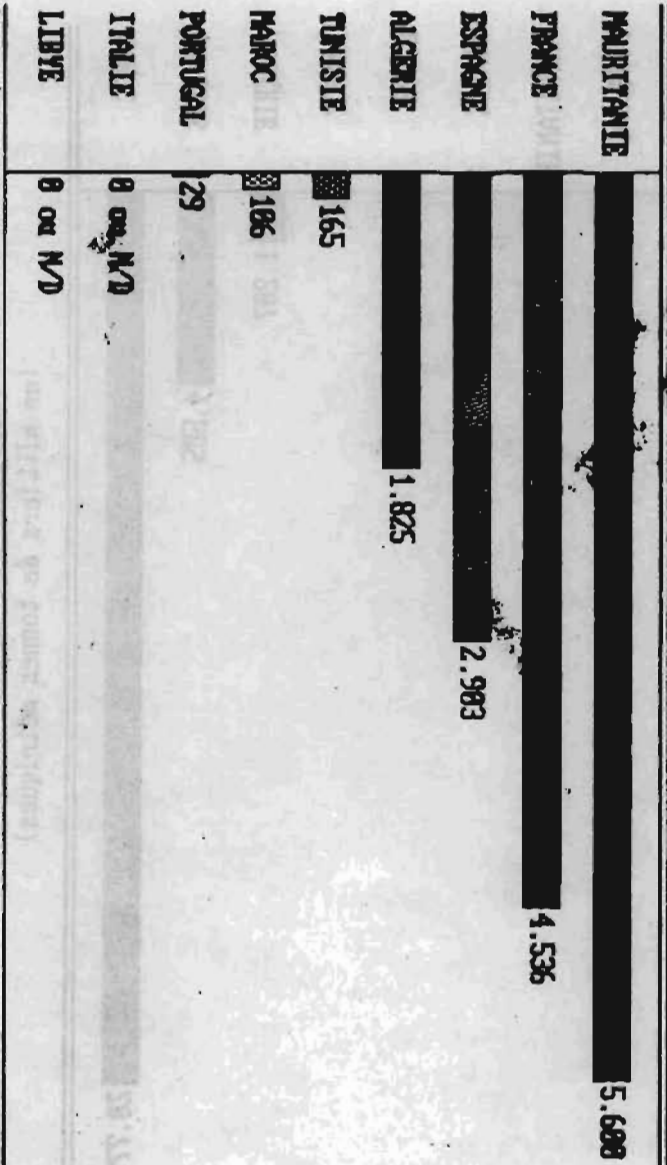


PRODUCTION DE PHOSPHATE (1985)
(en milliers de tonnes métriques)

MAROC		20.779
TUNISIE		4.585
ALGERIE		1.287
FRANCE	13	
LIBYE	0 ou N/D	
ITALIE	0 ou N/D	
MAURITANIE	0 ou N/D	
PORTUGAL	0 ou N/D	
ESPAGNE	0 ou N/D	

Carte 12

PRODUCTION DE MINERAL DE FER (1985)
(en milliers de tonnes métriques)



Carte 10

Carte 11

RECETTES TOURISTIQUES (1986)
(en millions de \$US)










ESPAGNE	12.858
ITALIE	9.855
FRANCE	9.784
PORTUGAL	1.574
MAROC	888
TUNISIE	488
ALGERIE	137
MAURITANIE	8
LIBYE	4

ENTREES DE TOURISTES (1986)
(en milliers)

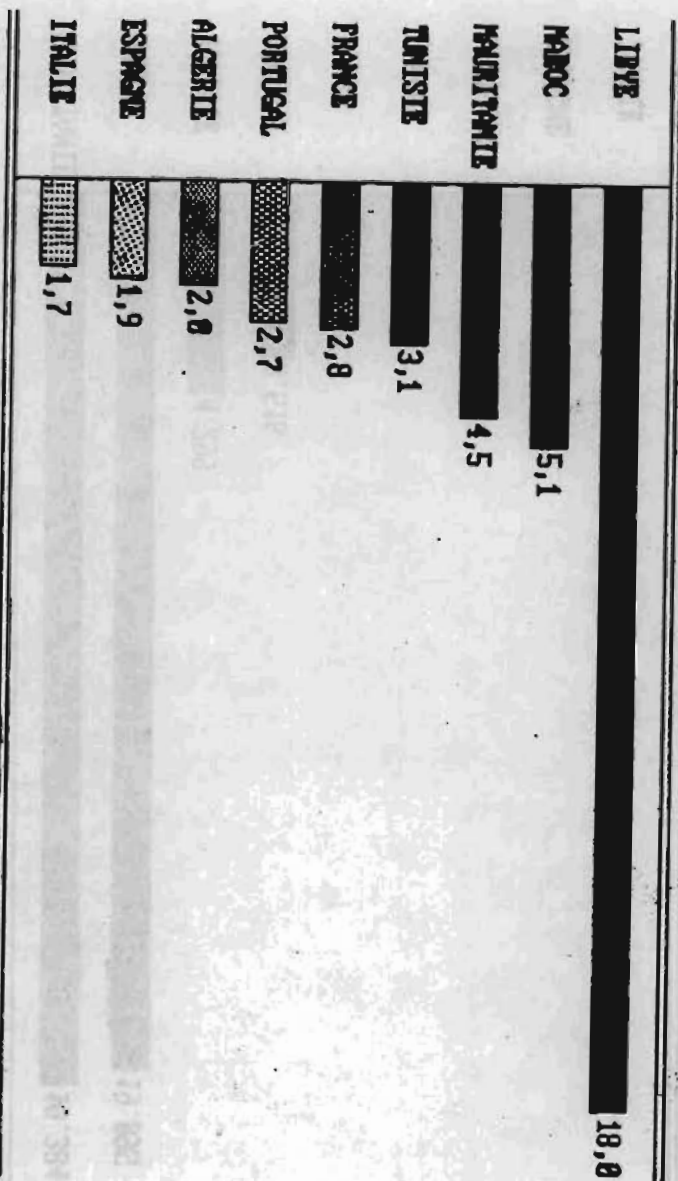
ITALIE	53.315
ESPAGNE	47.389
FRANCE	36.888
PORTUGAL	13.857
MAROC	2.186
TUNISIE	1.542
ALGERIE	596
LIBYE	188
MAURITANIE	0 ou N/D

Carte 9

POPULATION PAR MEDICIN

MAURITANIE		19.384
MAROC		19.095
TUNISIE		4.299
ALGERIE		3.516
LIBYE		759
FRANCE		494
PORTUGAL		472
ESPAGNE		374
ITALIE		349

PART DU PNB POUR LA DEFENSE
(en pourcentage)



Carte 8

PRODUCTION D'ELECTRICITE (1986)
 (en milliers de tonnes métriques d'équivalent charbon)

FRANCE		42.138
ITALIE		23.214
ESPAGNE		15.688
PORTUGAL		2.484
ALGERIE	■	1.566
LIBYE	■	1.186
MAROC	■	879
TUNISIE	■	516
MAURITANIE	0 ou N/D	

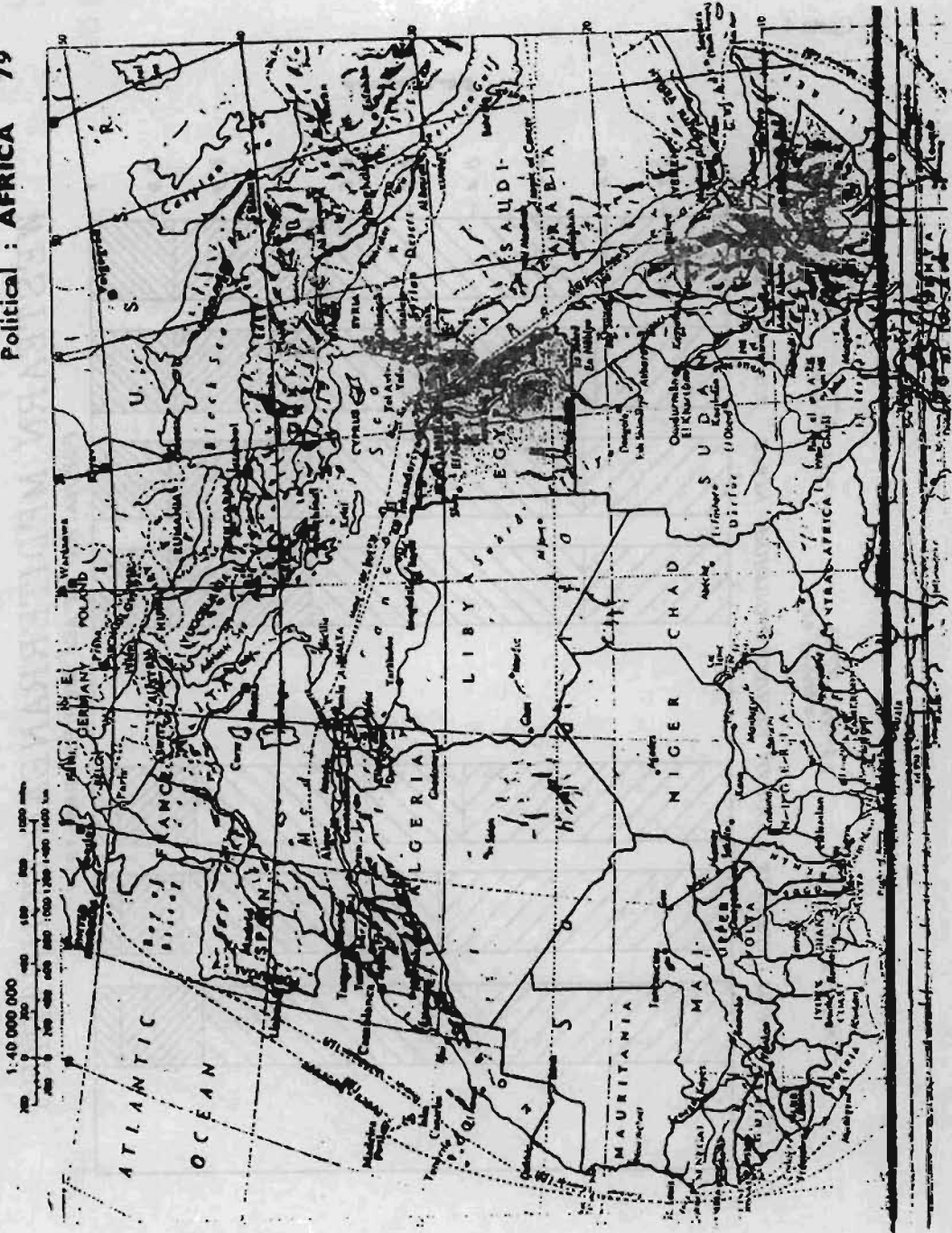
Carte 7

PRODUCTION DE PETROLE BRUT (1986)
(en milliers de tonnes métriques d'équivalent charbon)

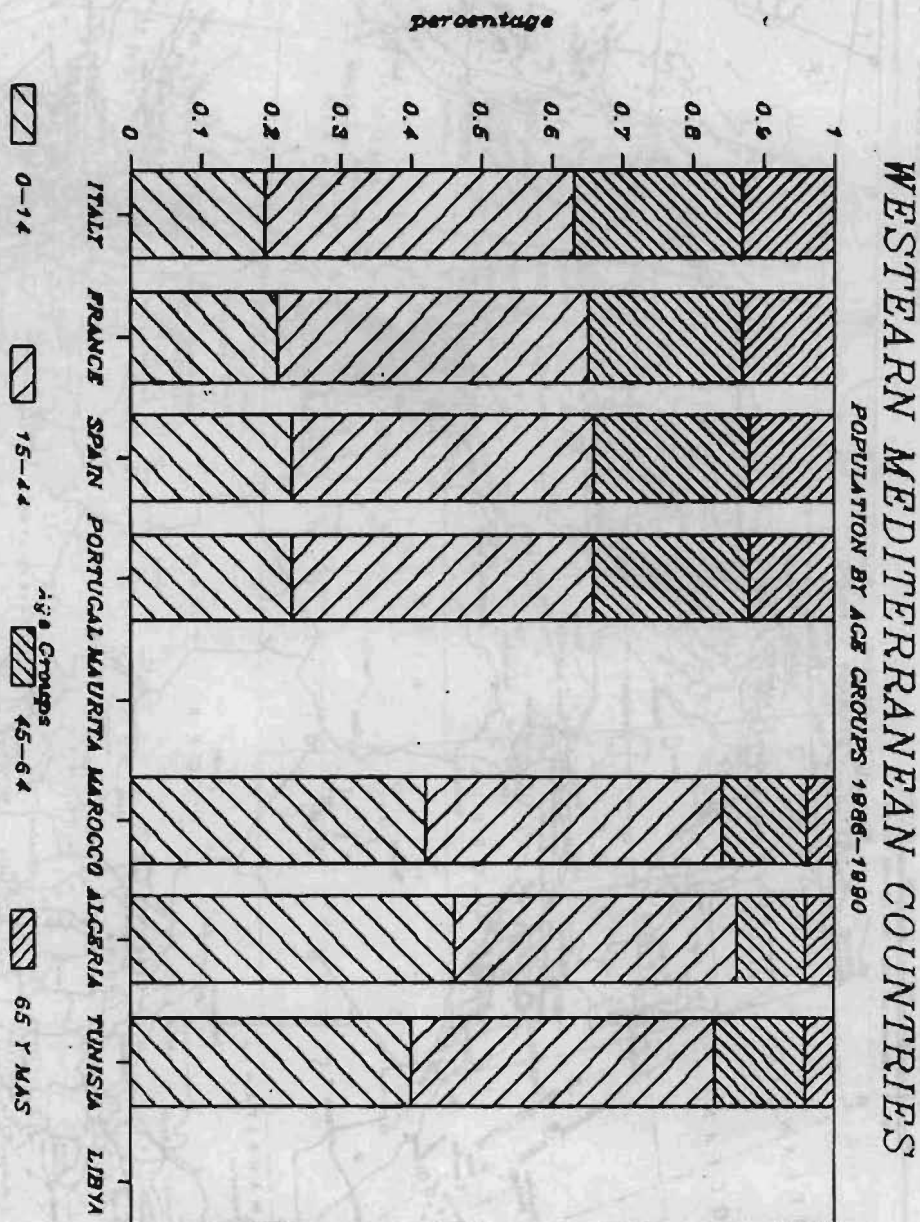
LIBYE	71.825
ALGERIE	39.875
TUNISIE	7.497
FRANCE	4.211
ITALIE	3.612
ESPAGNE	2.658
MAROC	94
PORTUGAL	0 ou N/D
MAURITANIE	0 ou N/D

Carte 5

Political : AFRICA 79

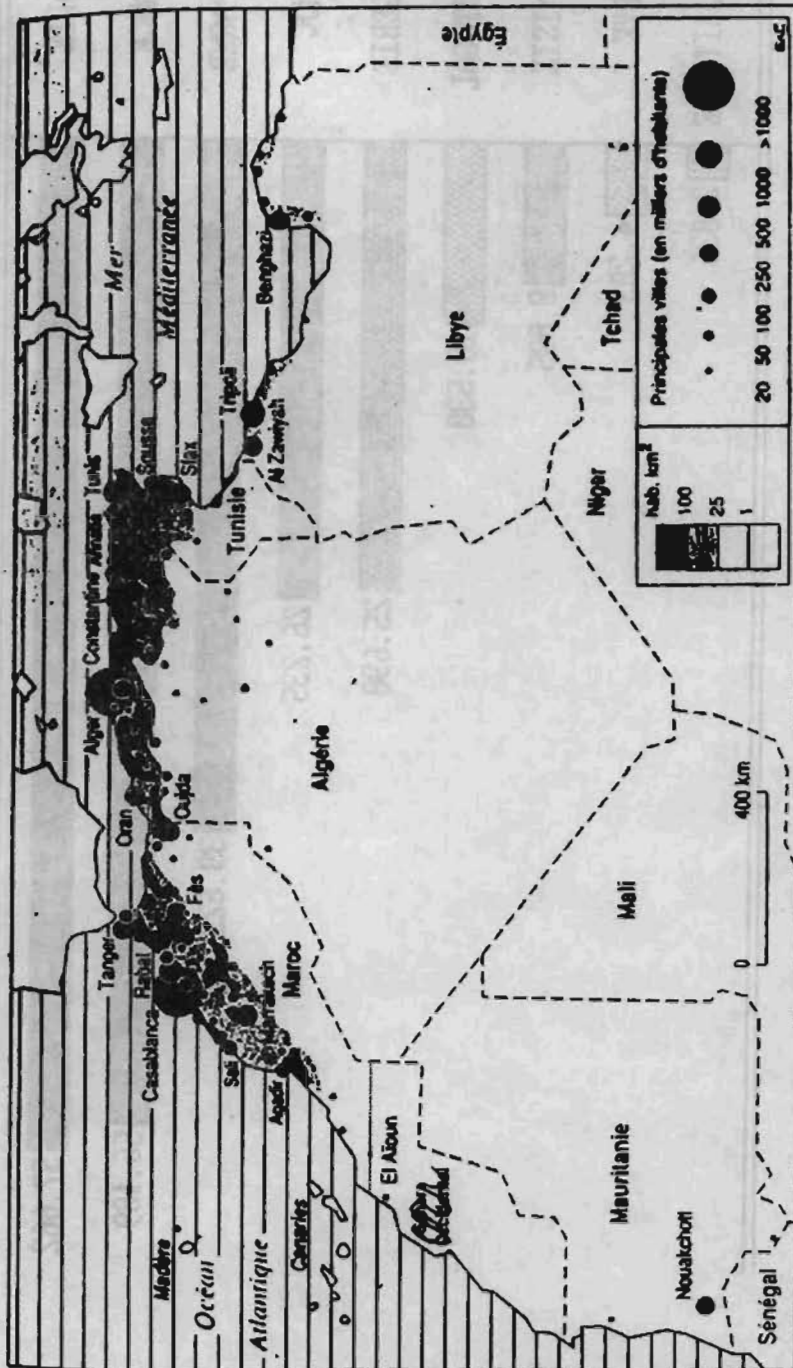


Carte 4

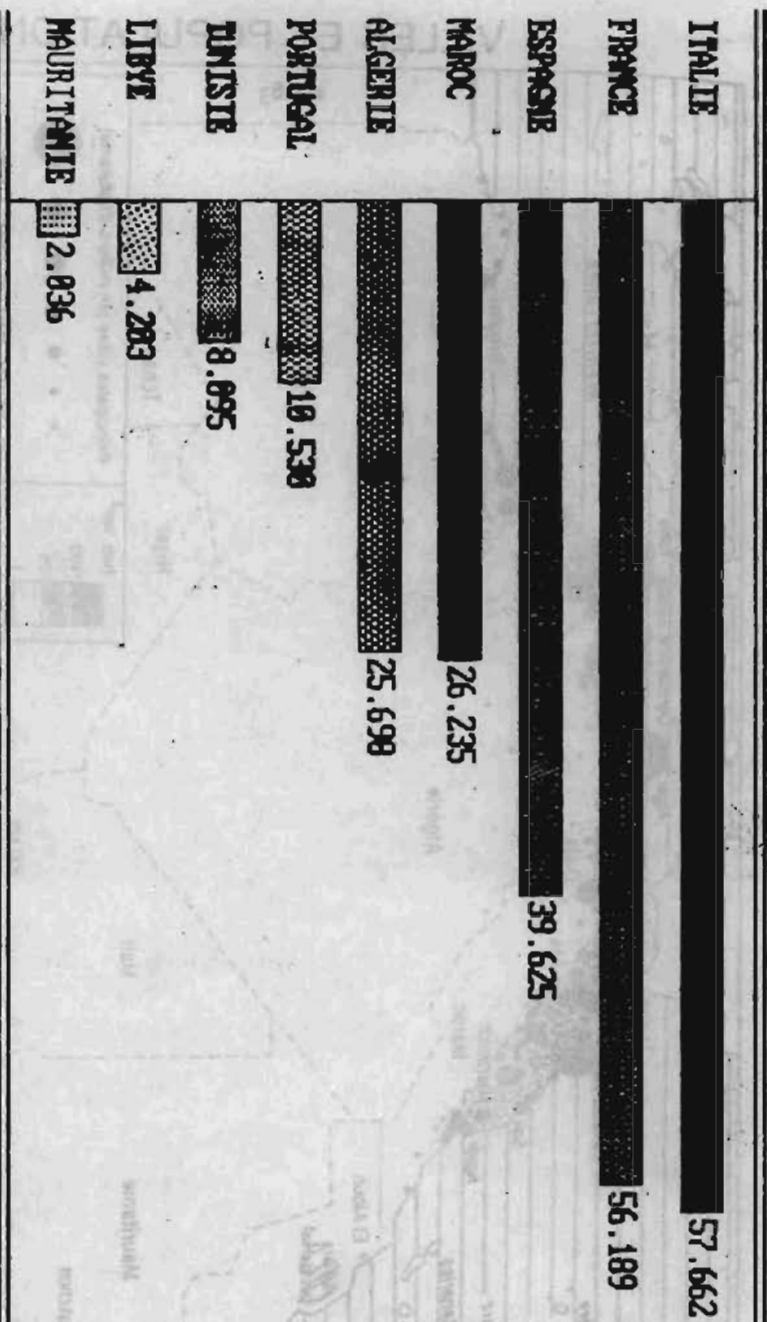


VILLES ET POPULATIONS

Carte 3



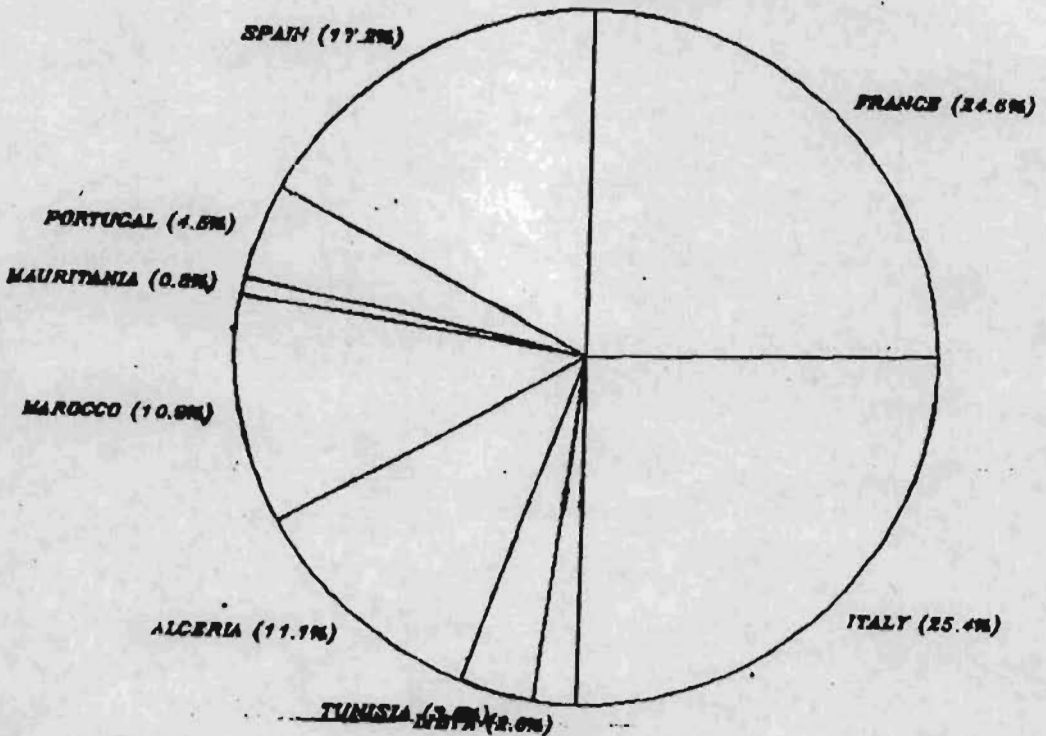
POPULATION 1998
(en milliers)



Carte 1

WESTERN MEDITERRANEAN COUNTRIES

SHARE IN TOTAL POPULATION 1988/90



3. The technical projects underway. There is a continuous flow of aid to fund technical projects like sewage and irrigation systems, housing, road building, etc., which at present are not involving technical cooperation neither in the process of conceiving and choosing the most adapted technology, nor in the process of executing the works. The results being that technical applications ignore practice problems concerning usage, available materials, labour and property systems the social, economic and technical environment. That is why we suggest that technical projects should be an important base to implement S&T cooperation.

The fourth EC Commission S&T framework program for 1994-1999 faces the challenge of increasing S&T capacity and performance in the EC countries, and for that purpose cooperation with their neighbours is essential.

IDENTIFYING S&T PROGRAM PRIORITIES

In order to select which S&T activities should be given priority, the following approach is suggested so as to characterize S&T demands :

1. **Present R&D capacity.** This is measured through the infrastructure and resources already existing for research activities in each country under consideration. That means identifying the researchers, the research institutions backing them (private or public, industry or consultancy related), the projects carried out and the existing networks of participants within and having connections outside the country, in the different S&T fields (funding and duration of the project, are also basic variables used to measure the S&T infrastructure).

Regarding technology transfer indicators, the infrastructure and resources can be measured through factors like the output that is communicated or transmitted outside the institution. These can take the following forms : publications, contacts with technology transfer institutions, participation in seminars, exhibitions, or fairs, contract-research or paid consultancy for other institutions, etc.

More than a list of institutions, importance should be given to projects underway and the transfer capacity. There should be no prejudice where quality is concerned.

2. **The needs of a productive system for S&T.** The structural problems demanding solutions revealed through an analysis of the socio-economic structure and trends in the region. Even if there is no capacity developed in certain fields or areas, the socio-economic systems require basic knowledge and know-how in order to meet with their demands. The following are some of the problems in the area : polarization of population distribution, lack of industrial activities, lack of trained professionals in all technical and research fields, old-fashioned financial systems that limit economic activity, lack of housing, lack of services in cities, low institutional capacity, low private investment both from internal and external investors, insufficient agricultural capacity, lack of accesibility and habitability in desert lands, etc.

Another obstacle to increasing the activity in S&T and the entrepreneurial capacity involved, is the weak connection between research centres and industry. A stronger communication is needed, both in the sense of territorial proximity and regarding the legal framework or agreements of university departments to provide services (laboratory analysis, consultancy) to meet private demands. The agents required to achieve this interaction are lacking, as companies or units of production are usually directed by military authorities or politicians instead of professional managers or technicians.

Another obstacle is starting of new business also comes from the monetary system that is not yet regulated at all.

THE ROLE OF EURO-MAGHREB SCIENCE & TECHNOLOGY COOPERATION

Through S&T programs, the European Community Commission has a role to play in contributing to the economic development of the Western Mediterranean region (South of Europe and Maghreb countries) and likewise to the stability of the internal and external relations of the EC, because :

1. The latest analysis shows that the Maghreb countries failed to stimulate their economies during the sixties and seventies and the world industrial crisis of the late seventies caught them in the middle of a population explosion with a very low organizational and technical capacity to react and solve their own problems.

2. In addition, during the last twenty years their international trade has been increasingly oriented towards EC countries : 80% of both their exports and their imports are connected to the EC countries. Furthermore, the existing technical cooperation programs are usually implemented by the EC countries and international institutions, with a low valorization of local technicians.

3. Under these conditions, the southern neighbours of the EC are crossing a very weak bridge towards the modernization of their societies, which has either to be reinforced through reasoning and scientific thought or it will fall back another twenty years into the realm of prejudice and hatred.

that are complementary, for making joint efforts and of dividing the work in terms of their specializations.

2. Investment in scientific research and technological development have multiplying effects that have proved their results through the last two decades of economic change, in which the most competitive industrial economies were found to be those capable of innovation. This capacity is a result of applying resources to research, of increasing the circulation of goods, building infrastructures for the stock and having accessibility to information.

3. We also want to stress a third aspect which is of interest when considering the promotion of S&T activities in countries : which are the social groups favoured by such an option ? In countries where teaching is not a very recognized economic activity from the salary point of view, together with tedious government employees, there are very active research workers who make a highly vocational self-sustained group capable of providing a considerable amount of new ideas and heading different fields of research in the Maghreb countries.

Both the Professors and the new doctorate students who have increased in number after the massive opening of Universities in the 1980s, in fact constitutes a new middle class that is aiming at any opportunity to start business on its own, to become the technical support for someone else's business, or be advisors to decision-makers. Increasing their preparation is an investment in the future of the country.

We will now consider the obstacles and will leave open the aspects of how such cooperation should take place and what instruments or mechanisms will provide the opportunity for communication and exchange.

Obstacles and difficulties for S&T cooperation

One of the main obstacles is the lack of autonomy of researchers in choosing the research topic and in keeping touch with other foreign institutions in a personal basis.

Those limits do not facilitate the preparation of cooperation projects as they need a variety of informal contacts, both to find good partners and to prepare a research project and plan the activities involved.

**COOPERATION IN SCIENCE AND TECHNOLOGY :
PERSPECTIVES FOR THE WESTERN MEDITERRANEAN**

Teresa ROJO *

ABSTRACT

This paper discusses what is meant by cooperation in Scientific Research and Technology Development (S&T) as a new form of cooperation between the EC countries and those of the Maghreb as well as the innovative aspects that make it a reliable way of re-launching international cooperation. It also underlines the framework of this cooperation.

- INTRODUCTION -

When forecasting scenarios of social cohesion and industrial growth for the Western Mediterranean region, the promotion of activities in the fields of science and technology appear to play a very relevant role which must be reinforced in the future.

There are two main reasons why S&T cooperation are expected to play a social and economic role. These are : the common versus the complementary interests of the actors directly involved, the strategic meaning that investment in S&T has for growing economies and the mobilization of human resources.

1. The actors more directly involved in S&T cooperation, such as scientists, researchers, consultants, experts, from private and public institutions from countries on both sides of the Mediterranean have the following in common : the interest in having the exchange of their knowledge sponsored on subjects and topics of research

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