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"EUROPE 2000: OUTLOOK FOR THE DEVELOPMENT OF THE COMMUNITY'S TERRITORY"

A preliminary overview

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1. Introduction

This paper outlines the main elements of a document now in preparation which aims to highlight the trends and pressures that are likely to shape land use and physical planning within the Community at the beginning of the next century. It is intended that the document should provide a reference framework for national, regional and local public authorities and for businesses to assist them in their longer-term planning and decision-making.

The purpose of this preliminary overview is to stimulate debate on some of the important factors now determining land use and physical planning with a view to finalisation of the Europe 2000 document by the end of 1991. It will in particular serve as a basis for discussion of physical planning issues at a meeting of Regional Policy and Planning Ministers on 23/24 November in Turin.

The outlook for the development of Community's territory: the need for a coherent Community approach

With the increasing globalisation of economic activity and the liberalisation of centrally planned economies, the countries of Europe are set on a course of closer and closer economic integration. Within the European Community, this integration process has been anticipated and accelerated by the commitment to the creation of a single large market without frontiers.

Both within this large market and beyond it, the flows of trade, capital and people across traditional national borders are now increasing substantially and their pattern within individual countries is adjusting to the growth of international linkages.

This accelerating integration will inevitably have a substantial impact on land use and physical planning within the Community. Increased transport and telecommunications traffic and technological developments in these and the energy fields, will place additional demands on infrastructure networks at a regional, national and European level. Migration of people between regions and between

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countries as well as the ageing of the Community's population will affect cities, towns and rural areas and have implications for the provision of housing and public services. Business investment and location decisions will not only have a direct impact on land use but will also have consequences for development of physical infrastructures such as airports, roads and schools.

Policies developed and decided at the Community level are also having an increasing impact on land use and physical planning within the territories of the Member States:

- The common agricultural and fisheries policies for example, have a determining influence on the character and structure of rural and coastal areas;

- Trade and industrial policies, which as well as having a direct impact on economic activity and employment in regions, inevitably lead to the need to develop new industrial sites or to abandon and/or redevelop old ones;

- The Community's external policy through trade agreements, economic and development cooperation with third countries have an impact on the Community's own regions in industrial as well as migration terms;

- Community environmental policies on land, water and air pollution equally have important consequences for planning and use of the Community's land area. The relationship of environmental protection to economic development is particularly sensitive, especially as quality of life is becoming an important factor in the ability of regions and cities to attract new investment. It is becoming increasingly evident that the right balance between protection of a fragile environment and economic growth will be difficult to achieve unless there is a clear view on how the physical environment within the Community should develop;

- The Community's human resources development policy and especially that concerning vocational training influence the location of economic activity and thus has an impact on land use;

- Community regional policy, as recently strengthened by the single European Act, is directly concerned in physical planning decisions throughout the Community given the Treaty objective of promoting "overall harmonious development".

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It is obviously most directly involved through the attack on the structural problems of weaker and disadvantaged regions, with more than half of Community territory being covered by regional development programmes. In the less-developed regions, in particular, these programmes are predominantly concerned with the development of physical infrastructures.

Community assistance for regional development is necessarily concentrated on the regions with the most severe structural problems of underdevelopment or restructuring. However, regions throughout the Community are often crucially dependent on major infrastructure or industrial investment projects located in other parts of the Community. Within the large market of 1992 peripheral regions for example also have a direct interest in the completion of schemes within more central regions which will link all regions into European-wide transport networks.

Community regional policy should not simply be concerned with the role of providing financial assistance to a limited number of regions. It has also to address issues reflecting the use and development of Community territory as a whole.

The development of the Community's territory within the large market needs also to be seen against the background of closer economic, social and cultural integration with neighbouring countries.

For example the closer links between the Community and EFTA countries in a "European Economic Area" raises questions relating to the development of infrastructure networks, involving links across Alpine regions to the South and with Scandinavia to the North. At the same time ties with Central and Eastern European countries and with those in the Mediterranean basin will undoubtedly have effects on the development of physical structures within the Community.

All the pressures and changes described above can produce both risks and opportunities for the well-balanced development of the Community's territory. Among the risks are the possible marginalisation of certain areas or the increased isolation of peripheral areas with consequential population movements; environmental damage and transport congestion; and wasteful competition where complementarity would have been more appropriate. On the other hand, the completion of the Single Market and introduction of new technologies offer opportunities for a better use of the Community's territory.

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Community land space is limited. Its potential uses are restricted by geography and by social and cultural differences: seven out of twelve Member States are located in islands or peninsulas; there are sharp variations in population densities, with an average of 139 hab/km^2 compared to 26 hab/km^2 in the U.S.A., but with certain areas with over 700 hab/km^2.

Strategic investment decisions have lasting and often irreversible consequences for our landscape. It is essential therefore that they are made in the light of the best available information. The Community's involvement in land use and physical planning stems from this.

Member States, together with their regional and local authorities have responsibility for land use decisions. These public authorities are drawing up plans for the next decade: for basic infrastructures in transport, energy, water and telecommunications; for investment in schools, hospitals and social services. These decisions have been increasingly decentralised, a good example of the application of the principle of subsidiarity. Public authorities however face growing difficulties in assessing the likely pressures on land and other resources from influences external to their own territories. The Community dimension itself is playing an increasing role in their decision making process. They need information on developments concerning Community territory as a whole in order to make the best decisions concerning their own investments.

In the private sector too, managers who are formulating business strategies need a broader framework of reference from public authorities which outlines the longer term trends and pressures shaping European markets.

Where particular developments affect more than one Member State, there are relatively few means of consultation between Member States to avoid duplication or mismatch of investment effort. If there were a more coherent approach to the use of Community territory across frontiers then it would also be possible to maximise the potential benefits of the Single Market.

The Community can help to attenuate the problems of the public and private sector decision makers by providing information concerning developments throughout the Community. This is the purpose of the EUROPE 2000 document which will be prepared for the end of next year.

It will aim to provide a framework of reference for public authorities, and for business, in their longer-term planning and decision-making. It is in no way intended to be some kind of master plan of how the Community should develop.

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The need for a coherent Community framework was already foreseen in the regulations on the Community's Structural Funds which it decided in 1988. (Cf. Article 10 of the ERDF regulation). Following on from this, at a first meeting of Regional Policy and Planning Ministers at Nantes in November 1989, it was agreed to begin the process of a more systematic and collective discussion on physical planning at the Community level.

In a resolution adopted at the October 1990 session, the European Parliament also specifically called for a concerted approach to physical planning on a Community basis.

Moreover, the work on transeuropean networks which is currently being carried out by the Commission for the Internal Market Council underlines the need for development of physical infrastructure on a Community-wide, and indeed European, basis. The Commission will issue an interim report on this subject shortly.(1)

Of the various influences shaping the use of the Community's territory over the next decade and beyond, some are more susceptible to quantitative analysis than others. This paper discusses factors of particular significance - population trends; new location factors for industry and services; developments in urban, rural and frontier areas; transport; energy; telecommunications; research and development; and the environment - identifying where further work is needed, but serving as a basis for discussion between Regional Policy and Planning Ministers at their meeting in Turin on 23 and 24 November.

II. Main Trends

1. Population and Migration

Population: Population growth will vary across the Community - some of the northern Member States (Germany, Luxembourg, Belgium, Denmark) are likely to see negative growth, while peripheral regions (southern Spain, southern Italy, Ireland, Northern Ireland) will see an increase. The total population of the Community's present territory is, however, likely to remain stable, at around 340m. Within that stable total, there will be a progressive ageing as a result of the decline in birth

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(1) see also documents COM(89)643, COM(90)310, Conclusions of the Presidency of the European Council 9 December 1989 and Council Resolution of 22 January 1990 (OJ N°C 27 p8).

rates in the 1960s and 1970s. The levelling off of the decline in birth rates in the north of the Community, coupled with a downward trend in birth rates in the south, means that this ageing effect is likely to be spread across all the regions of the Community. Table 1 shows a global Community picture of the age structure development up to the year 2015 and Map 1 shows the regional breakdown of the elderly population in 2010. As can be seen from the map, there is a considerable diversity among regions of the proportion of elderly by region.

The supply of labour follows populations trends with a time-lag of some 15 years as new-born children are translated over time into population of working age. In the Community as a whole a modest labour supply growth of around 1.5 million people by the year 2000 is foreseen (see Table 2). The declining number of young people and the associated ageing of the workforce requires facilities for continuous education during adult life, as well as more targetted opportunities for re-training.

Migration: Migratory trends often respond to international and interregional differences in employment opportunities and wage levels. However, other factors such as linguistic and cultural differences, as well as the public policy attitude towards migration, prevent a direct response to economic impulses.

There are essentially two types of migration which need to be considered at the Community level; migration internally within the Community (both within Member States and between them), and migratory exchanges with third countries. Migratory flows within the Community have slackened off in recent years, as a result of less favourable employment opportunities in the core regions of the Community and of Member States. Whether this relative lack of geographical mobility of the workforce will be sustained or reversed depends to a great extent on the relative economic performance of the peripheral compared with core regions.

Migration from third countries is less easy to predict, but will almost certainly continue to have an important influence on labour markets within the Community and in particular in large conurbations. The Single Market, by providing in principle greater mobility across national boundaries, could increase that influence, though cooperation and development policies with the countries concerned as well as national immigration policies may mitigate this.

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Following on from these trends in population and migration, some questions that might be addressed include: how is planning in the Member States themselves currently influenced by these trends towards an ageing indigenous population and potentially significant immigration. To what extent are these trends taken into account in for example the provision of educational and social services infrastructure (fewer schools, different housing needs, more hospitals, retirement homes, retraining facilities, etc). Is it already possible to discern specific developments resulting from changes in the population age profile e.g. migration of retired people to certain areas? What are the implications for the major conurbations of even greater concentration of immigrant communities in these areas?

2. Mobility of economic activity: new location factors

The Commission's approach to industrial issues in general is set out in its paper "Industrial Policy in an Open and Competitive Environment". As regards locational factors, the decline of some older industries has reduced the importance of traditional location factors such as the proximity of primary materials and energy. At the same time, progress in transport and communication technology, as well as the emergence of new methods of production organisation have greatly increased the mobility of a large part of the industrial and service sectors. This tendency will be reinforced by the completion of the internal market. This has led some studies to suggest that the proportion of total employment in the Community which can be considered to be potentially "geographically mobile" has increased from around 30% in the 1950s to over 50%.

Taking the Community as a whole, these factors have so far shown no sustained tendency to reduce regional disparities though there has been some catching up, most notably in Spain.

The Commission has been active in instigating a dialogue with the business community on the factors that influence location decisions. An in-depth survey was carried out among some 9.000 firms in regions throughout the Community*. The Commission also organised a conference

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* "An Empirical Assessment of Factors Shaping Regional Competitiveness in Problem Regions" - Ifo - Institut für Wirtschaftsforschung, 1990

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at Dublin Castle in June 1989 attended by over 100 senior business people. The conclusions of both initiatives suggest that apart from other elements directly affecting profitability, such as the cost of capital, among the most important factors influencing location decisions are:

- rapid and efficient transport and communication systems;

- the availability of a well qualified workforce;

- access to local educational institutions and research bodies;

- the presence of high quality business services, as firms increasingly contract out servicesthey would previously have undertaken for themselves;

- the quality of the social and cultural environment, including sporting and leisure facilities.

Because manufacturing and service sector companies have become much more spatially mobile, regional economic policy makers may well face increased inter-regional and inter-city competition to retain or attract investment. Hence Community policy needs to incorporate both an overall strategy to promote the Community's international competitiveness and attractiveness as a location for inward investment and measures to shape regional competitiveness through provision of comprehensive packages that include education and training, environmental improvement, insertion of regional firms in Community wide R&D networks and the modernisation of transport and communications systems. The Commission has launched a number of initiatives to this end such as PRISMA, TELEMATIQUE and EUROFORM, which are concerned with the creation of services for SMEs, networks of data transmission and new qualifications and skills.

In the light of these trends it is becoming increasingly necessary for regions to develop a wider "cluster" of locational advantages including educational and leisure facilities, specialised business services and a high quality of environment, as well as the basic requirements of physical infrastructure and a skilled workforce. To what extent should regional policy be more directed towards support for this type of investment package?

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3. Urban problems

Since the end of the second world war, the population of the European Community has become increasingly urbanised. Statistics from the beginning of the 1980s show that the Community* then had some 229 major metropolitan areas with populations greater than 330,000. Of these, 122 had core populations exceeding 200,000. The distribution of the 122 core city areas is shown in Table 3.

European society has therefore become largely an urban society (Table 4 and Map 2).

Urban areas cover a range of different types: from capital cities, large even by world standards with extensive suburban areas, to smaller cities which retain the character of provincial towns. The problems of urban areas differ, not just in relation to their size and geography, though these factors are important. Some have to deal with the problems of growth; some the problems of decline and decay; and others face both types of problem.

Growth brings its own problems. The urban area becomes a magnet for growth in the region. The population increases, property prices rise, traffic problems grow and the quality of life, often a catalyst for a city's growth, deteriorates. The problems of urban decline are characterised by a fall in population and often consist of a concentration of problems resulting in the decay of the physical fabric of neighbourhoods as well as social segregation and poverty. Localised areas of decay can be found in virtually all cities, even those which are growing and prosperous. "Inner city" problems are typical of older British cities. In France, comparable problems are mainly found on city peripheries or in older and smaller satellite industrial communities. Finally, suburban areas of the major conurbations have special problems, particularly relating to transport.

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* not including the old East Germany

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From a land use viewpoint, it is clear that the increasing restrictions on urban development and the protection of green field areas will have implications over the decades ahead for existing urban areas. However, rural depopulation is expected to continue despite the introduction of policies aimed at stemming this. Concern about quality of life issues such as noise, inconvenience of commuting, waste disposal and so on may reduce the attractiveness of city life but is unlikely to lead to a reversal in the trend of urbanisation. There is some suggestion however that all these factors will result in faster rates of growth in intermediate-sized towns and cities compared with the largest conurbations.

It is worth noting that the Community has no responsibility for urban policy as such. It does not feature in the Treaty. But the Community's environmental responsibilities and the action it undertakes through the Structural Funds for economic and social cohesion lead it to play an important role in the development of cities. The Community can play a limited role in urban renewal though the scope of its interventions is at present limited to certain types of investment and many areas e.g. housing, are excluded.

The Commission has recently issued a Green Paper on the Urban Environment which is presently being discussed in the Member States.

Just as the regions are developing their own identity within the Single Market, so cities are also seeking to establish their role and identity. The new economic context will see changes in the function of cities and often increase competition between them. At the same time, cities are developing complementary links to enhance their own particular specialisations. This manifests itself in the establishment of networks and groupings whereby cities seek to establish links concerning common problems, pool resources to realise economies of scale and foster technological cooperation. For example the Polis network was set up by 32 cities, co-financed by the Community, to devise new traffic management solutions and develop convergence in the new technology being developed. Urban networks offers the opportunity for European cities to compete more effectively in world markets.

These trends call for greater attention to be paid at the Community level both to the problem of development of urban areas and to the potential benefits of contact and cooperation between cities within the Community. In particular, Member States may wish to comment on the scope for the development of urban renewal actions and increased cooperation between cities.

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4. Rural Development

Although agricultural output in the Community has continued to increase, its share in total GDP has declined. About 7.7% of the working population of the Community is employed in the agricultural sector (including forestry and fishing), but this figure is conrtinuing to decrease. The share could be as low as half of this in 2010 for the Community as a whole.

Agriculture, however, will continue to play a significant role in the future development of rural areas, not just in economic, but also in socio-political terms. The latter is particularly true of, inter-alia, the Mediterranean regions, where it is estimated that 75% of the Community's agricultural population will be located by the year 2000.

Regional differences are also evident in the types of problems encountered by rural areas as defined in the Commission's Communication on the "Future of the Rural World" in 1988:

- in rural areas within regions of high population density, such as northern Germany and the Benelux countries, the reduction in agricultural activity can often be compensated for by the creation of industrial and service jobs, and the pattern of land use changes accordingly;

- in rural areas where agriculture is on the decline but where it still accounts for the largest part of the active population, such as in northern Spain, the ageing of the agricultural community and the lack of alternative work points to depopulation and limited development prospects in the future;

- in rural areas where the population is already on the decline, for example the mountain areas of France, parts of Ireland and western Scotland, population density tends to be extremely low (less than 25 per square kilometre) and the potential for the diversification of economic activity limited.

The decline in the Community's agricultural population is not, of course, a new phenomenon. Nor is the depopulation process at an end. This poses a number of problems for the use of Community land. Over 80% of Community territory is taken up by agriculture and forestry, but only 10-20% of the Community's population is involved. The capacity of rural areas to deal with their own problems is handicapped by the fact that income

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per head is lower than in neighbouring industrial areas and that the active population in agriculture is relatively old, with over 50% of farmers presently aged over 55 (see Table 5). The proportion of farmers over 65 is likely to continue to grow over the next 10 years.

The future economic development of rural areas will become increasingly dependent on sectors other than agriculture: tourism, forestry, industry. In some areas, these alternative rural activities will replace agriculture, whilst in others they will be additional. Already some 37% of Community farmers engage in secondary activities; forecasts suggest the figure will be 50% in the year 2000.

If the current GATT negotiations succeed in their agreed aim of reducing agricultural subsidies, this - together with the continuing adjustment of the CAP - is likely to involve further changes in Community agriculture, with commensurate implications for the rural economy. These adjustments are likely to give increased emphasis to environmentally-friendly agriculture measures.

The concept of rural development therefore needs to continue to move away from the solely agricultural view to a more global view. Agricultural, environmental and other economic development policies must be integrated into an overall strategy, which concentrates on tapping the potential of each kind of rural area within the Community as a whole. The existence of an educational and training fabric in rural areas is a condition for stemming rural depopulation. This could exploit the potential of multi-media, distance and open-learning technologies.

The reform of the Community Structural Funds already reflects this new approach. Most of the Community territory under Objective 1 is rural. Objective 5b areas are rural by definition. In addition to assistance provided through the Community Support Frameworks, the Community has launched the LEADER initiative aimed at integrating rural areas in the overall economic system (exploitation of region's own potential, use of modern technology), though at present the means at the Community's disposal for rural development are limited.

These trends call for adaptation of both the Community's and Member States policies affecting rural areas. How can diversification strategies overcome the obstacles of low population density and low incomes? What role can new communications technologies play in encouraging the location of new activities in rural areas, especially in the development of towns in rural areas.

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5. Border areas

As defined for Community purposes (see Map 3), border regions cover some 15% of the total territory and account for some 10% of Community population. The removal of internal frontiers within the Community is likely to have its most powerful spatial effects on border areas. They will have to adjust to new roles within the wider European space compared with their position on the periphery of the Member States, with a legacy of national and local administrative practice which still inhibits cross-border cooperation. It is for these areas that the need for consultation and concertation in physical planning is greatest.

Border areas experience particular disadvantages in regard to physical and economic planning which arise directly from their location:

- at the extremities of transport and communications systems that have traditionally been planned on a national basis, they often have relatively poor infrastructures within adequate cross-border connections;

- as commercial centres are often artificially separated from their natural hinterlands, thus causing distortions in patterns of trade;

- unable to sustain public services (health, education, training) in a national context or liable to duplicate services available on the other side of the border;

- facing differences in taxation and social welfare systems, language and employment practices, all of which may hamper the mobility of labour across national boundaries.

But the removal of administrative barriers does not of itself ensure the establishment of normal economic relationships across borders. Sustained and targetted effort is required to achieve co-operative cross-border action. The adoption of the INTERREG Community initiative represents an important step in this direction. The Commission will undertake in close consultation with the Member States an examination of legislative and administrative provisions governing cross-border activity, and will in the light of this, assess whether further measures are needed to reinforce planning and cooperation.

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What views do the Member States have about measures which could assist in establishing concerted planning in border areas.

6. Transport networks

Continuing traffic growth is expected to outstrip the extension and improvement of the transport system, aggravating congestion, especially in the central regions and the main population centres elsewhere. The development of high speed networks will have a positive impact only on certain regions of the Community. Improved links between the centre and the periphery can help to relieve congestion as well as contributing to more balanced development.

For road traffic, continuing rapid growth in passenger traffic is expected as the number and use of private vehicles increase extensively. Map 4 shows traffic flows on the main routes in the Community. The growth in road traffic has led to increased congestion in high density areas such as the Benelux and in some heavily used north-south routes such as the Rhône Valley, some Alpine valleys, and the London-Dover corridor. Bottlenecks will inevitably spread in land transport infrastructure unless annual growth in road traffic falls below 1.3%. Especially where availability of land is limited by the nature of terrain, solving these congestion problems can conflict with the need to protect the environment.

As to air transport, annual growth rates are likely to remain above 6% for several years. Increases in regional airport traffic have been the main component of overall growth (with some extremely high growth in 1989, for example 19.3% at Birmingham, 19.5% at Porto, 20.4% at Montpellier). Traffic and congestion have also increased, however, at the principal international airports. Reported peak period flight delays tripled between 1986 and 1987 and then nearly tripled again between 1987 and 1988. Map 5 shows the overall picture for passengers and freight movements in the Community's principal airports in 1989.

The problems of rail transport are not so much those of growth, but of the capability of the railways to cope with the evolution of transport demand. After losing ground over recent decades in relation to other sectors, rail traffic should increase between now and the turn of the century as a result of the development of TGV networks and multimodal transport techniques.

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Inland waterway systems for large commercial vessels are only significant in Germany, the Benelux countries and in eastern France. There has been an increase in international cargoes, which now represent 60% of the total, and although the overall length of the system is diminishing, its effectiveness is increasing thanks to a number of technical innovations.

Although there are clear indications that the European transport network is heading towards saturation, the construction of new infrastructure is held back by a number of constraints:

- financial: investment in the transport sector fell from 1.5% of Community GDP in 1975 to 0.9% in 1985;

- environmental: new infrastructures generate increased traffic, which produces more pollution and creates increased resistance to such developments in local communities;

- use of air space: available land is scarce, particularly for airports near large conurbations.

The continuing increase in demand for transport presents Europe with problems which have a vital spatial component. The full benefits of the large market can only be realised if the required infrastructure is in place. This is at the heart of the Community's transport policy. The negotiation of the Single Economic space with EFTA and the opening up of Eastern Europe (with the cooperation of Switzerland, Austria and Yugoslavia vital for transit traffic) all emphasise the wider European dimension of this question. Reflection on these questions is being carried out by the 'Transport 2000' group.

At present regional policy initiatives in transport infrastructure concentrate on opening up peripheral regions. (The ERDF provided some 8400 million Ecu for financing transport infrastructures in 1975-88, with some 5.900 million Ecu will be spent in 1989-93.) This approach could be made more effective in the context of a concerted approach to European physical planning.

Without a global approach there is a risk of new regional inequalities being added to the old ones. The development of high speed rail, road and air networks marks a fundamental improvement. But it could divide the Community into unequal zones. Gaps are likely to remain between the main links of the system; and some peripheral areas may remain untouched, unless further action is taken.

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The accurate prediction of traffic trends, and of their impact, helps in the achievement of an appropriate balance between different forms of transport, with special regard to environmental needs. The creation of multimodal transport networks (as introduced in Switzerland and under consideration in France) combined with modern telematic technology could lead to more efficient land use and improved environmental protection.

The productivity of transport infrastructure could be improved by optimal positioning of links between high-speed transport networks. For example, good TGV/airport links are essential for effective communications between the more developed centres of the Community, where TGV services are competitive, and the peripheral and peninsular regions where air transport is likely to continue to be more important.

The productivity of transport networks can be adversely affected by poor connections with other infrastructures. Airports or TGV stations are often served by urban transport systems which are old or unreliable, reducing the economic impact of the high speed network. Investment efforts in local networks should go hand in hand with the construction of new high speed systems.

Development of communications networks have, as part of Community regional policy, emphasised the benefits of linking the periphery with the centre; whilst this priority must remain, should not importance not now also be given to means of linking the peripheral areas with one another? How else can new disparities caused by high speed networks be avoided?

7. Energy infrastructures

The continued growth of demand for energy points to the need for strengthening cooperation at the European level in investment and in the planning and management of infrastructures.

By 1995 the over-capacity of electricity production in the Community as a whole will have disappeared. A Community priority will be the better integration of energy transmission systems, in order to reduce the need for new power stations and their potential environmental impact. Moreover, the development of technologies enabling the clean and economic use of coal and the safe use of nuclear power will also be treated as priorities. Current energy price increases emphasise the need for further Community actions promoting the efficient use of all sources of energy.

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Sources of energy do still have a considerable impact on the mobility of certain sectors of industry. An incomplete energy network might tend to increase regional development disparities. A coherent perspective on the use of Community territory together with appropriate efforts to reinforce the operation of networks could provide the basis for more efficient investments in energy infrastructure. The completion of European-wide networks (to which the REGEN initiative will make an important contribution, especially for gas) will be particularly significant in the peripheral regions.

Renewable sources of energy, such as hydro-electric power and biomass, could be particularly appropriate in meeting the energy needs of rural areas. The contribution of these sources to total primary energy supply could be substantial in certain areas through better inter-regional coordination.

The choice of appropriate sites for power stations, storage of liquefied gas and energy transport networks will need to take into account the protection of the environment. The siting of energy infrastructures can raise particular problems between Member States, especially in border areas.

In urban areas the better coordination of physical planning and energy programming would have certain advantages. It would enable energy consumption to be reduced, thereby releasing financial resources for other activities and helping to reduce atmospheric pollution.

Member States could address how European energy networks can be further integrated to ensure efficiency and security of supply across the whole of the Community territory; and also how they can be better linked to other supply sources in the rest of Europe and North Africa.

8. Telecommunications

Telecommunications play a crucial role in the development and competitivity of the economies of the European Community. It is estimated that the total world market value of management and transport of information exceeds 500 billion Ecu and that by the end of this century more than 60 million jobs will be highly dependent on information services and telecommunications.

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International telecommunications traffic has increased by around 20% per year since 1980 and reached 30 billion minutes in 1990 (partly due to the rapid rise in facsimile transmissions).

The phenomenal growth in the production, supply and use of telecommunications has spatial implications. The largest share of telecommunications activity is concentrated in large conurbations, in particular in the more advanced regions of the Community. By contrast, lagging regions of the Community are often characterised by inadequate telecommunications infrastructure and lack of awareness of advanced telecommunications services and products.

Furthermore, rural regions experience, on the whole, a slower introduction of new telecommunication technology, mainly due to higher costs of supplying and maintaining services to these regions compared to urban centres.

The completion of the internal market will be facilitated by the free flow of information throughout the telecommunications networks of the Community. Trade, commerce, financial and other services, transport, health care, central and regional government are all increasingly telecommunications-dependent. The Community is laying the foundations for the technology and standards for a cost-effective, inter-communicating broad band network for the future. The Community is helping to create networks for electronic trade data interchange (TEDIS) and to enable public administrations to communicate (INSIS and CADDIA). The Community is also addressing the regulatory environment in order to ensure effective, open access to all users wherever they may be in the Community (Open Network Provision).

There is clear scope for evaluation and planning of the spatial distribution of telecommunications services over the medium term so as to achieve the necessary convergence between the Community's regions, this convergence requiring a balanced development in:

- the existing services in the less favoured regions to bring them up to a level comparable with the rest of the Community;

- the introduction of new and advanced communication facilities and services in all areas of the Community including rural and peripheral areas with ease of access by SMEs and other users in those areas;

- the completion of any missing links in the main communication networks.

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The Community programmes STAR and TELEMATIQUE have these objectives.

Member States might comment on how their own national strategies address these spatial issues, and how the Community actions might be further developed. In particular, what mechanisms can help overcome the profitability disadvantages of investments in remoter, more sparsely populated areas?

9. Research and innovation

The relationship between investment (public and private) in research and development, innovative products and processes and regional economic growth is well established. It is not an accident that those regions which have relatively high levels of economic growth are also those which have high levels of investment in research and development and innovation. Investment in these fields is a pre-requisite for sustained regional economic development.

But just as disparities exist in economic growth performance throughout the Community's regions, so disparities exist in regions' research capacity and potential. Studies which the Commission has carried out show indeed that the scale of the disparities in R&D are far greater than the socio-economic disparities between our regions. To avoid being disadvantaged a region needs a good level of research and development infrastructure, qualified personnel and a technology transfer capacity.

In the Community, three quarters of total (i.e. public and private) R&D expenditure is concentrated in Germany, France and the U.K. Highly uneven distributions exist within Member States. And the technological gap within the Member States is wider than between Member States.

Companies in the electronics and informatics sectors often cluster around one another in a particular location. This can sometimes be explained by the presence of well-established and reputable centres of excellence or university research department. The role of higher education institutions in providing qualified personnel for research and innovation as well as undertaking innovative projects for industry can influence investment location. Concentration becomes a self-reinforcing process as good research results encourage further investment.

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This tendency towards concentration raises important questions for public policy. Although it is clear that all regions cannot have similar levels of research infrastructure, each should at least have the technology transfer structures which will allow it to use to its advantage the fruits of research elsewhere. The European Community has a role to play on the question of science, research, development and technology transfer. Through the research projects under the R&D Framework Programme and Structural Funds including the Stride initiative, the Commission is supporting a better regional balance. This is also supported by the Community's education programme COMETT which assists the rapid dissemination of research findings. THe Commission has also launched a programme called Sprint which seeks to strengthen the infrastructure for innovation services through the establishment of intra-Community networks, and includes specific actions for the less favoured regions.

Member States might like to comment on how to encourage a wider regional distribution of research capabilities and on how to make research carried out in the regions more responsive to local needs.

10. Quality of the Environment

There is a growing consensus that economic development decisions need to take greater account of long-term resource and environment costs.

A Community approach to environmental problems is also necessary in order to ensure common conditions for the Single Market and joint action to combat common pollution problems (see Map 6). Among the environmental challenges facing the Community are:

- serious air pollution levels in industrial conurbations: concentrations of SO2 and NOx in the Community's largest agglomerations (see Map 7);

- problems in the supply and availability of water and also in water pollution. The first problem affects many areas in the south of Europe. Examples of the second are continuing high river and groundwater pollution;

- soil erosion, particularly in Mediterranean regions, and soil pollution in zones in industrial decline;

- threats to the natural heritage, disappearing habitats and species;

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- conflicting pressures on land use in coastal areas where the absence of control is leading to significant environmental damage;

- environmental conditions becoming an increasingly important factor in locational decisions, and in the development of tourism;

- the heavy costs of environmental rehabilitation for instance in the new German Länder.

The Community's territory is characterised by considerable diversity in its environment. The south tends to be ecologically richer than the north: for example there are as many plant species in the Alpes Maritimes as there are in the whole of Great Britain; 60% of the Community's floral species and 70% of its mammal and amphibian species are to be found in Italy.

Pollution types and levels also differ considerably, depending on economic circumstances and on the strength and implementation of legislation.

The reform of the Structural Funds emphasised the need to integrate the environmental dimension into the Community's regional policies. Spending on environmental programmes is increasing more rapidly in real terms than before. The Community initiative ENVIREG will contribute to a closer coordination between economic development and environmental protection, particularly in Mediterranean coastal areas.

Member States might give their views on the priority to be given to environmental investment in regional development.

11. Coastal areas dependent on fisheries.

In addition to the 300.000 fishermen, activities in the field of fisheries and agriculture also generate a number of associated activities (construction of boats, processing industry, commercial activities etc.). In 1986, these represented 1.15 % of the active population in the Community.

Taking all the coastal areas of the Community together, there is a clear concentration of fisheries activities in certain regions, where their role in the regional economy is particularly important. These are to be found both on the European mainland (Mediterranean, Galicia, Andalusia, Bretagne, West Scotland, Ireland, Jutland) and in island regions (Canary Islands, Greek Islands, Sicily, Scottish Islands, Bornholt).

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The decline of resources and the reduction of certain traditional fishing activities have led to the decline of certain regions. The necessity to restructure this sector in view of a better balance between resources and fishing capacity will increase regional disparities.

Aquaculture is both a traditional and a modern activity which is heavily dependent on the surrounding environment. Its development and its potential is conditioned both by exogenous (pollution, tourism, industrial development) and endogenous (availability of juveniles, concentration) factors.

It can offer alternatives to the development of those regions heavily dependent on fishing, on the condition that this is done in a wider context which takes other human activities into consideration.

The restructuring and the development of the fishing and aquaculture sectors should be envisaged within a framework which allows the cooperation at the regional level of the various public and private actors concerned with physical planning, industrial development, tourism, urbanisation.

Despite the difficulties of managing fishing activities which go beyond the strictly regional context, is it not also necessary to promote a regional approach in order to solve the economic and social problems faced by the fishing industry? Although the management of fishing resources has a Community dimension, is it not also necessary to promote a greater degree of co-operation between local authorities affected by these problems?

III. Next Steps

As noted earlier, this paper has been produced in order to help stimulate a debate on the issues raised above. The Commission will produce the document EUROPE 2000 by the end of 1991. That document will identify current and emerging general trends in the Community, provide a synthesis of how these various factors impact on land use and consequential socio-economic developments, examine the inter-dependence between regions and set out the possible scenarios. To this end, the Commission is launching a number of studies.

The first set of studies takes a Community wide approach, analysing developments that will shape land use over the next decade, including some of those mentioned above: demography and migration; new location factors for industry and services; evolution of the transport, energy,

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telecommunications, tourism and leisure sectors; urbanisation and future functions of cities; resource management and pollution; and the impact of developments in neighbouring areas of the south and east Mediterranean, central/eastern Europe and Scandinavia.

The second set of studies examines how regions in geographical proximity, irrespective of national boundaries, themselves see the land and resource use issues. The Atlantic regions, the western Mediterranean, the Alps, the central Mediterranean and the North Sea regions will be among the areas to be studied.

A system of monitoring and updating of the information collected from the studies will be established.

In drawing up this document which will act as a reference framework, the Commission will be assisted by the Member States, and will consult the European Parliament. It also considers that the issues raised in this paper are among those which in the longer term justify the further involvement of regional and local authorities in discussions at Community level on the lines that it has recently proposed in its opinion on political union of 21st October 1990 (COM(90)600). In the initial instance it will consult regional and local authorities through the existing Consultative Council which advises it well as though seminars and experts groups.

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ANNEX : MAPS AND TABLES(*)

MAPS

1 Projected age structure: Percentage of the population over 65 by 2010.
Source : CEC/Netherlands Economic Institute

2 Population density and urban centres
Source : CEC Eurostat Regio database, DG XI CORINE settlements database

3 Border Regions
Source: CEC

4 Motorway network and vehicular flows, 1985
Source : United Nations, Census (Prof. IBF Kormoss)

5 Air transport : Principal airports, aircraft movements passengers and freight handled, 1989
Source : ADP, Aéroports de Paris 1990

6 Airborne pollution : Sulphur deposition by source
Source : Environmental Resource Ltd.

7 Air pollution : SO_2 emissions
Source : CEC DG XI Corinair database

TABLES

1 Ageing of the European Population

2 Ageing of the labour force 1990-2015

3 Distribution of major metropolitan areas by Member State

4 Urbanisation and urban growth in Member States

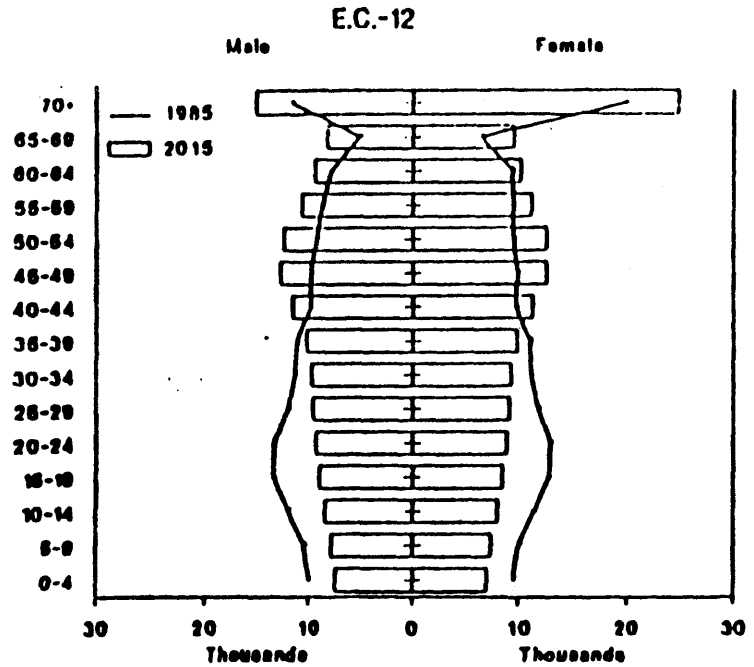
5 Farmers in the EC by age group

(*) Research, data processing and cartography by DG XI (CORINE data base) and Professor IBF Kormoss. Most of the maps and tables do not include the relevant data for the new German Länder, and were prepared pre-unification.

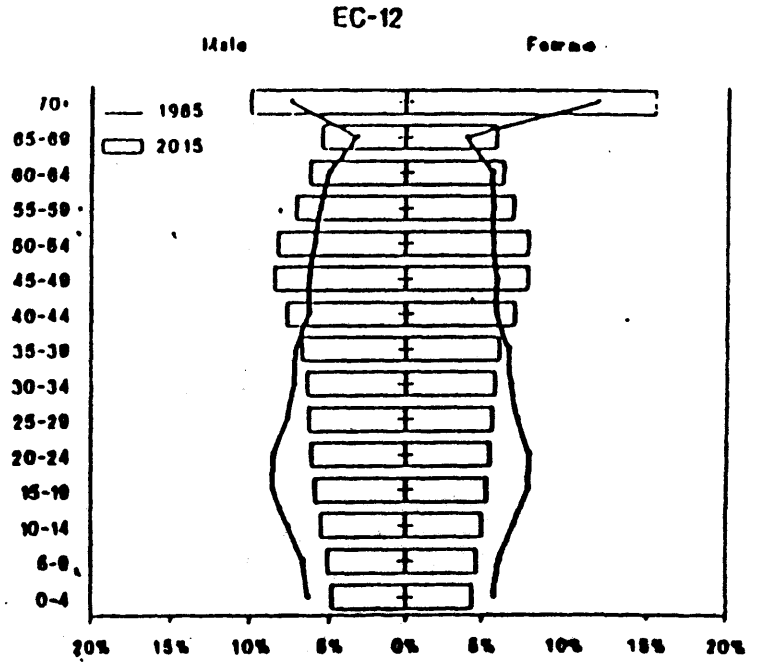
Table 1

Population pyramids, absolute (x 1000) and shares (%)
(projected fertility)

absolute numbers



share (%)



Source : Demographic Evolution through time in European Regions,
Netherlands Economic Institute, August 1990

Table 2

Ageing of the Labour force 1990-2015 (% in age group)

(projected fertility and projected activity rates)

Country	age 15-24			age 50+		
	1990	2000	2015	1990	2000	2015
Belgium	14.6	12.2	11.8	14.1	14.3	19.2
Denmark	20.4	15.9	16.0	19.1	24.1	27.5
France	16.1	13.2	13.1	17.4	18.7	22.3
Germany	18.3	12.5	13.8	21.8	22.3	30.0
Greece	14.2	12.4	9.2	25.5	23.1	26.4
Ireland	21.7	22.4	15.3	18.3	18.0	20.3
Italy	18.7	13.9	12.5	19.6	19.4	24.2
Luxembourg	16.5	13.9	14.1	17.1	18.8	24.3
Netherlands	18.0	13.0	14.5	14.2	17.7	22.6
Portugal	22.3	18.8	13.5	21.0	19.5	25.2
Spain	21.4	18.0	13.8	18.7	16.5	21.7
United Kingdom	21.5	17.0	18.4	20.2	22.2	25.9
EC-12	**18.9**	**14.7**	**14.3**	**19.5**	**20.0**	**24.9**

Source : Demographic Evolution through time in European Regions.
Netherlands Economic Institute, August 1990.

Table 3

Distribution of major metropolitan areas by Member State

Country	Number of major metropolitan Areas	% of National population living in major metropolitan areas (1981)
Belgium/Luxembourg	4	69
Denmark	2	46
France	22	48
Germany	28	63
Greece	2	45
Ireland	1	40
Italy	17	46
Netherlands	4	44
United Kingdom	24	54
Spain	16	57
Portugal	2	60
EEC 12	122	53

Source: "Urban Problems and Regional Policy in the European Community", CEC/Reading University, 1988, p10.

Table 4 Urbanisation degree and urban growth

Countries	Urban population as a percentage of total population		Average annual growth rate (in percent)	
	1965	1988	1965-80	1980-88
Belgium	93	97	0,4	0,2
Denmark	77	86	1,1	0,3
France	67	74	1,3	0,5
Germany (F.R.)	79	86	0,7	0,1
Germany (D.R.)	73	77	(no figures available)	
Greece	48	62	2,0	1,3
Ireland	49	58	2,1	1,1
Italy	62	68	1,0	0,5
Luxembourg	(no figures available)			
Netherlands	86	88	1,2	0,5
Portugal	24	32	1,7	1,9
Spain	61	77	2,2	1,3
United Kingdom	87	92	0,5	0,4
Austria	51	57	0,8	0,6
Switzerland	53	61	1,0	1,3

Notes: The Growth Rates are calculated from the World Bank's estimates. Because of different national definitions of what is urban, cross-country comparisons should be interpreted with caution.

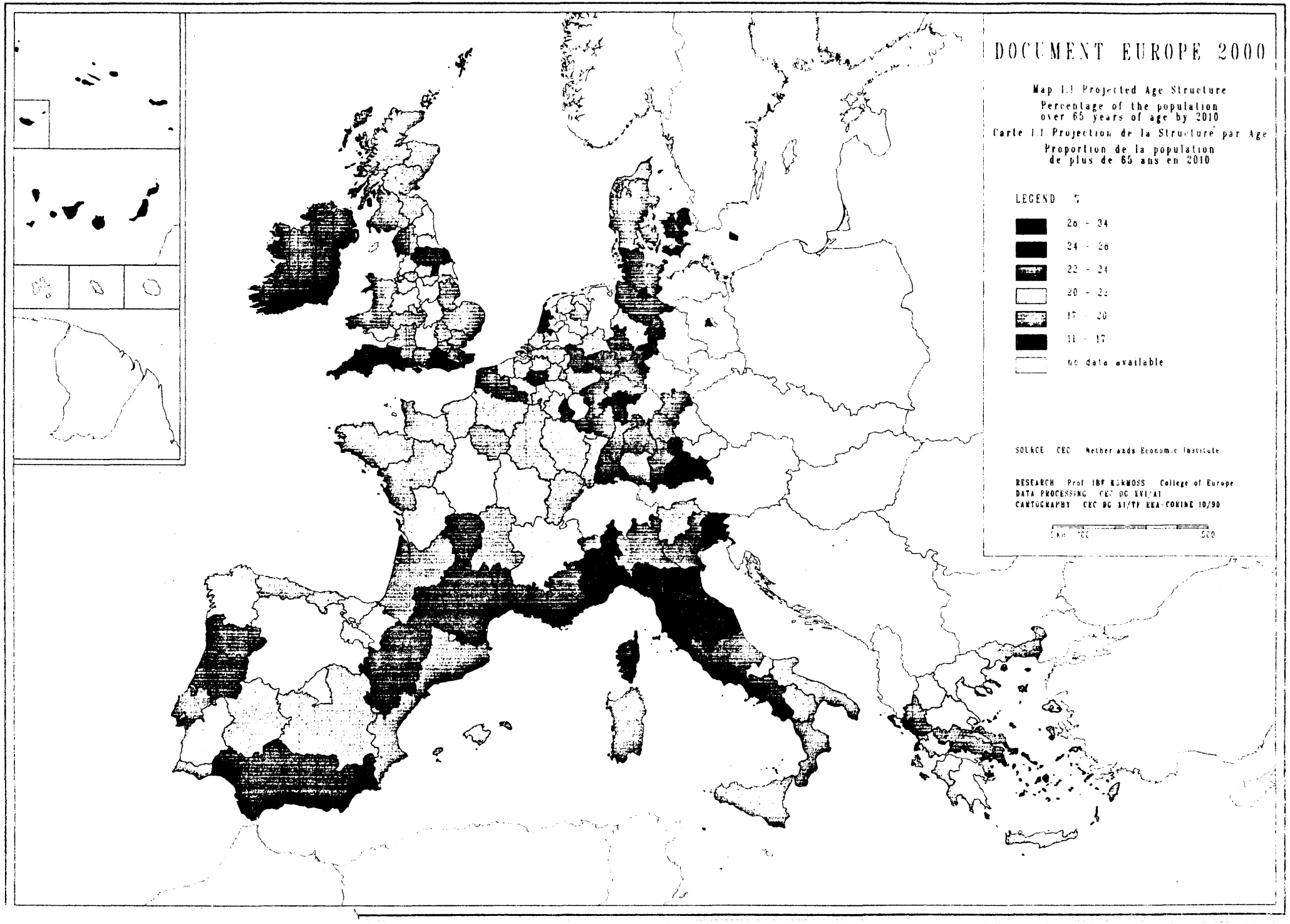
Source: World Development Report 1990, pp. 238-239 and 244-245

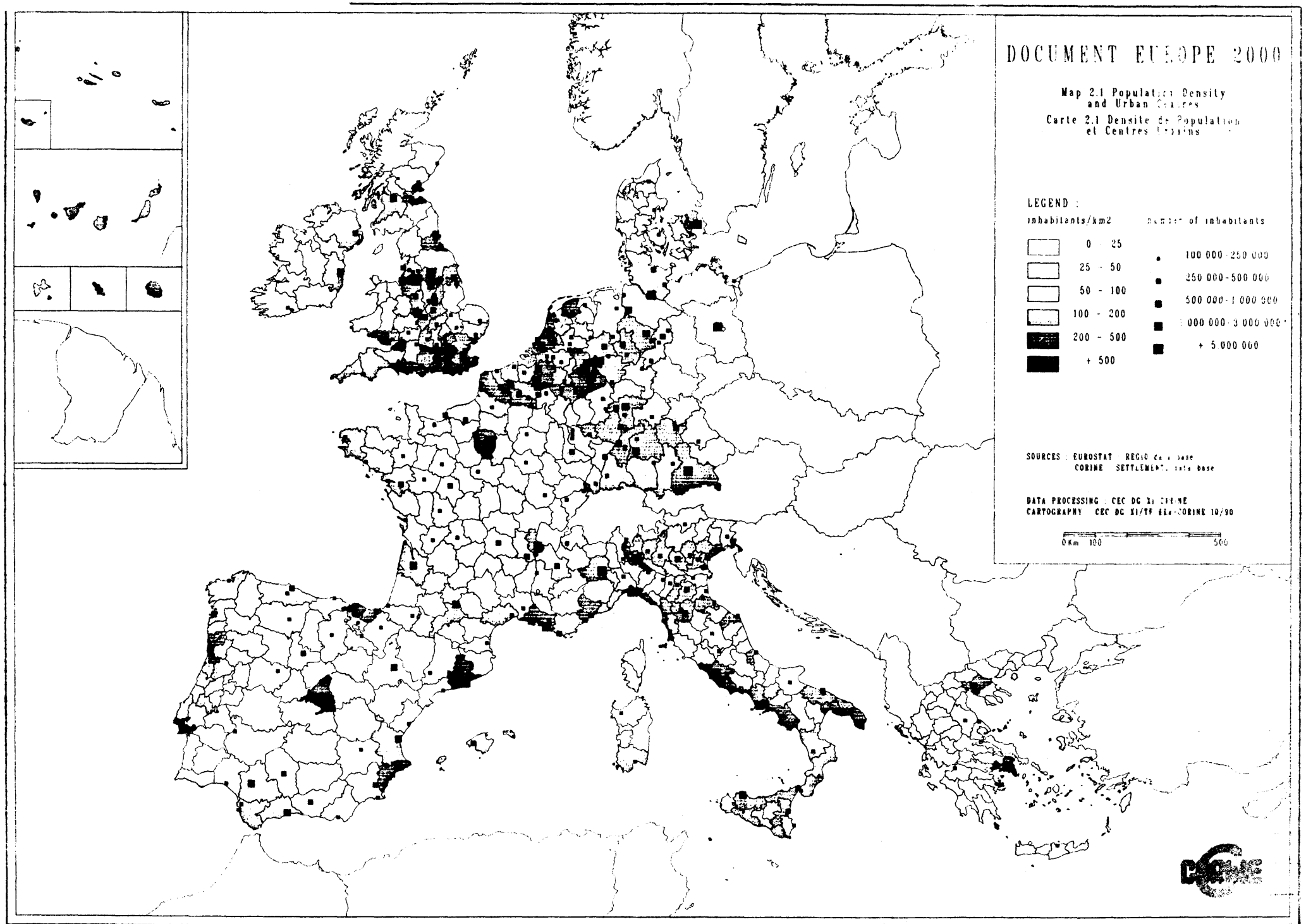
Table 5

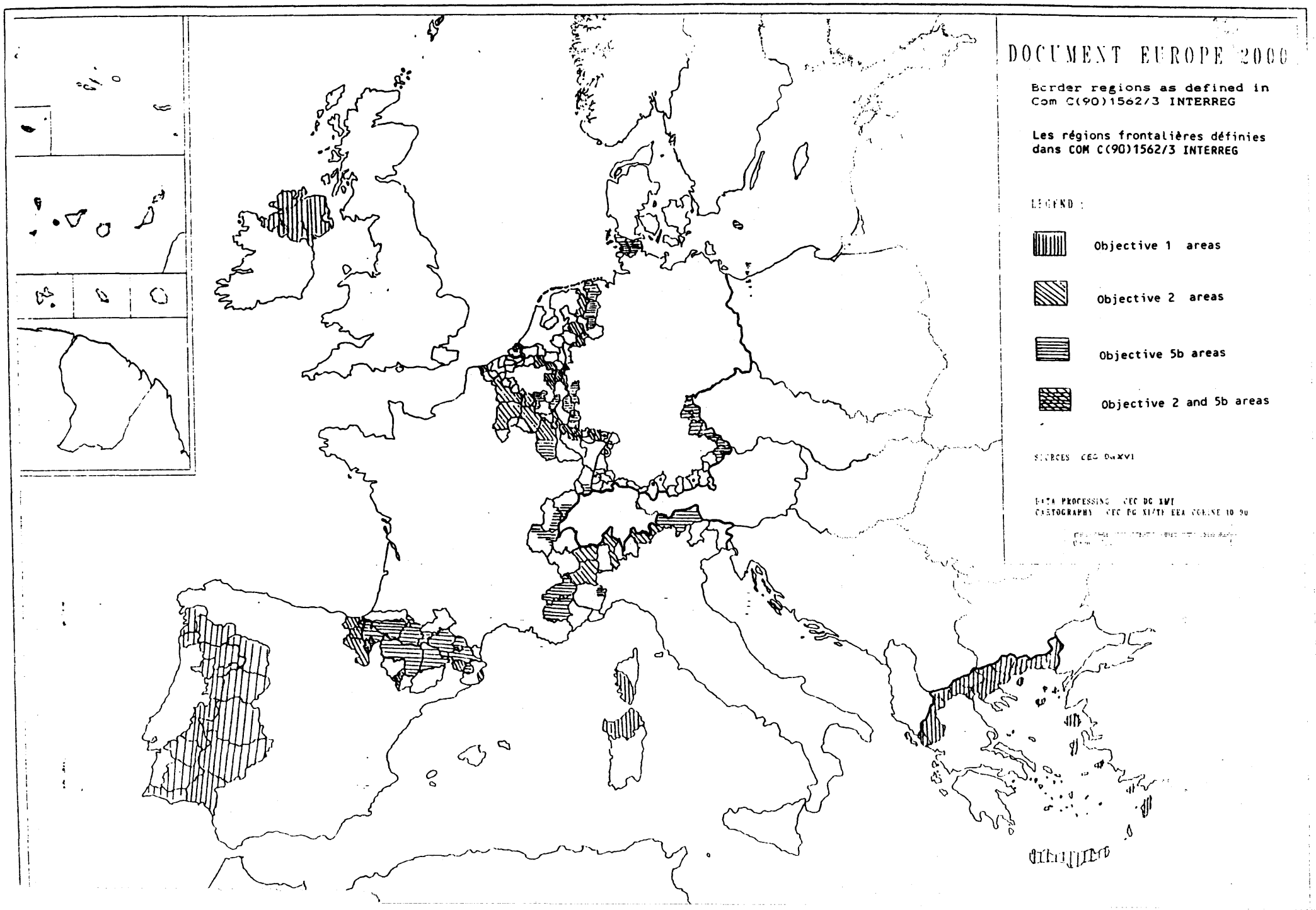
FARMERS IN THE EC BY AGE GROUP IN PERCENTAGE

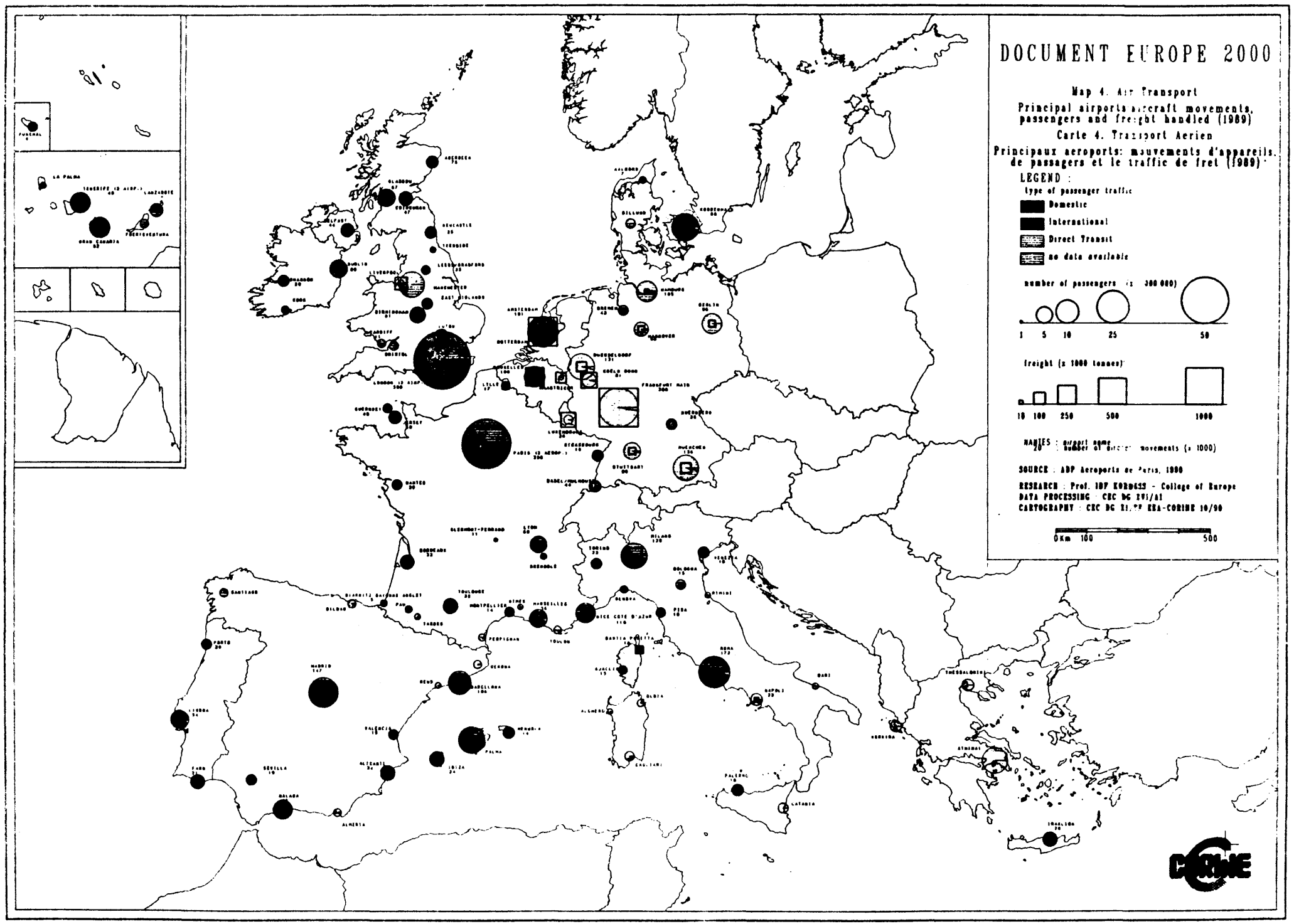
Age	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Lux.	Ndls.	Portugal	UK	EC12
under 45	33,4	29,4	33,4	21,0	20,6	25,3	24,7	18,9	28,4	31,7	25,0	26,5	22,7
45 - 55	30,6	24,4	35,0	25,7	27,7	26,3	24,7	25,4	26,7	28,2	25,6	25,0	26,9
55 - 65	27,2	26,4	25,6	26,6	28,1	33,1	28,3	30,3	25,6	27,7	24,8	27,4	28,7
over 65	8,8	19,7	6,2	26,6	23,5	15,2	22,3	25,4	19,3	12,4	24,6	21,0	21,7

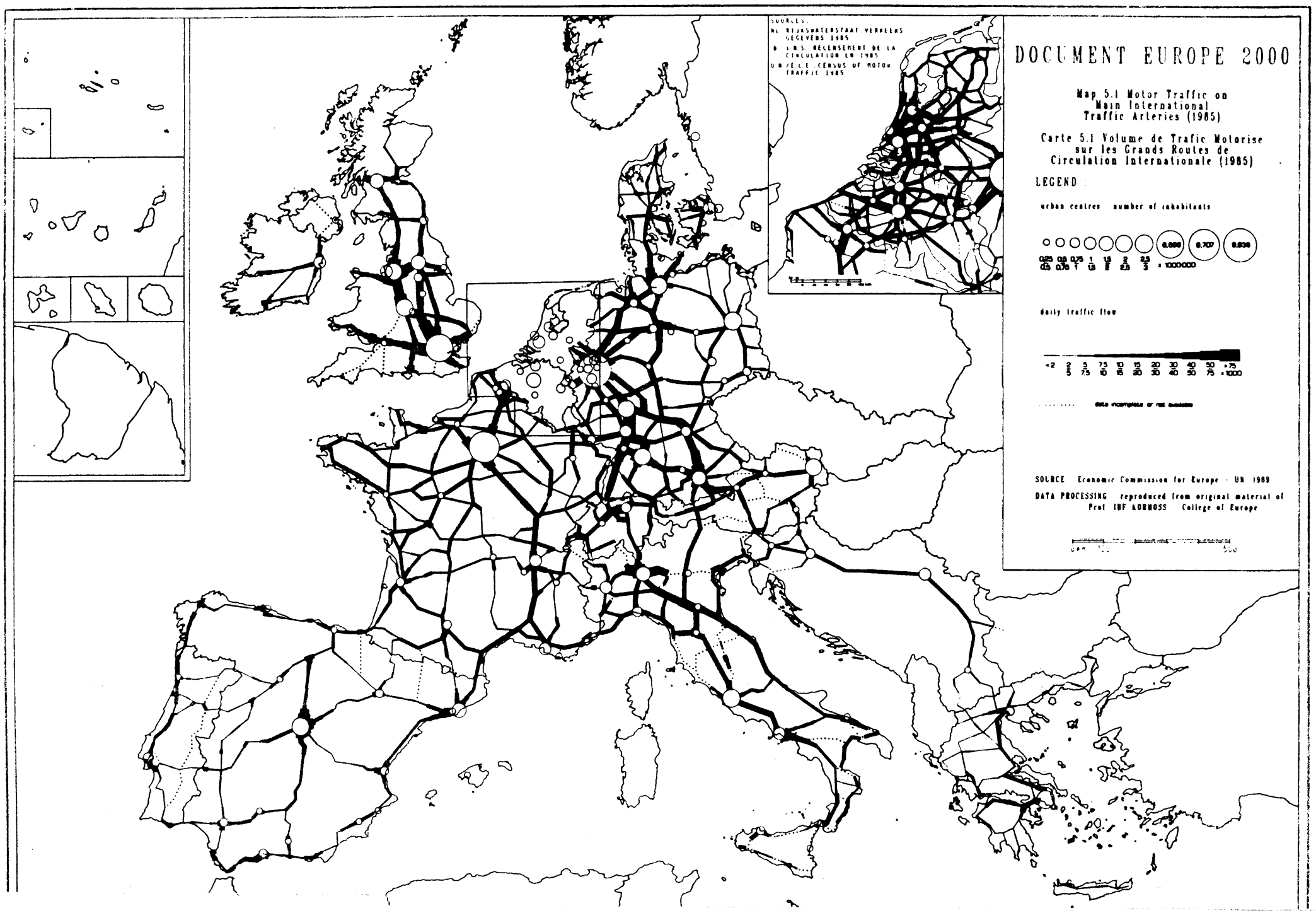
Source : Eurostat and 1989, Agricultural Report of the Federal Government, Bonn.

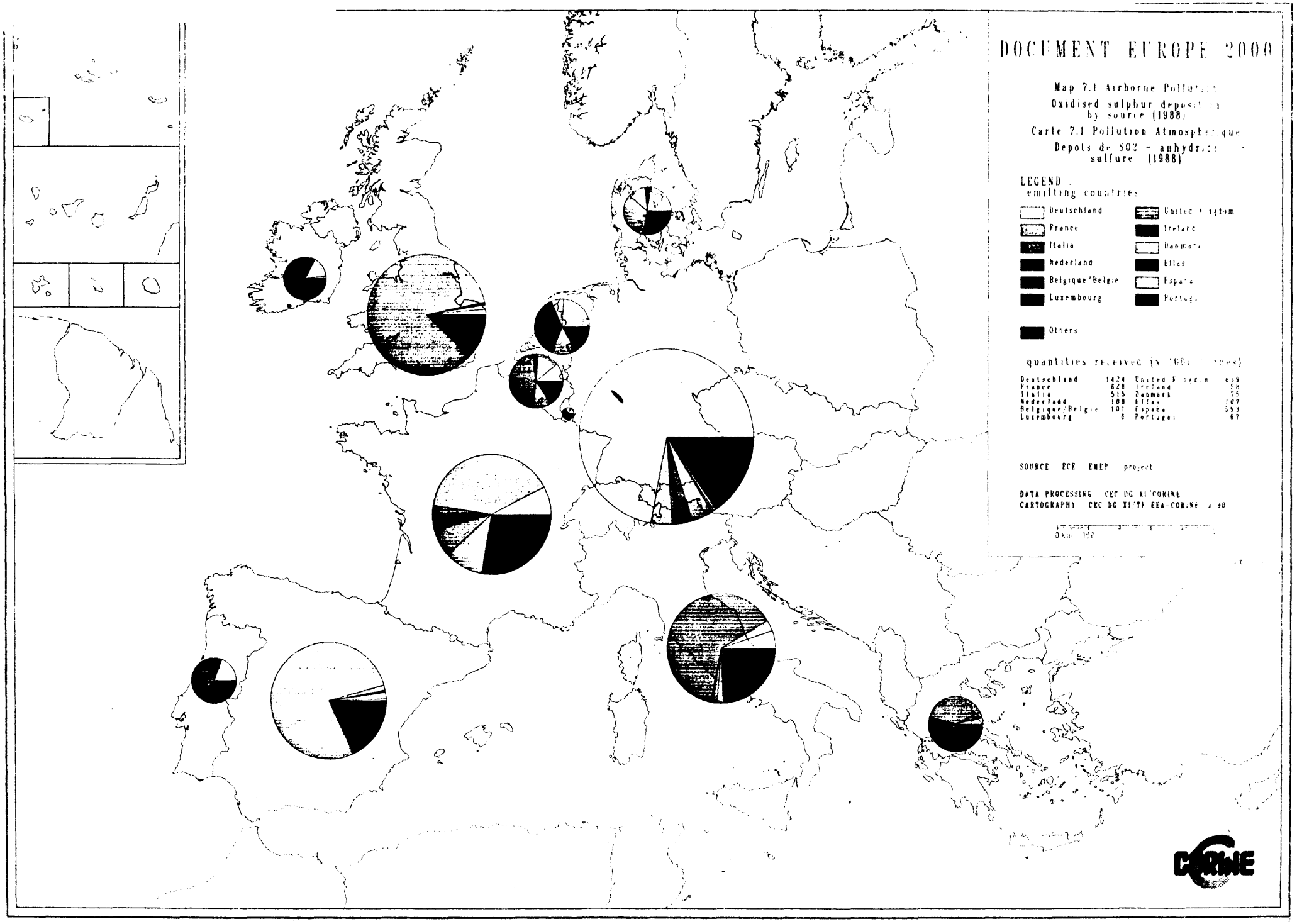

DOCUMENT EUROPE 2000
Map 1.1 Projected Age Structure
Percentage of the population
over 65 years of age by 2010
Carte 1.1 Projection de la Structure par Age
Proportion de la population
de plus de 65 ans en 2010
LEGEND %
26 - 34
24 - 26
22 - 24
20 - 22
17 - 20
11 - 17
no data available
SOURCE CEC - Netherlands Economic Institute
RESEARCH Prof IBF KORMOSS - College of Europe
DATA PROCESSING CEC DG XVI/A1
CARTOGRAPHY CEC DG XI/TF EEA-CORINE 10/90
500

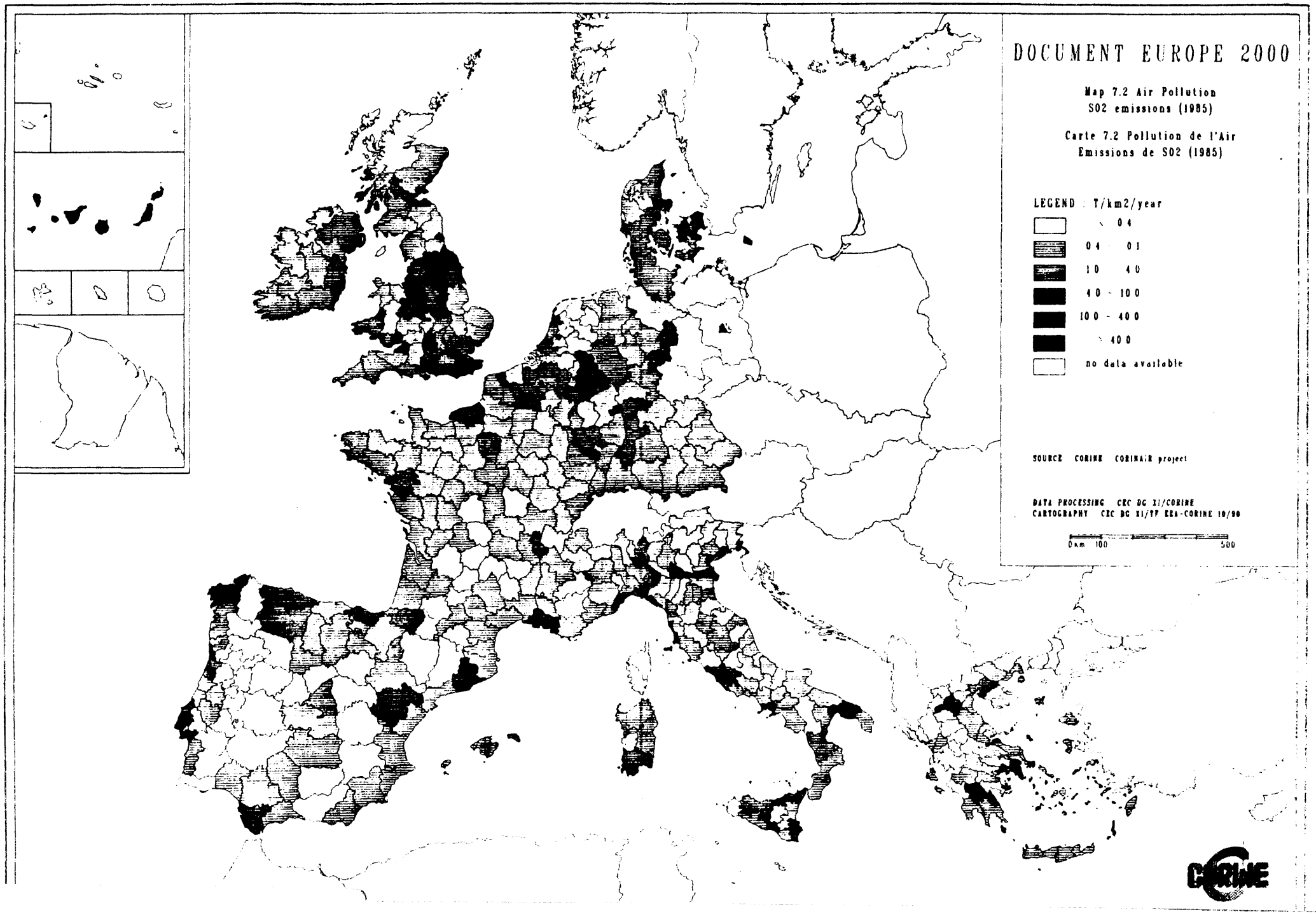

DOCUMENT EUROPE 2000
Map 2.1 Population Density and Urban Centres
Carte 2.1 Densité de Population et Centres Urbains
LEGEND :
inhabitants/km2
0 - 25
25 - 50
50 - 100
100 - 200
200 - 500
+ 500
Number of inhabitants
100 000 - 250 000
250 000 - 500 000
500 000 - 1 000 000
1 000 000 - 3 000 000
+ 5 000 000
SOURCES : EUROSTAT REGIO data base
CORINE SETTLEMENT data base
DATA PROCESSING : CEC DG XI CORINE
CARTOGRAPHY : CEC DG XI/TF GIS-CORINE 10/90
0 Km 100 500


DOCUMENT EUROPE 2000
Border regions as defined in Com C(90)1562/3 INTERREG
Les régions frontalières définies dans COM C(90)1562/3 INTERREG
LEGEND :
Objective 1 areas
Objective 2 areas
Objective 5b areas
Objective 2 and 5b areas
SOURCES CEC DG XVI
DATA PROCESSING CEC DG XVI
CARTOGRAPHY CEC DG XI/TI EEA CORINE 10 90


DOCUMENT EUROPE 2000
Map 4. Air Transport
Principal airports aircraft movements, passengers and freight handled (1989)
Carte 4. Transport Aerien
Principaux aeroports: mouvements d'appareils, de passagers et le traffic de fret (1989)
LEGEND :
type of passenger traffic
Domestic
International
Direct Transit
no data available
number of passengers (x 1000 000)
1 5 10 25 50
freight (x 1000 tonnes)
10 100 250 500 1000
SOURCE : ADP Aeroports de Paris, 1990
RESEARCH : Prof. JBP KORTHALS - College of Europe
DATA PROCESSING : CEC DG XVI/A1
0Km 100 500


SOURCES:
NL RIJKSWATERSTAAT VERKEERS GEGEVENS 1985
D I.M.S. RECENSEMENT DE LA CIRCULATION EN 1985
UN/ECE CENSUS OF MOTOR TRAFFIC 1985
DOCUMENT EUROPE 2000
Map 5.1 Motor Traffic on Main International Traffic Arteries (1985)
Carte 5.1 Volume de Trafic Motorise sur les Grands Routes de Circulation Internationale (1985)
LEGEND
urban centres number of inhabitants
daily traffic flow
SOURCE Economic Commission for Europe - UN 1989
DATA PROCESSING reproduced from original material of Prof IBF HORMOSS College of Europe


DOCUMENT EUROPE 2000
Map 7.1 Airborne Pollution
Oxidised sulphur deposition by source (1988)
Carte 7.1 Pollution Atmosphérique
Depots de SO2 - anhydride sulfure (1988)
LEGEND
emitting countries
Deutschland
France
Italia
Nederland
Belgique/België
Luxembourg
United Kingdom
Ireland
Danmark
Ellas
España
Portugal
Others
quantities received (1000 tonnes)
Deutschland 1424
France 628
Italia 515
Nederland 188
Belgique/België 101
Luxembourg 6
United Kingdom 659
Ireland 58
Danmark 75
Ellas 107
España 593
Portugal 67
SOURCE ECE EMEP project
DATA PROCESSING CEC DG XI/CORINE
CARTOGRAPHY CEC DG XI/TP EEA-CORINE
0 Km 500


DOCUMENT EUROPE 2000
Map 7.2 Air Pollution
SO2 emissions (1985)
Carte 7.2 Pollution de l'Air
Emissions de SO2 (1985)
LEGEND : T/km2/year
< 0.4
0.4 - 1.0
1.0 - 4.0
4.0 - 10.0
10.0 - 40.0
> 40.0
no data available
SOURCE CORINE CORINAIR project
DATA PROCESSING CEC DG XI/CORINE
CARTOGRAPHY CEC DG XI/TF EEA-CORINE 10/90
0km 100 500
CORINE

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