COMMISSION OF THE EUROPEAN COMMUNITIES

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Report from the Commission to the Council

The Community Interest of Transport Infrastructure Investments: practical experience with the evaluation methodology

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The Community Interest of Transport Infrastructure Investments: practical experience with the evaluation methodology

Summary

1. The results of tests of the methodology to evaluate the Community interest of transport infrastructure projects[1] are described in this report. Working with the Transport Infrastructure Committee, using the results of the Commission's study programme, a number of major projects were evaluated and the results assessed. The report opens with a list of the projects and brief comments on the approach adopted. Due to time constraints a range of projects could not be examined hence the tests concern projects which are both of high cost and considerable general importance (paras.2.1. - 2.2.). As the methodology has been fully described in the document noted above it is only briefly set out here (paras.3.1. - 3.4.). In essence the methodology has been tailored to make full use of the material normally available and to bear particularly upon the Community decision making process. A "check list" to help apply the methodology has been prepared (paras.4.1. - 4.6. and particularly Annex I). Although the use of the "check list" is recommended this advice is purely discretionary. Until such time as it is possible to apply the "check list" to a wide range of projects no firm recommendations on its use can be made. The results produced by the application of the methodology can be presented to advantage in the form of a uniform "Statement" (paras. 5.1. - 5.3. and Annex II). This statement would display in a simple but clear way the major elements of a project and give prominance to factors of special importance to the Community.

2. The projects used for the test were:-

- a fixed link crossing of the Channel between France and the UK,
- a fixed link crossing between mainland Italy and Sicily across the Messina Straits,
- various schemes for new Alpine rail tunnels.

[1] The methodology was described in COM(81)507 Final of 16th Sept.1981

The projects are briefly described (paras. 6.1. - 6.3.). The results of the evaluation methodology are set out in separate "statements" (Annex II, Statements 1 - 3). The implications of the "Statements" for the Community are explored (paras. 7.1. - 7.5.). The Community interest factors are demonstrated and although these are only pilot projects with no commitment attached to them, a number of conclusions are put forward to illustrate the advice that might be offered in actual cases. The methodology is considered to be applicable in these test cases. However, a complete judgment of its applicability will have to be deferred until it has benefitted from a progressive approach to its application. On the basis of these first results it can be concluded that:-

- the methodology can produce a useful guide to the identification of Community interest;
- a progressive development and refinement programme should be undertaken to increase the scope of the methodology and harmonise its application.

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Introduction

1.1 The Council of Ministers meeting on December 15th 1981 approved a Resolution setting out a programme for the continued consideration of the proposed Regulation on financial assistance for transport infrastructure (1). One part of the programme was to be a practical test of the methodology for the evaluation of Community interest set out in Doc. COM 81 507 (Final).

(The Council)

"-asks the Commission, in collaboration with the Transport Infrastructure Committee, to apply on an experimental basis the methods of appraising Community interest in infrastructure projects recommended in the Report on the criteria for the evaluation of projects of Community interest to a limited number of specific projects and requests the Commission to submit its conclusions on this work by October 1982 ;"

The object of this paper is thus clear. The methodology as set out in the Commission's proposal appeared acceptable in theory but needed to be tested on a number of actual proposals to ensure that it works.

1.2 Before outlining the results of the tests that have been undertaken it may be useful to briefly recall the principal points of the proposed methodology for evaluation of Community interest. The essential starting point for the evaluation is the evaluation undertaken by the country or other sponsoring body concerned. However, different ideas concerning the values to assign to factors in national evaluations open the possibility that projects are not ranked equally by individual national methods. In the long term this problem can be tackled by adopting common ideas on values to adopt; in the short term sensitivity analysis can be used to explore the importance of different values. The major factors subject to sensitivty tests will be scenario elements like growth of GNP., values of factors like time and the discount rate used. This "extended" cost/benefit study is then capable of providing a comprehensive review, even if not quantified in all respects, for decision making on the Community interest of projects (its "Community interest"). This approach is expressly designed to be flexible and not to involve considerable extra work on the part of sponsors.

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(1) COM(76)336 final OJ C207. 2.9.1976.

The "Guidelines" for evaluation of Community interest, set out in section 4, aim to balance the need to ensure that the Community institutions receive sufficient information to come to a clear decision against the need to avoid non-cost/effective work which serves little real purpose.

The Approach Adopted

2.1. A number of ways were open to meet the Council remit. One approach was to select a representative sample of projects of varying size, concerning different modes, various regions etc. and to apply the methodology. However, despite the obvious merits of this approach, in practice it had to be ruled out on the grounds of the limited time available. Having ruled out this approach as impractical, attention was concentrated on the projects which the Commission was already examining in its research programme. The Commission's programme has been set up to overcome the problem of lack of data and information on transport problems at the Community level. An element of the programme has been te examination of ways to develop a methodology for the evaluation of Community interest. This work has progressed to the stage that information was available on projects for three major schemes:

first: a fixed link crossing of the Channel from France to the UK

second: a fixed link between Sicilia and the Italian mainland

third: a new railway tunnel through the Alps.

Although these studies were not intended to be evaluations of the projects concerned, the results are most useful as a source for this report. In the circumstances they represented the best available material and justify the attention paid to this subject in the Commission's research programme.

2.2. Before continuing it should be mentioned that the Irish representatives on the Infrastructure Committee were ready to put forward a road scheme of a smaller size than these projects. Although such a project would certainly have been interesting to consider it had to be ruled out from the current exercise on time grounds. The consequent lack of scope in the coverage of projects implies that the methodology will need further testing in this different size range.

The Basis for a Community Interest Evaluation

3.1. An earlier Commission paper to the Council (1) has set out the principal elements of a Community interest evaluation. The main points of the approach have been recalled in para 1.2 above. However, it is necessary here to go into further detail in order to give some background to the development of the guidelines for evaluation set out in the next section.

3.2 The role of an economic evaluation in a decision-making process is not to replace the decision maker but rather to clarify and facilitate the process of making the final decision. At the level of the Community it is obviously illusory to expect economic evaluation to do more than reduce the uncertainty and refine the choices that are available. Having made this simple but important point the need for consistent and clear economic advice on the merits of a project for Community support should not be underestimated. Throughout the Community considerable progress has been achieved in quantifying the many factors that have to be considered in evaluation without, however, arriving at a total quantification. This implies that considerable scope for judgement exists and in no way are decisions "canalised" along rigid lines.

3.3 Member States have made considerable progress with the development of evaluation techniques. Under the combined pressure of increasingly scarce public resources and the need to take proper account of the impact of major projects upon the environment etc. comprehensive methods of analysing costs/benefits have been prepared. The Commission's proposals take account of these developments and add to the national approach a number of factors of importance for the Community in order to have a comprehensive picture of the Community situation. The principal element of any transport project that is open to quantification in money terms are time savings to passengers and also to freight. All attempts at evaluation now include an estimate of time savings. This estimate can be widened to include any benefits that occur across the national frontier and it can also be refined to show how the benefits are distributed between countries.

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(1) op.cit. para 1.1.

3.4 Building up from national evaluations is not the complete answer. It is also necessary to be able to compare between projects. A comparison has to be based on an assessment of the projects using acceptable values : such an approach is specifically considered in the context of the guidelines on evaluation developed in the next section.

A guide in outline form for Community interest evaluation

4.1 As explained in the last section the requirements for a Community interest evaluation can be based substantially upon national practices. In this situation it is clearly neither useful nor necessary to prepare a detailed guide for evaluation. Rather what is useful is a series of guidelines that attempt to direct those preparatory submissions towards questions of importance and for which there can usefully be a common approach. With this limited objective in mind a draft guide to the presentation of projects has been prepared, it is attached as Annex 1.

4.2 There are four principal points in section A of the guide. The objective of the section is to provide some general guidance on the form of the project, the traffic flows involved, how benefits and costs may be quantified and the appraisal criterion. The central point here is that the recommendations do not have to be slavishly followed but that by adopting basically similar ideas for the evaluation of projects decision makers using this information will have an easier task and the results will be less subject to differences of interpretation.

4.3 The first subsection attempts to set the scene for the evaluation : to ensure that the evaluation does not neglect either an option of particular interest nor fail to take account of the interests of an affected party. The second sub-section outlines some basic points concerning the projections of traffic. Attention is directed to the question of the scenario, the models and particularly, to the need for explicit and clear formulations. In the future the Commission plans to consider ways to provide a framework for more detailed forecasts that will have to be prepared specifically for projects. The value of a data bank for Community traffic movements will also be clear in this context and the Commission also has plans to develop this area.

4.4 The third sub-section deals with the quantification of costs/benefits. This section contains only a recapitulation of the basic features of a cost/benefit analysis. The aim once again should be to facilitate comparisons and to make the evaluations as transparent as possible.

4.5 The fourth and final sub-section sets out suggested criteria for evaluation. The points that are made are well known and generally accepted following as they do the usual practice in the Member States.

4.6 This short and generalised series of guidelines is only a first attempt to set out a feasible approach. It is illustrated later but it should be emphasised that the approach is left to the discretion of the sponsors of a project. The central question is how to show "Community interest" and there are other approaches which may be preferable for certain projects noteably smaller schemes. The "Guidelines" should be seen as a means to an end, identifying Community interest, rather than an end in itself. In the initial period of testing and developing practical Community machinery there are arguments for experimenting with modifications and additions to the basic framework.

The Statement of Community Interest

5.1 An appraisal of a major project is likely to be a compendious document. For the purposes of an application to the Community for assistance there are clear advantages in the preparation of a short document which is easy to understand and assimilate. The preparation of what might be termed a "statement" of Community interest could have two useful consequences.

first : as noted it makes a complex project easier to follow and concentrates attention on the points of principal Community interest.

second :it should permit a fairly easy "sort" of the projects into three groups - the projects with very good chances of aid, the projects with a poor chance, and the rest. For the rest in particular this is useful as it would single them out for the attention they merit to ensure that their case is adequately understood and evaluated.

5.2 The "Statement in Summary form of points of Community interest" - Annex 2 is designed to lead the proposer i.e. the group or other body submitting a project, through a logical series of questions. The series of questions starts with a basic review of the "scenario" used for the evaluation of the project. Here the main points to note concern the assumptions made concerning economic, demographic and regional growth. The object of this is to allow the other Member States to take a view on the forecasts and relate them as necessary to forecasts that they themselves have made.
Question B asks for a description of the principal benefits to users. Here the proposer should indicate, inter alia, the time benefits (and value of time used), fare or cost savings and any other notable benefits that the project is expected to provide.
Question C, aims to point up the effects on other modes or routes produced by the project. Question D calls for a statement of the principal effects of the project on some important factors such as employment, energy and regional development : these factors are likely to play a particular role in determining the overall value of the project to the Community. Question E arrives at the central item of the statement - a summary of the cost-benefit study of the project. The cost-benefit analysis should include the factors of particular interest to the Community. It will have been prepared following the notes set out in the "guidelines" or on some other approach ; the methodology itself is not important but the motivation and basis for the calculations should be clearly stated. Question F directs attention from the integrated cost-benefit analysis towards a statement of how the benefits and costs are distributed notably over countries and users. Finally, Question G calls for the sponsor to indicate why the project merits Community interest. Of particular relevance here is the budgetary aspect : a sponsor should show that the project not only merits Community assistance through the benefits it confers on the Community but also that it needs such assistance to ensure its early completion. This justification can originate in two ways, either the project does not rate sufficiently high in national rankings to enter into the budget or possibly that the national budget "envelope" for transport is not large enough for the number of good projects that merit inclusion.

5.3 In section 6 the statement will be applied to the projects that have been choosen to demonstrate the application of the Community interest methodology.

6. The Demonstration Projects

6.1 The Demonstration projects are as follows :

- The Channel Link : The idea of a fixed link crossing of the Channel has had a long and varied history. There are a number of projects currently being considered to provide a link. The projects can be grouped into three main types :

  first : conventional tunnels for rail transport alone ;

  second : immersed tunnels with ventilation equipment for road vehicles travelling under their own power ;

  third : bridge projects with or without intermediate artificial islands.

  A demonstration project could be choosen from any these : however as it is necessary to limit the number of projects covered the project for a single tunnel has been selected as an illustration.

- A link across the Messina Straits. A link from Italy to Sicilia has almost as long a history as the Channel. As the distance is much shorter, ± 4 kms, the project may at first sight seem more attainable. However, the existence of seismic problems creates considerable uncertainties for construction.

The alternative schemes proposed consist of various forms of bridge and what is described as a "submerged bridge" : this latter project involves a submerged tube supported at a certain depth in the water.

6.2 The Alps represent an important barrier on routes to/from Italy. Today, the barrier is more a barrier in terms of capacity. This problem is particularly complex due to the need to make decisions for a period a very long way ahead and because of the number of countries involved. The three main rail projects for new tunnels that are considered in the evaluation are :

- the Gothard, a new tunnel roughly parallel to the existing serving the most heavily used freight axis from the Ruhr to Lombardia ;

- the project for a tunnel along a new route, the Splügen. This project is claimed to open up new possibilities in terms of regional development and would use new approach tracks avoiding areas of existing congestion ;

- a tunnel along the Brenner route. The existing line is very mountainous and imposes severe restrictions on speed and capacity. The existing route is arguably the worst of the existing rail possibilities and hence its improvement merits close attention.

6.3 These three projects, in practice there are more than three projects as competing schemes exist, are the subject of statement 1 to 3. It should be recalled that the object of the statement is not to provide a detailed review of the project but rather to present the available evidence clearly and concisely in order to assist the decision-maker to arrive at a view of future Community action.

The basic information available to the Commission is not so detailed as would be expected in a formal submission from promoters. Only in the case of the Channel link does a fully documented supporting case exist and here some of the crossing projects are better supported than others. For projects coming forward to the Community it will be normal for them to have undergone an examination at the national level and that they will be supported by a considerable volume of technical and economic evidence. In the statements which are attached many assumptions need to be made in the absence of information ; however, it is considered that such assumptions do not go beyond what would be the usual capability of promoters to supply and indeed what they would require for their own evaluations and for national appraisals.

The application of the outline presentation of Community interest

7.1 Channel link : Statement I presents a review of the application of the methodology to the proposal for a single track rail tunnel. The statement shows that the tunnel project can be expected to be viable in terms of an isolated financial project. However, the evaluation is complicated by the fact that a tunnel promoter, assuming such a promoter to be a separate entity, is dependent upon two national railway companies for its traffic. In normal circumstances the railway companies would have every interest to provide traffic for the tunnel but circumstances can be envisaged where problems could arise. To add to this problem, which bears heavily upon the possibilities of financing the project, is the possibility of some unforeseen event considerably increasing the costs of the works. The statement also shows that the Community as a whole will derive benefits from the project. The evaluation also shows, although it should be remembered that the analysis was undertaken in 1979, that in purely financial terms a favourable rate of return should be earned. Notwithstanding these conclusions the emergence of a firmly supported project appears some way from becoming reality. If the Community is to furnish assistance it is axiomatic that this should be directed to areas that would be most effective. In the case of projects that are based on private finance the provision of guarantees has created problems. Should a project of this nature come forward to the Community it would clearly be sensible to include the question of guarantees together with other forms of aid in any discussion on the possibility and extent of Community assistance.

7.2 The Messina Straits project : the project for the Messina crossing is interesting from both the technical and economic viewpoints. Although the evaluation at this time has not included any consideration of technical matters it is clear that the problems in the area, seismic etc., will call for ingenious solutions. The general benefit to the region from a fixed crossing is clearly brought out. The major question mark against the project concerns its relevance to an integrated regional development plan for the area. As the amount of money involved is very high and the financial profitability of the scheme not such as to avoid the call upon considerable public funds it is inevitable that the alternative use of such public funds has to be considered. At this stage before a full evaluation of a project in the regional development context is available it would be premature to make any decision on the project in transport terms. The initial study undertaken of transport aspects needs to be supplemented by a more comprehensive appraisal and if such a study is to be undertaken a contribution from the Community should be actively considered.

7.3 The Alpine Tunnel Projects : The Alpine crossing projects bring together a number of elements of importance for Community action in the field of infrastructure. Among the points of interest are :

first : the question of pricing policy and its inter-modal, international consequences ;

second : the distribution of costs/benefits between Member States of the Community and non Members ;

third : the ranking of schemes producing benefits a long way ahead and those that produce quicker benefits.

The need for a new rail tunnel in the Alps depends essentially on the view that is taken of future traffic growth and its distribution between modes. If traffic were to grow slowly, due to low economic growth or a change to less bulky products, a new facility would not be needed until well into the next century. However, if traffic does grow reasonably quickly new facilities will be required, based on the calculations made by the consultants, around the year 2000. However, traffic growth is not the whole story as the modal split and routing of the traffic are also important.

Turning to the question of profitability the statement shows that in strictly financial terms a new tunnel project is not likely to be profitable. This is partly due to the general economic situation of the railways and also to the paradoxical situation that when a distance-based tariff structure exists, a new facility, which will be shorter in distance terms than the existing, will have a lower revenue. One answer to this would be to change the distance based tariffs but apart from the administrative problems this would imply the railway would be likely to attract less traffic.

A further problem concerns the distribution of costs. The tunnels costs would fall largely upon one of two non-Member countries - Switzerland or Austria. As these countries would not be able to recoup the totality of their costs from revenue they could be tempted to either postpone the project entirely or adopt a policy to restrict road transport in transit and so allow the rail rates to be raised. A final point concerns the fact that prior to aiding any project of this nature the Community would need to take a view on the alternative use of its funds. These projects start to produce benefits for the Community twenty years hence ; there may well be projects that will produce benefits before these in the Community itself.

Having made these general points it is clear from the information displayed in the statement that a clear prima facia case exists to justify Community interest. The issue of which project, if any, might merit support has been somewhat clarified by the analysis but a fundamental decision is necessary regarding the objectives for future capacity. A decision on one of the projects should not be taken independently as the construction of any one will make it impossible to justify economically another for many years. In these circumstances the choice in simple terms can be spelt out as follows :

If, it is accepted that traffic will grow as assumed in the high-growth scenario the Gothard project appears beneficial at 3% discount the others at lower rates.

If, the trade pattern in the high-growth scenario varies to a more easterly axis the Brenner and the Splugen projects become more interesting. The Brenner project is also somewhat favoured by the fact that it may prove possible to either reduce substantially or even close some parts of the existing mountain route thus realising considerable savings in terms of maintenance.

7.4 The Projects reviewed

In looking at the results of this exercise it is important to distinguish between the two stages of the process :

first : a decision in principle that a project is of Community interest in the context of transport policy.

second : a decision on the question of Community support and the form it might take.

The answer to the first question could well be that a project is of potential Community interest but in terms of the second question a decision may be taken that it is not justified to aid the project on transport grounds alone.

In the three cases that have been examined there is considerable evidence to support Community interest but the balance of the evidence varies from case to case. In the Channel tunnel scheme there are substantial benefits to the Community through user benefits and the general support for Community policy on transport and railways in particular. However, it is also apparent that on the evidence available the project should not need direct financial support. What may be needed is some form of guarantee.

As concerns the link to Sicily the project does not appear to be viable and will therefore require a fairly substantial injection of public funds. Although the link might contribute materially to regional development in Sicily the evaluation did not allow any clear decision to be made on this in the absence of a better understanding of the regions transport needs : in terms of its contribution to the Community on transport grounds alone the project does not appear likely to merit substantial direct assistance. The first question to solve in this situation might be to establish a clear hierarchy of investment needs and potential funding in the area.

As for the Alpine crossings the evaluation has pointed up a clear potential interest for the Community. The final decision must turn on a definite view of the future but it is already plain that a reasonably strong case for Community interest can be made. As regards the choice of project and the type of assistance this will require further work and discussions with the national authorities in Switzerland and Austria. A plausible series of assumptions lead to the conclusion that the Community could benefit substantially from a new tunnel hence it is important for the Community that its objectives are clearly understood, and possibilities of assistance clarified, in the preparatory work to develop projects.

THE PROJECTS REVIEWED

Figure 1

Project / Element	Channel Link Tunnel	Messina Straits Crossing	Alpine Rail Tunnels
Financial profitability	Good	Poor	Depends on tariff and transit policy
Nature of main benefits to community	- major improvement to important link - trade stimulation - energy savings	- regional development	- major improvement to important link - trade stimulation - energy savings
Main questions	Future development of railways	- regional planning framework - other sea links	- traffic growth - modal choice questions
Sensitivity to changes in basic assumptions			
- economic growth	robust downwards improves upwards	some improvement	very sensitive
- regional development	very small	important	none
- energy prices	improves as energy costs increases	probably negative	improves as cost increase
Conclusions	Good case for Community interest, possibly guarantee	some case for Community support in context of regional programme	clear prima facia case needing further analysis

7.5. Overall, the application of the methodology has been shown to be feasible even for cases where the amount of information is limited. The preparation of a short statement of Community interest has been undertaken and it is hoped that this first attempt is considered useful : it will clearly be necessary to improve and clarify the approach where doubts exist. The object of the methodology is to be flexible : to aid the decision-maker to decide upon aid and its most effective level. With this aim in view a decision, in advance, to fix an arbitrary limit of 15 % or 20 % is wrong : each major project should be considered on its particular merits and particular needs. The 'Statement' is designed to give the decision-maker a maximum of information on the nature of Community interest, and when possible to set a value on this. The assessment of Community interest is intended to help set a limit on the assistance that might be accorded. The appreciation of the financial situation and where appropriate the ranking of the project in national cost/benefit terms is intended to ensure that Community assistance is applied effectively and efficiently.

GUIDELINES FOR THE EVALUATION OF COMMUNITY INTEREST

SECTION A. Basic Information and the Approach to adopt

1. General Outline for the Appraisal Process

1.1 All potentially attractive schemes for satisfying the objective under study should be appraised, including those without active proponents. The analyst should consider the inclusion of additional options, particularly where those put forward do not serve all possible markets.

1.2 Where there is a large number of options, they should be subjected to a preliminary screening to produce a short list. Care must be taken with the exercise as costs for some options may be subject to high margins of error.

1.3 The evaluation must be comprehensive; it must include an assessment of the regional, social, and environmental aspects of the schemes.

1.4 The evaluation must aim to take into account the interests of all affected parties.

1.5 Methods of quantification and of valuation of costs and benefits must be explicit.

2. Projections of Traffic

2.1 The scenarios of external economic and other variables should be explicit, and internally self-consistent; where they are not consistent with those in general use by the Commission or by national Governments, the reason for the divergence should be explicit.

2.2 Traffic should, where possible, be divided up into groups within which the determinants of demand growth may reasonably be expected to be the same; thus passenger traffic should be divided by trip purpose, and goods traffic by type of goods.

2.3 Projections of traffic should be based on explicit models of consumer behaviour.

2.4 The models used should be consistent with the evaluation process.

2.5 Where possible, the models should be based on data on individual households, firms and trips; and, again where possible, statistically estimated from specifically designed surveys.

2.6 Assumptions about the price charged by the scheme, and by competing and complementary facilities, should be explicit, and reflect informed opinion on what is likely.

2.7 Account should be taken of likely future developments in competing and complementary infrastructure.

2.8 The possibility of traffic arising from :

(a) diversion (route and mode choice);
(b) redistribution (destination or supplier choice); and
(c) generation (new trip choice)

should be considered, and the categories should be distinguished in the analysis.

3. Quantification of Costs and Benefits

3.1 Costs and benefits should, where possible, be expressed in a single numeraire, money. Where this is not possible they should be quantified in physical terms.

3.2 The weights attached to factors not valued in the market should in general be based on 'revealed preferences'. The specific values given to factors (e.g. time savings) should be specified and the physical amounts involved also given.

3.3 All costs and benefits, for all schemes, should be calculated making the same, explicit set of assumptions about the movement of relative prices of factors of production; this set should be consistent with the scenario used in forecasting.

4. The Criterion for Appraisal

4.1 All schemes should be appraised including costs and benefits occurring between the present and the same time horizon.

4.2 Except where the life of the structure is short, the time horizon should be long; appraisal at 20 and 50 years is recommended although the choice must depend on the circumstances of each case.

4.3 The time streams of costs and benefits should be indicated to allow other discount rates to be applied if requested .

4.4 The incidence in time of individual items of cost and benefit should be shown explicitly, to enable their evaluation at any chosen discount rate, or the use of other criteria.

4.5 The sensitivity of the results to variations in :

(a) external scenarios;
(b) capital costs; and
(c) pricing policies
(d) discount rates

plus any other relevant factors should be examined.

4.6 Where a revealed preference approach has not been used to value factors the reasons should be given. In the case where certain items have been found impossible to quantify or value, an estimate should be given of what valuation would be implicit in altering a decision based on quantified items.

SECTION B. Presentation of a Community Interest Statement

5.1 An explicit statement should be made of how and to whom all items of cost and benefit accrue. This statement should include both quantifiable and non-quantifiable elements.

5.2 Where these items have been expressed in money terms, they should be discounted and expressed as present discounted values.

5.3 The distribution of benefits between countries should be shown, and that of financial costs and benefits between the main financing agencies, and other affected parties.

5.4 Where benefits accrue differentially between regions, their distribution between regions should also be shown.

5.5 As well as the initial geographical incidence of the benefits the distribution of their ultimate incidence should, where possible, be shown.

SEE THE ATTACHED "STATEMENT"

ANNEX 2

STATEMENT IN SUMMARY FORM
OF POINTS OF COMMUNITY INTEREST

Project :

Description :

1. Question A : Describe the economic "scenario" for the project.

(indicate the assumptions made about G.N.P., trade development, relative prices, etc.)

Note : tables, figures etc. can be attached separately.

2. Question B: What are the principal benefits to users of the project?

(Give the value of any time, fare or other benefits in quantified terms if possible)

3. Question C: Does the project have an impact on other routes or modes of transport?

(if so indicate the traffic and investment effects)

4. **Question D:** What are the principal effects of the project on factors such as employment, environment, energy, regional development? Mention any other external factors of importance.

5 **Question E:** Provide a summary of the cost-benefit study and an appreciation of the benefits of the project for the Community.

(indicate the likely effects of the project on Community policies such as transport,energy,environment,regional etc)

6. **Question F:** Provide a statement of how the benefits of the project are distributed throughout the Community.

7 Question G **Justify Community fiancial support for the project**

(provide an indication of the profitability of the project at the national level and show how the project relates to national budgeting)

STATEMENT in SUMMARY FORM

of POINTS of COMMUNITY INTEREST

Project: For a single track railway tunnel between the U.K. and France.

Description:

The project is to bore a single tunnel of approximately 7M.'s plus a service tunnel of 4.5M's from France to U.K.. The tunnel would be used by rail services plus a limited number of services for vehicle transport. Provision would be made for later expansion by the addition of a second tunnel. (The project was evaluated in 1979)

1. Question A: Describe the economic 'scenario' for the project.

(indicate the assumptions made about G.N.P., trade development, relative prices, etc.)

The scenario included two alternative hypothesis concerning economic developm-ent : these are shown in Table S.1.1. The assumptions concerning population are shown in Table S.1.2.. Under the "low growth" scenario it is assumed that the relative ("real") cost of fuel will rise by 3% per year to 1985 and by 1.5% thereafter. The assumption in the "high growth" scenario is that the relative cost of energy will remain unchanged up to the year 2000.

COMMENT.

The economic growth rates used may now be considered to be rather optimistic. This points to the need to consider the results of the sensitivity analyses with care.

Note: tables, figures etc. can be attached separately.

Table S.1.1. Population

Population levels (in thousands) and growth rates (% per year)

Country	1985 Population	Growth rate 1977-1985	2000 Population	Growth rate 1985-2000
F.R. Germany	60100	- 0,3	57200	- 0,3
France	55900	0,6	59000	0,4
Netherlands	14700	0,7	15600	0,4
Belgium/Luxembourg	10400	0,3	10400	0,0
Italy	58800	0,5	61200	0,3
Austria	7700	0,3	8000	0,3
Spain	39100	0,8	45300	1,0
Switzerland	6900	1,1	7600	0,6
United Kingdom	58600	0,6	60000	0,2
Other countries	-	0,4	-	0,3

Table S.1.2. G.D.P. and household expenditure

G.D.P. growth rates (% per year)

Country	1977 - 1985		1985 - 2000	
	Low	High	Low	High
Germany	1.6	3.0	2.90	3.5
France	2.0	3.7	2.0	3.5
Netherlands	1.7	3.1	2.0	3.5
Belgium/Luxembourg	1.3	2.4	2.0	3.5
Italy	1.3	2.4	2.0	3.5
Austria	2.0	3.8	2.0	3.5
Spain	2.3	4.3	2.0	3.5
Switzerland	1.4	2.7	2.0	3.5
United Kingdom	1.5	2.8	2.0	3.5
Others	1.7	3.2	2.0	3.5

2. **Question B:** **What are the principal benefits to users of the project?**

(Give the value of any time, fare or other benefits in quantified terms if possible)

The principal benificiaries of the new facility are leisure travellers who make up the bulk of the travellers. From a position where the majority of travellers originated in the UK it is forecast that by the year 2000 the majority will originate in the other European countries. Business travellers do not gain extensive benefits from this project as the need to "flight" (i.e. run the trains in one direction only for long periods) does not offer a competitive service to air. The principal beneficiaries of the freight side are those users who can switch easily to rail. For quantified benefits see Table S13.

COMMENT

As the passenger forecasts are very dependent upon increasing disposable income the growth rate of the EEC countries is very important. The freight users will face the problem in the UK of adapting to a network which is rather attenuated by the standards of other countries.

3. **Question C:** **Does the project have an impact on other routes or modes of transport?.**

(if so indicate the traffic and investment effects)

The project has two major impacts. First on the shipping services. Second, on the traffic on existing rail routes. Both are likely to be important. The shipping services are forecast to loose a substantial part of their existing "classic", i.e. non-car accompanied, traffic. However, as the overall demand is expected to grow the impact on the shipping services can be absorbed by a standstill on investment for a number of years. As for existing links doubts have been expressed about the possible impact of additional services on heavily used commuter routes near London : this problem can be tackled by limited investments and new operating practices. Losses will also occur in the PORTS and for ROAD HAULAGE.

COMMENT

The project will have a clear beneficial effect on railways particularly in the U.K.. It does pose a problem for maritime traffic and proper long-term planning and consultation will be needed to ensure the inception of the new facility does not create excess disruption.

4. Question D: **What are the principal effects of the project on factors such as employment, environment, energy, regional development? Mention any other external factors of importance.**

Employment. Two stages should be distinguished, construction and operation. Moreover, it is important to separate the positive (job creation) from the negative effects on employment in shipping and ports. The net effect during construction is likely to be positive whereas the longer-term direct effect could be neutral or even negative taking employment losses on ships into account.
Environment. The environment is affected directly by the new works and indirectly by the transfer of traffic between modes. Special attention has been paid to minimising the effects in Kent and the Pas de Calais. Overall a switch to rail is thought to have positive environmental effects although overall the effect is small.
Energy. Again the consequences are unlikely to be very great. The single track tunnel is unlikely to abstract large volumes of traffic from air or road. As ships are reasonably energy efficient traffic abstracted from this mode will not greatly change the energy balance.
Regional Development. The UK side of the project is not an area that suffers from particularly severe regional problems : in France the difficulties are somewhat greater. An effort has been made to concentrate the transport activities as much as possible in France (partly for environmental reasons). The effect on regions in the UK far from the tunnel portal is small but positive to the extent that the improvement in transport links by rail will favour particularly long-distance transport e.g. regions in the North-East and Scotland. In terms of diverting expenditure the only effect would occur if it could be demonstrated that investment on this project was diverted from investments in the regions.

COMMENT

To the extent that the project has important impacts these tend to be favourable. However, the project by its nature expressively designed to be "non-agressive", and to disturb as little as possible the "status-quo" situation.

.5 Question E: **Provide a summary of the cost-benefit study and an appreciation of the benefits of the project for the Community. Give the discount rate used and mention any sensitivity tests undertaken.**

(indicate the likely effects of the project on Community policies such as transport, energy, environment, regional etc)

The estimated distribution of Benefits and Costs among transport users is given in Table S1.3.. This table shows for comparative purposes estimates for some of the other projects. It will be noted that the discount rates employed offer a wide range 3 and 10% : the period used for discounting is 50 following the year of completion of the facility. The forecasts indicate a favourable cost/benefit rate of return. For the Community the project will remove a very considerable barrier to the development of an efficient Community railway system and provide a reliable means of all weather transport to/from the UK. In terms of railways the project is sensible and it could, with an additional tunnel, form a high quality, high capacity link for all modes.

COMMENTS

The present project is clearly a natural link to the rail system but because of this its future is also very dependent upon the railways. It supports, allbeit not greatly, the general line followed by Community transport policy and does not offend particularly against other policy objectives.

6. Question F: **Provide a statement of how the benefits of the project are distributed throughout the Community.**

The approach used for the distribution of benefits was as follows :

- the surplus of, say, a German user is allocated to Germany,
- the surplus on the tunnel is allocated equally to the UK and France,
- the cost or benefit to other transporters is allocated to the country of the transporter concerned, e.g. Belgium in the case of a loss of traffic to Belgian ports.

The results are shown in TABLE S1.4.

Table S.1.3. The Distribution of Benefits and Costs Among Transport Users and Producers

£m, January 1979 prices, NPVs discounted to 1979

Project	Single Track Tunnel				Double Track Tunnel				Bridge				Bridge and Rail Facility			
Discount rates	3%		10%		3%		10%		3%		10%		3%		10%	
Growth Scenarios	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H
The Link	2162	2265	213	223	4214	6631	280	612	1725	5201	-739	-283	2999	6512	-696	-245
User Benefit: Passengers	1193	1512	250	304	2950	4974	551	812	2785	5573	448	798	3180	5702	518	888
Freight	342	414	69	81	776	1167	141	198	512	1007	83	155	1415	1315	199	199
Ferry Lo-Lo	-51	-80	-11	-17	-112	-233	-23	-41	-56	-125	-9	-18	-116	-262	-21	-41
Operators Ro-Ro	-1191	-1148	-196	-145	-2122	-3452	-277	-329	-1579	-3151	-262	-228	-2164	-3595	-236	-106
Sea Ports	-132	-116	-29	-20	-194	-351	-47	-60	-115	-329	-25	-46	-206	-438	-43	-63
Airlines	-504	-674	-118	-150	-521	-711	-132	-165	-397	-697	-65	-101	-442	-636	-95	-125
Airports	-22	-23	-10	-10	-28	-31	-13	-14	-1	1	0	0	-18	-19	-7	-8
Railways	849	942	163	177	935	956	165	162	-74	-345	-12	-49	634	590	107	98
Roads: Authorities	0	0	0	0	-2	-2	-3	-3	-157	-157	-91	-91	-157	-157	-91	-91
Operators	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2645	3092	330	443	5898	8948	643	1171	2642	6977	-573	135	5125	9013	-345	405

Statement I

Statement I

S.1.4

Distribution by country **Net Benefits**

	% of total	Discounted at 3% high growth	Discounted at 10% low growth
France	47.0	1453.2	155.1
Belgium Luxemburg	3.3	102	10.9
Netherlands	2.9	89.6	9.5
Germany	2.8	86.5	2.2
Italy	0	0	0
U.K.	29.5	912	97.4
Spain	1.9	58.7	6.3
Other countries	12.6	389.6	41.6
		3092	330

Note 1 : taxes not included in calculation.

2 : due to the effects of variations in the rate of discount on costs which have not been recalculated the figures are approximative.

7 Question G **Justify Community fiancial support for the project**

(provide an indication of the profitability of the project at the national level and show how the project relates to national budgeting)

The financial profitability of the project is satisfactory. Tables S1.5 and S1.6 show the results under the principal scenarios. However, the tables fail to bring out the two major problems with the project :

first : the project involves a long period with no receipts (up to 10 years) and an even longer period before net receipts are earned. In this period changes in construction costs, inflation etc. could cause difficulties for the promoters.

second: The sole users of the project are the two national railways; policy changes by the railways could seriously affect future profitability.

The argument for Community support is therefore based on the evidence of benefits to the Community but taking account of the expected results does not ask for direct support. Rather the object of Community assistance would be to provide a guarantee for the provision of the necessary capital to complete the scheme in the event of a severe over-run of costs.

THE FINANCIAL RATE OF RETURN

TABLE S.1.5

		FLOWS UP TO YEAR 2000				FLOWS OVER 50 YEAR LIFE			
		Single Track	Double Track	Road Bridge	Road Bridge plus Single Rail	Single Track	Double Track	Road Bridge	Road Bridge plus Single Rail
IRR	(%)	11.0	8.3	-3.7	-2.0	14.3	12.6	5.7	6.8
NPV's (£m discounted to 1979)	3%	464	577	-971	-799	2162	4215	1725	2999
	5%	277	285	-1026	-966	1131	2074	282	901
	10%	26	-91	-1006	11086	213	280	-739	-863

Table (S.1.6.) below presents the rate of return in the High Growth case.

TABLE S.1.6.

		FLOWS UP TO YEAR 2000				FLOWS OVER 50 YEAR LIFE			
		Single Track	Double Track	Road Bridge	Road Bridge plus Single Rail	Single Track	Double Track	Road Bridge	Road Bridge plus Single Rail
IRR	(%)	10.9	10.9	0.7	1.9	14.3	14.9	8.7	9.1
NPV's (£m discounted to 1979)	3%	469	987	-408	-257	2265	6631	5202	6512
	5%	279	586	-617	-573	1183	3335	2070	2698
	10%	26	54	-814	-904	223	612	-283	-245

STATEMENT no.2

STATEMENT in SUMMARY FORM

of POINTS of COMMUNITY INTEREST

Project: A fixed link crossing from Sicily either as ,
- a suspension bridge for both road and rail ;
- a submerged tube supported in the water.

Description:

Sicily is currently linked to mainland Italy by a number of ferry routes. However, the comparative short distance involved and the heavy traffic flows makes a fixed link an interesting proposition. This statement summarises the results of a study undertaken in 1980/81 which examined the potential Community interest of the projects. / It should be noted that technical problems e.g. seismic difficulties, exist : the Commission's work has not been able to consider questions of a technical nature /. The study revealed gaps in the available information and the completion of the study required a number of estimates to be made.

1. Question A: Describe the economic 'scenario' for the project.

(indicate the assumptions made about G.N.P., trade development, relative prices, etc.)

The main features of the scenarios developed by promoters concerned G.D.P. growth, population and income. The Commission's study modified certain of the scenario elements, noteably G.D.P. : the assumptions retained were : EEC, high + 2.6% p.a., low, + 1.4%, Italy, high + 2.9% p.a., low, + 1.7% p.a., except for Sicily and Calabria where rates of + 3.4% p.a. and + 2.2 % p.a. were employed. The population forecasts prepared were accepted, the "key" figure here being an Italian population figure of 66 M in the year 2010.

COMMENT

The overall range used is acceptable. more information on regional developments would be useful.

Note: tables, figures etc. can be attached separately.

2. Question B: What are the principal benefits to users of the project?

(Give the value of any time, fare or other benefits in quantified terms if possible)

The principal beneficiaries are inter-regional Italian travellers. From the attached map (Fig.1) it can be seen that the position of the bridge is not favourable for local travel which is likely to continue by ferry. The number of non-Italian travellers, almost entirely tourists, is small. The amount of generated traffic is also not forecast as being large as the new facilities are a close substitute for the ferries. The assumed time savings per crossing are 46 mins for road and 78 minutes for rail. The value of time is calculated on the average income per hour ; for leisure trips the value is 30% of working time.

COMMENT

For long distance, particularly international, air travel is predominant. For freight cargo services to ports such as Genova or Marseille play an important role.

3. Question C: Does the project have an impact on other routes or modes of transport?.

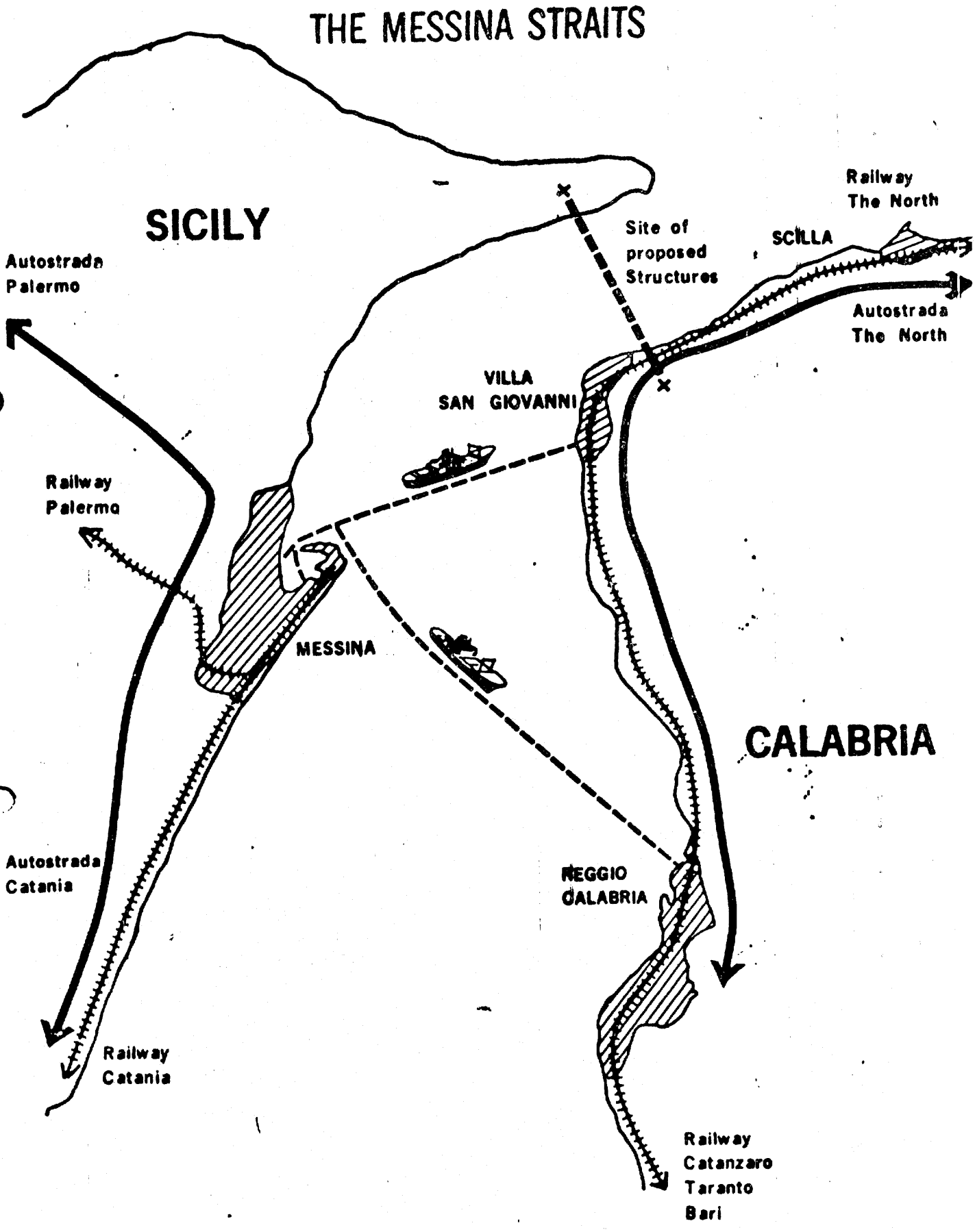
(if so indicate the traffic and investment effects)

The new facility has a substantial effect on ferries as would be expected. The evidence available is not sufficient to give precise information but it is clear that the railway ferries in particular would disappear. The effect on ferries will be less severe than thought as, for instance, a bus trip between Messina and Reggio via a bridge is likely to take longer and cost more than the existing hydrofoil service. The overall modal effects are expected to be small as the consequences for rail and road are roughly similar. However, other bridge situations (e.g. Bosphorus) show that some diversion from foot passengers to car travellers is likely to occur.

COMMENT

The project should particularly improve the rail links although the time for the current crossing appears long by the standards of similar trips in, say, Denmark.

Figure 1


THE MESSINA STRAITS
SICILY
Autostrada
Palermo
Railway
Palermo
Autostrada
Catania
Railway
Catania
MESSINA
Site of
proposed
Structures
VILLA
SAN GIOVANNI
Railway
The North
SCILLA
Autostrada
The North
CALABRIA
REGGIO
CALABRIA
Railway
Catanzaro
Taranto
Bari

4. Domanda D: Quali sono gli effetti principali del progetto su fattori come l'occupazione, l'ambiente, l'energia, lo sviluppo regionale? Menzionare altri eventuali fattori esterni di rilievo.

Il progetto avrà un effetto di breve durata (4-5 anni) sull'OCCUPAZIONE, ma effetti duraturi dipenderanno dallo stimolo dello sviluppo regionale di cui si è detto in precedenza. Nelle attività di navigazione e portuali vi saranno perdite di posti di lavoro.

Non si sono riscontrate attestazioni di un effetto sull'AMBIENTE: è necessario un ulteriore esame di tale fattore.

Dall'incidenza relativamente di scarso rilievo sulla ripartizione tra i modi risulterebbero conseguenze di tipo neutro del progetto sull'ENERGIA, tranne nella misura in cui numerosi passeggeri, che attualmente ricorrono a imbarcazioni, userebbero autoveicoli.

Il maggior punto interrogativo inerente al progetto riguarda l'incidenza sullo SVILUPPO REGIONALE, in particolare sull'industria e sul turismo. Per quanto attiene al turismo, i consulenti hanno ritenuto che gli effetti netti a livello regionale saranno esigui: dovrebbe esservi una limitata espansione del numero di passeggeri che si recheranno in Sicilia, ma ciò costituirebbe in una certa misura una perdita per altre regioni del Sud. Nel settore dell'attività industriale, non sembrano probabili modifiche di rilievo, in quanto il calo relativo dei costi di trasporto, in particolare presumendo un miglioramento dei collegamenti di trasporti marittimi a lunga distanza, sarebbe esiguo.

OSSERVAZIONI

Ci si può chiedere se, di per se stesso, un collegamento eserciterà un'incidenza di rilievo sullo sviluppo; tuttavia, se un tale collegamento dovesse far parte di un ampio e globale piano di sviluppo che richieda trasporti più sicuri e più efficienti verso il continente, ciò risulterebbe importante.

.5 **Question E:**

Provide a summary of the cost-benefit study and an appreciation of the benefits of the project for the Community. Give the discount rate used and mention any sensitivity tests undertaken.

(indicate the likely effects of the project on Community policies such as transport, energy, environment, regional etc)

Table S 2.1 set out the results of a summary cost benefit study. The table includes only benefits arising in the first 20 years of operation except for revenue where this has been extended for a further 30 years to show the importance of this item. Although the table shows a favourable result it is clear that the financial returns would not be such as to encourage private investors. The user benefits from the project are substantial but as noted below are overwhelmingly Italian. The Italian benefits accrue substantially to Sicily and, to a lesser extent, Calabria, both regions assisted by the Regional Fund. The benefits are largely time savings and the analysis has not shown clearly what could be effects of these time savings on the general level of economic activity in the regions concerned.

COMMENT

The measured benefits are very largely in terms of time-savings. It is important to translate these into the effect on activity in the region.

6. **Question F:**

Provide a statement of how the benefits of the project are distributed throughout the Community.

The impact of the Messina Straits fixed link will be concentrated in Italy. The only exceptions will be :

(a) benefits to foreign tourists in time and cost savings ;

(b) benefits to foreign consumers of Sicilian products ;

(c) costs to foreign producers, as consumers consume substitute Sicilian supplies ;

(d) benefits to foreign producers who substitute for Sicilian producers in Sicilian markets.

The best estimates of these factors produces a very small proportion of the total net benefit of the project.

Table S.2.1 Discounted Present Values of Costs and Benefits
(billions of lire, 1978 prices, discounted to 1983)

Item of cost or benefit	High Growth Hypothesis 3%	5%	10%	Low Growth Hypothesis 3%	5%	10%
Link construction and 20 years' operation	-387	-537	-715	-527	-636	-761
Further 30 years' operation	734	348	63	588	279	52
Closing down ferries (20 years)	549	417	226	415	314	135
Saved investment in a new port	327	286	184	327	286	184
User benefits	1105	813	409	774	577	299
Net present value	2328	1327	167	1577	820	-89
Internal rate of return		11.9%			9.3%	

7 Question G **Justify Community fiancial support for the project**

(provide an indication of the profitability of the project at the national level and show how the project relates to national budgeting)

Available evidence is incomplete and additional work is needed in a number of areas. However, from the results of the Commission study are not generally favourable towards the project being financially viable. To be constructed it seems clear that assistance from public sources is necessary. The argument for Community support has to be based on regional development grounds as the benefits in strictly transport terms to the Community do not appear to be substantial. The real question to be answered before Community support can be justified is whether the rather large injection of funds into this project would give a better return than a similar sum spent in other areas. For this question to be answered a comparison with other, non transport, projects in the context of a regional plan would have to be undertaken.

STATEMENT in SUMMARY FORM

of POINTS of COMMUNITY INTEREST

Project: For new Alpine rail tunnels.

Description: Three principal options exist to increase trans-Alpine rail capacity.

- a new low level Gothard Tunnel ;
- a tunnel along a new alignement called the Splügen ;
- various tunnel projects along the axis of the Brenner.

This summary presents a statement of the relative benefits to the Community of the projects using the best information available. The evaluation relates to 1981. (See Fig. 1 for the situation).

1. Question A: Describe the economic 'scenario' for the project.

(indicate the assumptions made about G.N.P., trade development, relative prices, etc.)

The scenario used for the traffic forecasts is based on a series of hypothesis set out in table S 3.1. For the non-Community states - Austria and Switzerland - the same sectoral growth rates as in Germany have been employed. For the period 2000 - 2030 the following assumption was made :

- high growth - the trends in the period 1978-2000 are continued to the end of the period ;
- low growth - No growth in value added after 2000.

Note: tables, figures etc. can be attached separately.

Figure 1

TRANSALPINE RAIL ROUTES

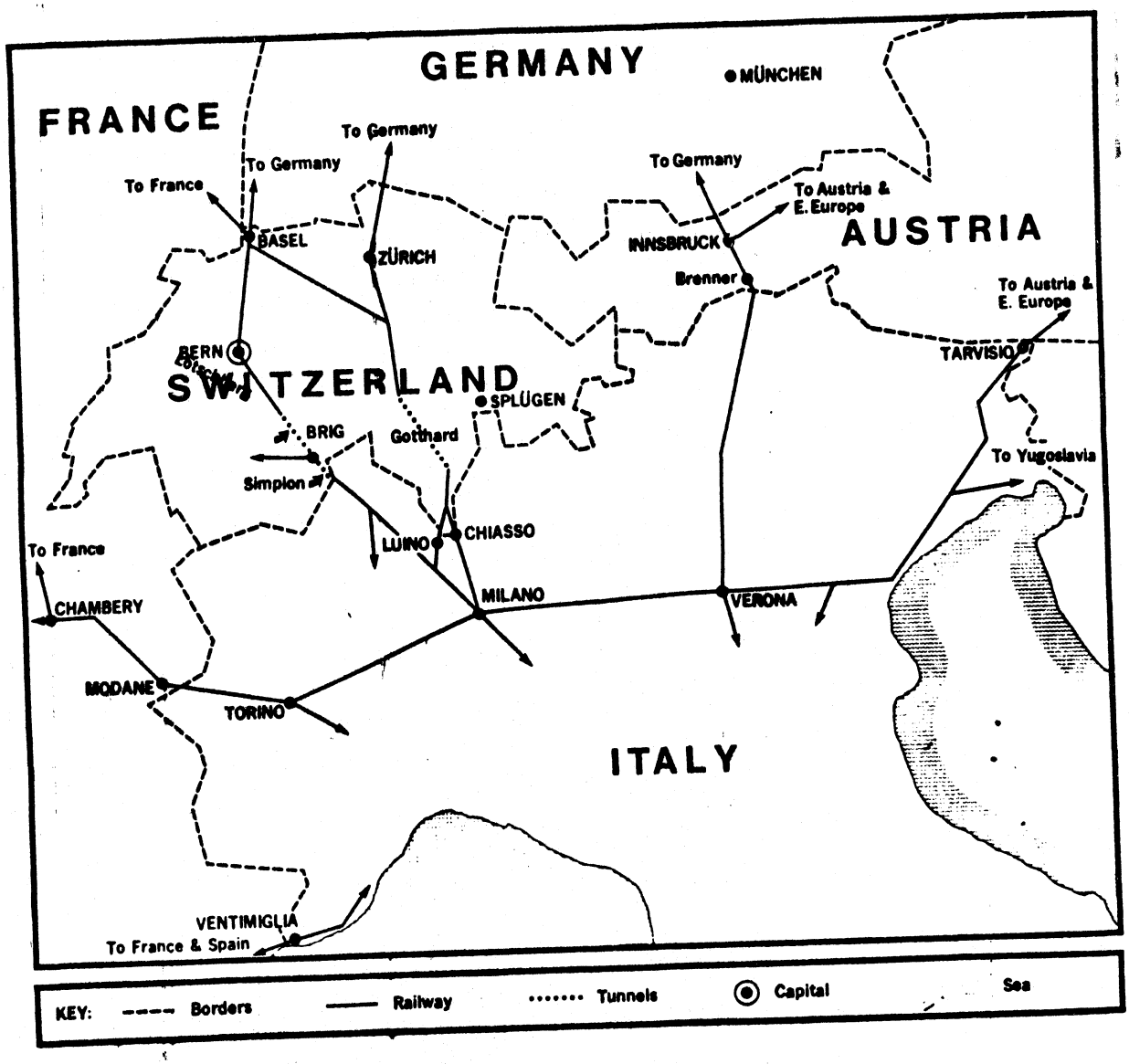


Table S.3.1.

Summary of Hypotheses of Value Added at Market Prices by Sector in 2000

Indices using 1978 = 100

Sector	Low Growth					High Growth				
	France	Germany	Italy	Netherlands	Belgium/Lux	France	Germany	Italy	Netherlands	Belgium/Lux
Agriculture, forestry, fishing	105	142	134	137	92	135	168	160	176	123
Energy	135	131	135	116	163	181	176	178	197	202
Industry:										
Minerals (Metallic)	76	128	140	69	82	116	171	204	118	121
Minerals (non-metallic)	113	123	133	102	440	160	172	187	134	152
Chemical Products	147	153	166	91	126	195	227	230	163	193
Metallic products exc.machinery	96	118	116	122	116	141	162	164	163	168
Industrial & Ag. machinery	101	116	133	120	136	154	164	181	160	195
Precision instruments, office equipment	203	186	172	138	105	260	237	274	177	154
Electrical	170	158	139	113	126	228	217	188	163	188
Transport Equipment	169	121	133	93	178	222	179	182	129	217
Food, drink, tobacco	143	123	148	161	128	191	160	195	185	161
Textiles, footwear etc.	93	104	144	64	74	132	139	190	86	108
Paper & paper products	121	111	119	125	93	159	158	182	158	128
Plastic & rubber products	98	120	147	103	114	149	193	215	152	202
Other	134	102	145	91	115	184	153	211	134	167
Civil Engineering & Construction	105	117	110	97	133	144	157	144	122	164
Marketed Services	153	156	155	145	136	192	193	194	180	170
Non-marketed Services	145	157	154	143	139	176	189	185	168	175
TOTAL GROSS DOMESTIC PRODUCT	139	143	145	132	132	179	184	187	170	170

2. Question B: **What are the principal benefits to users of the project?**

(Give the value of any time, fare or other benefits in quantified terms if possible)

The benefits of all the projects come from two sources :

(a) the shorter and/or better graded routes will mean lower distances, less time and the use of less power ;

(b) the improved characteristics will allow more heavily loaded freight trains saving operating costs.

As an example, the "new" Gothard would save 2 hours for freight trains : the "new" Brenner would save 2.4 hours. In both cases the total net train weight would increase by 150 % (33 %). For the Splügen, traffic diverted from the existing Brenner would save 0.8 hours. There are substantial economics in railway costs and it is assumed that in the case of passenger tariffs based on mileage these savings are passed on to the users.

3. Question C: **Does the project have an impact on other routes or modes of transport?**

(if so indicate the traffic and investment effects)

The competitive position of the railways in international traffic to/from Italy would be improved through these projects. However, the impact on existing traffic flows, principally freight, by road would not be likely to be great. The new projects are basically designed to provide considerable increased capacity to cope with an expansion of demand. The information concerning passenger traffic flows was not sufficient to make more than an hypothesis on transfer to rail in the case of new tunnels.

Statement 3

4. Question D: **What are the principal effects of the project on factors such as employment, environment, energy, regional development? Mention any other external factors of importance.**

ENERGY

The new tunnel projects will provide energy savings in two ways. First, there will be a saving in the consumption due to avoiding the steep gradients of the mountain sections and because distances are reduced. Second, the diversion from road transport will also produce savings.

No details are available on other aspects of the projects.

.5 Question E:

Provide a summary of the cost-benefit study and an appreciation of the benefits of the project for the Community. Give the discount rate used and mention any sensitivity tests undertaken.

(indicate the likely effects of the project on Community policies such as transport, energy, environment, regional etc)

The cost/benefit analysis uses a mean value of time based upon average hourly wages. Leisure time is valued at 30 % of working time. Tables S 3.2 and S 3.3 show the costs/benefits discounted at 3 %, but with the assumptions that had to be made the figures are illustrative only. It will be noted that in the high growth situation the Gothard project is almost profitable at a 3 % discount rate but fairly substantial user benefits give a positive overall cost/benefit rate of return.

6. Question F:

Provide a statement of how the benefits of the project are distributed throughout the Community.

Table S 3.4 gives a distribution of operating benefits between nations. It will be noted that in the high growth case the benefits to the Community from the Gothard are almost double (485 M UC against 273 MUC) those accruing to other parties. Table S.3.5. shows how the benefits vary according to traffic forecasts.

Statement 3

Table S.3.2 Present Discounted Values of Costs and Benefits
(millions of ecu, discounted to 1985 at 3% per year)

High Growth		Project		
Costs and Benefits to Railways		Gotthard	Brenner	Splügen
Saved operating costs	- freight	-83	-37	158
	- passengers	81	59	117
New revenues	- freight	1081	458	1312
	- passengers	53	28	73
Lost revenues	- freight	-	-	-205
	- passengers	-	-	-306
Track maintenance		-	-	-516
Net railway operating surplus		1132	508	-633
Capital costs		-1230	-1803	-2131
Costs and Benefits to Users				
Saved costs of rerouting	- freight	168	71	206
Fare reductions	- passengers	-	-	205
	- freight	-	-	306
Time savings	- business	414	431	464
	- other	176	93	168
Net consumer surplus		758	595	1349
Other Items				
Environmental impact		not quantified		
Regional impact				
Impact on trade generation				

Note: Figures are illustrative only

Table S.3.3. Present Discounted Values of Costs and Benefits (continued) (millions of ecu, discounted to 1985 at 3% per year)

Low Growth		Project		
Costs and Benefits to Railways		Gotthard	Brenner	Splügen
Saved operating costs	- freight	499	152	101
	- passengers	59	39	84
New revenues	- freight	-	-	-
	- passengers	50	26	64
Lost revenues	- freight	-	-	-137
	- passengers	-	-	-229
Track maintenance		-	-	-516
Net railway operating surplus		609	217	-632
Capital costs		-1230	-1803	-2131
Costs and Benefits to Users				
Saved costs of Rerouting	- freight	-	-	-
Fare reductions	- passengers	-	-	229
	- freight	-	-	137
Time savings	- business	198	205	222
	- other	84	44	81
Net consumer surplus		282	249	668
Other Items				
Environmntal impact				not quantified
Regional impact				
Impact on trade generation				

Note: Figures are illustrative only

Table S.3.4. Distribution of Operating Benefits Between Nations
(millions of ecus, discounted to 1985 at 3% per year)

	Low Growth			High growth		
	Gotthard	Brenner	Splügen	Gotthard	Brenner	Splügen
Benefits to railways						
- Germany	13	10	-151	283	175	132
- Italy	8	172	130	170	193	299
EEC	20	181	-21	434	368	431
- Switzerland	589	-	-839	678	-	-546
- Austria	-	~~36~~	~~227~~	-	~~139~~	748
Total non-EEC	589	36	-611	678	139	202
Total railway benefits	609	217	-632	1132	508	633
Benefits to users						
- Germany	20	55	122	53	131	299
- Italy	124	102	302	334	244	618
- other EEC	37	15	48	99	36	85
Total EEC	180	172	472	485	411	1001
- Switzerland	62	10	106	167	24	188
- Austria	-	35	16	-	83	28
- other non-EEC	39	32	74	106	77	132
Total non-EEC	101	77	196	273	184	348
Total user benefits	281	249	668	758	595	1349