European Commission, Directorate-General Regional Policy

Construcción de un buque oceanográfico multipropósito con capacidad global; 011ES16UPR001

Quick Appraisal of Major Project Application

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It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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		Name	Paz Arteijo / Horacio Salerno	Samir Kulenovic /Julie Ascoop	Sean Mason	
		Signature				
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			Prepared by	Checked by	Approved by	
		Name	Ricardo Rodrigues	Pedro Castro	Eurico Neves	
		Signature				
		Filename				
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1 Introduction

This Quick Appraisal has been carried out under Multiple Framework Contract No 2009 CE 160 AT090 for the provision of technical assistance services for the preparation, appraisal, monitoring and closure of projects receiving assistance from the ERDF, Cohesion Fund and IPPA, and for the audit of these projects by the European Court of Auditors (ECA) – Lot 3: industry, energy, ICT and knowledge economy investments.

Our assessment and recommendations are based on the following information provided:

- Application form for funds for the construction of a new multipurpose oceanographic vessel with global capacity (infrastructure investment). CCI N# 2011ES16UPR001.
- Technical Feasibility Study (Buque Oceanográfico multipropósito con capacidad global Documento Justificativo de Viabilidad Técnica) dated 2008-10-30 Document Nr.: 000.086.0002 Rev.: A by Aries Industrial y Naval Servicios, S.A. for Instituto Español de Oceanografía (IEO).
- Cost-Benefit Analysis (*Análisis Coste-Beneficio del Proyecto* "*Construcción de un buque oceanográfico multipropósito*") dated July 2011 by CEET for the IEO.

2 Project Overview

This project relates to the construction of a new modern and innovative multipurpose large capacity research vessel that will form part of the new Scientific Technical Infrastructure (in Spanish *Infraestructura Cinetifico Tecnica Singular* -ICTS). This new vessel will fill the role of the *Cornide de Saavedra* ship, which was built in 1973 and is now reaching the end of its natural lifespan.

The capacity and technological equipment of the new vessel will service the R+D+I (Research, Development and Innovation) community and will assist in providing a response to the increasing demand of scientific knowledge and technology for higher level studies.

The new vessel has a length of approximately 90 m and a beam of 19 m. The ship will have operational autonomy of about 45 days, is very agile and has an efficient design because of its diesel electric engine. The vessel operates with ROV (Remotely Operated Vehicles) and AUV (Autonomous Underwater Vessels). The design includes a 'gondola' and two retractile keels (*quillas*) in the hull that will be used to fit the more sophisticated research instruments.

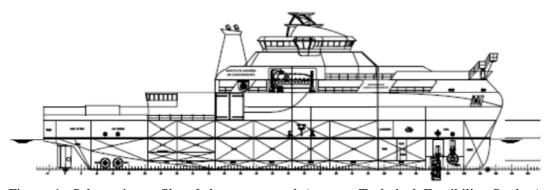


Figure 1: Schematic profile of the new vessel (source: Technical Feasibility Study / Concept design - Drawing 000-123-001 by Aries Industrial y Naval Servicios, S.A.)

The conceptual design along with the related technical specifications has been prepared by the Spanish Oceanographic Institute (*Instituto Español de Oceanografia* - IEO). It is broadly described in the Technical Feasibility Study document including some general drawings showing the proposed general arrangement for each deck.

The remaining stages in this project are:

- Provision of a detailed design for the project
- Model testing in a channel and validation of the type of propulsion
- Laying down of the keel
- Launching and fitting-out of the vessel
- Harbour and open sea trials

Delivery

The main beneficiaries (not yet appointed) of the development of this new national infrastructure will be:

- the companies in charge of the design and construction of the vessel as well as the suppliers of all the related equipments. This includes a large number of people employed in the Spanish naval sector who have a high risk of being unemployed because of the ongoing recession
- the employees that will operate the vessel,
- the fishing sector (who will benefit of the development of more sustainable methods of extracting marine resources),
- universities, research centres and other R+D entities (public or private) and
- students and other professionals who will obtain training aboard the new vessel.



Figure 2: Image of the *Cornide de Saavedra* (source www.shipspottimg.com)

The vessel will be managed by the IEO.

The *Cornide de Saavedra* is currently operating at full capacity. In order to complete some recent work associated with the INDEMARES project (inventory and designation of Red Natura 2000 in marine areas of Spain), the IEO was required to hire vessels from other countries.

3 Appraisal Approach

The main objective of a "Quick Appraisal" of a major project that is in the process of applying for EU co-financing is to verify that these projects have been correctly prepared and to check that the submitted application is compliant with the requirements established in the relevant regulations governing the use of EU funds.

"Quick Appraisals" are performed by completing a desk top study and by assessing the project application dossiers. Where appropriate and necessary, site visits are completed. The appraisal approach is based on the following criteria:

- the completeness of the application documentation submitted to the Commission, based on the requirements that are defined in the relevant EU and local regulations;
- the quality of the application submitted, based on an in-depth analysis of the project application dossier. Among other things this quality assessment should verify that the application complies with both the relevant regulatory requirements and the guidance defined by the Commission and the relevant local authorities.

Based on that assessment, the "Quick Appraisal" Report is prepared to help the European Commission to assess both the quality of the received application dossier and the value of the major project, its consistency with the priorities and objectives of the Operational Programme, its contribution to achieve these priorities and objectives, and its consistency with other EU policies and priorities.

Based on the "Quick Appraisal" Report the European Commission should be able to verify whether:

- the project objectives are well defined and the project is technically sound,
- the project provides good value for the investment,
- the public contribution is justified,
- the project is consistent with other EU policies.

If applicable, the "Quick Appraisal" Report should suggest possible improvements to the application dossier or even the project itself

4 Completeness Assessment

The completeness assessment consists of checking whether all the information that is required for a major project application has been provided to the Commission by the authority responsible for the application.

The outcome of the completeness assessment is presented in the completeness assessment checklist provided in appendix.

The application provided covers all the required items and all sections have been completed. Additional information has been provided in the form of appendices to provide evidence for the various conclusions made in the project application.

4.1 Project feasibility

A technical feasibility study of the project has been attached to the application. It consists of a 165 pages document covering the parts included in the conceptual design of the new vessel. The topics included in the study are:

- General introduction to the concept design
- Main dimensions
- Hull forms and hydraulics calculations
- Compartments, decks and bulkheads
- Tanks and ship's spaces
- General Arrangement
- Vessel stability
- Structure
- Equipment
- Propulsion
- Electrical
- Dumping free operation

The hull concept has been validated by the testing of the hydro dynamic design at the Hydrodynamic Testing Channel Facility in El Pardo (Spain) (CEHIPAR).

The demand for this type of vessel for scientific purposes in Spain and the level of occupancy of the existing *Cornide de Saavedra* are described in a qualitative way. The recent activity records of the *Cornide de Saavedra* and documentation show evidence of the hire of additional equipment that was required in order to fulfil the demands of the current program. This provides evidence that would support this application.

The Cost-Benefit Analysis links the future demand and occupancy of the new vessel to the limited capacity to attend the present demand of the vessel to be replaced. According to that analysis, the earnings will increase with the new ship due to its improved facilities and the best performance foreseen.

A prediction of the earnings is provided for the period of 25 years (2012 to 2036) based on the present performance of the *Cornide de Saavedra* and adjusted with the improvements associated with the adopted design for the new vessel.

The feasibility of this project is based on the benefits generated by the wide spectrum of scientific research missions that the new ship could support in the following fields:

- Marine geology
- Maritime biology and fisheries
- Oceanography (physics and chemistry)
- Sea contamination

Also the technological innovations introduced on the new design are presented as an argument for supporting a forecasted increase in the service output from the operations starting point.

We conclude that:

- The documents attached to the application form looks consistent and provide the technical support needed for supporting the technical feasibility argumentation.
- Official records of the Cornide de Saavedra vessel activity should be included as proof of the current demand of this type of equipment in the IEO.

4.2 Cost-Benefit Analysis

The Cost-Benefit Analysis (section E) looks reasonable for a project development of this scale, even if the timetable is not exactly as recommended by the European Commission rules (25 years instead of 30).

Due the fact of the non-profit nature of the project, the net present value is negative with or without EU co-financing. The socio-economic analysis presented in cost-benefit report evidence the benefits with quantity indicators.

4.3 Analysis of environmental impact

According to section F.2 the IEO have a good relationship with a number of Spanish environmental agencies and authorities. These include; Secretaría de Estado del Cambio Climático, Secretaría General del Mar, Secretaría General de Sostenibilidad de la Costa y del Mar, Secretaría General de Medio Natural y Política Forestal y Dirección General de Calidad y Evaluación Ambiental.

We conclude that although this project does not require an Environmental Impact Assessment (see section 4.8), a formal notification to the environmental competent authority (*Dirección General de Calidad y Evaluación Ambiental*) must be completed and the contact details, meeting minutes (if appropriate) and recommendations should be enclosed in the application dossier.

4.4 Financing plan

In respect of cost control and demand assessment, less evidence has been provided in the major project application.

From a financial perspective, the proposed project is not focused on increasing profits' beneficiary accounts but on creating an opportunity to develop the activities of R+D+i with national and international organizations. Thus, the financial analysis of the project resulted in negative values. Concerning the range of socio-economic benefits, the quantitative indicators demonstrate a full economic analysis. However some information sources are missing, showing some values withou a valid criteria, such us, Climate Change (*cambio climatic*) and Increased national R & D (*Incremento de la I+D+i nacional*).

Additionally, the following issues have been identified that could be further reviewed:

While it is clearly stated that the project's duration is 25 years, although there is a predicted lifetime for the vessel of 40 years. Also, the European Commission recommends a 30 years analysis for this type of project. This conditions distorts the overall presentation of the project's performance and thus further clarifications are required.

With respect to the economic analysis of the project, which is considered necessary to be included as the project does not aim at producing profits, it was not well identified the final users and the beneficiaries of the project (even in the Feasibility Report). This report only shows the technical feasibility and specific characteristics to implement.

Finally, the sources of financing are presented over the project's duration, demonstrating the distribution of public and EU sources of funding over the project's duration.

4.5 Compatibility with EU policies and Law

The project is consistent with EU Policies and Law in the field of sustainable development.

The project does not have any direct environmental impact as it is an informative infrastructure project.

We note that the application file contains inclusive necessary correspondence evidence.

5 Quality Assessment

The quality assessment aims to verify the quality of the key elements of the application dossier submitted to the European Commission. It also includes checking the compliance of the application dossier with relevant regulatory requirements and its alignment with relevant guidance established by the Commission.

The outcome of the quality assessment is presented in the quality assessment checklist provided in appendix. Further details of this quality assessment are provided below.

5.1 Context and project objectives

The social, institutional and economic context for the IEO to undertake this project become clear after reviewing the complete application form, and have been detailed in the Cost-Benefit Analysis.

The project objectives are explained extensively in the document. The key objective is to provide national infrastructure to meet the demands for both the IEO's services and the existing and future needs of Spanish R+D+i.

The socio-economic objectives are clearly explained. These include the creation of employment; researching the impacts of climate change; the development of sustainable fishing methods and finally the R+D+I development of various of industries (naval industry, fishing, energy, infrastructures etc.)

The beneficiaries of the project have been clearly identified in the dossier, but the benefits have not been defined by socio-economic indicators.

The socio-economic benefits are likely to be achieved by the development of the project, but no specific strategies and actions have outlined in the provided documents.

All the benefits have been considered in the context of R+D+I in Spain and of sectors associated with marine natural resources.

5.2 Project Identification

The project involves the detailed design and construction of an oceanographic vessel, which will constitute a self-sufficient unit of analysis.

The Technical Feasibility Study provides details of the vessel at the concept design stage, including some drawings.

The Cost-Benefit Analysis presents the following as the main differences between the new ship and the one that she will replace:

- Accommodation for 40 scientists (previously 31)
- Reduced crew requirements (new requirement is 20 while currently the number is 27)
- Autonomy increased in 50% (in terms of days between calling to port)

Number of operational days increased from 250 to 330

This new vessel will improve the existing oceanic and marine investigation capacity of Spain. This statement is based on the performance of the existing vessels, that are listed and detailed below;

- Sarmiento de Gamboa: Oceanographic and marine research campaigns are are mainly conducted with this ship. The ship's activity related to fisheries research is very low.
- *Miguel Oliver*: This vessel is used to explore fisheries in distant water fisheries (West African coast, east and west coasts of South America, etc..) Access to the ship by researchers' is presently limited, because the vessel belongs to a ministry that is not involved in Science and Innovation.
- Cornide de Saavedra: This vessel is reaching the end of its life span. The ship is currently presenting serious technological deficiencies due to age and the operating costs associated with the ship are much higher than would correspond to modern platforms.

The indirect and network effects of the project are all positive and are qualitatively described in Section B.4.2.

This project does not include any refurbishment or improvement of the existing vessels. The project only includes the design and construction of the new vessel, this is clearly outlined in the application dossier, with many improvements compared to the one she replaces

5.3 Project Timetable and Maturity

The project schedule has been identified in the application dossier.

After having produced the Technical Feasibility Study and the Cost-Benefit Analysis, it is the intention of the applicant to finalize the tender process in 2012. The expected time for the detailed design, construction and provision of all the naval and technological equipment is 2- 3 years. This timeline is considered technically feasible.

According to the application dossier, this project has been authorized by the *Secretario de Estado de Investigación* (Spanish Research State Secretary). The only outstanding approvals are listed below;

- Compliance with MARPOL regulations (by Spanish Merchant Navy)
- IEO internal administrative approval to put the project out to tender

Section F.3.1.3 of the application dossier states that no environmental approval is required for this project. However, this should be confirmed by the competent environmental authority (*Dirección General de Calidad y Evaluación Ambiental*).

The schedule is adequate to allow for the project completion within the timeframe. However, the schedule cannot be formally assessed without a statement from the environmental authority confirming that no environmental approval is required, as it might delay the process.

5.4 Feasibility and options analysis

A complete Technical Feasibility Study has been attached to the application dossier, including the characteristics of the vessel. Specifically, hydrodynamic tests have been carried out with models in the CEHIPAR facilities.

On the Cost-Benefit Analysis three scenarios including the do-nothing and the renting of third party owned ships have been assessed. According to that analysis, the alternative of replacing the *Cornide de Saavedra* has been identified as the one producing the greatest socio/economical benefits.

The proposed project, involving the construction of a new vessel, equipped with the most modern technologies, greater capacity than existing vessels and an innovative design will foster the collaboration among scientists, universities and private companies for the consolidation of R+D+I in oceanography, fishing and marine science.

The research activities to be developed with this vessel will help promote the sustainable use of the sea and its resources (fisheries, minerals including oil and gas, aquaculture, use of renewable and non-renewable energy.

The demand study is based on the current use of the *Cornide de Saavedra* only and ongoing European programs running without adequate infrastructure. The Cost-Benefit Analysis includes a forecast regarding the demand for the future.

The context is favourable and the involved Spanish institutions are engaged with this project.

The application dossier suggests, that the project will also have a major impact a upon the Spanish shipbuilding industry and would provide this industry with the opportunity to develop innovative technology, as contractors must provide innovative technological approaches to meet the requirements of the project.

According to the application, this project is only feasible if the ERDF provide grant approval.

5.5 Financial Analysis

The methodology utilised for the financial analysis of the project is relevant to the application and the total budget is analyzed into the appropriate cost categories.

The EU grant has been calculated appropriately and comprises 56% of the total project cost.

The discount rate used (5%) is in line with the discount rate proposed by the EU Guidelines, which is justifiable given the nature of the project.

The IRR (-4,7%) and NPV (-30.303.950 €) indicators have been calculated taking into consideration EU grants. The negative values of these financial performance indicators are justified by the fact that the project is not aiming to generate profits and provide further benefits to investigators. However, the negative value of IRR can imply that the project is not financially viable, given the provided figures.

Another issue that needs to be paid attention to is the time horizon of the project. According to the application, the time horizon of the project is 25 years; however,

the financial analysis should be made on a time horizon of 30 years, according with EC regulations.

Overall, the budget seems reasonable and analyzed into appropriate cost categories. However, it is advised that further economic analysis should be conducted that would take into consideration further economic benefits of the project, such as the creation of new job positions during and after the project, etc.

The sources of funding comprise of the EU grant, combined with public funds. The EU and public funds cover the total of the initial investment cost.

1. EU Grant: 52.151.876 €

2. Public funds: 40.976.475 €

In general, the EU and public funds have been calculated appropriately.

The allocation of the funding among the regions was included in the last two pages (pages 54 and 55) of the "Application form". The following table with the allocation of the main resources to the different regions have also been included:

Autonomous Community	Research personnel and supporting staff	Percent	% FEDER	Financing Index
Galicia	174	33,46%	70,00	23,42%
Baleares	42	8,08%	50,00	4,04%
Canarias	59	11,35%	70,00	7,94%
Asturias	37	7,12%	70,00	4,98%
Cantabria	62	11,92%	50,00	5,96%
Murcia	58	11,15%	70,00	7,81%
Andalucía	88	16,92%	70,00	11,85%
Total	520	100%		66,00%

Region attachment criterion	%	Expenses	Rate	Help	Real financing
Galicia	33,46	31.160.746,24	70	21.812.522,37	21.812.522,37
Baleares	8,08	7.524.770,76	50	3.762.385,38	0
Canarias	11,35	10.570.067,84	70	7.399.047,49	7.399.047,49
Asturias	7,12	6.630.738,59	70	4.641.517,01	4.641.517,01
Cantabria	11,92	11.100.899,44	50	5.550.449,72	0
Murcia	11,15	10.383.811,14	70	7.268.667,80	7.268.667,80
Andalucía	16,92	15.757.316,99	70	11.030.121,89	11.030.121,89
Total	100,00	93.128.351,00		61.464.711,66	52.151.876,56
Average rate				66,00	56,00

It seems that the criteria of allocation of the use of the vessel will be the number of research personnel and supporting staff by region in comparison with total staff in Spain.

However, this criteria is only an index of actual activity of IEO, so that this distribution only serves as a territorial allocation criteria when defining the application rate.

It is not clear in the documentation given (especially in the feasibility study or the cost-benefit report) any rules or rights to the use of the vessel according to such contributions.

The rate applied to each region (between 50% and 70%) is according with ERDF (FEDER) regulation and calculated with the maximum rate possible for each region.

5.6 Economic Analysis

The non-profit nature of the project required that the financial analysis would be accompanied by an economic analysis of the gains of the project. The socioeconomic analysis performed should demonstrate the effectiveness of the project in terms of its foreseen impacts upon society, investigation centres and university research units.

The Feasibility Report presented does not allow a good socioeconomic analyse.

Overall, a more complete and detailed economic analysis should be carried out, allowing for a better evaluation of the socioeconomic benefits of the project and their contribution in relation to the project's total budget as well as for providing further supporting arguments justifying the necessity of this project.

5.7 Risk Assessment

The methodology utilised for the sensitivity analysis was focused on exploring the variations in total investment costs, what is, in fact, the critical value regarding financial performance of the project. This analysis is not consistent even if the variable values match the economic analysis conducted. Parameters just like variations in operational cost, or reduction of income should be presented.

From the 2 critical variables, one, the possible rental price for a replacement of a vessel, does not shown any justification due the fact of the specificity of these variables, and absence of historical data on similar projects to analyze their changing values.

5.8 Other Evaluation Approaches

Section F describes the environmental items of the project. The net effect of the project on the environment will be positive. Section F 3.1.3. states that the proposal doesn't require an environmental authorization. However, this has not been confirmed in a written statement provided by the competent authority.

The construction project of a new vessel is not included in Annex I and II of the Directive 85/337/CEE on Environmental Impact Assessment. Thus, an EIA will not be required for the environmental approval (see section F3 of the application dossier).

The applicant has communicated and met with the competent authority regarding the environmental impact that the project would have on the environment in Spain (*Direccion General de Calidad y Evaluacion Ambiental*). Evidence of this correspondence and details of the outputs of the meeting/s should be included in the application form, in order to reinforce the arguments included in the application.

The conceptual design includes features that will result in an improvement of the performance of the vessel from the environmental point of view, such as:

- Electrical propulsion (reduced CO2 emissions)
- Low noises and vibrations
- Dumping following sustainable practices

In conclusion:

- A formal statement from the competent environmental authority must be included to confirm that no environmental approval is required
- Proof of the contact with Spanish environmental agencies and authorities must be in enclosed to the report (meeting minutes, contact details and recommendations)

5.9 Consistency with EU policies and law

Consistency with relevant EU policies and law in the field of sustainable development, protection and improvement of the environment. We recommend the presentation of detailed information on the compliance with national and European regulations. This project is align with the objectives of the Europe 2020 Flagship Initiative "Innovation Union" and may contribute to their achievement.

6 Overall

6.1 Are the Project Objectives well defined and is the Project Technically Sound?

The project objectives are clear and realistic, and mainly focused on developing R+D+I in Spain. The beneficiaries have also been identified in the dossier.

In the Cost-Benefit Analysis a detailed assessment on the socio-economic benefits has been completed, including qualitative and quantitative evaluations including externalities such as: savings on vessel hire, improvements for the Spanish R+D+I, climate change and noise reduction.

The EIO has a good knowledge of the requirements of this type of infrastructure and has completed the required preliminary studies to ensure that the design of the vessel is the most suitable and beneficial.

The schedule is sufficient to allow the project to be completed within the timeframe. However, this schedule cannot be fully assessed without a formal statement from the environmental authority confirming that a environmental approval is not required, as any environmental approval may delay the process. The feasibility study seem short in scope and further information would be required in order to justify the chosen solution of building a new vessel.

We cannot assess the technical definition of the project unless the following points are addressed:

- A formal statement from a competent environmental authority must be included to confirm that no environmental approval is required.
- Proof of the contact with Spanish environmental agencies and authorities must be in enclosed within the report (meeting minutes, contact details and recommendations)

6.2 Is the Project Worth Co-financing?

As aforementioned, the proposed project is not focused on increasing the monetary profits of Spanish Oceanographic Institute but on building a new vessel that consequently will produce socioeconomic wider benefits, which justifies the negative financial performance indicators calculated and presented in the summary CBA table.

In further detail, the cost-benefit analysis demonstrated a total budget of €93 Million, including VAT, an economic net present value of -30.303.950 Eur, and a financial rate of return of -4,7% with EU funding. The financial analysis of the project should have been appropriately complemented by an extensive and well-documented economic analysis that would have integrated into the financial projections of the project the socioeconomic benefits of the project. However, such an analysis was not present in the dossier of the project, obstructing the proper evaluation of the project's co-financing worthiness.

Additionally, the project claims also to create at least 340 job positions – 300 during the execution of the project and another 40 after the end of it. This is a significant positive objective of the project, but it is not clear enough that the 40

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positions will be really new job positions and that they won't be simple transfers from another vessels used in R+D+i activities (still working but too expensive to repair). It is also considered rather limited in view of the €93 million investment aiming to achieve.

The risk assessment has been completed at a qualitative level and sensitivity analysis has been undertaken to identify the impact on NPV.

The on-going project management, risk assessment and appropriate mitigation of risk are regarded as important components of the implementation and operation of the system.

Concluding from the above, financial presentation should be further complemented by additional information that are considered of paramount importance for the proper consummation of the project's evaluation. The social economic benefits have a little explanation identifying some indicators but without a clear justification of them.

6.3 Is the Public Contribution Justified?

There is a clear funding gap, which has been demonstrated as the project is not revenue-generating. Potential revenue from the rent of the vessel is mentioned in the dossier but the lack of information concerning this calculation has not been taken into account in the analysis, so it cannot be considered as a measurable project outcome. The public and ERDF contribution appear to be justified, subject also to clarity over the VAT not recovery position.

The project's financial and economic analysis presented, confirms that the project has a negative IRR and ERR including EU funding. The lack of information concerning the socioeconomic benefits and its conversion in monetary values does not allow the extraction of safe conclusions.

The project could bring significant benefits, important not only based on a national view, but also in an European one, in line with the requirements and perspectives of the EU on sustainability of the maritime ecosystems and sustainable development.

6.4 Is the Project Consistent with Other EU Policies?

- 1 The project is consistent with EU Policies and Law in the field of sustainable development and in line with the requirements and perspectives of the EU on sustainability of the maritime ecosystems.
- 2 Alignment with the objectives of the Europe 2020 Flagship Initiative namely "Innovation Union" and may contribute to their achievement.

7 Recommendations

7.1 Recommendations for the Organisation Responsible for Project Implementation

The following are the recommendations for the IEO in order to provide a more accurate application:

- Include a record of the meetings held and the main recommendations from the environmental authorities that have been contacted, according to section F.2.
- Section F 3.1.3. states that the proposal doesn't require an environmental authorization. Evidence that this authorization is not required should be provided within the application (i.e. statement issued by the competent authority).

7.2 Recommendations for the European Commission

The IEO's experience in oceanic and marine investigation provides a good technical background for this project. The technical characteristics of the vessel and the required technology are well known by the organization responsible for the implementation, but more technical available information must be submitted within the application dossier. The benefits of this project are clear, but further detail and quantitative information on these benefits must be submitted.

Our recommendation, from a technical point of view, to the European Commission is to require the applicant organization to supply the following information to complete the application dossier in order to allow for a full assessment of project:

- A demand study for the new vessel, including a more detailed justification for the forecast of future activity is necessary to assess the need of the project.
- A formal statement from the competent environmental authority to confirm that no environmental approval is required.
- Proof of the contact with Spanish environmental agencies and authorities (meeting minutes, contact details and recommendations).

Appendix A

Quick Appraisal Checklists

A1 Completeness Assessment Checklist

Application Section	Assessment	Comments / References		
Addresses and Reference				
Authority responsible for the application	Y ✓ N □ N/A □	Section A.1 of the application dossier		
Organisation responsible for project implementation	Y ✓ N ☐ N/A ☐	Section A.2 of the application dossier		
Project Presentation				
Title of project / project phase	Y ✔ N □ N/A □	Section B.1 of the application dossier		
Categorisation of project activity	Y ✓ N ☐ N/A ☐	Section B.2 of the application dossier		
Compatibility and coherence with the Operational Programme	Y ✓ N □ N/A □	Section B.3 of the application dossier		
Project description	Y ✓ N □ N/A □	Section B.4 of the application dossier		
Project objectives (and location)	Y ✓ N □ N/A □	Section B.5 of the application dossier		
Project Feasibility				
Demand Analysis	Y ✓ N □ N/A □	Section C.1.1		
Options considered	Y ✓ N □ N/A □	Options are presented in the Cost-Benefit Analysis		
Summary of feasibility studies conclusions	Y ✓ N ☐ N/A ☐	Section C.1 of the application dossier.		
Capacity considerations	Y ✓ N ☐ N/A ☐	Included in the Technical Feasibility Study attached		
Timetable				
Project timetable	Y ✓ N □ N/A □	Section D.1 of the application dossier contains a nine stage timetable.		
Project maturity	Y ✓ N □ N/A □	Section D.2 of the application dossier sets out the project maturity (concept design, specs and model test in channel are finalized)		
Cost-Benefit Analysis				
Financial Analysis	Y ✔ N □ N/A □	Section E.1 of the application dossier		
Socio-economic analysis	Y ✓ N □ N/A □	Section E.2 of the application dossier.		
Risk and sensitivity analysis	Y ✔ N □ N/A □	Section E.3 of the application dossier.		
Analysis of Environmental Impact				
Contribution to/respect of environmental sustainability	Y ✓ N □ N/A □	Section F of the application dossier.		
Consultation of environmental	Y ✓ N □ N/A □	Section F.2 and F.4 of the application		

Application Section	Assessment	Comments / References
authorities		dossier
Environmental Impact Assessment	Y □ N ✓ N/A □	Section F.1 and F.3 of the application dossier
Assessment of effects on NATURA 2000 /sites of	Y ✓ N ☐ N/A ☐	Section F.4 of the application dossier.
nature conservation importance		
Additional environmental integration measures	Y ✓ N ☐ N/A ☐	Section F.5 of the application dossier
Cost of measures taken for Correcting negative environmental impacts	Y □ N ✓ N/A □	Section F.6 of the application dossier
Consistency with sectoral /integrated plan and programme (in case of projects in the areas of water, waste water and solid waste).	Y □ N □ N/A ✓	Not applicable.
Justification for the Public Contri	bution	
Competition	Y □ N ✓ N/A □	Section G.1 of the application dossier states that the project does not involve State aid.
Impact of EU assistance on project implementation	Y ✓ N ☐ N/A ☐	Section G.2 of the application dossier
Financing Plan		
Cost breakdown	Y ✓ N □ N/A □	Section H.1 of the application dossier
Total planned resources and planned contribution from EU funds.	Y ✓ N □ N/A □	Section H.2 of the application dossier
Annual financing plan of EU contribution	Y ✓ N ☐ N/A ☐	Section H.3 of the application dossier
Compatibility with EU Policies an	d Law	
Other EU financing sources	Y □ N ✓ N/A □	Section I.1 of application dossier
IFI financing	Y □ N □ N/A ✓	
Existence of legal procedure for non-compliance with EU legislation	Y □ N ✓ N/A □	Section I.2 of the application dossier. Project is not subject to a legal procedure for non-compliance with Community legislation.
Publicity measures	Y ✓ N □ N/A □	Section I.3 of the application dossier
Involvement of JASPERS in project preparation	Y □ N ✓ N/A □	Section I.4 of the application dossier
Public Procurement	Y □ N ✓ N/A □	Section I.5 of the application dossier
Previous history of the recovery of assistance	Y □ N □ N/A ✓	Not included in the application

Application Section	Assessment	Comments / References
Endorsement of Competent Natio		
Signed endorsement	Y ✓ N □ N/A □	Section J. of the application dossier
Annexes		
Declaration by authority responsible for monitoring Natura 2000 sites / sites of nature conservation importance	Y ✓ N □ N/A □	Section F.4 and Annex of the application dossier.
Cost-Benefit Analysis	Y ✓ N □ N/A □	Attached document
Technical Sheets	Y ✓ N ☐ N/A ☐	Information required included in the Technical Feasibility Study
Feasibility study (summary)	Y ✓ N ☐ N/A ☐	Full Technical Feasibility Study attached
EIA non technical summary	Y □ N □ N/A ✓	Not included
Copies of relevant decisions permits and other documents	Y ✓ N □ N/A □	Regional distribution of researchers and personnel of the Oceanographic Spanish Institute, to be used as guide for the regional use of FEDER funds
Maps	Y □ N □ N/A ✓	Not applicable.
Others (please provide detail)		

A2 Quality Assessment Checklist

Application Section	Assessment	Comments / References
Context and Project Objectives		
The social, institutional and economic contexts of the project are clearly described	Y ✓ N □ N/A □	The social, institutional and economic context for the Spanish Oceanographic Institute to undertake this project are clear following the review of the complete application form, but they are not explicit in the document.
The project objectives are clearly defined	Y ✓ N □ N/A □	The project objectives are explicitly outlined in the document: the current infrastructure and the need for the projects in order to meet the actual and future requirements of the Spanish R+D+i.
The expected project benefits are indentified and clearly defined in terms of socio-economic indicators	Y ✓ N□ N/A □	The socio-economic objectives are clearly exposed, focused mainly on the creation of employment, the development of sustainable methods of extracting natural resources, the study of climate change and R+D+i for various types of firms (naval industry, fishing, energy, infrastructures,)
		The beneficiaries of the project have been clearly identified in the dossier, and a socio economic analysis has been included in the attached Cost- Benefit Analysis.
The foreseen socio-economic benefits are likely to be attainable with the implementation of the project	Y ✓ N □ N/A □	The socio-economic benefits are likely to be achieved by the development of the project, but no socio economic benefits have been defined.
All the most important socio- economic effects of the project have been considered in the context of the region, sector or country concerned	Y ✓ N □ N/A □	All the benefits have been considered in the context of the R+D+i in Spain and in the sectors related to the marine natural resources.
The project is coherent with the EU objectives of the Funds? (Art. 3 and Art. 4 Reg. 1083/2006 for the ERDF and CF, Art. 1 and Art. 2 Reg. 1084/2006 for the CF; Art. 1 and Art. 2 Reg. 1085/2006 for the IPA)	Y ✓ N □ N/A □	The project is coherent with EU objectives of the ERDF Fund, namely Regional competitiveness and employment objective
The project is coherent with the overarching national strategy and priorities defined in the national strategic reference frameworks and the operational programmes (Art. 27 and Art. 37 Reg. 1083/2006 for the ERDF and CF,	Y ✓ N □ N/A □	The development of R&D infrastructure development constitutes one from the main objectives of the National framework (programa Operativo I+D+i)

Application Section	Assessment	Comments / References
Art. 12 Reg. 1080/2006 for the ERDF)		
The means of measuring the attainment of objectives is indicated, and their relationship, if any, with the targets of the Operational Programmes is defined.	Y □ N ✓ N/A □	The process for the monitoring of targets is not made explicit.
Project Identification		
The project constitute a clearly identified self-sufficient unit of analysis	Y ✓ N □ N/A □	The project consists of the detailed design and construction of a oceanographic vessel, which constitutes a self-sufficient unit of analysis.
The project is defined with appropriate quantified indicators	Y ✓ N □ N/A □	There are only a few figures provided regarding the characteristics of the project: 90 meters in length and 19 operating beam; range of about 45 days; capacity for 40 scientists and technicians and 20 crew members on board.
The project's concept, outputs and capacity increase to the baseline are meaningful	Y ✓ N □ N/A □	The new vessel will boost the oceanic and marine investigation capacity in Spain, mainly for the purpose of natural resources use and fishing, based on the performance of the existing infrastructure. This is mainly comprised by the existing vessels.
The indirect effects of the project been properly considered (or excluded if appropriate shadow prices are used)	Y ✓ N □ N/A □	The indirect and network effects of the project are all positive and are qualitatively described in Section B.4.2.
The network effects of the project have been considered	Y ✓ N □ N/A □	The indirect and network effects of the project are all positive and are qualitatively described in Section B.4.2.
The economic welfare calculation is based on a consideration of costs and benefits for all potentially affected parties	Y ✓ N □ N/A □	Yes. The cost-benefit analysis includes direct and indirect impacts, and specify them by affected parties.
Project Timetable and Maturity		
The project phases have been clearly and correctly identified	Y ✓ N □ N/A □	The project schedule has been detailed in the application dossier.
The maturity of the project has been correctly assessed	Y ✓ N □ N/A □	The only information regarding the maturity of the project are the studies that have been undertaken to date: Concept Design, Specifications production and model testing.
The project implementation timeframe is realistic and reasonable	Y ✓ N □ N/A □	It is the intention of the applicant to finalize the tender process in 2012, The expected time for the detailed design, construction and provision of all the naval and technological

Application Section	Assessment	Comments / References
		equipment of 2- 3 years is considered feasible.
Dependencies and constraints have been properly taken into account in the project timetable	Y ✓ N □ N/A □	No major constrains are expected as the only permits and approvals required are the ones that are required for the tender process.
Feasibility and Options Analysis		
The application dossier contains sufficient evidence of the project's feasibility (from an economic, engineering, institutional, management, implementation, environmentalpoint of view)	Y ✓ N □ N/A □	A full Technical Feasibility Study has been attached
The do-nothing scenario ('business as usual') has been analysed to compare the situations with and without the project	Y ✓ N N/A	The do-nothing scenario has been included in the Cost-Benefit Analysis document and compared to other scenarios.
Other alternative feasible options have been adequately considered (in terms of do minimum and a small number of do something options)	Y ✓ N □ N/A □	The Cost.Benefit Analysis included the option of renting vessels
The chosen technical solution(s) is/are appropriate and sustainable according to market and technological developments, future demand and capacity constraints, etc.	Y ✓N □ N/A □	Yes. It will promote sustainability in the use of marine resources. The project provides non-pollutant infrastructure and will boost the collaboration between public and private entities for the marine, fishing and oceanic R+D+i.
Demand for the project outputs has been properly analysed and is and/or will be adequate and significant (long run forecasts)	Y □ N ✓ N/A □	The demand study is based on the lack of national infrastructure that the IEO must currently deliver its services with. Specifically, it must provide these services with access to one boat the Cornide de Saavedra, - A demand study for the new vessel, including a more detailed justification for the forecast of future activity is necessary to assess the need of the project.
The location of the investment is suitable and the local context is favourable to the project (i.e. there are no physical, social or institutional binding constraints that could threaten the project feasibility)	Y ✓ N □ N/A □	The context is favourable and numerous involved Spanish institutions are engaged with this project.
Appropriate technology is available for the project implementation	Y ✓ N □ N/A □	Yes. Moreover, the technological capacity and competitiveness of the .naval and marine industry will be improved by this project.
In the case of productive investments/R&D/energy, the relevance and impact on public	Y □ N □ N/A ✓	

Application Section	Assessment	Comments / References
infrastructures have been properly considered, e.g. necessary links to transport network (air, road/rail connections, etc.), links to other utilities, public sector responsibilities to provide "new services", etc.		
The incentive effect of the requested aid has been assessed and found to be significant (i.e. the proposed aid is necessary to produce a real incentive effect to undertake investments which would not otherwise be made in the area, or to ensure that the beneficiary undertakes (additional) investment in the region concerned)	Y ✓ N □ N/A □	The project is only feasible at this time if the ERDF provide grant approval.
Financial Analysis		
Depreciation, reserves, and other accounting items which do not correspond to actual flows have been eliminated in the analysis	Y ✓ N □ N/A □	The analysis is presented with actual flows.
The determination of cash flows has been made in accordance with an incremental approach	Y ✓ N □ N/A □	
The choice of discount rate is consistent with the Commission's or Member States' guidance	Y ✓ N □ N/A □	The discount rate is considered as consistent with Commission's guidelines.
The choice of the project's time horizon is consistent with the values recommended per sector for the 2007-2013 period ¹	Y □ N ✓ N/A □	The time horizon presented is 25 years (even with a forecast of exploitation of 40 years), when the recommendation is 30 years.
The residual value of the investment has been calculated	Y ✓ N □ N/A □	
A nominal financial discount rate been employed (in the case of using current prices)	Y ✓ N □ N/A □	Commission's recommended a financial discount rate of 5%, that was used in the financial analysis.
The main financial performance indicators have been calculated (FNPV(C), FRR(C), FNPV(K), FRR(K)) considering the right cash-flow categories	Y ✓ N □ N/A □	
The project's calculated financial rate of return is at an appropriate level to justify a potential EU contribution	Y □ N □ N/A ✓	The project is not revenue generating, and therefore the rate of return is negative.
Private partners in the project are expected to earn normal profits as	Y □ N □ N/A ✓	

¹ 25 years for Energy, 30 years for Water and environment, 30 years for Railways, 25 years for Roads, 25 years for Ports and airports, 15 years for Telecommunications, 10 years for Industry, 15 years for Other services.

Application Section	Assessment	Comments / References
compared with some financial benchmarks (if applicable)		
If the project does not benefit from any form of state aid, the financial analysis demonstrates the existence of a funding gap and the need for EU assistance in order to make the project financially viable	Y □ N □ N/A ✓	
If the project benefits from state aid, the requested EU grant has been properly calculated (the EU contribution may not exceed the maximum state aid allowed for a project)	Y ✓ N □ N/A □	
If the project is a revenue generating project ² , the amount to which the EU co-financing rate applies has been identified in accordance with EU regulations (Art. 55 Reg. 1083/2006) ³	Y □ N □ N/A ✓	The project is not revenue-generating.
Economic Analysis		
The cost-benefit analysis (CBA) demonstrates that the project yields a positive economic net present value considering its impact on the development of the area where it is to be implemented.	Y □ N □ N/A ✓	Due the fact of the non-profit nature of the project, the net present value is negative with or without EU cofinancing. However, a socioeconomic analysis presenting the benefits has been presented.
The prices of inputs and outputs have been considered net of VAT and of other indirect taxes	Y □ N ✓ N/A □	The total value of the investment includes VAT because Spanish Oceanographic Institute does not recover VAT, once does not have commercial activities. However, there is no information regarding the consideration or not of other indirect taxes.
The prices of inputs, including labour, have been considered gross of direct taxes	Y □ N □ N/A ✓	There is no information regarding the consideration or not of direct taxes.
Subsidies and pure transfer payments have been excluded	Y ✓ N □ N/A □	

² A revenue-generating project means any operation involving an investment in infrastructure the use of which is subject to charges borne directly by users or any operation involving the sale or rent of land or buildings or any other provision of services against payment (Article 55 of Council Regulation 1083/2006).

³ For revenue-generating projects, the maximum eligible expenditure is identified by Article 55(2) Regulation (EC) N. 1083/2006 as the amount "that shall not exceed the current value of the investment cost less the current value of the net revenue from the investment over a specific reference period". Such identification of the eligible expenditure aims at ensuring enough financial resources for project implementation, avoiding, at the same time, the granting of an undue advantage to the recipient of the aid (over-financing).

Application Section	Assessment	Comments / References
from the analysis		
Externalities have been included in the analysis, including environmental externalities (e.g. application of the polluter pays principle and assessment of effects on NATURA 2000 sites)	Y ✓ N □ N/A □	
Shadow prices have been used to reflect the social opportunity cost of the resources employed	Y ✓ N □ N/A □	
Sector-specific conversion factors been applied (in the case of major non-traded items)	Y □ N □ N/A ✓	
The appropriate shadow wages have been chosen in accordance with the nature of the local labour market	Y □ N □ N/A ✓	
The chosen social discount rate is consistent with the Commission's or Member States' guidance	Y ✓ N □ N/A □	
The main economic performance indicators have been calculated (ENPV, ERR and B/C ratio)	Y ✓ N □ N/A □	
If the economic net present value of the project is negative, there are important non-monetised benefits to be considered	Y ✓ N □ N/A □	Non monetary benefits are adequately presented and explained in the socio-economic analysis which has been carried out.
Risk Assessment		
The choice of the critical project variables is consistent with the elasticity threshold proposed	Y ✓ N □ N/A □	
The sensitivity analysis has been carried out variable by variable and possibly using switching values	Y ✓ N □ N/A □	The sensitivity analysis some few variables, even with some lack of justification.
The expected value criterion has been used to evaluate the project performance	Y ✓ N □ N/A □	
Ways to minimise the level of optimism bias have been considered	Y ✓ N □ N/A □	
Risk mitigation measures have been identified and are adequate	Y ✓ N □ N/A □	Risk mitigation measures are qualitative.
Other Evaluation Approaches		
If the project has been shown to have important effects that are difficult to assess in monetary terms, the opportunity to carry out an additional analysis, such as CEA or MCA, has been	Y □ N ✓ N/A □	

Application Section	Assessment	Comments / References
considered		
The choice of the additional analysis is suitable with the fields of application of CEA and MCA	Y □ N □ N/A ✓	
If a CEA has been performed, incremental cost-effectiveness ratios have been calculated to exclude 'dominated' alternatives	Y □ N □ N/A ✓	
If an MCA has been performed, the weights applied are consistent with the relative importance of the projects effects on society	Y □ N □ N/A ✓	
If the project is likely to have a significant macroeconomic impact, the opportunity to carry out an Economic Impact Analysis has been considered	Y □ N □ N/A ✓	
Consistency with EU Policies and	Law	
The project is consistent with relevant EU policies and law in the field of sustainable development, protection and improvement of the environment.	Y ✓ N □ N/A □	
The project is consistent with EU competition policy and regulations and is not likely to generate competition distortions	Y □ N □ N/A ✓	It is understood that State aid has been subject to separate scrutiny and clarification to seek clearance to exclusively appoint a contractor without an open competition for the work.
The project is consistent with EU public procurement regulations	Y ✓ N □ N/A □	
The project is consistent with gender equality and anti-discrimination EU policies	Y □ N □ N/A ✓	
If the project is in the field of industry, the project is in line with the objectives of the Europe 2020 Flagship Initiative "An Integrated Industrial Policy for the Globalisation Era" and may contribute to their achievement	Y □ N □ N/A ✓	
If the project is in the field of energy, the project is in line with the objectives of the Europe 2020 Flagship Initiative "A resource-efficient Europe" and may contribute to their achievement	Y □ N □ N/A ✓	
If the project is in the field of ICT, the project is in line with the objectives of the Europe 2020 Flagship Initiative "A Digital Agenda for Europe" and may contribute to their achievement	Y □ N □ N/A ✓	

Application Section	Assessment	Comments / References
If the project is in the field of the knowledge economy, the project is in line with the objectives of the Europe 2020 Flagship Initiative "Innovation Union" and may contribute to their achievement	Y ✓ N □ N/A □	