



LIFE+ Nature

TECHNICAL APPLICATION FORMS

Part A – administrative information



LIFE+ 2013

FOR ADMINISTRATION USE ONLY

LIFE13 NAT/ES/000237

LIFE+ Nature project application

Language of the proposal:

English (en)

Project title:

Migratory fish recovery and improved management in the final stretch of the Ebre River

Project acronym:

LIFE MIGRATOEBRE

The project will be implemented in the following Member State(s):

Spain Catalunya

Expected start date: 01/07/2014

Expected end date: 30/06/2018

LIST OF BENEFICIARIES

Name of the **coordinating** beneficiary: Institut per al Desenvolupament de les Comarques de l'Ebre (Institute for the Development of the Regions of the Ebre)

Name of the associated beneficiary: FUNDACIÓ PRIVADA MUSEU DEL TER

Name of the associated beneficiary: Departament d'Agricultura, Ramaderia, Pesca, Alimentació i Medi Natural - Direcció General de Pesca i Afers Marítims

Name of the associated beneficiary: FUNDACIÓ CATALUNYA LA PEDRERA

Name of the associated beneficiary: INSTITUT DE RECERCA I TECNOLOGIES AGROALIMENTÀRIES

LIST OF CO-FINANCIERS

PROJECT BUDGET AND REQUESTED EU FUNDING

Total project budget: 1,568,574 Euro

Total eligible project budget: 1,568,574 Euro

EU financial contribution requested: 784,285 Euro (= 50.00% of total eligible budget)

Coordinating Beneficiary Profile Information

Legal Name	Institut per al Desenvolupament de les Comarques de l'Ebre (Institute for the Development of the Regions of the Ebre)			
Short Name	IDECE	Legal Status		
VAT No	Q 9350005 F	Public body Private commercial Private non- commercial	X	
Legal Registration No	Law 12/1993			
Registration Date	04/11/1993			

Legal address of the Coordinating Beneficiary

Street Name and No	Av. Generalitat, 116		
Post Code	43500	PO Box	
Town / City	Tortosa		
Member State	Spain		

Coordinating Beneficiary contact person information

Title	Mr	Function	Director	
Surname	Borràs			
First Name	Jordi			
E-mail address	idece@idece.cat			
Department / Service				
Street Name and No	Av. Generalitat, 116			
Post Code	43500	PO Box		
Town / City	Tortosa			
Member State	Spain			
Telephone No	34977510546	Fax No	34977510749	

Website of the Coordinating Beneficiary

Website	http://www.idece.es/
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Brief description of the Coordinating Beneficiary's activities and experience in the area of the proposal

IDECE is an autonomous entity of the Department of Planning and Sustainability of the Government of Catalonia that was created in 1993. As an umbrella organization, its main functions are:

1. Development and promotion of plans for the promotion and development of global or sector of the regions of Baix Ebre, the Montsià, Terra Alta and Ribera d'Ebre.
2. Encouraging the projection of the regions mentioned.
3. Development of the programs to support general and sector-led local authorities in the region.
4. Maintenance and promotion of inland waterway to the Ebro.
5. Supervision of the implementation and review of the zoning plan of the regions of the Ebre.
6. Support to municipal policies to stimulate, through grants, technical support, etc..
7. To advice and conduct studies and technical work aimed at obtaining a better understanding of the reality and perspectives of the four regions.
8. Creator and driving force behind the tourism brand that identifies and unites all the regions of the Ebre.



COORDINATING BENEFICIARY DECLARATION

The undersigned hereby certifies that:

1. The specific actions listed in this proposal do not and will not receive aid from the Structural Funds or other European Union financial instruments. In the event that any such funding will be made available after the submission of the proposal or during the implementation of the project, my organisation will immediately inform the European Commission.
2. My organisation Institut per al Desenvolupament de les Comarques de l'Ebre (Institute for the Development of the Regions of the Ebre) has not been served with bankruptcy orders, nor has it received a formal summons from creditors. My organisation is not in any of the situations listed in Articles 93.1 and 94 of Council Regulation 1605/2002 of 25/06/2002 (OJ L248 of 16/09/2002).
3. My organisation (which is legally registered in the European Union) will contribute 401,911.00€ to the project. My organisation will participate in the implementation of the following actions: A2, C1, D4, D5, F1, F2, F3, F4. The estimated total cost of my organisation's part in the implementation of the project is 803,821.00 €.
4. Should one or more associated beneficiary or co-financier reduce or withdraw its financial contribution, my organisation will ensure that a corresponding additional contribution is made available.
5. My organisation will conclude with the associated beneficiaries and co-financiers any agreements necessary for the completion of the work, provided these do not infringe on their obligations, as stated in the grant agreement with the European Commission. Such agreements will be based on the model proposed by the European Commission. They will describe clearly the tasks to be performed by each associated beneficiary and define the financial arrangements.
6. I am aware that my organisation is solely legally and financially responsible to the Commission for the implementation of the project (Article 4 of the Common Provisions).

I am legally authorised to sign this statement on behalf of my organisation.

I have read in full the Common Provisions (attached to the Model Grant Agreement provided with the LIFE+ application files).

I certify to the best of my knowledge that the statements made in this proposal are true and the information provided is correct.

At on.....

Signature of the Coordinating Beneficiary:

Name(s) and status of signatory:

* When the form is completed, please print, sign, scan and upload it in eProposal

ASSOCIATED BENEFICIARY PROFILE

Associated Beneficiary profile information				
Legal Name	FUNDACIÓ PRIVADA MUSEU DEL TER			
Short Name	CERM	Legal Status		
VAT No	G63418552	<div style="display: flex; justify-content: space-between;"> <div style="width: 80%;"> Public body <input type="checkbox"/> Private commercial <input type="checkbox"/> Private non- commercial <input checked="" type="checkbox"/> </div> <div style="width: 15%; text-align: center;"> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> </div> </div>		
Legal Registration No	1954 (Register Foundations)			
Registration Date	05/04/2004			
Legal address of the Coordinating Beneficiary				
Street Name and No	Passeig del Ter, 2		PO Box	null
Post Code	08560	Town / City	Manlleu	
Member State	Spain			
Legal address of the Associated Beneficiary				
Website	http://www.museudelter.cat			
Brief description of the Associated Beneficiary's activities and experience in the area of the proposal				
<p>The CERM, Center for the Study of Mediterranean Rivers, located in the Museum of the Ter River, in Manlleu (Catalonia), is a non-profit organization -in legal form of private foundation-, which has as its purpose the study, dissemination and preservation of the Ter River and, by extension, other Mediterranean rivers and continental water ecosystems.</p> <p>The CERM is an independent research center focused on ecological status assessment of rivers and lakes (riparian vegetation, aquatic macroinvertebrates, fishes, etc.), and assessment of solutions to improve river connectivity for fish and ecological restoration projects of water inner systems. It also drives River conservation projects -riparian vegetation restoration, river habitat restoration and fish migration improvement-, mainly associated to land stewardship agreements. The CERM is also involved on environmental education -it provides training to thousands of students each year- and actively participate in public awareness. It works essentially in the whole of Catalonia but also in other areas of Spain, and participates in several international projects, collaborating with universities and other institutions.</p> <p>Main international projects:</p> <ul style="list-style-type: none"> •Interreg IIIC, COR! - Community rivers - Ecological quality and connectivity for fish improvement in rivers and reservoirs, and its assessment (Wales, United Kingdom; Holland; South Moravia, Scek Republik and Catalonia). 2004-2007. •Interreg IVB, SUDOE (SOE1/P2/P248) - RICOVER - Establishment of guidelines for management and riparian restoration in the Iberian Peninsula and exchange of experiences in the evaluation of its ecological status and biodiversity (Portugal, Extremadura and Catalonia). CERM team was an External expert member. 2008-2011. •WWF the Netherlands Innofonds and Foundation ARK Nature, the Netherlands. Reintroduction of the sturgeon in the Ebro. A feasibility study. February 2013. 				

ASSOCIATED BENEFICIARY PROFILE

Associated Beneficiary profile information				
Legal Name	Departament d'Agricultura, Ramaderia, Pesca, Alimentació i Medi Natural - Direcció General de Pesca i Afers Marítims			
Short Name	DAAM	Legal Status		
VAT No	null	Public body		X
Legal Registration No	null	Private commercial		
Registration Date	null	Private non- commercial		
Legal address of the Coordinating Beneficiary				
Street Name and No	Avinguda Diagonal, 523-525		PO Box	null
Post Code	08029	Town / City	Barcelona	
Member State	Spain			
Legal address of the Associated Beneficiary				
Website	http://www.gencat.cat/agricultura			
Brief description of the Associated Beneficiary's activities and experience in the area of the proposal				
<p>The Ministry of Agriculture, Livestock, Fisheries, Food and Environment of the Government of Catalonia will be involved in the project through the DG Fisheries and Maritime Affairs. The DG main responsibilities are:</p> <ol style="list-style-type: none"> 1.To plan strategies, programs and plans in terms of fishing and maritime affairs. 2.To plan activities in terms of funding and other measures aimed at fisheries, aquaculture and maritime affairs. 3.To supervise functions of the fishermen and their federations and implement actions regarding institutional relationships with other organizations representing the fisheries, aquaculture, recreational fishing and nautical activities. 4.To propose rules on the regulation of fisheries, marine resource management, fisheries protection areas or shellfish and other measures to protect marine resources, aquaculture and shellfish gathering of the markets hiring, marketing of fish products and marine activities and nautical qualifications. 5.To supervise the different types of plans fisheries, aquaculture and seafood restaurants on the Catalan coast, as well as plans for the Marine Living Resources. 6.To plan activities in the field of maritime activities, education and training as well as recreational and professional qualifications related to recreational water activities. 7.Any other similar function entrusted to them. 				

ASSOCIATED BENEFICIARY PROFILE

Associated Beneficiary profile information				
Legal Name	FUNDACIÓ CATALUNYA LA PEDRERA			
Short Name	FCatLP	Legal Status		
VAT No	G-65959512	Public body		<input type="checkbox"/>
Legal Registration No	null	Private commercial		<input type="checkbox"/>
Registration Date	null	Private non- commercial		<input checked="" type="checkbox"/>
Legal address of the Coordinating Beneficiary				
Street Name and No	Passeig de Gràcia, 92		PO Box	null
Post Code	08008	Town / City	Barcelona	
Member State	Spain			
Legal address of the Associated Beneficiary				
Website	http://www.fundaciocatalunya-lapedrera.com/ca/home			
Brief description of the Associated Beneficiary's activities and experience in the area of the proposal				
<p>The Fundació Catalunya La Pedrera focuses on ethics and innovation, believes in the proximity and dynamism and wants to transform into action the commitment to the territory and with its people. The main mission of the Foundation is to work proactively to the development and social transformation of Catalonia.</p> <p>One of its main sectors of the Foundation is the preservation of natural heritage and landscape and the creation of awareness among the population of the need to protect the environment. In this field, the Foundation has three main lines of action:</p> <ol style="list-style-type: none"> 1. To acquire parts of the territory that represent well conserved natural environments and to subsequently manage them with the co-operation of conservationist institutions, other non-government organizations and public bodies. 2. To co-operate in nature conservation projects being carried out by institutions nationwide. 3. To carry out an ongoing educational task, among children and youths as well as adults, in order to create environmental values in our society. <p>The Foundation nowadays protects 4,5% of the area of Catalonia and already has 24 estates as part of its property. As such, the Foundation takes care of the sustainable and respectful management of 144,096 hectares, which consists of corporate property (acquired for conservation purposes) and property held in public/private custody by means of agreements with the owners of the estates.</p>				

ASSOCIATED BENEFICIARY PROFILE

Associated Beneficiary profile information				
Legal Name	INSTITUT DE RECERCA I TECNOLOGIES AGROALIMENTÀRIES			
Short Name	IRTA	Legal Status		
VAT No	Q-5855049-B	Public body	X	
Legal Registration No	null	Private commercial		
Registration Date	null	Private non- commercial		
Legal address of the Coordinating Beneficiary				
Street Name and No	Passeig de Gràcia, 44, 3 pl.		PO Box	null
Post Code	08007	Town / City	Barcelona	
Member State	Spain			
Legal address of the Associated Beneficiary				
Website	http://www.irta.cat/			
Brief description of the Associated Beneficiary's activities and experience in the area of the proposal				
<p>IRTA is a research institute owned by the Government of Catalonia adscribed to the Department of Agriculture. It is regulated by Law 04/2009, passed by the Catalan Parliament on 15 April 2009, and it is ruled by private regulations.</p> <p>IRTA's mission is to contribute to modernising, improving, boosting competitiveness, and fostering sustainable development in the sectors of agriculture, food, agroforestry, aquaculture, and fishing, as well as in all areas of activity directly or indirectly related to the supply of healthy, high-quality foodstuffs to end consumers, while also contributing to food safety and safe processing of foodstuffs and in general enhancing the health and well-being of the population.</p> <p>The IRTA has 10 Centres and Field Stations of its own and also 9 associated centres. These are at 26 different locations spread throughout Catalonia. One of these centres is the Centre for Aquiculture of Sant Carles de la Ràpita that will take part in the project.</p> <p>IRTA has a long experience in European, national and Catalan projects. In 2011, the IRTA participated in 183 research projects, 25 of which were EU projects.</p>				



ASSOCIATED BENEFICIARY DECLARATION and MANDATE

I, the undersigned, (1), representing, FUNDACIÓ PRIVADA MUSEU DEL TER CERM, Private non-commercial, 1954 (Register Foundations), VAT number G63418552, Passeig del Ter, 2, Manlleu, 08560, Spain, hereinafter referred to as "the associated beneficiary", for the purposes of the signature and the implementation of the grant agreement Migratory fish recovery and improved management in the final stretch of the Ebre River with the European Commission (hereinafter referred to as "the grant agreement") hereby:

1. Mandate Institut per al Desenvolupament de les Comarques de l'Ebre (Institute for the Development of the Regions of the Ebre) (IDECE), Public body, Law 12/1993, VAT number Q 9350005 F, Av. Generalitat, 116, Tortosa, 43500, Spain, represented by, (hereinafter referred to as "the coordinating beneficiary") to sign in my name and on my behalf the grant agreement and its possible subsequent amendments with the European Commission.

2. Mandate the coordinating beneficiary to act on behalf of the associated beneficiary in compliance with the grant agreement.

I hereby confirm that the associated beneficiary accepts all terms and conditions of the grant agreement and, in particular, all provisions affecting the coordinating beneficiary and the associated beneficiaries. In particular, I acknowledge that, by virtue of this mandate, the coordinating beneficiary alone is entitled to receive funds from the Commission and distribute the amounts corresponding to the associated beneficiary's participation in the action.

I hereby accept that the associated beneficiary will do everything in its power to help the coordinating beneficiary fulfil its obligations under the grant agreement, and in particular, to provide to the coordinating beneficiary, on its request, whatever documents or information may be required.

I hereby declare that the associated beneficiary agrees that the provisions of the grant agreement, including this mandate, shall take precedence over any other agreement between the associated beneficiary and the coordinating beneficiary which may have an effect on the implementation of the grant agreement.

I furthermore certify that:

1. The associated beneficiary has not been served with bankruptcy orders, nor has it received a formal summons from creditors. My organisation is not in any of the situations listed in Articles 106(1) and 107 of Council Regulation No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union (OJ L298 of 26.10.2012).
2. The associated beneficiary (which is legally registered in the European Union) will contribute 74270€ to the project. My organisation will participate in the implementation of the following actions: A2, C1, D4, E7, F1, F2. The estimated total cost of my organisation's part in the implementation of the project is 148539€.
3. The associated beneficiary will conclude with the coordinating beneficiary an agreement necessary for the completion of the work, provided this does not infringe on our obligations, as stated in the grant agreement with the European Commission. This agreement will be based on the model proposed by the European Commission. It will describe clearly the tasks to be performed by my organisation and define the financial arrangements.

This declaration and mandate shall be annexed to the grant agreement and shall form an integral part thereof.

I am legally authorised to sign this statement on behalf of my organisation. I have read in full the Common Provisions (attached to the Model Grant Agreement provided with the LIFE+ application files). I certify to the best of my knowledge that the statements made in this proposal are true and the information provided is correct.

At on.....

Signature of the Associated Beneficiary:

Name(s) and status/function of signatory:

1. Forename and surname of the legal representative of the future associated beneficiary signing this mandate.
2. When the form is completed, please print, sign, scan and upload it in eProposal



ASSOCIATED BENEFICIARY DECLARATION and MANDATE

I, the undersigned, (1), representing, Departament d'Agricultura, Ramaderia, Pesca, Alimentació i Medi Natural - Direcció General de Pesca i Afers Marítims DAAM, Public body, , VAT number , Avinguda Diagonal, 523-525, Barcelona, 08029, Spain, hereinafter referred to as "the associated beneficiary", for the purposes of the signature and the implementation of the grant agreement Migratory fish recovery and improved management in the final stretch of the Ebre River with the European Commission (hereinafter referred to as "the grant agreement") hereby:

1. Mandate Institut per al Desenvolupament de les Comarques de l'Ebre (Institute for the Development of the Regions of the Ebre) (IDECE), Public body, Law 12/1993, VAT number Q 9350005 F, Av. Generalitat, 116, Tortosa, 43500, Spain, represented by, (hereinafter referred to as "the coordinating beneficiary") to sign in my name and on my behalf the grant agreement and its possible subsequent amendments with the European Commission.

2. Mandate the coordinating beneficiary to act on behalf of the associated beneficiary in compliance with the grant agreement.

I hereby confirm that the associated beneficiary accepts all terms and conditions of the grant agreement and, in particular, all provisions affecting the coordinating beneficiary and the associated beneficiaries. In particular, I acknowledge that, by virtue of this mandate, the coordinating beneficiary alone is entitled to receive funds from the Commission and distribute the amounts corresponding to the associated beneficiary's participation in the action.

I hereby accept that the associated beneficiary will do everything in its power to help the coordinating beneficiary fulfil its obligations under the grant agreement, and in particular, to provide to the coordinating beneficiary, on its request, whatever documents or information may be required.

I hereby declare that the associated beneficiary agrees that the provisions of the grant agreement, including this mandate, shall take precedence over any other agreement between the associated beneficiary and the coordinating beneficiary which may have an effect on the implementation of the grant agreement.

I furthermore certify that:

1. The associated beneficiary has not been served with bankruptcy orders, nor has it received a formal summons from creditors. My organisation is not in any of the situations listed in Articles 106(1) and 107 of Council Regulation No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union (OJ L298 of 26.10.2012).
2. The associated beneficiary (which is legally registered in the European Union) will contribute 140965€ to the project. My organisation will participate in the implementation of the following actions: D1, D2, D3, F1. The estimated total cost of my organisation's part in the implementation of the project is 281930€.
3. The associated beneficiary will conclude with the coordinating beneficiary an agreement necessary for the completion of the work, provided this does not infringe on our obligations, as stated in the grant agreement with the European Commission. This agreement will be based on the model proposed by the European Commission. It will describe clearly the tasks to be performed by my organisation and define the financial arrangements.

This declaration and mandate shall be annexed to the grant agreement and shall form an integral part thereof.

I am legally authorised to sign this statement on behalf of my organisation. I have read in full the Common Provisions (attached to the Model Grant Agreement provided with the LIFE+ application files). I certify to the best of my knowledge that the statements made in this proposal are true and the information provided is correct.

At on.....

Signature of the Associated Beneficiary:

Name(s) and status/function of signatory:

1. Forename and surname of the legal representative of the future associated beneficiary signing this mandate.
2. When the form is completed, please print, sign, scan and upload it in eProposal



ASSOCIATED BENEFICIARY DECLARATION and MANDATE

I, the undersigned, (1), representing, FUNDACIÓ CATALUNYA LA PEDRERA FCatLP, Private non-commercial, , VAT number G-65959512, Passeig de Gràcia, 92, Barcelona, 08008, Spain, hereinafter referred to as "the associated beneficiary", for the purposes of the signature and the implementation of the grant agreement Migratory fish recovery and improved management in the final stretch of the Ebre River with the European Commission (hereinafter referred to as "the grant agreement") hereby:

1. Mandate Institut per al Desenvolupament de les Comarques de l'Ebre (Institute for the Development of the Regions of the Ebre) (IDECE), Public body, Law 12/1993, VAT number Q 9350005 F, Av. Generalitat, 116, Tortosa, 43500, Spain, represented by, (hereinafter referred to as "the coordinating beneficiary") to sign in my name and on my behalf the grant agreement and its possible subsequent amendments with the European Commission.

2. Mandate the coordinating beneficiary to act on behalf of the associated beneficiary in compliance with the grant agreement.

I hereby confirm that the associated beneficiary accepts all terms and conditions of the grant agreement and, in particular, all provisions affecting the coordinating beneficiary and the associated beneficiaries. In particular, I acknowledge that, by virtue of this mandate, the coordinating beneficiary alone is entitled to receive funds from the Commission and distribute the amounts corresponding to the associated beneficiary's participation in the action.

I hereby accept that the associated beneficiary will do everything in its power to help the coordinating beneficiary fulfil its obligations under the grant agreement, and in particular, to provide to the coordinating beneficiary, on its request, whatever documents or information may be required.

I hereby declare that the associated beneficiary agrees that the provisions of the grant agreement, including this mandate, shall take precedence over any other agreement between the associated beneficiary and the coordinating beneficiary which may have an effect on the implementation of the grant agreement.

I furthermore certify that:

1. The associated beneficiary has not been served with bankruptcy orders, nor has it received a formal summons from creditors. My organisation is not in any of the situations listed in Articles 106(1) and 107 of Council Regulation No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union (OJ L298 of 26.10.2012).
2. The associated beneficiary (which is legally registered in the European Union) will contribute 132680€ to the project. My organisation will participate in the implementation of the following actions: D5, E1, E2, E3, E4, E5, E6, E7, E8, E9, F1. The estimated total cost of my organisation's part in the implementation of the project is 265359€.
3. The associated beneficiary will conclude with the coordinating beneficiary an agreement necessary for the completion of the work, provided this does not infringe on our obligations, as stated in the grant agreement with the European Commission. This agreement will be based on the model proposed by the European Commission. It will describe clearly the tasks to be performed by my organisation and define the financial arrangements.

This declaration and mandate shall be annexed to the grant agreement and shall form an integral part thereof.

I am legally authorised to sign this statement on behalf of my organisation. I have read in full the Common Provisions (attached to the Model Grant Agreement provided with the LIFE+ application files). I certify to the best of my knowledge that the statements made in this proposal are true and the information provided is correct.

At on.....

Signature of the Associated Beneficiary:

Name(s) and status/function of signatory:

1. Forename and surname of the legal representative of the future associated beneficiary signing this mandate.
2. When the form is completed, please print, sign, scan and upload it in eProposal



ASSOCIATED BENEFICIARY DECLARATION and MANDATE

I, the undersigned, (1), representing, INSTITUT DE RECERCA I TECNOLOGIES AGROALIMENTÀRIES IRTA, Public body, , VAT number Q-5855049-B, Passeig de Gràcia, 44, 3 pl., Barcelona, 08007, Spain, hereinafter referred to as "the associated beneficiary", for the purposes of the signature and the implementation of the grant agreement Migratory fish recovery and improved management in the final stretch of the Ebre River with the European Commission (hereinafter referred to as "the grant agreement") hereby:

1. Mandate Institut per al Desenvolupament de les Comarques de l'Ebre (Institute for the Development of the Regions of the Ebre) (IDECE), Public body, Law 12/1993, VAT number Q 9350005 F, Av. Generalitat, 116, Tortosa, 43500, Spain, represented by, (hereinafter referred to as "the coordinating beneficiary") to sign in my name and on my behalf the grant agreement and its possible subsequent amendments with the European Commission.

2. Mandate the coordinating beneficiary to act on behalf of the associated beneficiary in compliance with the grant agreement.

I hereby confirm that the associated beneficiary accepts all terms and conditions of the grant agreement and, in particular, all provisions affecting the coordinating beneficiary and the associated beneficiaries. In particular, I acknowledge that, by virtue of this mandate, the coordinating beneficiary alone is entitled to receive funds from the Commission and distribute the amounts corresponding to the associated beneficiary's participation in the action.

I hereby accept that the associated beneficiary will do everything in its power to help the coordinating beneficiary fulfil its obligations under the grant agreement, and in particular, to provide to the coordinating beneficiary, on its request, whatever documents or information may be required.

I hereby declare that the associated beneficiary agrees that the provisions of the grant agreement, including this mandate, shall take precedence over any other agreement between the associated beneficiary and the coordinating beneficiary which may have an effect on the implementation of the grant agreement.

I furthermore certify that:

1. The associated beneficiary has not been served with bankruptcy orders, nor has it received a formal summons from creditors. My organisation is not in any of the situations listed in Articles 106(1) and 107 of Council Regulation No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union (OJ L298 of 26.10.2012).
2. The associated beneficiary (which is legally registered in the European Union) will contribute 34463€ to the project. My organisation will participate in the implementation of the following actions: A1, C2, D1, F1. The estimated total cost of my organisation's part in the implementation of the project is 68925€.
3. The associated beneficiary will conclude with the coordinating beneficiary an agreement necessary for the completion of the work, provided this does not infringe on our obligations, as stated in the grant agreement with the European Commission. This agreement will be based on the model proposed by the European Commission. It will describe clearly the tasks to be performed by my organisation and define the financial arrangements.

This declaration and mandate shall be annexed to the grant agreement and shall form an integral part thereof.

I am legally authorised to sign this statement on behalf of my organisation. I have read in full the Common Provisions (attached to the Model Grant Agreement provided with the LIFE+ application files). I certify to the best of my knowledge that the statements made in this proposal are true and the information provided is correct.

At on.....

Signature of the Associated Beneficiary:

Name(s) and status/function of signatory:

1. Forename and surname of the legal representative of the future associated beneficiary signing this mandate.
2. When the form is completed, please print, sign, scan and upload it in eProposal

OTHER PROPOSALS SUBMITTED FOR EUROPEAN UNION FUNDING

Please answer each of the following questions:

- Have you or any of your associated beneficiaries already benefited from previous LIFE cofinancing? (please cite LIFE project reference number, title, year, amount of the co-financing, duration, name(s) of coordinating beneficiary and/or partners involved):

Fundació Catalunya- La Pedrera (ex Fundació CatalunyaCaixa) is a partner of two active LIFE+ projects:

“Delta Lagoon” (LIFE09/NAT/ES/000520, 1.490.084€, 2010-2014, IRTA)

“Operation CO2 (LIFE11/ENV/ES/000535, 1.752.950€, 2012-2017, Universidad de Valladolid)

and has been co-funding LIFE03/NAT/E/000067 “Mejora de los habitats y especies Natura2000 en Banyoles” (2003-7, 432.272€, Consorci de l’Estany).

IRTA: “Delta Lagoon” (LIFE09/NAT/ES/000520, 1.490.084€, 2010-2014, IRTA)

DAAM (Parc Natural Delta de l’Ebre):

“Conservación de especies prioritarias en humedales mediterráneos (Aphanius iberus, Valencia hispanica, Botaurus stellaris, Larus audouinii)”, LIFE96 NAT/E/003118, 305.738€, 1996-2000,

“Restauración y gestión integrada de la isla de Buda” LIFE96 NAT/E/003180, 243.746€, 1996-1998

“Conservación de Larus audouinii en España: Cataluña, LIFE02 NAT/E/008612, 380.132€, 2002-2006

- Have you or any of the associated beneficiaries submitted any actions related directly or indirectly to this project to other European Union financial instruments? To whom? When and with what results?

No other EU funds have been requested for this project neither for any of its actions.

- For those actions which fall within the eligibility criteria for financing through other European Union financial instruments, **please explain in full detail** why you consider that those actions nevertheless do not fall within the main scope of the instrument(s) in question and are therefore included in the current project.

The consortium has not identified any Community funding that could fund the entire project. Thus, among the community programs identified, neither the Horizon 2020 Programme for Research (more focused on scientific projects) nor the Interreg (that requires cross-border participation) could fund the main actions of the project.

Regarding the rest of potential EU programs, the consortium has also analyzed and dismissed the European Regional Development Fund (focused on improvements in economic activities), the European Social Fund (focused directly to people, job retention and helps to improve training and qualifications of the people), the European Agricultural Fund Rural (in the part of the environment, the funds are earmarked for sustainable use of agricultural land and forest), the Innovation Framework Programme and the Competitiveness (aimed at economic growth and job creation) as well as the Fund European Fisheries (fishing around

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DECLARATION OF SUPPORT FROM THE COMPETENT AUTHORITY

Optional: in addition to the support of the necessary competent authorities as described in the guidelines for applicants, this form may also be used to indicate any other support to the project by important stakeholder bodies, administrative bodies or individuals that may be concerned by the project.

Name and legal status:

**Subdirección General de Medio Natural
Dirección General de Calidad y Evaluación Ambiental y Medio Natural
Ministerio de Agricultura, Alimentación y Medio Ambiente**

Full address: Plaza de San Juan de la Cruz, S/N, 28071 Madrid (España).

Tel: 0034915976056 Fax: 0034915975973 E-mail: buzon-sgb@magrama.es

Contact person (name and function):

D. Miguel Aymerich Huyghues-Despointes. Subdirector General

Please specify whether, why and how you will support this project:

Declaración de compromiso:

Una vez leído y examinado la propuesta de referencia, se muestra nuestro apoyo al proyecto "LIFE + MIGRATOEBRE", coordinado por el Institut per al Desenvolupament de les Comarques de l'Ebre (IDECE).

Las acciones planteadas encajan en las prioridades de conservación de esta Subdirección General por lo que, en la medida de nuestras posibilidades, cooperaremos con los socios del proyecto en la recuperación del Esturión, así como en la mejora de las poblaciones de anguila, lamprea y saboga en el tramo final del río Ebro.

Signature and date: 24/Febrero/2014

Name and status of signatory:




Fdo, D. Miguel Aymerich Huyghues-Despointes Subdirector General



DECLARACIÓN DE COMPROMISO

En Zaragoza, a 24 de febrero de 2014

Por la presente, el abajo firmante, como representante de la **Confederación Hidrográfica del Ebro (CHE)** – declaro que la CHE apoya plenamente el proyecto "LIFE MIGRATOEBRE", coordinado por el Institut per al Desenvolupament de les Comarques de l'Ebre (IDECE).

En este sentido, el CHE se compromete a cooperar con los socios del proyecto con el fin de recuperar el esturión así como de mejorar las poblaciones de anguila, lamprea y saboga y mejorar la gestión fluvial en el tramo final del río Ebro. En particular, nos comprometemos a colaborar activamente con los socios para obtener los permisos necesarios para llevar a cabo las obras previstas en el proyecto. Asimismo nos comprometemos a contribuir a la sostenibilidad del proyecto una vez terminada la financiación del Programa LIFE +.

Fdo.: Javier San Roman Saldaña
Jefe del Área de Calidad de las de Aguas
Confederación Hidrográfica del Ebro



DÉCLARATION D'ENGAGEMENT

Par la présente, le soussigné, représentant l'Association pour la Restauration et la Gestion des Poissons Migrateurs du bassin de la Garonne et la Dordogne (MIGADO), déclare l'intérêt et le soutien au projet «LIFE MIGRATOEBRE. Migratory fish recovery and improved management in the final stretch of the Ebre River" coordonné par l'Institut de Desenvolupament de les Comarques de l'Ebre (IDECE).

À cet égard, MIGADO s'engage à coopérer avec les partenaires du projet afin de récupérer l'esturgeon dans la dernière section du fleuve Ebre.

Alain GUILLAUMIE, Président

A Le Passage d'Agen, le 20 février 2014



DÉCLARATION D'ENGAGEMENT

Par la présente, le soussigné, Eric Rochard, Directeur de l'unité de Recherches Ecosystèmes aquatiques et Changement Globaux (EABX) déclare son intérêt et son soutien au projet «LIFE MIGRATOEBRE" coordonné par l'Institut de Développement de les Comarques de l'Ebre (IDECE).

À cet égard, l'unité EABX d'Iristea s'engage à coopérer avec les partenaires du projet afin de mettre à disposition son expertise concernant les poissons migrateurs amphihalins et leur conservation. Cette expertise vise à aider à définir et à mettre en œuvre les mesures nécessaires à la restauration des poissons migrateurs dans cette section du fleuve Èbre.

A handwritten signature in black ink, appearing to read "E. Rochard", with a stylized flourish at the end.

Eric Rochard PhD HDR

Directeur de recherches

Directeur de l'Unité de Recherches Ecosystèmes aquatiques et Changement Globaux

Cestas le 24/02/2014



Minicentrales Dos, SL

DECLARATION OF COMMITMENT

To whom it may concern,

I, the undersigned, declare that the company **Hidroelèctrica de Xerta SL** supports the **“LIFE MIGRATOEBRE”** project, coordinated by the Institut per al Desenvolupament de les Comarques de l'Ebre (IDECE).

Within our efforts, we will cooperate with the partners of the project in order to recover the migratory fish and to improve management in the final stretch of the Ebre River.

In particular, we commit ourselves to actively collaborate with the project's partners to implement the fish improved friendly management measures foreseen in the ship lock of the Xerta's weir as well as to support the implementation of the Under Water hide, and the visitor centre to be installed in the Xerta's weir, in the understanding that the measures and implementations described above do not impair in any way the normal operation and production of the plant and do not affect, or create any risks to, persons or the plant. Finally, we also commit ourselves to collaborate in the sustainability of the project after the end of the LIFE+ funding.

In 2.014 February



José Lozano Muñoz
CEO



Generalitat de Catalunya
**Departament de Territori
i Sostenibilitat**

DECLARATION OF COMMITMENT

To whom it may concern,

I, the undersigned, declare that the **Departament de Territori i Sostenibilitat de la Generalitat de Catalunya** (Catalan Ministry for the Territory and Sustainability) fully supports the **"LIFE MIGRATOEBRE"** project, coordinated by the Institut per al Desenvolupament de les Comarques de l'Ebre (IDECE).

Within our efforts, we will cooperate with the partners of the project in order to recover the migratory fish and to improve management in the final stretch of the Ebre River. In particular, we commit ourselves to actively collaborate with project's partners to obtain the necessary permits to undertake the works envisaged by the project. We also commit ourselves to actively participate in public awareness rising as well as contribute to the sustainability of the project after the end of the LIFE+ funding.

Pau Villòria i Sistach

Secretari General - Departament de Territori i Sostenibilitat

Generalitat de Catalunya

Barcelona, 18th February 2014

Av. de Josep Tarradellas, 2-6

08029 Barcelona

Tel. 93 495 80 00

Fax 93 495 80 01

<http://www.gencat.cat/territori>

1714 / 2014



**Agència Catalana
de l'Aigua**

Provença, 204-208
08036 Barcelona
Tel. 93 567 28 00
Fax 93 567 27 80
NIF Q 0801031 F

DECLARATION OF COMMITMENT

To whom it may concern,

I, the undersigned, declare that the Agència Catalana de l'Aigua (Catalan Water Agency) supports the **"LIFE MIGRATOEBRE"** project, coordinated by the Institut per al Desenvolupament de les Comarques de l'Ebre (IDECE).

Within our efforts, we will cooperate with the partners of the project with the aim of recovering the migratory fish and to improve management in the final stretch of the Ebre River. In particular, we commit ourselves to actively collaborate with project's partners to undertake the works envisaged by the project. We also commit ourselves to actively participate in public awareness rising at local level as well as contribute to the sustainability of the project after the end of the LIFE+ funding.

Signature,

Antoni Munné

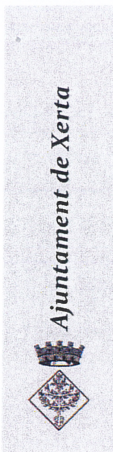
Head of Monitoring and Ecosystem Improvement Department



Barcelona, 19th February of 2014



Generalitat de Catalunya
**Departament de Territori
i Sostenibilitat**



DECLARATION OF COMMITMENT

To whom it may concern,

I, the undersigned, declare that the **Ajuntament de Xerta** (Xerta's Council) fully supports the **"LIFE MIGRATOE BRE"** project, coordinated by the Institut per al Desenvolupament de les Comarques de l'Ebre (IDECE).

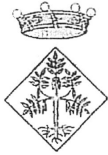
Within our efforts, we will cooperate with the partners of the project in order to recover the migratory fish and to improve management in the final stretch of the Ebre River. In particular, we commit ourselves to actively collaborate with project's partners to obtain the necessary permits to undertake the works envisaged by the project. We also commit ourselves to actively participate in public awareness rising at local level as well as contribute to the sustainability of the project after the end of the LIFE+ funding.

El Alcalde,

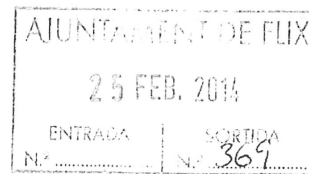


Moisés Fabra Serral

Xerta, 21 de Febrero de 2014



AJUNTAMENT DE FLIX



DECLARATION OF COMMITMENT

To whom it may concern,

I, the undersigned, declare that the **Ajuntament de Flix** (Flix's Council) fully supports the "**LIFE MIGRATOEBRE**" project, coordinated by the Institut per al Desenvolupament de les Comarques de l'Ebre (IDECE).

Within our efforts, we will cooperate with the partners of the project in order to recover the migratory fish and to improve management in the final stretch of the Ebre River. In particular, we commit ourselves to actively collaborate with project's partners to obtain the necessary permits to undertake the works envisaged by the project. We also commit ourselves to actively participate in public awareness rising at local level as well as contribute to the sustainability of the project after the end of the LIFE+ funding.

Signature

Name and legal status: MARC MUR BAGÉS- ALCALDE PRESIDENT DE L'AJUNTAMENT DE FLIX

Place and date: FLIX, 25 DE FEBRER DE 2014



AJUNTAMENT D'ASCÓ

(Ribera d'Ebre)

INSTITUT PER AL DESENVOLUPAMENT DE LES COMARQUES DE L'EBRE
Av. de la Generalitat, 116
43500 TORTOSA

AJUNTAMENT D'ASCÓ REGISTRE GENERAL	
ENTRADA	SORTIDA
Nº 24 FEB 2014	Nº 490

NOTIFICACIÓ

La Junta de Govern Local, en sessió celebrada el dia 20 / febrer / 2014 adoptà, entre altres, el següent acord, sense perjudici dels termes que en resultin de l'aprovació de l'acta corresponent, tal i com disposa l'article 206 del R.O.F. (R.D. 2568/1986 del 28 de novembre):

6.- PROPOSTA PER DONAR SUPORT AL PROJECTE LIFE MIGRATOEBRE.

El projecte LIFE MIGRATOEBRE presentat per l'Institut per al Desenvolupament de la Comarques de l'Ebre (IDECE) al Programa comunitari LIFE + al juny de l'any 2013 té per objectiu la recuperació de l'estútid, així com la millora de les poblacions d'angülla, llamprea i saboga al tram final riu Ebre. El projecte pretén, així mateix, fomentar la restauració de la connectivitat ecològica d'aquest tram del riu a través de la interconnexió dels espais naturals inclosos a la Xarxa Natura 2000.

En particular, els objectius específics del projecte LIFE MIGRATOEBRE són:

- Recuperar poblacions sanes i sostenibles d'esturions, angüelles, sabogues i llamprees en un termini de 20-30 anys a l'Ebre inferior.
- Millorar significativament la connectivitat ecològica de la part baixa del riu Ebre, adaptant els obstacles actuals de la recta final (assut de Xerta, assut d'Ascó i presa de Flix) per permetre la migració dels peixos (aigües amunt i aigües avall), augmentar en més de deu vegades la disponibilitat d'hàbitats de fresa per l'estútid, la saboga i la llamprea i incrementar la distribució en l'àrea (i el creixement) de l'angülla.
- Involucrar la comunitat així com a una àmplia xarxa de gestors de la natura, agricultors, pescadors, gestors de l'aigua, companyies elèctriques, agents de turisme, autoritats regionals i locals per treballar junts en la recuperació dels peixos migratoris i en la millora de la gestió ecològica en el tram final del riu Ebre.
- Ser un projecte de referència i promoure, de manera integral, la millora de la connectivitat ecològica a la conca del riu Ebre.

El projecte té un pressupost total estimat de 1.565.070 € i una durada de 4 anys. La iniciativa està promoguda per l'IDECE amb la participació del Departament d'Agricultura, Ramaderia i Pesca de la Generalitat de Catalunya, l'IRTA (Centre d'Investigació i Tecnologia Agroalimentàries), la Fundació Catalunya - La Pedrera i el Centre d'Estudis dels Rius Mediterranis (CERM).

Per tot l'exposat la Junta de Govern Local acorda, per unanimitat:

PRIMER.- Donar recolzament al projecte "LIFE MIGRATOEBRE", coordinat per l'Institut per al Desenvolupament de les Comarques de l'Ebre (IDECE), cooperant dins de les nostres possibilitats, amb els socis del projecte per tal de recuperar els peixos migratoris i per a millorar la gestió en el tram final del riu Ebre. En particular, ens comprometem a col·laborar activament amb els socis del projecte per a l'obtenció dels permisos necessaris per portar a terme les obres previstes en el projecte. També ens comprometem a participar activament en la sensibilització del públic a nivell local, així com contribuir a la sostenibilitat del projecte després de la finalització de LIFE +.

SEGON.- Autoritzar el Sr. Alcalde per la signatura de la declaració de compromís.

TERCER.- Notificar el present acord a l'IDECE.

Atenient,

LA SECRETÀRIA

Lidia Martíorell-Domingo

IDECE Institut per al Desenvolupament de les Comarques de l'Ebre Generalitat de Catalunya Departament d'Agricultura, Ramaderia i Pesca Plaça de Catalunya, 10 08002 Barcelona	
Núm. 03.13E	24/2014
Cap	24/02/14
Moza	12/14
Registre de resolucions	



AJUNTAMENT D'ASCÓ

(Ribera d'Ebre)

DECLARACIÓN DE COMPROMISO

Yo, el abajo firmante, declaro que el Ayuntamiento de Ascó muestra su pleno apoyo al proyecto "LIFE MIGRATOEBRE", coordinado por el Institut per al Desenvolupament de les Comarques de l'Ebre (IDECE).

Dentro de nuestras posibilidades, cooperaremos con los socios del proyecto con el fin de recuperar los peces migratorios y para mejorar la gestión en el tramo final del río Ebro. En particular, nos comprometemos a colaborar activamente con los socios del proyecto para la obtención de los permisos necesarios para llevar a cabo las obras previstas en el proyecto. También nos comprometemos a participar activamente en la sensibilización del público a nivel local, así como contribuir a la sostenibilidad del proyecto después de la financiación de LIFE +.

Rafael Vidal Ibars

ALCALDE-PRÉSIDENTE

Ascó, 20 de febrero de 2014



Central Nuclear Vandellòs II
REGISTRO GENERAL

SALIDA - 035732

Fecha: 26-02-2014 17:49

DECLARATION OF COMMITMENT

To whom it may concern,

I, the undersigned, declare that the **Asociación Nuclear Ascó-Vandellòs II, A.I.E. (ANAV)** fully supports the **"LIFE MIGRATOEBRE"** project, coordinated by the Institut per al Desenvolupament de les Comarques de l'Ebre (IDECE).

Within our efforts, we will cooperate with the partners of the project in order to recover the migratory fish and to improve management in the final stretch of the Ebre River.

In particular, we commit ourselves to actively collaborate with project's partners to develop the fish friendly improved management measures foreseen in the Ascó's weir. Finally, we also commit ourselves to contribute to the sustainability of the project after the end of the LIFE+ funding.

José Luis Esparza Martin
Environmental Department
Asociación Nuclear Ascó-Vandellòs II, AIE

L'Hospitalet de l'Infant, 26th February 2014

Asociación Nuclear Ascó-Vandellòs II, A.I.E.

Edificio Sede:
Apartado de correos 48,
43890 L'Hospitalet de l'Infant, Tarragona
Tel 977 818 800 · Fax 977 818 720
www.anav.es

Central Nuclear Ascó:
Avinguda de les Centrals s/n,
43791 Ascó, Tarragona
Tel 977 415 000 · Fax 977 405 181

Central Nuclear Vandellòs II:
Apartado de correos 27,
43890 L'Hospitalet de l'Infant, Tarragona
Tel 977 818 700 · Fax 977 810 014



LIFE13 NAT/ES/000237

TECHNICAL APPLICATION FORMS

**Part B - technical summary and overall
context of the project**

SUMMARY DESCRIPTION OF THE PROJECT (Max. 3 pages; to be completed in English)**Project title:**

Migratory fish recovery and improved management in the final stretch of the Ebre River

Project objectives:

LIFE MIGRATOEBRE project is a best practices and a demonstration project for final stretches of major European Rivers, focused on long-term sustainable investments in Natura 2000 sites and on species and habitats targeted by Habitats Directive conservation, at local and regional levels. The project is based on the implementation of mitigation measures in relation to rivers hydromorphology improvement, especially on rivers ecological connectivity and fish passage issues associated by the Water Framework Directive and the European Eel Recovery Plan (Regulation 1100/2007).

The main objectives of the LIFE MIGRATOEBRE project are the conservation of the endangered anadromous fish species (**European sturgeon, European eel, twait shad and sea lamprey**) and the restoration of the Ebre River ecological connectivity through the interconnection of natural areas included in the Natura 2000 network. The specific objectives of the project are:

1. Recover healthy and sustainable populations of migratory fish species -European sturgeon (*Acipenser sturio*), European eel (*Anguilla anguilla*), twaite shad (*Alosa fallax*) and sea lamprey (*Petromizon marinus*)- within 20-30 years in the lower Ebre River and Delta.

1. Significantly improve the ecological connectivity of the lower Ebre River, adapting all the present obstacles of the final stretch (**Xerta's weir, Ascó's weir and Flix dam**) to allow fish migration (upstream and downstream); **increasing more than tenfold the river spawning habitat** availability for European sturgeon, twaite shad and sea lamprey, **and the distribution (and growth) area** for European eel.

1. Involve community and a net of nature managers, farmers, fishermen, anglers, water managers, electric companies, tourism stakeholders, regional and local authorities working together on migratory fish recovery and improved ecological management in the final stretch of the Ebre River, on long-term sustainable investments in Natura 2000 sites on conservation of species and habitats targeted by Habitats Directive.

1. Be an exemplary project at local scale, and progressively to integrally promote the improvement of the ecological connectivity at the Ebre River basin. I. e. In a second step, at Riba-roja dam -to connect the lower Ebre with an important tributary, the Segre River- and Mequinença dam -to connect the lower Ebre with the middle Ebre basin-. **And also to become a demonstration project by other principal Iberian** -Guadalquivir, Guadiana, Miño- **and some European Rivers** as well.

Actions and means involved:

Actions and means involved are the following:

1. To undertake a pilot project of sturgeon restocking: experimental releases in the lower Ebre (downstream of the Xerta's weir and between Flix dam and Ascó's weir as well). This will be carried out to enhance the knowledge concerning: (a) Migration behaviour in the Ebre River and stuary system; (b) Location of suitable habitats; (c) Movement along migration barriers; and (d) Communication of the issue. In total, 50 individuals (of 50 - 70 cm) will be released with a transponder. These individuals will be selected by IRSTEA (France).

2. **To apply a ship locks improved management** (at Xerta's weir and Flix dam), **to install new fish passes** (at Xerta's weir and Ascó's weir), **to monitor it and to communicate**. This will be carried out to enhance the knowledge concerning: (a). Execution of a fish friendly improved management by the ship locks at the Xerta's weir and the Flix dam; (b). Installation of a new fish lift at the weir of Xerta and a fish ramp at the Ascó's weir; (c). Monitoring of fish movement along these new fish ways (using fish traps and marked fish with transponders); (d) Implementation of a new management measures (or not) according to the monitoring conclusions. and (e). Communication of the issue (i. e. promoting visits to several sites, like a transparent window located at the outlet of the Xerta's fish lift, during the main migration period).

3. **To design a communication campaign** on the main project objectives for general public as well as to farmers, fishermen, anglers, among other sectors. To produce **a great travelling exhibition and brochures**. Sturgeon, eel, twaite shad and sea lamprey are **flag ship species** to move towards a "Healthy Ebre River and Delta", icons, trade marks for a healthy lower Ebre River and Ebre delta.

4. **To execute a community involvement plan**. Creation of active groups of volunteers. Focus it partially on specific managers: Youngs, families, seniors, fishermen, anglers, farmers, electric companies, tourism stakeholders, regional and local authorities. **Participation on the World Fish Migration Day** event -anually, from 2014, each May.

5. To disseminate the results: final **conference on "Fish migration conservation and river ecological connectivity restoration"**, attended by national and international researchers and managers. To produce a final brochure, poster and video, and promote TV programs and news to the general media.

Expected results (outputs and quantified achievements):

The expected results at the end of this project are:

(a). Presence of European sturgeon (*Acipenser sturio*) reproductive individuals in the area in 20-30 years.

(b). Presence of twaite shad (*Alosa fallax*) and sea lamprey (*Petromizon marinus*) on the spawning period in the area upstream of the main river obstacles with implemented ecological connectivity measures in 4 years.

(c). Increase more than tenfold the presence of European eel (*Anguilla anguilla*) in the area upstream of the main river obstacles with implemented ecological connectivity measures in 4 years.

(d). Increase more than tenfold the available spawning area for European sturgeon, twaite shad and sea lamprey, and the distribution (and growth) area for European eel, **making available 64km of new river habitat** in 4 years.

(e). A great number of people (a total of more than 10,000) from the community (young, families and seniors) and river managers (farmers, fishermen, anglers and politicians, among others) wich **had visited the great travelling exhibition or attended other public activities** directly associated to the project (not considering TV programs).

(f). At the end of this project, the existence of **a permanent group of volunteers (minimum of 10 people)** working together on migratory fish recovery and improved ecological management in the final stretch of the Ebre River, on long-term sustainable investments in Natura 2000 sites and on the conservation of species and habitats targeted by Habitats Directive.

(g). At the end of this project, **annual participation on the World Fish Migration Day**, organizing an event at the lower Ebre River **attending** for each **a minimum of 100 people** from the community.

(h). Spread more than 5,000 final project brochures printed in paper and more than 1,000 pdf in internet.

(i). The **final conference** on "*Fish migration conservation and river ecological connectivity restoration*" had been attended **by a minimum of 50 national and international researchers and managers**.

Can the project be considered to be a climate change adaptation project?

Yes ☒ No ☐

European sturgeon, twaite shad, sea lamprey and European eel are fish species adapted to the extreme variability of the Mediterranean climate. However, it has been raised that global warming could have some effects on Mediterranean sturgeon populations (Béguer et al., 2007; Lassalle et al., 2011).

Climate change leads to higher temperatures in the Mediterranean areas. In rivers, global warming will reduce flow and warm water, which will produce displacements of the fauna, including fish. In view of the effects of global warming (IPCC, 2007), it is expected an increase of 3.2° C for the period 2070-2100 in the area of the Ebre River (CHE, 2005).

On the other hand, the lower Ebre is subject to thermal and hydrological alterations caused by the system of reservoirs of Mequinença, Riba-roja, and Flix and to the thermal effluent of the nuclear power plant of Ascó (Prats et al., 2012). The nuclear plant effluent increases water temperature by 3°C on average all year-round, and the system of reservoirs produces a warming effect in the fall-winter and a cooling effect in the spring-summer (Prats et al., 2010). A decrease in the annual and daily water temperature ranges, and a delay of the annual maxima and minima are other effects due to the reservoirs. As a result, water temperature of the final stretch of the Ebre is much lower than it would be under natural conditions. Thus, in summer water temperature is at least 5°C less at the outlet of the Flix dam than at the gauging station of Escatron (upstream of the main big dams).

It is considered, therefore, that the effect of global warming in the final stretch of the Ebre River is locally amply compensated by the impact of large dams present in middle and low stretches of this river basin.

SUMMARY DESCRIPTION OF THE PROJECT (Max. 3 pages; to be completed in national language)**Project title:**

Migratory fish recovery and improved management in the final stretch of the Ebre River

Project objectives:

LIFE MIGRATOEBRE project is a best practices and a demonstration project for final stretches of major European Rivers, focused on long-term sustainable investments in Natura 2000 sites and on species and habitats targeted by Habitats Directive conservation, at local and regional levels. The project is based on the implementation of mitigation measures in relation to rivers hydromorphology improvement, especially on rivers ecological connectivity and fish passage issues associated by the Water Framework Directive and the European Eel Recovery Plan (Regulation 1100/2007).

The main objectives of the LIFE MIGRATOEBRE project are the conservation of the endangered anadromous fish species (**European sturgeon, European eel, twait shad and sea lamprey**) and the restoration of the Ebre River ecological connectivity through the interconnection of natural areas included in the Natura 2000 network. The specific objectives of the project are:

1. Recover healthy and sustainable populations of migratory fish species -European sturgeon (*Acipenser sturio*), European eel (*Anguilla anguilla*), twaite shad (*Alosa fallax*) and sea lamprey (*Petromizon marinus*)- within 20-30 years in the lower Ebre River and Delta.

1. Significantly improve the ecological connectivity of the lower Ebre River, adapting all the present obstacles of the final stretch (**Xerta's weir, Ascó's weir and Flix dam**) to allow fish migration (upstream and downstream); **increasing more than tenfold the river spawning habitat availability for European sturgeon, twaite shad and sea lamprey, and the distribution (and growth) area** for European eel.

1. Involve community and a net of nature managers, farmers, fishermen, anglers, water managers, electric companies, tourism stakeholders, regional and local authorities working together on migratory fish recovery and improved ecological management in the final stretch of the Ebre River, on long-term sustainable investments in Natura 2000 sites on conservation of species and habitats targeted by Habitats Directive.

1. Be an exemplary project at local scale, and progressively to integrally promote the improvement of the ecological connectivity at the Ebre River basin. I. e. In a second step, at Riba-roja dam -to connect the lower Ebre with an important tributary, the Segre River- and Mequinença dam -to connect the lower Ebre with the middle Ebre basin-. **And also to become a demonstration project by other principal Iberian** -Guadalquivir, Guadiana, Miño- **and some European Rivers** as well.

Actions and means involved:

Actions and means involved are the following:

1. To undertake a pilot project of sturgeon restocking: experimental releases in the lower Ebre (downstream of the Xerta's weir and between Flix dam and Ascó's weir as well). This will be carried out to enhance the knowledge concerning: (a) Migration behaviour in the Ebre River and stuary system; (b) Location of suitable habitats; (c) Movement along migration barriers; and (d) Communication of the issue. In total, 50 individuals (of 50 - 70 cm) will be released with a transponder. These individuals will be selected by IRSTEA (France).

2. **To apply a ship locks improved management** (at Xerta's weir and Flix dam), **to install new fish passes** (at Xerta's weir and Ascó's weir), **to monitor it and to communicate**. This will be carried out to enhance the knowledge concerning: (a). Execution of a fish friendly improved management by the ship locks at the Xerta's weir and the Flix dam; (b). Installation of a new fish lift at the weir of Xerta and a fish ramp at the Ascó's weir; (c). Monitoring of fish movement along these new fish ways (using fish traps and marked fish with transponders); (d) Implementation of a new management measures (or not) according to the monitoring conclusions. and (e). Communication of the issue (i. e. promoting visits to several sites, like a transparent window located at the outlet of the Xerta's fish lift, during the main migration period).

3. **To design a communication campaign** on the main project objectives for general public as well as to farmers, fishermen, anglers, among other sectors. To produce **a great travelling exhibition and brochures**. Sturgeon, eel, twaite shad and sea lamprey are **flag ship species** to move towards a "Healthy Ebre River and Delta", icons, trade marks for a healthy lower Ebre River and Ebre delta.

4. **To execute a community involvement plan**. Creation of active groups of volunteers. Focus it partially on specific managers: Youngs, families, seniors, fishermen, anglers, farmers, electric companies, tourism stakeholders, regional and local authorities. **Participation on the World Fish Migration Day** event -anually, from 2014, each May.

5. To disseminate the results: final **conference on "Fish migration conservation and river ecological connectivity restoration"**, attended by national and international researchers and managers. To produce a final brochure, poster and video, and promote TV programs and news to the general media.

Expected results (outputs and quantified achievements):

The expected results at the end of this project are:

(a). Presence of European sturgeon (*Acipenser sturio*) reproductive individuals in the area in 20-30 years.

(b). Presence of twaite shad (*Alosa fallax*) and sea lamprey (*Petromizon marinus*) on the spawning period in the area upstream of the main river obstacles with implemented ecological connectivity measures in 4 years.

(c). Increase more than tenfold the presence of European eel (*Anguilla anguilla*) in the area upstream of the main river obstacles with implemented ecological connectivity measures in 4 years.

(d). Increase more than tenfold the available spawning area for European sturgeon, twaite shad and sea lamprey, and the distribution (and growth) area for European eel, **making available 64km of new river habitat** in 4 years.

(e). A great number of people (a total of more than 10,000) from the community (young, families and seniors) and river managers (farmers, fishermen, anglers and politicians, among others) wich **had visited the great travelling exhibition or attended other public activities** directly associated to the project (not considering TV programs).

(f). At the end of this project, the existence of **a permanent group of volunteers (minimum of 10 people)** working together on migratory fish recovery and improved ecological management in the final stretch of the Ebre River, on long-term sustainable investments in Natura 2000 sites and on the conservation of species and habitats targeted by Habitats Directive.

(g). At the end of this project, **annual participation on the World Fish Migration Day**, organizing an event at the lower Ebre River **attending** for each **a minimum of 100 people** from the community.

(h). Spread more than 5,000 final project brochures printed in paper and more than 1,000 pdf in internet.

(i). The **final conference** on "*Fish migration conservation and river ecological connectivity restoration*" had been attended **by a minimum of 50 national and international researchers and managers**.

Can the project be considered to be a climate change adaptation project?

Yes ☒ No ☐

European sturgeon, twaite shad, sea lamprey and European eel are fish species adapted to the extreme variability of the Mediterranean climate. However, it has been raised that global warming could have some effects on Mediterranean sturgeon populations (Béguer et al., 2007; Lassalle et al., 2011).

Climate change leads to higher temperatures in the Mediterranean areas. In rivers, global warming will reduce flow and warm water, which will produce displacements of the fauna, including fish. In view of the effects of global warming (IPCC, 2007), it is expected an increase of 3.2° C for the period 2070-2100 in the area of the Ebre River (CHE, 2005).

On the other hand, the lower Ebre is subject to thermal and hydrological alterations caused by the system of reservoirs of Mequinença, Riba-roja, and Flix and to the thermal effluent of the nuclear power plant of Ascó (Prats et al., 2012). The nuclear plant effluent increases water temperature by 3°C on average all year-round, and the system of reservoirs produces a warming effect in the fall-winter and a cooling effect in the spring-summer (Prats et al., 2010). A decrease in the annual and daily water temperature ranges, and a delay of the annual maxima and minima are other effects due to the reservoirs. As a result, water temperature of the final stretch of the Ebre is much lower than it would be under natural conditions. Thus, in summer water temperature is at least 5°C less at the outlet of the Flix dam than at the gauging station of Escatron (upstream of the main big dams).

It is considered, therefore, that the effect of global warming in the final stretch of the Ebre River is locally amply compensated by the impact of large dams present in middle and low stretches of this river basin.

GENERAL DESCRIPTION OF THE AREA / SITE(S) TARGETED BY THE PROJECT

Name of the project area:

Final stretch of the Ebre River, Ebre Delta and Mediterranean Sea around the Delta.

Surface area (ha):

48,687.000

Surface description:

null

EU protection status:

SPA ☒ NATURA 2000 Code : ES0000020pSCI ☒ NATURA 2000 Code : ES0000020**Other protection status according to national or regional legislation:**

- **Riberes i Illes de l'Ebre.** Code Natura 2000: ES5140010.
- **Ebre Delta Natural Park** includes 23 habitats of Community Interest, 13 water habitats and 1 of Priority Interest, and 89 protected species: 4 amphibians/reptiles, 75 birds, 4 fish, 5 mammals and 1 plant.
- **ZEPA.** "Zona de Especial Protección para las Aves Delta de l'Ebre"
- **Wetland of International Importance according to Ramsar Covention** of 1992
- **European Charter for Sustainable Tourism**
- Since May 2013, **World Network of Biosphere Reserves.**

Main land uses and ownership status of the project area:

The lower Ebre River, including the Ebre Delta, has always been of high value for mankind due to the availability of fresh water and fertile land. The fresh water is a very important resource for agriculture, drinking water and hydroelectric power; as it is for nature. The lower Ebre is an important agricultural area, specialized in the production of oranges and tangerines and olive oil. In the delta the most important economic sectors are agriculture (rice crops), salt winning, fisheries and recreation. The main part of the land is used for cattle. Alternative energy sources such as hydrological, solar and wind power, are being developed in the region, respecting biological conservation and landscape values.

Main part of the area targeted by the project belongs to private owners, although the river and the maritime coastline are of public use as they are considered as public hydraulic domain.

Scientific description of project area:

The Ebre Delta is unique in the field of Palearctic, both by the great diversity of ecosystems including (coastal lagoons, marshes, dunes, rice, salt, etc) in an excellent state of preservation, as well as for the spectacular concentration of aquatic birds during certain periods of the year (many of them endangered species). All this is meant as an example of excellence recognized worldwide. The Ebre Dealta is an important wetland at a typical river delta, combining such diverse habitats as salt and brackish coastal lagoons, marshes, sandy coastal areas and to a lesser extent, some islands in rivers and freshwater springs.

It is the largest wetland in Catalonia and one of the most remarkable in size and biodiversity in the

western Mediterranean, also having great importance for the maintenance of many fisheries in the Mediterranean region. It is a location of international importance for both some of the halophytic plant and aquatic communities (including a number of rare or threatened), and also for the presence of fish endemic and/or threatened taxons, although the site is also relevant particularly for the aquatic birds (aquatic birds population rises to 56,000 of nesting pairs, reaching up to 200,000 individuals during the wintering), including the presence of such iconic species as Audouin's Gull *Larus Audouin* (60-70% of the world population).

The Ebre Delta is primarily a wetland formed from sediments eroded and transported by the Ebre river in the last recent millennia (Quaternary), but has been significantly artificialised (agricultural transformation, altered hydrologic regime and sediment) throughout the nineteenth and twentieth centuries.

Geology and Geomorphology

The Ebre Delta origin dates from the end of the last ice age as a result of eustatic rise in sea level and subsequent stabilization, about 10,000 years ago. Currently the area emerged penetrates about 30 km offshore and is formed by an active lobe (frontal lobe) and two that have lost functionality (lobe southern and northern lobe). The following geomorphological units can be distinguished: current Ebre river and levees and Migjorn arm, fluvial-alluvial zone (currently occupied mostly by rice fields), lake and marsh areas, arrows and sandy shorelines, marine areas and, finally, freshwater springs in peaty areas.

Hidrology

The Ebre River has a high diversity of hydrological resources as a consequence of both natural environmental heterogeneity and of human action. It houses permanent and temporary aquatic, fresh, brackish, saline or hypersaline natural (rivers, lakes, bays, marshes) or artificial (rice and salt, etc.). The river hydrological regime has a distinctly Mediterranean character. The estimated average annual contribution to the natural regime (1940/41-1985/86) is 18,217Hm³, although the range of variation ranges between 8,393 and 29,726 hm³.

The hydrological dynamics of most aquatic environments is strongly influenced by rice cultivation. This crop (63% of the delta area), remains flooded from April to December and the water is kept in constant circulation.

Seawater intrusion is a common phenomenon in both groundwater and in the river stretch. The river has an estuarine hydrological behavior, in which the river water flows over the denser seawater, creating a salt wedge.

The depth of the river is highly variable, because the topography is very irregular. The average depth decreases drastically towards the mouth (2-3 m) and during periods of low water it tends to form very shallow sand bars in this area. The fluctuation of the water level in the river is notable, although much lower than in natural conditions, given the strong regulation exerted by the basin reservoirs.

Flora

The flora of the Ebre Delta is characterized by a high richness, to be home to several threatened taxons and for the presence of Euro-Siberian species and Ibero-North African populations that have in

the Delta one of the limits of distribution either southern or northern. It is noteworthy that in 1984 the Council of Europe declared the Ebro Delta as an area of European importance area for the preservation of halophytic vegetation (Dijkema et al. 1984).

It is relevant to point out the presence, among others, as *Marsilea quadrifolia* species (species listed in Annex II of the Habitats Directive extinct in the wild, but of which there is a population under growing conditions), *Zygophyllum album* (Saharan species with a single population in the continental Europe and classified as Vulnerable on the Red List of Spanish Vascular Flora), *Callitriche palustris* (Endangered on a national level), *Callitriche platycarpa* (Vulnerable) and *Lemna trisulca* (Endangered).

Also important is the presence of some very rare and threatened taxons in the Iberian Peninsula, according to the Red List of Spanish Vascular Flora as *Limonium densissimum* (halophytic species described in the Ebro Delta, restricted distribution and classified as Vulnerable) and *Limonium gibertii* (endemic to the coast of Tarragona and the island Ibiza and Formentera).

The reed beds have an extension of about 850 hectares and are represented by Phragmiti-Magnocariceta and Molinio-Arrhenatheretea) and 9 associations. European level.

The communities of submerged and floating macrophytes (Lemnetea retailers, Potametea, Zosteretea marinae), with 13 associations are highly diversified and distributed by the majority of aquatic areas, whether fresh, brackish, marine or hypersaline natural or artificial rice, irrigation canals, bays, coastal lagoons, "ullals", river, etc..

The other plant communities are related to crops and other means strongly anthropic (Oryzetea classes and Ruderali-Secalietea sativae) in the area have identified more than 20 associations, some of great interest because of its size and ecological importance (eg, coccineae Cypero-Ammanietum the rice fields).

The Ebre River homes riparian forest vegetation with a remarkably richness, especially in several of the well-preserved big islands. Apart from its scenic, these areas of riparian vegetation contrast to the barren land around them, and they are of great importance as refuges for rare bird species and, above all, as key areas for shelter and feeding migratory birds during their migratory travels.

Fauna:

Invertebrates

Among other, stand river mussels like *Margaritifera auricularia*, very rare, wich has one of the last populations in Europe in the low stretch of the Ebre River, and other species like *Potomida littoralis* and, the also endangered but more widely distributed, *Unio mancus*.

Fish

The Ebre Delta fish fauna is characterized by a high richness, as well as by hosting some endemic species of Iberian coast: the fartet (Lebias Iberian) and samaruc (Valencia hispanica), and several threatened taxa: the sturgeon (Acipenser sturio) , considered virtually extinct, the Saboga (Alosa fallax), the loach (Cobitis paludicola), etc.. All these species are in decline to a greater or lesser extent, mainly due to the upstream river regulation and the impact of alien species (Gambusia affinis, Silurus glanis, etc..).

The Ebre River passes from one fish species -brown trout- to the upper reaches of the Pyrenees to potentially 16 native species near its mouth up to a total of 23 in the whole of the Ebre Delta.

Coastal lagoons, estuary, bays and the sea coast near the delta are of great interest for some species of fish during certain critical phases of their life cycles and migration and reproduction. It is specially important the estuarine area of the Ebro for migrant species such as eel (*Anguilla anguilla*), still fairly abundant, the sea lamprey (*Petromyzon marinus*) and Saboga (*Alosa fallax*), the latter two anadromous with high degree of threat as well as other species as *Mugil cephalus*, *Liza ramada*, *Sparus aurata*, etc..

Amphibians and Reptiles

The herpetofauna is represented by a number of aquatic species, with two species of freshwater turtles (*Emys orbicularis* and *Mauremys leprosa*), two water snakes (*Natrix maura* and *N. natrix*) and a triton, the Palmate Newt (*Triturus helveticus*). In the sandy coastal there are also Mediterranean Turtle (*Testudo hermanni*) and the Lizard Redstart (*Acanthodactylus erythrurus*). It is remarkable the regular presence of several species of sea turtles in the Ebro Delta coast: the Green Turtle (*Chelonia mydas*), Leatherback (*Dermochelys coriacea*) and loggerhead sea turtle (*Caretta caretta*), the latter with some evidence reproduction late twentieth century.

Birds

The Ebre Delta highlights for the nesting of aquatic birds populations, with more than 56,000 couples, and winter, with an average of about 200,000 individuals. The high productivity of aquatic environments that make up this space and its remarkable ecological diversity, promote very heterogeneous avian groups.

There colonies of international importance such as the breeding colonies of Audouin's Gull (*Larus Audouin*), with 60-70% of the world population and the regional populations of Squacco (*Ardeola*), crested Pochard (*Netta Rufina*), Purple Heron (*Ardea purpurea*) and Little Bittern (*Ixobrychus minutus*), which comprise significant percentage compared to Western troops in NW Europe and Africa. With annual quotas of 5-8% of the respective regional populations, the Ebre Delta also has international importance for the wintering of crested Pochard (*Netta Rufina*), the Greater Flamingo (*Phoenicopterus roseus*) and Little Egret (*Egretta garzetta*).

Mammals

Mammal are not very diverse, although there are some marine mammals that frequent the coastal deltaic (*Stenella coeruleoalba* Striped Dolphin, Bottlenose Dolphin *Tursiops truncatus*) and a very rare chiropteran the Nathusius bat (*Pipistrellus nathusii*).

Importance of the project area for biodiversity and/or for the conservation of the species /habitat types targeted at regional, national and EU level (give quantitative information if possible):

The area targeted by the project is located in Catalonia and includes the delta and watershed of the Ebre River, which is the Iberian Peninsula largest river in terms of volume (18 217 Hm³/year), draining one-sixth of the Iberian peninsula surface area (88,835 km²) and forming the fourth largest delta in the Mediterranean Sea (350 km²). It has a large number of different ecosystems ranging from inland to coastal areas.

In particular, the area targeted by the project is the low stretch of the Ebre River, Ebre Delta and Mediterranean Sea around the Delta. The sites targeted by the project are:

- **EIN & Reserva natural de fauna salvatge de la ribera de l'Ebre a Flix** (Reserva Natural de Sebes and Meandre de Flix);
- **EIN & Reserva natural de fauna salvatge de les Illes de l'Ebre** (Audí, Miravet, Móra la Nova, Móra d'Ebre, Vinallop and Xiquina) between Flix municipality and the Mediterranean Sea; it includes a stretch of the Ebre River at Xerta and Tivenys municipalities (downstream of the Xerta's weir; the

current spawning area of the twaite shad);

- **Parc Natural del Delta de l'Ebre** (coastal lagoons of the Ebre Delta, estuary of the Ebre River and coastal marine of the Ebre Delta).

The Mediterranean Region is one of the identified “key eco-system regions” of the world, vital for the biodiversity conservation at a global scale. Among the Strait of Gibraltar and southern Italy, over 3,000 miles of coastline, there are only two big rivers: the Rhone River and the Ebre River.

The Ebre Delta, in the Western Mediterranean, is an internationally important wetland. It forms an important part of the European–African, North–south, bird migration route. Many bird species use the wetland as a “stop over” migrating from Europe to Africa and the other way around. This is seen in the enormous amounts of bird species visiting the Delta of the Ebre River every year.

Furthermore, the Ebre Delta is a key element in the swim ways from the river to the Mediterranean Sea. Many fish species need both the fresh water and the salt water system to fulfil their life circle. This is the case for example for the species sturgeon, shad, sea lamprey and eel. The fish need the delta and its transitional waters to adapt to the changing conditions. To do so, however, it is needed that the nature quality of the Ebre River and Delta have improved: meaning protected wetlands in the delta, healthy fish populations, a clean and flowing river and good ecological connection between the river and the delta.

Although the Ebre River is one of the largest Mediterranean rivers, the presence of anadromous fish species was near to complete extirpation since the second half of the 20th century.

Sturgeon could be an icon, a trade mark for a healthy Ebre delta. It is an impressive and old fish species which can become up to 3 meters long. Sturgeon belongs in healthy, clean rivers, deltas and the sea and it is a symbol of good ecological connectivity between these 3 ecosystems. European sturgeon is a perfect flag ship species to move towards a “Healthy Ebre River and Delta”. This species envisages the ecological connection between river – delta – sea. It has potential for nature and economics and it appeals to the bigger audience. The ambition to create a sustainable population on European sturgeons in the Ebre River and delta can be the focal point for the future and the driving force for nature managers, water managers, fishery managers, regional and local authorities and hydropower companies to work together.

The reasons for the reintroduction of the sturgeon and to preserve eel, twaite shad and sea lamprey in the lower Ebre River are:

- Restore natural processes in this area;
- Protect highly endangered iconic species.
- These target species are symbols for a better, healthy and attractive river and delta;
- Ecology and economy, together, combined with this project.

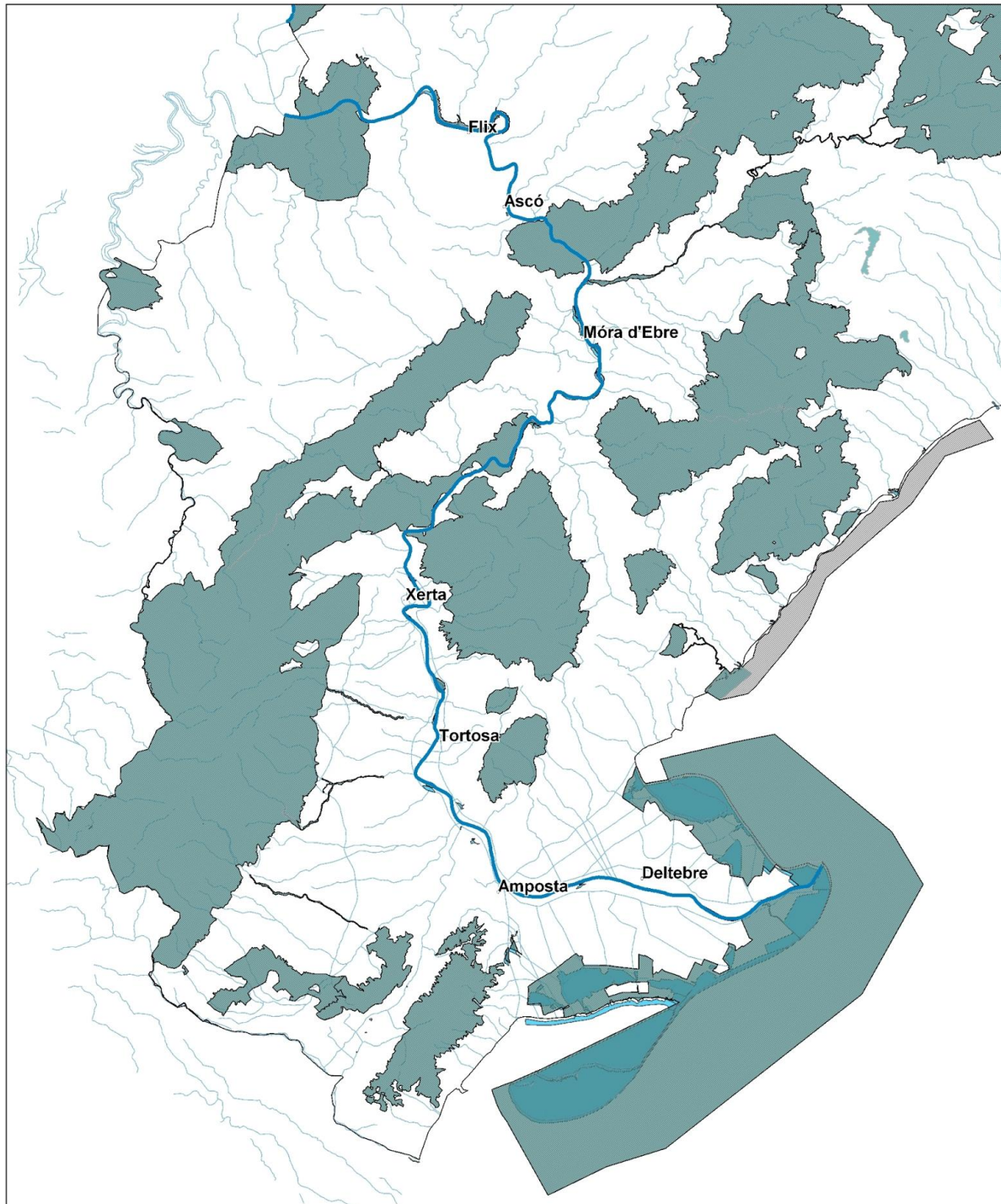
Lower Ebre River and Ebre Delta are not in pristine conditions, but mainly with the implementation of relatively small scale restoration measures and environmental management, these species would be successfully recovered into the lower Ebre River and surrounding sea. A first step needs to promote a fish friendly management of the ship locks and the construction of new fish ways in the weirs and dams of Xerta, Ascó and Flix. Following, monitor the obtained preliminary results. Xerta's weir, located at 57 km upstream of the sea, is a currently (and since the fifteenth century) the upper limit for the spawning habitat of sturgeon, twaite shad and sea lamprey. Flix dam, 58 km from the latter, almost impassable to eels, is the upper limit for these species.

The proposal of construction of a proper fish passage for anadromous species at the Xerta's weir, combined with a fish friendly management for the Xerta's fish locks, would allow fish access to a further 60 km of river upstream of the weir, representing a 200% increase in the amount of freshwater habitat and potential spawning areas -except for eel-. Improved access together with restrictive fishery regulations will assist with renewed interest in the fishery and conservation of the species (López et al., 2007).

An important point to achieve the success of this project is to attract fish from the sea by the implementation of an environmental flow regime which includes enough big flows in spring. Availability of big flows is important to direct mature individuals of sturgeon and shad upstream to spawn. It is also essential to establish favourable hydrological conditions during the spawning season, in spring May - June) to attract adults -and also to remove macrofites from the river bed-, by which the number of mature fish to reach spawning grounds may be improved (Elvira & Almodóvar, 2003). An environmental flow regime establishment is crucial to enlarge the river flows. An environmental flows regime should maintain between 87m³/s and 622m³/s into the river, with big differences between seasons, and also depending of dry and wet years (Water Cat. Ag., 2008).

Name of the picture: Map of the protected areas of the LIFE MIGRATOEBRE project

Natural protected areas of the MIGRATOEBRE project



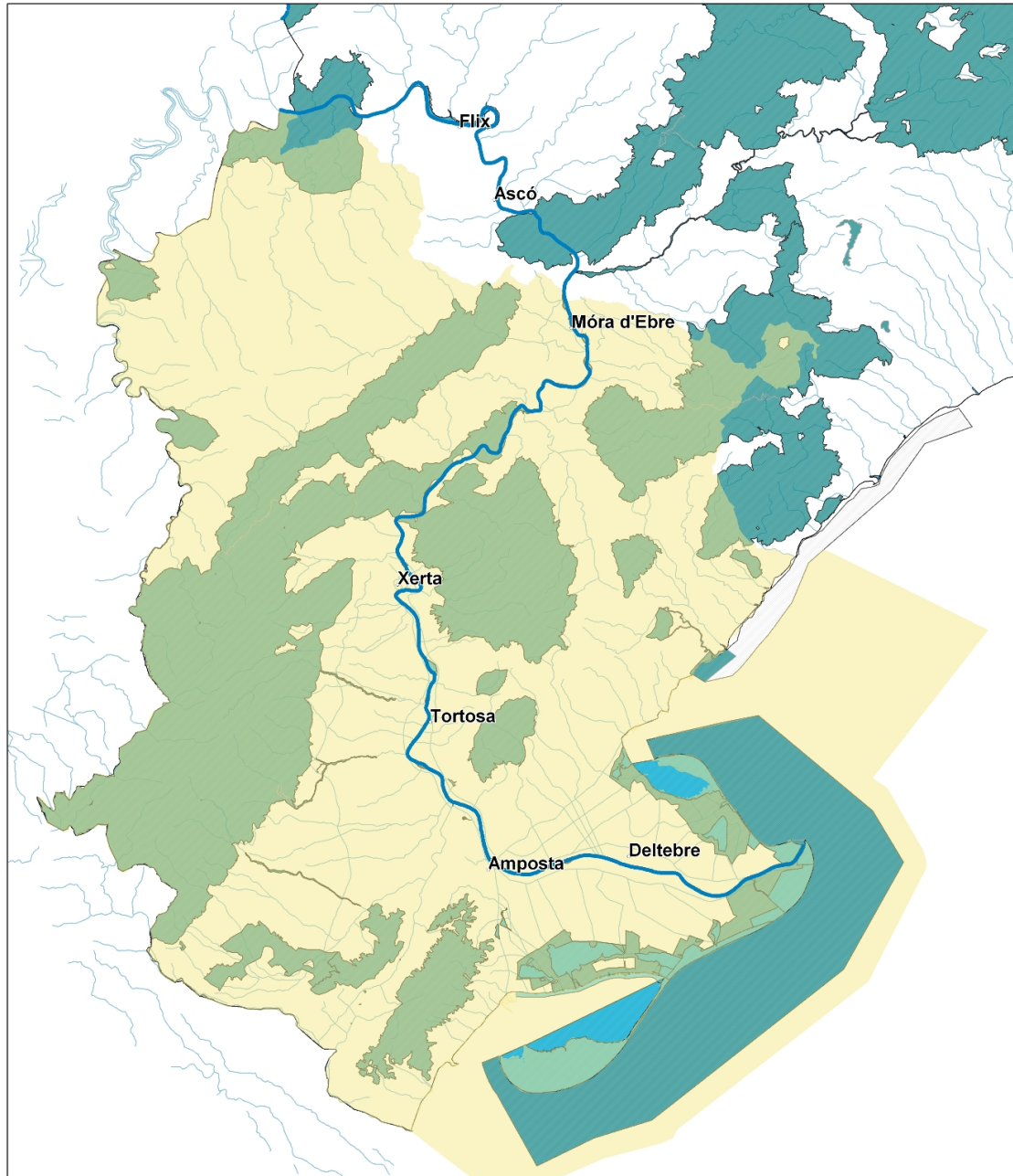
5 0 25 km

- Ebre river
- Natura 2000 areas (LIC+ZEPA)
- PEIN areas
- Catalan Wetlands Inventory

Name of the picture: Map of the Ebre - Biosphere Reserve

Natural protected areas of the MIGRATOEBRE project

EbreBiosfera Terres de l'Ebre

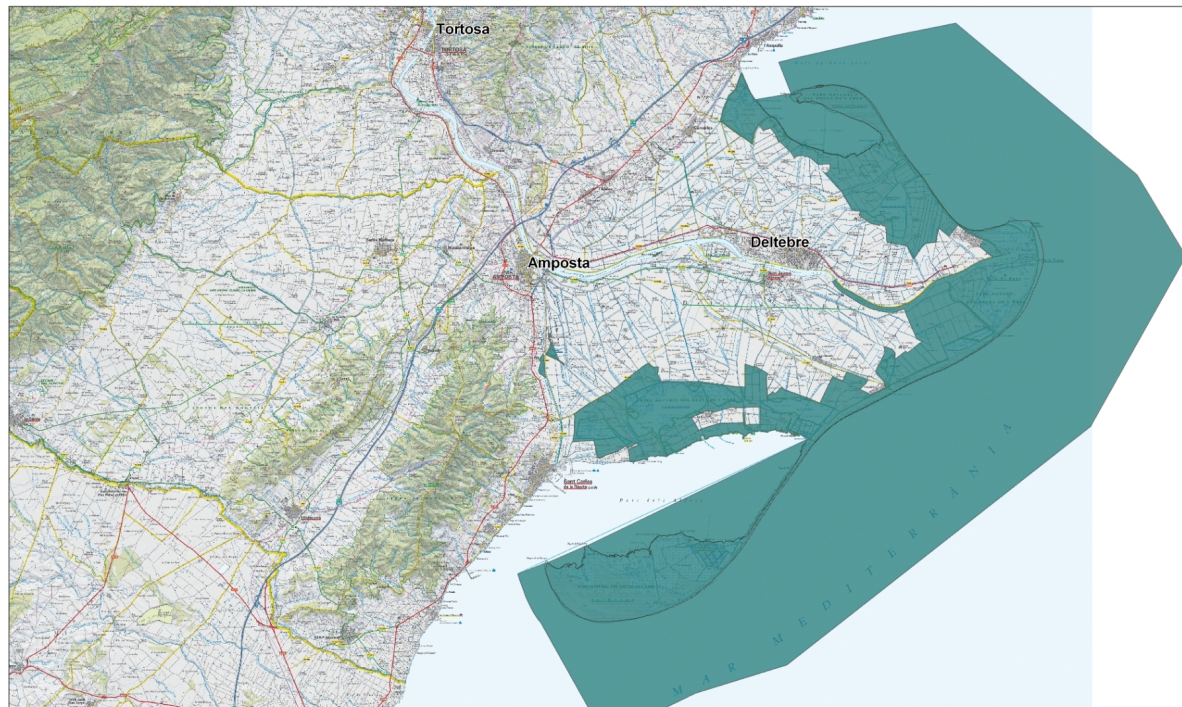


- Ebre river
- Ebre Biosfera Terres de l'Ebre
- Natura 2000 areas (LIC+ZEPA)
- Catalan Wetlands Inventory
- PEIN areas

5 0 25 km

Name of the picture: Map of the Natural Park of the Ebre Delta

Parc Natural del Delta de l'Ebre



 Natura 2000 areas (LIC+ZEPA)

 PEIN areas

2 0 10 km

Name of the picture: Map EIN & Natural Reserve of the wild fauna of the islands of the Ebre's Delta

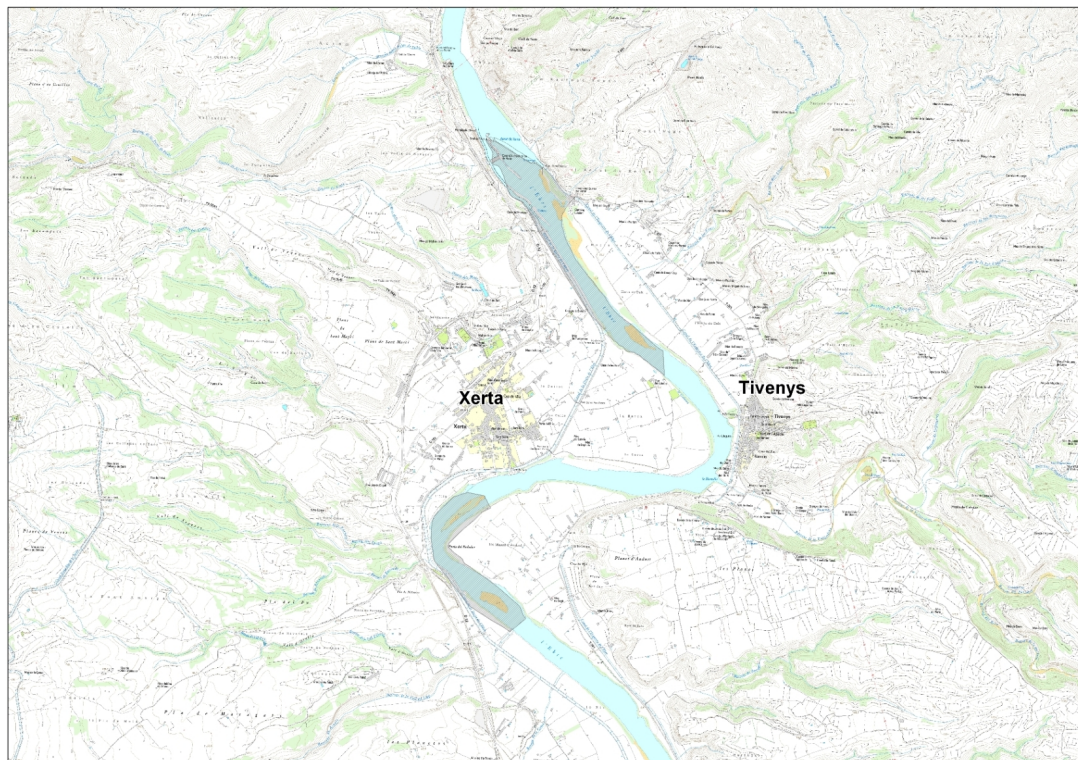
EIN & Reserva natural de fauna salvatge de les Illes de l'Ebre




5 0 25 km

Name of the picture: Assut de Xerta and a stretch of the Ebre River at Xerta and Tivenys municipalities

Assut de Xerta and a stretch of the Ebre River at Xerta and Tivenys municipalities



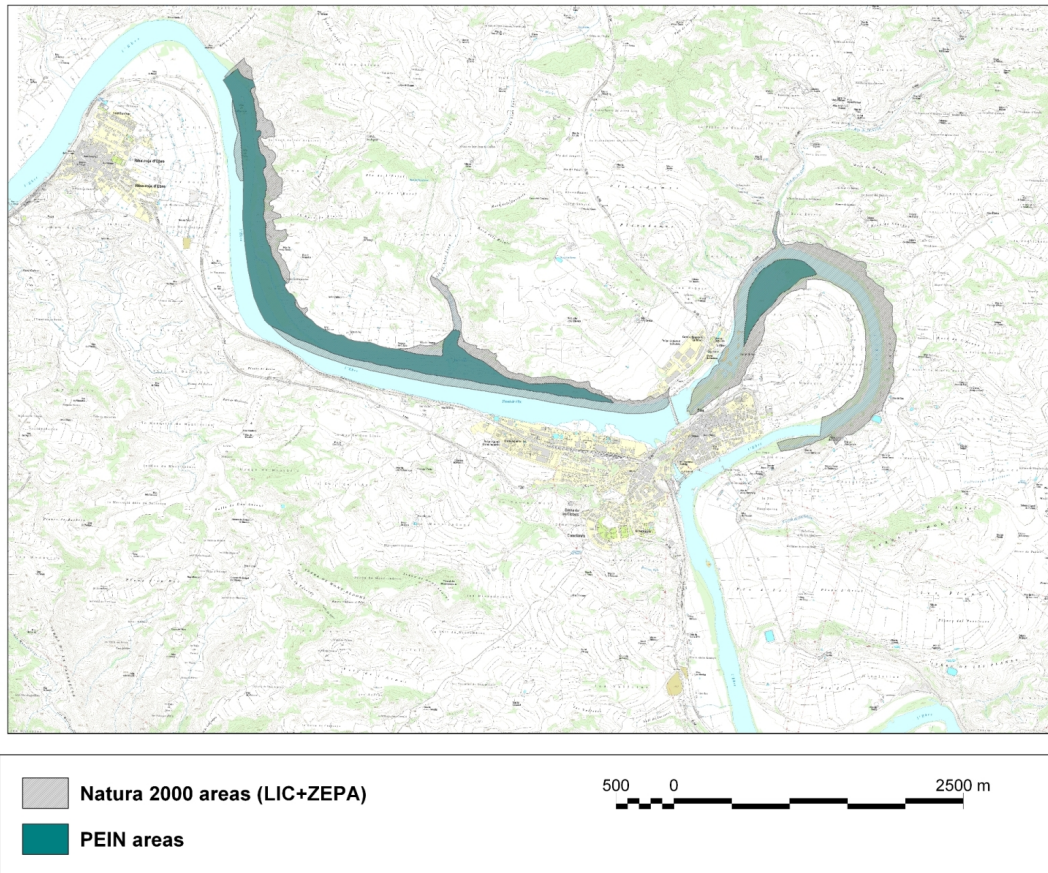
 Natura 2000 areas (LIC+ZEPA)

500 0 2500 m



Name of the picture: Map Reserva Natural de Sebes and Meandre de Flix

Reserva Natural de Sebes and Meandre de Flix



Name of the picture: Natural Reserve Sebes Flix



Name of the picture: Lower Ebre at Tortosa

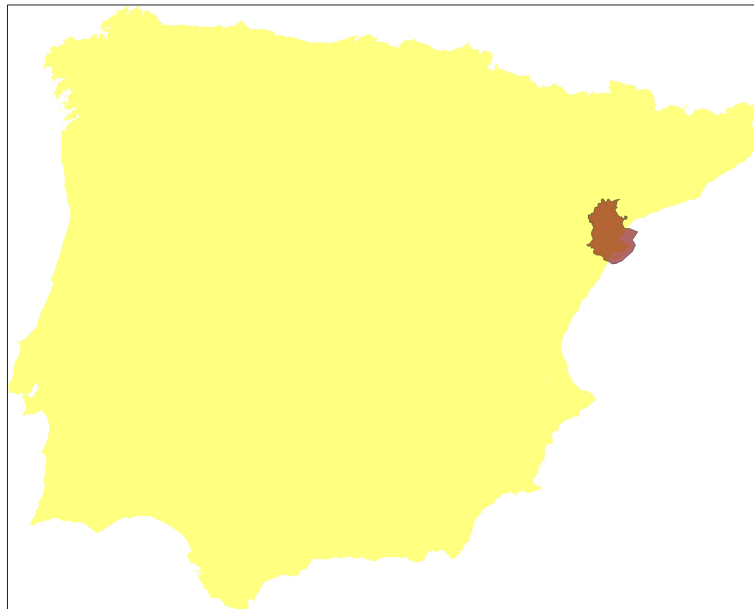


Name of the picture: Ebre River mourh at Buda island



Name of the picture: Flix Meander



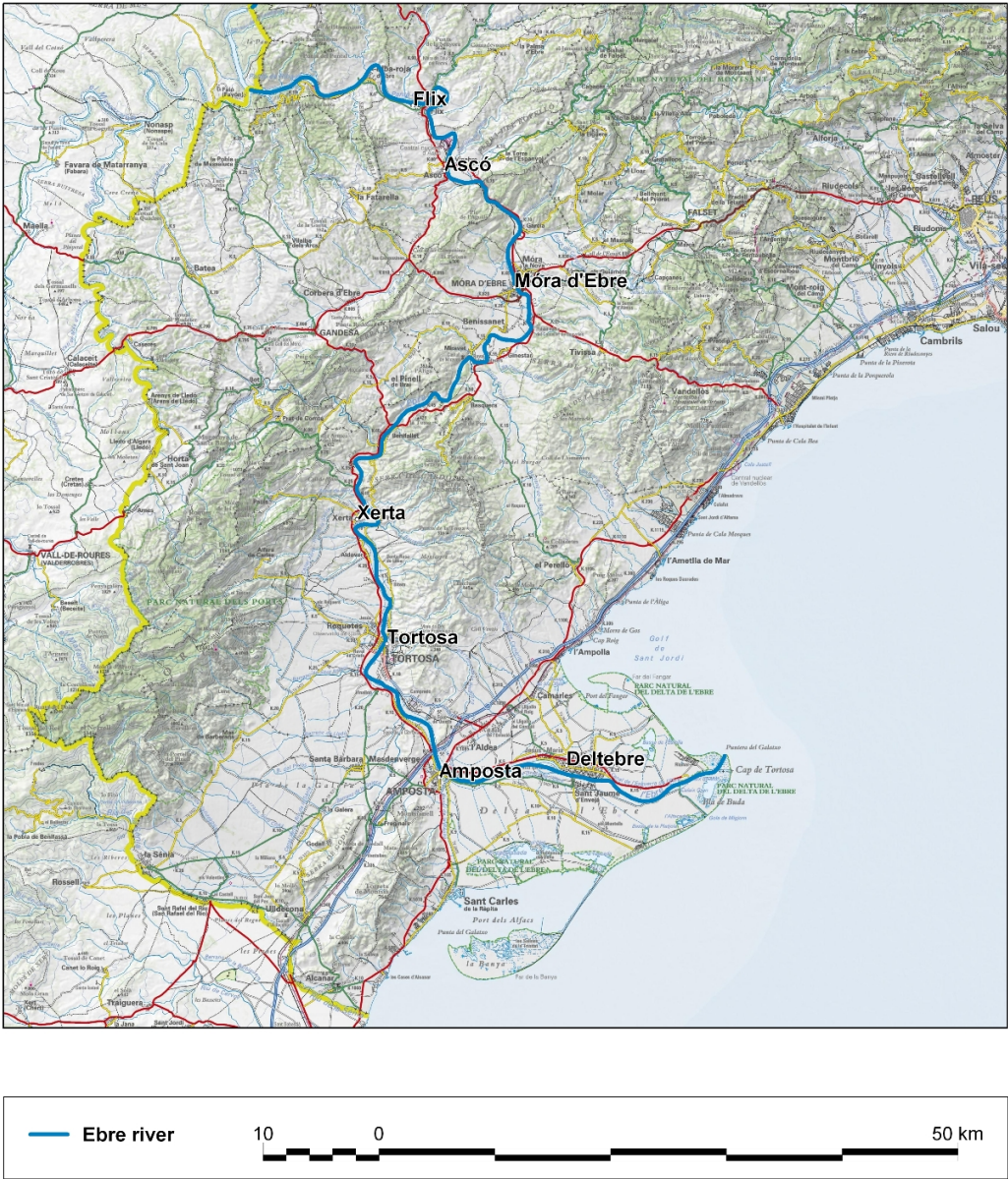
General location of the MIGRATOEBRE project area in the Iberian Peninsula

 MIGRATOEBRE project area

100 0 500 km



Map of the general location of the MIGRATOEBRE project area



DESCRIPTION OF SPECIES / HABITATS ISSUES TARGETED BY THE PROJECT

Four anadromous native fish species of the Ebre River basin are targeted by this project: European sturgeon (*Acipenser sturio*), European eel (*Anguilla anguilla*), twaite shad (*Alosa fallax*) and sea lamprey (*Petromizon marinus*). However, some other anadromous fish –that has its live cycle between sea and continental waters- and also several potamodromous fish species –that has its live cycle only in continental waters- will be benefited by this project. Fish with a wide distribution and culturally and locally very valuable, like several mullets (*Liza saliens*, *Liza aurata*, *Chelon labrosus*, *Mugil cephalus*, *Liza ramada*) –they are food source for many endangered bird species of this area as well, like herons and osprey-, the endangered freshwater blenny (*Salaria fluviatilis*) and also other historically present but few at this area, like allis shad (*Alosa alosa*).

Otherwise, river mussels like *Margaritifera auricularia*, wich has one of the last populations in Europe in this river stretch, and other species like *Potomida littoralis* and *Unio mancus*, will be also benefited by the increase of number and variety of fish hosts –like sturgeon- and river ecological connectivity.

Main species targeted by the project are:

European sturgeon (*Acipenser sturio*): is an emblematic species of major European rivers such as Gironde, Elbe, Guadalquivir and Ebre. It is critically endangered and an European restoration program is dedicated to this species. It is protected by different conservation national and international policies: classified "Critically Endangered" by the IUCN; protected under the Habitats Directive (92/43/EEC), included in annexes II and IV; protected by the Bern Convention, included in Annex II. It exists an international action plan in favour of the European sturgeon (Rosenthal et al (eds), 2007), approved under the Berne Convention on the Protection of European Wildlife. It is clasified by “Endangered” by the Spanish National Catalogue of Endangered Species (R. D. 439/90).

Old documents state that in the XV century the construction of the weir of Xerta caused serious problems to them (with other migratory species such as shad); they could no longer migrate upstream. As a result of the construction of Xerta’s weir, the area of reproduction of the sturgeon in the Ebre River and Delta remains, since then, limited to the last 57 km of the river system. Spawning areas were located in the top section of this area, between the municipalities of Bitem and Xerta.

Due to an intensive fishery in the estuary and the sea, and the decline of the amount of spawning areas, the sturgeon populations weakened, especially between 1926 and 1946. This decline ended with the disappearing of the sturgeon at the lower Ebre River by mid-twentieth century. Since 1965, there is no data of capture of adults. The disappearance of juveniles is slightly later as one would expect, and occurs after the year 1970 -it is very similar to those that occurred in the Rhone River (Brosse et al., 2011)-. His last capture related to a juvenile in 1970 (Farnós & Porres in Fernández & Farnós, 1999).

The European sturgeon was historically distributed to Northwest Europe, Southwest Europe and the Mediterranean. The most important areas were situated in the Northwest on the Atlantic coast. There were populations in the northern part of the Mediterranean region as well: Southwest of the Iberian Peninsula, Ebro, Rhone, Italy, Greece and up to the Black Sea.

- **European eel** (*Anguilla anguilla*): eel has experienced a serious decline its entire distribution area during the last century (Freyhof & Brooks, 2011), considered a critically endangered species (Freyhof and Brooks, 2011; IUCN, 2011). For all these reasons and having suffered a 99% decline in European stocks since 1980, rendering their current status “Vulnerable” according to the IUCN and it is objective of an ambitious *Eel Recovery Plan* of the European Community (Regulation 1100/2007, EC, 2007). In Spain and Catalonia, eel can be caught only by fishermen and with restrictions.

The eel population is outside safe biological limits and its fishing is not sustainable. On this basis, the European Commission adopted the Regulation 1100/2007 of 18 September 2007, which sets out guidelines to be followed to ensure the recovery of this species. Basically it focuses on reducing fishing effort, restocking and improvement of habitats. It is important that the eel can access the highest sections of the river, and they are in best status. This ensures that eel can grow, mature and eat right to make the necessary energy reserves in the form of fat to begin their migration to the sea.

Until the mid-twentieth century in Catalonia eel was distributed to most river basins and up to an altitude of about one thousand meters high above the level of the Sea. Today, their range is reduced by more than 90%, eel only resists in basins or areas where there are no obstacles. Is greatly affected by overfishing, both juveniles (glass eels) as adults, organic pollution and heavy metals, and, also very serious, a nematode parasite (*Anguillicola crassus*). Eel densities are generally low, except for the lower Ebre and its Delta, and other lower reaches of coastal rivers and streams.

- **Twaite shad** (*Alosa fallax*): shads are anadromous species that belong to one of the world's most commercially exploited fish families (Clupeidae). The European species, allis (*Alosa alosa*) and twaite shad (*Alosa fallax*) (Baglinière, 2000), used to be commonly found along most Atlantic basins in Europe (Sabatié et al., 2002); but have experienced serious declines during the last century (Freyhof & Brooks, 2011), rendering their current inclusion in Appendix III of the Bern Convention and Annexes II and V of the EU Habitats Directive.

Ebre River historically supported one of the most important twaite shad (*Alosa fallax*) populations in the Western Mediterranean. At 16th century since the beginning of the 20th century, it was considered an abundant and valuable commercial species. However, multiple anthropogenic-driven alterations of the drainage (mainly dams) and water pollution caused/promoted a severe decline of the species that culminated in the closure of the commercial fishery in 1970. Since the closure of the Twaite shad commercial fishery, the species was considered to be locally extinct (Aprahamian et al., 2003). Between 2001 and 2005 accidental captures of Twaite shad reported downstream of the Xerta weir provided evidence of a nascent recovery of this population in the Ebre River (López et al., 2007).

Studies suggest a gradual and natural recovery of the Ebro River twaite shad population. The above-mentioned recovery might probably be due to an improvement in water quality in the last 10 years due to the implementation of EC Water Framework Directive (CHE, 2006) coupled with the absence of the traditional fishery over the last 40 years (Boquera and Quiroga-Raimúndez, 2001). Currently twaite shad has wild populations in Catalonia, apparently slowly increasing, but probably at its limit of survival.

- **Sea lamprey** (*Petromizon marinus*): are also anadromous species that have experienced serious declines during the last century (Freyhof & Brooks, 2011), rendering their inclusion in Annex II of the EU Habitats Directive. Threatened by the fragmentation of rivers, dredging and sediment pollution, especially in the Mediterranean basin is considered rare and vulnerable (Freyhof and Brooks, 2011; IUCN, 2011). Sea lamprey spawns in the lower reaches of the Ebre River, but adults and also larvae have been greatly diminished (Queral et al., 1999). Only several individuals have been caught during last years. Unfortunately, there is not so much available information on this fish specie. Currently sea lamprey has a low population in Catalonia, basically only at the lower Ebre and Delta, and probably at its limit of survival.

Habitats

Regarding the habitats of Annex I to Directive 92/43/EEC present in the area:

1140 Mudflats and sandy not covered by seawater at low tide (1743.98 ha)

1150 * Coastal lagoons (2390.3 ha)

1210 Annual vegetation of drift lines (118.5 ha)

1310 *Salicornia* and other annuals colonizing mud and sand (84.5 ha)

1320 *Spartina* swards (*Spartinion maritimae*) (23.7 ha)

1410 Mediterranean salt meadows (*Juncetalia maritimi*) (258.7 ha)

1420 Mediterranean and thermo halophilous scrubs (*Sarcocornetea fruticosi*) (643.3 ha)

1430 halo-nitrophilous Scrub (*Pegano-Salsolatea*) (1.8 ha)

1510 * Mediterranean salt steppes (*Limonietalia*) (49.7 ha)

2110 Embryonic shifting dunes (175.9 ha)

2120 Shifting dunes along the coastal belt of *Ammophila arenaria* (white dunes) (0.7 ha)

2190 Slacks wet depressions (2.6 ha)

2210 Fixed dunes *Crucianellion maritimae* (120.6 ha)

2230 dune grasslands with *Malcolmietalia* (11.4 ha)

3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. (25.5 ha)

3150 Natural eutrophic lakes with vegetation or *Hydrocharition Magnopotamion* (presence)

3280 Constantly flowing Mediterranean rivers *Paspalo-Agrostidion* with green curtains of *Salix* and *Populus alba* (presence)

6220 * Zones subestépicas annual grasses and Thero-Brachypodietea (1.0 ha)

6420 Mediterranean wet meadows of herbaceous *Molinio large-Holoschoenion* (1.8 ha)

7210 *Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* (103.4 ha)

92A0 *Salix alba* and *Populus alba* (1.2 ha)

92D0 riparian galleries and thickets (*Nerio-Tamaricetea* and *Securinegion tinctoriae*) (2.9 ha)

Name of the picture: 35.Sea lamprey_Petromyzon marinus



Name of the picture: 09.1European eel_anguilla anguilla



Name of the picture: 14.Twaite shad_*Alosa fallax*



Name of the picture: 08.European sturgeon_Acipenser sturio



CONSERVATION PROBLEMS AND THREATS

Provide this information for those species and habitat types directly targeted by the project

The lower Ebre River and the Ebre Delta are facing different conservation problems for anadromous fish. The most important are:

- **River connectivity.** There are several weirs and dams that break the river connectivity for fish. To enlarge spawning possibilities it is very important to promote progressively solutions to improving fish migration (both upstream and downstream) for the 5 major obstacles present in the lower Ebro River, which are:

- Weir of Xerta (located at 58 km from the sea).
- Weir of Ascó nuclear plant (located at 104 km from the sea);
- Dam of Flix (located at 115 km from the sea);
- Dam of Riba-roja (to allow fish to go to the Segre River); located at 122 km from the sea);
- Dam of Mequinença (located at 152 km from the sea).

The historical spawning habitat of the sturgeon and twait shad is currently limited to only the final 57 km, located in the top section of the Xerta's weir, between the municipalities of Bitem and Xerta. The main uses are irrigation, drinking water and hydropower. Hydropower plants presents in the lower Ebro are Mequinença, Riba-roja, Flix and Xerta. Also considered an important component of the hydromorphological quality, the river connectivity for fish, based on the ICF index (Solà *et al.*, 2011), is bad at the Xerta's weir and also at the big dams of the Ebro River. Insufficient river connectivity affects negatively native fish populations and river mussels as well, which are hosts of fish. Counts of individuals of the river mussel *Margaritifera auricularia* are very low at the Ebro River basin. *Unio* sp. and *Potomida littoralis*, other river mussel species, show a very marked regressive pattern as well.

The project envisages to improve the ecological connectivity of the lower Ebre River weirs and dams by adapting them to allow fish migration (upstream and downstream); the river spawning habitat availability will be substantially increased. The following threats will be reduced and/or sturgeons will be able to co-exist with them in the LIFE MIGRATOEBRE project, namely:

- **Water eutrophication and contamination.** Following the Framework Water Directive (FWD), water quality and ecological general status of the lower Ebro River is classified into a good level (Water Catalan Agency, 2004; Water Catalan Agency, 2010). The IBMWP index (Alba-Tercedor *et al.*, 2002), based on macroinvertebrates, is good for the last 60 km of the Ebro River, except for the last 10 km before the river mouth and only in Spring, where IBMWP index is fair (Cid, 2010). Water quality in general is improving. Nutrients coming from agriculture are going to be reduced. (Water Catalan Agency, 2004; Water Catalan Agency, 2010).

- **Low availability of freshwater for the river and delta.** There are so much hydrological exploitations in the Lower Ebro River basin; the minimum ecological flow of fresh water for the delta is very limited in the current situation. The presence of dams in the lower Ebro River led to a series of changes, like reduction of the entity and frequency of floods (reduced until at 25%), and flow stabilization (Vericat & Batalla, 2004; Prats *et al.*, 2009). Water flow (associated to the climate and also to big dams management) is being very low during the last decade, often around 100m³/sec. Water reserves for irrigation and strategic reserves of the regions of the Ebro basin affect river flows in the final stretch of the Ebro River. They limit environmental flows established by this section. Irrigation and also evaporation in reservoirs (Ibáñez *et al.*, 1996) affect the dynamics of the salt wedge in the estuary. The retention of sediment into the dams and also the low flow regime produced a mass of macrofites (*Myriophyllum spicatum*, *Potamogeton pectinatus* and *Ceratophyllum demersum*), which absolutely covers the lower Ebro River bed and facilitate the presence of the annoying black fly associated throughout the final stretch of the Ebre. Although the presence of big dams has changed the natural flow regime, an environmental water flow regime will be implemented in the final stretch of the Ebre River. The water flow regime is necessary not only to improve the fish population, but also to improve the dynamics of the salt wedge in the estuary (that affects agriculture at the Ebre Delta) and the permanence of the mass of macrofites. Water Catalan Agency and Ebre Waterboard are working together with the power companies to establish a new water flow management in the big dams. It also

should help the increase of the call flow for mature sturgeon, from the sea to the river in spring (from March to June).

- **Water temperature:** Climate change leads to higher temperatures in the Mediterranean areas. In view of the effects of global warming (IPCC, 2007), it is expected an increase of 3.2° C for the period 2070-2100 in the area of the Ebre (CHE, 2005). Anyway, in the lower Ebre, water temperature decreases after each dam (Mequinença, Riba-Roja and Flix) and slightly increases after the nuclear plant of Ascó. In general, water temperature suffers a decrease in the annual and daily water temperature ranges, and a delay of the annual maxima and minima are other effects due to the reservoirs (Prats et al., 2004). So, current water temperature is lower than in a hypothetical lower Ebre river without big dams; they amply compensate the effects of the global warming. In Riba-Roja dam, water temperature is around 24-27°C in summer, and 5-8°C in winter. At the entry of Flix dam these values are around 20°C in summer (Prats et al., 2004). In spring, water temperature is close or lower than 17-20°C, considered optimal in spawning grounds for this species (Gressner & Bartel, 2000).

- **Targeted species status:** Currently, European sturgeon does not exist in the lower Ebre and its Delta. Eel, twait shad and sea lamprey have populations under the river and delta capacity. For the case of the European sturgeon, reintroduction efforts and protection measures have been taken to restore the species in several European countries (France, Germany, The Netherlands). The MIGRATOEBRE project could be one of these experiences.

The **historic decline of several anadromous** species in the Ebro River drainage are related to the presence of river flow obstructions such as the Xerta's weir built in the 16th century (Fernández and Farnós, 1999). Initially, the weir did not completely block the upstream migration of this species, as fish were likely able to pass the obstacle during flood events and weir breakages. However, the weir was rebuilt in 1854, and was increased in height for navigational purposes (Carreras-Candi, 1993; March and Cabrera, 1997), thereby becoming an almost complete barrier to fish passage. Access to the river upstream was only possible through the navigation locks. This blockage concentrated the fish downstream of the weir, where the shad fishery developed (López et al., 2011).

Recent field studies have shown that **twaite shad** in the Ebro River represent an annual and functional migrating small population that has existed for at least the last 5 years (Andree et al., 2011). Field data showed that despite the insurmountable obstacle imposed by the barrier of the Xerta-Tivenys weir, it seems that the species actively selected some characteristics of the habitat for spawning (fast flowing waters, 2-4 m water depth, substrate composed of heterogeneous clean gravels without silting). Thus, the improvement of river connectivity and the elimination actual obstacles would result in a potential increase in habitat of 200% upstream. However, further surveys of potential spawning habitats in portions of the drainage above the Xerta and Ribarroja weirs have not yet been investigated.

- **Alien species.** Significant presence of exotic species, especially fish. The IBICAT index (Sostoa et al., 2010), based on fish, shows a bad biological quality due of the significant presence of alien fish species in the lower Ebro. It has been cited 58 species of exotic aquatic fauna, 30 of which are fish and other mostly aquatic invertebrates (data of the Natural Park of the Ebre Delta). The interaction of alien fish species, most of them are fish and aquatic invertebrates, with sturgeon is unknown. Sturgeons will control Zebra mussel and will also reduce the mass of macrofites. The improvement of knowledge in these issues is a main reason for the implementation of the pilot project.

- **Fisheries.** The intensity of the fishery focused on glass eel and eel and several other species is quiet intensive in and around the Ebro Delta. Currently, Sant Carles de la Ràpita (Ebro Delta) is the second most important fishing port of Catalonia, both in terms of catches as economic recovery. An information campaign focused on fishermen and anglers should minimise their interaction with sturgeon (and also to inform us about involuntary catchements). Moreover, Twaite shad population seems to grow: juveniles are recovering water bodies of the Ebre delta from 2012.

• **Chemical pollution.** Many substances, which are in the water at very low concentrations, are potentially bioaccumulative. Moreover, a decontamination and extraction project of the polluted sludge (with mercury and organo-chloride substances) from the bottom of the Flix reservoir, the biggest chemical pollution present in this area (generated into an ancient chemical industry), already initiated, is being carried out during the years 2013-15.

Finally, there is no evidence of lack of oxygen on the current potential spawning grounds (upstream and downstream of the Xerta's weir), but it sometimes occurs in spring downstream of Tortosa city, associated at the salt wedge in the estuary. In this sense, we will add a specific action of checking oxygen level (and redox potential, labile organic matter) in hyporheic waters at the potential spawning grounds (Action A.1) to ensure there is no excess catchment organic contamination affecting reproductive success or to undertake appropriate action to reduce this threat

PREVIOUS CONSERVATION EFFORTS IN THE PROJECT AREA AND/OR FOR THE HABITATS / SPECIES TARGETED BY THE PROJECT

Different actions have been undertaken previously on the project area regarding the conservation of the targeted species, in particular:

a). **Elaboration of “An eel management Plan for Catalonia”**, especially focused in the lower Ebre River and Delta driven by the Catalan Ministry of Agriculture, Livestock, Fisheries, Food and Environment (DAAM, 2009).

In 2009, DGPAM (Department of Fisheries and Maritime Affairs) presented its own Eel Management Plan (PGA), which included all Catalan rivers and made individualized treatment of the Ebro. These are the most important subjects:

- Reduction of period and fishing points for the professional eel fishermen;
- Prohibition of fishing for eels less than 35cm;
- Prohibition of sport fishing for eel and glass-eel;
- Restocking plans;
- Plan to improve River ecological connectivity.

The local fishing system, the "bussó" (a cone-like structure covered with a tiny net), is a passive fishing gear located on the edges of rivers or canals connecting the lagoons to the sea. In the case of the Ebre, with more than 300m wide at the mouth, the "bussons" occupy 6m on both sides. That ensures, even in time of fishing, the entry of eel upstream of the Ebre Delta (exclusive area for eel fishing).

In 2012, it was presented the first report in which the difficulties to fulfill all commitments in 2009 were highlighted, but also underline the achievements: a reduction in fishing effort by 12% and nearly 200,000 restocked eels.

On the other side, it has not been any changes to allow greater ecological connectivity of the different sections of the river. It has been unable to carry out any improvement in weirs and dams in order to improve a largest transit of eels.

b). Elaboration of “**A twaite shad (*Alosa fallax*) spawning potential habitat availability and associated environmental flows project for the lower Ebre River and its Delta**”, driven by the Catalan Ministry of Agriculture, Livestock, Fisheries, Food and Environment (IRTA – Sant Carles de la Ràpita & Forestal Catalana, Catalan Ministry of Agriculture, 2008).

c). **Elaboration of a “Feasibility study for the reintroduction of the sturgeon in the Ebre River”** as a result of two meetings with a wide group of stakeholders invited on 26th and 27th November 2012 in the Ebro Delta to discuss a project proposal and approach for the next project phase on sturgeon recovery plan for the lower Ebre River. In this group, representatives from nature, water management, fisheries and hydroelectric power, local organizations, knowledge institutes and regional authorities were present. The Steering group was made up of several entities: WWF the Netherlands, Foundation ARK Nature (the Netherlands), CERM, Center for the Study of Mediterranean Rivers (Catalonia), Foundation Catalunya-la Pedrera (Catalonia) and LINKit consult & Wanningen Water Consult (the Netherlands) (Ordeix et al., 2013).

There is a lot of expertise and a network on re-introduction of the sturgeon in Europe. In the Rivers Rhine, the Netherlands, and Elbe, Germany, two sturgeon re-introduction projects have started successfully. This has been done with individuals and support from the French National Research Institute of Science and Technology for Environment and Agriculture (IRSTEA) and its partner MIGADO (*Migrateurs Garonne Dordogne*, from the French *Direction Régionale de L'Environnement*, structure responsible for the reproduction and mass breeding of fry). This knowledge will be used in the project. The reproduction of European sturgeon in France is limited and the rules for co-operation with IRSTEA are strict. Furthermore, they put strict conditions on the co-operation with reintroduction programs in other countries. This means that the process of reintroduction needs to be handled professionally. The members of the MIGRATOEBRE projects have contacts with the abovementioned French entities in order to analyse all the aspects of the restocking of the sturgeon.

d) Elaboration of the “**Spanish action plan for the recovery of the European sturgeon**” with the Spanish Ministry of Agriculture, Livestock, Fisheries, Food and Environment and its partners (Tragsatec) This general guidelines supports a future reintroduction plan of the sturgeon in the Ebro (February-April 2013).

e) **Contacts with researchers and managers of European organisations working on conservation on migratory fish** from France (National Research Institute of Science and Technology for Environment and Agriculture, IRSTEA) and the Netherlands (Fundation Ark Nature and WWF The Netherlands), among others, to agree future collaborations.

Name of the picture: Xerta's weir and irrigation channel_lower Ebre



Name of the picture: Nuclear Plant Ascó



EU ADDED VALUE OF THE PROJECT AND ITS ACTIONS

The main added value of the project lies in its catalyst effect for an ambitious conservation goal: the migratory fish recovery and improved management in the final stretch of the Ebre River.

River restoration and reestablishment of river connectivity are legal requirements under the Water Framework Directive (*WFD, 2000/60/EC*; EC, 2000) and the European Eel Recovery Plan (*Regulation 1100/2007*; EC, 2007). It is vital for the maintenance of the conservation status of many protected freshwater species included in the nature 2000 network (*Habitats Directive 92/43/CEE*; EC, 1992).

Certain actions focused to the sturgeon reintroduction may have some positive effects on other anadromous fish species. These current water policies, including conservation projects of other migratory fish endangered species, like European eel (*Anguilla anguilla*), twait shad (*Alosa fallax*), shad (*Alosa alosa*) and sea lamprey (*Petromyzon marinus*), and the ambition to reintroduce the sturgeon can strengthen each other. All of them strive for the improvement of the Ebre River ecosystem and, reinforcing its fish community, reinforcing the European anadromous fish populations.

The habitats and species mainly beneficiaries of this project are considered as priority or interest at Community level. The fact that the project is developed in the geographical area of the Ebro Delta is also

an added value, since it is the second most important area for wet bird conservation in Spain and is also considered one of the main wetlands of the Mediterranean basin.

The LIFE MIGRATOEBRE project will demonstrate the benefits of protecting and restoring biodiversity in large European rivers and thus enhancing local economies by the provision of environmental services, such as tourism-related and fisheries. The conservation actions aimed at the recovery of migratory fish will also become the last part of many efforts on restoring a major river ecosystem in Southern Europe: enhancing the water quality, increasing the permeability of infrastructures (dams), the protection and restoration of riparian and aquatic habitats, etc. A recent recognition to this new status and the fruitful coexistence of nature and human development in the lower Ebre basin has been the declaration of this area as a World Heritage Site "Terres de l'Ebre" in May 2013. This LIFE project will no doubt help to improve this situation and to increase local acceptancy of Nature protection and all its benefits, including Natura 2000 and the species included in the Habitats Directive.

The realization of this project may, thus, represents a milestone in the restoration strategy Ebro Delta environment and may stimulate future collaborations between institutions participants, all key players in the management and conservation of this important wetland. The funding will also allow for LIFE funds devote much effort to outreach and environmental education, which will impact positively on the awareness and involvement of social actors and local people in conservation.

SOCIO-ECONOMIC EFFECTS OF THE PROJECT

The lower Ebre River, including the Ebre Delta, has a high value for mankind due to the availability of fresh water and fertile land. Fresh water is a very important resource for agriculture, drinking water, hydropower and nature as well. The lower Ebre is an important agricultural area, specialized in the production of oranges and tangerines and olive oil. The most important economic sectors in its delta are agriculture (rice crops), salt winning, fisheries and recreation. However, the economic situation of the lower Ebro and delta of the Ebro are not in very good condition. Price of oranges is too low, it is very hard for the rice farmers to compete with Southeast Asia, fisheries decline severely and tourism is not so strong developed. Farmers answer to this by producing in a more natural way and creating products with a higher value.

A healthy river and delta economy values the natural qualities it has and uses them wisely. The lower Ebro River and the Ebro Delta have enormous qualities. On the basis of a well-functioning, it is possible to create a strong local economy with different sectors: agriculture (high quality of citrus, olives oil, vegetables and rice production), fisheries (strong fishery sector based on re-vitalised river and delta fishes, i.e. eel) and eco-tourism and quality tourism (based on nature qualities just next to the mass tourism beaches in the Western Mediterranean; fishing, bird watching, canoeing, camping, visiting

natural beaches).

The Ebre River and Delta has a high potential for eco-tourism based on nature and landscape. This is due to the fact that the basis of the ecosystems are still preserved. The Ebre Delta is located in the Mediterranean coast of Catalonia, a centre of existing tourism. However, at the moment, this region does not use optimally this potential. An economic study including the sturgeon reintroduction plan and other fish species and the possibilities of "Ebro Eco-tourism" could change the mind set and make way for investments in nature and economy.

Sturgeon and other anadromous fish species, recovered and/or improved, may also be tourism attractions for the lower Ebre and its delta, especially for the Natural Park of the Ebre Delta and his certificate of the European Charter for Sustainable Tourism), renewed last 2012, and also for the whole lower Ebre area, protected and promoted by the brand new "Site MAB" award.

BEST PRACTICE CHARACTER OF THE PROJECT

As stated before, the main conservation challenge the project faces to is that the Ebre River and Ebre Delta system provide good habitat for these fish species but needs adaptations to support viable populations. It is crucial for the success of the project to combine efforts for habitat restoration projects and reintroduction of several sturgeons. In this sense, the actions undertaken by the project for the conservation of the nature could serve as a best practice for other projects that intend to do the same in other European rivers.

DEMONSTRATION CHARACTER OF THE PROJECT

LIFE MIGRATOEBRE project could be a demonstration project for the reintroduction of the targeted species in other European rivers provided that the following factors are fulfilled:

- Improvement of river connectivity. To increase the amount of available potential spawning areas would generate a strong increase of spawning habitat availability. To enlarge spawning possibilities it is very important to promote progressively solutions to improving fish migration (both upstream and downstream). The first step needs to improve water flow management, ship locks and new fish ways (a fish lift and a fish ramp) in the weirs and dams of Xerta, Ascó and Flix, and following to monitor their preliminary results.
- Implementation of an environmental flows regime. An important point to achieve the success of this project is to attract fish from the sea by the implementation of an environmental flow regime which includes enough big flows in spring. Availability of big flows is important to direct mature individuals of sturgeon and shad upstream to spawn. It is also essential to establish favourable hydrological conditions during the spawning season, in spring May - June) to attract adults -and also to remove macrofites from the river bed-, by which the number of mature fish to reach spawning grounds may be improved (Elvira & Almodóvar, 2003). An environmental flow regime establishment is crucial to enlarge the river flows. An environmental flows regime should maintain between 87m³/s and 622m³/s into the river, with big differences between seasons, and also depending of dry and wet years (Water Cat. Ag., 2008).
- Restocking program for sturgeon: There is a clear interest to work on the re-introduction of the sturgeon. There is a network on re-introduction of the sturgeon in Europe. In the Rivers Rhine, the Netherlands, and Elbe, Germany, two sturgeon re-introduction projects have started successfully. This has been done with individuals from and support from the French National Research Institute of Science and Technology for Environment and Agriculture (IRSTEA) and its partner MIGADO (*Migrateurs Garonne Dordogne*, from the French *Direction Régionale de L'Environnement*, structure responsible for the reproduction and mass breeding of fry). This knowledge will be used. The reproduction of European

sturgeon in France is limited and the rules for co-operation with IRSTEA are strict. Furthermore, they put strict conditions on the co-operation with reintroduction programs in other countries. This means that the process of reintroduction needs to be handled professionally. Monitor a pilot restocking plan using telemetry and fishermen and community involvement as well. An expert on anadromous fish Comitee will study more in detail several possibilities of reintroduction for the sturgeon -fish sizes to release, possible places and data, efficient systems to assess it, etc-.

- Fisheries in the river, delta and sea. The intensive fishery with the art of hauling into the marine platform and near the river mouth may be critical factors for the recovery of sturgeon in the Ebre River (and other European rivers). The minor fishing arts (dredge -*gànguils*- and trammel nets -*tresmall*s-) in the two bays of the Delta, substantial, and the final stretch of the Ebre can have a significant impact on the catching of sturgeons, both adults and juveniles, as well. Information of the fishermen, fishery control and closure periods could be important tools to restore these fish species. Can not afford any commercial sturgeon fishery in the river, delta, estuary and sea around the delta. These rule need to be implemented strictly.

EFFORTS FOR REDUCING THE PROJECT'S "CARBON FOOTPRINT"

Transportation included in the project is minimal, mainly local and regional. The use of the logistic existing in natural areas, primarily associated with the Natural Park of the Ebro Delta and Sebes Nature Reserve and Flix Meander and their sampling equipment will reduce travel costs from other geographic areas of the country or abroad. The location of specialized laboratories both in the center of the IRTA Sant Carles de la Rapita or in Flix (through TM Manresa Technology Centre) on issues of pollutants and sediments will also allow a reduction in transportation.

The coordinator will make the necessary efforts to reduce the project's ecological footprint while managing and implementing the project. Thus, some measures will be promoted, like:

- Searching for synergies to optimize travel.
- Replacing face-to-face meetings by virtual meetings.
- Minimizing documents' printing.
- Using recycled paper in the meetings.
- For the international Conference (action E8), a compensation scheme for the participants will be in place and will be included in the organizational costs

The overall objective of green public procurement is the reduction of the environmental impact of purchased materials. In this sense, the project will intend to include the principles of the green procurement in the implementation and management of the project by:

Principle 1 - Whenever necessary to purchase a material, product or equipment for the development of the project, various impacts toward environment from the aspect of product life cycle (from the material use to the disposal of the product) will be considered.

Principle 2 - Before the purchase of the material, product or equipment, the environmental information of the product as well as the supplier will be collected.

Principle 3 - If the product, material or equipment could be provided by different suppliers, the supplier who is caring more for the environment will be chosen.

Name of the picture: Ebre Delta agriculture



Name of the picture: Fishery at the Ebre Delta



EXPECTED CONSTRAINTS AND RISKS RELATED TO THE PROJECT IMPLEMENTATION AND HOW THEY WILL BE DEALT WITH (CONTINGENCY PLANNING)

- Global warming: It is considered, therefore, that the effect of global warming is locally amply compensated by the impact of large dams present in middle and low stretches of the Ebre. However, this issue could be a problem for the transfer of sturgeons from the IRSTEA in Bordeaux (France). Their commitment is especially strengthen sturgeon population of the Garonne-Gironde and its extension to the Elbe in Germany. On the other hand, IRSTEA is working hard on the possible effects of global warming on future populations that may be generated, and suffer specially for the Mediterranean (Lassalle et al., 2011).

In any case, in the first phase of the project, once enough water temperature data had been collected, the MIGRATOEBRE scientific committee, which will present Eric Rochard (senior research scientist of the IRSTEA, head of unit of estuarine ecosystems and diadromous fish), will discuss if it looks good that a surplus of sturgeons are transported from France to be released to the Ebre.

Otherwise, this project will produce enough knowledge on European sturgeon (*Acipenser sturio*) behaviour in the current Ebre River habitats -including the existant improved managed ship locks and new fish passes-, Ebre Delta and surrounding Mediterranean Sea, and what topics would run before to promote a new fase of sturgeons releasing. The same by the other target fish species. So, it will permit **to correct detected difficulties** and, after to have it improved, if necessary, to start a new sturgeon's restocking program.

- Invasive species. Abundance of alien fish species, most of them are fish and aquatic invertebrates. Their interaction with sturgeon is unclear. There is not enough information about if a possible reintroduction of the sturgeon could be a possible system to control zebra mussel and several invasive fish species.

- Habitat conservation for juvenile and subadult sturgeons in the delta. Juvenile and subadult sturgeons use deltas as living and feeding areas. This habitat is present in the Ebro Delta, but it is unclear if its quality is good enough.

- Fisheries in the river, delta and sea. The intensive fishery with the art of hauling into the marine platform and near the river mouth may be critical factors for the recovery of sturgeon in the Ebre River (and other European rivers). The minor fishing arts (dredge -*gànguils*- and trammel nets -*tresmall*s-) in the two bays of the Delta, substantial, and the final stretch of the Ebre can have a significant impact on the catching of sturgeons, both adults and juveniles, as well. Information of the fishermen, fishery control and closure periods could be imporant tools to restore these fish species.

In terms of professional fishing, the capture of the eel is very controlled: it is a fishery with lot of tradition and regulation. The shad and sturgeon are not targeted species, and thus it is not foreseen that any professional fisher could be be attracted by these two species. Another thing are the accidental hauls. In this case the project envisages a series of explanatory meetings with graphics and information.

In terms of sport fishing, fishing for sturgeon should not be, at least in the medium term, an objective of fisheries and their catch should mean the immediate return to the water.

- River navigation

In the Xerta weir and in the dam of Flix, there might be difficulties in the managing of the coupling locks with river navigation for little use. There may also be difficulties unless there is a good coordination with hydroelectric uses.

- **Chemical pollution.** Many substances, which are in the water at very low concentrations, are potentially bioaccumulative. Anyway, a decontamination project of the polluted sludge from Flix dam, already initiated, must be carried out within a maximum period of 2 years.

CONTINUATION / VALORISATION OF THE PROJECT RESULTS AFTER THE END OF THE PROJECT

Which actions will have to be carried out or continued after the end of the project?

The system of detection and release of fished European sturgeon, twaite shad and sea lamprey to the sea or river (by the Catalan Ministry of Agriculture, Food, Fisheries and Nature) will continue after the end of the project.

Other actions of the project, namely the monitoring actions will also continued after the end of the project as they will be integrated in different management plans such as:

- Management of the navigation channel and its fish locks;
- Management of weirs and dams;
- Annual management plans of the Ebre Delta Natural Park and the Natural Reserves of Seves and Meander of Flix;
- Combination with other projects which including connectivity uses, like the otter monitoring (by the Catalan Ministry of Agriculture, Food, Fisheries and Nature).
- Monitoring associated at the decontamination of the Flix dam (by the CHE, Ebre River waterboard).
- Monitoring of the eel populations of the river and delta (by the Catalan Ministry of Agriculture, Food, Fisheries and Nature).

How will this be achieved, what resources will be necessary to carry out these actions?

The consortium members involved in these tasks will be the same that they will carry out the activities once the project finalised. They will the abovementioned tasks in their annual management and monitoring plans.

Protection status under national/local law of sites/species/habitats targeted (if relevant)

New stretches of the river upstream of the Xerta's wiers, especially spawning areas for these target fish species, probably will be included under the Natura 2000 network "Riberes i Illes de l'Ebre" (Code Natura 2000: ES5140010) of preserved areas.

How, where and by whom will the equipment acquired be used after the end of the project?

The infrastructures built/enhanced at Xerta's weir and Flix dam will remain in place and will be managed directly by the corresponding partner. The underwater hide (action E7) will be managed by the the local electric company, Hidroeléctrica de Xerta, S. L., in charge of the facilities where it is located.

The itinerant exhibition (action E4) will be placed definitely in one of the local visitors' centres that belong to the project partners (Museu del Montsià, Ecomuseu del Parc Natural or MónNatura Delta).

The underwater hide (action E.7) of the fish lift from the Xerta's weir will be managed by Fundació Catalunya - La Pedrera although the owner of the navigation channel is the IDECE. The company managing the power plant (Hidroeléctrica de Xerta) has delcared its commitment to guarantee the sustainability of the underwater hide once the project ends.

Finally, the fish by-passes (fish lift and fish ramp) envisaged by the project will be owned by IDECE but

will be jointly managed by the electric companies (Hidroelectrica de Xerta, ANAV-Associació Nuclear Ascó-Vandellós and ENDESA) and the IDECE, responsible of the navigation on the lower Ebre. On the other hand, IDECE will guarantee the maintenance and sustainability of the fish by-passes after the LIFE project. The companies/organizations managing the power plants as well as the Water Catalan Agency and the Ebre Waterboard have also expressed their commitment in order to guarantee the sustainability of the equipment once the project arrives to its end.

To what extent will the results and lessons of the project be actively disseminated after the end of the project to those persons and/or organisations that could best make use of them (please identify these persons/organisations)?

Outreach activities will continue in the webs of the IDECE, Fundació Catalunya La Pedrera and IRTA. Moreover, monitoring the project generates a large database that will publish in different media communication. As explained before, the project envisages the creation of a community network and groups of volunteers focused it on specific stakeholders: Youngs, families, seniors, fishermen, anglers, farmers, electric companies, tourism stakeholders, regional and local authorities.

Moreover, the project will foster the already existing contacts with researchers and managers of European organisations working on conservation on migratory fish from different countries such as France (National Research Institute of Science and Technology for Environment and Agriculture, IRSTEA) and the Netherlands (Foundation Ark Nature and WWF The Netherlands).



LIFE13 NAT/ES/000237

TECHNICAL APPLICATION FORMS

**Part C – detailed technical description of the
proposed actions**

LIST OF ALL PROPOSED ACTIONS

A. Preparatory actions, elaboration of management plans and/or of action plans

- A1 Identification of potential spawning areas for sturgeon, twaite shad and sea lamprey.
- A2 Administrative, legal and technical procedures for the construction of a fish lift and a fish ramp

B. Purchase/lease of land and/or compensation payments for use rights**C. Concrete conservation actions**

- C1 Implementation of connectivity improved measures for the targeted migratory fish species.
- C2 Pilot project of sturgeon restocking

D. Monitoring of the impact of the project actions (obligatory only if there are concrete conservation actions)

- D1 Monitoring the pilot project of sturgeon restocking
- D2 Monitoring the target fish population of the water bodies
- D3 Ecological status monitoring of the final stretch of the Ebre River (water, biota and sediments, except fish)
- D4 Monitoring of the ship locks improved management (at Xerta's weir and Flix dam) and the new fish passes (at Xerta's weir and Ascó's weir)
- D5 Socio-economic impact assessment study

E. Public awareness and dissemination of results (obligatory)

- E1 General Communication activities
- E2 Notice boards
- E3 LIFE MIGRATOEBRE Layman's Report
- E4 Exhibition on fishes and the lower Ebre river
- E5 Community Awareness Campaign
- E6 Network of volunteers
- E7 UnderWater Hide
- E8 Organisation and participation in conferences and related events
- E9 Dissemination activities for students

F. Overall project operation and monitoring of the project progress

- F1 Project Management by IDECE

F2 Networking

F3 Audit

F4 After-LIFE Communication Plan

DETAILS OF PROPOSED ACTIONS

A. Preparatory actions, elaboration of management plans and/or of action plans

ACTION A.1: Identification of potential spawning areas for sturgeon, twaite shad and sea lamprey.

Description (what, how, where and when):

IRTA researchers will carry out a bibliographic analysis of the literature on the spawning grounds for the three species considered that spawn in the river and then, look for potential spawning sites in the river according to the mapping of habitats that already exists for the area of study. Once these sites located, personnel are going to characterize them according to local hydrological and habitat characteristics.

Considering the available data and literature on the characteristics of spawning sites for European sturgeon in the Garonne system (Williot, P., Rochard, E., Desse-Berset, N., Kirschbaum, F., Gessner, J. Editors; 2011. Biology and Conservation of the European sturgeon *Acipenser sturio* L. 1758; Springer; 668 p), for twaite shad in the Ebro River (downstream to Xerta's weir) (López et al., J. Appl. Ichthyol. 27, 2011, 53-55) and for sea lamprey in the River Mondego - Portugal (Almeida et al., Aquatic Telemetry - Developments in Hydrobiology 165, 2002, 1-8), different potential spawning sites in the area of the study are going to be localized considering the actual knowledge and mapping of the study area. After this identification, locations are going to be inspected and analysed in order to evaluate whether they fit the characteristics described in the literature.

This analysis will be conducted in terms of hydrobiology (water depth, velocity, quality, annual cycles) and habitat characteristics (type of bottom: silt, sand, gravel, pebbles, rocks; presence and density of vegetation - macrophytes; accompanying ichthyofauna). Water current will be measured by means of a portable current meter and water quality parameters (oxygen, turbidity, dissolved oxygen) by means of portable analytical instruments (Crison Instruments) and a Secchi disc. The coverage of macrophytes will be assessed by 5 m transects over a lineal distance of 100 m within and around the spawning site. Samples of the bottom will be obtained with a dredge and samples sieved in order to determine their granulometry. Additionally, information about the distance of the site from the mouth of the river and potential migratory obstacles is going to be reported. The above-mentioned characterization of the potential spawning sites is going to be done in agreement with the EU Water Framework Directive.

Moreover, the oxygen level will be checked (redox potential, labile organic matter) in hyporheic waters in order to ensure that is no excess of catchment organic contamination that could affect reproductive success.

The expected start date of Action A1 is 01.07.14 and the Action will end in 30.06.15.

Reasons why this action is necessary:

Basic information on the characteristics of habitat for European sturgeon, twaite shad and sea lamprey for successful spawning are mostly missing in the lower stretches of the Ebro River. This information is urgently needed in order to develop proper conservation measures and locate potential spawning grounds upstream of the river barriers currently in place. These data are key steps for the long-term viability of the population of these migratory species. In this context, although there already exists some information and localization of the spawning grounds for twaite shad in the Ebro River (downstream the Xerta's weir), there is no information about the potential spawning habitats for this species upstream this obstacle. In case that those animals would be able to surpass the Xerta's weir, the availability of potential upstream habitats for twaite shad could be increased by approximately 200%, which is of special importance for the restoration and conservation of this species. Consequently, LIFE MIGRATOEBRE project will locate and describe in terms of hydrological and sediment quality parameters, different potential spawning sites for the three of the migratory species considered in the proposal, these areas will be monitored and located considering the available literature European sturgeon, twaite shad and sea lamprey.

Beneficiary responsible for implementation:

IRTA

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

Characterization of the spawning grounds for European sturgeon, twaite shad and sea lamprey in order to evaluate the presence of these habitats for the above-mentioned species. Their localization and mapping will be very useful in order to protect these areas from other potential future uses. This information will be also available in case there is a need to increase or improve these habitats by future restoring activities within the river, as it has been conducted in some countries where artificial spawning grounds for sturgeons have been constructed considering the species needs.

How was the cost of the action estimated?:

IRTA Staff (biologist) (125€/day x 28 person-days): **3.500€**

IRTA Staff (expert in sturgeons aquiculture) (200€/day x 28 person-days): **5.600€**

IRTA Local travels: 1.000€ . Local travels from St. Carles de la Ràpita - Targeted sites. Local travels from St. Carles de la Ràpita (IRTA headquarters) to Flix (92 km of distance one way), Xerta (40 km) and Ascó (90 km) and Tortosa (30 km). $0,30€/km \times 1.666 km = 500€$. $19€/day \text{ for daily allowance} \times 26 \text{ days} = 500€$

A. Preparatory actions, elaboration of management plans and/or of action plans

ACTION A.2: Administrative, legal and technical procedures for the construction of a fish lift and a fish ramp

Description (what, how, where and when):

This action will be conducted by the IDECE in collaboration with an engineering company to be subcontracted. IDECE will be responsible for the required contacts with owners, managers and other authorities involved. The engineering company to be subcontracted will be in charge the several executive projects as well as the technical direction and project management of the works. the following permits and legal procedures will be needed to undertake the project works described in action C.1:

- 1) Permits of the Agència Catalana de l'Aigua (Water Catalan Agency) for the 2 improved management of ship locks and for the 2 devices to build.
- 2) Permits of the Confederación Hidrográfica del Ebro (Ebre Waterboard) for the 2 improved management of ship locks and for the 2 devices to build.
- 3) Building permit of the Municipality of Xerta to improve the management of the ship locks of the Xerta's weir and to install the ship lock at the Xerta's weir.
- 4) Building permit of the Municipality of Ascó to install the fish ramp at the Asco's weir
- 5) Building permit of the Municipality of Flix to improve the management of the ship locks of the Flix dam and to install the ship lock at the Flix dam.
- 6) Permit of the Departament de Territori i Sostenibilitat (Government of Catalonia) to undertake the Environmental Impact Statement of the project works envisaged in action C.1.

The expected start date of Action A2 is 01.07.14 and the Action will end in 30.06.15.

Reasons why this action is necessary:

In order to carry out the civil works required for the construction of a fish lift and a fish ramp, it is necessary to carry out some preparatory activities such as the preparation of the executive studies, the permits and licenses, etc...

Beneficiary responsible for implementation:

IDECE

Responsibilities in case several beneficiaries are implicated:

CERM (preparation of the environmental guidelines for the executive projects)

Expected results (quantitative information when possible):

- CERM technicians will elaborate the environmental guidelines for the executive projects and its adaptation to the needs of the target fish species.
- The engineering company will deliver the executive projects to the IDECE, following sustainable and standardized criteria (Wellcomme & Marmulla, 2002; Wanningen et al., 2012).
- Obtention of the abovementioned permits in order to undertake the envisaged works in action C.1
- Signature of the contracts with construction companies by the IDECE.

How was the cost of the action estimated?:

IDECE staff: Technical Director (200€/day x 10 person-days): **2.000€**

CERM staff (environmental technician) (145€/day x 21 person-days): **3.045€**

IDECE subcontractor (engineering company): 28.000€, as follows:

- Improved management of the Xerta's ship locks (project): 2,000€
- Improved management of the Flix dam ship locks (project): 2,000€
- Fish lift for Xerta's weir (topographic map of the area, executive project and estimated visa): 12,000€
- Fish ramp for Ascó's weir (topographic map of the area, executive project and estimated visa): 12,000€

C. Concrete conservation actions

ACTION C.1: Implementation of connectivity improved measures for the targeted migratory fish species.

Description (what, how, where and when):

The LIFE MIGRATOEBRE project intends to restore migratory routes of fish in the Lower Ebre. The rehabilitation of native fish populations is actually feasible by applying a number of environmental improvements essentially associated with improved ecological connectivity: the establishment of fish passage solutions, which only work properly in 4 locations, and 2 more in the future (Riba-roja and Mequinença dams).

The LIFE MIGRATOEBRE project aims, among other objectives, to apply a ship locks improved management (at Xerta's weir and Flix dam) and to install new fish passes (at Xerta's weir and Ascó's weir). In particular the project envisages the following measures:

- Execution of a fish friendly improved management by the ship locks at the Xerta's weir and the Flix dam;
- Installation of a new fish lift at the Xerta's weir and a fish ramp at the Ascó's weir;
- Monitoring of fish movement along these new fish ways (using fish traps and marked fish with transponders)

Fish friendly improved management of the ship locks of the Xerta's weir and the Flix dam

Fish friendly improved management of two ship locks: in the Xerta's weir and in the Flix dam: reviewing of the time opening / closing -to allow the fish entry- of these two ship locks, improving ecological connectivity for fish in agreement with the managers of the main uses of these infrastructures (navigation, irrigation and hidropower). The installation of light barriers (with strobe lights) to force the fish to the entrance of the fish locks (and not to go to the water outlet of the hydropower plant) is also envisaged.

These action will be made according to the Ebre Waterboard, CHE, the local electric company, Hidroeléctrica de Xerta, S. L., the managers of the irrigation channel, Comunitat de regants del Canal de la Dreta de l'Ebre & Comunitat de regants del Canal de l'Esquerra de l'Ebre and an engineering company to be subcontracted. The following permits will be necessary in order to undertake this action (refer to action A.2):

- 1) Permit of the Agència Catalana de l'Aigua (Water Catalan Agency) for the 2 improved management of ship locks
- 2) Permit of the Confederación Hidrográfica del Ebro (Ebre Waterboard) for the 2 improved management of ship locks
- 3) Permit of the Municipality of Xerta to improve the management of the ship locks of the Xerta's weir
- 4) Building permit of the Municipality of Flix to improve the management of the ship locks of the Flix dam and to install the ship lock at the Flix dam.

Installation of a new fish lift for big fish at the Xerta's weir

Bucket of 4x4 meters (adult sturgeon, a target specie of this project, can achieve until 3,5 m long), to lift the fish up to 7 meters high. It will be located in front of the water outlet of the hidropower and close to the navigation and irrigation channel of the right bank of the Ebre Delta. It will also include an underwater hide, a window to show and monitor the fish passage (see E7). There are similar fish lifts in France such as the CN de Golfech dam (EDF electric company, Tarn River) and Tuilières dam (Dordogne), among other countries, especially in the USA.

These action will be made according to the Ebre waterboard, CHE, the local electric company, Hidroeléctrica de Xerta, S. L., the managers of the irrigation channel, Comunitat de regants del Canal de la Dreta de l'Ebre & Comunitat de regants del Canal de l'Esquerra de l'Ebre, and advised by an engineering company.

The following permits will be necessary in order to undertake this action (refer to action A.2):

- 1) Permits of the Agència Catalana de l'Aigua (Water Catalan Agency) for the installation of the fish lift
- 2) Permits of the Confederación Hidrográfica del Ebro (Ebre Waterboard) for the installation of the fish lift
- 3) Building permit of the Municipality of Xerta to install the ship lock at the Xerta's weir.
- 4) Permit of the Departament de Territori i Sostenibilitat (Government of Catalonia) to undertake the Environmental Impact Statement.

Installation of a new fish ramp at the Ascó's weir

Installation of a new fish ramp at the Ascó's weir. It is 2 meters high. Integrated into the weir structure, this fish ramp should permit the crossing of canoes and small boats as well. It has a rough surface (interleaving of large blocks and boulders) and low slope (1:20). Its total width is 30m, about 250 meters from the dam. The total length of the fish ramp is 75m. The average depth of the water is 30 to 40 cm inside the fish ramp. Water speed: 1.6 to 2.0 m/s. Maximum internally differences between two any sheets of water: 8 cm. It incorporates minimum flows of the river. Its main body is made by base and walls of concrete and several stone blocks, used to reduce the speed of the water. The maintenance is simple. Serves both: for fish passage upstream and downstream. This action will be made according to the Ebre waterboard, CHE, the Ascó's nuclear plant and its electric company, ANAV association and ENDESA, and advised by an engineering company and the CERM.

- 1) Building permit of the Municipality of Ascó to install the fish ramp at the Asco's weir
- 2) Permit of the Departament de Territori i Sostenibilitat (Government of Catalonia) to undertake the Environmental Impact Statement.

Please refer to ANNEX 1(Declarations of Commitment of the abovementined competent authorities in order to obtain the needed permits) as well as the Declarations of Commitment of the companies managing the power plants, the nuclear plant and the dams to apply the management measures indetified in this Action C.1.

The **timetable** for the implementation of action C.1.is the following:

Fish friendly improved management of the ship locks of the Xerta's weir (01.07.15 - 30.06.16)

1. installation of a light barrier (of strobe lights) - 01.07.15 - 30.06.16
2. Automated opening and closing of the gates 01.07.15 - 30.06.16

Fish friendly improved management of the ship locks of the Flix dam (01.07.15 - 30.06.16)

1. installation of a light barrier (of strobe lights) - 01.07.15 - 30.06.16
2. Automated opening and closing of the gates 01.07.15 - 30.06.16

Installation of a new fish lift for big fish at the Xerta's weir (01.07.15-31.12.16)

1. Fish basket inox (01.07.15 - 01.11.15)
2. Device structure (01.07.15 - 01.11.15)
3. Riverwatcher Fish counter (Infrared Vaki system & video recorder) (01.10.16 - 31.12.16)
4. System of flow regulation (01.10.16 - 31.12.16)
5. Automation (01.10.16 - 31.12.16)

Installation of a new fish ramp at the Ascó's weir (01.07.16 - 31.12.16)

Earthworks (01.07.15 - 01.11.15)

Formation of the ramp and rock ledges (01.11.15 - 01.11.16)

Opening at the top of the dam (01.11.16 - 31.12.16)

Reasons why this action is necessary:

- **Xerta's weir** is a key point for ecological connectivity improvement in the last stretch of the Ebre River. An hydroelectric installation is located at the south-west of this weir, on the right bank of the river, contacting with the irrigation channel of the right bank of the Ebre River, navigable in this upper part. The Xerta's weir includes a small fish ladder -a concrete structure approximately 2 m wide with some blocks set-, located in a corner next to an old mill, which is considered impassable for target fish (already assessed by the CHE, it's only available for some big individuals of mullets and Ebre barbels). There is a biggest attraction flow for fish, located in front of the water outlet of the power plant. Only a fish passage located in front of the water outlet of the hydroelectric turbines can redirect upstream these big concentrations of fishes. Otherwise, current fish locks of the **Xerta's navigation channel** could be a complementary fish way if their time of opening and closure is improved -already checked in the Rhone River by the twaite shad -.

- **Ascó's weir** is a non permanent barrier for fish migration (depending on the river flows). In summer is often 2 meters high, resulting an obstacle for mainly target and other native fish species. A fish pass solution close-to-nature, a fish ramp, is the proposed solution.

- **Flix dam** is a key point for ecological connectivity improvement between the Ebre Delta and the medium Ebre River basin. A hydroelectric installation is located at this dam; which includes ship locks, located in a corner next to an old mill, close to the water outlet of the power plant. Fish locks could also be a fish way if their time of opening and closure would be improved -already checked in the Rhone River by the twaite shad -.

Beneficiary responsible for implementation:

IDECE

*Responsibilities in case several beneficiaries are implicated:**Expected results (quantitative information when possible):*

1. A significantly improvement of the ecological connectivity of the lower Ebre River, to allow fish migration (upstream and downstream);
2. An increase of more than tenfold the river spawning habitat availability for European sturgeon, twaite shad and sea lamprey, and the distribution (and growth) area for European eel.
3. Nº of fish crossing rates and deviations in size frequency based on the type of fish community present and the characteristics of the studied river reach, obstacle and fishway.

How was the cost of the action estimated?:

IDECE - Infrastructure**Cost estimation for the Ascó's fish ramp: 70.000,00€**

1. Earthworks: 5.000,00€
2. Formation of the ramp and rock ledges: 63.000,00€
3. Opening at the top of the dam: 2.000,00€

Cost estimation for the Xerta's fish lift: 425.000,00€

1. Fish basket inox: 14.000,00€
2. Device structure: 191.600,00€
3. Machinery: 120.000,00€
4. Riverwacher Fish Counter (Infrared Vaki system & video recorder): 28.400,00€
5. System of flow regulation: 59.000,00€
6. Automation: 12.000,00€

IDECE - Equipment costs**Improved management of the Xerta's ship locks**

Equipment for the automated opening and closing of the gates: 12.000€

Light barrier (of strobe lights): 2,000€

Improved management of the Flix dam ship locks

Equipment of the automated opening and closing of the gates: 12.000€

Light barrier (of strobe lights): 2,000€

IDECE Staff: 26.750€

Technical director (200€/day x 80 person-days): 16.000€

Coordinator (300€/day x 15 person-days): 4.500€

Administrative officer (125€/day x 50 person-days): 6.250€

CERM Staff: 6.300€

Scientific coordinator (210€/day x 30 person-days): 6.300€

IDECE Subcontractor (Engineering company): 24.000€

IDECE Local travels: 2.500€- Local travels from Tortosa (IDECE headquarters) to Flix (68 km of distance one way), Xerta (13 km) and Ascó (62 km) where C1 Action will be implemented. Also local travels from Tortosa to Barcelona are envisaged (180 km).

Name of the picture: Example of a fish lift



Name of the picture: Stroboscopic lights barrier



Name of the picture: Example of fish ramp



C. Concrete conservation actions

ACTION C.2: Pilot project of sturgeon restocking

Description (what, how, where and when):

1. Experimental releases of sturgeons in the lower Ebre (downstream of the Xerta's weir and between Flix dam and Ascó's weir as well) will be carried out by the project in order to enhance the knowledge concerning:

1. Migration behaviour in the Ebre River and stuary system;
2. Location of suitable habitats;
3. Movement along migration barriers;
4. Communication of the issue.

In total, 50 individuals (of 50 – 70 cm) will be released with a transponder. These individuals will be selected by IRSTEA (France).

For the release of the sturgeons different permits will be needed, namely:

1) Permits of IRSTEA (Bordeaux, France) and MIGADO (French organisation in charge of the ex-situ culture of sturgeon in the Garonne-Dordogne drainage system) to involve the only stocks of European sturgeons kept in captivity in Europe for restocking purposes.

2) Permit of the Catalan Ministry of Agriculture, Food and Environmental Affairs (associated beneficiary of the project) for the European sturgeon restocking in the low stretch of the Ebre River.

3) Permit of the Spanish Ministry of Agriculture, Food and Environment and especially its DG of Quality and Environmental Assessment and Natural Environment.

Action C.2 will be conducted by the IRTA, in charge of the transport, acclimation and maintenance of fish prior their release into the river, for the release of fish into the river (upstream and lower stream of the Xerta's weir) and for the installation of transponders in fish and test them in captivity conditions prior to fish release.

In agreement with the IRSTEA (Bordeaux, France), European sturgeons will be donated by MIGADO (French organisation in charge of the exsitu culture of sturgeon in the Garonne-Dordogne drainage system) and transported by road (12 h trip) to IRTA's facilities in Sant Carles de la Ràpita (Spain). Considering the biological value of donated fish, transport (710 km) will be conducted with an adapted truck for fish transport provided with oxygen and aeration systems, as well as an experienced driver to take care of fish.

Fish size will depend on the number and size of available fish for the French restoration program. However, in case that available fish will be too small for the planned activities (<50 cm TL), they will be reared and grown-out at IRTA's facilities under controlled conditions and standard rearing protocols, as described in Williot et al. (2011; Biology and Conservation of the European sturgeon *Acipenser sturio* L. 1758; Springer; 668 p). After their arrival at IRTA's facilities, fish will be kept in quarantine for two weeks when they will be regularly inspected in order to monitor their adaptation and acclimation to new facilities, as well as to detect any potential pathogen that fish may carry with them (microbiological analyses of gills and skin, and inspection for ectoparasites). During the period of fish acclimation and before their release into the river, fish will be regularly inspected and their size in terms of weight and total length will be monthly measured in order to evaluate the acclimation and growth of fish to new conditions and their suitability for releasing purposes.

Fish will be stocked until their release into the river in two 14 m³ concrete raceways (open-flow system with automatic water quality recording). Handling, maintenance and feeding of fish will be conducted according to the instructions provided by the technical personnel of MIGADO, as well as specific literature on this topic (Williot et al., 2011).

Once fish acclimated or grown-out at the convenient size for their release, they will be tagged with

transponders in order to study their movements in the river (upper and lower stretches from the Xerta's Weir).

In addition to this activity, LIFE MIGRATOEBRE project will evaluate the presence, area and distribution of potential spawning areas for European sturgeon within the river stretch considered within the proposal. This assessment will be conducted following previous data and field experience of IRSTEA researchers. In this sense, the characterization and description in detail (water current, depth, type of substrate, vegetation, associated ichthyofauna) of these areas that were previously identified as potential spawning sites for this species considering the available information in this topic will be necessary (Williot, P., Rochard, E., Desse-Berset, N., Kirschbaum, F., Gessner, J. Editors; 2011. Biology and Conservation of the European sturgeon *Acipenser sturio* L. 1758; Springer; 668 p).

The timetable for the implementation of Action C.2. is the following:

Transport of the sturgeons from Saint Seurin sur l'Isle (Bordeaux, France) to Sant Carles de la Ràpita (01.12.16 - 01.03.16)

Acclimatation and tagging in IRTA installations (01.02.16 - 01.03.16)

Release of the sturgeons (01.03.16 - 01.04.16)

Monitoring (01.03.16 - 30.09.17)

Reasons why this action is necessary:

The only stocks of European sturgeon kept in captivity for restocking purposes are in France (Garonne basin) and Germany (Leibniz-Institute of Freshwater Ecology and Inland Fisheries in Berlin) due to the French-German Cooperation program developed by both countries for restoring European populations of this species. However, there are no facilities devoted to European sturgeon culture for restocking purposes in the Iberian Peninsula due to the absence of this species in our waters and the impossibility to create the own Spanish brood-stock. Consequently, this consortium has contacted the researchers of IRSTEA and MIGADO (French organization in charge of the ex-situ culture of sturgeon in the Garonne-Dordogne drainage system) in order to get their support and get fish for this action.

Considering that currently there is only a draft of a national plan for the conservation and restoring of European sturgeon running in Spain, the information gathered by this action (detection of most suitable foraging and spawning habitats for sturgeon, movements and distribution of fish within the Ebre river, detection of potential risks derived from different activities conducted in the river such as sport fishing, damming, navigation, etc) will be of value for the future implementation of a conservation and restoring plan for European sturgeon in the Iberian Peninsula.

The last but not the least of the reasons for this action is that European sturgeon is considered as an emblematic and flag fish species and the releasing of some specimens in the river would be a really important event in terms of national and local mass media in order to recover the historical memory of people from the area, as well as in terms of improving the connectivity and biological quality of the river

Beneficiary responsible for implementation:

IRTA

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

The final objective of this action is to create a first reintroduced population of European sturgeon in the Ebre River that may serve for the restoration of the species in the area in combination with more future reintroduction episodes. In addition, the telemetry studies on fish movements along different stretches of the river will serve to study fish preferences in terms of homing range and foraging preferences, as well as to better understand the ecological preferences of this species in the Ebre River. In addition, the monitoring of the ecological conditions of the river, as well as the recording of accidental sturgeon catchers by sport fishermen or other casualties derived from other activities conducted in the river (e.g. damming, navigation) will serve to evaluate the feasibility of a large-scale restoration plan in the river considering its actual uses and activities.

Thus, the quantitative expected result of this Action will be the nº of released sturgeons with GPS and radio transponders.

Considering the information reported in the monograph of Williot et al. (2011; Biology and Conservation of the European sturgeon *Acipenser sturio* L. 1758; Springer; 668 p), LIFE MIGRATOEBRE project will identify and describe the potential spawning areas for European sturgeon within the river stretch considered within the proposal.

How was the cost of the action estimated?:

- **IRTA staff (aquiculture's technician)** (125€/day x 60 person-days): **7.500€**
- **IRTA staff (expert in sturgeons aquiculture)** (200€/day x 25 person-days): **5.000€**
- **IRTA Other costs:** Fish transport from MIGADO facilities at St Seurin sur l'Isle (France) to IRTA facilities (distance = 830 km.) Truck rental and transport associated costs (2 days trip). Cost: **5.500 €.**
- **IRTA Other costs:** Acclimatation and rearing of European sturgeon at IRTA's facilities for a period of 3 months, including: feeding, supplementary oxygen, etc... Cost: **2.500 €.**
- **IRTA Other costs:** Refurnishment of fish tanks: **3.000€**
- **IRTA Consumables:** activated carbon filters, sun filters and UV lights: **3.000€**
- **IRTA travel costs: 1000€.** Travel to picking up of the sturgeons from France to the Delta. St. Carles de la Ràpita - St. Seurin sur l'Isle -St. Carles de la Ràpita (aprox. 830 km one way). 0,30€/km x 1.666 km = 500€ + 250€/hotel + subsistence x 2 persons =500€.

D. Monitoring of the impact of the project actions

ACTION D.1: Monitoring the pilot project of sturgeon restocking

Description (what, how, where and when):

The experimental releases in the lower Ebre (downstream of the Xerta's weir and between Flix dam and Ascó's weir as well) will be monitored. This will be carried out to enhance the knowledge concerning:

1. Migration behaviour in the Ebre River and estuary system;
2. Location of suitable habitats;
3. Movement along migration barriers.

In total, 50 individuals (of 50 – 70 cm) will be released with a transponder. Dispersal and survival analysis of young of year migratory fish within the frame of stocking program: study case on European sturgeon (*Acipenser sturio*).

Young stages dispersal implies individual costs, it is associated to a risk taking which can lead to increase mortality. Within the frame of stocking program, rearing practice in captivity as well as release age may influence dispersal mechanisms and increase mortality in the wild. Through juvenile production from a captive breeding stock, Gironde and Elbe population are supported by stocking since 2007. To ensure the sustainability of the species, the success of the stocking program is paramount.

The monitoring will be implemented as follows:

Firstly, to enhance the knowledge concerning **(a) Migration behaviour in the Ebre River and estuary system**, the foreseen monitoring will be based on telemetry studies on fish movements along different stretches of the river and also the surrounding sea, as well as the recording of accidental sturgeon catches by sport fishermen or other casualties derived from other activities conducted in the river (e.g. damming, navigation).

Secondly, in order to enhance the knowledge concerning **(b) Location of suitable habitats**, the foreseen monitoring will be implemented through telemetry studies on fish movements along different stretches of the river and sea. These studies will allow to know fish preferences in terms of homing range and foraging preferences, as well as to better understand the ecological preferences of this species in the Ebre River. Considering the information reported in the monograph of Williot et al. (2011; Biology and Conservation of the European sturgeon *Acipenser sturio* L. 1758; Springer; 668 p), LIFE MIGRATOEBRE will identify and describe the potential spawning areas for European sturgeon within the river stretch considered within this project.

And finally, to improve the knowledge concerning **(c) Movement along migration barriers**, several methods (Ordeix et al., 2011) will be used for the monitoring: visual, infrared & video counts (Travade & Larinier, 2002; Marmulla & Welcomme, 2002) - this technique will be only used at the underwater hide of the fish lift from the Xerta's weir - and the installation of fish traps at the water intake upstream of each facility (Travade & Larinier, 2002; Marmulla & Welcomme, 2002;

The responsible of this Action is the IRTA. The DAMM - Departament d'Agricultura, Ramaderia, Pesca, Alimentació i Medi Natural (Catalan Ministry of Agriculture, Food and Environmental Affairs) will be involved in this action with participating - jointly with a subcontracted research institution - on the monitoring of restocked sturgeons. DAMM will be the responsible for the purchasing of the transponders (GPS or radio) for tagging sturgeons and recording the accidental sturgeon catches by professional or sport fishermen or other casualties derived from other activities conducted in the river (e.g. damming, navigation).

The monitoring will be required to lead to a diagnosis of the individual performance of juveniles released in the wild according to site of release and release stages. The releasing practices will be modified in order to

increase their survival in future releasing. In addition, it will be compared by the obtained data by the monitoring of the ecological conditions of the river, as well as the recording of accidental sturgeon catchers by sport fishermen or other casualties derived from other activities conducted in the river (e.g. damming, navigation).

Finally, the consortium is committed to release fish caught by electric devices. In this sense, it is important to point out the scientific fishing permits issued by the Catalan Ministry of Agriculture, Food and Environmental Affairs (DAMM) already includes this commitment.

The expected start date of Action D1 is 01.03.16 and the Action will end in 31.12.17.

Reasons why this action is necessary:

Monitoring the sturgeons is a key action in order to measure the success of the action.

Beneficiary responsible for implementation:

IRTA

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

Nº of days of permanence of the juveniles of European sturgeon into the restocked stretch of the river.

How was the cost of the action estimated?:

- **IRTA - Staff - Expert in sturgeons** - 20 person/days x 200€/day = **4.000€**
- **IRTA Local travels** from St. Carles de la Ràpita (IRTA headquarters) to Flix (92 km of distance one way), Xerta (40 km) and Ascó (90 km) and Tortosa (30 km) - 0,30€/km x 5.000 km = **1.500€** + 19€/day for daily allowance x 52 days = **1.000€**
- **IRTA Purchase of material for horizontal automatic monitoring** - Total cost: **3.500€**
- **IRTA Purchase of 30 radio transponders** - 300€/transponder - Total cost: **9.000€**
- **DAAM - Staff- Biologist** - 5 person/day x 106€/day = **530€**
- **DAMM External services** for the tagging of sturgeons and data processing) - **5.500€**
- **DAAM Purchase of 20 GPS transponders** - 6.000€/GPS transponder - Total cost: **120.000€**.

Name of the picture: Action D.1: Monitoring sturgeon restocking

ACTION D.1 Monitoring sturgeon restocking



Monitoring sturgeon restocking



Ebro river

2 0 10 km



D. Monitoring of the impact of the project actions

ACTION D.2: Monitoring the target fish population of the water bodies

Description (what, how, where and when):

The monitoring will be coordinated by biologists of the DAAM. This Action will consist on making samples to determine if it is a relictual population or if some sturgeons arrive naturally to the targeted area of the project. Some characteristics of the samples:

1. These intensive samples will also allow knowing the situation of other species.
2. The monitoring will insist on determining potential areas available for reproduction for these species, as the river has changed a lot in recent years.
3. The samples will allow determining the use of these species in the estuary delta, some of these species use the waters at certain times of transition between fresh water and sea. The samplings will allow determining the importance of these habitats for these species.
4. Furthermore, the monitoring will allow the establishment of habitat management strategies in order to promote recovery of the species under study.

There will be a total of 17 sampling stations in water bodies including:

Sampling of the irrigation network

Time: sampling 5 days in late spring (June) and 5 days late fall (October).

Period: an annual campaign to coincide with the dates of closure of the channel network. The period can be extended in time from the months of November to March.

Methodological description: There will be an average of 20 annual fishing both hemidelta. It will use a device without electric fishing vessel that discharges through a 600 volt pulse. There will be fishing confined to critical points of accumulation of fish later take biometric data and determine the species caught. To complement the data obtained during the rescue will be a campaign of electric fishing during the months of August-September. The points will be randomly selected secondary channels and / or tertiary irrigation network.

Sampling of ponds

Time: two 10-day campaigns for all sampled ponds. Sampling periods in spring and autumn.

Methodological description: Network sampling points in different pools Delta (25 stations) which will be sampling by scientific fishing passive instruments (traps and nets). Species and biometric measurements will be taken from the sample of fish. In parallel, pending physical and chemical parameters of the water pools in the network of sampling points that Natural Park of Ebre Delta has already established.

Sampling of bays

Time: two 10-day campaigns in each bay. Sampling periods in spring and in autumn

Methodological description:

- Active fishing: fishing vessel is held constant frequency transects with different Punt both bays, covering different habitat characteristics. There will be species and measuring biometric data samples. Type of habitat.
- Passive Fishing and trammel nets used handles monofilamentoses of different mesh arranged in different areas such as the coast of the deepest zone.

Sampling the final section of the river (from the mouth to Flix)

Time: two 10-day Campaign to sample the final stretch of the Ebro River from the town of Flix to the mouth.

Period: 10 days of sampling in late spring (June) and 10 days in late autumn (October).

Methodological description: There will be a weekly sampling from boats with electric fishing device (through downloads 600 volt pulse intensity. Fishing will be done in alternative sections stretch from high to low every day is sampled 20 transects (3000 m / day) and then take biometric data and determine the species.

The monitoring indicators for the target fish population of the water bodies will be the following: species composition (Kottelat & Freyhof, 2007), population structure and IBICAT index (Agència Catalana de l'Aigua,

2006a; and new version of Sostoa *et al. in press*), using fikenets (Clavero *et al.*, 2006) and multimesh nets –at the Ebre Delta lagoons and bays- and electrofishing techniques (using Erreka III device, following Lobón-Cerviá (1991), bound or not to a boat –depending of the depth of the channel or the river-.

Finally, the consortium is committed to release fish caught by electric devices. On the other hand, it is important to point out that the scientific fishing permits issued by the Catalan Ministry of Agriculture, Food and Environmental Affairs (DAMM) already include this commitment.

The expected start date of Action D2 is 01.01.15 and the Action will end in 31.03.18.

Reasons why this action is necessary:

Monitoring the sturgeons is a key action in order to measure the success of the action.

Beneficiary responsible for implementation:

DAAM

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

Number of accidental catches of sturgeons by sport fishermen or other casualties derived from other activities conducted in the river (e.g. damming, navigation).

How was the cost of the action estimated?:

DAAM Monitoring coordinator (150 days x 50€/days): **22.500€**

DAMM Biologist technician (200 days x 110€/day): **22.000€**

DAMM biologist (200 days x 106€/day): **21.200€**

DAAM Consumables (fike nets, waders, gasoil, neopren suits, etc...): **12.000€**

Name of the picture: Fike nets for fish pass monitoring



Name of the picture: Map D.2 - Monitoring of target fish population

ACTION D.2- Monitoring of target fish population



● Monitoring point

— Ebre river

2 0 10 km

D. Monitoring of the impact of the project actions

ACTION D.3: Ecological status monitoring of the final stretch of the Ebre River (water, biota and sediments, except fish)

Description (what, how, where and when):

This monitoring action will consist on:

1. Analysis of physicochemical parameters related to water quality: pH, conductivity, turbidity, organic matter and key pollutants (Hg).
2. Sampling macrophytes and macroinvertebrates
3. Sampling of fish fauna
4. Sampling of sediments (grain size and chemical quality, specially the presence of contaminants such as Hg and organochlorines)

The sampling will be made with the use of boat for water samples and macrophytes. Multiparametrical probe analysis of water. Using electric fishing equipment and nets to catch fish from. Using dredge to capture sediment. Hoses and plankton surbers for macroinvertebrate sampling. The analytical laboratory of the contaminants will CTMFlux techniques and instrumentation required: AMA254 LECO, ICP-OS THERMO, SHIMADZU TOC.

It will identify 10 sampling stations: one upstream and one downstream of the three obstacles connectivity (Xerta weir, dam and weir Asco Flix), a Flix Meander and the remaining three in estuarine and deltaic area.

Sampling fortnightly regarding physicochemical parameters; monthly terms macrophytes and macroinvertebrates, and for seasonal sediments (4), throughout the duration of the project.

The monitoring indicators of this action will be the following: the protocols for assessing biological quality of rivers (BIORI, ACA, 2006) and hydromorphological quality of rivers (HIDRI, ACA, 2006) (http://aca-web.gencat.cat/aca/appmanager/aca/aca.jsessionid=5BfvSFnCK98YmsDxrVpq5YgppWPh4bpd0FWy7GyMTZnnzZrQW5Gm!1777165473!1165136947?_nfpb=true&_pageLabel=P1206254461208200588613&profileLocale=en) will be mainly followed, in agreement with the EU Water Framework Directive (2000/60/EC).

Moreover, water physicochemical quality parameters (temperature, electrical conductivity, pH and dissolved oxygen) will be obtained by means of portable multiparametric analytical instruments (YSI Professional Plus). Other physicochemical parameters (organic matter, Hg, organochlorines) from samples of water and sediments will be analyzed in a certified laboratory.

Furthermore, water current and river flow will be measured by means of a portable current meter (FP101 de Global Water) following Hauer & Lamberti (2006).

On the other hand, the analysis of habitat quality (IHF index (Pardo *et al.*, 2002), river connectivity (ICF index; Solà *et al.*, 2011), riparian vegetation (woody species composition (Folch i Guillén, 1986), and QBR index; Munné *et al.*, 1998), an aquatic macroinvertebrates (families composition (Tachet, 2000), IBMWP and IASPT indexes (Alba-Tercedor & Sánchez-Ortega, 1988, Alba-Tercedor *et al.*, 2002); EPT index, OCH index and ratio EPT/OCH (Barbour *et al.*, 1999); and FBILL index (Prat *et al.*, 2002)) will be done.

Preferably at the potential spawning grounds for fish target species, this analysis will be conducted in terms of hydrobiology (water depth, velocity, quality, annual cycles) and habitat characteristics (type of bottom: silt, sand, gravel, pebbles, rocks; presence and density of vegetation – macrophytes; accompanying ichthyofauna). Water current will be measured by means of a portable current meter and water quality parameters (oxygen, turbidity, dissolved oxygen) by means of portable analytical instruments and a Secchi disc. The coverage of macrophytes will be assessed by 5 m transects over a lineal distance of 100 m within and around the spawning site. Samples of the bottom will be obtained with a dredge and samples sieved in order to determine their granulometry. Additionally, information about the distance of the site from the mouth of the

river and potential migratory obstacles is going to be reported. All is going to be done in agreement with the EU Water Framework Directive.

Finally, the consortium is committed to release fish caught by electric devices. In this sense, it is important to point out the scientific fishing permits issued by the Catalan Ministry of Agriculture, Food and Environmental Affairs (DAMM) already include this commitment.

The expected start date of Action D3 is 01.01.15 and the Action will end in 31.03.18.

Reasons why this action is necessary:

The overall objective is to have a real knowledge both at the beginning of the project and during implementation to analyze the evolution of the parameters described and its relationship with the improvements and proposed actions and implementation of the project. The monitoring will also evaluate their impact and appropriateness as well as their proposed improvements and adjustments in the course of the project.

Specifically, it is necessary to have a preliminary assessment of the ecological status of this section, determine whether there are relictual populations or viable species and the factors of water quality and benthos that may affect them. These works from the beginning of the project are essential to support the decision making during the project and in subsequent years.

Beneficiary responsible for implementation:

DAAM

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

1. Water quality data and their seasonal variations and interannual
2. Data diversity of macrophytes, surface coating and seasonal evolution and interannual
3. Information on presence/absence of contaminants in sediments

How was the cost of the action estimated?:

DAAM Staff: Coordinator (150€/day x 60 person-days): **9.000€**

DAAM local travels: 2.500€. Local travels from Deltebre (DAMM headquarters) to Flix (78 km of distance one way), Xerta (40 km) and Ascó (70 km) and Tortosa (25 km). 0,30€/km x 5000 km= 1.500€ + 19€/day for daily allowance x 52 days=1.000€

DAAM Subcontractor: Monitoring of the final stretch of the Ebre river (water, biota and sediments, except fish): **43.000€**

Name of the picture: Map D.3 - Ecological status monitoring of the lower Ebre river

ACTION D.3- Ecological status monitoring of the lower Ebre River



Monitoring point



Ebre river

2 0 10 km

D. Monitoring of the impact of the project actions

ACTION D.4: Monitoring of the ship locks improved management (at Xerta's weir and Flix dam) and the new fish passes (at Xerta's weir and Ascó's weir)

Description (what, how, where and when):

The objective of this action is to evaluate the limitations on improved ecological connectivity for fish at the lower Ebre River. This Action will consist in an assessment of the efectivity of 2 fish passes (fish lift of the Xerta's weir & fish ramp of the Ascó's weir) and the fish friendly management of two ship locks (Xerta's navigation channel and Flix dam):

- Direct evaluation of the rates fish passage through these fish ways by the installation of a fish trap at their upstream (3 campaigns, about 14 days of each). The construction of 4 fish traps to be installed at the exit of two devices for fish passage and two fish locks will also proceed.
- Direct evaluation of the fish crossing rates by visual counts for a whole day (big fish, more than 200mm, coinciding with each trapping campaign).

Action D.4 will be carried out by the researchers of the CERM, that will monitor environmental parameters and the presence and crossing rates in the fish ways of the target fish species.. IDECE will be responsible of the contacts with land owners, managers and other authorities involved. The consortium considers that it is interesting to contact with land owners, managers and other authorities from the neighbourhood in order to involve them in the project, especially for the prevention of hypothetical complaints of illegal fishing. Moreover, their involvement could also be relevant for the protection of the fish traps from theft or damage (i.e. in case of big floods).

The monitoring indicators to be used in this action will be the following:

On the one hand, methods that estimate fish crossing rates and compare upstream and downstream fish populations (Ordeix *et al.*, 2011). The barrier effect will be deducted from fish crossing rates, deviations of size frequencies in the water intake of the fish pass and downstream reach of the obstacle or deviations of size frequencies in reaches upstream and downstream of the obstacle (Lucas & Baras, 2001; Roni, 2005). The evaluation of barrier effects will be undertaken during high migration activity periods of the species expected to be present in each river stretch, so that the barrier effect will be maximised.

On the other hand, the application of different techniques to estimate fish crossing rates and deviations in size frequency will be based on the type of fish community present and the characteristics of the studied river reach, obstacle and fishway. Visual & video counts (Travade & Larinier, 2002; Marmulla & Welcomme, 2002) are limited by water turbidity and the presence of a large number of migrating fish. Therefore, this technique will be only used at the underwater hide of the fish lift from the Xerta's weir, and in the continuous Riverwacher Fish Counter (Infrared Vaki system & video recorder) installed at the entry of their fish lift. Most of the direct estimation techniques will include the installation of fish traps at the water intake upstream of each facility (Travade & Larinier, 2002; Marmulla & Welcomme, 2002; Clavero *et al.*, 2006). The indirect estimation techniques will also consist of methods of comparison of fish populations on both sides of the obstacle using electrofishing procedures (Santos *et al.*, 2006).

Finally, the consortium is committed to release fish caught by electric devices. In this sense, it is important to point out the scientific fishing permits issued by the Catalan Ministry of Agriculture, Food and Environmental Affairs (DAMM) already include this commitment.

The expected start date of Action D4 is 01.03.06 and the Action will end in 30.06.18.

Reasons why this action is necessary:

A correct monitoring should inform about what species, proportion of individuals of different sizes and sexes

and in which periods passes across these fish ways. It is necessary to know the efficiency of these new 4 fish ways in relation to the requirements of the target fish species and to the whole fish population of the Lower Ebre.

Beneficiary responsible for implementation:

CERM

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

The evaluation of fish crossing rates in each device and for each campaign will also include, in any case, the calculation of a number of parameters and recording conditions existing, if possible, when it carries out the monitoring process: water levels at different parts of the device, speeds, flows (river course and device), weather, moon phase, water turbidity, temperature, pH, conductivity and oxygen, among others.

How was the cost of the action estimated?:

- **IDECE staff** (Technical Director) (200€/day x 50 person-days): **10.000€**
- **IDECE**: 4 traps tailored to each site: 1.200€ x 4 sites = **4,800€**
- **CERM staff** (2 biologists/environmentalists) (145€/day x 276 person-days): **40.020€**
- **CERM local travels**. Travels from CERM headquarters in Manlleu to Tortosa (194 km one way), Flix (175km), Xerta (193km) and Ascó (168km). 0,30€/km x 10.000 km= 3.000€ + 19€/day for daily allowance x 79 days=1.500€. **TOTAL: 4.500€**

Name of the picture: Map D.4 - Monitoring of the ship locks improved management and new fish passes

ACTION D.4- Monitoring of the ship lock improved management and new fish passes



D. Monitoring of the impact of the project actions

ACTION D.5: Socio-economic impact assessment study

Description (what, how, where and when):

The project envisages undertaking a systematic analysis to identify and evaluate the potential socio-economic impacts in the Ebre Delta area. The assessment will identify and distinguish numerous measurable impacts, namely: a better standard of living due to increased access to employment, business opportunities, local business competitiveness, economic diversification, among others.

A preliminary analysis identifying and prioritizing considerations and required information will be necessary. Afterwards a baseline conditions definition will be required focusing on gathering information about the socioeconomic environment and context of the project including defining measurable indicators of valued socioeconomic components. Based on the analysis of information gathered from issues scoping, baseline profiling to predict possible socio-economic impacts, there will be necessary to identifying trade offs between the adverse and beneficial impacts of the project.

A strong socioeconomic monitoring of the project results' will be established, which could let to targeted policy recommendations on the replication and scaling up of project activities after completion. Socioeconomic impact assessment will be a useful tool to help understand the potential range of impacts of the LIFE MIGRATOEBRE project. This understanding can help maximise positive impacts. It is important to determine not only the full range of impacts, such as changes to levels of income and employment, quality of life, but also the implications of each particular change. The socio-economic impact assessment study will be an important instrument for the dissemination of the project's results. The study will, thus, be presented to national, regional and local authorities and relevant stakeholders either through the final conference or targeted bilateral visits.

Moreover, an assessment of ecosystem services is also envisaged. In this sense, the LIFE MIGRATOEBRE project has an important rule associated to the environmental or ecosystem services. There will be important humankind benefits from a multitude of resources and processes that are supplied by ecosystems, which will be improved, namely: ecotourism, angling, education, welfare of the local communities, etc.

Finally, for the **ecosystem services**, some indicators to be used could be the number of visitors of the temporary exhibition (ecotourism), number of visitors of the underwater hide (ecotourism), number of licenses (angling) and number of students attending environmental programs (education), following Costanza (1997). For the **Socio-economic impact assessment study**, it will be based on the following indicators: Creation of direct and indirect employment, changes to levels of income, changes to quality of life, among others.

The expected start date of Action D5 is 01.07.17 and the Action will end in 31.12.17.

Reasons why this action is necessary:

Social and economic assessment of the impacts of the execution of the LIFE MIGRATOEBRE project can assist in planning and decision making and guide regional, national or European public authorities and other relevant stakeholders responsible for this field of activity.

Moreover, an assessment of the ecosystem services will provide new considerations for migrating fish, river connectivity and river flow management that will take into account all types of beneficiaries.

Beneficiary responsible for implementation:

IDECE

Responsibilities in case several beneficiaries are implicated:

FCatLP will undertake the assessment on the ecosystem services

Expected results (quantitative information when possible):

- Study on the socio-economic impact of the project.
- Identification of the most important ecosystem services associated to this project in the lower Ebre River and its delta.
- Identification of the interactions between ecosystem services, migrating fish, river connectivity and river flow.
- Selection of several indicators of ecosystem services to follow.

How was the cost of the action estimated?:

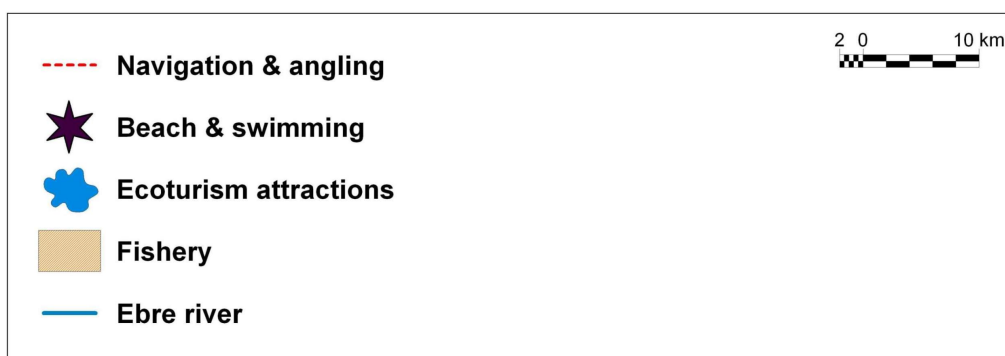
IDECE Staff (socio-economic development technician) (150€/day x 42 person-days): **6.300€**

FCatLP (143€/day x 28 days): **4.004€**

Name of the picture: Map D.5 - Socio economic impact assessment study

Map of the LIFE MIGRATOEBRE project area

ACTION D.5 Socio-economic impact assessment study



E. Public awareness and dissemination of results

ACTION E.1: General Communication activities

Description (what, how, where and when):

Project website and project's graphic identity

The project website will be the main tool for disseminating information about the project and will feature public and private part. The private part will be used for information exchange between the partners of the consortium and for uploading deliverables data and reports. The internal area will be used to support communication between partners. The web will support private on-line discussion around specific topics in the project scope as well as the monitoring of project progress and the preparation of reports. The public part of the web-site will be used for dissemination of the project. The public part will be linked to the website of each partners, as well as to the website of other relevant EC funded projects. The public site will also be used to announce recent project breakthroughs and public events. The project website will be online within the first six months of the project and it will be regularly updated. It will be kept for at least five years after the end of the project and it will be in Catalan, Spanish and English.

The project's graphic identity will be also developed. It will serve to uniform all project promotion material, and to help the project to be easily recognized among public.

Media work

beneficiaries will attempt to achieve coverage across a wide variety of media: radio, television, newspapers, magazines and news websites and blogs as well. Namely:

- 3 press conferences – In the beginning of the project, a press conference will be organized to present project activities and goals. In addition another press conference will be organized at the end of the project to present the project results. During the project, field press conference will be organized to emphasize project activities.
- 2-days press trip for 25 journalists and press releases

The expected start date of Action E1 is 01.07.14 and the Action will end in 30.06.18.

Reasons why this action is necessary:

Having a website accessible to the wide public, which uses the internet to find information and news, is vital for the dissemination of the project findings and contents. It is also necessary to facilitate the visual identification of the project from the beginning and provide an online platform where all interested parties can follow and consult the developments of the project.

The graphic identity of the project is necessary in order to facilitate visual identification of the project from the beginning and give homogeneity to all communication materials generated. This will reinforce the presence and penetration of the project.

It is necessary in order to have media work prepared and explaining the project's objectives and results in order to achieve an important coverage across a wide variety of media: radio, television, newspapers, magazines and news websites and blogs.

Beneficiary responsible for implementation:

FCatLP

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

The expected results of this action are the following:

- 1) To publicize and disseminate the project among the widest possible audience (general public, media), local, national and international.
- 2) To create a permanent source of information and project updates.
- 3) To create an own image of the project

In particular, the quantitative results of the action will be:

Number of press conferences

Number of press trips

Number of journalists participating in the press trips

Number of press releases

How was the cost of the action estimated?:

FCatLP Staff – Communication manager - 100 person/days x 143€/day = **14.300€**

FCa **FCatLP External service** – Project's graphic design – **2.000€**

FCatLP External service - Website designer responsible for the design of the project's website, definition of its contents and maintenance of the website at least five years after the finalization of the project – **2.800€**

E. Public awareness and dissemination of results

ACTION E.2: Notice boards

Description (what, how, where and when):

4 on-site panels (90x90cm) will be produced and be displayed at strategic places accessible to the public. Panels will be led light panels, with a TV integrated in the panel (similar to the underwater hide of Mosellum fish pass, from Germany).

Panels will be located at the main project sites, with the target habitats or species directly visible (if possible) behind the boards. The Ebre Delta is a very touristic spot. Thus, panels will be displayed at the different approach roads and information points in Catalan, Spanish and English ensuring that locals and tourists alike are well informed. Finally, logos of LIFE and Natura 2000 as well as those from the project beneficiary and partners will be well displayed, meeting the LIFE contractual requirements.

The expected start date of Action E2 is 01.04.16 and the Action will end in 30.06.16.

Reasons why this action is necessary:

It is very advisable to have didactic and visual material on-site capable of explaining to the public the actions and activities that are conducted in the area.

Beneficiary responsible for implementation:

FCatLP

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

- 1) To provide information panels fixed to meet the information needs of public.
- 2) To channel public use designated areas for this purpose.

How was the cost of the action estimated?:

- **FCatLP- Staff cost** (Communication manager) (10 days x 143€) - **1.430€**
- **FCatLP- External assistance** - Panels designer responsible for the design of the panels : **1.500€**
- **FCatLP- External assistance** - Panels manufacturing and installation - 1.300€/panel x 4 panels: **5.200€.**

E. Public awareness and dissemination of results

ACTION E.3: LIFE MIGRATOEBRE Layman's Report

Description (what, how, where and when):

The layman's report will be produced in paper (1.000 units) and electronic format at the end of the project. The report will be 5-10 pages long and present the project, its objectives, its actions and its results targeted at a non-specialist audience, including political decision-makers. The layman's report along with the project website will be the main tools for disseminating information about the project. It will be produced in both print and electronic format and published in Catalan, Spanish and English.

The expected start date of Action E3 is 01.01.18 and the Action will end in 31.03.18.

Reasons why this action is necessary:

It is necessary to have a document that summarizes the project's objectives, actions and results and that can be distributed among nonspecialist audience and serves to inform decisionmakers and non-technical parties of the project objectives and results

Beneficiary responsible for implementation:

FCatLP

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

Elaboration of the Layman's Report for paper and electronic format

How was the cost of the action estimated?:

FCatLP - Staff cost (communication manager, 5 days x 143€/day) - **715€**

FCatLP - Other costs - Translation and printing - **4.500€**

E. Public awareness and dissemination of results

ACTION E.4: Exhibition on fishes and the lower Ebre river

Description (what, how, where and when):

The exhibition will be addressed to the general public as well as to farmers, fishermen, anglers, among other sectors. Sturgeon, eel, twaite shad and sea lamprey will become icons and trade marks for a healthy lower Ebre River and Ebre delta. They are **flag ship species** to move towards a "Healthy Ebre River and Delta".

The exhibition will include historical pictures, oral stories of elder people and the bigger picture for a future "Healthy Ebre River and Delta". An audiovisual will complete the set of different elements of the expo. To generate the documentation and information, a research on local sources (museums, archives) and interviews with old fishermen and elders will be necessary.

The contents will include the following topics:

1.- Ecological Connectivity: Why it's important?; Associated problems and barriers; evolution of the river along the last 100 years.

2.- River Species and ecosystem: fish; mammals, birds, invertebrate, riparian and aquatic vegetation; evolutions and trends.

3.- Folklore and popular background: to recover histories and images on the activities and life in the river; species fished and hunted and associated uses; activities that were transforming the river; the introduction of exotic and invasive species.

4.- Proposals for the Future: viability of enhanced connectivity measures; breaking barriers to connectivity; viability of fish reintroduction (eel, sturgeon); control and eradication of exotic species

These thematic blocks might be also adapted to the local dimensions of the different exhibit halls .

During the project lifetime, the villages where the exhibition will be shown are municipalities of the project area, namely: Tortosa (35.000 inhabitants), Amposta (21.500 inhabitants), Deltebre (15.000 inhabitants), Gandesa (12.000 inhabitants), Sant Carles de la Ràpita (13.000 inhabitants), L'Ametlla (8.500 inhabitants), Mora d'Ebre (5.000 inhabitants) and Flix (4.000 inhabitants).

In a second phase, and after the project termination, the exhibition could also be showed in other places in the region: Lleida (University), Tarragona (Rovira i Virgili University), Barcelona (Blau-Natural History Museum and Catalunya-La Pedrera Foundation), Manlleu (Ter River Museum). The exhibition will be advertised by an effective communication plan, including daily news and TV programs that will help generate a lot of attention for this subject, will strengthen the support and generate visitors for the region, too.

The responsible for this action will be Fundació Catalunya - La Pedrera and its MónNatura Delta de l'Ebre interpretation. In each of the proposed villages, FCatLP will collaborate with a local institution that will be subcontracted. The exhibit presentation (and basis of their distribution) will be held in the Museum of les Terres de l'Ebre (Amposta). In the case of Tortosa (the capital of the region), the IDECE will closely collaborate with FCatLP.

The expected start date of Action E4 is 01.07.16 and the Action will end in 30.06.18

Reasons why this action is necessary:

Communication is essential in this kind of proposals. A central element of this **project will include a complete itinerant exhibit** on the project's target fish species and the traditional fisher culture in the Ebre

delta (sturgeon, eel, twaite shad and sea lamprey). This exhibit will be accompanied and be complementary with other actions to raise public awareness of this species and their requirements in the Ebro river, and to involve and to engage local population to achieve project's expected results (actions b, c, d, f,).

Beneficiary responsible for implementation:

FCatLP

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

Preparation of the exhibition and its installation in different local municipalities of the Ebre Delta with the objective to reach a wider public.

Number of exhibitions

Number of visitors

Number of press releases

How was the cost of the action estimated?:

- **FCatLP staff** (100 days communication manager x 143€/day) = **14.300€**

- **FCatLP (Subcontractor to be determined)**: Design and production of an audiovisual on the Ebre river and fishes. Duration: 7-12 minutes. Edition of a Teaser (45-60 sec.) to be included in Social Networks and Internet (YouTube, Facebook, Project's Website, etc. No voice, only music and text in Catalan, Spanish and English: **15.000€**

- **FCatLP (Subcontractor to be determined)**: Production of exhibit panels: **6.000€**

- **FCatLP (Subcontractor to be determined)**: The exhibition will be shown in 8 different municipalities of the project area: Tortosa, Amposta, Deltebre, Gandesa, Sant Carles de la Ràpita, L' Ametlla, Mora d'Ebre and Flix. The amount includes transport, personnel for the set up and dismantling of the exhibition, hire of vehicles and insurances - **9.500€**

- **FCatLP (Subcontractor to be determined)** (Exhibit commissioning): **15.000€**

- **FCatLP (Subcontractor to be determined)** (Photographic databank on the local species, habitats, landscapes, human activities, etc...): **5.000€**

- **FCatLP (Subcontractor to be determined)** (Compilation of information for the exhibit regarding environmental educational activities and observation and study of the natural environment): **5.000€**

- **FCatLP (Subcontractor to be determined)** (Design and edition of 3.500 booklets - exhibit guide): **15.000 €**

- **FCatLP - Travel costs: 4.500€** Travels from FCatLP headquarters in Barcelona to Tortosa (194 km one way), Flix (175km), Xerta (193km) and Ascó (168km). Also local travels from FCatLP Mon Natura Delta (centre of knowledge of the region owned by FCatLP located in Amposta). The cost of travels are calculated according to the following parameters: 0,30€/km and 19€/day for daily allowance. For FCatLP, this means travels for a total of 10.000km for the project lifetime (2.500km/year) and approximately 80 daily allowances.

E. Public awareness and dissemination of results

ACTION E.5: Community Awareness Campaign

Description (what, how, where and when):

This action is basically focused on a social network. A communication event with TV, press (local and national) and politicians' presence is also expected. Social Media is a powerful tool that will be used to raise awareness for LIFE MIGRATOEBRE project locally as well as nationally and internationally. Used properly, the idea to use social media is that it could allow to quickly drawing attention to our project, possibly leading to news coverage. In addition, it could also allow connecting the project with like-minded people, generating interest and support for the project. A campaign in the Social Networks (FaceBook, TWitter, Instagram, YouTube and Flickr) will help raise citizens' involvement in the conservation of fishes and the river Ebre.

The main action will be to develop a photo contest under the tag #lomeuriuEbre #myriverEbre (or similar), where the topic will be to reflect personal experiences related to the river and its fishes, visions of the river, favourite spots, observed fauna and flora, etc. The winners will be rewarded with a price (to be decided).

This action will be previous to the following action "Network of volunteers" , to help create a larger social basis and general support to the project.

The expected start date of Action E5 is 01.07.15 and the Action will end in 30.06.18.

Reasons why this action is necessary:

Raising the awareness among general public is of great importance of the LIFE MIGRATOEBRE project, its activities, its objectives and one of the main effective ways is through a Community based campaign. Moreover, the land surrounding the Ebro is mainly used for agriculture and livestock farming. Farmers will be included in this action as well as other targeted public. In this sense, in 2013, the consortium already contacted and explained the project to the two Presidents of the main -and ancient- agriculture organizations of the Ebre Delta: the *Confraria de regants del canal de la dreta de l'Ebre* and the *Confraria de regants del canal de l'esquerra de l'Ebre*. They showed their interest in being informed on its progress and to analyse how farmers could be involved in it.

Beneficiary responsible for implementation:

FCatLP

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

- The general public, local community and all other interested parties will get up-to-date information on the project, its progress and results.
- The awareness of general public, local community and all other interested parties about the importance of the project will be increased.

Some quantitative indicators will be:

Number of Twitter' followers

Number of tweets

Number of Facebook followers

Number of Instagram followers

How was the cost of the action estimated?:

FCatLP (Subcontractor to be determined) Communication external services will consist on the

subcontract of a community manager, a professional who will collaborate with the personnel of FCatLP in achieving fans or followers on the project's social profiles and interact with them. It is envisaged that FCatLP will subcontract a free lance professional or a communication company for a total amount of 18.000€ for the 3 years (6.000€/year or 500€/month): **18.000€**

FCatLP Staff (50 days communication manager x 143€/day): **14.300€**

E. Public awareness and dissemination of results

ACTION E.6: Network of volunteers

Description (what, how, where and when):

LIFE MIGRATOEBRE project will contribute to raise the awareness and knowledge on the river and wetlands ecosystem troubles. The ambition to create a network of volunteers associated to the reintroduction or improvement of sustainable populations on European sturgeons and other native migratory fish species in the Ebre River and its Delta can be a focal point for the future and the driving force for the local communities, neighbourhood, tourism stakeholders, nature managers, water managers, fishery managers, regional and local authorities and hydropower companies to work together.

Through the social network, the consortium envisages to create different groups of volunteers in the main villages of the lower Ebre: Tortosa, Amposta, Mora d'Ebre and Flix. After this first call, other groups of volunteers from other neighbouring villages could be included. The establishment of active groups of volunteers will generate an important social support to achieve project's objectives. Focus will be on different specific practitioners: Youth, families, seniors, fishermen, anglers, farmers, electric companies, tourism stakeholders, regional and local authorities. The managers of the power plants and the nuclear plant will be specifically involved in the awareness dissemination actions. Regarding farmers, the consortium already contacted the two Presidents of the main -and ancient- agriculture organizations of the Ebre Delta: the *Confraria de regants del canal de la dreta de l'Ebre* and the *Confraria de regants del canal de l'esquerra de l'Ebre*. They showed their interest in analysing how farmers could be involved in it

The responsible for this action will be Fundació Catalunya - La Pedrera. In each of the proposed villages, FCatLP will collaborate with a local institution. Different "ad-hoc" presentations will be organised for this different groups. The actions pursued with this volunteers network will be specially to help in the task of environmental surveillance of the river and the key fish species, as well as to help promote the goals of the project among the population. Presentations will be organized in Casa de l'Aigua at Tortosa, Museu de les Terres de l'Ebre at Amposta, Consell Comarcal de la Ribera d'Ebre at Mora d'Ebre and Reserva Natural de Sebes at Flix.

Moreover, Casa de l'Aigua, Grup de Natura Freixe, the Museu de les Terres de l'Ebre and the Parc Natural del Delta de l'Ebre will also promote this event to its members and supporters (at no cost for the project). It will start in spring-summer 2015.

Some specific materials (brochures and a poster) will be produced to engage two key actors:

- Professional fishermen. In close coordination with the Generalitat's DG of Maritime Fisheries. At least, 2 local presentations will be organised with this group.
- Anglers (sportive fishers). In close coordination with the Generalitat's DG of Maritime Fisheries and DG of Nature. At least, 2 local presentations will be organised with this group.

A previous step to achieve this action will be to create a larger social receptiveness, through a Social Media campaign and photo contest.

The expected start date of Action E6 is 01.07.15 and the Action will end in 30.06.18.

Reasons why this action is necessary:

The establishment of active groups of volunteers will generate an important social support to achieve project's objectives.

Beneficiary responsible for implementation:

FCatLP

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

- The general public, local community and all other interested parties will get up-to-date information on the project, its progress and results.
- The awareness of general public, local community and all other interested parties about the importance of the project will be increased.

In particular, some quantitative indicators could be:

Number of networks created

Number of participants

Number of "ad-hoc presentations to engage volunteers

How was the cost of the action estimated?:

FCatLP Staff (50 days communication manager x 143€/day): **14.300€**

FCatLP (Subcontractor to be determined) : 30.000€. Communication external services will consist on the subcontract of a company or more than one that would be responsible for the organization of events in order to foster the activities of the different groups of volunteers to be set up. The subcontractor/s will be the responsible to organize activities addressed to specific targeted groups of volunteers such as summer working camps, weekend working camps, leisure monitors, among others. It is envisaged to subcontract a total amount of 30.000€ for the 3 years (10.000€/year), taking into account that the project foresees the creation of 4 groups of volunteers in the main villages of the lower Ebre, namely Tortosa, Amposta, Mora d'Ebre and Flix.

E. Public awareness and dissemination of results

ACTION E.7: UnderWater Hide

Description (what, how, where and when):

Action E.7 corresponds to a small visitor centre to be installed in the underwater hide. The UnderWater Hide will consist in a window of the fish lift exit upstream of the Xerta's weir, to show migrating fish, and an associated panel to explain this project, threatened fish species, fish migration needs and Natura 2000 protected areas of the lower Ebre river and Delta. It is important that the lift has a built-in sight glass associated with a small space or visitor center, allowing to observe -and also monitor- the fish during the migration period. Many fish lifts are a real tourism attraction (I. e. Boneville fish passage center (EUA), Holyoke Fishlift Center (EUA), Mosellum (Alemanya) i Amoskeag Fishways Learning and Visitors Center (Manchester, UK), among others).

The underwater hide (action E.7) of the fish lift from the Xerta's weir will be managed by Fundació Catalunya - La Pedrera although the owner of the navigation channel is the IDECE. The company managing the power plant (Hidroeléctrica de Xerta) has expressed its commitment with the project (please refer to ANNEX 1). CERM will elaborate the scientific contents in the visitor centre.

The expected start date of Action E7 is 01.07.17 and the Action will end in 30.12.17.

Reasons why this action is necessary:

A visitor centre in the lift is another channel of dissemination and awareness of the project, specially in this area of great tourism.

Beneficiary responsible for implementation:

CERM

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

- The general public, local community and all other interested parties will be able to visit the lift.
- The awareness of general public, local community and all other interested parties about the importance of the project will be increased.-
- Nº of visitors

How was the cost of the action estimated?:

CERM Staff (Environmental technicians) (280 person-days x 145 €/day): 40.600€

FCatLP Staff (Communication manager) (50 person - days x 143€/day): 7.150€

E. Public awareness and dissemination of results

ACTION E.8: Organisation and participation in conferences and related events

Description (what, how, where and when):

It is envisaged organizing and participating in different kind of events during the project lifetime. The organization of such events is an effective way of raising the profile of the work undertaken and engaging key stakeholders. It is also an opportunity to share and exchange with other experts in the field. Thus, the project envisages the following events:

E8.1. PARTICIPATION IN THE WORLD FISH MIGRATION DAY EVENT

The **World Fish Migration Day** is a new concept to worldwide bring a greater understanding of migratory fish to the general public. Raising awareness and creating commitments for communities in the different river basins is an essential aspect of working on fish passage issues. By creating commitments through all levels of the community and multiple stakeholders, conservation measures can be carried out more efficiently and financial opportunities can be maximized. The "Fish Migration Day" is an event to get people involved in environmental issues and, in particular, paying attention to the river fish and its migrations. Globally, it will start in New Zealand and, following the sun around the world, it will end in North America. 20 organizations have already supported the idea. Participating organizations will organize their own event and arrange their own communication under the common banner of the World Fish Migration Day. The central organization of the World Fish Migration Day will take care of the international coordination and the main website (www.worldfishmigrationday.com). In Catalonia, this event is promoted by the Catalunya-La Pedrera Foundation and the CERM. Target audience/stakeholders involved is general public.

The presentation of the "Fish Migration Day" in Catalonia will be held in Barcelona in late May 2014. Afterwards, different related activities linked to fish and rivers will be organised in 5 different Catalan locations (being one of them located at the Information Centre of Fundació Catalunya-La Pedrera in the Ebre Delta, Mon Natura Delta). In 2015, a new location of the "Fish Migration Day" in Catalonia will be at Xerta's weir, including workshops and visits to the fish lift and its underwater hide

E8.2. CONFERENCE ON "MIGRATORY FISH CONSERVATION AND RIVER ECOLOGICAL CONNECTIVITY RESTORATION",

To spread the results of the project, a **Final conference on "Migratory Fish Conservation and River Ecological Connectivity Restoration"** will be organised and attended by national and international researchers and managers.

A final conference (month 47) at the end of project with the aim of disseminating project results exchanging good practices and developing cooperation relationships with other EU funded projects. Networking with other LIFE European projects will be fostered in the final conference. The reports elaborated during the project lifetime regarding the implementation of conservation actions with quantitative indicators will be disseminated in the final conference in order to facilitate reproduction and transferability of the project. The final conference will be held in the Delta Ebre and representatives of the European Commission will be invited. It is expected a participation of 150 people in the final conference. A Carbon compensation scheme will be included in the organization of this Conference. Target audience and interested parties at local, regional, national and European level will be informed about these events by direct invitation, through the mass media, the official website and the information channels of the partners.

The expected start date of Action E8 is 01.01.15 and the Action will end in 30.06.18.

Reasons why this action is necessary:

The presentation of the project results in the final conference will have a significant impact on an expert public opinion who may be interested in collaborating with project partners or implement the project actions

elsewhere. The celebration of conferences and meetings gives the public the opportunity to show the results of the project to hundreds of people and make personal contacts with experts whose collaboration (and advice) can add value to the project.

Beneficiary responsible for implementation:

FCatLP

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

150 general audience attending the final conference

How was the cost of the action estimated?:

- **FCatLP - Staff cost** (Communication manager) (50 days x 143€) – **7.150€**

- **FCatLP - Other costs** (Organisation of the Final Conference – 150 pax x 25€/pax (including subsistence and translation) - **3.750€**

E. Public awareness and dissemination of results

ACTION E.9: Dissemination activities for students

Description (what, how, where and when):

Action E.9 will consist on the organization of activities for secondary and high school local children (9-16) in schools of the project area. The dissemination of the project activities among scholars is considered essential for the project impact, since not only children will be aware of the project but also teachers and parents. These activities will consist on field visits and work with materials especially prepared for this aim.

The dissemination activities to be implemented with students are focused to change attitudes regarding river and wetlands habitats conservation, fish connectivity improvement, and native fish species conservation, especially European sturgeon, European eel, twaite shad and sea lamprey. It will include talks and field trips and an environmental educational program. We expect the participation of 40 scholar groups and a total of approximately 1.000 students. The program will include the visit to an important and feasible place for fish migration in this area (i.e. the outlet channel of the Tancada lagoon, in the Ebre Delta, the Xerta's weir, the Ascó weir and the Flix dam). In the abovementioned locations, students will also participate in a workshop focused on fish biodiversity and fish migration.

The expected start date of Action E9 is 01.07.16 and the Action will end in 30.06.18.

Reasons why this action is necessary:

Raising the awareness among the primary and secondary local students on the importance of the LIFE project, its activities, its objectives will allow to assure the local implication in the project.

Beneficiary responsible for implementation:

FCatLP

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

Environmental awareness and understanding the project amongst kids and scholars will improve.

- Participation of 1000 students throughout the project, making an average of 2 monthly activities for 2 school years.
- Development of materials for teachers: 40 guides
- Development of materials for students: 1.000 copies
- Preparation of material for the activity monitors: 40 guides
- Information of school activities on the website.

How was the cost of the action estimated?:

FCatLP - Staff cost (Communication manager) (100 days x 143€) – **14.300€**

FCatLP - Other costs (Preparation, edition and publication of educational material): **2.000€**

F. Overall project operation and monitoring of the project progress

ACTION F.1: Project Management by IDECE

Description (what, how, where and when):

This action deals with development of the project's methodology to be used by the coordinator and all partners. The well-balanced team will support the project with vision, project management skills, experience, communication experiences and analytical skills. The objective of this action is to ensure that the project meets its objectives within budget and scheduled timescales. Tasks will include monitoring project progress, tracking deliverables and reporting back to the consortium among others. Special emphasis will be put in the ecological footprint of the own project development as well as in the quality control of the same.

The **project Coordinator**, Mr. Jordi Borràs, will be part-time dedicated to the project. His duties, as Director of the IDECE, will not allow him to devote more time to the project. Regarding the management of the project (Actions F.1 and F.2), Mr. Borràs will devote a 25% of his dedication.

A **Deputy Coordinator** will also be appointed, Mr. Juan Carlos Alemany, who will be the responsible for the day-to-day activities and will be in charge of the technical, legal, contractual and financial matters of the project. Mr. Alemany will be part-time dedicated to the project. Regarding to the management of the project (Actions F.1 and F.2), Mr. Alemany will devote to these tasks a 28% of his time.

Finally, the management structure will also include a **Dissemination Coordinator**, provided by FCatLP.

Finally, Mr. Marc Ordeix, from the CERM, will be the **Scientific Coordinator** of the project. Concerning the management of the project (Actions F.1 and F.2), Mr. Ordeix will devote a 35% of his time to management tasks. Marc Ordeix is a biologist from the University of Barcelona, Diplomate in Water Technology from the Polytechnic University of Catalonia (Barcelona) and Master in Conservation of Nature and Natural Resources Conservation by IUSC (Barcelona). Professionally, he worked on analysis of water and control of wastewater treatment plants between 1999 and 2001. He also participated in numerous zoological and limnological studies. Since 2001, he is the coordinator of the CERM, Center for the Study of Mediterranean Rivers, located in the Museum of the Ter River, in Manlleu (Catalonia), a non-profit organization which has as its purpose the study, dissemination and preservation of the Ter River and, by extension, other Mediterranean rivers. The CERM's awareness issues -it provides training to thousands of students each year- and River conservation projects activities are mainly associated to ecological status assessment of rivers and wetlands (riparian vegetation, aquatic macroinvertebrates, fishes, etc.), and assessment of solutions to improve river connectivity for fish and ecological restoration projects of water inner systems. The CERM is also involved on environmental education and public -riparian restoration and fish migration improvement-. CERM works essentially in the whole of Catalonia but also in other areas of Spain and participates in several international projects, collaborating with universities and other institutions. Marc has participated in different European projects:

- Interreg IIIC, COR! - Community rivers - *Ecological quality and connectivity for fish improvement in rivers and reservoirs, and its assessment (Wales, United Kingdom; Holland; South Moravia, Scek Republik and Catalonia)* . Coordinator: Torfaen County Borough Council, 2004-2007. EU contribution: 450,000 €.
- Interreg IVB, SUDOE (SOE1/P2/P248) - RICOVER - *Establishment of guidelines for management and riparian restoration in the Iberian Peninsula and exchange of experiences in the evaluation of its ecological status and biodiversity (Portugal, Extremadura and Catalonia)*. External expert. Coordinator: Centre Tecnològic Forestal de Catalunya, 2008-2011. EU contribution: 1,798,182 €.

Finally, in order to guarantee a smooth management of project, an **administrative officer** with responsibilities in contractual, legal and financial issues will partly work for the project (15% dedication).

The main project coordination tasks will include:

- Consortium Agreement will be signed between the partners to secure a professional working cooperation and legal basis for each partner's responsibilities in the project. The agreement states the role of the Management Structure, the responsibilities of each partner regarding delivery of results and reporting inputs, actions to be taken if a partner defaults on its tasks and other administrative arrangements within the consortium.
- Overall project management and planning. To ensure effective and efficient execution of the contract and work programme, the budget and schedule. The coordinator will maintain the plan and reports against the foreseen plan and provide revisions of the plan (if necessary) as agreed by the project's management committee.
- Project finance planning and management. The project coordinator will receive all payments made by the EC and administer them regarding its allocation between contractors and activities. The coordinator will be responsible for the obtention of audit certificates by each partner, when required. In this sense, it is important to point out that concerning the staff of the public entities involved in the project (IDECE, DAMM and IRTA), it will be permanent staff specifically seconded to the project.
- Project administration. All the financial questions arising from the project will be addressed by the project financial coordinator. Regarding the administrative tasks, an administrative coordinator, is foreseen on a part time basis.
- Reporting. The project coordinator will be responsible for the deliverables and management and progress reports, cost statements, final report and layman's report. The coordinator will monitor that work (including deliverables and milestones) is progressing according to the project plan and schedule. Management reports and cost statements will be made by the partners individually on the basis of templates made available through the coordinator. This task includes the preparation of the Inception Report (31/03/2015), the first mid-term report with payment request (31/12/2015), the second Interim report (30/06/2017) and the final report (31/07/2018) jointly with the necessary payment requests.

All the documents will be discussed and agreed upon by all the partners before being sent to the EU Commission. In addition to all the above mentioned reporting documents, the Coordination will be available to provide any integrative information requested by the EU Commission. As far as the management and control of the documentation, during the project the partners will guarantee the registration and filing of all the relevant official documents produced for supporting its activities.

- Project team communication, exchange of information, internal meetings. The coordinator will be responsible for scheduling and organising meetings, for producing agendas and minutes and coordinating and, if necessary, circulating, discussion papers for the meetings. The project envisages the following management meetings: Monthly management meetings. Formal progress meetings will be held at monthly intervals throughout the project period with a kick-off meeting at the beginning of the project.
- Ad-hoc meetings will be arranged to deal with specific technical, contractual or other issues as they arise. Participation at these meetings will be dependent on the issue under discussion. Formal notes of these will be taken and decisions and actions recorded. Meetings with the European Commission: the coordinator (and appropriate partners) will meet with the Commission and the National Contact Point to discuss any relevant issues that arise during the project. Annual Meetings of the Advisory Board.
- Evaluating project execution, results, and the achievement of goals. The coordinator will be responsible for the quality of the developed work as well as for the quality of the deliverables. In this sense, the coordinator

will set different procedures in order to assure the quality such as standard documents for the production of deliverables or a detailed workplan, among others. Quality of the project will be followed through several indicators: milestones, reports and deliverables amongst others.

Furthermore, the consortium envisages the creation of a **Management Committee**, composed by one representative from each participant and will be led by the project coordinator. The Management Committee will seek consensus on project direction, resolve any administrative or contractual issues, including partnership instability, decide on the management issues, including technical, dissemination, financial, planning and control matters. If one of the partners show weak cooperation in matters where their contribution to the project was planned crucial, the Management Committee will decide on precautions. Meetings are planned on a monthly base. If necessary the Committee will meet extraordinarily.

Finally, the consortium envisaged the creation of an **Advisory Board** composed of a small number of experts in fire prevention, biodiversity, silvopastoralism, among other (internal or external to the project partners'). The Advisory Board will meet in an annual basis to ensure excellence and relevance of the project as well as to give advice on the project development to achieve a maximal output. The Board will be composed of 5-6 experts. Possible candidates for the Board include representatives of, among others, the National Research Institute of Science and Technology for Environment and Agriculture, France, IRSTEA) and the Netherlands (Foundation Ark Nature and WWF The Netherlands).

Monitoring indicators of the financial part of the project implementation – will be verified by external independent financial audits of the beneficiary's and partners' financial documents. Audit costs are included into external costs category (subcontractor).

F1 will start in 01.07.14 and end in 30.06.18.

Reasons why this action is necessary:

Due to the duration of the project and the number of partners involved in the realisation of the actions, it is necessary to create sound management structures, both administrative and technical, in order to assure a correct management and coordination of the project and the compliance with all the obligations and commitments derived from the project

Beneficiary responsible for implementation:

IDECE

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

- Consortium agreement
- Reports on the activity of the independent financial auditor
- Four reports: Inception, two Midterm Report and a Final Report

Establishment of the Advisory Board

How was the cost of the action estimated?:

IDECE Project coordinator (300€/day x 150 days): **45.000€**

IDECE Deputy coordinator/technical director (180 days x 200): **36.000€**

IDECE Administrative officer (100 days x 125€/day): **12.500€**

CERM Scientific coordinator (175 days x 210€/day): **36750€**

IRTA Coordinator (40 days x 200€/day): **8.000€**

DAMM Coordinator (40 days x 150€/day): **6.000€**

FCatPL Coordinator (40 days x 300€/day): **12.000€**

IDECE Travels Madrid. Kick off meeting. Spanish Ministry of Environment. Jordi Borrás. 250€/train ticket + 250€/(hotel + subsistence): TOTAL: **500€**

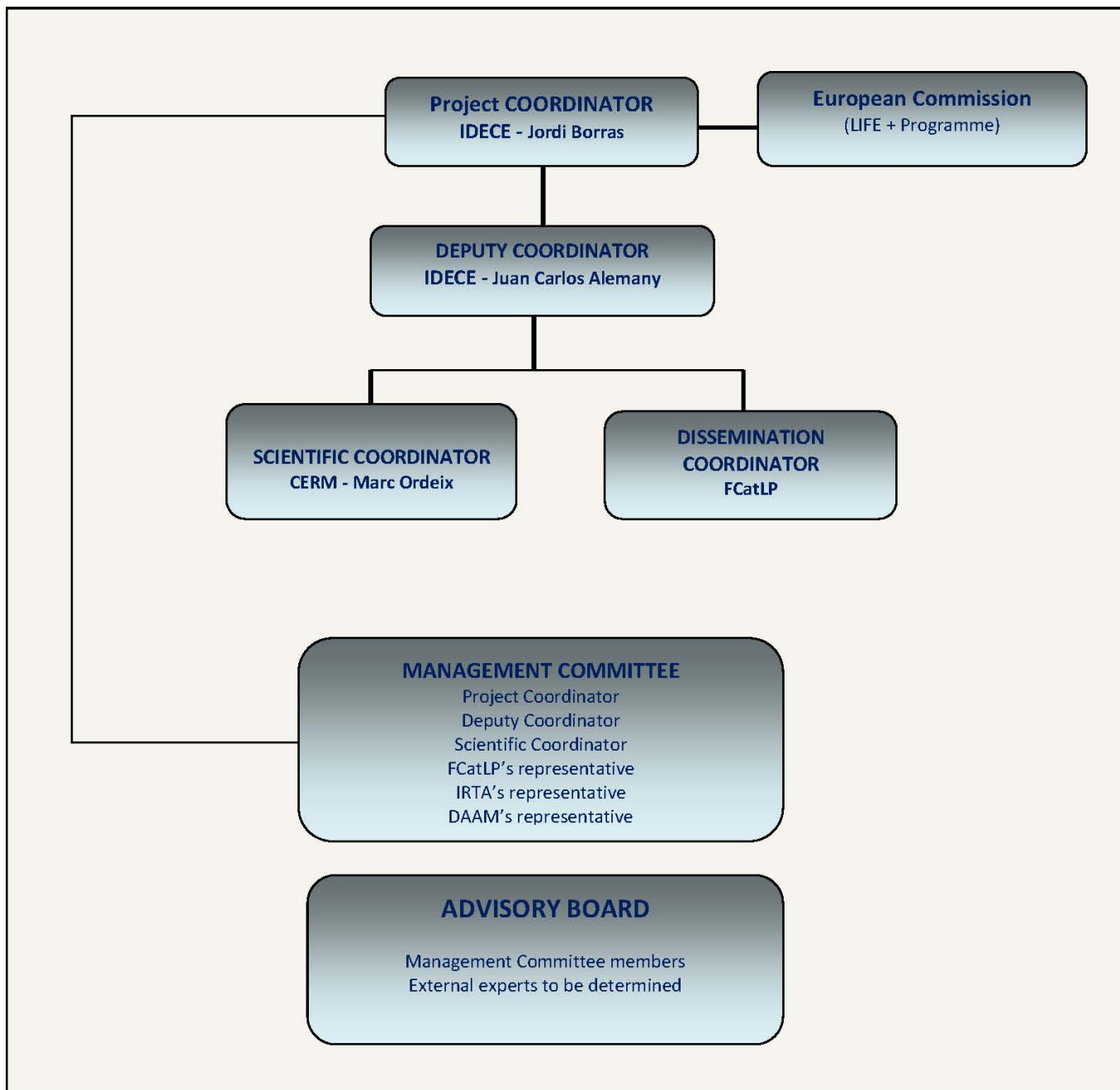
IDECE Travels BXL. Meetings with the European Commission - 2 travels (mid term review - final review). Jordi Borrás. 500€/flight x 2 travels = 1000€ + 200€/(hotel + subsistence) x 2 travels = 400€. TOTAL: **1.400€**

IDECE Travels meetings Advisory Board (invitation to the experts): (15 travels to 600€/each) Advisory Board meetings. 5 experts from France, The Netherlands, Spain, etc... will travel yearly to Tortosa. IDECE will pay the travel and subsistence costs. 300€/flight or train ticket x 5 persons x 4 travels = 6000€ + 150€/hotel x 5 persons x 4 travels = 3000€. TOTAL: **9.000€**

CERM Travels Madrid. Kick off meeting. Spanish Ministry of Environment. Marc Ordeix. 250€/train ticket + 250€/(hotel + subsistence): TOTAL: **500€**

CERM Travels BXL. Meetings with the European Commission - 2 travels (mid term review - final review). Marc Ordeix. 500€/flight x 2 travels = 1000€ + 200€/(hotel + subsistence) x 2 travels = 400€. TOTAL: **1.400€**

Name of the picture: LIFE MIGRATOEBRE Managing Chart



F. Overall project operation and monitoring of the project progress

ACTION F.2: Networking

Description (what, how, where and when):

Positioning the project at relevant local, national and European strategic associations is relevant in order to disseminate its results. Networking with other projects (including LIFE+ projects), information exchange activities etc. will be fostered by the project coordinator. Some examples of LIFE projects for networking:

ReMiBar - Remediation of migratory barriers in Nordic/fennoscandian watercourses LIFE10 NAT/SE/000045

Niebieski korytarz Regi - The construction of the blue ecological corridor along the valley of Riga river and its tributaries LIFE11 NAT/PL/000424

Niebieski korytarz Iny - Creating a Blue Wildlife Corridor in the Ina basin LIFE10 NAT/PL/000654

Obermain - Upper Main valley LIFE08 NAT/D/000001

Networking is useful at all levels, from the European to the local level, and across all sectors, from elected politicians to civil servants, to the private and the community and voluntary sectors. More in detail, the project will promote networking with relevant stakeholders in the different topics addressed active at different levels (local regional, national and European and International level):

Politicians and decision makers at local and regional level, the different Ministries involved in the project of the Catalan Government responsible for fire and civil protection, the Environment and Agriculture Ministry as well as the Territory and Sustainability Ministry and other depending public bodies) will be involved in discussing the project results and their implications. Local and regional authorities will be involved during the development and implementation of the actions the model will be based on. Contacts with the political level are considered relevant to the project as exponents of the local political represent the local community needs and vision. The consortium will work for the possible follow-up of the project's results in national policy (Ministry of Agriculture, Food and Environmental Affairs) and position within the European Union processes and negotiates regarding migratory fish and river conservations. Other relevant international stakeholders will be the IUCN, among others.

The expected start date of Action F2 is 01.07.14 and the Action will end in 30.06.18

Reasons why this action is necessary:

Networking is useful at all levels, from the European to the local level, and across all sectors, from elected politicians to civil servants, to the private and the community and voluntary sectors. It is also positive and advisable to have contacts with the partners involved in other projects similar or related to the LIFE MIGRATOEBRE project in order to exchange best practices, experiences and mutual learning.

Beneficiary responsible for implementation:

IDECE

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

Number of LIFE projects to be contacted

Number of local, regional, national and international politicians and decision makers to be contacted

How was the cost of the action estimated?:

IDECE Coordinator (20 days x 300€/day): **6.000€**

CERM - Scientific coordinator (10 days x 210€/day): **2.100€**

IDECE Travels to European and Spanish networking events such as July 2014. **XVII Congress of the Iberian Association of Limnology. University of Cantabria. Santander**, June 2015. **Fish passage 2015**. Gröningen (The Netherlands) or June 2015. **11th International symposium on ecohydraulics**. Austria. The abovementioned events are only for the first half of 2015. At the present moment it is impossible to know the networking events for the second half of 2015, 2016, 2017 and the first half of 2018 although it is likely that the consortium will participate in at least a couple of events per year in different Spanish and European locations.

Attendance to different events related to the LIFE MIGRATOEBRE project. Cost estimation per event: Jordi Borrás. 300€/flight or train ticket x 10 travels = 3.000€ + 100€/hotel x 10 travels =1.000€. TOTAL: **4.000€**

CERM Travels to European and Spanish networking events such as July 2014. **XVII Congress of the Iberian Association of Limnology. University of Cantabria. Santander**, June 2015. **Fish passage 2015**. Gröningen (The Netherlands) or June 2015. **11th International symposium on ecohydraulics**. Austria. The abovementioned events are only for the first half of 2015. At the present moment it is impossible to know the networking events for the second half of 2015, 2016, 2017 and the first half of 2018 although it is likely that the consortium will participate in at least a couple of events per year in different Spanish and European locations.

Attendance to different events related to the LIFE MIGRATOEBRE project. Cost estimation per event: Jordi Borrás. 300€/flight or train ticket x 10 travels = 3.000€ + 100€/hotel x 10 travels =1.000€. TOTAL: **4.000€**

F. Overall project operation and monitoring of the project progress

ACTION F.3: Audit

Description (what, how, where and when):

An independent auditor nominated by the coordinating beneficiary will verify the financial statements provided to the Commission in the final project report. The audit will not only verify the respect of national legislation and accounting rules but should also certify that all costs incurred respect the LIFE+ Common Provisions.

The expected start date of Action F3 is 01.06.18 and the Action will end in 30.06.18.

Reasons why this action is necessary:

An audit is necessary to ensure the transparency and veracity of the financial statements provided to the European Commission

Beneficiary responsible for implementation:

IDECE

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

Favourable Audit Report

How was the cost of the action estimated?:

IDECE Other costs (Audit) – **10.000€**

IDECE Deputy coordinator - (8 days x 200€/day): **1.600€**

F. Overall project operation and monitoring of the project progress

ACTION F.4: After-LIFE Communication Plan

Description (what, how, where and when):

At the end of the project, an 'After-LIFE Communication Plan' will be produced setting out how to continue disseminating the results of the project over the coming years. Specifically, the Plan will include an evaluation of the communication strategy's main target groups, an overview of past dissemination activities and their results, a list of present dissemination activities and their results and a list of proposed additional dissemination activities.

Long term management for the maintenance of the conservation status of species and habitats of community importance will be presented together with the responsibilities assigned to assure long term conservation project areas. In addition experiences gained through projects activities will be presented. The document will give details regarding what actions will be carried out, when, by whom and with what sources. Costs for this action are 0€.

The expected start date of Action F4 is 01.06.18 and the Action will end in 30.06.18.

Reasons why this action is necessary:

The Communication Plan will be necessary to ensure the continuation and valorisation of the project's objectives and results after the end of it.

Beneficiary responsible for implementation:

IDECE

Responsibilities in case several beneficiaries are implicated:

Expected results (quantitative information when possible):

Elaboration of the After -LIFE Communication Plan

How was the cost of the action estimated?:

DELIVERABLE PRODUCTS OF THE PROJECT

Name of the Deliverable	Number of the associated action	Deadline
-Identification, location and characterization of potential spawning areas for European sturgeon in the area of study.	A 1	30/09/2014
-Identification, location and characterization of potential spawning areas for sea lamprey in the area of study	A 1	30/09/2014
-Identification, location and characterization of potential spawning areas for twaite shad in the area of study	A 1	30/09/2014
Environmental guidelines for the executive projects and its adaptation to the needs of the target fish species	A 2	30/09/2014
Executive projects	A 2	31/10/2014
-Mapping of potential spawning sites for European sturgeon, twaite shad and sea lamprey	A 1	31/12/2014
LIFE MIGRATOEBRE Website	E 1	01/01/2015
Inception Report	F 1	31/03/2015
First mid-term report with payment request	F 1	31/12/2015
LIFE MIGRATOEBRE Notice Boards	E 2	30/06/2016
- Report on the identification, location and characterization of foraging areas for European sturgeon in the area of study	C 2	30/12/2016
- Report on the identification, location and characterization of potential spawning areas for European sturgeon in the area of study	C 2	30/12/2016
- Report on the optimal conditions for long transport by road of European sturgeon and their acclimation to new rearing conditions (Mediterranean basin)	C 2	30/12/2016
Report on the home range movements of European sturgeon in the area of study	C 2	30/06/2017
Second mid-term report with payment request	F 1	30/06/2017
Second mid-term report with payment request	F 1	30/06/2017
Production of the Exhibition	E 4	01/07/2017
Report on the monitoring the pilot project of sturgeon restocking	D 1	31/12/2017
LIFE MIGRATOEBRE Layman's Report	E 3	28/02/2018

Report on the Assessment of the ecosystem services	D 5	01/04/2018
Socio-economic impact assessment study	D 5	01/04/2018
Report on the ecological status monitoring of the final stretch of the Ebre River (water, biota and sediments, except fish)	D 3	30/06/2018
Report on the monitoring of the ship locks improved management (at Xerta's weir and Flix dam) and the new fish passes (at Xerta's weir and Ascó's weir)	D 4	30/06/2018
After-LIFE Communication Plan	F 4	31/07/2018
Final Report	F 1	31/07/2018
Report on the project's final conference	E 8	31/08/2018
Report on the Monitoring the target fish population of the water bodies	D 2	01/09/2018

MILESTONES OF THE PROJECT

Name of the Milestone	Number of the associated action	Deadline
Consortium Agreement	F 1	30/09/2014
Signature of contract with construction companies	A 2	31/12/2014
Website operational	E 1	01/01/2015
-Identification, location and characterization of potential spawning areas for European sturgeon, lamprey and twaite shad in the targeted area.	A 1	01/05/2015
-Mapping of potential spawning sites for European sturgeon, twaite shad and sea lamprey	A 1	01/08/2015
Network of volunteers operational	E 6	01/09/2015
Development of a photo contest of the LIFE MIGRATOEBRE project	E 5	01/01/2016
Acclimation of fish to new rearing conditions	C 2	30/03/2016
Improved management of the Flix dam and Xerta's ship locks	C 1	31/05/2016
LIFE MIGRATOEBRE Notice Boards installed	E 2	30/06/2016
- Signature of a donation contract of European sturgeons between the MIGADO and the MIGRATOEBRE consortium	C 2	30/09/2016

Finalisation of the civil works for the construction of the fish lift in Xerta's weir and the fish ramp in Asco's weir	C 1	31/12/2016
Recovery of information from transponders and data analysis	C 2	31/12/2016
Transport of fish to IRTA's facilities	C 2	31/12/2016
Released of tagged fish into the Ebro River	C 2	30/03/2017
Finalisation of the production of the exhibition	E 4	01/07/2017
Tagging fish with transponders for telemetry studies	C 2	30/09/2017
Effective monitoring the pilot project of sturgeon restocking	D 1	31/12/2017
Undertwater Hide operational	E 7	31/12/2017
Publication of the LIFE MIGRATOEBRE Layman's Report	E 3	28/02/2018
Finalisation of the socio-economic assessment study	D 5	01/04/2018
Implementation of the ecological status monitoring of the final stretch of the Ebre River (water, biota and sediments, except fish)	D 3	30/06/2018
Implementation of the monitoring of the ship locks improved management (at Xerta's weir and Flix dam) and the new fish passes (at Xerta's weir and Ascó's weir)	D 4	30/06/2018
Report on the project's final conference ready	E 8	31/08/2018
Effective monitoring the target fish population of the water bodies	D 2	30/09/2018
Participation of 1000 students throughout the project	E 9	30/09/2018

ACTIVITY REPORTS FORESEEN

Please indicate the deadlines for the following reports:

- Inception Report (to be delivered within 9 months after the project start);
- Progress Reports n°1, n°2 etc. (if any; to ensure that the delay between consecutive reports does not exceed 18 months);
- Mid-term Report with payment request (only for project longer than 24 months)
- Final Report with payment request (to be delivered within 3 months after the end of the project)

Type of report	Deadline
Inception report	31/03/2015
Midterm report	31/12/2015
Midterm report	30/06/2017
Final report	31/07/2018

TIMETABLE

Action		2014				2015				2016				2017				2018				2019			
Action number	Name of the action	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
A. Preparatory actions, elaboration of management plans and/or of action plans:																									
A.1	Identification of potential spawning areas for sturgeon, twaite shad and sea lamprey.			■	■	■	■																		
A.2	Administrative, legal and technical procedures for the construction of a fish lift and a fish ramp			■	■	■	■																		
B. Purchase/lease of land and/or compensation payments for use rights:																									
C. Concrete conservation actions:																									
C.1	Implementation of connectivity improved measures for the targeted migratory fish species.								■	■	■	■	■	■											
C.2	Pilot project of sturgeon restocking									■	■	■	■	■	■	■									
D. Monitoring of the impact of the project actions:																									
D.1	Monitoring the pilot project of sturgeon restocking									■	■	■	■	■	■	■	■								
D.2	Monitoring the target fish population of the water bodies					■	■	■	■	■	■	■	■	■	■	■	■	■	■						
D.3	Ecological status monitoring of the final stretch of the Ebre River (water, biota and sediments, except fish)					■	■	■	■	■	■	■	■	■	■	■	■	■							
D.4	Monitoring of the ship locks improved management (at Xerta's weir and Flix dam) and the new fish passes (at Xerta's weir and Ascó's weir)									■	■	■	■	■	■	■	■	■	■						
D.5	Socio-economic impact assessment study																	■							
E. Public awareness and dissemination of results:																									
E.1	General Communication activities			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■						
E.2	Notice boards										■														
E.3	LIFE MIGRATOEBRE Layman's Report																	■							
E.4	Exhibition on fishes and the lower Ebre river										■	■	■	■	■	■	■	■	■						
E.5	Community Awareness Campaign						■	■	■	■	■	■	■	■	■	■	■	■	■						
E.6	Network of volunteers						■	■	■	■	■	■	■	■	■	■	■	■	■						
E.7	UnderWater Hide																■	■							
E.8	Organisation and participation in conferences and related events					■	■	■	■	■	■	■	■	■	■	■	■	■	■						
E.9	Dissemination activities for students										■	■	■	■	■	■	■	■	■						

F. Overall project operation and monitoring of the project progress:																									
F.1	Project Management by IDECE			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■						
F.2	Networking			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■						
F.3	Audit																		■						
F.4	After-LIFE Communication Plan																		■						



LIFE13 NAT/ES/000237

FINANCIAL APPLICATION FORMS

Part F – financial information

Budget breakdown cost categories	Total cost in €	Eligible Cost in €	% of total eligible costs
1. Personnel		493,744	31.48 %
2. Travel and subsistence		39,300	2.51 %
3. External assistance		230,500	14.69 %
4. Durable goods			
4.a Infrastructure	495,000	495,000	31.56 %
4.b Equipment	165,300	165,300	10.54 %
4.c Prototype	Not applicable		
5. Land purchase / long-term lease /one-off compensation payments		0	0.00 %
6. Consumables		15,000	0.96 %
7. Other Costs		31,250	1.99 %
8. Overheads		98,480	6.28 %
TOTAL	1,568,574	1,568,574	100 %

Contribution breakdown	In €	% of TOTAL	% of total eligible costs
Requested EU contribution	784,285	50.00 %	50.00 %
Coordinating Beneficiary's contribution	401,911	25.62 %	
Associated Beneficiaries' contribution	382,378	24.38 %	
Co-financiers contribution	0	0.00 %	
TOTAL	1,568,574	100.00 %	

Cost category in Euro									
Project action	1. Personnel	2. Travel	3. External assistance	4.a Infra-structure	4.b Equipment	5. Land	6. Consumables	7. Other	TOTAL
A1 Identification of potential spawning areas for sturgeon, twaite shad and sea lamprey.	9,100	1,000	0	0	0	0	0	0	10,100
A2 Administrative, legal and technical procedures for the construction of a fish lift and a fish ramp	5,045	0	28,000	0	0	0	0	0	33,045
C1 Implementation of connectivity improved measures for the targeted migratory fish species.	33,050	2,500	24,000	495,000	28,000	0	0	0	582,550
C2 Pilot project of sturgeon restocking	12,500	1,000	0	0	0	0	3,000	11,000	27,500
D1 Monitoring the pilot project of sturgeon restocking	4,530	2,500	5,500	0	132,500	0	0	0	145,030
D2 Monitoring the target fish population of the water bodies	65,700	0	0	0	0	0	12,000	0	77,700

D3 Ecological status monitoring of the final stretch of the Ebre River (water, biota and sediments, except fish)	9,000	2,500	43,000	0	0	0	0	0	54,500
D4 Monitoring of the ship locks improved management (at Xerta's weir and Flix dam) and the new fish passes (at Xerta's weir and Ascó's weir)	50,020	4,500	0	0	4,800	0	0	0	59,320
D5 Socio-economic impact assessment study	10,304	0	0	0	0	0	0	0	10,304
E1 General Communication activities	14,300	0	4,800	0	0	0	0	0	19,100
E2 Notice boards	1,430	0	6,700	0	0	0	0	0	8,130
E3 LIFE MIGRATOEBRE Layman's Report	715	0	0	0	0	0	0	4,500	5,215
E4 Exhibition on fishes and the lower Ebre river	14,300	4,500	70,500	0	0	0	0	0	89,300
E5 Community Awareness Campaign	14,300	0	18,000	0	0	0	0	0	32,300

E6 Network of volunteers		14,300	0	30,000	0	0	0	0	0	44,300
E7 UnderWater Hide		47,750	0	0	0	0	0	0	0	47,750
E8 Organisation and participation in conferences and related events		7,150	0	0	0	0	0	0	3,750	10,900
E9 Dissemination activities for students		14,300	0	0	0	0	0	0	2,000	16,300
F1 Project Management by IDECE		156,250	12,800	0	0	0	0	0	0	169,050
F2 Networking		8,100	8,000	0	0	0	0	0	0	16,100
F3 Audit		1,600	0	0	0	0	0	0	10,000	11,600
F4 After-LIFE Communication Plan		0	0	0	0	0	0	0	0	0
Overheads										98,480
	TOTAL	493,744	39,300	230,500	495,000	165,300	0	15,000	31,250	1,568,574

Coordinating Beneficiary's contribution

Country code	Beneficiary short name	Total costs of the actions in € (including overheads)	Beneficiary's own contribution in €	Amount of EU contribution requested in €
ES	IDECE	803,821	401,911	401,910

Associated Beneficiaries' contribution

Country code	Beneficiary short name	Total costs of the actions in € (including overheads)	Associated beneficiary's own contribution in €	Amount of EU contribution requested in €
ES	CERM	148,539	74,270	74,269
ES	DAAM	281,930	140,965	140,965
ES	FCatLP	265,359	132,680	132,679
ES	IRTA	68,925	34,463	34,462
TOTAL Associated Beneficiaries		764,753	382,378	382,375

TOTAL All Beneficiaries	1,568,574	784,289	784,285
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Co-financiers contribution

Co-financier's name	Amount of co-financing in €
TOTAL	0

Direct Personnel costs

Calculation =>				A	B	A x B
Beneficiary short name	Action number	Type of contract	Category/Role in the project	Daily rate (rounded to the nearest €)	Number of person-days	Direct personnel costs (€)
IDECE	A 2	Permanent staff or civil servant	Technical Director	200	10	2,000
IDECE	C 1	Permanent staff or civil servant	Coordinator	300	15	4,500
IDECE	C 1	Permanent staff or civil servant	Technical Director	200	80	16,000
IDECE	C 1	Permanent staff or civil servant	Administrative officer	125	50	6,250
IDECE	D 4	Permanent staff or civil servant	Technical Director	200	50	10,000
IDECE	D 5	Permanent staff or civil servant	Socio-economic development Technician	150	42	6,300
IDECE	F 1	Permanent staff or civil servant	Deputy Coordinator/Technical Director	200	180	36,000
IDECE	F 1	Permanent staff or civil servant	Administrative officer	125	100	12,500
IDECE	F 1	Permanent staff or civil servant	Coordinator	300	150	45,000
IDECE	F 2	Permanent staff or civil servant	Coordinator	300	20	6,000
IDECE	F 3	Permanent staff or civil servant	Financial Coordinator	200	8	1,600
FCatLP	D 5	Permanent staff or civil servant	Technician	143	28	4,004
FCatLP	E 1	Permanent staff or civil servant	Communication manager	143	100	14,300
FCatLP	E 2	Permanent staff or civil servant	Communication manager	143	10	1,430
FCatLP	E 3	Permanent staff or civil servant	Communication manager	143	5	715
FCatLP	E 4	Permanent staff or civil servant	Communication manager	143	100	14,300
FCatLP	E 5	Permanent staff or civil servant	Communication manager	143	100	14,300
FCatLP	E 6	Permanent staff or civil servant	Communication manager	143	100	14,300

Direct Personnel costs

Calculation =>				A	B	A x B
Beneficiary short name	Action number	Type of contract	Category/Role in the project	Daily rate (rounded to the nearest €)	Number of person-days	Direct personnel costs (€)
FCatLP	E 7	Permanent staff or civil servant	Communication manager	143	50	7,150
FCatLP	E 8	Permanent staff or civil servant	Communication manager	143	50	7,150
FCatLP	E 9	Permanent staff or civil servant	Communication manager	143	100	14,300
FCatLP	F 1	Permanent staff or civil servant	Coordinator	300	40	12,000
DAAM	D 1	Permanent staff or civil servant	Biologist	106	5	530
DAAM	D 2	Permanent staff or civil servant	Biologist	106	200	21,200
DAAM	D 2	Permanent staff or civil servant	Monitoring coordinator	150	150	22,500
DAAM	D 2	Permanent staff or civil servant	Biologist technician	110	200	22,000
DAAM	D 3	Permanent staff or civil servant	Coordinator	150	60	9,000
DAAM	F 1	Permanent staff or civil servant	Coordinator	150	40	6,000
CERM	A 2	Permanent staff or civil servant	Environmental technician	145	21	3,045
CERM	C 1	Permanent staff or civil servant	Scientific coordinator	210	30	6,300
CERM	D 4	Permanent staff or civil servant	Environmental technician	145	276	40,020
CERM	E 7	Permanent staff or civil servant	Environmental technician	145	280	40,600
CERM	F 1	Permanent staff or civil servant	Scientific coordinator	210	175	36,750
CERM	F 2	Permanent staff or civil servant	Scientific coordinator	210	10	2,100
IRTA	A 1	Permanent staff or civil servant	Biologist	125	28	3,500
IRTA	A 1	Permanent staff or civil servant	Expert in sturgeons aquiculture	200	28	5,600

Direct Personnel costs

Calculation =>				A	B	A x B
Beneficiary short name	Action number	Type of contract	Category/Role in the project	Daily rate (rounded to the nearest €)	Number of person-days	Direct personnel costs (€)
IRTA	C 2	Permanent staff or civil servant	Expert in sturgeons aquiculture	200	25	5,000
IRTA	C 2	Permanent staff or civil servant	Aquiculture's technician	125	60	7,500
IRTA	D 1	Permanent staff or civil servant	Expert in sturgeons aquiculture	200	20	4,000
IRTA	F 1	Permanent staff or civil servant	Coordinator	200	40	8,000
TOTAL =>					3,036	493,744

Travel and subsistence costs

				Calculation =>	A	B	A + B
Beneficiary short name	Action number	Destination (From / To)	Outside EU (YES / NO)	Purpose of travel/number of trips and persons travelling, duration of trip (in days)	Travel costs (€)	Subsistence costs (€)	Total travel and subsistence costs (€)
IDECE	C 1	Local travels	No	Local travels from Tortosa to Flix (68 km one way), Xerta (13 km) and Ascó (62 km) where C1 Action will be implemented. Also local travels from Tortosa to Barcelona are envisaged (180 km).	1,500	1,000	2,500
IDECE	F 1	European locations - Brussels - European locations	No	Advisory Board Meetings (15 travels x 600 Euros/travel) Invitation of 5 European experts from France, The Netherlands, Spain, etc....	6,000	3,000	9,000
IDECE	F 1	Tortosa - Madrid	No	Kick-off meeting. Spanish Ministry of Environment. Jordi Borrás.	250	250	500
IDECE	F 1	Tortosa - Brussels - Tortosa	No	2 meetings with the EC (mid-term review and final review)	1,000	400	1,400
IDECE	F 2	European and national destinations	No	Networking (Attendance to European and Spanish events; i.e. Congress of the Iberian Association of Limnology 2014, Fish passages 2015 (Gorningen), 11th International symposium on ecohydraulics, etc...	3,000	1,000	4,000
FCatLP	E 4	Barcelona - Tortosa/Flix -Barcelona	No	Travels from FCatLP headquarters Barcelona to Tortosa (194 km one way), Flix (175km), Xerta (193km) and Ascó (168km). Also local travels from FCatLP Mon Natura Delta located in Amposta	3,000	1,500	4,500
DAAM	D 3	Local travels	No	Visits to targeted sites. Local travels from Deltebre (DAMM headquarters) to Flix (78 km of distance one way), Xerta (40 km) and Ascó (70 km) and Tortosa (25 km).	1,500	1,000	2,500
CERM	D 4	Local travels (Manlleu to the targeted site)	No	Travels from CERM headquarters (Manlleu) to Tortosa (194 km one way), Flix (175 km), Xerta (193 km) and Ascó (168 km)	3,000	1,500	4,500
CERM	F 1	Manlleu - Brussels - Manlleu	No	2 meetings with the EC (mid-term review and final review)	1,000	400	1,400
CERM	F 1	Manlleu - Madrid - Manlleu	No	Kick-off meeting. Spanish Ministry of Environment. Marc Ordeix	250	250	500
CERM	F 2	European and national destinations	No	Networking (Attendance to European and Spanish events; i.e. Congress of the Iberian Association of Limnology 2014, Fish passages 2015 (Gorningen), 11th International symposium on ecohydraulics, etc...	3,000	1,000	4,000

Travel and subsistence costs

Calculation =>					A	B	A + B
Beneficiary short name	Action number	Destination (From / To)	Outside EU (YES / NO)	Purpose of travel/number of trips and persons travelling, duration of trip (in days)	Travel costs (€)	Subsistence costs (€)	Total travel and subsistence costs (€)
IRTA	A 1	St. Carles de la Ràpita - local sites	No	Field visits, 2 persons. Local travels from St. Carles de la Ràpita (IRTA headquarters) to Flix (92 km of distance one way), Xerta (40 km) and Ascó (90 km) and Tortosa (30 km).	500	500	1,000
IRTA	C 2	St. Carles de la Ràpita - Burdeaux	No	Picking up of the sturgeons form France (St. Seurin sur l'Isle) to St. Carles de la Ràpita (aprox 830 km one way)	500	500	1,000
IRTA	D 1	Local travels	No	Visits to targeted sites. Local travels from St. Carles de la Ràpita (IRTA headquarters) to Flix (92 km of distance one way), Xerta (40 km) and Ascó (90 km) and Tortosa (30 km).	1,500	1,000	2,500
TOTAL =>					26,000	13,300	39,300

External assistance costs

Beneficiary short name	Action number	Procedure	Description	Costs (€)
IDECE	A 2	Negotiated contract	Engineering services for the studies and executive projects)	28,000
IDECE	C 1	Negotiated contract	Engineering service for the supervision of the civil works and installation of the equipments	24,000
FCatLP	E 1	Direct treaty	Project's graphic design	2,000
FCatLP	E 1	Direct treaty	Website design responsible for the design of the project's website, definition of its contents and maintenance of the website at least five years after the finalization of the project	2,800
FCatLP	E 2	Direct treaty	Panels manufacturing and installation	5,200
FCatLP	E 2	Direct treaty	Panels designer responsible for the design of the panels	1,500
FCatLP	E 4	Direct treaty	Design and edition of 3.500 booklets - exhibit guide	15,000
FCatLP	E 4	Direct treaty	Production of the exhibit panels	6,000
FCatLP	E 4	Direct treaty	Design and production of an audiovisual (7-12 min). Edition of a Teaser (45-60sec.) for social networks without voice, only music in Catalan, Spanish and English	15,000
FCatLP	E 4	Direct treaty	Compilation of previous information for the exhibit	5,000
FCatLP	E 4	Direct treaty	Exhibit commissioning	15,000
FCatLP	E 4	Direct treaty	Creation of a photographic databank on the local species, habitats, landscapes, human activities, etc...	5,000
FCatLP	E 4	Direct treaty	Transport and installation of the exhibit in several municipalities	9,500
FCatLP	E 5	Direct treaty	Communication external services	18,000
FCatLP	E 6	Direct treaty	Communication external services	30,000
DAAM	D 1	Direct Treaty	Tagging sturgeons and data processing	5,500
DAAM	D 3	Negotiated contract	Monitoring of the final stretch of the Ebre river (water, biota and sediments, except fish)	43,000
TOTAL =>				230,500

Durable goods: Infrastructure costs

Beneficiary short name	Action number	Procedure	Description	Actual cost (€)	Depreciation (eligible cost) (€)
IDECE	C 1	Negotiated contract	Civil works for the construction of the Xerta's lift. Fish basket (14.000€), device structure (191.600€), machinery (120.000€), riverwacher Fish Counter (28.400€), system flow regulation (59.000€)	425,000	425,000
IDECE	C 1	Negotiated contract	Civil works for the construction of the Asco's fish ramp (Earthworks (5.000€), formation of the ramp and rock ledges (63.000€) and opening at the top of the dam (2.000€).	70,000	70,000
TOTAL =>				495,000	495,000

Durable goods: equipment costs

Beneficiary short name	Action number	Procedure	Description	Actual cost (€)	Depreciation (eligible cost) (€)
IDECE	C 1	Direct award	Equipment for the automatic opening and closing of the gates (Flix dam ship locks)	12,000	12,000
IDECE	C 1	Direct award	Equipment for the automatic opening and closing of the gates (Xerta's ship locks)	12,000	12,000
IDECE	C 1	Direct award	Equipment for the installation of a light barrier (of strobe lights) Flix dam ship locks	2,000	2,000
IDECE	C 1	Direct award	Equipment for the installation of a light barrier (of strobe lights) Xerta's ship locks	2,000	2,000
IDECE	D 4	Direct award	4 traps tailored to each site (1200€ x 4 sites)	4,800	4,800
DAAM	D 1	Negotiated contract	20 GPS transponders for tagging sturgeons (6.000€/transponder)	120,000	120,000
IRTA	D 1	Direct award	30 radio transponders for tagging sturgeons (6.000€/transponder)	9,000	9,000
IRTA	D 1	Direct award	Material for horizontal automatic monitoring for sturgeons	3,500	3,500
TOTAL =>				165,300	165,300

Consumables

Beneficiary short name	Action numbe	Procedure	Description	Costs (€)
DAAM	D 2	Direct award	Fike nets, essence, waders, neopren suits, etc...)	12,000
IRTA	C 2	Direct award	Activated carbon filters and sun filters and UV lights	3,000
TOTAL =>				15,000

Other costs

Beneficiary short name	Action numbe	Procedure	Description	Costs (€)
IDECE	F 3	Direct award	Audit company	10,000
FCatLP	E 3	Direct award	Translation and printing	4,500
FCatLP	E 8	Direct award	Organisation of the final conference (150pax x 25€/pax)	3,750
FCatLP	E 9	Direct award	Preparation, edition and publication of educational material	2,000
IRTA	C 2	Direct award	Refurnishment of the fish tanks	3,000
IRTA	C 2	Direct award	Purchase of sturgeons' feeding, supplementary oxigen	2,500
IRTA	C 2	Direct award	Transport of sturgeons from France to IRTA Sant Carles de la Ràpitas	5,500
TOTAL =>				31,250

Overheads

Beneficiary short name	Total direct costs of the project in €	Overhead amount (€)
FCatLP	248,699	16,660
DAAM	264,230	17,700
CERM	139,215	9,324
IRTA	64,600	4,325
IDECE	753,350	50,471
	1,470,094	98,480

Proposal attachments			
			Included?
Attachment title	Attachment type	Yes	No
Declaration of support Xarxa Custòdia del Patrimoni	declaration of support (other than form A8)		
Declaration of support University of Girona	declaration of support (other than form A8)		
Declaration of support Wanningen	declaration of support (other than form A8)		
Declaration of support LINKit	declaration of support (other than form A8)		
Declaration of support Universidad Complutense	declaration of support (other than form A8)		
Declaration of support Mr. Patrick Williot (expert)	declaration of support (other than form A8)		
Declaration of support Fundación Biodiversidad	declaration of support (other than form A8)		
IDECE Public body declaration	public body declaration		
LIFE MIGRATOEBRE Personnel costs	other document		