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LIFE Project Number
LIFE13 NAT/IT/001129

Mid-term Report
Covering the project activities from **01/04/2015** to **30/09/2016**

Reporting Date
<30/10/2016>

LIFE PROJECT NAME or Acronym
<BARBIE - Conservation and management of *Barbus meridionalis* and *Barbus plebejus* in the Emilian tributaries of Po River>

Data Project

Project location:	Emilia Romagna – Italia
Project start date:	01/07/2014
Project end date:	30/06/2018 Extension date: -
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(%) of eligible costs:	49.97 %

Data Beneficiary

Name Beneficiary:	Università degli Studi di Parma
Contact person:	Prof. Francesco Nonnis Marzano
Postal address:	Viale delle Scienze, 11 43124 Parma
Telephone:	+39-0521.905643
E-mail:	+39-0521.905657
Project Website:	francesco.nonnismarzano@unipr.it
	www.lifebarbie.eu

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2. Executive Summary

Distribution and size of native Italian populations of Common Barbel *Barbus plebejus* and Southern Barbel *Barbus meridionalis* (sin. *B. caninus*) have progressively declined during the last years. The update of the IUNC Red List suggests two new risk categories for the two species by increasing the threat level of the Common Barbel to VU (vulnerable) and the threat level of the Southern Barbel from VU to EN (endangered). Both species are protected at a European level and are part of the annex II of the Habitat Directive 1992/43/EC.

The project LIFE13 NAT/IT/001129 BARBIE «*Conservation and Management of Barbus meridionalis and Barbus plebejus in the Emilian tributaries of Po River*» aims at recovering native populations of Common Barbel and Southern Barbel in n.14 Sites of Community Interest of the Provinces of Parma, Reggio Emilia and Piacenza. The project plans specific breeding practices for the reintroduction in nature of about 10.000 fry/year of the two target species and requalification actions, river defragmentation practices (construction of fish passages) and control of the spread of invasive alien species. A sustainable management of the rivers will be favoured through the subscription of specific agreements on multi-annual planning among the stakeholders as well as specific activities of environmental information/formation. The threat level for barbel populations also at a local level justifies proposed interventions with special attention to breeding practices which become a prerequisite for those species undergoing a rapid demographic decline such as the Common Barbel in the lowland and notably the Southern Barbel in the upper appenine stretches.

Starting from the protection of the two fish species the project ambitious objective is to safeguard the whole river ecosystem with reference not only to the Habitat Directive 1992/43/EC but also to the Framework directive on Waters 2000/60/EC and the new Regulation (EU) n. 1143/2014 “which sets forth provisions aiming at the prevention and management of the introduction and spread of invasive alien species” (and the subsequent Implementing Regulation of 13/07/2016).

The BARBIE project has been funded in June 2014 within the financial framework of LIFE Nature of the European Commission (call 2013) with a total budget of euros 2,189,378.00. Parma University (UNPR) is the head of the project; Project Leader is prof. Francesco Nonnis Marzano. The partnership currently encompasses the Tuscan-Emilian Apennine National Park (PNATE), Management Body for Sustainability of Western Emilia region (EGPB), the academic spin-off GEN-TECH Srl (GENTECH) and The Po basin Water Authority (AdbPo). On the 21/1/2016, the Mario Negri Sud foundation (FMNS) has been ousted from the partnership through a specific *amendment* retroactively applied to the Grant Agreement and the tasks of such body have been reassigned to the beneficiary coordinator UNPR (action F1). This change to the partnership has been necessary during the first year of the project due to a change in the administrative and financial status of the FMNS which was not able to grant compliance with scheduled project actions, co-funding terms and conditions and achievement of project objectives; as a matter of fact on the 5/03/2015 FMNS has gone into liquidation due to serious contract noncompliance. On 10/03/2015 – within the liquidation procedure of the National Park – the lawyer Carlo Fimiani, Dr. Giordano Albanese and Dr. Valentina Luise sono were appointed by the Court of Chieti Court-appointed Liquidators of the FMNS. On 14/4/2015 those Court-appointed Liquidators ordered the start of the general liquidation of the

National Park (Det. Prot. 101/2015 RVG Court of Chieti), once ascertained its profound debt – exceeding nine million Euro – and therefore acknowledged the failure of the Foundation properties to fully pay all liabilities. Finally, on the 12/5/2016 FMNS terminated its activity therefore firing all employees.

As to the project management, during action F1, half-yearly meetings have been organized as well as technical meetings and surveys, monthly reports have also been prepared. Thanks to a fruitful cooperation with the head of Monitoring NEEMO-Timesis Dott.^{ssa} Iva Rossi, both the PI and the partnership have dealt with some criticalities of the project trying time by time to find short/medium-term solutions to achieve in any case the project results.

Within the framework of action F3 the company Demetra - Società di revisione Srl has been appointed for the project audit.

With reference to the project technical activities, during the first year of the project all preparatory actions have been started, as detailed in the *Inception Report* (as of 30/3/2016). Actions A1 “creation of the working group”, A5 “drawing-up of the adjustment plan of the fish hatcheries of Monchio delle Corti, Corniglio and Selvanizza (PR)” and A6 “drawing-up of the environmental education project” have been achieved in the scheduled times. Some delays, on the contrary, have characterised the beginning of actions A2 and A3 of preliminary characterisation and therefore action A4, due to the exceptional weather conditions that have altered the hydrometric regime of rivers being the object of this study for an extended period. In particular the heavy rains of the autumn 2014 have caused extensive flooding, with heavy damage over a large part of the provinces of Parma, Piacenza and Reggio Emilia, such as to push the government to declare a “state of emergency for natural disasters”. Heavy snowfalls of winter times and abnormal low-water periods of rivers during the summer of 2015 have allowed exclusively fragmentary samplings, limited to few parameters for some SCIs, as detailed in the technical reports of specific actions. Moreover, 2015 flooding in the Piacenza region have further worsened the situation. In any case, thanks to the cooperation with some regional agencies which supplied specific information and a stronger sampling effort until December 2015, project objectives have been achieved and information about the state of current populations of barbels in the Emilia Romagna region and associated river environment have been obtained; such data are essential for the drawing-up of the first part of the “Recovery Plan of Target Species” (set forth in Action A4). Such Plan, including operating details for the subsequent actions C3, C4, C5 e C7, has been submitted to a procedure of regional Environmental Incidence Assessment, pursuant to the Habitat Directive, and received favourable opinion (PG.2016.0531201 of 15/07/2016).

The calculation of the Minimum Vital Flow (MVF) scheduled in action A3 and the drawing-up of the Final Project of River defragmentation of the Enza River planned in action A4 (second part of the “Recovery Plan of the Target Species”) are in progress. Both actions are delayed due to technical-administrative problems for the identification of experts appointed for the studies and definition of the best technical solutions. It is underlined that in order to favour the subsequent approval of the planned interventions of river defragmentation a debate has been started with the Decision Makers (in particular with the Interregional Authority for the Po river – AIPO - which is in charge of the delivery of water authorisations). The accrued delays of these actions will lead to a postponement in the beginning of the subsequent action

C2 “Interventions for River defragmentation of the Enza River - SCI IT4030023”; in any case, works will be completed in due time so as to achieve expected results over the project period and plan a correct monitoring of it. Conclusion of action C2 scheduled for May 2016 will probably be postponed by one year. Other C actions, on the contrary, have been started and are following the scheduled programme.

With reference to action C1 “Update of fish hatcheries”, works planned for the hatchery in Monchio delle Corti have been completed; while the works for the Corniglio hatchery are still in progress and are expected to be completed by the end of November 2016. Following the hypothesis of a transfer of the property of the fish hatchery in Selvanizza (PR) and deriving doubts on the feasibility of a cooperation with the new owner, in May 2016, it has been decided to exclude the hatchery from the project and reinvest the amount initially destined to such hatchery in two other facilities by increasing their breeding capacity and therefore counter-balance the lack of availability of the third hatchery. The executive Project under action A5 has been amended. Delays in the completion of the update works for the hatcheries did not prevent breeding practices planned for the first year of the project (action C4). In the second breeding season expected in 2017 full availability of the centres for the in-situ breeding for brood stock and a production increase are believed to take place. In the period between June and August 2016 the first tests of captive breeding of barbels have been successfully carried out also thanks to a networking action with international experts. Approximately 40.000 eggs have been fertilized by obtaining at the end of the spawning cycle about 7000 barbel fry, 2000 of which have already been released into the wild (action C5). The remaining 5000 are currently bred at the Monchio facility where the naturally cooler water temperature causes a slower growth; they will be released into the wild as soon as they will reach the correct size for seeds sowing, usually some months. During the first spawning season a lower number of fry has been obtained than expected (20000) and they concern exclusively the Common Barbel. In any case, captive breeding of barbels was the actual challenge of this project and this objective has been achieved; during the second year production is expected to increase to achieve, over the whole project period, the expected results. Activities aiming at the eradication and control of alien species (action C7) have been carried out and, parallelly to “seeds sowing” practices, the first artificial substrates in the riverbed have been successfully installed, as sheltering sites (action C3). The scheduled deadline for these two actions (C3 e C7) was the end of May 2016; it has been decided, however, to postpone the completion of the actions by one year parallelly to actions C4 and C5 to ensure better efficiency as to reduction of specific threats for the young brood stocks introduced into the wild. The cost of these actions will remain the same.

With reference to action C6 “Round table with stakeholders for a sustainable management of water resources and control of poaching”, in full compliance with the time schedule, the first three meetings have been held and three agreements have been signed to fight poaching (contexts: Trebbia, Parma-Taro-Po and Enza). The second phase concerning the sustainable management of water resources is correctly in progress.

Parallelly to the beginning of action C4 also action D2 “evaluation of the effectiveness of ex-situ spawning interventions” has been started; the beginning of action D1 (repetition of biological and environmental characterisations under actions A2 and A3) has been on the

contrary postponed by one year in order to be able to assess after one year interventions under actions C2, C3 and C7.

All E actions on communication and F2 actions on networking have been successfully started as detailed in paragraph 4.2. In particular, within the scope of these actions, tasks assigned to the artwork company have been executed, as well as those of the project press officer and educational guides. The Project on Environmental education-formation has been prepared and started (actions A6 and E4) by involving over the period from January to August 2016 n. 14 schools and a total of 1296 students. The project website has been launched (www.lifebarbie.eu), translated in English and constantly updated; a project FB page has been opened (barbolino). Eleven press releases have been published, an article on a specialized magazine, 53 posts on FB. The following dissemination material was produced:

- N. 3000 informative folders to present the project
- 2 roll up banners
- 3000 pins
- 10000 educational folders
- 150 promotional folders for activities with schools
- 500 posters for schools (31/12/2015);
- An education documentary (in several parts) and one cartoon for kids.

Contact has been established with 28 LIFE projects through exchange of information and experiences and/or joint participation and organization of seminars, meetings, conferences and cooperation in the dissemination of results. With some LIFE projects (CON.FLU.PO, CIPRIBER e CSMON), more complex collaboration has been started and in particular the «Memorandum of Undersanding for a sustainable and joint management of fishing practices and for the safeguard of the fish stocks of the Po river» has been undersigned within the scope of a consortium defined “the LIFE projects meet”.

The project partnership has also participated in scientific meetings and conferences at an international level. The technical details on the progress of every single action are reported in the following chapter 5.

In the chapter "Introduction" of this Report a summary statement about the background, threats and objectives of the project are provided, with particular reference to the target species. The chapter "Administrative Section" contains the description of the management system, the project phases, activities and tasks for each phase with its relevant schedule. The administrative and technical issues found and management methods applied for their solution are detailed. The chapter "Technical part" provides a detailed description of each project actions, dissemination/communication activities. An evaluation of the project implementation with reference to the time schedule and expected results is provided as well, and the analysis of long-term benefits with particular reference to the demonstration value and replicability of the project and its transferability to the international level is given. A summary of the costs and the accounting system is provided in the chapter "Comments to the financial report".

3. Introduction

3.1 Description of background, problem and objectives

Italian populations of Common Barbel (*Barbus plebejus*) and Southern Barbel (*Barbus meridionalis*) are increasingly declining as also evidenced by the update of the IUCN Red List where the risk status of the two species has been listed as “vulnerable” and “endangered” respectively. In the Emilia Romagna Region, the populations of two target species are constituted by a limited number of specimens, able to move in large areas within different streams and rivers for different hydrological regimes. An estimate of semi-quantitative type but definitely constant across streams and rivers where the species are present, quantifies the populations in a number of specimens ranging between 1 and 5 (category "rare") and 6 and 10 (category "poor") for about 400 square meters of watercourse.

In general terms, the IUCN identifies as threats to the survival of the barbel habitat alteration/fragmentation (A2) and water pollution (A3). The main threats for the target species in the investigated area are as follows: a) excessive water intakes and consequent reduction in water flow; b) fragmentation of habitats/populations; c) alteration of habitats; d) introduction of alien species; wrong management of fish fauna for fishery purposes; e) climate changes.

The main objective of the project LIFE13 NAT/IT/001129 is the conservation and recovery of native populations of native barbel species in the Emilian tributaries of the Po River through in situ and ex situ interventions as well as the drawing up of guidelines. Starting with the detailed study of the density and distribution of populations, as well as an analysis of threats, the specific objectives of the proposal are as follows:

1. to create new populations and/or reinforce existing populations, in connection with environmental suitability and the composition of the fish community, through specific in situ interventions (reduction of biodiversity loss /defragmentation) and ex situ breeding practices);
2. to identify the threats to the survival of the species at a local scale, and open up discussion among stakeholders in order to reduce such threats through an interprovincial approach thanks to a lasting governance for the protection of target species and , indirectly, of river biodiversity;
3. to eradicate/control the spread of invasive alien species;
4. to establish guidelines for the conservation and sustainable management of species, also to be used for the creation of a general European model; to transfer best practices;
5. to increase sensibilization of media and people through cultural activities on natural conservation matters.

The project objectives will not affect the conservation of global biodiversity, but rather have a positive impact also on other fish species of community interest such as the Western vairone (*Leuciscus souffia*), the Mediterranean trout (*Salmo macrostigma*), the roach (*Chondrostoma genei*) and the Twaite shad (*Alosa fallax*), which are present in the area of investigation.

This study covers rivers and streams running along in the following 14 sites of the Rete Natura2000 of the Emilia Romagna Region: IT4010006, IT4010008, IT4010011, IT4010016, IT4010017, IT4020003, IT4020017, IT4020020, IT4020021, IT4020022, IT4020025, IT4030013, IT4030014 and IT4030023.

The breeding activities will be conducted in the fish hatcheries of Corniglio and Monchio delle Corti in the Province of Parma, out of Natura2000 network.

Concerning Socio-economic aspects, the Project will specifically focus relationships and conflicts between fish conservation and freshwater management. In particular, discussions and activities will be shared with stakeholders and policy makers to successfully reach the project objectives and improve a mutual cultural growth. Citizens will be fully involved in

the project through specific communication, information and formation plans also connected to “citizen science” activities.

3.2 Expected longer term results

Native populations of Common Barbel and Southern Barbel will be recovered in the study area through specific breeding practices for the reintroduction of about 10.000 fry/year of the two target species. The reintroduction/reinforcement fauna plan included in the project is crucial to the recovery of the species in relation to their current state of threat. In fact, the recent revision of the IUCN Red List raises the threat level of the Common Barbel from the status "near threatened" to "vulnerable", and from VU to "endangered" for the Southern Barbel, thus witnessing a steady worsening status of the populations of both species. These overall figures are confirmed by the results of the censuses held in life BARBIE (action A2) showing a sharp contraction of the populations of indigenous barbels with particular reference to the Canine Barbel against literature data.

In particular, Canine Barbel was found with a well-structured population only in the brook Cerezzola (SCI IT4030014) and in the creek Parmossa (in extra SCI area), despite its historical presence in the provinces of Parma, Piacenza and Reggio Emilia would have reported it in many streams of the medium-Apennine, hilly portion of drainage basins. The general decrease in population of both species has, among the various causes, even the colonisation of some stretches of Trebbia, Taro, Arda and Enza by individuals of allochthonous European barbel.

If in the past, the assumed low level of risk might have not asked for immediate support breeding interventions from a certain point of view, nowadays, instead, the threats and the constant quality / quantity decline of the populations of both species in Emilia Romagna, do not justify the precautionary approach proposed by Zerunian¹ in order to avoid the restocking with hybrids. In any case the utmost care is paid in selecting the specimens to undergo breeding practices to avoid any hybrids and prevent any exotic individuals from being introduced by operating careful morphological and molecular characterisations.

Simultaneously, river defragmentation practices (construction of N°6 passages for fish) will also be carried. In particular, a sustainable management of the rivers will be favoured through the subscription of specific agreements on multi-annual planning among the stakeholders as well as specific activities of environmental information/formation.

¹ Zerunian, S.. (2003). Overall action plan for the conservation of Italian fish of fresh water. Ministry of the Environment and National Institute of Wildlife. Nature Conservation Books no. 17, 123 pp

4. Administrative part

4.1 Description of the management system

The project encompasses 24 actions: 6 for the planning of the activities, 7 on actual preservation practices and the remaining actions to monitor the project impacts (n.3), for dissemination (n.5) and management (n. 4).

The project can therefore be subdivided into the following main phases:

phases	Activites	tasks	planning
1	setting-up of work group	A1	concluded
2	preliminary characterisation of the study area	A2,A3	almost concluded
3	planning of activities (concrete, awareness actions – environmental education)	A4,A5,A6	almost concluded
4	Adaptation of spawning centres	C1	almost concluded
5	concrete actions of conservation: fauna reintroduction/reinforcement, river defragmentation, placing of sanctuaries in riverbeds, control of the alien species	C2,C3,C4,C5,C7	in progress
6	concerted action between stakeholders and decision makers	C6	in progress
7	awareness, communication and networking actions	E1,E2,E3,E4,E5,F1	in progress
8	monitoring of phase 5 effectiveness	D1,D2,D3	in progress
9	drawing up of “after LIFE” guidelines and planning	E6, F4	not started
10	management and audit	F1, F3	in progress

The project progress is reported in the following Gantt-chart (Fig. 1).

The project partnership was originally made of four public bodies: the University of Parma (UNIPR), as coordinator, the Management Body for Sustainability of Western Emilia region (EPGB), The Po basin Water Authority (Autorità di Bacino del fiume Po, AdbPO) and the Tuscan-Emilian Apennine National Park (PNATE) and two private bodies: the academic spin-off GEN-TECH Srl (GEN-TECH) and the Mario Negri Sud Foundation (FMNS). At the kick off of the project (Action A1) a working group has been formed and every partner has appointed a technical and administrative contact (Fig. 1). The beneficiary coordinator UNIPR has also appointed a Project Leader, Prof. Francesco Nonnis Marzano as well as two other persons for technical support and administrative-financial support respectively for the project management: dott.^{sse} Federica Piccoli and Daniela Sciarra. Notably, hiring the management consultant by UNPR as of 1/4/2016 has been necessary in order to recover specific competencies which belonged to the staff of the FMNS, expelled from the partnership. Daniela Sciarra shall take care of the administrative-financial management of the project and its account rendering, supporting the PL.

Names and email and telephone data of the whole working group are available from the project website under the section “contacts/partners”: <http://www.lifebarbie.eu/it/p/7>.

The organizational / project coordination actions (action F1) take place mainly through mail / phone contacts, monthly reports (in attachment), scheduled partnership meetings (every six months) and extraordinary meetings according to the specific project requirements. The main meetings are shown in the following table:

Date	Action	Object	Place
09/4/2015	A6	meeting with educational guide	EGPB
21/4/2015	A4	meeting between UNPR and AIPO	AIPO
05/5/2015	A5	specific management meeting	acquacolture plants
25/5/2015	F1	semi-annual partnership meeting	AdbPo
23/7/2015	A4	meeting between UNPR and AIPO	AIPO
11/9/2015	C1	specific management meeting	UNPR
07/10/2015	A4	meeting between UNPR and AIPO	AIPO
22/10/2015	E4	meeting with press officer	EGPB
6/11/2015	F1	semi-annual partnership meeting	UNPR

10/11/2015	E4	meeting with press officer, graphic studio and guide	EGPB
11/11/2015	A4	specific management meeting	Enza river
25-26/11/2015	F1	monitoring visit by the external project monitor	UNPR
21/1/2016	C1	specific management meeting	acquaculture plants
14/04/2016	A3	specific meeting about DMV analysis	Enza river
16/04/2016	F1	semi-annual partnership meeting	UNPR
23/5/2016	A4	meeting about VINCA procedure	Region Office
25/7/2016	C1	specific management meeting	acquaculture plants
15/9/2016	E4	educational management meeting with schools	UNPR
21/9/2016	C1	specific management meeting	acquaculture plants

In particular, the following semi-annual partnership meetings were held, of which the minutes and the "signature sheets" are attached: 25/05/2015; 06/11/2015; 19/04/2016. The next meeting is scheduled for 10/10/2016.

A project evaluation document was also prepared (attached); with reference to the document evaluation reports have been written every six months as of December 2015. The project website (action E2), also allows, in the "reserved area" the filing of documents useful to the partnership while in the "work in progress" area the constant monitoring of compliance with the time schedule.

The partnership agreements between UNIPR and associate beneficiaries EGPB, PNATE, AdbPo and GEN-TECH have been undersigned by December 2014 and submitted to the EU with the *Inception Report*.

In compliance with art. 18.2 of Common Provisions, in January 2016, FMNS has been ousted from the project partnership through a specific amendment retroactively applied to the Grant Agreement and the tasks of such body have been reassigned to the beneficiary coordinator UNPR. On 07/08/2015 the application for additional protocol was sent to the EC by the UNIPR coordinating beneficiary. Later on – after some audits requested by EC – on 16/12/2015 the UNPR Board of Directors approved the “additional protocol” to the BARBIE project (with resolution 543-31397); later on 23/12/2015 the Dean of UNPR signed the amendment (transmission of Prot. no. 116140 of 23/12/2015). On 8/2/2016 the paper copy of the “additional protocol” to the BARBIE project duly signed also by EC was received by UNPR via snail mail.

As of 07/06/2016 with order n.2807 UNPR untrusted the company **Demetra - Società di revisione Srl** (Viale Bizzozzero, 5, 43123, Parma) with the project audit (action F3).

Gantt-chart LIFE BARBIE

BLU:cronoprogramma previsto; VERDE:realizzato in tempo; ROSSO:realizzato in ritardo; X:conclusa; →:in corso

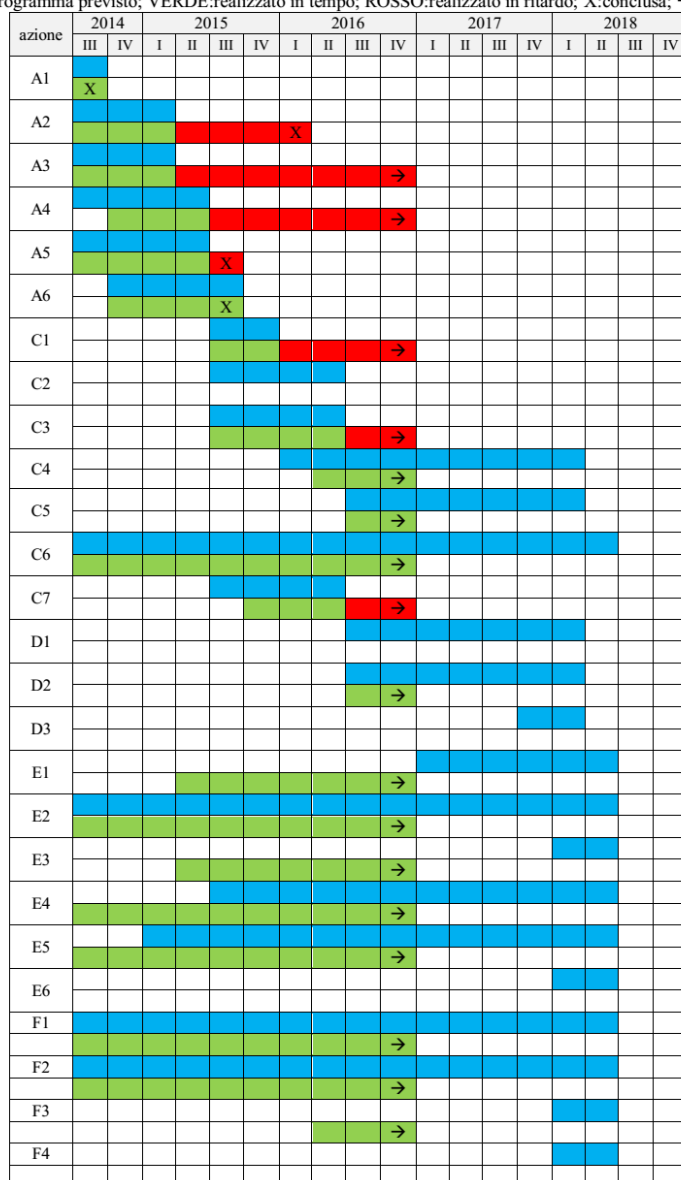
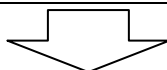


Fig.1 Gantt-Chart LIFE BARBIE (stato di avanzamento al 30/9/2016)

Beneficiary coordinator:	Project Leader:	
UNIPR	Prof. Francesco Nonnis Marzano (Dipartimento di Bioscienze)	
	Technical contact:	Administrative contact:
	Prof. Pierluigi Viaroli	Dott. ^{ssa} Simona Fontana
	Technical support:	Administrative support:
	Dott. ^{ssa} Federica Piccoli	Dott. ^{ssa} Daniela Sciarra



Associate Beneficiary:	Technical contact :	Administrative contact:
PNATE	Dott.ssa Francesca Moretti	Dott. Willy Reggioni
EGPB	Dott.ssa Sonia Anelli	Dott.ssa Marcella Ghiretti
AdbPO	Dott. Christian Farioli	Dott.ssa Maria Collosi
GEN-TECH	Dott. Armando Piccinini	Dott. Nicola Rinaldi

Fig.2 Organization chart of the Project.

4.2 Evaluation of the management system

- *Financial-administrative criticalities*

During the first year of the project an *amendment* to the Grant Agreement has been necessary with the outgoing of the FMNS partner and a reallocation of tasks of the body to the beneficiary coordinator UNIPR. The outgoing of FMNS has been necessary due to a change in the administrative and financial status of the FMNS which was not able to grant the BARBIE partnership compliance with scheduled project actions, co-funding terms and conditions and achievement of project objectives. On the 5th of March 2015 FMNS has gone into liquidation due to serious contract noncompliance towards employees and suppliers due to persistent financial problems and liabilities which could not be afforded anymore for the Foundation surviving. The beneficiary coordinator had previously ignored the application for loan disbursement from FMNS, since no Partnership Agreement had been signed. Project actions scheduled under the coordination of FMNS (actions A1, E2, F1), have been immediately managed by the beneficiary coordinator with some slight delay in their implementation which has been currently recovered.

It must be remarked that unfortunately a general delay was accumulated before the submission of the “Amendment to the Grant Agreement” due to bureaucracy times. In fact, University procedures request different approval steps that go from Department council approval to Administration Board approval and final signature by the Dean committee. The procedure therefore took almost three months as internal University procedure. It is noteworthy observing that the majority of delay must be attributed to the prolonged previous discussion with the new Administrator of FMNS with whom the PL was trying to find a solution that was never reached.

Another significant aspect are the delays encountered in the authorisation processes by the competent regional services in the field of *Environmental Impact Assessment (EIA)*.

For the approval of the Species Recovery Plan, the PL had to interface several times with the people in charge of the proceedings at the Regional Offices of Bologna, before getting a positive opinion. The slowness in granting the positive opinion (5 months) did not affected the implementation of the plan in any way. We must point out that the reorganisation of the provincial administrative department was started in Italy in 2016 with the passage of many competences and tasks, including fish service and Nature 2000 network management to the region or to other Agencies, and those aspects have unpredictably affected the administrative procedures of LIFE BARBIE.

It is believed that the conclusion of the reorganisation of regional offices, open contacts with the competent authorities and the experience gained by the coordinating beneficiary in this final year of project will expedite the granting of future authorisations (i.e. regarding the river defragmentation project).

Moreover, in spring 2016 the PL learnt from Dr. Zini – the Selvanizza plant’s owner - of his intention to sell; given the inherent uncertainties in the real possibility of collaboration of the new owner, the PL - in agreement with the Partnership – decided in May 2016 to exclude the plant from the project, and to reinvest the amounts initially intended for it in the other two centres, thus increasing their breeding capacity. In that way they compensated for the unavailability of the third centre. A variation to the executive Project was then created and performed under Action A5, as detailed in the chap. 5.

- *Criticalities linked to adverse weather conditions or technical problems*

There have been early delays/impediments in the implementation of some sampling campaigns due to the exceptional weather conditions that have altered the hydrometric regime of rivers under study for an extended period of time. In particular the autumn rains in 2014

and winter snowfalls in 2015 caused the field activities to be concentrated in the spring-summer 2015. In some study sites, however, all the indicators established could not be applied as a result of the low water present. The A2 and A3 actions scheduled by March 2015 have been postponed and then carried out within December 2015.

However, the preliminary characterisation concerned all the SCI being studied, and it made it possible to define the reference framework to plan the next concrete activities of conservation C3, C4, C5 and C7. The action A3 was not declared over, as the definition of minimum vital flow (MVF) near the dikes on the river Enza is still missing. The delay can be attributed to the difficulty in contracting an expert to carry out the study, as detailed in the following paragraph. The procedures for the assignment to the qualified technician are currently being defined. The study is expected to be completed in the spring-summer 2016, and anyhow in a functional way to the defragmentation works covered by the action C2 "River defragmentation Interventions in the River Enza (SCI IT4030023)".

Thanks to the direct interest of the PL and GEN-TECH technicians, the operation of the fish hatcheries of Monchio delle Corti and Corniglio has been ensured, although the adjustment works have not been yet finished. In particular, provisional tanks for farming the broodstock have been set up in centre of Corniglio, and artificial insemination activities have been performed directly in the natural environment with subsequent transport of the fertilised eggs to spawning facilities. In the second spawning season expected in 2017, the full functionality of the centres for the farming of broodstock on the spot and the increase in production is expected to be guaranteed.

As expected, the spawning in captivity of barbels has been a key aspect of the project that has required a great effort of UNIPR and GEN-TECH researchers; the current literature about Cyprinidae spawning is indeed poor. In the spring-summer 2016 we were able to reproduce barbels in captivity, also thanks to networking activities with the universities of South Bohemia and Rome Torvergata which had previous experience about Cyprinidae spawning. The suggestions were collected and adapted to the indigenous species of Emilia Romagna which were the project target. More than 60,000 eggs of common barbel and approximately 1,000 eggs of brook barbel have been obtained, getting about 7,000 fry of common barbel from these ones. Mortality of brook barbel eggs is due to the higher sensitivity of the species and the initial inexperience of the operators. In the second spawning season the number of broodstock and fertilised eggs will be increased and - using the protocols successfully developed throughout the first year - the number of fry is expected to be increased, thus achieving the expected results of the project (i.e. surpassing the 10,000 fry/year for species).

Actions C3 and C7 concerning the placement of artificial substrata in the riverbed and the control of invasive alien species - whose scheduled deadline was May 2016 - must be extended by one year without additional costs for the EC in order to ensure a greater effectiveness of fauna reintroduction/reinforcement actions in terms of reduction of specific threats to young specimens of barbels into the wild.

The direct intervention of the Project Leader and a fruitful constant relation with the monitor Dott.^{ssa} Iva Rossi and therefore the EU, allowed for a correct management of those difficulties deriving - as detailed in the following chapter 5 - and at the same time granting the expected project results.

We also point out that within the work activities with stakeholders included in the project (action C6), the Municipality of Traversetolo expressed its will to cooperate in the project and notably it has called for the inclusion of SCI "IT4020027 Cronovilla" into LIFE BARBIE study area.

The site was established in 2012 (with update in 2014) and therefore not initially included in the project proposal.

The site (92 hectares of extension) is located on the left bank of river Enza in the foothills river plain in the province of Parma, at the confluence with the stream Termina; a residual population of common barbel (*Barbus plebejus*) object of interest is present there. The site is located between the SCI IT4030023 and IT4030014 already included in the project. The inclusion of this additional site would therefore give continuity to the conservation measures already provided for by the BARBIE project in the river Enza. The expansion of the study area would also be useful to give a positive response to a requirement of the local community and therefore to improve the collaboration relationships between the BARBIE work group and local governments. Attached are the SCI sheet with orthophotos and applications for inclusion received by the Partnership from the Municipality of Traversetolo and the local environmental association Cronovilla Onlus.

The following table also lists the type and times of the reports included in the project.

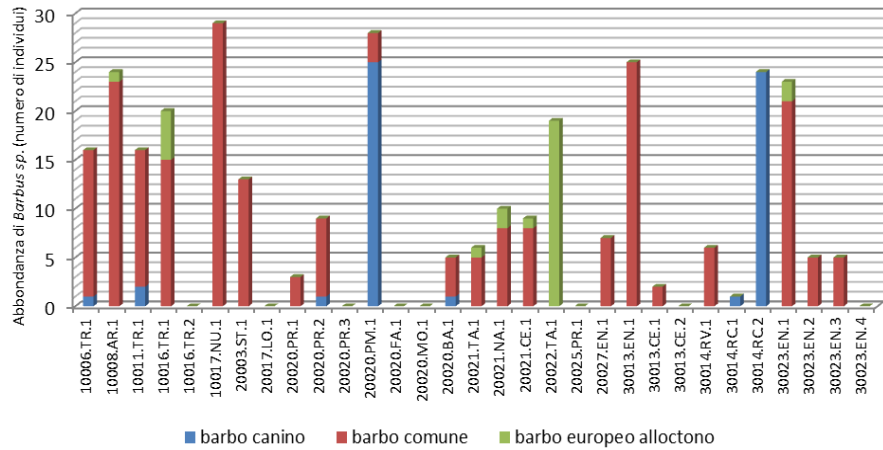
Type of document	Scheduled forwarding date	Actual forwarding date
Inception report	31st March 2015	16th April 2015
Amendment to the agreement	---	07th August 2015

4. Technical part

4.1 Technical progress, per task

Please find below the detailed technical progress of the project actions started or achieved in the period to which this report refers (March 2015-September 2016). As required by the LIFE guidelines, management (A1, F1, F3) and dissemination (A6, E1, E2, E3, E4, E5, F2) actions are dealt with separately, in the previous chapter 3 and following chapter a.5.

Action A2	STUDY OF THE DENSITY AND GEOGRAPHICAL, HISTORICAL AND CURRENT DISTRIBUTION OF BARBEL POPULATION; CENSUS OF ALIEN SPECIES AND GENETIC CHARACTERIZATION	
Beginning:	Scheduled date: July 2014	Actual date: July 2014
End:	Scheduled date: February 2015	Actual date: March 2016
Carried out activities:	<p>Between July 2014 and December 2015 samplings by electric fishing were conducted in the whole BARIBE study area, in n. 31 sites, in Emilian tributaries of Po river; a total of 305 barbel individuals retrieved. In-situ sampling of a biological specimen has been conducted for genetic characterization in the lab (Cytochrome b mtDNA sequence analysis). In the shortest time possible, fish have been then released in the same catching spot. Pictures have been taken. Starting from the analysis of the naturalness of the present fish community the ISECI index - <i>Index of the Ecological Status of Fish Communities</i> – (Zerunian <i>et al.</i>, 2009) has been calculated.</p> <p>DNA sequencing has been performed through specific procedures that requested DNA amplification, purification and sequencing reactions. Sequencing has been performed both inside the UNPR labs and in outsourcing at Macrogen LTD. This is a standardized approach to reach intercalibration and results validation. More specifically, outsourcing sequencing can lower general analyses expenses. Intercalibration was fundamental to obtain reliable sequences to be used as reference data while using Illumina “Massive parallel sequencing” (Next Generation Sequencing). According to preliminary experiences with NGS, the technique is requesting additional efforts to obtain reliable data due to the absence of previous data on barbel genomes. The effort dedicated to obtain reliable results with Illumina NGS will be fundamental to succeed in Action C4 and D3 dedicated to reproduction and restocking.</p> <p>Following mtDNA analyses a further assessment was carried out using nuclear codominant markers. The unexpected tetraploid genome appeared as a limiting point in population assessment and hybridization determination. For this reason, nuclear analyses were mainly concentrated on 5 specific loci that resulted particularly useful from a molecular diagnosis. More specifically, Barb79, Barb59, Barbus33, Barbus39, Barbus50 loci were initially selected among a large panel of markers previously described. Their fine determination was successfully reached after a prolonged preliminary testing to reach an appropriate marker set up.</p> <p>According to fish monitoring and genetic analyses, as shown in the following graph, in six (21%) sites no barbel population was retrieved. Alien individuals have been retrieved in six sites. In general, molecular analyses on mtDNA evidenced the following density values: 72% Common Barbel, 18% Southern Barbel 10% alien barbel.</p>	



Codominant markers were functional to discrimination of hybrid specimens. In fact, introgression driven by *Barbus caninus* within *plebejus* populations were detected at SCI La Mora (IT4030013) although the population determined at morphological level appeared to be quite homogenous and preliminarily attributed only to *Barbus plebejus*. Unfortunately, this population is fundamental to the project as it represents a well structured and abundant group of common barbels necessary to restock the entire Enza basin. It will therefore be necessary to deeply investigate even low frequency introgression levels using NGS with the aim of obtaining large progeny numbers avoiding any possible genomic contamination. Nuclear DNA analyses performed on canine barbels obtained from Rio Cerezzola (SIC IT4030014) and Parmossa revealed pure canine genome without any introgression from other species.

Results of morphological and molecular analyses were fundamental for the selection of breeders to be used during summer 2016 reproduction campaign (see Action C4). In particular, following deep preliminary fish monitoring specific sites in Enza, Parma, Parmossa, Cerezzola and Vico rivers were selected for reproduction campaign. Additional sites in Parma and Reggio Emilia provinces were excluded due to low demographic numbers or bad morphological and genetic assessments. Rivers of Piacenza province were excluded in the first season due to the flooding problems of past winter and will therefore be postponed to summer 2017.

From a general point of view, the study evidences a decline in the initial barbel populations, with reference to literature data; in particular a structured population of Southern Barbel was retrieved in two areas only.

During the summer samplings some specimens of dead barbel and roach have been retrieved and sent to the zooprophyllactic Institute of the Piedmont region for post-mortem examination and diagnostic analysis.

No obvious causes of infectious disease have been highlighted therefore the die-off was attributed to the rise in temperature and anoxic crises of the poor water remaining in the stream. Poor water seems to represent the environmental parameter which mostly impacts on fish, so as to influence their survival during the summer months.

The results, detailed in the technical report attached, have therefore made it possible to define the size and distribution of the species of the project target and alien species in the study area.

Specific authorizations for electric fishing have been required to the competent territorial offices.

Deliverables:	Action A2 final technical report
Milestones:	-
Issues at stake	Initial delays and obstacles have hindered the implementation of some sampling

and changes, if any:	campaigns due to the exceptional weather conditions that have altered the hydrometric regime of rivers being the object of this study for an extended period. As a matter of fact, the heavy rains in the autumn of 2014 have caused extensive flooding, with heavy damage over a large part of the provinces of Parma, Piacenza and Reggio Emilia, such as to push the government to declare a “state of emergency for natural disasters”. In the winter of 2014, heavy snowfall led to fragmentary samplings . In the summer of 2015 abnormal low-water periods have been recorded. Delays have been caught up in any case without compromising subsequent concrete conservation actions (actions C).
Annexes:	A2.1 Authorizations for electric fish A2.2 Action A2 final technical report A2.3 Photos and newspaper articles about the flood in Piacenza

Action A3	ENVIRONMENTAL CHARACTERISATION OF THE STUDY AREA	
Beginning:	Scheduled date: July 2014	Actual date: July 2014
End:	Scheduled date: February 2015	Actual date: in progress
Carried out activities:	<p>The chemical and physical characterisation of water as well as the assessment of the macrobenthic community have been performed in two sampling dates, the first one over an extended time interval corresponding to the winter-spring 2015 (early February-late May) and the second one during the early summer period (early June – late July 2015). Surveys for the implementation of the index of river functionality have been done during the second sampling campaign, in late July. For every SCI project area at least one sampling station has been assigned. Some chemical and physical parameters of waters have been analysed on-situ (T, pH, electrical conductivity, dissolved oxygen) by using multi-parametric probes. In the lab, the following BOD₅, SST, NO²⁻, NO³⁻, NH⁴⁺, Cu and Zn values have been analysed (manual APAT-IRSA 39/2003). Eventually, the IFF and STAR_ICMi indexes have been calculated in order to describe the ecological state of every target site.</p> <p>In this study, investigated sites are arranged along an elevational gradient stretching from the Tuscan-Emilian Apennine ridge to the Po valley and the Po river. Such gradient partially overlaps with a gradient of anthropic pressures particularly present in the plain areas therefore affecting the environmental features of the investigated sites: those featuring a better conservation state are located in the mountain and hill areas. In particular, the high stream of the rivers Trebbia, Arda, Enza and Parma (sites 10006.TR.1, 10008.AR.1, 10011.TR.1, 10016.TR.1, 10016.TR.2, 20020.PR.1-2, 30013.EN.1) features an ecological state ranging from good to sufficient.</p> <p>A special remark must be devoted to naturally or artificially intermittent site characterized by low-water periods during the summer (sites 30014.RV.1, 30014.RC.2, 30023.EN.1-2-3-4, 10017.NU.1, 20022.TA.1). These sites are often characterized by good quality as to chemical-physical characteristics of the water and of macroinvertebrate community in the spring period. In summer, however, the values of these two descriptors worsen considerably and, in some cases, they can hardly be assessed.</p> <p>Two sites in particular, in the SCI IT4010016 “Lower reach of Trebbia” and IT4020021 “Medium reach of Taro”, have evidenced a good state of conservation of all of the analysed environmental matrices. These sites, however, during the dry summers like those analysed in this project, undergo a strong reduction of flows due to water intakes for irrigation purposes. Such flow reduction combined with an increase in temperature, favours the formation of algal skeins liable to modify the river metabolism, as also evidenced by the low BOD₅ value of site 20022.TA.1.</p> <p>The preliminary technical report has already been submitted together</p>	

	with the <i>Inception report</i> . A progress report at 08.30.2015 is attached (in this report lacks only the DMV study).
Deliverables:	Action A3 final technical report
Milestones:	-
Issues at stake and changes, if any:	<p>Initial delays and obstacles have hindered the implementation of some sampling campaigns due to the exceptional weather conditions; abnormal low-water periods of waterstreams in some sites have prevented the analysis of macrobenthonic fauna due to the inapplicability of the method (Buffagli <i>et al</i> 2007); the sampling of microvertebrates in residual waterholes is not representative. Likewise action A2, these problems will not jeopardize the achievement of conservation objectives (actions C2, C3, C4 e C5).</p> <p>This action will be achieved with the determination of the DMV (Minimum Vital Flow) of the Enza river barriers. The delay is due to the difficulties met in the appointment of an expert able to carry out such study. Local experts have been initially contacted having a good expertise on the river system and dynamics; such experts however did not agreed with the proposed remuneration. Other national firms have been contacted later on and some preliminary surveys of the site have been carried out. The study completion is scheduled for the spring-summer 2016 period or in any case following the defragmentation works planned in action C2 “River defragmentation interventions on the Enza river - SCI IT4030023”. Furthermore, the correct definition of DMV is strictly related to the project that will be applied for river defragmentation. For this reason, a preliminary survey of river habitat has been executed on April 15th, 2016 with technicians skillfull in DMV calculation and administration procedures to subscribe contracts are on the way. Therefore, final DMV calculation will be performed before spring 2017 according to final project illustrating the best chosen technology for Fish pass along Enza river (see action A4). In this way, the DMV calculation will not be just a mere mathematical count but it will consider real ecological aspects related to river flow inside the fish pass.</p>
Annexes:	A3.1 Action A3 progress report (08.30.2015)

Action A4	DRAWING UP OF THE RECOVERY PLAN FOR TARGET SPECIES FOLLOWING THE PRELIMINARY STUDIES RESULTS	
Beginning:	Scheduled date: July 2015	Actual date: December 2014
End:	Scheduled date: April 2015	Actual date: in progress
Carried out activities:	<p>Following the results of the preliminary studies of actions A2 and A3, the first part of the Recovery plan of the project target species has been drawn up, as enclosed. The document encompasses the following chapters:</p> <ol style="list-style-type: none"> 1. <i>Introduction</i> 2. <i>Biology, ecology and historical distribution of the common Barbel and of the Southern Barbel in the Emilia Romagna region</i> 3. <i>Threats to the species survival</i> 4. <i>Fish and fauna characterisation and environmental characterisation of the SCIs within the LIFE BARBIE project</i> 5. <i>fauna reintroduction/reinforcement activities</i> 6. <i>Control of invasive alien species pursuant to regulation 1143/2014/UE</i> 7. <i>Installation of artificial substrates in the riverbed</i> 8. <i>Identification of additional interventions for the elimination/ minimization of threats for the species</i> 9. <i>Intervention summary and time schedule</i> 10. <i>Bibliography</i> <p>The first part of the Plan has been submitted to the VINCA regional procedure</p>	

	<p>pursuant to Habitat Directive; as of 15/7 the Emilia Romagna region has given its favourable opinion (PG.2016.0531201 of 15/07/2016).</p> <p>For the preparation of the second part of the Plan, concerning the defragmentation interventions on the Enza river, Parma university (UNPR) appointed the firm Studio Zanzucchi Srl; they have prepared a draft project that you will find enclosed. A debate is now open with all stakeholders (action C6) and Ing. Mirella Vergnani (Agenzia Interregionale per il PO; AIPO), who is in charge of the delivery of the authorisation for the water interventions. In the next month (November 2016) the final project will be defined and the authorisation procedure started so as to start works, with a delay, in next spring (action C2 “River defragmentation interventions on the Enza river - SCI IT4030023”).</p> <p>Authorization procedures will consider the environmental impact of fish passes and connected working procedures with reference to Habitats Directive 43/92/CEE, and related Italian regulations. In particular, the project participants will elaborate a “study for environmental impact” (SIA) to be submitted to Regional Government. In relation to this, preliminary discussions were started with local public decision makers, also following project suggestions delivered by AIPO.</p> <p>More specifically, the project will be based on boulders allocation in proximity of unsurmountable concrete barriers, with the aim of obtaining small water basins functional to barbels migration. Big rocks will be positioned and connected each other either with steel wires or with limited amounts of cement and steel. No specific activities on the barriers will be performed and this will therefore avoid additional authorization problems with local river managers. From an environmental point of view, the fish passes will bring a visual and ecological improvement to the natural habitat.</p>
Deliverables:	Recovery plan for the target species
Milestones:	-
Issues at stake and changes, if any:	<p>The PL has got in contact many times, over the phone and in person, with people in charge of the VINCA procedure at the regional offices in Bologna. The delayed concession of the favourable opinion (5 months) has not hindered in any case the implementation of the plan (actions C3 and C4).</p> <p>After consulting also the person in charge of the monitoring, Dott.^{ssa} Iva Rossi, it has been decided to divide the plan into two parts. The second part of the plan, concerning the river defragmentation interventions, requires longer project and implementation times. Delays accrued in this action will lead a delay in the achievement of the subsequent action C2; in any case, works are expected to be accomplished in due time to achieve expected results during the project period while also planning a correct monitoring. The completion of action C2 “River defragmentation interventions of the Enza river - SCI IT4030023” scheduled for May 2016, will probably be delayed by 6 months-1 year. In relation to this, considering the involvement of both AIPO and Regional Government in the direct evaluation of project, we do not expect additional delays during authorization of fish pass constructions. It must be remarked that shared decisions led to a preliminary project mostly based on landscape engineering that will consider the setting of boulders and rocks to build the different fish passes. We strongly believe that this nature-based approach limiting engineering infrastructures and concrete deposition will certainly speed up the construction process, avoiding additional delays. The 6 fish passes will be completed during summer 2017.</p>
Annexes:	<p>A4.1 Part A of the Recovery Plan</p> <p>A4.2 Favourable opinion by VINCA Part A Recovery Plan</p> <p>A4.3 Draft Part B of the Recovery Plan – progetto di deframmentazione</p>

Action A5	DRAWING-UP OF THE ADJUSTMENT PLAN OF THE FISH HATCHERIES OF MONCHIO DELLE CORTI (PR), CORNIGLIO (PR) AND SELVANIZZA (PR)	
Beginning:	Scheduled date: July 2014	Actual date: July 2014
End:	Scheduled date: June 2015	Actual date: July 2015
Carried out activities:	<p>Meetings and joint technical inspections were held among PNATE, UNIPR and GEN-TECH, even in the presence of the plant managers.</p> <p>On 17/03/2015 the Ing. Roberto Zanzucchi (Determination of the National Park Manager no. 45) was given a technical task for drawing up the adjustment plan of fish hatcheries. On 30/06/2015 prot. no. 1437 the executive Project called «Upgrade interventions of the fish hatcheries of Monchio delle Corti, Corniglio and Selvanizza in the Province of Parma», later endorsed by PNATE with Determination of the National Park Manager no. 194 of 15/07/2015 was delivered.</p> <p>The plan includes the posing of an additional tank in Corniglio, plumbing retrofit, upgrade of drain systems and tanks in order to increase the breeding capacity of centres. It also includes the installation of probes for the remote monitoring of water quality in tanks and video cameras for video surveillance. The supply of specific equipment for the breeding and incubation of barbels is expected as well.</p>	
Deliverables:	Renovation plan of aquaculture plans	
Milestones:	-	
Issues at stake and changes, if any:	-	
Annexes:	A5.1 Renovation plan of aquaculture plans A5.2 Endorsement Determination of PNATE's Director	

Action C1	RENOVATION OF FISH HATCHERIES OF MONCHIO DELLE CORTI (PR), CORNIGLIO (PR) AND SELVANIZZA (PR)	
Beginning:	Scheduled date: July 2015	Actual date: September 2015
End:	Scheduled date: December 2015	Actual date: in progress
Carried out activities:	<p>The main activities carried out are detailed below:</p> <ul style="list-style-type: none"> - purchase of equipment for fish breeding on 05.12.2015 with Determination of the National Park Manager no. 334; - purchase of freezers for fodder storage on 18/11/2015 with Determination of the National Park Manager no. 306; - purchase of submersible pumps on 04/12/2015 with Determination of the National Park Manager no. 333; - purchase of equipment for water monitoring and video surveillance of fish hatcheries on 23/11/2015 with Determination of the National Park Manager no. 316; - appointment for performing works in the breeding centres on 16/01/2016 with Determination of the National Park Manager no.5, with works started on 11.05.2016 and currently underway. <p>Inspections at the centres were carried out in the presence of the associations managing the plants, the appointed firm, the Design Engineer, EGPB and UNPR. On 14/7 the upgrade works of Monchio delle Corti's plant were completed; works were started later at Corniglio plant. In particular, in order to guarantee the first activities of spawning included in action C4, both egg hatching trough ("Zug" jars) and artemia salina hatching devices were installed and set at work by GEN-TECH and UNPR personnel. Moreover, specific tanks for breeding larvae were outfitted with a water thermal regulating and handling system.</p>	

	<p>Tanks feature suitable dividing partitions to ensure the separation of larvae according to their maturation stage and origin. On 30/9 the expected tanks were installed and filled at Corniglio plant with an expansion of the external area of the plant. The remaining upgrade works are currently underway . Interventions that will be completed by next November concern the arrangement of loading/unloading wells and water recovery traps (cleaning, replacing pipes, and construction of some new pipelines), and the reconstruction of water supply and drainage system of the hatchery (with interventions to water distribution lines to the inner tanks and troughs, the construction of a system of waste water recovery of the hatchery tanks and the construction of a new floor drain with connection to the sewer line).</p> <p>In both plants video cameras and multiparameter probes were regularly installed for the remote monitoring of some chemical and physical parameters of waters in breeding and surveillance. Data can be referred to to the following link: http://www.bitlineftp.com/monchio/.</p> <p>Meetings/inspections were carried out to plan out and manage works. On 21/9 the last joint inspection PNATE-UNIPR-GEN-TECH was carried out for the assessment of functionality of the executed works and agreements for the completion of works in Corniglio scheduled within November 2016.</p> <p>We point out that the authorisation of the regional veterinary services for using the centre in Corniglio (PR) was issued pursuant to the Legislative Decree 148/08 and Ministerial Decree 3/08/11; enclosed.</p>																																								
Deliverables:	-																																								
Milestones:	Activation of the adequate centres (31/12/2015)																																								
Issues at stake and changes, if any:	<p>Following the hypothesis of ownership transfer of the fish hatchery in Selvanizza (PR) and the resulting uncertainties in the real possibility of collaboration of the new owner to the actions of the LIFE BARBIE project, it was agreed to exclude the plant from the project in May 2016 and to reinvest the sums originally destined to it into the two other Centres of Monchio delle Corti and Corniglio, thus further improving its capabilities in terms of functionality to accommodate the breeding practices for ex-situ spawning of the target species, and making up in this way for the unavailability of the third centre. With reference to that which is provided for by the form, it was agreed to invest the resources destined to the fish hatcheries only in the two facilities of Monchio delle Corti and Corniglio, including further processing which is required under way, especially to increase the breeding capacity of centres in full compliance with the project targets. . Notably, the following works are required:</p> <table border="0" data-bbox="491 1572 1356 1859"> <tr> <td colspan="4">1) Impianto ittiogenico di Monchio delle Corti:</td> </tr> <tr> <td>• risanamento vasca rettangolare terminale</td> <td>importo</td> <td>€</td> <td>2.700,00;</td> </tr> <tr> <td>• realizzazione piano di posa per vasca in vetroresina</td> <td>importo</td> <td>€</td> <td>1.200,00;</td> </tr> <tr> <td>• fornitura e installazione griglie vasca ovale</td> <td>importo</td> <td>€</td> <td>500,00;</td> </tr> <tr> <td>• realizzazione pavimentazione in calcestruzzo per opere di presa Cedra e Cedrano</td> <td>€</td> <td></td> <td>1.100,00.</td> </tr> <tr> <td colspan="4">2) Impianto ittiogenico di Corniglio:</td> </tr> <tr> <td>• rifacimento parte di recinzione</td> <td>importo</td> <td>€</td> <td>1.350,00;</td> </tr> <tr> <td>• realizzazione platea di fondazione per nuova vasca in vetroresina</td> <td>importo</td> <td>€</td> <td>1.550,00;</td> </tr> <tr> <td>• spostamento tubazione idrica interferente</td> <td>importo</td> <td>€</td> <td>250,00;</td> </tr> <tr> <td>• rifacimento rete fognaria di scarico delle vasche</td> <td>importo</td> <td>€</td> <td>519,00.</td> </tr> </table> <p>The variation includes the execution of more works equalling the amount of EUR 9,169 (costs of new works unchanged) and less supplies equalling the amount of EUR 8,919 (failure to supply the wastewater phyto-treatment plant expected in Selvanizza). Selvanizza). The enclosed document shows the new bill of quantities of the project.</p>	1) Impianto ittiogenico di Monchio delle Corti:				• risanamento vasca rettangolare terminale	importo	€	2.700,00;	• realizzazione piano di posa per vasca in vetroresina	importo	€	1.200,00;	• fornitura e installazione griglie vasca ovale	importo	€	500,00;	• realizzazione pavimentazione in calcestruzzo per opere di presa Cedra e Cedrano	€		1.100,00.	2) Impianto ittiogenico di Corniglio:				• rifacimento parte di recinzione	importo	€	1.350,00;	• realizzazione platea di fondazione per nuova vasca in vetroresina	importo	€	1.550,00;	• spostamento tubazione idrica interferente	importo	€	250,00;	• rifacimento rete fognaria di scarico delle vasche	importo	€	519,00.
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• spostamento tubazione idrica interferente	importo	€	250,00;																																						
• rifacimento rete fognaria di scarico delle vasche	importo	€	519,00.																																						

	<p>Delays in activating the centre of Corniglio were experienced due to technical issues during the implementation phase of works, in any case those delays have not prevented the breeding activities planned in the first year of the project (action C4). In particular, the “I cannisti Val Parma” Fishing Club – which manages the facility in agreement with the Management Body for Sustainability of Western Emilia region – asked the Project Management for the possibility of interrupting the execution of interventions throughout summertime, as the Salmonidae usually bred inside the plant could have been adversely affected by disturbances caused by the execution of interventions, especially as far as the works on water supply network are concerned. Moreover, as mentioned above, the decision to give up the plant of Selvanizza has disengaged resources that were then reused for additional works to complete and integrate those included. The interventions will be completed by November and concern the arrangement of the charging/discharging wells and water recovery (cleaning, replacing pipes, and construction of several new pipelines) and the reconstruction of water supply and drainage system of the hatchery (with interventions on the water distribution lines to tanks and troughs interior, the construction of a system of recovery of the waste water of the hatchery tanks and the construction of a new floor drain connected to the sewer system).</p> <p>In the expected second spawning season, we believe we are able to ensure the full functionality of the centres for the breeding on the spot of broodstock and increase in production; the full functionality of the centres will also ensure the implementation of activities that were initially expected at the centre of Selvanizza and which are now to be carried out by the two centres of Monchio delle Corti and Corniglio.</p> <p>In the implementation of the takeover of the Region to the Provinces in the matter of "hunting and fisheries" (RL07/30/2015, no. 13 "Reform of the regional and local government system and provisions of the City of Bologna, Provinces, Municipalities and their Unions"), in general the Emilia Romagna has decided to entrust the management of regional hatcheries to fishing associations. In the specific case of hatcheries of Monchio delle Corti and Corniglio - also in reference to the LIFE BARBIE - the Region, instead, has kept its custody temporarily (until 31/12/2016) to EGPB with the Regional Council Resolution No. 1335 of 01.08.2016 (enclosed). In this regard, we underline that the Convention between PNATE and EGPB for the integrated management of technical and administrative structures of the two entities (enclosed) will expire as well in December 2016. The facilities of Monchio and Corniglio will be managed by EGPB up to December 2016, whilst as of January 2017 – in agreement with the Region - new specific agreements can be drawn up for the assignment of the management of hatchery of Monchio to EGPB and Corniglio to the competent PNATE in the territory.</p>
LIFE complementary actions:	<p>Besides the works included in the adjustment Plan, further works have been carried out outside the scope of the Project in order to improve the functionality of the plant in Monchio delle Corti. Notably, a tank bottom drain has been refurbished and a pedestrian gangway was built near the tank for a total amount of € 5,600.00.</p>
Annexes:	<p>C1.1 Action C1 photographic documentation. C1.2 Modification to the renovation Plan of aquaculture plans C1.3 Authorisation of regional veterinary services for the use of the centre in Corniglio (PR). C1.4 Decision of the Regional Council no. 1335 of 1 August 2016</p>

	<p>"Implementation of Resolutions no. 2269/2015 and no. 142/2016. Approval of agreement ex art. 15 of l. no. 241/90 and subsequent amendments between Emilia-Romagna Region and the Management Body for Sustainability of Western Emilia region, for the management of hatcheries for fish breeding located in Monchio delle Corti and Corniglio and for conducting restocking activity".</p> <p>C1.5 Agreement between the Tuscan-Emilian Apennine National Park and the Management Body for Sustainability of Western Emilia region for the functional integration of technical and administrative structures of the two authorities with particular regard to the field of management the fish and the fishing fauna in the Parma area of the Tuscan-Emilian National Park.</p>
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Action C2	INTERVENTIONS OF RIVER DEFRAGMENTATION IN THE ENZA RIVER (SCI IT4030023)	
Beginning:	Scheduled day: July 2015	Actual date: not started
End:	Scheduled date: May 2016	Actual date: -
Carried out activities:	-	
Deliverables:	Interventions of river restoration	
Milestones:	Implementation of river restoration interventions (31/5/2016)	
Issues at stake and changes, if any:	The action is subject to approval of the redevelopment Plan under action A4. It expects to achieve no. 6 out of the no. 7 scheduled interventions are expected to be carried out, as already detailed in the description of the action A4.	
Annexes:	-	

Action C3	PREARRANGEMENT OF ARTIFICIAL SUBSTRATA IN RIVERBED	
Beginning:	Scheduled date: June 2015	Actual date: July 2016
End:	Scheduled date: May 2016	Actual date: in progress
Carried out activities:	On 15/7 - at the same time as action C5 was started, as provided for by the Recovery Plan – the first no. 4 artificial substrata with bricks coated with metal mesh were created and placed in the riverbed in the S IT4020017 "Areas of resurgences of Viarolo, basins of Torrile, flood bed of Po River". In particular, two substrata with bricks coated with metal mesh (with approximately 1 cm link) and two with tiles have been made. The artificial substrata have been placed in two particular points of the waterways, that is in areas partially protected from any unexpected river flooding and at suitable points for their fixing. They will provide shelter to the reintroduced young barbels. Subsequent monitoring after approximately one month of their positioning have allowed verifying the good condition of substrata and their naturalisation in the environmental context. Evaluating their effectiveness in terms of action sanctuary for the reintroduced young barbels was not possible at this stage.	
Deliverables:	Action C3 Photographic documentation	
Milestones:	Positioning of substrata in riverbed (31/05/2016)	
Issues at stake and changes, if any:	It is announced that during the monitoring inspection on August 12 the launch of a highway construction site near the resurgences of Viarolo was recorded in Network 2000 Nature site under study. The works are linked to the realization of the "Overpass Highway Cisa A15-A22 Motorway of Brennero A22 Fontevivo (PR) -Nogarole Rocca (VR)," called Ti-Bre. The findings show that the works are included in the "strategic" works "of national interest" and that it would have all the environmental authorisations provided for by the Italian regulations (Objective Law). The works seem to also involve the low Taro area, near SCI IT4022022.	
Annexes:	C3.1 Action C3 Photographic documentation.	

Action C4	IMPLEMENTATION OF EX SITU SPAWNING ACTIVITIES																																															
Beginning:	Scheduled date: January 2016			Actual date: April 2016																																												
End:	Scheduled date: January 2018			Actual date: in progress																																												
Carried out activities:	<p>From 1st through June 16th with the advice of Prof. Tomas Policar University of South Bohemia (Czech Republic) and prof. Lorenzo Tancioni University of Rome "Tor Vergata", tests of spawning in captivity of the Common and Southern barbels were carried out. Prof. T. Policar's staff was accommodated near the fish hatcheries of Monchio and Corniglio from 10th through June 16th – hosted by UNPR. In particular, stripping of female and male individuals and consequent artificial insemination were performed, both in natural environment and by transporting broodstock to Corniglio and Monchio fishery.</p> <p>In particular, a double strategy was chosen according to previous taxonomic and population genetics determination. In fact, breeders previously selected were partly already available at Monchio hatchery and additional ones were collected directly on the rivers Enza (furtherly transferred to Monchio to implement already available ones) and Parma (transferred to Corniglio hatchery). It must be remarked that barbel reproduction request a dynamic management of spawners as the time of eggs delivery is limited in time to a few hours of maturation and release. For this reason, a rapid adaptation of methodologies was performed during june-july 2016 as unappropriate gonads maturation was observed in fish previously stabulated in artificial tanks. The necessity of finding mature spawners to be stripped "on site" therefore became an urgent need not to fain an entire reproduction season. For the same reason, besides genetically assessed fish, a new stock of breeders was rapidly selected through mtDNA analyses for Enza river and Parmossa, while population of Parma river did not request a complete hybrid determination because of a very consistent <i>plebejus</i> homogeneous population revealed by previous genetic analyses. It must be remarked that thanks to the experience gained during summer 2016, a more appropriate evaluation on a larger set of fish will be executed during next season 2017 where larger juvenile numbers will be obtained.</p> <p>In order to favour eggs maturation, a subsample of females were treated with specific hormones. The gametes produced (approximately 61,000 in total) were incubated in specific hatching troughs and monitored daily.</p>																																															
	<table border="1"> <thead> <tr> <th>data</th> <th>Barbi</th> <th>specie</th> <th>provenienza</th> <th>trattamento</th> <th>N°uova</th> <th>centro</th> </tr> </thead> <tbody> <tr> <td>08/6/2016</td> <td>1 F + 3 M*</td> <td>comune</td> <td>parmossa</td> <td>-</td> <td>3.000</td> <td>corniglio</td> </tr> <tr> <td>12/6/2016</td> <td>1 F + 2 M</td> <td>canino</td> <td>parmossa</td> <td>Ovopel 24 h</td> <td>800</td> <td>corniglio</td> </tr> <tr> <td>13/6/2016</td> <td>1 F + 3 M</td> <td>comune</td> <td>parma</td> <td>Carp Hormon 24 h</td> <td>20.000</td> <td>corniglio</td> </tr> <tr> <td>13/6/2016</td> <td>1 F + 3 M</td> <td>comune</td> <td>parmossa</td> <td>Carp Hormon 24 h</td> <td>18.000</td> <td>corniglio</td> </tr> <tr> <td>17/6/2016</td> <td>1 F + 3 M</td> <td>comune</td> <td>enza</td> <td>Carp Hormon 24 h</td> <td>20.000</td> <td>monchio</td> </tr> </tbody> </table>						data	Barbi	specie	provenienza	trattamento	N°uova	centro	08/6/2016	1 F + 3 M*	comune	parmossa	-	3.000	corniglio	12/6/2016	1 F + 2 M	canino	parmossa	Ovopel 24 h	800	corniglio	13/6/2016	1 F + 3 M	comune	parma	Carp Hormon 24 h	20.000	corniglio	13/6/2016	1 F + 3 M	comune	parmossa	Carp Hormon 24 h	18.000	corniglio	17/6/2016	1 F + 3 M	comune	enza	Carp Hormon 24 h	20.000	monchio
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	<p>* fertilization in field. Starting from 20th June the first hatches have been recorded, then later from 23rd June larvae have been transferred into the tanks and fed with cysts of artemia salina – expressly raised at the facilities. A partial mortality of eggs and larvae was recorded, in particular about of more sensitive canine barbel'ones. About 7000 young fish were obtained:</p>																																															
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	<p>On 5/7 no. 56 broodstock present at the plant of Monchio delle Corti were released. The individuals were temporarily stocked at the centre to monitor their post-</p>																																															

	<p>spawning progress and any production of gametes.</p> <p>They were released in the same sites where they have been caught, in the basin of Enza River. The weaning of larvae goes on in the incubator of Monchio, and a low mortality is recorded. On 15/7 fry produced at Corniglio centre were released, which therefore is currently free of any specimens(refer to Action C5). PNATE entrusted the association «Pesca sportiva Fario» of Monchio delle Corti (external ichthyology technician) and Dr.^{ssa} Francesca Orsoni with two tasks with Determination of National Park Manager no. 144 of 27/06/2016 and no. 169 of 25/07/2016 respectively.</p>
Deliverables:	-
Milestones:	-
Issues at stake and changes, if any:	<p>In the first year of the project, it was expected to produce about 10,000 fry from approximately 20,000 eggs for every single species. As expected, barbel reproduction is the focal point of this project. Literature on cyprinid reproduction is scarce and therefore experimental activities to obtain broodstocks request quite an effort in terms of spawners search, their hormonal induction, stripping and juveniles rearing. We positively reached successful numbers in terms of found spawners and stripped animals reaching a quite valuable number of fertilized eggs. More precisely, more than 60.000 common barbels and almost 1.000 canine barbels eggs were obtained. Unfortunately, the hatching period and above all larval rearing conditions are real limiting steps. As previously highlighted by different authors, larval loss is tremendously high particularly in high mountain conditions where water temperature can affect embryological and larval growth. Therefore, most losses were due to our limited experience with both species and unexpected errors in artificially managing of temperatures. In spite of this, about 7.000 juveniles (2.000 Corniglio, 5.000 Monchio) were obtained, fairly close to declared value of 10.000 previously defined in the proposal. It must be remarked that management of canine barbel is certainly more difficult than the one related to common barbel and no juveniles were obtained because of a low number of obtained eggs. It is also noteworthy observing that we feel very satisfied from a technical point of view since this first year of aquaculture activity on barbels has certainly been very positive. In spite of basic mistakes that have limited eggs hatching and larval growth, we are now capable to work on very large eggs numbers and therefore increase barbel production for both species during the incoming spawning seasons. Spawning in captivity the barbel represented the true challenge of the project. In fact, in this first year spawning techniques could be developed and perfected even through important international networking activities; the production is expected to be increased in the second year.</p>
Annexes:	C4.1 Action C4 Photographic documentation.

Action C5	INTRODUCTION OF BARBELS PRODUCED EX SITU INTO THE WILD	
Beginning:	Scheduled date: September 2016	Actual date: July 2016
End:	Scheduled date: January 2018	Actual date: in progress
Carried out activities:	<p>On 15/7 the first 2000 fry born in captivity at the centre of Corniglio were reintroduced in the wild. They were transported in refrigerated, oxygenated environment, and released in two sites deemed suitable near the resurgences of Viarolo (SCI IT4020017 "Areas of resurgences of Viarolo, basins of Torrile, flood bed of Po River"). The Resurgence of Viarolo was chosen as stable environment and in good preservation, consistent with that which is written in the Recovery Plan.</p>	
Deliverables:	Intervention reports and photographic documentation (31/1/2018)	
Milestones:	Introduction of barbels into the wild (31/1/2018)	
Issues at stake and changes, if any:	Refer to that which was written for actions C3 and C4 about any problems connected to this action.	

any:	
Annexes:	C5.1 Reintroduction Intervention report (15/7/2016) C5.2 Action C5 Photographic documentation

Action C6	OPENING OF A WORKING ROUND TABLE WITH STAKEHOLDERS FOR THE SUSTAINABLE MANAGEMENT OF WATER RESOURCES AND COUNTERACTING POACHING	
Beginning:	Scheduled date: July 2014	Actual date: July 2014
End:	Scheduled date: June2018	Actual date: in progress
Carried out activities:	<p>This action is considered of paramount importance especially in terms of cultural-political view, for raising awareness of stakeholders and institutions on the issue of environmental management of rivers and river biological communities, particularly those in relation to fish.</p> <p>If the cultural aspects were to be endorsed by stakeholders and voluntarily put into practice, even at the end of the project, the benefits in terms of the success of the project would become important and long lasting.</p> <p>The management and protection of water resources, as well as the environmental restoration account for important actions also capable of influencing the success of other actions indirectly. Only the main activities are listed below:</p> <p>30/09/2014, Parma: public meeting of the participatory process of presentation of the Project LIFE BARBIE and action C6;</p> <p>26/06/2015, Piacenza: public meeting of the working process with stakeholders towards an agreement of poaching counteracting in the Trebbia area;</p> <p>24/07/2015, Collecchio (PR): public meeting of the working process with stakeholders towards an agreement of poaching counteracting in the Parma, Taro, Po areas;</p> <p>24/09/2015, San Polo d'Enza (RE): public meeting of the working process with stakeholders towards an agreement of poaching counteracting in the Enza area;</p> <p>30/09/2015, Boretto (RE): public meeting of the working process with stakeholders towards an agreement of poaching counteracting in the Po area – where the problem of poaching is much more considerable compared to the other areas – and for a joint governance also regarding the matter of sustainable fishing to enhance the Po river in collaboration with LIFE11/NAT/IT/188 CONFLUPO;</p> <p>25/02/2016, Parma: signature of the Memorandum of Understanding "For a sustainable, joint management of fishing and the protection of fish heritage in the Po river" signed by the basin Authorities of the Po river, Emilia-Romagna Region, Lombardia Region, Piemonte Region, Veneto Region;</p> <p>24/06/2016, Parma: signature of the no. 3 Memoranda of Understanding to counteract the poaching in the Trebbia, Parma, Taro, Po, Enza areas;</p> <p>24/06/2016, Parma: public meeting of the working process with stakeholders towards an agreement for the sustainable management of the water resource. Moreover, the topic of the contribution of river management to biodiversity through the river restoration and Network 2000 Nature.</p>	
Deliverables:	Anti-poaching agreements and agreements for the sustainable management of the water resource.	
Milestones:	-	
Issues at stake and changes, if any:	<p>At present no issues are so significant as to be signalled. An additional meeting took place (on 30.09.2016 in Boretto), with respect to the project's form, because we wanted to specifically address the issue of poaching on the Po river, which in this context is paramount, seizing also this opportunity for constructive cooperation with the CONFLUPO Life. Some meetings, in particular the three meetings concerning the 3 territorial areas, lasted less than the 8 scheduled hours, since they were carried out in the evening, in order to facilitate the participation of the target stakeholders considered most significant for that type of agreements</p>	

	(intermediate bodies, associations). The anti-poaching agreements, scheduled for December 2015, were postponed for some months, and anyway signed in the first half of 2016, since these are complex activities, also from a bureaucratic and administrative point of view, and certainly taking quite a long time, especially since they involve different and numerous parties with their own statutes, and public administrations.
LIFE complementary actions:	Several complementary actions were performed in favour of the C6 action, especially involving discussion and cooperation with other Life projects, for which reference should be made to the action F2 (Networking activities with other LIFE projects). In addition, various actions have been initiated by the coordination work group provided for by the Memorandum of Understanding (MoU) <i>For a sustainable and common management of fishing and the protection of fish stocks in the Po river</i> , which are also complementary to the LIFE BARBIE project.
Annexes:	C6.1 Memorandum of Understanding " <i>For a sustainable and common management of fishing and the protection of fish stocks in the Po river</i> ", of 25.02.2016, in the process of being implemented; C6.2 Anti.poaching agreement, territorial area of Trebbia of 24.06.2016, subscription phase in the process of being implemented; C6.3 Anti.poaching agreement, territorial areas of Parma, Taro and Po of 24.06.2016, subscription phase in the process of being implemented; C6.4 Anti.poaching agreement, territorial area of Enza, of 24.06.2016, subscription phase in the process of being implemented. C6.5 action C6 meetings signature sheets C6.6 action C6 photographic documentation C6.7 action C6 meetings programs C6.8 action C6 meetings reports

Action C7	CONTROL OF ALIEN BARBEL SPECIES: ERADICATION OR MANAGEMENT OF ALLOCTHONOUS SPECIES	
Beginning:	Scheduled date: July 2015	Actual date: October 2015
End:	Scheduled date: May 2016	Actual date: in progress
Carried out activities:	In the period October 2015 - February 2016, a pilot study was carried out for the control of alien species in the Taro River Park. The alien barbel specimens found were caught by electric fishing and transferred in confined artificial environments (lakes for recreational angling). This study has allowed us to develop the working method also offering the first positive results in terms of reducing the density of alien <i>B. barbatus</i> (from 0.51 to 0.04 specimen/sqm after the first 5 interventions) . This pilot study also led to the preparation of a Master thesis in "Ecology and Nature Conservation" (discussed on 25/02 by Stefania Matricardi for graduation).	
Deliverables:	Intervention reports and photographic documentation	
Milestones:	-	
Issues at stake and changes, if any:	In summer 2016, the BARBIE working group has been focussing its activities in the development of captive barbel breeding techniques (action C4) while sacrificing control/eradication actions that will still be carried out with greater intensity from the month of October 2016 and also in the next spring-summer. Therefore the expected results of the project will still be guaranteed.	
Annexes:	C7.1 report of AIS control actions C7.2 action C7 photographic documentation	

Action D2	ASSESSMENT OF THE EFFICIENCY OF EX SITU BREEDING INTERVENTIONS	
Beginning:	Scheduled date: January 2016	Actual date: June 2016
End:	Scheduled date: January 2018	Actual date: in progress
Carried out	Upon action C4 kick off, a data base was also elaborated and partially compiled in	

activities:	order to monitor the effectiveness of the activities involving the following parameters. <ul style="list-style-type: none"> • N ° breeders • N ° acclimated breeders • N ° of obtained fry • Rate of growth of the species • N ° of offspring at sexual maturity / Total n° of specimens • N ° of hybrids / Tot n ° of samples analyzed • Offspring development.
Deliverables:	Action C4 monitoring final report
Milestones:	-
Issues at stake and changes, if any:	-
Annexes:	D2.1 Monitoring Data Base

5.2 Dissemination actions

5.2.1. Objectives

Information and awareness raising actions with respect to nature conservation, the LIFE program and the good practices relating to land protection are fundamental elements for the development of an environmental awareness in all citizens and therefore to contribute to the full achievement of the results of the LIFE BARBIE project while ensuring their maintenance over time. Networking activities between experts in the field are also essential to identify the best technologies for the realization of the project activities and to promote the replicability of results.

5.2.2. Dissemination: overview per activity

The project provides for multiple actions of project results dissemination and networking, targeting different audiences: a) environmental education activities with schools (A6 and E4 actions); b) forum with citizens (action E4); c) exchange of information with the scientific community and networking with other LIFE projects (action E5 and F2). It also provides for the preparation of information boards (Action E1), a project website (E2 share), a Layman's report (Action E3) and other promotional material targeting a general audience (action E4).

On 6/12/2015 EGPB entrusted the graphic design agency "Primo Piano Creativity in Communication" of Milan (selection procedure started on 04/20/2015) which will deal with all the graphic designing aspects relating to the project (E1, E3 and E4 actions). The company will develop the following deliverables: 10,000 Layman's reports, 16,000 trifold brochures, 8,000 badges, 3 roll ups with 9 different communications, 24 plasticized posters, 3 invitations (300 pieces each), a cartoon for 3-8 year children, 1000 informative 70x100 cm posters, project and relevant facebook page. In July 2015 EGPB also appointed the project press officer Dr. Silvia Baglioni (06/16/2015 approval of selection announcement and appointment of the winner 07/31/2015).

Action A6	DRAWING UP OF THE ENVIRONMENTAL EDUCATION PROJECT	
Beginning:	Scheduled date: October 2014	Actual date: October 2014
End:	Scheduled date: September 2015	Actual Date: September 2015
Carried out activities:	The educational proposals for schools were developed over the period July 2014 - October 2014. The title, objectives, purposes and rough actions have been identified. The relevant educational paths have been structured with UNIPR in the period November 2014 - April 2015 and specific training activities were carried out for the guides (action E4).	

	EGPB then collected the various contributions and came to a final draft of the planned activities. It 'been planned Different teaching activities have been identified and planned for pre-schools, primary schools and lower secondary schools. In addition the project has been modulated so as to allow the teachers to choose between 3 different types of activities: in the classroom, on the field, in the laboratory and / or hatcheries visits. Subsequently the teaching guides were also involved in the preparation of teaching materials.
Deliverables:	Environmental education project
Milestones:	-
Issues at stake and changes, if any:	The plan was to involve teachers in the preparation of the activities of environmental education. Such a procedure was not complied with due to the following: difficulties in involving and coordinating teachers, risk of involving only a few teachers, possible difficulties in implementing the project in schools other than those attended by the teachers. It was therefore decided to draw up the teaching program within schools with the help of teaching guides and then leave to the latter the task of involving teachers and students in both classroom and field activities.
Annexes:	A6. Environmental education project

Action E1	PREARRANGEMENT AND INSTALLATION OF INFORMATION PANELS IN THE AREAS OF UTMOST VISIBILITY OF THE PROJECT	
Beginning:	Scheduled date: January 2017	Actual date: April 2015
End:	Scheduled date: June 2017	Actual date: in progress
Carried out activities:	On 20/04/2015 was published the "Call for bids for graphic design, printing and delivery of information panels, leaflets to spread the environmental education project, educational report (Layman's report) of the project LIFE13 NAT/IT/001129 – BARBIE Conservation and management of Barbus meridionalis and Barbus plebejus in Emilian Tributaries of Po River". The public competition was won by the graphic design studio Primo Piano Creativity in Communication of Milan. Information panels are expected to be created and installed within May 2017.	
Deliverables:	Information panels	
Milestones:	Installing information panels (15/6/2017)	
Issues at stake and changes, if any:	-	
Annexes:	-	

Action E2	DEVELOPMENT AND MANAGEMENT OF THE PROJECT WEB SITE	
Beginning:	Scheduled date: July 2014	Actual date: July 2014
End:	Scheduled date: June 2018	Actual date: in progress
Carried out activities:	Thanks to the direct involvement of the PL a test version of the website was first created; after sharing the contents with the project Partners, the website has been "put on line" on 12/01/2014. The website is available at: www.lifebarbie.eu. The website will be gradually enriched with contents and will represent a direct interface with the entire community of reference. As recommended by the EC with its note of 26/1 [ENV.E3 TPM / TF / ib Ares (2015) 301813], specific sections were included regarding the LIFE program and the Network 2000 Nature as well as a photo gallery. The site also has a reserved area through which all project partners and LIFE monitoring team members can access internal and confidential documents; access to that section by clicking on "login" and by using the following credentials: "staff" (user) and "supervisor"	

	<p>(password). In July 2016 the company Dragomanno Snc (appointed through selection on MePA -e-Market Portal for the Public Administration- on 05/30/2016 by UNIPR) translated into English the LIFE BARBIE project website. The company has also been entrusted with the translation of the reports for the EC (F1 action) and of the After-Conservation Plan (Action F4).</p> <p>The site also features a statistical function for the monitoring of visits: as of September 30, visitors are 13.024 (reference period: January 2015-September 2016). The following diagrams shows the monthly trend of visits in 2015 and 2016.</p> <p style="text-align: center;">Monthly history</p> <p style="text-align: center;"> Month Unique visitors Number of visits Pages Hits Bandwidth </p> <p>In addition to the website, under the action E4, a project Facebook (FB) profile called “barbolino” was created.</p>
Deliverables:	Project website
Milestones:	Putting on line the complete version of the web site (30/9/2014)
Issues at stake and changes, if any:	The website was established later than scheduled due to the unavailability of the IT staff of the FMNS. Therefore, contrary to the provisions of the form which had originally appointed FMNS as action coordinator, UNPR will manage the website for the duration of the project.
Annexes:	-

Action E4	DEVELOPMENT AND IMPLEMENTATION OF THE ENVIRONMENTAL EDUCATION PROJECT CATERING TO THE SCHOOLS AND THE CITIZENS, WORKING OUT OF THE MATERIALS FOR THE PROJECT DISSEMINATION AND FOR ITS COMMUNICATION THROUGH THE MASS MEDIA	
Beginning:	Scheduled date: June 2015	Actual date: luglio 2014
End:	Scheduled date: June 2018	Actual date: in corso
Carried out activities:	<p>The project logo was prepared through a competition of ideas organized and financed by EGPB (€ 1,000.00) earmarked from overhead expenses. (Call for tenders approved on 09/02/2014, winner appointed on 10/16/2014). In March 2015 a training course was developed for the environmental guides that will carry out environmental education activities in the schools, as already detailed in the Inception Report.</p> <p>As of 9/30 the following dissemination materials have been prepared:</p> <ul style="list-style-type: none"> ▪ N. 3000 information brochures presenting the project (30/6/2015) ▪ A Documentary subdivided in many clips so as to make it more 	

	<p>easily usable by schools (31/12/2015)</p> <ul style="list-style-type: none"> ▪ N. 11 press releases ▪ N. 1 article published on Storie Naturali magazine (naturalistic magazine of Emilia Romagna Region) ▪ N. 53 posts on the project facebook page ▪ N. 8 posts on the facebook page of Parchi del Ducato (before the creation of the project dedicated page) ▪ 2 roll ups ▪ 3000 brooches (30/6/2015) ▪ 10000 booklets ▪ 150 promotional leaflets for the activities with the schools (25/11/2015) ▪ 500 posters for the schools (31/12/2015); ▪ 1 cartoon for preschool children and for primary school pupils (6-8 years) <p>We point out that the FB page dedicated to the “barbolino” project is entirely managed by the company Primo Piano Creativity in Communication of Milan that has won the tender for the graphic creation of project nitem (actions E1, E3, E4). 257 people currently “like” the FB page: https://www.facebook.com/BarboLino-729670360500108/?fref=ts.</p> <p>On 08/04/2015 the companies Atiesse, Expert, Eureka, and Incia were entrusted with the subsequent activities of Environmental Education to be carried out in the schools. The 02/19/2016 quotes were asked for the hiring of coaches for the transport service (the service was then entrusted on 02/26/2016). No. 17 activities were carried out in the classrooms and n. 35 activities in the field involving both preschools and primary schools children. As detailed in the annex, n. 14 schools were involved for a total of n. 1296 pupils.</p> <p>An Environmental Education project was developed promoting work internships for n. 100 students attending 1 Secondary School specializing in classical studies (Liceo Classico Romagnosi, Parma) and n. 1 secondary school specializing in scientific studies (Liceo Scientifico Ulivi, Parma). The project was worked out together with the teachers (main topic: The conservation of species and habitats for biodiversity) and other Life projects: MIPP, MIRCO WOLF, Hermit, SMART4ACTION. On 06.21.2016, 07.07.2016, 09.15.2016 the teachers of the above mentioned secondary schools participated in meetings relating to the project. Meetings are currently being held with the secondary school Marconi, Parma and Respighi, Piacenza focusing on an Environmental Education activity.</p>
Deliverables:	Informative Brochures and documentary
Milestones:	-
Issues at stake and changes, if any:	At present no issues are so significant as to be signalled.
Annexes:	<p>E4.1 Informative brochures E4.2 Brooches E4.3 Rolls Up E4.4 Educational Poster E4.5 Educational brochure E4.6 Educational notebook E4.7 Scientific Poster E4.8 Press releases E4.9 List of schools participating in the Life Barbie activity</p>

	E4.10 Environmental education programm for high schools E4.11 Educational cartoon
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Action E5	ORGANISATION AND PARTECIPATION IN SCIENTIFIC MEETINGS AND CONFERENCES, AND IN THE PUBLISHING OF SCIENTIFIC PAPERS	
Beginning:	Scheduled date: January 2015	Actual date: November 2014
End:	Scheduled date: June 2018	Actual date: in progress
Carried out activities:	<p>The partnership took part in the following major conferences:</p> <ul style="list-style-type: none"> • Gorizia, 14-15 / 11/2014 XV Conference of the Italian Association of Freshwater Ichthyologists (http://www.iiad.it/sito/notizie/20-xv-convegno-iiad) involving the presentation of a poster about the BARBIE project • Bologna, 12/10/2014 CISBA Study Days <Environmental Monitoring Plans>; particularly the PL was invited to moderate the panel discussion <The ISECI index: the method, the development and the application issues> • Valladolid (Spain), 1-3 / 6/2015: seguiminetos de proyectos de restauración fluvial of LIFE CIPRIBER (www.cipriber.eu) - Brussels (Belgium), 3-5 / 6/2015: the EC's green week 2015 (www.greenweek2015.eu) • Edolo, 7-12 /6/2015: Theoretical-practical workshop introduction to the RADseq data analysis of the University of Milan and Rome La Sapienza - Rome, June 22: info day LIFE of the Ministry • Groningen (The Netherlands), 22-25 / 6/2015: fish passage 2015 (www.fishpassageconference.com) • Rome, 21-25 /9/2015: Meeting of the European Society of Ecology, with a poster contribution on LIFE BARBIE • Bergerac (France), 14-15 / 10/2015 <International Symposium on study, restoration and management of shads> organized as feedback of the project LIFE09 NAT / D / 000008 (http://lifealose2015.com/en/home/) • Reggio Calabria, 28-30 / 10/2015, <Third Italian Conference on River Restoration> of CIRF (http://www.cirf.org/2015/) with a speech on the BARBIE project • Rome, 02.23.2016, FISNA National Conference "ALIEN SPECIES IN ITALY: EMERGENCIES AND RE-EMERGENCIES FOR THE ENVIRONMENT AND HEALTH " with a speech entitled: "alien fish fauna of inland waters: a conservation emergency not only from a biological perspective" mentioning the experience gained under the LIFE BARBIE project (action C7): http://www.fisna.it/files/Locandina.jp • Murcia (Spain), 21-24 / 6/2016, VI Spanish Congress of ichthyology, (http://www.um.es/sibic6/es/presentacion/) • Rome, 06/22/2016, "Writers Workshop for LIFE proponents" organized by the Ministry of Environment, with EASME and NEEMO (http://www.minambiente.it/pagina/writers-workshop-proponenti-life). • Milan, 30 / 8-2 / 9/2016, 1st National Joint Congress SITE - UZI - SIB "Biodiversity: concepts, new tools and future challenges" (http://www.site-uzi-sib-bicocca2016.it/) with a poster contribution on LIFE BARBIE project entitled "Molecular taxonomy and distribution of Barbel species in protected areas of the SCI Emilian tributaries of the Po river inferred with 	

	<p>mtDNA".</p> <p>On the 7.3.2015 the event "Citizens and LIFE + projects. Involvement, disclosure and participation " was organized and held at the Botanical Garden of Rome in partnership with LIFE CSMON, ECOLIFE, MIPP and USAVEREDS. The LIFE program and the BARBIE project were the subject of a specific lesson in the "Interuniversity Master in Environmental Management and Conservation and Wildlife" (AA AA 2014-2015 and 2015-2016). The project was also presented as part of the the event " UNIPR the Night of the researchers " both in 2015 and 2016. Then a paper entitled "Conservation genetics of Barbel species in relation to ecological factors" about the BARBIE project was presented at the AIIAD conference held in Popoli (PE) from 21 to 23 October 2016 (http:// www .aiiad.it).</p>
Deliverables:	Final report to monitor action C4
Milestones:	-
Issues at stake and changes, if any:	At present no issues are so significant as to be signalled.
Annexes:	-

Action F2	NETWORKING ACTIVITIES WITH OTHER LIFE PROJECTS	
Beginning:	Scheduled date: July 2014	Actual date: July 2014
End:	Scheduled date: june 2018	Actual date: in progress
Carried out activities:	<p>As per the planned schedule (by 31/12/2014) the attached networking database (DB) was created. On the basis of the created DB, a screening was performed of all Life projects currently underway or completed until recently, that could have fruitful interactions and collaborations with BARBIE project. As detailed in the attached DB, networking activities were carried out with the following LIFE projects:</p> <ul style="list-style-type: none"> ▪ LIFE07 NAT/IT/000413 P.A.R.C. ▪ LIFE07 NAT/IT/433 SCI D'ACQUA ▪ LIFE08 NAT/IT/000352 CRAINat ▪ LIFE09 ENV/IT/000075 AQUA ▪ LIFE09 NAT/IT/000095 EC-SQUARE ▪ LIFE09 NAT/DE/000008 Alosa-Alosa ▪ LIFE10 INF/IT/000272 FA.RE.NA.IT ▪ LIFE 10 ENV/IT/000380 AQUOR ▪ LIFE11 ENV/IT/000004 LAMBROVIVO ▪ LIFE11 ENV/IT/000035 WSTORE2 ▪ LIFE11 ENV/IT/000168 MGN ▪ LIFE11 NAT/IT/000188 CON.FLU.PO. ▪ LIFE11/NAT/IT/000252 MIPP ▪ LIFE 11 ENV/IT/000243 RII ▪ LIFE11 BIO/ IT/ 000020 BIOAQUAE ▪ LIFE12 NAT/IT/000940 TROTA ▪ LIFE12 BIO/IT/000231 AQUALIFE ▪ LIFE 12/INF/IT/000465 ECOLIFE ▪ LIFE13 NAT/IT/000115 AGREE ▪ LIFE 13 ENV/IT/000169 RINASCE ▪ LIFE13 ENV/IT/000842 CSMON ▪ LIFE13 ENV/IT/001069 MERMAIDS ▪ LIFE 13/BIO/ IT/ 000204 U-SAVEREDS ▪ LIFE13 NAT / ES / 000772 CIPRIBER ▪ LIFE 14 NAT/IT/ 000809 SILIFFE ▪ LIFE 13 ENV/ IT/000225 GIOCONDA 	

	<ul style="list-style-type: none"> ▪ LIFE 11 NAT/IT/ 000044 GESTIRE ▪ LIFE 14 IPE /IT/000018 IP GESTIRE 2020 <p>In general, the activities consisted in the sharing of information and experience, through direct contact and / or participation and joint organization of seminars, meetings, conferences as well as collaboration in the dissemination of the results.</p> <p>With some LIFE projects (CON.FLU.PO, CIPRIBER and CSMON), more structured partnerships have been developed and in particular, as detailed in the action C6, the "Memorandum of Understanding for a sustainable and common management of fisheries and for the protection of fish stocks in the river Po " was signed.</p> <p>On 17/8/2015 the campaign of "Citizen science" BARBIE started: http://www.csmon-life.eu/pagina/campagne/23. Specific applications for mobile phones (App) can be downloaded, and the presence of the two project target species can be notified. All validated data will also enrich the database of the National Network on Biodiversity (NNB).</p>
Deliverables:	Networking DataBase to be upgraded underway
Milestones:	-
Issues at stake and changes, if any:	At present no issues are so significant as to be signalled.
Annexes:	F2.1 Networking DataBase to be upgraded underway

5.3 Evaluation of Project Implementation

The proper implementation of the project was assessed as part of the action F1. The accomplishment of the "deliverables" provided for by each project action and the respective time schedule as well as specific performance indicators established by the assessment document were evaluated.

Up to 30/9/2016 no. 4 actions (A1, A2, A5 ed A6) have been finished out of the no. 6 expected, one of which (A2) delayed by one year. Evaluation of obtained results in successful Actions with respect to expected ones, are listed in the table underneath.

Action	Obtained results	Evaluation with respect to expected results
A1	Working group constitution	As already described in the "Inception report", the Working group was successfully constituted thanks to the PL involvement, although the FMNS was in charge of this specific Action.
A2	Preliminary population assessment of target species, also including genetic characterization and impact of alien invasive species	Despite a generalized delayed start in the Action due to adverse weather conditions, the preliminary assessment useful for concrete conservation goals (Actions C3, C4, C5, C7) was successfully executed. Concerning genetic analyses a complete characterization of populations was carried out with special concern on hybridization detection. Unfortunately, the particular tetraploid genome of both barbel species has driven unexpected problems during nuclear analyses. For the same reason, the preliminary application of genomic tools has driven unexpected problems. The development of additional genomic tools will be helpful for a better characterization of future progeny, based not only on classical genetic techniques. Application of genomic tools will deliver a better resolution level, able to

		highlight even low frequency hybridization hardly detectable with classical tools. In relation to the above cited technical issues, characterization of breeders has been successful during 2016 but mostly based on mitochondrial DNA and microsatellites.
A5	Aquaculture facilities implementation plan	The plan for modernization and restoration of aquaculture plants has been completed on scheduled time. A variation to the plan has been subsequently performed in the framework of Action C1 due to Selvanizza facility (private plant) discharge, in relation to inappropriate reliability (as detailed in the text).
A6	Educational plan	The plan has been completed fulfilling appropriate time as scheduled.

The two unfinished actions (A3 ed A4) have been mostly completed, and they have caused only partial delays to the consequent actions C (notably to postpone the start of the action C2 by one year). Therefore the expected deliverables and milestones have been partially accomplished, as specified in the table in the following page.

Despite the accumulated delays, the actual expected outcomes of conservation are likely expected to be reached at the end of the project. The start-up work carried out under Action C4 for the development of spawning techniques in captivity of barbels and the start of a fruitful open dialogue with the Authorities responsible for issuing authorisations and in general the management of water resources, as part of the actions A4 and C6 are deemed to be very positive.

Those activities will allow recovering the accumulated delays in some actions (e.g. C2), increasing the stock of young barbels for the following seeding by minimising their survival threads (actions C4 and C5) and thus positively attaining the actual expected outcomes of conservation.

(Projects submitting final reports after 1 January 2014 must use this format.)

Deliverables and milestones for each project action (delays with respect to the project timeline chart are written in red).

action	status	Deliverables Object	Scheduled deadline ²	Actual deadline	milestones Object	Scheduled deadline ¹	Actual deadline	remarks
A1	finished	GdL appointment	31/7/2014	31/7/2014	GdL setting-up	20/7/2014	22/7/2014	-
A2	finished	technical report: “relazione tecnica riportante lo studio delle popolazioni di <i>Barbus sp.</i> nell’area di studio con particolare attenzione per le specie esotiche”	28/2/2015	31/3/2016	-	-	-	Fish sampling completed in December 2015
A3	in progress	technical report: “relazione tecnica riportante lo studio ambientale nell’area di studio”	28/2/2015	-	-	-	-	Completed, except for DMV calculation in August 2015
A4	in progress	recovery plan	30/4/2015	-	plan approval	30/4/2015	-	First part of plan completed in December 2015 and approved in July 2016, second part as a draft
A5	finished	adjustment plan	30/6/2015	30/6/2015	plan approval	30/6/2015	15/7/2015	
A6	finished	environmental education project	30/9/2015	15/9/2015	environmental education project	30/9/2015	15/9/2015	
C1	in progress	-	-	-	activation of proper centres	31/12/2015	-	Centre of Monchio completed in July 2016
C2 ³	not started	fragmentation works	31/5/2016	-	fragmentation works	31/5/2016	-	
C3 ²	in progress	pictures of substrata in riverbed	31/5/2016	-	substrata in riverbed	31/5/2016	-	First substrata installed in July 2016
C4	in progress	-	-	-	-	-	-	First spawning season performed (tot. 40,000 eggs fertilised and 7000 fry of Common Barbel)
C5	in progress	“seed sowing” reports	31/1/2018	-	“seed sowing” 20000/year	31/1/2018	-	First seed sowing of 2000 fry of Common Barbel
C6	in progress	anti-poaching agreement	31/12/2015	30/06/2016	-	-	-	
		water management agreement	30/6/2018	-	-	-	-	
C7 ²	in progress	alien check report	31/5/2016	-	-	-	-	
D1	not started	Report	31/1/2018	-	-	-	-	Postponed with reference to actions C2,C3 and C7
D2	in progress	Report	31/1/2018	-	-	-	-	
D3	not started	Report	31/1/2018	-	-	-	-	
E1	in progress	Panels	15/6/2018	-	laying of panels	15/6/2018	-	
E2	in progress	web site	30/9/2014	30/9/2014	site placed on the Web	30/9/2014	1/12/2014	

² With reference to the initial project timeline chart.

³ The action deadline is expected to be postponed by one year.

E3	in progress	layman's report	20/6/2018	-	printing of layman's report	20/6/2018	-	
E4	in progress	final exhibition	30/6/2018	-	-	-	-	
E5	in progress	scientific works	30/6/2018	-	final conference	30/6/2018	-	
E6	not started	guidelines	30/4/2018	-	drawing up of guidelines	30/4/2018	-	
F1	in progress	evaluation doc	30/6/2018	-	-	-	-	guide document drawn up in November 2015
		Relations, signatures, pictures of meetings	30/6/2018	-	-	-	-	
F2	in progress	DB networking	31/12/2014	31/12/2014	-	-	-	
F3	in progress	-	-	-	administrative audit	30/6/2018	-	Firm appointed in June 2016
F4	not started	After Conservation Plan	30/6/2018	-	After Conservation Plan	30/6/2018	-	

(Projects submitting final reports after 1 January 2014 must use this format.)

Some project numbers are written below (up to 30/9/2016), extrapolated from the project evaluation report.

No. of people taking part in the six-month partnership meetings:	Parma, 17/12/2014	17
	Parma, 25/05/2015	07
	Parma, 06/11/2015	12
	Parma, 19/04/2016	10
No. of corrective actions taken:	"Additional protocol"	5
	Postponement of field activities A2-A3	
	Exclusion of the fish hatchery of Selvanizza	
	Postponement of river fragmentation works	
	Postponement of actions C3 and C7 deadline	
No. of internal deliverables reports:		-
No. of signed networking agreements:		2
No. of training-working meetings:		59
Total no. of people taking part in training-working meetings		1657
No. of people taking part in roundtable working activities with stakeholders:	Parma, 30/09/2014	48
	Piacenza, 26/06/2015	52
	Collecchio-PR, 24/07/2015	16
	San Polo d'Enza-RE, 24/09/2015	31
	Boretto - RE, 30/09/2015	67
	Parma, 24/06/2016	85
No. of people taking part in training meetings:	Training of educational guides (Collecchio-PR, 5-7/3/2015)	62
	Activities with 14 schools (17 activities in classroom and 35 activities on field)	1296
Total no. of produced awareness material		16656
No. of produced awareness material	Information brochures	3000
	Video material	4
	Roll up	2
	Pins	3000
	Educational leaflets	10000
	Leaflets	150
	Posters	500
	Total no. of communication deliverables	
No. of communication deliverables	Press releases	11
	Artiche in sectorial magazines	1
	Posts on FB	61
No. of project website visits (from 1/1/2015)		39986
No. of project website visitors (from 1/1/2015)		13024
No. of involved professionals: two UNPR researchers, one UNPR administrative collaborator, one GEN-TECH researcher, one GEN-TECH executive, one graphic designer, one press agent, 15 (3x5) educational guides, one engineer, one ichthyologist technician, one PNATE collaborator, one auditor		26

The activities of participation, dissemination-communication and networking which have been started and have recorded a solid attendance and good satisfaction are deemed to be very positive. As detailed in the table above, a total of 59 meetings with the participation of 1657 people were in fact carried out.

5.4 Analysis of long-term benefits

A. Environmental Benefits

▪ *Direct environmental benefit*

Native populations of Common Barbel and Southern Barbel will be recovered in the study area at the end of the project. The expected results already defined in the planning stage are confirmed. They can be summed up as follows: a) seed sowing of approximately 20,000 fry/year into the wild; b) interventions of environmental restoration (placing of artificial substrata in riverbed near the release sites, defragmentation of the Enza river in “SIC-ZPS IT4030023 Resurgences of Gattatico and Enza River”; c) control of invasive alien species; d) signing of voluntary agreements between stakeholders and decision makers to control poaching and sustainable management of water resource. The latter objective is particularly important in light of the preliminary studies carried out in the project (actions A2 and A3), which showed a sharp contraction of the native populations of barbel, with reference to the Common Barbel identifying the root cause, locally, in the decrease in water flow in the summertime.

▪ *Indirect Environmental benefit*

Indirect benefits are mostly related to European Directives regulating water quality assessment and ecological resilience of freshwaters. In particular, conservation of barbel species will have a positive feed back on management actions requested by the Water Framework Directive 2000/60/CE. In addition, practical actions for control of alien species carried out in the project will anticipate incoming European policies stated by recently issued Regulation 1143/2014/UE.

B. Long-term benefits and sustainability

▪ *Long-term environmental benefit*

In the long term, therefore, the actions developed in the project and the signing of the above-mentioned agreements will guarantee the minimisation of threats to the survival of the target species and their natural recovery, with the colonisation of further neighboring river environments and, indirectly, the overall improvement the river environment for the benefit of the entire biological component. It is noteworthy observing that sensibilization of both citizens, associations and public bodies, will drive future attention on barbel species and their related environment. Additional long term benefits will therefore be connected to a better environmental control of river ecosystems and a generalized increased interest on conservation projects.

▪ *Long-term economic benefit*

Economic benefits are mostly related to professional training in the framework of the project, able to generate well trained technicians that will be involved in environmental conservation at different levels. Nevertheless, a better sensibilization of public bodies in charge of environmental management, will allow a better money saving with particular reference to prevention acting, rather than continuous river remodeling.

▪ *Long-term social benefit*

The project actions, and in particular the communication and participation activities covered by them (actions C6 and E4) will lead to an improvement of the dialogue between managers

and users of water resources by promoting the minimisation of related social conflicts connected to the multiple use of the resource. A so-called "environmental awareness" will also be implemented starting from the knowledge, therefore the sustainable management of river environments will be promoted also with reference to the indications of the Habitat Directives and Water Framework and the new Regulation on the Control of Invasive Alien Species.

From a social point of view, a large involvement of fishermen associations has been obtained at different levels. In fact, after first meetings carried out with fishermen and interested general public, the project has often been targeted as a specific tool helpful for the solution of environmental disputes. More precisely, the PL has been invited to several workshops dealing with habitat alterations and possible solutions to be presented. For example, the "Associazione Amici del Monte Sporno" requested a collaboration with the project to propose the constitution of a new SCI to prevent degradation of the Monte Sporno (Pr) landscape. The PL and postgraduate students involved in Life Barbie have participated to several meetings and fish monitoring in the area to highlight Habitat Directive species. Similarly, LIPU (Lega Italiana Protezione Uccelli) requested support by Life Barbie to perform a specific environmental assessment of Ti-Bre potential impact on Taro river. Furtherly, as previously specified, the request of Cronovilla Association to enter the project derived by preliminary contacts generated by Action C6.

The social impact of the project also emerged from a video which was published online. The video erroneously stated an involvement of Life Barbie in river remodelling actions executed by Berceto Municipality on Baganza stream. In relation to this, the PL called the vice president of the angling association (Archi pesca fisa di Parma) owner of the video, who declared not to be aware of the situation. Following advices by monitor Dott.^{ssa} Iva Rossi the PL requested ARCI to modify the online video⁴, avoiding any additional action towards the video proponents due to a general fear that an uncorrect communication might be negatively manipulated. As a matter of fact, the video was changed into a more positive presentation of the project as helpful tool to preserve river habitats. This is a further example of how much attention the project is collecting at social level and the importance of an appropriate communication free of instrumentalization.

Finally, new professional figures will be created, and specific knowledge will be boosted within the project with potential positive implications in terms of employment. This action will have a particular impact on school sensibilization and teen-agers involvement.

▪ *Continuation of project actions*

In the after-Life Plan, actions and strategies for the continuation of the project activities will be detailed. In particular, management of aquaculture facilities will continue after the project ending and the progeny will be yearly released to support natural populations. Monitoring of fish passes will be an important part of after-Life activities with special regard to assessment of barbel population quality. A strict surveillance of populations will be carried out to avoid their extinction during summer drought periods and unexpected poaching. From this point of view, obtained agreements for anti-poaching and for a better management of water will be continuously applied. The web site, networking activities, and environmental education will be continuously updated. Specific guidelines on target species conservation will still be promoted.

⁴ https://www.youtube.com/watch?v=ja2xdMSowyk&list=UUP0IQOMBrW-OvEj5iG_1cFA

C. Replicability, demonstration, transferability, cooperation

The drawing up of specific guidelines and the networking actions undertaken at international level will also promote the replicability and transferability of project outcomes. In particular, experiences gained at international level will allow the elaboration of aquaculture guidelines for breeding and rearing of barbel species. More precisely, agreements were obtained with technicians of South Bohemia University and of Cipriber Life and exchange visits and practical activities have already been shared among groups.

D. Best Practice lessons

Generally speaking, the project applies best practice lessons within sustainable aquaculture and nature conservation. However, considering the innovative breeding activities and specific genomic approach for both target species, the project displays a high innovative and demonstration value.

E. Innovation and demonstration value

In relation to the above cited aspects, the demonstration value of the project has to be related to innovative approaches applied both in aquaculture and genomic typing. In particular, specific protocols and guidelines on breeding of target species will be realized and made available for fish conservationist.

F. Long term indicators of the project success

Long term indicators can be referred to both preservation of habitat and species. In particular, a correct management of the water resource will allow the maintenance of increased water volumes and a better habitat variability. In this way, a correct population structuring of target species will reveal a generalized population welfare. Similarly, continuous monitoring of alien species recurrence will allow to evaluate the long term success brought by invasive species removal and control. From a social point of view, a systematic involvement of citizens and associations will be an additional indicator of a long term success obtained by the project. A detailed description of specific output indicators has already been transmitted with the "Inception report".

6 Comments on the financial report

General notes

As shown in the summary financial table, the total cost of the project as of 1st July 2014 to 30th September 2016 amounts to € **680.724,39** corresponding to 31.09% of the planned total expenditure.

We believe that, although just over half of the project, the expenses incurred are in line with the measures implemented so far. Unfortunately the delay of some actions (as explained in the technical part) has caused a shift forward in the relevant payments.

But such delay is expected to be recovered in time.

The amendment no. 1 of the Agreement of Financial Support was countersigned on 21/01/2016 and albeit retroactively, submitting a statement of expenditures relating to the staff for the action A5 already concluded on that date was not possible.

The estimated costs are shown in the table below:

Action	Beginning date	End date	Amounts
A5	July 2014	July 2015	Staff € 10,616 External Ass. € 2,300

Such amounts are requested to be used for any needs that arise during the implementation of the project (by promptly notifying such needs to the Commission).

VAT returns:

Each public partner has submit to the local Revenue Agency, the request for a declaration of non-recoverable VAT for the project actions. See attached documents.

UNIPR:

Staff:

In the writing stage of the project for different professionals for which a statement of expenditures has been given the daily cost was underestimated, thus there is an increase in the daily rates stated in the approved project compared with what reported in the statement of expenditures. This discrepancy is further increased by the fact that in the writing stage of the project, the hourly cost of employees, and therefore the daily rates are calculated according to the total number of hours required by the contract and therefore including holidays, leaves and public holidays.

Since the EC requires a different type of calculation indicated in the "circular note on the timesheet 8/12/2010", and that is that the productive annual hours actually worked by the employee are written, the annual total of hours decreases and this determines the increase in the employee's hourly rate and the consequent increase in the relative cost per day.

As for the professionals and for the kind of contract they have, they are not bound to clock in and out. Timesheets with only the hours actually worked on the project were produced, and the calculation of their hourly cost is based on the number of standard hours 1720 written in the "Guidance for Financial Management and Reporting".

The professionals involved are the following:

- full professor;
- associate professor (Project Leader);
- temporary research associates not entirely included in the statement of expenditures of the project.

No timesheets have been produced for the “research grant II” included in the approved budget, as it provides for the exclusive commitment to the project. Therefore it is accounted the total cost of the contract (full time).

Only one figure of a Ph.D. Candidate to 100% will be included in the statement of expenditures, instead of two figures to 50% as provided for in the approved rescheduling, since only the first is doing a doctoral thesis on the specific project issues.

The gross cost for the year 2016 was calculated based on the previous year's annual costs in comparison to the monthly payments referred to by the report. Times shown are those actually worked by the staff involved (E2 column also includes the column E3).

Travel

In the travel worksheet there are missions carried out by personnel not reported in the project (Gemma Burgazzi, Delsouz Khaki Neginn, Giulia Zuccon), but deemed necessary for the specific sampling activities. Those persons provided support to staff accounted (the names of such persons are present in the sample activity reports).

Equipment

To complete tools necessary for a correct functioning of Illumina NGS, a Qubit 3.0 fluorometer and a IKA MS3 digital microcentrifuge were acquired. Both instruments are fundamental for assessing nucleic acid quantity and quality for sample preparation to be inserted in the NGS methodology.

EGPB:

Staff

Initially, according to the provisions of the Grant Agreement, the EGPB project staff was represented by no. 6 professional figures (including 3 part time), at the beginning of the project, however, we deemed it necessary to redistribute the workload on no. 5 professional figures of which only one part-time - since there have been changes as of the date of writing of the project to the date of actual start – keeping the total cost related to the staff category unaltered.

The gross cost for the year 2016 was calculated based on the previous year's annual costs in comparison to the monthly payments referred to by the report. Times shown are those actually worked by the staff involved.

Equipment

As for the copy machine included in the action A6, the partners carried out a research of P.A. (MEPA) on the Electronic Market, and long-term rent turned out to be much cheaper than purchase, as the set monthly fee includes both maintenance and the replacement of cartridges, as well as any other intervention required for the proper operation of the machine. Therefore, this type of expenditure initially expected in the category "equipment" was then included in the category "external assistance".

External assistance:

Additional gadgets have been product but the cost remains unchanged.

**AdbPo:
Staff**

Initially, according to the provisions of the Grant Agreement, the AdbPo project staff was represented by one technical officer and one technical instructor.

At the beginning of the project, however, once identified the activities to be carried out in more detail, we deemed it necessary to add 2 administrative figures, required, but overlooked in the initial design stage, while keeping the total cost of the staff unaltered. Finally, with the Mid-term Report included in the statement of expenditures, modest adjustments were made in mutual distributions among the 4 designated professionals, in order to better meet the real needs, maintaining the proposed overall times unchanged.

Finally, the actual costs of the staff – initially roughly estimated - significantly differ from those initially foreseen on the approved project; furthermore they vary annually.

Therefore the costs related to the staff are expected to be significantly higher, but not due at the closing of the project.

Further details are contained in the attached note (annex F1.7).

PNATE:

The role of technical coordinator of ex situ spawning activities provided for in action C4 of the project has been entrusted with a fixed-term contract (co.co.co.) by PNATE through public selection based on qualifications and interview. The total amount of the job equals € 49,600.

The following funds will be used:

Action number	Type of contract	Category/Role in the project	Daily rate (rounded to the nearest €)	Number of person-days	Direct personnel costs (€)	REMARKS
C 4	Permanent staff or civil servant	Ichthyologist technician no. 1 with coordinating functions	€ 110	340	€ 37,400	From “permanent staff” it becomes “Temporary staff specifically hired for this project”, as the Park is currently lacking in inner staff to be intended for such activities
A5	Permanent staff or civil servant	Ichthyologist technician no. 1 supporting Project planning	€ 110	20	€ 2,200	Amount not used

	Action number	Procedure	Description	Costs (€)	REMARKS
External assistance	C1	Selection procedures	Desinging and adjustment of PNATE fish hatcheries	€ 10.000	Residual amount of the job entrusted for designing and adjusting fish hatcheries

Travel:

The trips will be accounted in the next report (see attached declaration) .

Equipment:

Following the hypothesis of ownership transfer of the fish hatchery in Selvanizza (PR), it was agreed to exclude the plant from the project in May 2016 and to reinvest the sums originally destined to it into the two other Centres of Monchio delle Corti and Corniglio, thus further improving its capabilities in terms of functionality to accommodate the breeding practices for ex-situ spawning of the target species, and making up in this way for the unavailability of the third centre. With reference to that which is provided for by the form, it was agreed to invest the resources destined to the fish hatcheries only in the two facilities of Monchio delle Corti and Corniglio, including further processing which is required under way, especially to increase the breeding capacity of centres in full compliance with the project targets.

The variance includes the execution of more works equalling the amount of EUR 9,169 and less supplies equalling the amount of EUR 8,919 (wastewater phyto-treatment plant expected in Selvanizza), therefore the authorisation to shift the above-mentioned amount from the "equipment" to "external assistance" expenditure category.

The enclosed document shows the new bill of quantities of the project.

This movement does not involve a substantial change (€ 30,000/10%).

GENTECH:**Personnel:**

Andrea Voccia was under contract with Gen tech until April 2015. From May 2015 was employed on a permanent part time.

The gross cost for the year 2016 was calculated based on the previous year's annual costs in comparison to the monthly payments referred to by the report. Times shown are those actually worked by the staff involved (E2 column also includes the column E3).

Equipment

Gent-Tech partner has purchased the fuel and natural gas car for sampling activities as included in the approved form. The total amount spent equals € 14,400.00 (€ 11,881.97 € 2,518.03 + VAT). To purchase that item it was agreed to pay immediately 50% of the amount and take out a financing through FCA Bank for the remaining amount. The loan includes no. 36 monthly installments starting from November 2015 until October 2018.

For the above loan, one row was inserted in the financial statement with the total amount of installments paid up to 30/09/2016 (in the amounts of installments all interest and related financing costs have already been deducted). See attached documents.

Moreover, the Italian legislation on cars owned by private companies provides for the non entitlement to 40% VAT deductibility both on the purchase of the car, and on any inherent and accessory cost to the car use(service, fuel, toll roads, etc ...). Exceptions are insurance and car tax which are not subject to VAT.

At the time it was not invoiced VAT, but it calls for the possibility of recognition of the non-recoverable part (DPR 633/72 art 19 bis 1 lettera c).

According to development of different actions and project evolution, some items were not acquired since they would have been unhelpful, or already available before the beginning of Life Barbie. Some other item was not necessary at the time of Action execution but it will become necessary for the project prosecution (action C4 and D3). Please find underneath a list of products and possible variations:

- electronic balance: not necessary it will be converted in a probe for conductivity detection

- small boat: necessary to release fish in more protected unreachable river zone and settling of artificial hiding substrates
- GPS: one model was available at the beginning of project but it is not functioning appropriately any more
- portable photometer: already available but more reagents are necessary
- electrofishing device: not acquired because sampling was executed in limited river systems that were sampled with shoulder carryable devices. We would rather change the amount in an innovative system for cryopreserving sperm cells to be used for fertilization on site.
- portable oxymeter: one model was available at the beginning of project but it is not functioning appropriately any more

The equipment provided and not mentioned, was already purchased, or it will be soon.

Consumables: Landing net was available at the beginning of project but it is not functioning appropriately any more. It will become necessary for the project prosecution (actions C4, D1 and D3). The amount will remain unchanged.

Other costs:

The “laboratory equipment maintenance contract” will be converted in external assistance necessary for increased costs of professional technicians to evaluate river topography and environmental impact assessment before construction of fish passes (action A4 and C2). The amount will remain unchanged.

Overheads

Overheads account for an indirect cost, and they were calculated according to the communal provisions to the 7% of the direct costs of the project.

Audit

The audit assignment was given on 07/06/2016 to Demetra Società di Revisione Srl, Viale Bizzozero no.5 - 43100 PARMA Taxpayer’s Code – VAT no. 01753820347, enrolled in the Register of Auditors, registration number 145969.

6.1 Summary of Costs Incurred

PROJECT COSTS INCURRED			
Cost category	Budget according to the grant agreement	Costs incurred within the project duration	%
1. Personnel	€ 1.104.996,00	€ 385.738,04	34,91%
2. Travel	€ 107.750,00	€ 12.208,12	11,33%
3. External assistance	€ 584.510,00	€ 59.336,60	10,15%
4. Durables: total <u>non-depreciated</u> cost			
- <i>Infrastructure sub-tot.</i>	-	-	-
- <i>Equipment sub-tot.</i>	€ 199.971,00	€ 159.338,04	79,68%
- <i>Prototypes sub-tot.</i>	-	-	-
5. Consumables	€ 46.000,00	€ 17.989,48	38,60%
6. Other costs	€ 3.500,00	€ 1.902,11	54,35%
7. Overheads	€ 142.051,00	€ 44.212,00	31,12%
TOTAL	€ 2.189.378,00	€ 680.724,39	31,09%

(Projects submitting final reports after 1 January 2014 must use this format.)

6.2. Accounting system

The following is a table which shows all the information related to the accounting systems used by partners, as well as the name of the person authorising expenditures and the relevant payments.

N°	Name of coordinating/ associated beneficiary	Cost account (e.g. code name or number, capitolo di spesa etc.)	Name / function of person authorising expenditure (e.g. purchase order) at present	Name / function of person authorising payment at present	Name / function of person responsible for financial project management (e.g. accounting, reporting etc.)
1	UNPR - Dipartimento di Bioscienze- Università degli Studi di Parma	NONNIS14BARBIE - LIFE PLUS NATURE BARBIE CA.C.B.13.01.01.01	Francesco Nonnis Marzano e Nelson Marmioli	Fino al 28/02/2015: Simona Fontana e Nelson Marmioli Dal 01/03/2015: Paola Magri fino a € 50.000,00; Paola Magri e Silvana Ablondi oltre € 50.000,00	Simona Fontana
2	Adb PO - Autorità di bacino del fiume Po	Contabilità speciale n. 1603 capitolo 999/5	Puma Francesco, Segretario Generale	Puma Francesco, Segretario Generale	Puma Francesco, Segretario Generale
3	EGPB - Ente di Gestione Parchi e Biodiversità Emilia Occidentale	Codice: 2090605/62 Numero capitolo: 2076 Nome capitolo: LIFE13/NAT/IT/001129	Sonia Anelli / Responsabile Tecnico del Progetto	Alessandra Maestri / Responsabile Finanziario Ente	Marcella Ghiretti / Responsabile Amministrativo del Progetto
4	Gentech	-	Armando Piccinini	Armando Piccinini	Nicola Rinaldi
5	PNATE - Parco nazionale dell'Appennino toscano- emiliano	CAP: 1.2.1.1.60	Giuseppe Vignali (Direttore)	Patrizia Rubertelli (Resp. Servizio Finanziario)	Willy Reggioni (Responsabile amministrativo progetto LIFE BARBIE)

(Projects submitting final reports after 1 January 2014 must use this format.)

Each public partner has an electronic registration system of working hours of staff. The accounted professionals in the project that are required by contract to the registration of work time, downloading monthly by the system used a summary report of the performed hours. Compiling of timesheets is done digitally, then are printed, signed, dated and countersigned by the project manager for the institution. The two above-mentioned documents along with the pay slip constitutes official documentation for reporting the employees themselves. The Gen-tech partner does not have an official system of electronic recording of working hours, but has developed an ad hoc registration manual system for the project. For every purchase on the project / expenditure, the individual partners shall ensure that invoices contain a clear reference to the project and indicate the number and acronym. If the bills do not bear this indication, the procedure to affix a stamp with the required information.

6.3. Partnership arrangements (if relevant)

The partnership agreements have been enclosed to the Inception report.

The coordinating beneficiary has received the first pre-financing by the EC amounting to € 434,010.40. The transfer of competence of the amount of each partner is made through bank transfer according to the terms and conditions defined in the Partnership Agreement.

Partner	Amount	Data erogazione
AdbPo	€ 12,010.40	16 December 2014
FMNS		The amount the Partner was entitled to has not been delivered. Later the partner has been excluded by the partnership with the relevant Amendment
EGPB	€ 48,672.80	16 December 2014
Gen tech	€ 43,814.40	15 December 2014
PNATE	€ 58,502.00	10 February 2015

The associated beneficiaries shall independently include all the information in financial reports on a regular basis, and they shall send all supporting documentation to the coordinating beneficiary. The coordinator has organised an archive containing an electronic copy of the documentation of the individual partners at his/her headquarters. The associated beneficiaries are constantly accompanied by the figure of the executive contracted by the coordinating beneficiary, who actually plays a connecting and supervising role of the entire partnership.

6.4 Summary of costs per action

This table should present an allocation of the costs incurred per action. It should be presented in both paper and Excel format.

Action no.	Short name of action	1. Personnel	2. Travel and subsistence	3. External assistance	4.a Infra-structure	4.b Equip-ment	4.c Prototype	5. Purchase or lease of land	6. Consumables	7. Other costs	TOTAL
A.1	Creation of the working group	€ 5.223,72	€ 22,40	€ 242,82	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 5488,94
A.2	Study of the density and geographical, historical and current distribution of barbel population; census of alien species and genetic characterization	€ 30.845,02	€ 474,27	€ 2.231,09	-	€ 111.852,45	-	-	€ 9.428,75	€ 382,30	€ 155213,88
A.3	Environmental characterisation of the study area	€ 72.721,03	€ 336,75	€ 0,00	-	€ 0,00	-	-	€ 2.004,42	€ 0,00	€ 75062,20

A.4	Drawing up of the recovery plan for target species following the preliminary studies results	€ 36.706,57	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 36.706,57
A.5	Drawing-up of the adjustment plan of the fish hatcheries of Monchio delle Corti (PR), Corniglio (PR) and Selvanizza (PR)	€ 9.197,92	€ 736,07	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 9933,99
A.6	Drawing up of the environmental education project	€ 12.079,59	€ 53,40	€ 160,43	-	€ 599,02	-	-	€ 0,00	€ 0,00	€ 12892,44
C.1	Adjustment of fish hatcheries of Monchio delle Corti (PR), Corniglio (PR) and Selvanizza (PR)	€ 22.722,54	€ 966,60	€ 6.398,90	-	€ 46.886,57	-	-	€ 0,00	€ 0,00	€ 76974,61
C.2	Interventions of river defragmentation in the Enza river (SCI IT4030023)	€ 0,00	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 0,00
C.3	Prearrangement of artificial substrata in riverbed	€ 8.144,65	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 8144,65
C.4	Implementation of ex situ spawning activities	€ 10.186,88	€ 1.413,00	€ 0,00	-	€ 0,00	-	-	€ 6.162,68	€ 682,00	€ 18444,56
C.5	Introduction of barbels produced ex situ into the wild	€ 3.277,61	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 3277,61
C.6	Opening of a working round table with stakeholders for the sustainable management of water resources and counteracting poaching	€ 43.860,75	€ 448,54	€ 4.010,66	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 48319,95
C.7	Control of alien barbel species: eradication or management of allothonous species	€ 10.231,44	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 10231,44
D.1	Assessment of the efficiency of the in situ interventions	€ 0,00	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 0,00
D.2	Assessment of the efficiency of ex situ breeding interventions (actions C2, C3 and C7)	€ 5.778,66	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 5778,66
D.3	Assessment of the engraftment in nature of the new barbels populations	€ 0,00	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 0,00
E.1	Prearrangement and installation of information panels in the areas of utmost visibility of the project	€ 2.816,98	€ 13,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 2829,98
E.2	Development and management of the project web site	€ 5.635,25	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 5635,25
E.3	Execution of a Layman's report	€ 15.009,98	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 15009,98
E.4	Development and implementation of the environmental education project catering to the schools and the citizens, working out of the materials for the project dissemination and for its communication through the mass media	€ 14.866,04	€ 119,80	€ 31.404,24	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 46390,08
E.5	Organisation and participation in scientific meetings and conferences, and in the publishing of scientific papers	€ 10.783,71	€ 5.877,90	€ 0,00	-	€ 0,00	-	-	€ 393,63	€ 16,10	€ 17071,34
E.6	Drafting of a guidelines	€ 0,00	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 0,00
F.1	Management of project; partnership meetings	€ 44.716,10	€ 1.218,60	€ 14.888,46	-	€ 0,00	-	-	€ 0,00	€ 821,71	€ 61644,87
F.2	Networking activities with other life projects	€ 19.780,36	€ 527,79	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 20308,15
F.3	Audit	€ 1.153,24	€ 0,00	€ 0,00	-	€ 0,00	-	-	€ 0,00	€ 0,00	€ 1153,24
Over-heads											44212,00
	TOTAL	€ 385738,04	€ 12208,12	€ 59336,60	0	€ 159338,04	0	0	€ 17989,48	€ 1902,11	€ 680724,39

7. Annexes

Annexes referring to the codified “deliverables” of project are asterisked and attached also in paper format.

7.1 Administrative annexes

The *partnership agreements* have already been transmitted with the Inception Report and are not attached to this document. The following documents are attached:

- Authorizations for electric fish
- A4.2 Favourable opinion on Environmental Impact Assessment of Recovery Plan (part A)
- A5.2 Endorsement Determination of PNATE’s Director
- C1.3 Authorisation of regional veterinary services for the use of Corniglio (PR) Plant
- C1.4 Decision of the Regional Council no. 1335 of 1 August 2016 "Implementation of Resolutions no. 2269/2015 and no. 142/2016. Approval of agreement ex art. 15 of l. no. 241/90 and subsequent amendments between Emilia-Romagna Region and the Management Body for Sustainability of Western Emilia region, for the management of hatcheries for fish breeding located in Monchio delle Corti and Corniglio and for conducting restocking activity”.
- C1.5 Agreement between the Tuscan-Emilian Apennine National Park and the Management Body for Sustainability of Western Emilia region for the functional integration of technical and administrative structures of the two authorities with particular regard to the field of management the fish and the fishing fauna in the Parma area of the Tuscan-Emilian National Park.
- F1.1 semi-annual partnership meetings report and the "signature sheets"*
- F1.2 Timesis-Neemo monthly reports
- F1.3 Response letter to the note of EC of 22/2/2016
- F1.4 Documentation for the application for the inclusion of “Cronovilla” SCI in LIFE BARBIE study area

7.2 Technical annexes

- List of keywords and abbreviations used
- A2.2 Action A2 final technical report: “technical report describing the study of *Barbus* sp. populations in the study area with special attention paid to the exotic species”*
- A2.3 Photos and newspaper articles about the flood in Piacenza
- A3.1 Action A3 progress report (08.30.2015): “technical report describing the environmental study in the study area”
- A4.1 Part A of the Recovery Plan*
- A4.3 Draft Part B of the Recovery Plan – progetto di deframmentazione
- A5.1 Renovation plan of acquaculture plants*
- C1.1 Action C1 photographic documentation
- C1.2 Modification to the renovation Plan of acquaculture facilities
- C3.1 Action C3 photographic documentation*
- C4.1 Action C4 photographic documentation
- C5.1 Reintroduction intervention reports (15/7/2016)*
- C5.2 Action C5 photographic documentation
- C6.1 Memorandum of Understanding "*For a sustainable and common management of fishing and the protection of fish stocks in the Po river* "
- C6.2 Anti- poaching Agreement, territorial area of Trebbia river*
- C6.3 Anti- poaching Agreement, territorial area of Parma, Taro, Po rivers*
- C6.4 Anti- poaching Agreement, territorial area of Enza river*
- C6.5 Action C6 meeting signature sheets
- C6.6 Action C6 photographic documentation

- C6.7 Action C6 meeting programmes
- C6.8 Action C6 meeting reports
- C7.1 Report of AIS control actions*
- C7.2 Action C7 photographic documentation*
- D2.1 Monitoring Data Base*
- F1.5 Document of project evaluation*
- F1.6 Report of project evaluation

7.3 Dissemination annexes

- A6.1 Environmental education project*
- E4.1 Informative brochures*
- E4.2 Brooches
- E4.3 Rolls Up
- E4.4 Educational Poster
- E4.5 Educational brochure
- E4.6 Educational notebook
- E4.7 Scientific Poster
- E4.8 Press releases
- E4.9 List of schools participating in the Life Barbie activity
- E4.10 Environmental education programme for high schools
- E4.11 Educational cartoon
- F2.1 Networking DataBase to be upgraded underway*
- Standard presentation illustrating the main actions and results of the project

8. Financial report and annexes

- "Standard Payment Request and Beneficiary's Certificate"
- "Beneficiary's Certificate for Nature Projects" (for each project beneficiary)
- "Consolidated Cost Statement for the Project"

- "Financial Statement of the Individual Beneficiary" for each project beneficiary
 - Personnel costs
 - Travel costs
 - External assistance
 - Infrastructure
 - Equipment
 - Prototype (only applicable for ENV and BIO projects)
 - Land purchase (only applicable for NAT projects)
 - Lease of land (only applicable for NAT projects)
 - Consumable material
 - Other direct costs
 - Overheads
 - Funding from other sources

- Detailed documentation of Chapter 6 :
 - AdbPo staff details
 - VAT returns documentation (for each project beneficiary)
 - Documentation for GEN-TECH car purchase financing
 - Costs incurred per action Table (file excel)