CEPF Final Project Completion Report

Instructions to grantees: please complete all fields, and respond to all questions, below.

Organization Legal Name	Agro-Environmental & Economic Management-Center (AEEM-Center)
Project Title	Integrated Natural Water Management of Shkumbini River, Albania
CEPF GEM No.	ID 65717
Date of Report	29.08.2016

CEPF Hotspot: Mediterranean Basin

Strategic Direction: Establish sustainable management of water catchments in 4 priority corridors.2.1 Contribute to and establish Integrated River Basin Management initiatives for pilot basins and replicate best practices to reduce the negative impacts of insufficiently planned water infrastructures.
Grant Amount: 29470 USD

Project Dates:

1. **Implementation Partners for this Project** ***(list each partner and explain how they were involved in the project)***
   1. Local government of Cerrik and Elbasan supported this project, they gave us information on discharges in the Shkumbini River, moreover, they helped in the organization of meetings with businesses operating around Shkumbin for the propaganda of the project results, and measures to reduce pollution.
2. The Ministry of Environment with its representatives Ms.Ornela Shoshi, Msr Polikron Horeshka, was a continuous partner throughout the project. Representatives of various Departments of the Ministry of Environment and Ministry of Agriculture, Rural Development and Water Administration attended the meetings organized by AEEMc, where they were introduced to the study of biodiversity and chemical assessment of Shkumbinis water. During these meetings representatives of these ministries were informed and discussed the achievements and findings of the project. They contributed with their thoughts to the work improvement. The Directory of Rural development in MBZHRAU, represented by Msr. Grigor Gjeci was in constant connection with our staff and provided their assistance in the infrastructure part of the project, as well as helped in collecting the data from the other agriculture specialists in the villages nearby.
   Directory of Agriculture in Elbasan and mainly Drainage and Irrigation Department of Elbasan have been open to give us information, to assist in meeting with representatives of the WUO.
   • Agriculture University of Tirana and Environmental Monitoring Center in which we have conducted all the analysis of water, sediment and plants.

- Aleksander Xhuvani University, Expert biochemist Marilda Osmani joins our team for trainings.

Stakeholders that participated in the project results are: (i)

Water Use Organisation (WUO of Naun Panxhi and Peqin Kavaj Canal). WUOs members were part of the training and meetings made during implementation AEEMC project, they informed us about the situation in the irrigation system, Shkumbin water management, problems with local and central authorities. They also informed us about the conflicts that exist between farmers and water losses of Shkumbini River. All this information helped us to be more effective during the implementation of the project.WUO members Msrs Aleksander Cullhaj, Thanas Rrasa, Kelmand Salla, Filip Binjaku, Ristan Bardhushi, Murat Cekrezi, Vasil Cullhaj, Dhimiter Kuqja, Sadush Sina, Shefki Murati, Kujtim Salla,Bashkim Belshi, Sinan Kuqja, Ramiz Banja, Erard Salla ect have benefited from training conducted during this project from AEEMC. They were trained for an effective water management; also they were part of every event. They were therefore very active in round table discussions, in meetings with government representatives.
Relevant stakeholders are co-authors with AEEMC specialists in the design of innovative Practices as far as the 'Plan of seasonal irrigation' and Planting Plan are concerned. Moreover, they are successful implementers of these practices.
The work methodology developed by AEEMC was to sit at a round table the members of water associations and local government representatives.
High school of Cerrik and Belsh. Students and teachers of High school of Cerrik and Belsh participated in trainings, open days, and other activities of the project.

Conservation Impacts

3. Describe how your project has contributed to the implementation of the CEPF investment strategy set out in the ecosystem profile

Our project in accordance with the CEPF strategy has contributed in sustainable management of Shkumbini water and its Integrated Management. This project included farmers, members of the WUO, students, local and central government in the region for Best Practices in Water Management of Shkumbini River.

The biological and biodiversity assessment of the waters of the Shkumbin River gives a big contribution to the conservation through:

1. The identification of the number of fish species and macroinvertebrate.
2. The identification of the distributional status of the macroinvertebrae and fish species throughout River Shkumbin.
3. The determination of the diatom community composition as indicators of the trophic state of the Shkumbin River that has a direct impact on biodiversity. The determination of the conservation status of fish species of Shkumbini river basin.
4. The determination of the methods for biological and biodiversity assessment of the water in Shkumbini River.

All these achievements and contributions of this project are presented in the brochure: Shkumbini Biodiversity and Water Quality, which is made available to specialists and everyone concerned in the Ministry of Agriculture and Environment.

The methode for biodiversity assessment of the waters of the Shkumbin River serve as **guidance to the National Environment Agency.**

IBECA (Institution Building For Enforcing Environmental And Climate Acquis) takes into account the data of the macro invertebrate biodiversity of our project in the drafting of the management plan of the river Shkumbin.

This body is also introducing benthic macro vertebrate and fish as an evaluation component, during the training of the staff of NEA (National Environment Agency).

The achievements of biological and biodiversity assessment of the water in Shkumbini River have been presented in the press, social media and on various television media outlets.

4. Summarize the overall results/impact of your project

Training of the association's members and Federations has helped WUO for an effective management of irrigation water in Shkumbini´s River region.

After the implementation of our project, they built the Planting Plan (this did not exist before). After our training they started to register what kind of plant they have to cultivate.

An innovative practice that is used during this project is the "seasonal plan of irrigation".

During the seasonal plan of irrigation, the farmers confront the need for water with the irrigation capacity. They are based on the Planting Plan (as well an innovative practice introduced by this project).

As a result of a series of training introduced by our project, water users are building a new maintenance plan. Water users evidenced what is needed for the maintenance of the irrigation system. The water users of both associations are included in this process.
During the project we have worked with WUO in-Shirgjanit Gostima with an area of about 730 ha (Channel of Naum Panxhit) and WUO in Pajovë - Gjocaj with a surface of about 340 ha (Channel Peqin- Kavaj).
During the project, as a result of the improvement of the Water Management in distribution, particularly in minimizing the losses to about 460 ha (380 in Naum Panxhi and 80 in Pajovë - Gjoxaj) more that 1 irrigation a year is realized.

According to the calculations there are generally 1070 Ha x 2 irrigations = **2140 ha irrigated**

After project implementation: (610 Ha x 2 irrigations) + (460 ha x 3 irrigations) = **2600** ha have been irrigated
So during the project there was 21% more irrigated surface of agricultural land than before.

We think that our propaganda for the protection of the biodiversity and pollution in Shkumbini region had an indirect impact on the domestic state institutions (by stopping the activities that were polluter of this region).

During the project period in the area considered under this survey 15 fish species were identified. The species with the widest distribution along the river are *Alburnoides bipunctatus*, *Barbus presepnsis Squalius cephalus*, *Chondrostoma nasus*, *Pachichilon pictum* and *Oxynoemacheilus pindus*. The species with restricted distribution are *Gobio gobio*, *Cobitis ohridana* and *Anguilla Anguilla*
Presence of eel (*Angilla anguilla*), a critically endangered species (IUCN) in two sampling locations (Peqin and Paper) shows the importance of Shkumbini river as a migrating corridor for this species, while national wide due to hydropower construction and damming is seriously threaten. Further to that presence of flathead grey mullet (*Mugil cephalus*) and thinlip mullet (*Liza ramada*), both marine species of Mugilidae family is reinforcing importance of the Shkumbini river for both catadromic and anadromic taxons.
Based on data related to number of individual per species in different locations ($100m^2$), during the field campaigning the highest number of individuals (per all species) was registered in Peqin (191 individuals/100 m^2), while the lower of 53 individuals was registered in Qukes.
Looking to the species composition and dominance of *Barbus prespensis*, *Alburnoides bipunctatus* and *Oxynoemachileus pindus*, it can be concluded that there are no barrier for fish movement in the considered section of Shkumbini.
The presence of young of the year fish at all sampling sites among various species of Family Cyprinidae is encouraging for the medium term future of the Shkumbini river fisheries.

Spirlin *Alburnoides bipunctatus* is considered to be in the "least concern" IUCN category, as it is widespread and is regionally abundant, but in many European waters it is reported as "endangered" or "threatened" due to stream regulation or organic pollution. The species *Anguilla anguilla, Barbus prespensis, Alburnoides bipunctatus* and *Oxynoemachileus pindus, Pachychilon pictum, Alburnus alborella, Squalius cephalus and Gobio gobio, Cobitis ohridana* are considered with different conservation status by IUCN, national legislation (Red Book 2007) and Bern Convention at European level.

Presence of alien species (*Pseudorasbora parva* and *Gambusia affinis*) at the lower part of the river flow is reflecting the tendency of accelerated eutrophication, where organic pollution, solid waste depositions and waste water discharges are the cause of the phenomena.

During the monitoring period July-September 2015, in each of the stations a total number of **macroinvertebrates** 1192 were collected. From these individuals: 534 were found at the first monitoring station (Prrenjas), 467 at the second station (Qukes), 254 in the third station (Labinot fushe), 265 in the fourth station (Paper) and 292 in the fifth station (Peqin). The insect group represents 83 % of the species found in Shkumbini River. In all station were identified 31 families of macro invertebrates that show a high degree of biodiversity. Benthos sensitive and medium tolerant groups are represented by an insignificant percentage (71%) compared to the benthos tolerant groups where presence of group EPT indicates for a good water quality. Based on the EPT-Index value the three first stations are classified with water quality " Good" compared to two other stations that are classified in " Clean" bio-class. The forth and the fifth stations have not shown considerable differences in EPT value.
From the five sampling stations, the first station has the best water quality "Very good" bio-class, compared to the other stations based on S.W.R.C – BI calculations. The second and third stations represent with "Good" bio-clas and forth and fifth stations with "medium" bio-class.
From the qualitative assessment of the data it results that the water quality in all selected sampling stations is not classified with bad water quality. The differences in water quality among different stations are due to climate factors, geographic position and anthropogenic influence.
From all the calculations and analyses of the data collected (for biodiversity) in Shkumbini River during July –September 2015 we can conclude that the water of the river represents a good quality with a medium impact in the downstream.
The most common and widespread species of diatoms were: *Achnanthesminutissima, Cocconeispediculus, Cymbellamicrocephala, Fragilariacapucina, Fragilaria ulna, Gomphonemaminutum, Naviculacryptotenella, Nitzschiaincospicua, Nitzschiapalea, Nitzschiaumbonata* etc. *A. minutissima*, considered as a tolerant species (*Hofmann, 1994*), and was found almost in all sampling stations, it was often accompanied with *Cocconeispediculus*. The composition of the diatom community in Shkumbini river were classified from mesotroph (Paper) to polytroph (in Peqin) show the high status of polluted, which indicated from medium inorganic and organic matter, agricultural land and restaurants, especially in Peqini site. Increased turbidity due to the large content of solids, in some cases, large and organic pollution.e.g. stations: Peqin the saprobic index

belong to β-α meso-saprob (2.2); Prrenjas the saprobic index belong to β-meso-saprob (2.0) and Labinot-Fushe belong to β-mesosaprob (1.9), inhibited the growth of macroscopic algae like as *Chladophora glomerata*. This situation comes as a result of the influence of cities:Prrenjas, Librazhd, Elbasan, Peqin and Rrogozhinë, that are the main causes of such a high value of trophic and saprobic index in Shkumbini river.

Analysis of heavy metals in the river Shkumbin showed that the level of nickel is high in water and sediments along the Shkumbin. The highest values of nickel in water were in stations Lekaj (46 µg/L**)** and Peqin (40 µg/L**)** therefore not only influenced by the origin of ultramafic soils that are naturally rich in metals but and human pollution. In sediments collected along the Shkumbini River nickel concentration is high ranged from 500 to 750 mg/kg dry weight. Construction activities cause short-term effects, but subsequent erosion of ditches and slopes may cause more serious long-term effects if not mitigated.

Figure 1. During sampling time in Shkumbini River (Dr. Spase Shumka, Dr. Lirika Dorri, Kupe)

Planned Long-term Impacts - 3+ years (as stated in the approved proposal)

List each long-term impact from Grant Writer proposal

- Preparation and training of members of the WUO, that profits knowledge for the future.
- Preparation of the documents for WUO, so in the future they will be able to calculate the rate of irrigation and built the Planting Plan so they will reduce water expenditure and work time.
- The brochure, leaflets, reports can be used for a long time, so the water user and locals will know the problems and will find some solution.
- Training of the WUO members and the young generation is a good investment for the future.
- Meetings organized at the Ministry of Environment and Agriculture to present the results of the project and distribution of brochure will be a contribution for the new strategy for integrated management of Shkumbini River.
- A poll of our center showed that after training from AEEMC students of the regions have more knowledge about biodiversity and water quality of Shkumbini River. This is promising for the future.

5. Actual progress toward long-term impacts at completion

-Organizations and federations of water are prepared for the sustainable management of irrigation water in collaboration with Agricultural Directory in their region. AEEMC organized 6 Forums (two in July and four in September have been organized with farmers and members of 2 water associations in Cerrik, Elbasan, Paper and Rrogozhine), meetings, four trainings (August- November) for the WUO and Federation personnel also we have prepared the brochure; Training as a tool to improve WUAs management. At each meeting there were about 15 members of water associations and representative of the locals and agriculture directory.

-AEEMC expert had prepared some documents for WUO (Planting Plan, Seasonal Plan of Irrigation" and the Maintenance Plan) and trained them to use these three plans,). As a result in this year and in the future they will be able to calculate the rate of irrigation and built the Planting Plan. So in this year they reduced water expenditure and work time. This year they irrigated 21% more agricultural land.

-Through our meetings, trainings and our publications regarding Shkumbini biodiversity, we aim to grab the attention of the Ministry of Environment, local state institutions and the people that live in this region.

-During this project we published the brochures: Training as a tool to improve WUAs management and Shkumbinis Biodiversity and Water Quality) and the following leaflets “Integrated Natural Water Management of Shkumbini River, Albania” that can help the water user and locals to know the problems and find some solution.

-We also trained the young generation of the region because we see that as a good investment for the future. During the March-May period we had lectures in high schools of the region (professional and general high school of Cerrik, Belsh) through the prepared modules: Water Quality and Biodiversity and Integrated Natural Water Management of Shkumbini River. Through these actions tend to prepare the future generation for an sustainable use of water.

-The meeting organized in the Ministry of Environment on the 18th of March with representatives of the Ministries of Environment and Agriculture, The National Environment Agency, Agency of Protected Areas to present the results of the project and distribution of brochure has been a contribution for the new strategy for integrated management of Shkumbini River.

Figure 2. During the meeting in Environmental Ministry.

-The methode for biodiversity assessment of the waters of the Shkumbin River are guidance to the National Environment Agency.

-2 forums held in the Agriculture Directory in the District of Elbasan (part of the Agriculture Ministry) have formed a stable relationship that will have continuity between them and WUO.
-In the meeting organized in the Ministry of Environment on the 18th of March (with representatives of the Ministries of Environment and Agriculture, The National Environment Agency, Agency of Protected Areas) we presented the results of pollution caused by the industrial activity. This has resulted in frequent checks along the Shkumbini and measures such as locking or fines.

Planned Short-term Impacts - 1 to 3 years
-After training WUO planned irrigation, therefore in 2016 as a result have less loss. After the implementation of our project, WUO built the Planting Plan (this did not exist before). After our training, they started to register what kind of plant they have to cultivate and planned irrigation water. So as a result after April 2016 have less loss of water.
-As a result of a series of training introduced by our project, water users are building a new maintenance plan. Thus, at the end of March, water users started to notice and understand what is needed for the maintenance of the irrigation system. The water users of both associations were included in this process. In the beginnings of 2016 WUO members inform us that irrigation channels are in a better state. Also our inspections in Cerrik and Peqin for both channels told us a better state of irrigation channels.

Dissemination of the river Shkumbin problems detected during this project in the Best Channel TV, in daily or Environmental journal (Tirana Observer, Mjedisi Sot), facebook page (Zhvillimi I qendrueshem I serpentinave) increased attention to the local and central government.

Awareness about Shkumini problems in the Best Channel TV (May2016), in daily or Environmental journal (Tirana Observer, Mjedisi Sot), increased attention to the local and central government.
- As a result of the work done during this project, through propaganda in the press, meetings with businesses, meeting in the Ministry of Environment and with specialists from the National Environment Agency is seen to have better control of urban discharge in Shkumbini River.

Meetings, forums with the young people of high schools in the region (Cerrik, Paper, Belsh) increased the interest of the new generation for cleaning Shkumbini river coast. So some parts of the river are cleaner than before.

6. Actual progress toward short-term impacts at completion

-Increase of irrigated area is directly related with improvements of participatory irrigation management in the project area. This effect is directly related to training of staff of the WUOs in the fields of planning and management. After the implementation of our project, for a better management of irrigation water, WUOs started to build a register of plantings. This register consists of recording surfaces that will be planted for each plot to be watered by irrigation schemes. For preparation of this register WUAs staff collaborated with farmers in cover area. Records were produced in the period from January to February and served as the basis for building of irrigation seasonal register. We trained and assisted WUA staff to prepare specific records.

Before irrigation season during March, the WUOs staff built a seasonal irrigation registry. This register contained predicted quantities and numbers of irrigation for each plot registered in the plantings. In accordance with this plan water adjustments were throughout the season following the opportunities dictated by the weather conditions.

-We trained and assisted WUOs staff to prepare specific records

Rise of managing capacities of WUOs resulted in the reduction of occasional distribution of water irrigation. A significant effect on the increase in irrigated area and an increase in the number of irrigation was the debut of the water distribution for users in the tail of the channel, following with the users that are in the top area of the channel. Such techniques reduce the stay time of water in the channel by increasing the irrigated surface in units of time and reduce water losses.

-The planning of irrigation increased the interest of farmers to grow intensive plants such as corn and vegetables that require more irrigation during the summer season. An important role for increasing interest of farmers has WUOs work in drafting of register of plantings. Contacts with farmers for the preparation of this registry are very important to ensure the collaboration between these and WUOs.

The increase in irrigated area and the number of irrigation per unit area, and planting of intensive plants like corn and vegetables, create opportunity to take high quality products with and provide more profits. We have not made a direct assessment of production but can attest to the well-known relations between irrigation and crop production. Thus, corn irrigated three times per season can give up to 20 – 30% more than the corn is irrigated twice per season.

7. Describe the success or challenges of the project toward achieving its short-term and long-term impacts

Providing information on biodiversity in the lagoon (the fish and macro invertebrate species) present has encouraged local government and the Environment Ministry in taking protective measures. Identification of the species threat status has aimed to influence the preventive measures; as the prohibition of hunting, urban emissions,

harmful industrial activities, or gravel collection. The publications made during the project, the brochures, article published in daily journal, leaflets or meetings have well informed the people responsible for Shkumbin conditions. The training of water organizations, has led to 21% more surface irrigated; irrigation becomes more important due to an increase in production.
WUO and farmers are informed and they are applying new methods of irrigation planning that provided the growth of products and it is promising perspective.
The results of chemical analysis resulted in a nickel contamination of water and sediment in the hottest points of the river and found the causes of this pollution.
This is promising for the future to reduce the level of pollution.
Determination of threatened species is a big help to lobby for their threat status.

Were there any unexpected impacts (positive or negative)?

Change the organization of local government in Albania raises the necessity of continuing the work of this project to raise awareness of the newly created structures.
WUO are independent but collaborations with local help their functioning.

Project Components and Products/Deliverables

Component 1 (as stated in the approved proposal)

List each component and product/deliverable from Grant Writer

Component 1; Preparation of local groups (community water associations and federations responsible for the management of irrigation water) to establish responsible water use and increased responsibility in decision-making
The main product of this component was strengthening and improving of the role of the WUO and Federation responsible for the management of irrigation water
Deliverable from Components 1 were:

i) Four Trainings for the WUO and Federation personnel on the following topic, by field expert invited by AEEMC;

Training1. Planning the seasonal irrigation demand, its practical application. Participatory Irrigation; Irrigation Planning; Seasonal register of irrigation. 19, ,Cerrik-Elbasan. The number of participants in this training was 20.
There are some procedures for planning the seasonal irrigation demand, which are not used effectively. As a consequence, the plan and situations do not correspond. The purpose of planning and its practical application were treated and have been shown to great interest in this training the WUOs staff.

Figure 3. During training 1.

Training 2. Inequitable access to irrigation water supplies between top and tail-end water users. 26/9 2015, Elbasan
The number of participants in this training was 15.
Equitable distribution of available irrigation supplies is a key objective of the irrigation management. Good water management will reduce the inequity of water distribution, and generally results in an increase in overall productivity within an irrigation scheme. The training program raises the issue of equitable distribution of water and work with the trainees to identify ways to overcome inequity.

Figure 4. During training 2.
Training 3. Identifying the factors causing low fee recovery and look at measures that can be introduced to increase fee recovery levels. 31 October 2015, Cerrik. The number of participants in this training was 17.
Low fee recovery levels are a major issue, and problem. The fee recovery levels need to be increased if the irrigation systems are to be sustainable in the long term. The training program worked with the trainees to identify the factors causing low fee recovery and look at measures that can be introduced to increase fee recovery levels. Some of the problems with fee recovery is related to the reporting processes.

Figure 5. During training 3.

Training 4. Long-term sustainability and financing of irrigation system.
13 November 2015. Cerrik
The number of participants in this training was 20.
Some personnel have experience of water management at a farm level; very few have experience of water management at main system level. This is a major problem for equitable and productive distribution of irrigation water, and is a key feature of the training programs. The training programs significantly improve the level of competence within WUOs in water management.

The government is partially funding the rehabilitation but will not fund any further investment in irrigation infrastructure. The WUOs will have to collect sufficient money from water users not just for annual maintenance but also for long-term expenditure to cover the costs of replacing structures as they deteriorate. The training programs cover the issue of long-term sustainability and financing of irrigation system.

Figure 6. During training 4.

ii) The article: Menaxhimi i integruar i ujit te Lumit Shkumbin (Integrated Natural Water Management of Shkumbini River, Albania) published in journal Tirana Observer, mardi 13 october 2015.
iii) Forums (6, 28, 31/07/2015, 21, 26, 27/08/2015, 28/09/2016) are organized with farmers and members of 2 Water Associations in Librazhd, Cerrik, Elbasan, Paper, Peqin and Rrogozhine. During the forum we listen directly requirements of farmers, their problems and farmers are exercised in drafting the planting plan, irrigation plan and maintenance plan.
vi)We have published and delivered for WUO and Federation personnel brochure; Training as a tool to improve WUAs management

Component 2: Carry out a qualitative and ecological assessment of irrigation water of Shkumbini River and its channels
The general product from this component was the assessment of water quality according to physico-chemical and nutrient parameters, the information of WUO and Federation,

key stakeholders on quality state of Shkumbini and cannels services, and encouragement of actions to improve their quality.
Deliverable from Components 2 are;

- Report on the chemical state of river,
- 2 articles: two in daily journal "Tirana Observer" (23 .02. 2016) and the one in´´Mjedisi sot´´,(4 march 2016) an environmental journal. Both articles were focused in water quality of Shkumbini River.
- Prepared in the press scientific article; in Fresenius Environmental Bulletin; Biodiversity and Water quality in Shkumbini River.
- Publication of a brochure Shkumbini biodiversity and Water quality

Component 3: Raise awareness of local government in relation to the management of industrial and urban discharges in the river and its channels
Products from this component will be: Raised awareness of local stakeholders on benefits coming from sustainable use of water resource.
Deliverable from Component 3 are;

- Participatory Workshops with locals (2/10/2015 28/10 2015 Cerrik, Shtermen-Elbasan), WUO members, and representatives of the agricultural directory and AEEMC with the topic: Raised awareness of local stakeholders on benefits coming from sustainable use of Shkumbini water. The numbers of attendees on each of the trainings were respectively 15, 14.
  Conclusions
  i) WUO felt no support from the local government and departments of agriculture, so from 1500 ha of agricultural land only 300 ha are cultivated.
  ii) WUO cannot cover the costs of network maintenance to the fact that farmers do not cultivate and did not contribute financially to the association.
  iii) In the municipalities of Elbasan and Cërrik the second and third channels do not work after missing the attention by municipalities and Drainage Board.
  iv)Meetings suggested that municipalities should establish a structure for irrigation and drainage problems.
  v) Using efficiently of the Shkumbin river water increases irrigated surface and affects production growth.
  vi)Training the farmers to use water efficiently is a crucial component.
  vii) Also at the meeting support was requested from the local government. Legal improvements, particularly for relations of WUO with the local government are necessary in the framework of a new territorial division and the fact that some irrigation channels lie in more than one unit.
  viii) Raising of the capacity the WUO is necessary for sustainable use of irrigation water.
- Participatory Workshop (13,14,19/11/2015, respectively in Cerrik, Peqin-Elbasan) with local government members, farmers, students in regarding the better management of industrial discharges in around Shkumbini River- The number of attendees on each of the trainings 15, 17, 16.
  Conclusions
  i) Lack of periodic control by central and local government for industrial discharges in the river of Shkumbin. Lack of control of urban waste discharged into the River Shkumbin.

ii) Metallurgical industrial wastes in Elbasan are a potential risk to living organisms.
iii) Missing wastewater treatment plants.
iv)Cooperation of local government with NGOs is weak
v) It is necessary to increase information and consequently the interest of the new generation about the benefits and services offered by Shkumbin River ecosystem.

- AEEM Center´s staffs at 10 may had an interview in Best Channel TV during a field trip along Shkumbini River to raise the awareness on pollution sources and influence in the River Biodiversity. Prof Aida Bani and Prof Ilir Kristo were interviewed.
- In 17 March we had a round table discussion in the Ministry of Environment; members of WUO, AEEMC and local government members in regarding the nature of the pollution and the management of urban and industrial discharges.

Component 4: Raise awareness on socio-economical benefits of sustainable use of water of the younger generation. We intend to ensure sustainability.

Products from this component were: Raised awareness of younger generation on benefits coming from sustainable use of water resources through the following deliverables:

- Mini brochure for the students of secondary school (January): Shkumbini River, biodiversity and pollution.
- Open days are organized in water and Earth Day with the participation of the students of secondary agricultural school and general secondary schools of Cerrik, Belsh
- In May: Leaflet preparation and they are distributed in the regions during Shkumbini River.
- Leaflets provide information about water quality, biodiversity, pollutions,
- 3 May lecture in agricultural secondary school of Cerrik (20 students)
- 26 may lecture in high school of Cerrrik, Belsh, Gramsh (80 students)
- 28 may lecture in Rrogozhine High School (20students). The lecturers were Prof. Ilir Kristo, Prof Aida Bani and Msc Marilda Osmani. The lectures were about Management and Quality of Shkumbini River.

Figure 7: Lectures in professional and general high school of Shkumbini´s region

Main conclusions of the education activities for high school students

i) High school students in the region were not very informed about Shkumbin River, the goods and services that it provides.
ii) Schoolchildren and their teachers displayed a great interest to be informed of the results of the project in relation to biodiversity and water pollution level Shkumbin
iii) Participation in open activities, or giving information (brochures) was very attractive to young people.
iv) This project show that have to work more with young people to recognize the goods and services of natural ecosystems, for a right orientation in their life.

8. If you did not complete any component or deliverable, how did this affect the overall impact of the project?

We have completed all the components and deliverables.

9. Please describe and submit any tools, products, or methodologies that resulted from this project or contributed to the results

Training and Forums organized from the AEEMC staff with farmers and members of 2 water associations in Cerrik, Elbasan, Paper and Rrogozhine with selected topics in view of the needs of farmers associations.

Topic; Implementation of the innovative practice; Planting Plan,

After the implementation of our project, for a better management of irrigation water, WUOs started to build register of plantings. This register consists of recording surfaces that will be planted for each plot to be watered by irrigation schemes. For preparation of this register WUAs staff collaborated with farmers in cover area. Records were produced in the period from January to February and served as the basis for building of irrigation seasonal register. We trained and assisted WUA staff to prepare specific records
Topic; Implementation of the Seasonal plan of irrigation

Before irrigation season during March, WUOs staff built seasonal irrigation registry. This register was predicted quantities and numbers of irrigation for each plot registered in the plantings. According to this plan was implemented water throughout the season making and adjustments that dictated by the weather conditions.
We trained and assisted WUO staff to prepare specific records

Topic Implementation of the Maintenance plan

As a result of a series of training introduced by our project, WUAs staff in last December also inspected all irrigation channels and based on information collected during the inspection built a new maintenance plan for all works to be carried out in the network of irrigation channels. WUOs evidenced what is needed for the maintenance of the irrigation

system. In March and April were carried out works to bring irrigation network in readiness for the new season. We assisted WUO staff to prepare specific records
After trainings we organized forums with WUO, farmers where we talk about methods and solutions.

Benefits to Communities

10. Please describe the communities that have benefited from CEPF support

Please report on the size and characteristics of communities and the benefits that they have received, as a result of CEPF investment. Please provide information for all communities that have benefited ***from project start to project completion****.*

	Community Characteristics											**Nature of Socioeconomic Benefit**								
								Size of Community												
Community Name	**Subsistence economy**	**Small landowners**	**Indigenous/ ethnic peoples**	**Pastoralists / nomadic peoples**	**Recent migrants**	**Urban communities**	**Other***	**50-250 people**	**251-500 people**	**501-1,000 people**	**Over 1,001 people**	**Increased access to clean water**	**Increased food security**	**Increased access to energy**	**Increased access to public services (e.g. health care, education)**	**Increased resilience to climate change**	**Improved land tenure**	**Improved recognition of traditional knowledge**	**Improved representation and decision-making in governance**	**Improved access to ecosystem services**
Farmers		+									+								+	+
Young generation (student of high school of the region)								+												
																		+		

*If you marked “Other” to describe the community characteristic, please explain:

Lessons Learned

11. Describe any lessons learned related to organizational development and capacity building.

Water associations and Federations have needs for the support of the local government for same problems;

-Keeping in the working conditions of multifunctional channels and third channels, because the farmers are unable to contribute to clean them.
-Lacking Care for third irrigation channels reduces the effectiveness of irrigation.
-Dumping of waste in channels from economic entities and individuals reduces the canals flow of irrigation and ruin water quality,
-Water associations need financial support in cases of the emergencies.
-Needs for legal improvements in the interaction between drainage board and the local government.

12. Describe any lessons learned related to project Design Process *(aspects of the project design that contributed to its success/shortcomings)*

Designing the project around four specific components, with great importance to establish sustainable management of water and for the preservation and conservation of the water ecosystem, was an important pre-requisite for the successful implementation of the project in collaboration with local stakeholders to make sure everything went according to plan.

13. Describe any lesson learned related to project Implementation *(aspects of the project execution that contributed to its success/shortcomings)*

An important lesson we got from this project is that cooperation, the teamwork and the fact that the relationships built with the community have a strong impact towards success.
One other very important lesson learned during the implementation of the project is to work on site, contact with people is crucial in succeeding.
This project shows that the water use organizations need support from local government, who should better hear their problems; many issues depend on the work of local government affecting directly the effective management of irrigation water or its pollution.
- It is required a better collaboration between the central government and representatives of the industrial activities operating around Shkumbin river because this project told us that It is increasing the level of pollution in the river of Shkumbini (heavy metals, eutrophication).

14. Describe any other lessons learned relevant to the conservation community

In Shkumbin River we found 15 species of fish and 1192 individuals of macro invertebrate in some stations (Prrenjas Qukes, Labinot Fushe, Paper and Rovers) among whom some with wide spread dissemination and some with more limited dissemination and threatened. Anthropogenic threats to fish populations of freshwater in Albania have increased seriously in recent decades.

These include not friendly fishing methods and habitat degradation.
In these conditions for biodiversity conservation and the sustainable future development of fish in the river should draw attention to the protection of the erosion phenomena.

Sustainability / Replication

15. Summarize the success or challenges in ensuring the project will be sustained or replicated

- Farmer and water associations are advised to clean the canals during the water flow, about downstream taking into account the biological cycle (fauna, flora); If we do not clean the canals they can be blocked and will be accompanied by flooding and threats to flora and fauna. During meetings with farmers we introduced the rich flora and fauna of the Shkumbin River and the importance of its protection.
- The study of biodiversity in the Shkumbin River shows us a significant amount of small fishes present and this is promising to the future. We advised people to stop hunting with explosives because it is threatening for the fish species.
- Another risk for the river is taking gravel from the riverbed by construction firms, so in meetings with representatives of local and central government we have propagated the stopping of this process.
- Training of the young generation on the importance of water sources heritage tend to ensure sustainability
- Publications of the 2 brochures: Training as a tool to improve WUAs management and brochure; Shkumbinis' biodiversity and Water quality, are permanent information for WUOs members, farmers, representatives of central and local government. They will orient them in their work in the future

16. **Summarize any unplanned activities that are likely to result in increased sustainability or replicability**

The managers of the watering canals have been advised from AEEMC experts not to damage the flora and fauna surrounding the canal during cleaning of the canals, as a condition to preserve the diverse vegetation of the area.

Safeguards

17. If not listed as a separate Project Component and described above, summarize the implementation of any required action related to social and environmental safeguards that your project may have triggered

In general the entire project was friendly with the environment.
The matters of environment protection have been a priority in the work realized by the project staff. During sampling time or laboratory analyses they have carefully avoided to contaminate the environment and educate farmers or locals on the misuse of chemical pesticides and waste management in the area of Shkumbini and irrigations canals.

Additional Funding

18. Provide details of any additional funding that supported this project and any funding secured for the project, organization, or the region, as a result of CEPF investment

Donor	Type of Funding*	Amount	Notes
AEEMC contribute	Travelling, per diem	About 1500 Usd	For travel, per diem, rent the meeting hall ect

** Categorize the type of funding as:*

A Project Co-Financing (other donors or your organization contribute to the direct costs of this project)
B Grantee and Partner Leveraging (other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF funded project)
*C Regional/Portfolio Leveraging (other donors make large investments in a region because of CEPF investm*ent or successes related to this project)

Additional Comments/Recommendations

19. Use this space to provide any further comments or recommendations in relation to your project or CEPF

The experience and work of this project showed that Shkumbin River needs a deeper study, a large-scale project. This, because it has a lot of problems in need of a solution (pollution, biodiversity, new structures of local government). After the new Territorial Reform in Albania the management of irrigation water will be under the administration of municipally, water sector, so water heads of the associations will be employed in the respective municipalities. To have sustainable water use, the new structure in the municipality has to develop to a stage where they can manage, operate and maintain water system to an adequate standard. This requires not only the continuation of the activities in order to improve the standard of service, but also the implementation of training to build their management capabilities. Starting from our previous experience with training WUO we aim to assist in the establishment of new capacity to the respective municipalities, and their training for better management irrigation water. So we want to contribute for capacity buildings and training of new structures responsible for irrigation management in municipality of Cerrik, Elbasan, and Peqin where before this work were covered by Water Use Organization. We want to help them for the integration WUO members and documents in new structures. Project supported by CEP for one year (2015-2016) has made a great contribution to the preparation of water specialist. In the context of the new changes in Territorial Reform in Albania we propose undertaking actions strengthening and capacity building of new structures and establishing links between the Water Use Organizations with the relevant structures in the municipalities in Departments of water management in their districts.

Information Sharing and CEPF Policy

CEPF is committed to transparent operations and helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our Web site, www.cepf.net, and publicized in our newsletter and other communications.

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