

Hellenic Republic
Ministry of Foreign Affairs
Hellenic International Development Cooperation Department



**Project title “Transboundary cooperation for the surface water
resources management
in the Aaos/Vjosa watershed”**

ANAH-16-2005

**Activity 6 “Proposed Management Guidelines
for the Vjosa watershed”**

Thessaloniki 2008



THE GOULANDRIS NATURAL HISTORY MUSEUM
GREEK BIOTOPE / WETLAND CENTRE



ECAT
Environmental Center for
Administration & Technology
TIRANA



Η παρούσα μελέτη εκπονήθηκε από το Μουσείο Γουλανδρή Φυσικής Ιστορίας-Ελληνικό Κέντρο Βιοτόπων-Υγροτόπων (ΕΚΒΥ) στο πλαίσιο του έργου “Διασυνοριακή συνεργασία για τη διαχείριση των επιφανειακών υδάτων στη λεκάνη απορροής του Αώου/Vjosa ποταμού”. Το έργο χρηματοδοτήθηκε από την Υπηρεσία Διεθνούς Αναπτυξιακής Συνεργασίας (ΥΔΑΣ)- Hellenic Aid.

The present study has been prepared by the Goulandris Natural History Museum-Greek Biotope/Wetland Centre in the framework of the project "Transboundary cooperation for the surface water resources management in the Aaos/Vjosa watershed". The project was funded by the International Development Cooperation Department (YDAS)/Hellenic Aid.

This document may be cited as follows:

Seferlis, M., T. Lako, N Panariti, E. Demiraj and D. Papadimos, 2008. Proposed management guidelines for the Vjosa watershed. The Goulandris Natural History Museum - Greek Biotope/Wetland Centre. Thermi, Greece. 22pp.

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I. Introduction

The transboundary river Aaos/Vjosa is situated in southwestern Albania and northwestern Greece (Map 1). The total length of the river is about 272 km, of which 80 km is in Greece. Aaos/Vjosa¹ River catchment has approximately a total area of 6706 km² (~4365 km² in Albania and ~2341 km² in Greece). In Greece the catchment is mainly extended in the Region of Epirus and to a lesser degree in Dytiki Macedonia. The lowest altitude is around 400 m and the highest 2636 m. The river springs in the Pindus mountain range, in northern Epirus, Greece and flows through the Vikos-Aaos National Park, where it forms a unique canyon.

In Albania the catchment is shared among seven districts: Permet, Gjirokaster, Tepelene, Kolonja, Fieri, Mallakstra and Vlora with a mean elevation of 855 m (Saraci R., Tirane 1984). Aaos/Vjosë River enters Albanian territory close to Molivoskepastos village (on the Greek side) and Perat village (on the Albanian side) (Table 1). The river flows into the Adriatic Sea, north of Vlorë, Albania forming the Narta lagoon.

Table 1 Population in main villages and towns of Aaos/Vjosa catchment.

Population of major towns and villages			
Greece		Albania	
Konitsa:	2,858	Permet:	36,746
Chrisovitsi:	1,100	Tepelene:	45,538
Kalpaki:	762	Vlore:	179,497
Milia:	603	Gjirokaster:	65,841
Petra:	439		
Aspraggeloi:	211		
Agia Paraskevi:	394		

In the frame of the project titled “Transboundary cooperation for the surface water resources management in the Aaos/Vjosa watershed”, financed by the Hellenic International Development Cooperation Department, the Greek Biotope Wetland Centre (EKBY) in collaboration with the Albanian partner Environmental Centre for Administration and Technology (ECAT) have proposed management guidelines for the Aaos/Vjosa catchment. This is the deliverable of Action 6 referred as “*Proposed Management Guidelines for the Vjosa watershed*”.

¹ The name *Vjosë* will refer to the Albanian section and the name Aaos to the Greek section

The purpose of the Vjosa River catchment management guidelines is to assist competent authorities, local units of government and local non-governmental organisations of Albania and Greece in developing, implementing, monitoring, and managing their trans-boundary catchment. The guidelines will support better integration between the various agencies involved and between the various efforts currently occurring or will occur in the future.

The proposed management guidelines for the Vjosa catchment are closely aligned with the Albanian National Water Strategy as well as other in-power national and international legislation as pertain to Albania and further international conventions which however do not create legislative obligations e.g. Ramsar Convention, MedWet Initiative (Box 1, 2).

Furthermore the guidelines will contribute to the implementation of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes that has been signed by the two countries. Albania has signed the Convention on March 1992 and ratified it on January 1994 and Greece signed it on the same date and ratified it on September 1996.

Following the provisions of this Convention the two countries need to set up a “joint body” for cooperation between them in order to prevent, control and reduce transboundary impact by developing, adopt, implement and as far as possible render compatible relevant legal, administrative, economic, financial and technical measures. Accordingly, they should develop monitoring actions of the conditions of their shared waters, jointly conduct research and develop techniques for the prevention, control and reduction of transboundary impact. The Convention also provides for “the widest exchange of information as early as possible on relevant issues” and urges riparian countries to agree upon rules, criteria and rules in the field of responsibility and liability (Articles 4, 5, 6, 7, 8).

The proposed management guidelines are based on the results of the DPSIR model that has been implemented in the catchment (Seferlis et al 2008) and in fact, they constitute the response compartment of this model.

Box 1. Worldwide agreements (December 2001) related to water resources protection- Albania

- (y) 1969 (BRUSSELS) Convention on Civil Liability for Oil Pollution Damage
- (y) 1976 (LONDON) Protocol to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage
- (y R) 1971 (RAMSAR) Convention on Wetlands of International Importance especially as Waterfowl Habitat
- (y) 1982 (PARIS) Amendment
- (y) 1987 (REGINA) Amendments
- (y) 1971 (GENEVA) Convention on Protection against Hazards from Benzene (ILO 136)
- (y) 1971 (BRUSSELS) Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage
- (y) 1972 (LONDON) Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter
- (y) 1972 (GENEVA) International Convention for Safe Containers
- (y) 1973 (WASHINGTON) Convention on International Trade in Endangered Species of Wild Fauna and Flora
- (y) 1983 (GABORONE) Amendment
- (y) 1973 (LONDON) Convention for the Prevention of Pollution from Ships (MARPOL)
- (y) 1978 (LONDON) Protocol (segregated ballast)
- (y) 1978 (LONDON) Annex V on Garbage
- (y R) 1995 (THE HAGUE) African/Eurasian Migratory Waterbird Agreement (AEWA)
- (y R) 1989 (BASEL) Convention on the Control of Transboundary Movements of Hazardous Wastes & their Disposal
- (y R) 1992 (RIO) Convention on Biological Diversity
- (y R) 1992 2000 (CARTAGENA) Protocol on Biosafety
- (y R) 1992 (NEW YORK) Framework Convention on Climate Change
- (y R) 1997 (KYOTO) Protocol
- (y R) 1994 (PARIS) Convention to Combat Desertification
- (S) 2001 (STOCKHOLM) Convention on Persistent Organic Chemicals

y=in force; S=signed; r=ratified; D=denounced

Box 2. Regional & subregional agreements (December 2001) related to water resources protection- Albania

- (y) 1950 (PARIS) International Convention for the Protection of Birds
- (y R) 1976 (BARCELONA) Convention for the Protection of the Mediterranean Sea against Pollution
- (R) 1976 (BARCELONA) Dumping Protocol
- (y) 1976 (BARCELONA) Emergency Protocol
- (y) 1980 (ATHENS) Land-based Sources Protocol
- (y) 1982 (GENEVA) Specially Protected Areas Protocol
- (R) 1994 (MADRID) Offshore Protocol
- (y) 1995 (BARCELONA) Specially Protected Areas and Biodiversity Protocol
- (R) 1996 (IZMIR) Hazardous Wastes Protocol
- (y R) 1979 (BERN) Convention on the Conservation of European Wildlife and Natural Habitats
- (y) 1999 (GOTHENBURG) Protocol to Abate Acidification, Eutrophication and Ground-level Ozone
- (y R) 1991 (ESPOO) Convention on Environmental Impact Assessment in a Transboundary Context
- (y R) 1992 (HELSINKI) Convention on the Protection and Use of Transboundary Waters and International Lakes
- (y) 1999 (LONDON) Protocol on Water and Health
- (y R) 1992 (HELSINKI) Convention on the Transboundary Effects of Industrial Accidents
- (R) 1993 (OSLO & LUGANO) Convention - Civil Liability for Damage from Activities Dangerous for the Environment
- (y S) 1998 (AARHUS) Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters

y=in force; S=signed; r=ratified; D=denounced

Management guidelines for the forested areas of the Vjosa catchment and the Narta Lagoon are not included in this study since specific management projects have been elaborated. Albania with the support of the World Bank has submitted a national forestry project (World Bank 2004). As regards Narta Lagoon, there is a complete management plan for the area under Ramsar Convention and MedWet Initiative.

As regards management guidelines for agriculture, Activity 2 “Identification of human pressures and impacts on the surface waters of Aaos/Vjosa watershed” (Seferlis et al 2008) has demonstrated that agriculture is a mild activity and the limited use of fertilizers and agrochemicals does not pose a threat for surface waters in Vjosa catchment. Hence at this stage there is not need to propose any management actions.

II. Management Guidelines

TITLE

Activation of the joined Greek - Albanian Commission as described in the bilateral agreement of 2005.

OBJECTIVE

Activation of the joined agency that will reinforce the cooperation between Albania and Greece to achieve comprehensive catchment management.

RATIONALE

An agreement of understanding and cooperation has been concluded between Albania and Greece and entered into force on 21 November 2005. This agreement provides for the establishment of a Permanent Greek-Albanian Commission on transboundary freshwater issues with such specific tasks as the setting of joint water-quality objectives and criteria, the drafting of proposals for relevant measures to achieve the water quality objectives, and the organization and promotion of national networks for water-quality monitoring.

DESCRIPTION - REQUIREMENTS

The aforementioned bilateral agreement (EKBY 2008) and Albanian Law No. 8093 of 21-3-1996 "ON WATER SOURCES" prescribe the obligations of joined commission and the Council of Vjosa catchment.

PROVISIONAL COSTS

In addition to the fees of the joined Commission, additional expenses may include operational expenses of a permanent secretariat, travelling, brief working meetings, etc.

PROPOSED FUNDING MECHANISM

Each country may incorporate the expenses of the joined Commission in its annual budget.

TITLE

Monitoring of water quality and quantity

OBJECTIVE

The establishment of a comprehensive monitoring system in Aoos/Vjosa river of both meteorological and surface water status. The objective of monitoring water quality and quantity programme is to determine areas and extentt of pollution.

RATIONALE

The water quality in the Aoos/Vjosa basin is considered of very good quality in both countries. However, an important problem linked to the assessment of surface water resources in the catchment is the lack of update information (National Water Strategy for Albania 1997). Limited budget accounts for inadequate maintenance and scheduled calibration of on-site instruments, irregular payment to observers and limitation of field trips. In the Greek part of the catchment new hydropower plans are planned and in the Albanian side human activities are constantly developed. Thus significant pressures will be exerted on the water balance and water quality of the river.

A well designed and fully operating monitoring system will support the assessment of the success/failure or the need for alteration of restoration measures. The establishment of a monitoring system that will provide continuous data is thus considered necessary.

DESCRIPTION

- Monitoring surface water quality: The existing network is almost obsolete in terms of still operational monitoring locations and frequency of observation. The main monitoring parameters of surface water quality would be:

- Chemical parameters: Oxygen (dissolved oxygen, biochemical oxygen demand) nutrients (nitrogen, phosphorus), pH and alkalinity.
- Physical parameters: temperature, turbidity and total solids, etc.;
- Biological parameters: total coliforms, fecal coliforms, *E. coli*, and enterococci.

Considering the provisions of the WFD, substances and parameters to be monitored may be selected by means of past pollution incidents, types of near-by pollution sources or indicative parameters of river water quality e.g. oxygen, pH etc. Further, biological

indicators (i.e. macroinvertebrates, vegetation, fish populations etc) may be used to recognise toxic effects in the Aoos/Vjosa catchment.

- Monitoring water quantity: This network should include discharge monitoring stations at least at the outlet of the subcatchment of the main tributaries of Aoos/Vjosa catchment and Narta Lagoon. Additional stations are necessary downstream of large water abstraction points e.g. irrigation networks, abstraction for human consumption). Also it should include water level recorders for monitoring lakes and wetland's hydroperiod in the catchment.

- Monitoring meteorological parameters: This should be examined in combination with the surface water monitoring network. Even though the existing network has sufficient density for general evaluation of water resources part of the precipitation stations are not functioning at the moment or seem to be abandoned. The distribution of rain gauges as related to the hypsometric curve of the Albanian territory and the climatic conditions of the different geographic regions has not been properly assessed recently. It is therefore recommended to make an assessment of the existing network in order to optimize the network in terms of suitability for the expected output, eventual rehabilitation costs and operational costs. In particular, the coverage of mountainous areas and high elevations should be checked and/or completed.

REQUIREMENTS

Surface water quality: The design of a new network is recommended, based on presently known or expected pollution locations and main water intake points. Since water quality monitoring is very expensive, the financial sustainability of the monitoring system should be a major argument in the choice of the number of monitoring locations, the observation frequency and the number of parameters to be analysed. Taking into consideration the requirements of Albanian and European legislation for water protection monitoring should cover the following parameters at minimum:

- Water temperature
- Oxygenation conditions
- Salinity
- Acidification status
- Nutrient conditions

- Biological elements such as composition and abundance of aquatic flora, composition and abundance of benthic invertebrate fauna, composition, abundance and age structure of fish fauna.

Surface water quantity: It is recommended to assess the existing network in terms of monitoring locations, density and cost effectiveness/sustainability. A major overhaul of existing equipment and measurement methods seems to be necessary. Establishment of a network of automatic hydrological stations is a priority. The automatic network ensures greater reliability while being easier to use. Taking into consideration the conditions of Albania a perfect automatic station is one equipped with ARGOS system. This system is easier to installed, to maintain, and to assist. It can be installed in the locations where it is difficult to be reached by the people, as mainly Albanian hydrometric stations are. The project for an automatic network in Vjosa river may include at least four automatic stations: two of them in Vjosa and Drino upstream, another one after Ura e Leklit and the last at Mifoli Bridge (Vjosa downstream).

PROVISIONAL COST

Monitoring surface water quality: The annual cost of surface water quality parameters monitoring i.e. travelling, sampling, analysis, reporting, etc., is calculated in average 20000 euro.

The most probably cheaper alternative of not having a real monitoring network, but making less frequent (e.g. every 2 or 3 years) limited assessments of water quality in August (lowest flow month) may be considered.

Monitoring surface water quantity: initial cost of equipment, installation, transmission and software cost is about 50000 euro.

Monitoring meteorological parameters: a complete meteorological station i.e. air temperature, precipitation, solar radiation, wind, evapotranspiration, remote controlled may cost 15000 euro. In the case of lack of adequate funds, as an alternative, the upgrading of existing network by substitution of existing instruments with high quality recorders, such as pluviograph may be sufficient until complete renovation.

PROPOSED FUNDING MECHANISM

As regards the purchase of the necessary equipment, this may be covered by Greek national funds i.e. Hellenic Ministry of Foreign Affairs – Hellenic Aid under the umbrella of a new joint programme.

Alternatively, the cost of the equipment may be covered by EU Framework Project 7 which funds research and third countries as Albania is eligible to participate.

International Hydrometeorological Institutes, the World Meteorological Organization etc may support this action. Finally, the Albanian Hydrometeorological Institute and other competent agencies could cover the operational cost and maintenance of the established network.

TITLE

Sewer network and waste water treatment in Vjosa catchment

OBJECTIVE

Management of wastewater, wastes and hazardous materials in Vjosa catchment should aim to protect public health and water resources (surface and groundwater). It will lead to compliance with Albanian and EU legislation. Albania should expand its network of waste collection and transfer it outside the catchment or if this is not feasible handle it according to modern safe techniques to protect surface and ground water.

RATIONALE

Seven districts: Permet, Gjirokaster, Tepelene, Kolonja, Fieri, Mallakstra and Vlora share administrative the Vjosa catchment.

Population in the catchment, is estimated more than 290000 inhabitants, living in seven towns (Gjirokaster, Permet, Kelcyre, Leskovik, Tepelene, Memaliaj & Selenica) and more than 300 villages (INSTAT, 2001). More than 80% of them are living in the rural area and this means that the main economic activity in the Aaos/Vjosa River watershed it is agriculture.

Regarding the sewage waters and solid waste, all towns within the Vjosa watershed shear the same problems. Sewerage network in the towns cover only 60-70 % of the houses and does not exist in the villages. The sewage waters are discharged without any previous treatment in the Vjosa River.

Solid wastes are in an average 0.5-0.6 kg/inhabitant/day. In these figures are included wastes from domestic use and from those generated from other activities as restaurants, shops, hospitals, etc.). There are not metallic or plastic containers for the collection of solid wastes in the towns, but in same places there are fixed concrete points only.

From the sanitation point of view, disposal places are not placed in appropriate sites, and there is not any disposal technology. In the case of Kelcyra town the urban solid waste are disposed in the Vjosa River side.

Collection points and disposal sites do not exist for almost all villages. Only in some cases, farmers are using composting process for the production of organic fertilizer.

During the last fifteen years a new problem, which have a negative impact on urban environment, is the illegal building, mainly concentrated in the green areas of the towns. This is not an isolated problem for this area, but for all the rest of the towns of Albania as well.

Industrial pollution is not relevant in the watershed because the industry is mainly linked with food processing and some other very small activities.

DESCRIPTION

For the current management guideline as a first step, a detailed assessment study of the existing sewerage in the biggest cities should be conducted.

The above assessment study should propose the following:

A study on the quantity and quality of effluents and to a further extend pollutants loads in Vjosa River should be elaborated. Albanian and international legislation and bilateral agreements should be taken into account to set limits for discharge of hazardous substances and special attention is required in order to achieve ecological standards as set by the WFD. Effluent assessment will assist in achieving water quality (WFD) and contribute to the appraisal of the efficiency of specific medication measures. This means that total load from point and diffuse sources should be inventoried in detail and estimated.

According to the provisions of EU legislation (Directive 91/271/EEC and 98/15/EC) a study for the renovation of the sewerage and construction of necessary wastewater treatment plants should be carried out.

A study, regarding the use of treated wastewater for irrigation will contribute to the economy of water in the catchment.

Finally an additional study related to industrial wastewater treatment in the river catchment is necessary.

The specifications and the cost of all these assessments should be estimated in the first general study.

REQUIREMENTS

Collection of information and realistic cost estimates regarding completion of the urban sewerage in Vjosa catchment should be available.

Also, detailed inventories of crop patterns, use of fertilisers and agrochemicals, inventory of farms and number of livestock in the catchment should be elaborated.

PROVISIONAL COST

The cost for the Preliminary Study for the assessment and evaluation of the existing sewerage in the main cities of Vjosa catchment is estimated to be 300000 euro. The cost of the additional studies will be determined by the preliminary one.

PROPOSED FUNDING MECHANISM

Albania may seek financial support in order to collect information and carry out necessary studies from national sources, by UNDEP/GEF funds and the European Agency for Reconstruction (EAR). In addition, international networking and previous collaboration of the local partner (ECAT Tirana) may assist significantly to achieve fund raising.

TITLE

Inventory and assessment of the impact on ecosystems of gravel mining in Vjosa catchment.

OBJECTIVE

Monitor and assess the impact of gravel mining in the hydromorphology of the river and its ecosystems

RATIONALE

The gravel extraction from riverbed is main industrial activity of Vjosa watershed. Gravel extraction from the river bed is carried out intensively, having an impact on the hydromorphology of the river and its ecosystem. Actually there are about 56 gravel extraction points, 26 from which are on the main river bed of Vjosa, 16 gravel extraction points there are in Shushica river bed (tributary of Vjosa) and about 14 gravel extraction points are on the Drino river bed.

DESCRIPTION

The continuous monitoring of gravel extraction, as well as the monitoring of changes in the channel and ecosystem of Vjosa River as result of the impact of gravel mining will provide useful data for future management of this activity.

REQUIREMENTS

Detailed information on exact location (geographical coordinates), capacity of mining, operation conditions, habitats, species etc should be recorded for all mining sites.

PROVISIONAL COST

Assessment study of the impact of gravel mining would cost approximately 250000 euro.

PROPOSED FUNDING MECHANISM

European Agency for Reconstruction and Albanian state budget.

TITLE

Comprehensive information bank

OBJECTIVE

Organize existing information in a usable form and produce the basic, necessary hydrological model of the catchment.

RATIONALE

Information on water management issues for the catchment though extensive it is scattered among various authorities and institutions and this holds for both countries. Further more data holders are not always informed about other sources of data. A synchronised information bank should be developed in order to collect all available information concerning the river catchment. This includes apart from the information itself and a separate archive of metadata for existing however not available information (e.g. unpublished data).

DESCRIPTION

Such an information bank may include records on water uses and water needs in the river basin; runoff characteristics and historical data on floods in the river basin; water quality (not only physico-chemical, but also sanitary, biological and ecotoxicological); the most important point sources of pollution from industry and municipal waste, characterising these in terms of production process, pollution composition and discharge load; land uses and diffuse pollution sources from land use, with an inventory of the use of fertilisers and pesticides in agriculture; other sources of diffuse pollution may include potential sources of accidental pollution. A review of the findings of previous and on-going studies is a useful source of information and refers to the above mentioned metadata archive.

The collection of all available information will indicate which of the above aspects and at what level is insufficiently studied, thus what kind of monitoring is needed.

Another advantaged of this process is the rapid identification of pollution sources that demand direct action. These can be assessed with detailed biological, ecotoxicological and chemical analyses.

As part of this databank, the simulation of the catchment hydrology is recommended as a basic though powerful tool. The hydrological model of the river catchment using modern applications will enable Albania and Greece to estimate water quality and quantity under the current and future socio-economic conditions.

REQUIREMENTS

Collection of scattered information and built of a sophisticate geo-database including biological, physical, chemical, hydrological and socio-economic data of the catchment. Experts on GIS and hydrological modelling are necessary.

PROVISIONAL COST

Cost of collecting available information is estimated up to 2000 euro

Cost of organizing a geo-database and constructing a sophisticated hydrological model for the whole catchment in a year is estimated up to 300000 euro.

PROPOSED FUNDING MECHANISM

As regards the purchase of the necessary equipment, this may be covered by Greek national funds i.e. Hellenic Ministry of Foreign Affairs – Hellenic Aid under the umbrella of a new joint programme.

Alternatively, the cost of the equipment may be covered by EU Framework Project 7 which funds research and third countries as Albania is eligible to participate.

International Hydrometeorological Institutes, the World Meteorological Organization etc may support this action. Finally, the Albanian Hydrometeorological Institute and other competent agencies could cover the operational cost and maintenance of the established network.

TITLE

Environmental Education and Awareness in Vjosa catchment.

OBJECTIVE

The main objective of this measure is to set the basis for improvement of environmental education and raising public awareness in Vjosa catchment.

The specific objectives are to inform the public for the values of the catchment, to motivate people in the conservation of water resources and their sustainable management, to support environmental education, providing advisory support, drawing up guidelines, producing educational material, participating in thematic networks, training staff.

RATIONALE

Environmental education is established as one of the most important tools in international educational systems, with a general recognition that young people are the best investment in the building of a society, which will safeguard and manage wisely the natural resources of our planet.

On the other hand, in long-term basis, raising awareness of the values of ecosystems, their benefits and the need to conserve them, will define new systems of values to achieve a harmonious relationship between humans and nature.

In the framework of this measure, the proposed actions are:

1. Support of Environmental Education.
2. Raising awareness activities for the values of the Vjosa catchment.

DESCRIPTION

1. Environmental education actions include production of environmental education material, drawing up environmental education activities for schoolchildren, implementation of training seminars for teachers.

2. Undertaking of public awareness campaigns, which may involve information and consultation meetings and conferences, production of information material or special events.

REQUIREMENTS

The implementation of the above actions will ideally be coordinated by the Water Basin's Agency in collaboration with local and other competent authorities in Albania. Environmental education should begin in collaboration with the Ministry of Education, with special training of teachers and the design of relevant educational materials and activities to be incorporated in the national syllabus.

PROVISIONAL COST

The cost of environmental education actions as described above is estimated at 400.000 euro.

The cost of public awareness campaigns will depend on their scope and duration.

PROPOSED FUNDING MECHANISM

Funds for the implementation of these actions may be sought to the national budget of Albania and international funding instruments for such actions. It could be one of the aforementioned joint Greek-Albanian Commission's tasks to follow international calls for similar projects and seek collaboration with competent partners.

III. ΠΕΡΙΛΗΨΗ

Ο ποταμός Αώος/Vjosa πηγάζει από την οροσειρά της Πίνδου, ρέει βορειοδυτικά και αφού εισέλθει στο νοτιοδυτικό τμήμα της Αλβανίας εκβάλλει στην Αδριατική σχηματίζοντας τη λιμνοθάλασσα Narta. Το συνολικό μήκος του είναι 272 km, από τα οποία 80 km βρίσκονται στην Ελλάδα. Η λεκάνη απορροής του ποταμού έχει συνολική έκταση 6706 km² (~4365 km² επί Αλβανικού εδάφους και ~2341 km² επί Ελληνικού).

Στο πλαίσιο του προγράμματος με τίτλο «Διασυνοριακή συνεργασία για τη διαχείριση των επιφανειακών υδάτων στη λεκάνη απορροής του Αώου/Vjosa ποταμού», χρηματοδοτούμενο από την ΥΔΑΣ, το Ελληνικό Κέντρο Βιοτόπων - Υγροτόπων συνεργάστηκε με τον Αλβανικό φορέα Environmental Centre for Administration and Technology (ECAT) για την υλοποίηση της Δράσης 6 που αφορούσε στις κατευθύνσεις διαχείρισης της λεκάνης απορροής του ποταμού Αώου/Vjosa.

Σκοπός των κατευθυντήριων γραμμών διαχείρισης αποτελεί η υποστήριξη τόσο των αρμόδιων αρχών όσο και των λοιπών εμπλεκόμενων φορέων των δύο κρατών στην παρακολούθηση, στη διαχείριση και στην προστασία των επιφανειακών υδάτων της διασυνοριακής λεκάνης απορροής.

Οι προτεινόμενες κατευθυντήριες γραμμές διαχείρισης για τη λεκάνη του ποταμού συμβαδίζουν με την Αλβανική Στρατηγική για τα Ύδατα καθώς και με άλλες ισχύουσες εθνικές και διεθνείς νομοθετικές διατάξεις όπως η Σύμβαση Ραμσάρ και η Πρωτοβουλία MedWet. Επιπλέον θα συμβάλλουν στην εφαρμογή της Σύμβασης για την Προστασία και Χρήση Διασυνοριακών Υδάτων και Διεθνών Λιμνών η οποία έχει υπογραφεί από τα δύο κράτη.

Οι προτεινόμενες κατευθυντήριες γραμμές διαχείρισης είναι δυνατό να χρησιμοποιηθούν:

- Ως πηγή πληροφορίας των τοπικών αρχών, των φορέων και της τοπικής κοινωνίας για τις αρχές διαχείρισης της λεκάνης απορροής του ποταμού.
- Ως βάση για λήψη αποφάσεων στη χρηματοδότηση και σχεδιασμό σχετικών έργων

- Ως οδηγός για την εμπλοκή και ενσωμάτωση των τοπικών κοινωνιών, τοπικών αρχών, και φορέων στην προστασία και διατήρηση των φυσικών οικοσυστημάτων και υδατικών πόρων της λεκάνης απορροής του ποταμού.

Οι προτάσεις διαχείρισης βασίστηκαν στα αποτελέσματα της εφαρμογής του ομοιώματος Αίτια - Πιέσεις - Κατάσταση - Επιπτώσεις - Αντίδραση (*Drivers-Pressures-State-Impact-Response, DPSIR*) στη λεκάνη απορροής του ποταμού. Σε αυτές τις προτάσεις διαχείρισης δεν λήφθηκαν υπόψη οι δασικές εκτάσεις του αλβανικού τμήματος της λεκάνης απορροής καθώς η Αλβανία έχει ήδη συντάξει εκτεταμένη στρατηγική διαχείρισης γι αυτές. Επίσης, δεν περιλαμβάνει την ευαίσθητη περιοχή των εκβολών του ποταμού στην Αδριατική (λιμνοθάλασσα Narta) καθώς υπάρχει ειδικό διαχειριστικό σχέδιο για αυτή. Τέλος δεν προτείνονται κατευθύνσεις διαχείρισης για τους τομείς γεωργίας και κτηνοτροφίας καθώς ο βαθμός ανάπτυξης τους (βρίσκονται στο στάδιο της οικόσιτης μορφής), δεν αποτελεί πίεση για τα επιφανειακά ύδατα της λεκάνης απορροής του ποταμού.

Οι προτεινόμενες κατευθυντήριες γραμμές διαχείρισης περιλαμβάνουν:

- Σύσταση και ενεργοποίηση της κοινής επιτροπής για την εφαρμογή του Μνημονίου Κατανόησης και Συνεργασίας, 2005 και του Συμβουλίου της λεκάνης του ποταμού Vjosa στην Αλβανία.
- Παρακολούθηση της ποιότητας και ποσότητας των επιφανειακών υδάτων της λεκάνης σύμφωνα με τις προβλέψεις της ευρωπαϊκής και των εθνικών νομοθεσιών.
- Δημιουργία ολοκληρωμένης βάσης δεδομένων και λεπτομερούς υδρολογικού ομοιώματος της λεκάνης για την υποστήριξη των παραπάνω δράσεων.
- Ανάπτυξη και τον εκσυγχρονισμό του αποχετευτικού συστήματος των μεγάλων πόλεων της λεκάνης και της βιολογικής επεξεργασίας των λυμάτων όπου αυτή κρίνεται αναγκαία.

- Καταγραφή των εξορύξεων και την εκτίμηση των επιπτώσεων τους στην υδρομορφολογία και το παραποτάμιο οικοσύστημα του ποταμού
- Ανάπτυξη προγραμμάτων και υλικού περιβαλλοντικής ενημέρωσης και εκπαίδευσης.

V. References

Convention on the protection and use of transboundary watercourses and international lakes, Helsinki, 17 March 1992.

Seferlis, M., T. Lako and D. Papadimos. 2008. Identification of human pressures and impacts on the surface waters of Aoos/Vjosa watershed. The Goulandris Natural History Museum - Greek Biotope/Wetland Centre. Thermi, Greece. 70pp.

Greek Biotope Wetland Centre. 2008. Identification and assessment of the legal framework for water resources in Albania. The Goulandris Natural History Museum - Greek Biotope/Wetland Centre. Thermi, Greece. 26 p.

Gerakis P. A. and E. T. Koutrakis (editors). 1996. Greek Wetlands. Greek Biotope/Wetland Centre (EKBY) and Commercial Bank of Greece. Athens. 381 p. (Gr, En).

Guidance Document No 3, Common Implementation Strategy for the Water Framework Directive (2000/60/EC). Analysis of Pressures and Impacts. Produced by Working Group 2.1 – IMPRESS. European Commission 2003.

INSTAT. 2001. Statistical Yearbook. Tirana.

National Water Strategy for Albania, Final Report. PHARE contract 95-1145.00. February 1997.

Official Journal of the European Communities, L 327, Decision of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (2000/60/EC).

World Bank. 2004. Implementation of completion report (PPFI-P9050 IDA-28460 TF-20909 TF-20893 TF-29312) on a credit in the amount of SDR 5.5 million (US\$8.0 million equivalent) to Albania for a forestry project. November 30, 2004. Report No 28783.