



## **Generating momentum on water and forests in the Balkans**

### **FINAL NARRATIVE REPORT**

Donor: Deutsche Bundesstiftung Umwelt (DBU)

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Lead partner: Research Institute for Forest Ecology and Forestry (FAWF), International Projects and Networking, Hauptstrasse 16, D-67705 Trippstadt/ Deutschland

Project coordinator: CNVP – Connecting Natural Values and People Foundation, Tolakkerweg 68, Hollandsche Rading, 3739 JP

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## Summary

Macedonia, Serbia and Albania are confronted with a multitude of challenges in terms of closely related forest and water management which need to be tackled jointly by forestry and water management. Objectives of this project were developing exemplary water protection measures in forest areas by an integrative forestry and water management within forest planning, and an integrative forest management strategy with a special focus on water retention in forests. For considering water management measures in forestry two catchment areas with forest management and potential erosion risks, one in Albania and another in North-Macedonia were selected for an exemplary development, implementation and testing of flood and erosion protection concepts by an adapted management of water protection in forests. GIS-models were developed and tested in favor of a theme-based mapping and of an exemplary decision support system for integrated forest and catchment management in these selected pilot areas in North-Macedonia and Albania (<https://gembalkans.org/forest-water-interactions/>). Two workshops were organized to get a maximum of expertise (practitioners, politicians and other stakeholders) from forestry, agriculture and water management and economics around the pilot areas to improve the effectivity of forest ecosystem services for water and for monetization of ecosystem services.

For harmonizing forest and water strategies with EU standard a Gap analysis was elaborated about forest legislation, water and climate change to review the compliance of Macedonia and Albania concerned with EU directives and policies (<https://gembalkans.org/gap-assessment-and-analysis-on-compliance-of-existing-forest-legislation-in-albania-and-north-macedonia-with-eu-directives-and-policies-related-to-forests-water-and-climate-changes/>). Besides that a regional round table was organized as webinar due to Covid lockdown. 40 participants from Serbia, Bulgaria, Bosnia and Herzegovina, Albania, Kosovo, Montenegro and Germany attended that event. Additionally promotional activities on the field were planned and implemented as examples for sustainable forest measures contributing to water and soil protection. In Albania small dams from wooden pools and stones were constructed at the gullies of the Ulza pilot site. At the same time, video files were produced from the action to be presented to wider auditorium in Albania showing how sustainable forestry can contribute to water and soil protection. In Macedonia an exemplary practice of conversion of one species and one aged forest in multispecies and multi age forest was implemented. From the field activities short promotional video was produced as well. Both videos are available at: [https://www.youtube.com/watch?v=-x90kFY9\\_W8](https://www.youtube.com/watch?v=-x90kFY9_W8) and <https://www.youtube.com/watch?v=AimAPMBv-NU>.

Several events for further education for forest planners were organized, such as professional trainings for forest planners in Macedonia and municipal representatives and ministry and faculty representatives in Albania about GIS techniques and expert systems in Albania and Macedonia based on the experiences and data from the pilot areas.

Other trainings were performed on requirements for sustainable forest management in Albania and Macedonia with special view on the economic importance of forests, ecosystem services, climate protection, protection of water quality, minimizing the dangers of flood generation and protection against erosion.

The approach of GIS modelling, theoretic background and recommendations for forest planners are part of the "Guide for forest planning and forest protective functions notably soil and water". The Guide can be downloaded as PDF file at: <https://gembalkans.org/wp-content/uploads/2020/05/DBU-Forest-Planning-and-Forest-Protective-Functions.pdf>

The project also produced video tutorials for the forest planners explaining step by step procedures how to use digital data files for identifying erosion risks. The video files were shared with attendants on the trainings and are placed on the project web page

[https://www.youtube.com/channel/UCBAA3htrfGzorudHJX9Fwxw?view\\_as=subscriber](https://www.youtube.com/channel/UCBAA3htrfGzorudHJX9Fwxw?view_as=subscriber)

The project produced a communication strategy document. Part of the communication strategies are key messages highlighting the importance of the water. The key messages were shared on Facebook, LinkedIn, and the project website (<https://gembalkans.org/>).

## Zusammenfassung

Mazedonien, Serbien und Albanien sind mit einer Vielzahl von Herausforderungen in Bezug auf Wald und Wasser konfrontiert, die von Forstwirtschaft und Wasserwirtschaft gemeinsam angegangen werden müssen. Ziele dieses Projektes „GeMBalkans“ waren die Entwicklung von beispielhaften Wasserschutzmaßnahmen in Waldgebieten durch ein integratives Forst- und Wassermanagement im Rahmen der Forstplanung sowie Einführung einer integrativen Waldbewirtschaftungsstrategie mit besonderem Fokus auf den Wasserrückhalt im Wald. Für die Betrachtung wasserwirtschaftlicher Maßnahmen in der Forstwirtschaft wurden zwei Einzugsgebiete mit Waldbewirtschaftung und potentiellen Erosionsrisiken, eines in Albanien und ein weiteres in Nord-Mazedonien, für eine beispielhafte Entwicklung, Umsetzung und Erprobung von Hochwasser- und Erosionsschutzkonzepten durch ein angepasstes Management des Gewässerschutzes in Wäldern ausgewählt. In diesen ausgewählten Pilotgebieten in Nord-Mazedonien und Albanien wurden GIS-Modelle für eine themenbasierte Kartierung und ein beispielhaftes Entscheidungsunterstützungssystem für ein integriertes Wald- und Einzugsgebietsmanagement entwickelt und getestet (<https://gembalkans.org/forest-water-interactions/>). Zwei Workshops wurden organisiert, um ein Maximum an Fachwissen (Praktiker, Politiker und andere Interessenvertreter) aus Forst-, Land- und Wasserwirtschaft und Ökonomie um die Pilotgebiete herum zu erhalten, um die Effektivität von Waldökosystemdienstleistungen für Wasser und für die Monetarisierung von Ökosystemdienstleistungen zu verbessern. Zur Harmonisierung der Wald- und Wassermanagementstrategien der Balkanstaaten mit dem EU-Standard wurde eine Lücken-Analyse zu den Themen Waldgesetzgebung, Wasser und Klimawandel erstellt, um die Übereinstimmung von Mazedonien und Albanien mit den EU-Richtlinien und -Politiken zu überprüfen (<https://gembalkans.org/gap-assessment-and-analysis-on-compliance-of-existing-forest-legislation-in-albania-and-north-macedonia-with-eu-directives-and-policies-related-to-forests-water-and-climate-changes/>). Für Albanien zeigte der Bericht noch sehr viele Diskrepanzen auf, so dass eine bessere Koordinierung der Wald- und Wasserressourcenbewirtschaftungspolitik mit den nationalen Entwicklungsstrategien oder Regierungsprogrammen dringend erforderlich ist. All Lücken, die identifiziert wurden, zeigen, dass die albanische Regierung geeignete Maßnahmen ergreifen muss, um die von den internationalen Richtlinien geforderten Standards zu erfüllen. Alle forst- und wasserpolitischen Dokumente in Albanien müssen der Rolle der Wälder bei der Wasserversorgung, der Artenvielfalt von Wasserökosystemen, dem Hochwasserschutz und der Bodenerosion mehr Aufmerksamkeit schenken. Darüber hinaus muss das neue Waldgesetz besser auf die Wechselbeziehung zwischen Wald- und Wasserproblemen eingehen und das Bewusstsein der Entscheidungsträger und der Bevölkerung für die Bedeutung einer nachhaltigen Waldbewirtschaftung für die Wasserumwelt stärken. Auch bei der Wald- und Wassergesetzgebung von Nord-Mazedonien wurden viele Lücken aufgezeigt, so dass nicht nur eine bessere Koordinierung der Wald- und Wasserressourcen-Management-Politik in den nationalen Entwicklungsstrategien oder Regierungsprogrammen dringend erforderlich ist, sondern auch der Aufbau menschlicher Kapazitäten der Förster in Bezug auf Wasserfragen. All

diese Lücken, die für die einzelnen Richtlinien identifiziert wurden, zeigen, dass die albanische Regierung geeignete Maßnahmen ergreifen muss, um die von diesen internationalen Richtlinien geforderten Standards zu erfüllen. Alle forst- und wasserpolitischen Dokumente in Nord-Mazedonien müssen der Rolle der Wälder mehr Aufmerksamkeit schenken.

Schlussfolgerungen und nächste Schritte bei der Wasserversorgung, der Biodiversität von Wasserökosystemen, der Verringerung von Überschwemmungen und der Bodenerosion müssen in der Wald- und Wassergesetzgebung und in den Nationalen Strategien für eine nachhaltige Forstwirtschaft angesprochen werden, einschließlich einer besseren Wechselbeziehung zwischen Wald- und Wasserproblemen sowie der Steigerung des Bewusstseins von Entscheidungsträgern und der Gemeinschaft über die Bedeutung einer nachhaltigen Waldbewirtschaftung für die Wasserumwelt.

Aufgrund der Covid-Sperre Außerdem wurde ein regionaler Runder Tisch als Webinar organisiert. 40 Teilnehmer aus Serbien, Bulgarien, Bosnien und Herzegowina, Albanien, Kosovo, Montenegro und Deutschland nahmen an dieser Veranstaltung teil.

Zusätzlich wurden Werbemaßnahmen vor Ort geplant und durchgeführt, die als Vorzeige-Beispiele für nachhaltige Forstmaßnahmen zum Wasser- und Bodenschutz beitragen. In Albanien wurden dafür in den Erosionsrinnen des Ulza-Pilotgebietes kleine Dämme aus Holzbecken und Steinen errichtet. Gleichzeitig wurden Videos von der Aktion produziert, die einem größeren Auditorium in Albanien präsentiert wurden und die zeigen, wie nachhaltige Forstwirtschaft zum Wasser- und Bodenschutz beitragen kann. In Mazedonien wurde ein beispielhaftes Verfahren zur Umwandlung von Altersklassenwäldern mit nur einer Baumart in Wälder mit mehreren Baumarten und mehreren Altersklassen durchgeführt. Auch von diesen Feldaktivitäten wurde ein kurzes Werbevideo produziert. Beide Videos sind verfügbar unter:

[https://www.youtube.com/watch?v=-x90kFY9\\_W8](https://www.youtube.com/watch?v=-x90kFY9_W8) und

<https://www.youtube.com/watch?v=AimAPMBv-NU>.

Basierend auf den Erfahrungen und Daten aus den Pilotgebieten wurden mehrere Weiterbildungsveranstaltungen organisiert, z.B. Fachschulungen über GIS-Techniken und Expertensysteme für Forstplaner in Mazedonien und für Gemeindevertreter sowie Ministeriums- und Universitätsvertreter in Albanien. Weitere Weiterbildungsveranstaltungen über eine nachhaltige Waldbewirtschaftung mit besonderem Blick auf die wirtschaftliche Bedeutung der Wälder, Ökosystemleistungen, Klimaschutz, Schutz der Wasserqualität, Minimierung der Gefahren der Hochwasserentstehung und Schutz vor Erosion in Albanien und Mazedonien durchgeführt.

Der Ansatz der GIS-Modellierung, der theoretische Hintergrund und die Empfehlungen für Forstplaner sind Teil des "Guide for forest planning and forest protective functions notably soil and water". Dieser Leitfaden kann als PDF-Datei heruntergeladen werden unter:

<https://gembalkans.org/wp-content/uploads/2020/05/DBU-Forest-Planning-and-Forest-Protective-Functions.pdf>.

Das Projekt produzierte auch Video-Tutorials für die Forstplaner, in denen Schritt für Schritt erklärt wird, wie man digitale Datendateien zur Identifizierung von Erosionsrisiken verwendet. Die Videodateien wurden den Teilnehmern an den Schulungen zur Verfügung gestellt und sind auf der Projektwebseite

[https://www.youtube.com/channel/UCBAA3htrfGzorudHJX9Fwxw?view\\_as=subscriber](https://www.youtube.com/channel/UCBAA3htrfGzorudHJX9Fwxw?view_as=subscriber) herunterzuladen.

Das Projekt erstellte auch ein Dokument zur Kommunikationsstrategie. Teil der Kommunikationsstrategien sind Schlüsselbotschaften, die die Bedeutung des Wassers hervorheben. Die Schlüsselbotschaften wurden auf Facebook, LinkedIn und der Projektwebseite (<https://gembalkans.org/>) geteilt.



### **Brief on project objectives**

The background of the project was the fact that Macedonia, Serbia and Albania are confronted with a multitude of challenges in terms of closely related forest and water management. In these countries such challenges need to be tackled jointly by forestry and water management through greater synergy potential between forest and water administrations including concerned stakeholders.

Forest planning in Macedonia, Albania and Serbia shall include water management aspects in order to provide improved ecosystem services around the resource water.

The first specific objective is to develop model measures for water protection in forest areas by an integrative forestry and water management within forest planning.

As a second specific objective, forest planning capacities in Macedonia, Albania and Serbia are to be extended by an integrative forest management strategy with a special focus on water retention in forests.

### **Project results**

The project implementation was following the structure of the work packages schedule and timeline to a maximum possible extent. Described achievements by activities are in the text below.

#### **WP 1. Considering water management measures in forestry**

##### 1.1. Selection of two catchment areas each with forest management and potential erosion risks in Albania and North-Macedonia for the model-based development, implementation and testing of flood and erosion protection concepts by an adapted management of water protection forests.

Within this activity, two catchment areas were selected. The catchment area in Macedonia was on the north from the city of Skopje. Two catchment areas were selected as pilot sites in Macedonia, the area of Creshevska Reka with size of 1650 ha and Vinichka Reka with size of 741 ha. The sites are managed by the National Forest administration. The reason for selection of these sites was a catastrophic event in 2016 when a “rain bomb” of more than 110 mm has caused flash flood that resulted with lot of damage and 22 casualties.

The pilot site in Albania is part of the Ulza lake catchment area and belongs to Mat river basin. The reason for selection of this site is the actual volume of estimated annual total produced sediments of 1.8 mill.m<sup>3</sup>. The estimated value of potential soil loss for Ulza catchment is 35.45 tons/ha/year and is much higher than in EU (2.46 tons/ha/year). The size of pilot area is of 2 neighboring catchment areas, with size of 780 ha and 490 ha. The area is under forest management and belongs to communal forests.

For both pilot sites, all data were collected (including digital) and further use in digital modelling.



1.2. Development and testing of GIS models in favor of a theme-based mapping and of an exemplary decision support system for integrated forest and catchment management in selected pilot areas in North-Macedonia and Albania.

To analyze the characteristics of the catchment areas, available data were used and digitized where necessary. In principal, many data were analyzed and entered in the GIS modelling to come to the conclusion about potential runoff processes and intensities in the forest and from the road network in pilot areas. The purpose of that action was actually to come to conclusions how GIS modelling can assist in improved planning in forestry in relation to water and soil protection.

The pilot areas in Macedonia and Albania were used to analyze the land use/land cover, topography (length of catchment area, max and min altitude, perimeter, slope), geology and its characteristics, soil, climate (rain falls), hydrology (max water discharge) and erosion potential. In addition to that, a decision tree was used to get maps through GIS modelling on expected erosion potential levels in the catchment area based on different forest management practice, including identified hot spots in the areas. All work implemented in this activity is described in the Study Forest – Water Interactions <https://gembalkans.org/forest-water-interactions/>

1.3. Bringing together expertise (practitioners, politicians and other stakeholders) from forestry, agriculture and water management and economics around pilot areas to improve the effectiveness of forest ecosystem services for water and monetization of ecosystem services.

In the frame of this activity, in September 2019 two workshops were organized, one in Skopje and one in Tirana. The objective of the workshops was to present GIS modelling as a tool for improved planning in forestry with aim to contribute to inclusion of water management aspects in forest planning. Both workshops were attended by more than 40 participants representing institutions responsible for forest and water management, forest owners and managers, science and research organizations, CSO's. Proposed GIS models for improved planning that integrates water and soil protection in forest management were presented to participants and then discussed. There were several important conclusions from the workshops:

## Tirana

- Having a module on monitoring of planned measures will be a step forward in implementation of management plans and reaching objectives for targeted areas. This could be a tool not just for planners but for the whole actors' chain.
- If it is possible, it will be good to extend the scope of the study to the bushland areas too, not only to the forest areas. For example, in central Albania bush areas cover 30% - 40% of the terrain and where the phenomenon of erosion is very problematic.
- Theoretically is known, but in practice there is little attention and this starts from the legal framework where an analysis of the legal framework for the correlation between forest and water is done, but there are very few paragraphs related to this interaction. The legal framework of water provides only one paragraph on forest and ecological functions, that affecting the quantity and quality of water. The Faculty Curricula should have a specific subject matter for forests and water and not to focus only on erosion.
- Deforestation of some areas resulted with high level of erosion. It is not related just with loss of land but the material is transported at the reservoirs and contribute to increase sediment load.

## Skopje

- In Macedonia currently criteria, indicators and valorization of ecosystem services, including forests are in preparation. That will be a base to develop mechanisms for payment of ecosystem services.
- There is a need to categorize forests of protective functions by adding additional criteria for their management to support their protective function.
- Clear cuts must be limited, depending on the forest type, slope and size of area. Example of that are provisions of the PEFC national standard for SFM, where indicators are established in relation to the slope and size of forest area where clear cuts are applied.
- Forest roads must be constructed on the base of engineering plan.
- Definition and mapping of forests for prevention and protection from natural hazards shall be one of priorities in forest sector.





## WP2. Harmonization of forest and water strategies with EU standard

### 2.1. Elaboration of a Gap analysis of forest legislation on forests, water and climate change to review the compliance of the Macedonia and Albania concerned with EU directives and policies.

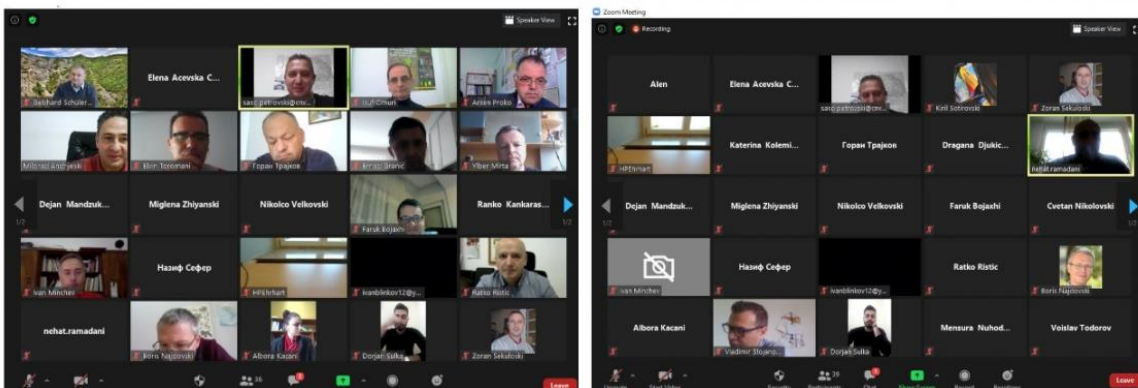
The aim of this **GAP analyze** was to present areas of non-compliance of national legislation in forestry with the European Union (EU) requirements, related to forest-water relations. The GAP analyze provided comprehensive and detailed analysis of the legal framework for forests and other legislation. In the parts related to forests it has identified many gaps, as consequence it recommended as an urgent need for better coordination of forest and water resource management policies into the national development strategies / government programmes, but also human capacities building of employees in forestry sector related to water issues.

The content of whole study can be found on: <https://gembalkans.org/gap-assessment-and-analysis-on-compliance-of-existing-forest-legislation-in-albania-and-north-macedonia-with-eu-directives-and-policies-related-to-forests-water-and-climate-changes/>

### 2.2. Organisation of a regional round table

During initial planning for the regional round table, three day seminar was planned to be organized in Ohrid in April 2020. For that purpose almost all preparations were done: offers for accommodation, transport, field visit, translation, initial invitations, draft agenda etc. Due to Covid closure, the project team has decided to postpone this activity for autumn with hope that situation will allow to organize it. When it become clear that there will not be any possibility to organize the event as it was planned, then the regional table was organized as webinar on Zoom platform.

The webinar was organized on November 18 and 19 and it was followed by more than 40 participants from the region: Serbia, Bulgaria, Bosnia and Herzegovina, Albania, Kosovo, Montenegro, Germany. At the day 1 the project results were presented to participants on the webinar, while on day 2 we have provided opportunity to look at regional experiences related to forest management and water and soil conservation. At total there were 7 presenters from Serbia, Bulgaria, Bosnia and Herzegovina, Albania and Macedonia. All presentations were placed on the project web page as PDF files. Information about the studies produced with the project and their availability on the project web page was also shared with participants on the webinar and on CNVP FB profile.



### 2.2.a: Promotional field activities

Because the biggest part of the budget for the regional webinar remained unspent, in consultation with the team leader and project coordinator was decided to plan and implement promotional activities on the field as examples for SFM measures contributing to water and soil protection.

In Albania it was decided to construct small check dams at the gullies discovered at the Ulza pilot site. The dams were constructed by materials from the nature like wooden poles and stones, while the construction was implemented by communal forest users from the area. At the same time, video files were produced from the action to be presented to wider auditorium in Albania and region about the ways how sustainable forestry can contribute to water and soil protection. These interventions are related to the soil protection of the ecosystem and these interventions in such areas of this micro-basin are fully justified.

In Macedonia it was decided to show practice of conversion of one species and one aged forest in multispecies and multi age forest by thinning of the stand to provide light to the ground and conditions for natural regeneration, afforestation and sowing with the seeds of other species that are native for the forest area. The practice was implemented nearby Mavrovo Lake at beech forest that is bordering with the Mavrovo National Park in cooperation with the National Forests from Gostivar branch. From the field activities short promotional video was produced as well.

Both videos are available at: [https://www.youtube.com/watch?v=-x90kFY9\\_W8](https://www.youtube.com/watch?v=-x90kFY9_W8)  
<https://www.youtube.com/watch?v=AimAPMBv-NU>



### **WP3. Further education for forest planners**

#### 3.1. Professional training for forest planners

##### a) Organization of trainings about GIS techniques and expert systems in Albania and Macedonia

The new approach that was analyzed, developed and tested at the pilot areas was a base for the GIS training for the forest planners in Macedonia and municipal representatives and ministry and faculty representatives in Albania. Trainings were held in Tirana in January 2020 and in Skopje in October 2020. At total there were 17 participants attending the trainings.

In general, the content for the training was executed step by step, providing opportunity to attendants to go through the whole process, from installing of free software to production of the map with identified risk from erosion and hot spots in pilot area. The content of the training may be summarized as:

- QGIS general overview (tools, menus and plugins);
- Vector data representation;
- Vector data creation (point, line, polygon) with attribute data;
- Raster data and basic analyses;
- Basics of data management in GIS (clip, union, dissolve);
- Hands on exercises with example data from the study area of the project;
- Review of data structure: soil, geology, slope, land cover;
- Reclassification of input data;
- Export of input data into thematic layers;
- Creation of model;
- Review on the model and observation of the hot spots on satellite imagery.

Reflections of participants on the training were very positive. There are some remarks from evaluation of the training:

- More days are needed for the training. Training should be extended from 2 days to 5 days.
- Another training focused on GIS techniques in related field of forestry.
- Before the training a field study of the group is needed.
- After some times to have another training of QGIS.
- Trainings of such kind are necessary for improvement of the skills of forest planners and for the overall forestry sector as well.



## b) Organization of trainings on requirements for sustainable forest management in Albania and Macedonia

The training objective was to present the economic importance of forests, but also ecosystem services, forests and forest management for climate protection, protection of water quality, minimizing the dangers of flood generation and protection against erosion. The significance of different forest types in reducing the risks from flood and erosion was also emphasized as well the need to adapt current planning practices to comply an increased attention to climate changes.

Training in Skopje was organized from 25-27 November 2019 in Skopje, while in Tirana it was organized from 06-08 November, 2019.

The topics that were part of the project were:

- Agenda 21, Statement of forest principles ; UN conventions, Sustainable Development Goals;
- Forest Europe and pan-European C&I for SFM (focus on criteria 5); FSC and PEFC indicators in criteria 5; EU biodiversity strategy and forest ecosystem services;
- EU Water framework directive; WFD related forestry actions, WFD protected areas and adaptations in forestry practice;
- Legal framework arrangements in the countries;
- Understanding Environment Impact Assessment and Strategic Environment Assessment;
- Importance of forests in soil and water protection, forests hydrology;
- Practical experiences from AL and MK – erosion & torrent control;
- Influence of forest types and dynamics in forest stands;
- Exercises: Complex of factors influencing management of water in forest ecosystems: calculation of water balance in forest watersheds; calculation of erosion potential;

At total 20 participants were attending the trainings. In Macedonia they were representatives from the unit for forest planning in the National Forests, while in Albania they were mainly forest administration from municipalities where forest management plans are tendered for municipal forests.

The training evaluation was positive, most of participants scored 5. There were some remarks in the evaluation forms:

- Such trainings to be more frequent.
- This training should be followed by other trainings focusing on GIS and other techniques suitable for basic level of computer skills.
- Field visit and discussions to be held on the field.
- To explore possibilities if it is possible to unify the formats of forest and watershed management plans in whole Balkan
- Very good presentations from both, Macedonian and German presenters.
- Maybe attention should be more on implementation of the training into forest management.
- Everything is well said, but most of us have big problem with illegal cutting, politics involving in forest management, technical means lacking, etc.
- More time for discussion.
- Involving National Forests in all processes that currently are ongoing in Macedonia, such as definition of forest ecosystem conditions and services in the framework of ongoing projects.
- More scientific public debates are needed.



### 3.2. Creating an online guide for forest planners

The approach of GIS modelling, theoretic background and recommendations for forest planners are part of the “**Guide for forest planning and forest protective functions notably soil and water**”. The Guide has provided overview on:

1. Basic forest hydrological processes including influence of forest management activities on elements of water balance in forest.
2. Identification of runoff types.
3. Erosion potential method.
4. Forest roads and their impact on hydrological process.
5. Recommended sustainable forest management activities.

The Guide can be downloaded as PDF file at: <https://gembalkans.org/wp-content/uploads/2020/05/DBU-Forest-Planning-and-Forest-Protective-Functions.pdf>

The project also produced video tutorials for the forest planners. Video files are explaining step by step procedures on use of digital data files to come to maps identifying erosion risks based

on different management decisions. Video files were shared with attendants on the trainings and are placed on the project web page. Video files are available on three languages.








































[https://www.youtube.com/channel/UCBAA3htrfGzorudHJX9Fwxw?view\\_as=subscriber](https://www.youtube.com/channel/UCBAA3htrfGzorudHJX9Fwxw?view_as=subscriber)

## **WP4. Creating awareness**

### 4.1 Development of communication strategies to increase social acceptance of ecosystem services of forests for water

In the frame of this activity, the project produced a communication strategy document, where all the visibility and promotional activities were planned. Also, Social media channels like Facebook and LinkedIn were established. For the need of the project in order to create and raise awareness, as part of the communication strategies were specially created key messages highlighting the importance of the water. The key messages were shared on Facebook, LinkedIn, and the Website. The aim of these messages was to reach more audiences, partners, stakeholders, and other relevant communities that are working closely with the project's main objectives. The key messages were translated into three languages, Macedonian, Albanian, and English.

On the photos below are shown the Facebook Insights.

Published	Post	Type	Targeting	Reach	Engagement	Promote
11/30/2020 1:39 PM	 Целта на проектот е да спојат повеќе експертизи од областа на			45	4 4	<b>Boost Post</b>
11/30/2020 10:37 AM	 <a href="http://cnvp-eu.org/eng/new.php?mv=12&amp;id=1255&amp;fbclid=IwAR0HZG">http://cnvp-eu.org/eng/new.php?mv=12&amp;id=1255&amp;fbclid=IwAR0HZG</a>			19	2 1	<b>Boost Post</b>
11/24/2020 2:24 PM	 Ky aktivitet është në kuadër të projektit Balkan GeM, financuar			305	14 12	<b>Boost Post</b>
11/18/2020 12:26 PM	 Happening now! "Regional webinar for Integrating water			407	29 28	<b>Boost Post</b>
11/12/2020 10:00 AM	 >NEW VIDEO< This activity is in the frame of the Balkans GeM project.			704	23 49	<b>Boost Post</b>
10/19/2020 6:42 PM				37	6 1	<b>Boost Post</b>
10/13/2020 1:36 PM	 Video Udhëzuese - Zgjidhje të planifikimit të pyjeve të bazuara në			35	3 5	<b>Boost Post</b>
10/06/2020 3:42 PM	 Video udhëzuese për përdorimin e zgjidhjeve të bazuara në GIS në			56	6 13	<b>Boost Post</b>
08/27/2020 10:24 AM	 Видео упатство за употреба на GIS решенија при планирањето			53	5 62	<b>Boost Post</b>
08/10/2020 10:09 AM	 Forest –Water Interactions			49	6 3	<b>Boost Post</b>
07/21/2020 2:46 PM	 Gap assessment and analysis on compliance of existing forest			36	2 1	<b>Boost Post</b>
07/17/2020 2:14 PM	 Video tutorial for use of GIS based solutions in forest planning to be			51	5 24	<b>Boost Post</b>
07/17/2020 2:13 PM	 Video tutorial for use of GIS based solutions in forest planning to be			41	3 4	<b>Boost Post</b>

07/10/2020 2:24 PM				337		6 12		<a href="#">Boost Post</a>
07/09/2020 1:13 PM				881		5 18		<a href="#">Boost Post</a>
06/23/2020 8:58 PM	Photos from GeM Balkans's post			149		6 4		<a href="#">Boost Post</a>
06/09/2020 12:25 PM	Study: Forest –Water Interactions			51		3 0		<a href="#">Boost Post</a>
05/19/2020 12:54 PM	Gap assessment and analysis on compliance of existing forest			35		5 0		<a href="#">Boost Post</a>
05/06/2020 3:21 PM	Photos from GeM Balkans's post			529		11 25		<a href="#">Boost Post</a>
04/06/2020 2:04 PM	Photos from GeM Balkans's post			656		17 24		<a href="#">Boost Post</a>
03/24/2020 2:53 PM	Photos from GeM Balkans's post			498		9 20		<a href="#">Boost Post</a>
03/10/2020 10:36 AM	Photos from GeM Balkans's post			581		27 28		<a href="#">Boost Post</a>
02/25/2020 7:07 PM	Photos from GeM Balkans's post			388		19 17		<a href="#">Boost Post</a>
02/13/2020 9:44 AM	Photos from GeM Balkans's post			303		6 19		<a href="#">Boost Post</a>
02/07/2020 3:23 PM	On 23-24 January 2020 in Tirana, Albania was held two days training			74		14 25		<a href="#">Boost Post</a>
02/04/2020 12:09 PM	Photos from GeM Balkans's post			1.3K		81 42		<a href="#">Boost Post</a>
01/09/2020 10:18 AM	Photos from GeM Balkans's post			426		24 11		<a href="#">Boost Post</a>



12/20/2019 11:27 AM		Photos from GeM Balkans's post			1.3K		52 29		
12/02/2019 9:59 AM		http://cnvp-eu.org/eng/new.php?mv=12&id=1181			71		11 5		
11/11/2019 2:59 PM		From 6 to 8 November 2019 in Tirana, Albania was held three days			82		13 14		
09/30/2019 11:20 AM		On 24th September 2019 in Tirana, CNVP Albania organized a one-day			100		9 2		
09/30/2019 10:21 AM		GeM: Now it's easier to send GeM Balkans a message.			109		0 1		
09/30/2019 9:43 AM					103		11 3		
09/26/2019 9:44 AM		На 17 септември во Скопје, ЦНВП Македонија одржа еднодневна			84		2 3		
09/17/2019 12:53 PM		ЈП НАЦИОНАЛНИ ШУМИ ГИ НАДОГРАДУВА КАПАЦИТЕТИТЕ			61		1 1		
07/15/2019 1:03 PM		The project aims to bring together expertise (practitioners, politicians)			195		4 4		
07/15/2019 12:22 PM		GeM Balkans updated their status.			11		0 0		
07/15/2019 12:20 PM		GeM Balkans			0		0 1		

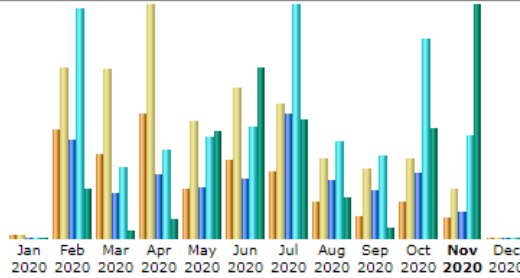
#### 4.2. Establishment of a project web-site for exchange of knowledge and results

For the need of the project, there was established project website named <https://gembalkans.org/>. The content of the website refers to the project objectives and goals.

On the website the achieved results are presented, and more about project activities as well as all the documents produced during the project. The Key messages and project videos are also attached on the website. The website is in three languages Macedonian, English, and Albanian. The project website reach was measured in the monthly statistic. The Website was visited by the 3357 unique visitors. The Number of visits in the continuation was 6691.

The results are shown on the photo below.

**Monthly history**



Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2020	17	18	18	18	111.25 KB
Feb 2020	582	910	3,895	9,087	428.77 MB
Mar 2020	454	896	1,773	2,833	75.34 MB
Apr 2020	664	1,240	2,528	3,500	156.70 MB
May 2020	267	626	2,005	3,996	910.13 MB
Jun 2020	414	800	2,307	4,360	1.42 GB
Jul 2020	352	713	4,959	9,215	1009.48 MB
Aug 2020	189	427	2,268	3,836	347.73 MB
Sep 2020	116	369	1,886	3,248	95.00 MB
Oct 2020	190	425	2,572	7,857	928.57 MB
<b>Nov 2020</b>	112	267	1,073	4,048	1.93 GB
Dec 2020	0	0	0	0	0
<b>Total</b>	<b>3,357</b>	<b>6,691</b>	<b>25,284</b>	<b>51,998</b>	<b>7.21 GB</b>

### 4.3. Preparation of promotional materials

The project has produced promotional materials such as leaflets, notebooks, pens, folders, USB sticks, and t-shirts. The promotional materials were specially designed with the project logo and all the project elements in order to highlight the water as the main segment. On the promotional materials was attached QR with the code of the website, for easier and better visibility. The promotional materials were translated into English and the Albanian language. All the promotional materials were given at the workshops and meetings related to the project activities.

### **Obstacles during implementation**

The main obstacle during implementation was the Covid outbreak. It has influenced the project life from beginning of March 2020. The regional conference that was scheduled for end of April and most of arrangements prepared was cancelled. In addition to that, the GIS training for forest planners in Macedonia was cancelled too. That is why the whole project was actually on break for a period of 6-7 months.

When it became clear that organization of regional conference would not be possible, it was decided to organize it through the ZOOM platform, while the training for forest planners was organized with limited number of participants and time frame.