



# NARRATIVE REPORT

**Project Title: The Dniester Hydro Power Complex Social and Environmental Impact Study**

Activities for the period September 2018 - December 2021

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## ACRONYMS AND ABBREVIATIONS

AGRM	Agency for Geology and Mineral Resources
CSO	Civil Society Organization
DHC	Dniester Hydrological Commission
DHPC	Dniester Hydro Power Complex
EIB	European Investment Bank
ESIA	Environmental and Social Impact Assessment
GEF	Global Environmental Facility
HLM	High Level Meeting
HPP	Hydro Power Plant
HPC	Hydro Power Complex
IBA	Important Bird and Biodiversity Areas
MARDE	Minister of Agriculture Regional Development and Environment
MEI	Minister of Economy and Infrastructure
MFAEI	Ministry of Foreign and European Integration
NBS	National Bureau of Statistics
NGO	Nom-Governmental Organization
OSCE	Organization for Security and Co-operation in Europe
RAMSAR	Ramsar Convention on Wetlands
SHS	State Hydrometeorological Service
SIDA	Swedish International Development Cooperation Agency
ToR	Terms of Reference
UN	United Nations
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
USD	US dollars
WFD	Water Framework Directive

## BASIC INFORMATION &amp; SCOPE OF THE PROJECT

Duration:	1 September 2018 – 15 January 2022
Donor:	Swedish International Development Cooperation Agency - SIDA
Budget:	Total budget: Sweden Government: 655,024.82 USD
Coverage:	Republic of Moldova
Objectives:	<p>The Overall Objective of the project is to support sustainable management and protection of the Dniester River.</p> <p>The Specific Objectives are:</p> <ol style="list-style-type: none"> <li>(1) To ensure that Government of the Republic of Moldova is aware of the impacts of the functioning of the Dniester HPC and is fully prepared in negotiations on the Agreement on functioning of the Dniester HPC.</li> <li>(2) To provide the public with science-based information on the current and potential impacts of the functioning of the Dniester HPC.</li> </ol>
Project Summary:	<p>The Dniester Hydro Power Complex (Dniester HPC) is functioning for many years and various negative environmental impacts and other consequences of its operation were registered on the Dniester River downstream. Generally, the critical pressures generated by HPC are well known. These are hydropeaking, altering water flow and spatial pattern of temperature, fluctuating water level, drastic slowing up of the gravel and sand sediments movement, etc.</p> <p>Currently, the Agreement on functioning of the Dniester HPC is being developed and negotiated between the Governments of Moldova and Ukraine. It aims to provide the legal background for functioning of HPC and its further extension, as well as to establish responsibilities of both contracting parties in terms of ensuring safety of the HPC functioning, parties' rights, use of properties, leasing of land, etc. Yet, some articles of the Agreement, including art. 6 addressing environmental issues, is an obstacle for its signing, as there is no consensus on the requirements made by the Moldovan party which are considered as crucial for ensuring environmental security. Moldova argues that Ukrainian plans related to further development of the hydropower sector may negatively affect downstream ecosystems, and in general, undermine the socio-economic security of Moldova in terms of water quality and availability. To fully consider in the Agreement all the Moldova's concerns regarding protection of the Dniester River against hydro-power generation impacts, it is essential to carry out comprehensive study and assessments covering a wide range of issues linked to the hydropower generated impacts on the Moldovan part of the Dniester River, and to provide essential legal and negotiation support to Moldova in the course of the Agreement elaboration and negotiation.</p> <p>The expected outputs of the project are: i) detailed Study on current and potential environmental and socio-economic impacts on the territory of Moldova resulting from operation of the hydro power generation facilities on the Dniester River elaborated, and the findings widely distributed; ii) capacities of the Moldovan negotiation team enhanced, and iii) public awareness raised,</p>

	and transparency of the transboundary management of the Dniester River increased.
Expected results:	<p>Three outputs shall be produced under the Project. These are the following:</p> <p><b>Output 1.</b> Detailed Study on current and potential environmental and socio-economic impacts on the territory of Moldova resulting from operation of the hydro power generation facilities on the Dniester River is developed and conclusions are made</p> <p><b>Output 2.</b> Capacities of the Moldovan negotiation team (women and men) enhanced</p> <p><b>Output 3.</b> Science-based information on current and potential impacts of the functioning of the Dniester HPC is provided to public</p> <p>Outputs 1 and 2 are to contribute to the achievement of the Specific Objective 1, and Output 3 is to achieve Specific Objective 2.</p>

## PART I. KEY ACTIVITIES AND MILESTONES OF THE PROJECT

### OUTPUT I. Study on environmental and socio-economic impacts of Dniester HPC.

**The achievement of the 1st Output** consisted in the elaboration of the detailed Study on the current environment and socio-economic impacts on the territory of Moldova resulting from the operation of the Dniester Hydropower Complex. The study has also touched on the potential impacts of hydropower generation facilities, which included 12 sub-studies. The study consists of the 12 sub-studies and subsumes approximately 600 pages. It was delivered to the Ministry of Environment in a layout format. It contains reliable data and provides answers to many specific questions from members of the Dniester Commission, the negotiating group of the draft Agreement on the operation of Dniester Hydro Power Complex (DHPC) and civil society, which required a very persuasive scientific analysis and scientifically confirms that the entire DHPC has a significant impact on the environment, and this impact in accordance with national and international environmental regulations, must be eliminated or compensated.

At the same time, the Study contains the necessary arguments and evidence for decision making process, especially related to cooperation with Ukrainian partners strategic planning for further national and local socio-economic development.

Concomitantly, the Study outlined conclusions on the parameters of the minimum water flow, the parameters of the spring flow (ecological) and other seasonal flows from HPP-2 to ensure the proper functioning of the aquatic ecosystem and other river-dependent ecosystems, as well as the fulfilment of downstream socio-economic needs, taking into account the climate change scenarios included in the Report on the hydrological and hydromorphological status of the Dniester River under the influence of the operation of the Dniester Hydropower Complex and in the Document Analysis of the Dniester River in section HPP -2 (F-40500 km<sup>2</sup>) for a period of long-term observations from 1985 to 2017, provided by the Moldovan Party at the meeting of the Dniester Commission from 28-29 October 2021.

**Below, are presented the detailed information with regards to implementation of 1st Component in chronological order:**

#### **October 2018. Inception workshop and Board.**

The inception workshop of the Project and the Board took place in October 2018. Project was briefly presented, stakeholders mapped and Work Plan for 2018-2019 communicated.

**The Terms of References for ESIA study** - prepared in October 2018 and advertised in November 2018. Due to limited number of applicants the tender for selecting international consulting companies was extended twice, the last extension had as deadline 15 January 2019.

#### **February 2019. Company selected.**

In February 2019 as a result of competitive evaluation process, out of 4 applications submitted overall, the members of the Evaluation Panel recommended the selection of

CONSORTIUM EPC-JBA to be awarded a contract for implementation of the mentioned assignment, due to the highest cumulative scores being rendered by evaluators. General conclusions were: Technical Proposal of CONSORTIUM EPC-JBA complied with administrative and technical requirements stipulated by the solicitation documents, therefore it was deemed technically qualified and responsive; Financial Proposal was complete and contained sufficient details on time and costs used for the development of each core deliverable.

**March 2019. Negotiations with EPC-JBA.**

Taking into consideration the available budget resources allocated for this activity by the Dniester Project and based on assessment of financial proposal submitted by the CONSORTIUM EPC-JBA against compliance with the ToR requirements and submitted technical proposal, negotiations were recommended. As a result of negotiations, the Offeror agreed to revise its financial proposal through the decrease of overall costs of services by 24,1% in the amount of 108,754USD to the level which would permit CONSORTIUM EPC-JBA to qualitatively undertake the assignment described in Terms of References, from USD 449,800 to USD 341,046, preserving the standards and quality of the expected products.

**April 2019. Contract signed.**

It was subsequently amended in October 2019.

**May 2019. Inception workshop.**

During the event, the team of EPC -JBA was presented and briefly described the approach methodology on environmental impact assessment, damage assessment and compensation measures methodology. The access to relevant data was mentioned as a crucial element. The field visits will target areas of critical impact of Dniester HPC. Significant workload and modelling will be conducted based on available spatial data from national institutions.

**July 2019. First field visit on Dniester.**

It aimed to identifying, mapping and locating the most significant impacts of Dniester HPC. During this documentation visit, there were visited the most affected areas along the Dniester river closest to and located downstream to Dniester HPC. The route of the field visit included two segments of Dniester: Dam HPP2 - Sorooca (characterized by significant fluctuations of water level during the day, hydropeaking, low temperature and high transparency of water, diminished stock of fish, damaged eco-touristic site, quality of water affected, river bed affected etc.) and Sorooca – Dubasari (characterised by large areas of vegetation emerged as a result of low and transparent water, islands of reed and affected economic and touristic activities).

**September 2019. GAP analysis and preliminary version of Environmental flow sub-study.**

EPC-JBA presented the preliminary results of the Dniester HPC Social and Environmental Impact Assessment Study, including the scope and objectives of the Study, the main activities carried out thus far and the Study approach. It was also presented the data required and data gathered from the relevant institutions, a review of previous studies, the main gaps and shortcomings as well as the next steps to be taken to advance with the finalization of the Study.

### **October 2019. Second field visit on Dniester.**

Field investigations were needed to compensate for the lack of quantitative data from the area of direct influence of HPC, where impacts were easier to highlight. During this field survey there were carried out measurements and sampling to obtain information on the physico-chemical parameters of the water of the river as well as to identify any changes generated by the diurnal variation of the water level of the Dniester river. Also, it was studied the ichthyofauna from the 5 sections of the Dniester River in order to be able to highlight the changes at different distances from the energy complex. Observations were also made on habitats, birds and other animal species through transects in the Naslavcea - Soroca sector.

### **December 2019. Environmental flow sub-study.**

It was considerably improved compared with the previous version finalized and presented in September 2019. Starting with December 2019, the data sets of the study are cross-checked with the set of data provided by the Ukrainian institutions.

**Hydrology and morphology, water quality, water biology, social -economic impacts** were initiated in 2019. Because of the lack of key data sets from Ukraine, these sub-studies are work in progress. The other key sub-studies to be soon initiated are the following: **direct and indirect costs, ecosystem services, damage assessment methodology, hydrogeology**.

#### **Data sets.**

Significant effort was invested in securing the data sets from national institutions. Meetings with national institutions (data holders) were conducted in May and July 2019. Additional e-mails, phone, Skype talks and meetings were organised with these institutions in this period. Official letters with the required data sets were submitted from two State Secretaries of MARDE to the national data holders in July and August 2019. UNDP Moldova also sub-contracted in August 2019 an NGO to secure a part of the data needed for the ESIA study. Due to persistent gaps in securing all the needed information a High-Level Meeting was planned in November 2019 and organised in January 2020 to tackle the reining difficulties.

In regard to Ukrainian counterparts, Project Management Unit drafted letters with the required information from Ukrainian authorities and submitted the list to MARDE and MFAIE in June/July 2019. These letters and the related data sets were updated and submitted to MARDE, MFAIE in September 2019, December 2019 and January 2020.

### **January 2020. High Level Meeting (HLM).**



A HLM took place on 28 January 2020 that was attended by H.E. Ion Perju, Minister of Agriculture Regional Development and Environment (MARDE), Mr Anatol Usaty, Minister of Economy and Infrastructure (MEI), Gheorghe Leuca, State Secretary at the Ministry of Foreign and European Integration (MFAEI), H.E. Anna Lyberg, Ambassador at the Embassy of Sweden in Chişinău, H.E. Dima Al-Khatib, Permanent Resident Representative at UNDP Moldova (the host of the meeting). During the meeting it was presented an up to date of project activities of Dniester HPC impact study. It was communicated that six sub-studies are under preparation and the first draft is expected to be finalised by the end of April 2020, and the remaining ones to be commenced soon. During the meeting were presented the main challenges of the Project: access to data sets from national institutions and institutions from Ukraine and Russian Federation relevant to the Project.

National institutions in this regard included: *SHS (Hydromet Service)* – access to hydrological data; *AGRM (Agency for Geology and Mineral Resources)* – access to maps, geological data and times series on ground and underground water reserves of Moldova; *CADASTRU (Cadastral Agency)* – spatial data on the land use; institutions affiliated to *MARDE* or *Ministry of Education* – passports of protected areas, hydrochemical indicators, hydrobiological indicators; Ministry of Health & Public Health Centre – water borne disease, areas with risk for human health; BNS (National Bureau of Statistics) – tourism, level living, social protection, prices; *Apele Moldovei (Moldovan Waters)* – monthly consumption levels of water by sector of activity; *Agencia Navală (Naval Agency of Moldova)* – Regulation on navigation; reports on cleaning navigable channel on Dniester; bathymetries on Dniester (if any).

The challenges encountered in relation to institutions from Ukraine included access to technical data (technical designs) of Dniester Hydropower Complex, access to data on water quality, monitoring data on Dniester Pumped Storage Station; the need for a field visit at Dniester HPC and discussion with the operator of Dniester HPC that was requested by international consultants conducting the impact study.

The challenges encountered in relation to institutions from Russian Federation included access the initial technical/project documentation of Dniester HPC produced during Soviet Union.

It was outlined that without these sets of data the study will be based mainly on expert opinions that will led to a weak position in negotiations with Ukraine of Moldovan team and poor evidence in regard to securing at bilateral level a sufficient level of minimum permanent and spring flows released by Dniester HPC that is needed for preservation of ecosystems and well being of communities, economics and population downstream to this hydropower infrastructure.

A high-level commitment was taken by participants to support the project team with securing the needed data.

### **January – May 2020. National consultants and local expertise.**

In addition to the recommendations from 2019, starting with January 2020 Project Team insisted more actively and advised the international consortium to work with and engage national consultants and local expertise more actively. EPC-JBA was particularly asked to engage consultants and local expertise on hydrochemistry and hydrobiology, hydrogeology, socio-economic impacts, hydrology, biodiversity

specialists. Consequently, contracts with local specialists in both data collection, analysis and interpretation were set by EPC-JBA in the period February – May 2020. This action was meant to complement the existing international expertise, complete the data gaps and speed up the completion of the studies. The consultants hired for this purpose included Iurie Bejan (geography), Petru Bacal (socio-economic expert), Natalia Zgarcu and Valentina Iurcu (water quality experts), Oleg Bogdevici (hydrogeologist). A similar contract was signed with Tudor Cozari (biologist) who did not deliver the information signed with him in the contract.

### **January - August 2020. Closer monitoring EPC-JBA.**

In addition, starting with January to August 2020, weekly/by-weekly or monthly Skype meetings took place between EPC-JBA and the implementation Team. Scope of these meetings was to have better guidance to and reporting from EPC-JBA.

### **February 2020. Data set collection.**

On February 7, 2020 there was an organizational meeting discussing the competence and scope of a trip to Moscow to discuss the bringing of technical documentation of Dniester HPC to Chisinau was discussed. The meeting was attended by Representatives of MFAIE (Anatol Cebuc and Vladimir Saranciuc), MARDE (Dorin Andros, Andrian Delinschi, Radu Cazacu), MEI (Calin Negura, Ineta Panurco), Agentia Cadastru (Stefan Crigan), Politia de Frontiera (Valentin Fiodorov, Valeriu Lungu), UNDP Project Team (Ion Efros, Liuba Brinzoi). As a result of the meeting it was agreed that MFAIE will draft a letter to Ukrainian counterparts requiring the needed technical documentation of Dniester HPC, liaise with the Moldovan Embassy in Moscow to set the date for the business trip at RusHydroProiect and sent a letter to the national relevant institutions to nominate an expert who could make the trip to Moscow. UNDP team communicated that the cost of the trip could be partially covered from the Project Funds.

On February 25 the letter was sent to Letter drafted by Project Team requiring data sets from Ukraine. Signed by the MEI and sent to the Ministry of Coal Industry. This letter as the previous ones sent by MARDE to Ukrainian authorities in June 2019 and September/October 2020 remained without any response.

In February 2020 an additional set of letters was sent by MARDE to national institutions (data holders) presenting them the data sets required by EPC-JBA for conducting the ESIA study as follows: SHS, Institute of Zoology, National Bureau of Statistics, National Centre for Public Health, Botanical Garden. Only SHS and National Bureau of Statistics responded with partial data. Institute of Zoology responded with a letter. While National Centre for Public Health and Botanical Garden did not respond.

In February started the discussions with Expert-Grup (a local economic think tank) for conducting the sub-study 10 on indirect economic costs of ESIA. Expert-Grup presented their methodology on conducting the study in the same month. EG proposed in this sense to elaborate a Computable General Equilibrium Model aimed to capturing the most essential features of the Moldovan economy ((inter-industry links, inter-market links, consumers preferences). Expert Grup proposed in their methodology field trips, focus groups and in-depth interviews with various stakeholders. The methodology was consulted with EPC-JBA. According to the schedule presented by the Expert-Group the study was expected to be finalized by 30 June 2020.

On February 27, a draft letter was signed by RR Dima Al Khatib to H.E. Aureliu Ciocoi (Minister of Foreign Affairs) asking the Minister to facilitate the speeding up the visit to Moscow of Moldovan team of national experts at RusHydroProject. While the MFAIE arranged the visit to Russian Federation for 15 – 17 March, the visit was cancelled due to COVID19 conditions.

**February – March 2020. EPC-JBA received a first feedback on environmental flow report.**

They have been suggested to change the approach when analyzing the flows (debits) from simple statistical analysis of historical times series to taking more in consideration the water needs of Lower Dniester ecosystem functioning.

**March 2020. The 4<sup>th</sup> Board of the Project.**

The Board of the Project approved the activities conducted during the semester 3,4 of 2019 and first semester of 2020. At that time only, the sub-study on environmental flows was prepared. The remaining of the studies were still under preparation. The slow progress of the study was due to slow collection of data from national institutions and international partners. The Board agreed to conduct additional meetings and submit letters to the national institutions as well as relevant institutions from Ukraine and Russian Federation. At the same time the Board decided to allow the company conducting the ESIA study to collect the remaining data by 15 April 2020, and afterwards to conduct the study with the existing data. The Board also considered the approval of the Project expected to be decided at a subsequent meeting.

**March 18, 2020. Communication Plan.**

Communication Plan was updated and shared with Communication Analyst and Cluster Lead. The Plan aims to informing the national public (especially the communities who reside in the Dniester river) about the potential risks of the functioning of Dniester Hydro Power Complex and to raise awareness among journalists about the issue and encourage them to produce qualitative articles and materials about the issue. As it was decided during previous Boards the Communication campaign should have been started once the ESIA study is finalized.

**March- April 2020. Contacts with RusHydroProject.**

In March and April 2020 two rounds of emails were sent to RusHydroProject asking about their willingness to cooperate. Prior to this RusHydroProject was approached twice in September and December 2019 by the MFAIE with the request to support Moldovan Government with initial technical documentation of Dniester HPC. Management of this engineering institutions invited Moldovan representatives to Moscow to discuss potential cooperation. The visit that was scheduled/arranged for the middle of March 2020 was cancelled due to COVID19 issues. Therefore, dialogue with this institution continued via e-mail. After two series of e-mails in March and April 2020 RusHydroProject communicated that they can not share the original documentation. Neither for free, nor for a cost basis. Instead they proposed their

institution to be hired to produce only the calculations the Project might need. Considering that for the Project and for Moldovan Government was crucial to have the documentation in Chisinau (as is needed for a set of broader bilateral issues between Moldova and Ukraine), the Project Team asked in April and May the support of the Moldovan relevant institutions to step into the process and facilitate the transfer of this documentation to Chisinau.

### **May, July, August 2020.**

Zoom calls and meetings between Apele Moldovei and EPC-JBA. Scope of discussions was to explain the importance of modelling the area of Lower Dniester till the mouth of the Sea as well as taking into accounts the water needs of Blind Dniester. For this scope EPC – JBA received in September 2019 the DTM and other technical data that was produced in the project *Management and technical assistance support to Moldova flood protection project financed by the European Investment Bank* on Dniester River and technical data from Aqua Project in August and September 2020 on various hydrotechnical works in the area of Blind Dniester.

It was explained that Blind Dniester and Lower Dniester are rich ecosystems highly dependent on water and that it would be important to conduct hydrological modelling in these areas in the scope of determining the spring flows and permanent flows that represents a topic of permanent discussions between Moldovan and Ukrainian authorities. It was agreed that EPC – JBA will do the best to model these areas.

### **June 19, 2020.**

**An expert meeting** discussion was facilitated by the Project between EPC and local forest, agriculture, fishes specialists. The discussions had the scope of providing expert insights into the areas developed by ESIA study. As a result of the discussions the forest specialist suggested that the impact of Dniester HPC on terraced forests is smaller (and difficult to quantify) while in the meadow area the impact is major and calculable (in the area of Lower Dniester). The the volume of industrial exploitation of wood difficult to quantify. There is registered an abusive deforestation in the Dniester meadow. The specialist does not exclude that a major conflict over the Dniester water between Ukraine and Moldova. At the same time the agriculture specialist communicated that the Moldovan population in the area of agriculture has a decreasing trend, there is a declining number of domestic animals, Moldova faces droughts every two years whose impact could be amplified by the operation for Dniester HPC, the irrigation system is largely destroyed, the production low yield in agriculture, fish farming represent a missed opportunity, the Dniester is not navigable and this might be amplified by the operation of Dniester HPC and he does not exclude a major conflict over the Dniester water between Ukraine and the Rep. Moldavia. Finally the fish specialist concluded that factors of influence over fish population in Dniester relate to low water temperature (e.g. 40 km downstream of Dniester HPC very few fish species ( around 7 species, small size), poor cooperation between Ukraine and the Rep. Moldova, spring flow problems, changed hydrological situation changed in certain areas (e.g. Lower Dniester, river estuary), amplified conditions for invasive species, serious siltation of the upper Dniester, gravel extraction (in Transnistria, corruption). Fish specialist considers as a low probability a large-scale conflict over the Dniester water between Ukraine and the

Rep. Moldova. EPC-JBA was encouraged to continue the dialogue with these specialists.

### **June 25, 2020.**

**A Skype discussion EPC-JBA - Institute of Zoology aimed** to bridge a collaboration with the Institute of Zoology (and team of Ms. Elena Zubcova) on the subject of the "Bayesian model" to be used in sub-study 4 on Hydrobiology. Marius Nistorescu (EPC) presented in a "shared screen" a short presentation on the (monthly) data EPC has and aiming to analyze the probability of uncertainty of hydrological and physico-chemical variables (parameters) using the Bayesian model. Ms. Elena Zubcova communicate the problems she has encountered in various projects and meetings (+100) with various Ukrainian public institutions, such as the need to work with foreign partners in the EU and European international approval of the scientific methods used during those projects. she participated / led. During the speech, Ms. Zubcova pointed out that Ukraine will ignore the investigations conducted by EPC-JBA. It was also communicated that she cannot disclose to EPC-JBA the "primary" data (modeling) the Institute has for the years 40s-80s. These data belong to Ms. Zubcova (Zoological Institute of the Republic of Moldova + et al.), being collected and analyzed personally in the laboratory of the institution. It is added that there are already published data proving the hydrological and physico-chemical changes in the Dniester in the post-HPC period. In the last sentence, Ms. Zubcova points out that Ukraine will try to prove with its own hydrologists that our data are incomplete since we lack intra-day information and raise questions about validity, whether the EPC or JBA is accredited on modeling or not. Nevertheless, the Institute agreed to consider responding to a set of questions (up to 25 – 30 questions) on various issues of hydrobiology that will be formulated in advance and EPC team. The questions were submitted by EPC to the Institute of Zoology in September 2020.

### **May – June 2020**

Took place online discussions on the **methodologies for 2<sup>nd</sup> part of the study**. The sessions were also attended by ExpertGrup representatives. During the sessions there were discussed the methodologies to be applied and hypothesis that follows to be tested for the 2<sup>nd</sup> part of the study.

### **July 7, 2020 – presentation of the draft of the first five sub-studies of the study of impacts.**

This was the first round of consultations with the Beneficiary). The event was attended by representatives of MARDE, Apele Moldovei, SHS, Environmental Agency, Institute of Zoology of Academy of Sciences, Institute of Ecology and Geography, MFAIE, civil society representatives. Around 35 people attended the event in online format. The main preliminary findings presented by the representatives of EPC-JBA are the following:

*Output 1: Hydrology and morphology sub-study:*

- Average monthly and annual flows are strongly influenced by the presence of Dniester HPC reservoirs, especially in the spring and summer season; the average monthly flows recorded maximum decreases of up to 129 m<sup>3</sup>/s in the Moghilev-Podolosky section, 200 m<sup>3</sup>/s in the Hrusca section and 219 m<sup>3</sup>/s in the Bender section. The impact on average flows is identified from the HPC section to the mouth of the Black Sea
- Maximum annual flows are reduced by about 25-30%; The effect of reducing the maximum annual flows is due to the flood attenuation functions of the HPP1 reservoir
- There is a tendency of increasing minimum flows by about 50% (in the Moghilev-Podolsky section, the average minimum flow for the period before 1980 is 49 m<sup>3</sup>/s, and in the post-HPC period is 90.5 m<sup>3</sup>/s).
- Sediment transport is strongly affected by dams and reservoirs, this being confirmed both by the large volumes of sediments retained, proven by the degree of clogging of the lakes, and by the monitored data on suspended solid flows.
- The accumulation lakes retain approximately 15 million m<sup>3</sup> of sediment per year, preventing their transport downstream in the middle Dniester sector or to the delta area and the mouth.
- Comparing the two reference periods (before and after 1980), at the Zaleshiki gauging station it is observed that there is a natural decrease of the suspended solids flows. However, the graphical analysis shows that the HPP1 and HPP2 dams produce a drastic, additional decrease in solid flows by about 95% in the downstream sections; The Bender section identifies a regeneration of solid flows due to the main tributaries (Răuț, Ichel and Bac) that converge with the Dniester River, downstream of the Dubasari accumulation;
- The river sector directly influenced by the dynamics of the hydropeaking phenomenon is between HPC and Hrușca, the modeling results indicating its attenuation downstream of this sector.

#### Output 2: Water quality sub-study

- The analyzes regarding the determination of the water quality classes indicate an improvement in time of the water quality classes of the Dniester river but it is specified that the methods of sampling and determination of the parameters have evolved in time;
- Long-term analysis of the temperature regime indicates a significant decrease in temperatures due mainly to the accumulation lakes, the impact felt being limited on the sector between HPC and Camenca.
- As a recommendation, because the data available for the sections of interest were used for this study, which had a wide variation in terms of parameters and monitoring periods, in order to assess the impact of the HPC it is considered appropriate to establish a joint program with Ukraine investigative monitoring in accordance with the WFD for sections upstream of the town. Soroca, upstream of the Novodnestrovsk Hydropower Complex as well as at the level of reservoirs.
- As a limitation of this sub-study, it should be specified that it aims to achieve a water quality model using specialized software, especially the hydrological model developed in the previous sub-study, which should also include water quality

parameters in inside the reservoirs corresponding to HPC and the Dniester river sector between HPC and Dubasari with the specification that for the reservoirs of the hydropower complex there are no data on water quality corresponding to different depths in reservoirs, and data on the Moldovan–sector between HPC–Dubasari they are strongly disparate from a spatial and temporal point of view, which makes it very difficult to make a model.

Output 3: Hydrogeology sub-study – was not ready by 7 July as the national consultant signed the contract and started the work late in May.

Output 4: Sub-study on the impacts of Dniester HPC on Biodiversity

- The Dniester is an ecological Corridor for birds; There are 11 IBAs, 2 of which are on the Dniester; 3 RAMSAR sites, of which 2 on the Dniester; A total of 50 protected species in the Emerald sites on the Dniester;
- There is an intention to increase the population of Aquila clanga species to > 5 pairs in Moldova;
- The main agglomeration areas: Lake Dubasari, downstream of Naslavcea, Lower Dniester National Park (Ukraine);
- Significant secondary impact produced by Dniester HPC relates to loss of trophic resource (fish): Naslavcea - Dubasari;
- Significant secondary impact - habitat loss (flooded areas): Lower Dniester is affected as a result of a contribution of cumulative impacts

The expert pointed out that one of the elements proposed in this component to better understand how the ecosystem works (and relate it to ecosystem services), is to make a model (e.g. Bayesian model) allowing them the correlation between hydrological, biological and chemical parameters. Despite the existing deficiencies e.g. the fact that biological data do not overlap as location with chemical data, consultants mentioned that they were working on a model to allowing them to come with expert opinion and try to fill the information gaps.

Output 5: Sub-study on socio-economic impacts

- Fishing is the economic activity most affected by the operation of the Hydropower Complex. There is a significant direct impact on the Naslavcea - Soroca sector. The aim is to further identify the contributions of the Hydropower Complex and the cumulation with various other pressures on other sectors of the river.
- The industrial area is the main user of water, although a very large part of the volume captured is cooling water. There are some estimates based on data obtained from the Moldovan Waters Agency. Work of consultants is focused on the scenario of increasing the need for water for industry.
- Tourism is the best example of opportunity costs. Because there are elements that can be quantified in terms of losses, limitation of tourism activities associated with the variation of flows and changes in water temperature. The most important aspect is related to the opportunity costs, more precisely to the impossibility of developing tourism.

- Things are more complicated in the transport sector. There is an impact component that comes from the Hydropower Complex area.
- In terms of health, there is a tendency to reduce water-related infectious diseases. However, the risk remains and will have to be reinterpreted by the development prospects of the Hydropower Complex. Consultants were not been able to identify forms of significant impact on the health component
- On the social component there had been analyzed various parameters related to living standards, income and education and other social components. There are elements that can highlight a more vulnerable situation in the area of the districts bordering the Dniester, but not significantly with the rest of the districts. There are also elements that can be quantified in terms of impact such as reducing access to biological resources and indirectly by reducing the recreational potential and the income that can be obtained from these activities.
- In terms of scenarios to be developed by this sub-study the elements taken into account are those related to water demand (especially in the Dniester), climate change, population evolution (declining trend) and economic development (an increasing trend).

#### Output 6: Study in the minimum and spring flows

- Limitations of the assessment according to the consultant are the following: the estimated flow to ensure the water requirement did not take into account the input of the tributaries of the Dniester River / the input of water from the underground source (consultants consider that this input is not significant), nor the water requirement of Odessa; also, the volumes of water used for irrigation were not provided by Apele Moldovei, as a monthly variation; as a result, it was considered a constant value (as an annual average). Although the consultants did not recommend a single value, they still made an annual average of these values - 133 m<sup>3</sup>/s, representing 53% of the value of the multiannual average flow (naturally).
- In terms of spring flows, they have taken into account the available sources, from resulting in two approaches: *Approach 1* - Maximum indicative value of the flow is 500 - 550 m<sup>3</sup> / s for about 30 days [the international literature recommends double the average multiannual average flow in section - maximum value (Gore and Petts, 1989), respectively as 518 m<sup>3</sup> / s , in our case]. Spring evacuation should cover the period of high water - the last decade of April - the last decade of July, an interval that also overlaps with the breeding season for fish. The values are provided as an indicative average, per decade (gap 200 - 550 m<sup>3</sup>/s) in the form of an echo hydrograph ("optimal spring echo hydrograph").
- *Approach 2* - Flood flow of the Dniester delta for reproductive purposes - duration 1 month, stable regime of about 20 days, starting with mid-April (gap 260 - 720 m<sup>3</sup> / s). Here we need to consult with other experts to lead us to a unique approach. The discharge / discharge of water in the river afferent to the accumulation lake varies in a short time, between the minimum-maximum values of the wave, depending on the energy required.



**July - August 2020.**

The studies presented early in July were reviewed and detailed comments were provided by the following institutions: MARDE, Apele Moldovei, Institute of Zoology, Institute of Geography and Ecology. In addition UNDP conducted its own review of the studies. As a result a joint, consolidated position of UNDP and MARDE on the quality of the studies was sent to the EPC-JBA consultants at 26 August 2020 with the specification to address these comments by 13 September 2020.

**August 2020.**

In August a discussion with GEF/OSCE team of the Project “Enabling transboundary co-operation and integrated water resources management in the Dniester River Basin” took place on the data sets they have and can support the UNDP Project. GEF/OSCE provided the contacts of Ukrainian SHS. AS a result EPC-JBA contacted this institution and acquired a set of data on water quality starting from 1990 till 2016. It should be mentioned that the quality and credibility of this data set was not checked. It would be strongly recommended that the MARDE and the technical institutions from Moldova is checking the quality of these data.

**August - September 2020. Online surveys.**

Project team facilitated the production of online surveys conducted by EPC-JBA among community of experts general public inhabiting the communities of Dniester. The results of the survey were expected to be included in the sub-study 9 related to the estimation of lost ecosystem services.

**September 2020.**

Discussions with EPC-JBA on the deadlines of project submission and modelling on Lower Dniester.

**January – March 2021. Estimating the sub-studies content, identifying and hiring national and international experts to complete the sub-studies.**

After being estimated the degree of accomplishment of the sub-studies initiated by the EPC-JBA company, the terms of reference for the potential experts suggested in carrying out the project activities were elaborated. Subsequently, numerous discussions, consultations and negotiations were held with national experts to finalize the outstanding sub-studies and develop the ones which were not initiated.

Consequently, the following experts were contracted: Mrs. Ana Jeleapov - hydrologist, Mr. Ruslan Melian - water quality specialist, Mr. Oleg Bogdevici - hydrogeologist, Mrs. Ala Donica - biologist, Mr. Serghei Filipenco - hydrobiologist, Mr. Petru Bacal geographer-economist, Mrs. Veronica Railean -economist, Mrs. Olga Cazanțeva-specialist in economic assessment of ecosystems, Mr. Ilia Trombițchi - hydrobiologist, Mr. Roman Corobov - specialist in climate change, Mr. Ghenadie Sirodov - specialist in geoinformatics, Mr. Aurel Lozan - expert in natural resource management, Mr Veaceslav Purcic - hydrobiologist, Mr. Nicolae Talpă Sr.- expert in forestry, Mr. Felix Zaharia - expert in international law, and Mr. Viorel Miron - expert in economics.

Additionally, there was determined the necessity to hire a hydro-energetic expert with experience in monitoring and evaluating the operation of hydro-energetic constructions in order to ascertain the possible operating errors of DHPC that causes a negative impact, reported on the Dniester downstream of DHPC and recommend some solutions to remedy them. The international expert Ionel Zlati-Podani was identified and contracted for this assignment.

### **February 2021. The 7<sup>th</sup> Board of the Project, elaboration of the Action Plan for 2021**

The Action Plan for the extended project period up to the end of June has been developed. The plan was coordinated with the beneficiary of the project - the Ministry of Agriculture, Regional Development and Environment and approved at the meeting of the Supervisory Board of the project on 17 February 2021. The proposed plan was quite complex and ambitious. The planned activities were meant to fully achieve the planned objectives according to the project document.

### **March - June 2021. Elaboration of the Impact Study of the operation of the Dniester Hydropower Complex**

Multiple online meetings, telephone discussions and correspondence by e-mail with project national team of experts were organized in order to arrange the working processes, to clear up definition of tasks and expected results. Advice and recommendations were given to them for organizing meetings and discussions with national stakeholders, for collecting needed data to finalize / develop sub-studies and obtain valuable feedback that will ensure the synergy between related sub-studies.

During that period, the first versions of the elaborated sub-studies were provided by the project's national team of experts. Immediately afterwards, there was an intense period of analysis of the preliminary versions of the sub-studies by Mr. Viorel Miron and the project coordinator. Nearly 30 online meetings with national experts were organized separately and in groups in order to analyze comments and proposals for improving deliverables. The improved sub-studies were sent to the beneficiary and the first consultations on them were initiated.

On April 26, the first online meeting was held together with the representatives of the Ministry of Agriculture, Regional Development and Environment to monitor progress in delivering activities for Deliverable 2: Completing the sub-study on water quality, rapporteur Ruslan Melian, national expert and Deliverables 11 and 12: Development of the methodology and procedure for estimating the damage, rapporteur Felix Zaharia, international legal expert;

On April 28, the second online meeting with the Ministry of Agriculture, Regional Development and Environment on the progress made in the following activities took place: Deliverable 8: Elaboration of the sub-study of cost estimation for water supply, agriculture, industry, health, tourism, rapporteur Veronica Railean, national expert; Deliverable 9: Elaboration of the sub-study on cost estimation for lost ecosystem services, rapporteur Olga Cazanteva, national expert; Deliverable 14: Development of a set of compensatory measures, rapporteur Aurel Lozan, national expert.

On April 29, the third online meeting with the representatives of the Ministry of Agriculture, Regional Development and Environment established the progress in

carrying out the following activities: Deliverable 3: Completion of the sub-study on hydrogeology, rapporteur Oleg Bogdevici, national expert; Deliverable 4: Completion of the environmental and hydrobiological sub-study, rapporteurs Ala Donica and Serghei Filipenco, national experts.

Following the sub-study consultation sessions, the experts revised and improved the texts of the documents in conformity with the obtained comments. The process of improving the documents was supported by the continuous interaction ensured through weekly progress meetings organized by project team. Altogether, about 20 meetings were organized.

During 8-18 June, 5 round tables were organized to consult the improved versions of the sub-studies with the participation of representatives of the Ministry of Agriculture, Regional Development and Environment, Government authorities and institutions involved in water resources management, representatives of academia and Moldovan members of the Dniester Commission as well.

- 08.06.2021 - consultation meeting damage assessment - presented by the expert Felix Zaharia and the report on Deliverable 14 - sub-study on compensatory measures - presented by experts Aurel Lozan and Veaceslav Purcic;
- 10.06.2021 - meeting to consult the reports on Deliverable 2 - sub-study on quality water - presented by expert Ruslan Melian and Deliverable 3 - sub-study on hydrogeology - presented by Oleg Bogdevici;
- 14.06.2021 - consultation meeting on Deliverable 4 - sub-study on environmental and hydrobiological impact, presented by experts Ala Donica and Serghei Filipenco and Deliverable 9 - sub-study on estimating the costs of lost ecosystem services, presented by experts Olga Cazanțeva and Ilya Trombitski;
- 16.06.2021 - the meeting for consulting the reports on Deliverable 5 - the sub-study on the socio-economic impact, presented by the expert Petru Bacal and on Deliverable 8 - sub-study on cost estimation for water supply, agriculture, industry, health and tourism, presented by the expert Veronica Railean;
- 18.06.2021 - the meeting for consulting the reports on the Deliverable no. 1 and 6 - sub-studies on river hydrology and hydromorphology and sub-study on estimating minimum and ecological flows, presented by expert Ana Jeleapov and sub-study on assessing the negative impact of DHPC in case of the development of hydropower system in the downstream sector of the Dniester river in Republic of Moldova, presented by the international hydropower expert Ionel Zlate.

#### **April 2021. Organization of the field visits in the Turunciuc bifurcation region**

Aiming at practical monitoring and research on the efficiency of the spring ecological flood on the Dniester River after the discharge by Ukrainian Novodnistrovsk Hydroelectric Power Plant the project has organized field visit to Dniester river starting with 08.04.2021 when the Ukrainian authorities have formally notified Moldova about start of 2021 spring discharges. Thus, a series of 4 field visits on 10 April, 14 April and 15 and 16 May were conducted with project support.

Project experts and representatives of Ministry of Agriculture, Regional Development and Environment, Apele Moldovei Agency, State hydrometeorological Service, NGOs BIOTICA, the EcoContact and EcoTiras and the representatives of the local public authorities in the territory, visited the shallow waters in the Turunciuc bifurcation

region and carried out research on the efficiency of the spring flooding on aquatic biological resources.

Following the field visit, the report "Ecological spring flood for the reproduction of fish in the meadow of the Dniester River 2021" was elaborated by the team of experts.

### **May – September 2021. Collection of additional data**

For the detailed expertise of the draft Regulation on the operation of the water reservoirs of the Dniester Hydropower Complex and the buffer reservoir, (2017) and the elaboration of proposals to improve the document, but also for the completion of sub-studies of hydrology and morphology of the Dniester river were necessary a series of additional data that were requested from the State Hydrometeorological Service. Thus, on May 6, a letter was sent requesting the following data:

- daily levels and flows at Galich, Zalischyky, Moghilev stations, during 2016-2020;
- daily levels at Naslavcea and Unguri stations for 2020 every 15 minutes;
- levels and daily flows for 2020 for the hydrological stations Hrușca, Dubăsari, Bender, Talmază, Nezavertailovca;
- series of daily values of water temperature at the stations Galich, Zalischyky, Moghilev, and the stations on the territory of Moldova for the period 1950-2020 with the specification of the measurement hours at each hydrometric station; usually the temperature is measured at standard hours (7:00 am and 5:00 pm), to specify if there are other hours for measurement;
- limnometric keys for all hydrological stations;
- daily speeds and associated flows for all hydrological posts for the last 10 years;
- data on evaporation from the surface of the water where measurements are made for the period 1950-2020;
- data on the high spring waters for the Dniester River and its affluents for the period 1950-2020 (as presented in the Extended State Cadastre).

After several rounds of meetings and clarifications with the participation of SHS representatives and project experts Ionel Zlate and Ana Jeleapov and correspondence by email, the requested information was fully and qualitatively presented by the State Hydrometeorological Service between 17-31 May through e-mail communication.

In order to assess the current state of the Dniester minor riverbed, which will later permit the monitoring of the dynamics of the riverbed under the influence of natural and anthropogenic factors, including within the DHPC, the project has formally requested the State Hydrometeorological Service to organize top-bathymetry activities in the downstream of DHPC and at the water catchment from the Coșernița Water Capture and Pumping Station.

On August 19, the letter was sent to the General Inspectorate of the Border Police referring to the possibility in obtaining access to the border area for carrying out topo-bathymetric works in the Dniester riverbed downstream of the Dniester Hydropower Complex. The General Inspectorate of the Border Police gave access, but the Ukrainian side refused it, so the topo-bathymetric works were possible only in the region of the Coșernița Water Capture and Pumping Station.

On September 30, the project managed to obtain more complex data sets that requested initially, that have compensated the incapability to collect data downstream of the CHN within the topo-bathymetric expedition. The data sets were presented in the form of Excel

cross-sections containing geographical coordinates, absolute and relative altitudes (depths), distance between points, indication of banks (right / left), as well as vector layers specifying absolute and relative points and altitudes (depths) in the solicited format.

### **June 2021. The 8<sup>th</sup> meeting of the Project's Board**

On June 11, the members of the Supervisory Board of the project, were informed by e-mail about the achievements of the project that were undertaken between January and June 2021, in particular emphasizing that all sub-studies of the Impact Study were 100% completed. The Activity Plan for the extended project period was discussed and approved for the period of 1 July -15 October 2021.

### **July – August 2021. Writing and translating the study**

After completion of the sub-studies and their consultation with the interested parties, an extensive stage of fine-tuning and proof reading of the documents presented by the experts followed. Based on the fact that the subject of the HPC impact on the Dniester River is an acute and very important one, which requires a deep and complex involvement and research, the experts have analyzed the situation in all its complexity and multidimensionally and described in detail the findings, observations and recommendations needed to solve the problems (over 1000 pages). Thus, the documents delivered by the experts proved to be voluminous and needed optimization in order to be presented much more concisely and accurately. Numerous meetings were organized to rationalize the texts and their grammatical and stylistic wording. After Study proof reading, the texts prepared by Russian speaking experts ( e.g. from Transnistrian region) were translated into Romanian, and those prepared in Romanian were translated into Russian. Therefore, the study became accessible in two languages, Romanian and Russian. The Romanian version of the technical study was laid out and sent by e-mail to the beneficiary, the Ministry of Environment on 21 October 2021.

### **September 2021. The 9<sup>th</sup> meeting of the Project's Board**

On September 17, the Secretary of State of the Ministry of Environment, Mrs. Iordanca-Rodica Iordanov requested a last extension of the project, invoking the postponement of the 3rd bilateral meeting of the Dniester Commission originally planned for the end of September and transferred for 28-29 October 2021.

Considering that the project was to end on 15 October and that the meeting of the Dniester Commission would take place after that date, the Ministry of Environment requested the extension of the project activity until January 15, 2022.

On September 21, a message was sent to the members of the Supervisory Board of the project regarding the results of the project and its extension with the proposal to implement a Capacity Building Program for the Ministry of Environment between October 2021 – January 2022, focused on the logistical organization of the meeting of the Dniester Commission, but also on the participation in the presentation of the topics included in the agenda of the meeting. This was approved at the meeting of the Supervisory Board of the project on September 27, 2021.

**December 2021. Finalization of the methodology for estimating the damage caused by the operation of Dniester Hydropower Complex**

On December 13, an initial draft of the Methodology for the estimation of damage assessment, elaborated by the international legal expert Felix Zaharia and the national legal expert Alexandru Cojocari, was sent to the Ministry of the Environment. The Methodology is based on the regulations of the Rome Agreement, and constitutes a "framework methodology", which sets out the main elements of a damage assessment methodology (definition of damage, determination of categories damage, geographical and temporal boundaries, mechanisms for obtaining and processing data). The Rome Agreement stipulates that the Parties determine the damage on mutual basis, so the draft methodology needs to be coordinated with the Ukrainian side too. The document is also appropriate in the context of the forthcoming negotiations with Ukraine on the draft Agreement on the Functioning of the DHPC and could be proposed as an annex to it.

On December 17, an approach and operating method for elaboration of the Methodology for estimating minimum and ecological flows, proposed by the international hydropower expert Ionel Zlate, based on internationally recognized flow estimation methods and based on the observations of DHPC was sent to the Ministry of Environment.

**OUTPUT II Capacity Building of Moldova negotiation team****January – June 2019. Legal Analysis.**

Legal analysis was aimed to support the team on negotiators of Moldova in understanding the legal implications of the particular articles of the Agreement of Dniester HPC, legal implications of the Technical Regulations of Dniester HPC and the national and international legal framework relevant to cross-border water courses and infrastructure. Two legal consultants were contacted in this regard. One national and one international. More specifically, the international consultant delivered the following reports:

- (i) Comments to the Rules of exploitation of water reservoirs of Dniester HPC.
- (ii) Report on lease of land for the functioning of Dniester HPP-2.
- (iii) Report on the application of Espoo Convention.
- (iv) Report on the analysis of International legal background.
- (v) A draft on the Agreement on functioning of Dniester HPC (under preparation)

The national consultant delivered the following:

- (i) Report on the analysis of the Rules of exploitation of water reservoirs of Dniester HPC
- (ii) Report on the legal assessment of the Agreement between Government of Moldova and Ukrainian Cabinets of Ministers on ensuring the functioning of Dniester Hydro Power Complex<sup>1</sup>

- (iii) Report on the analysis of national legal provisions regarding the lease of land to foreign countries and legal amendments proposal
- (iv) Report on domestic application of Espoo Convention in Moldova and the steps that have to be taken by Moldova for its application in regard to Dniester HPC, including the findings of an international expert
- (v) Report on in-depth analysis of international commitments of Moldova and Ukraine on water and environmental governance
- (vi) Report of legal aspects of existing national policies of Moldova and Ukraine, legislation, codes, strategies, relevant for transboundary river management and hydropower

### **January 2020. Field visit abroad (hydropower infrastructure) – Finland.**

The scope of the field visit was to complement the trainings on negotiations and legal analysis with the accustoming of best practices of exploitation of cross-border hydropower infrastructure and dams from other European countries.

In this regard upon requests of the project beneficiaries, a field visit to an international cross-border HPP was organized. It was decided to organize such a visit in Finland as it would serve as a good example of long-term cooperation, established between Finland and Russian Federation, in managing a cascade of 4 hydropower plants on Vuoksi River. 7 members of Dniester Commission and team of negotiators from Moldova participated in this field visit.

As a result of the three day visit the Dniester Commission members and group of negotiators from Moldova got acknowledged with best practices of dams and hydropower operation within cross-border context. They have learned more about the coordination of the operation of dams and hydropower between upstream and downstream countries. They have better understood the practice of Finland in the application and enforcement of technical Rules of operation of dams and hydropower infrastructure. They became familiarized with the insights of the methodology that is applied and how are estimated and monitored the environmental flows. They got acquainted with the decision-making process and collaborative management of watercourses. The participants also found out best practices on River Basin Management Plans and flood control.

### **February – December 2019. Trainings on water diplomacy, international water law and negotiation skills.**

The trainings and workshops were aiming at enhancing the negotiation skills of the Moldovan governmental team tasked with the negotiation of the Agreement on Ensuring the Functioning of Dniester Hydro Power Complex. Thus, the primary target are Moldovan team of negotiators. Nevertheless, due to increased interest Moldovan representatives in the Commission for Sustainable Use and Protection of the Dniester River Basin and public servants from relevant institutions had also attended the events improving their negotiation skills.

In 2019 the project provided 4 workshops on international water law and diplomacy discussing international best practices on environmental governance on water resources in the Dniester River Basin in the context of hydropower development on the River. The workshops took place during February 28-March 01, 9-10 July, 24-25 September

and 6 of December 2019 and consisted in training sessions on water diplomacy, negotiation strategies and skills, as well as presentation of best international examples of transboundary water resources management. The workshops and trainings had been conducted by two experienced international experts and one national expert in the area of international public law and diplomacy, international water law and business negotiations.

The first workshop, held in February 2019, was focused on the following topics: Negotiations with Ukraine regarding the Dniester River – latest developments (draft Operating Rules, draft Agreement), International legal framework applicable to the Dniester River, the theory and practice of negotiations concerning transboundary water management issues, Dniester River negotiation exercise – working with a team and a mandate, transboundary watercourses negotiations examples, Dniester River negotiation exercise – identifying the tools (matters of fact, legal instruments), finding help and identifying possible packages, Settlement of transboundary watercourses disputes.

The second workshop took place in July 2019 and presented the key principles of the UN Watercourses Convention and the UNECE Water Convention, the legal frameworks of the UNECE Espoo and Aarhus Conventions, the dispute settlement mechanisms and case law, the joint water infrastructures in the Senegal watershed, the public participation and the human rights to water and sanitation and simulation of negotiation exercises.

The third workshop held in September 2019 and examined technical Rules of Exploitation of cross-border infrastructure, models and content of bilateral Agreements of cross border infrastructure with transnational impact, application of Espoo Convention and other International legal background relevant to cross-border infrastructure, lease of land to foreign countries building cross-border infrastructure.

The fourth workshop held in December 2019 focused on the stages of negotiation process, methods of communication in negotiations, tools for the needs assessment of negotiations partners, building of arguments and agenda setting, techniques and tactics of negotiations, simulations of negotiation process.

### **February 2020 – training on communication and negotiation skills.**

A second training on communication and negotiation skills was delivered by a national expert, Ludmila Stihi. The training was a follow-up of the training organized in December 2019. The workshop was focused on:

- Analysis of negotiation techniques and tactics.
- Exercise: applying negotiation techniques.
- Self-assessment test. Behavior in difficult situations
- Styles for solving difficult situations in negotiation
- The negotiation process.
- Simulation of negotiation situations in 3 teams
- Unchecking and analyzing situations
- Discussions and conclusions
- Development Plan



**April 2020 - Finnish experts (planned) arrival in Moldova.**

As a follow up to the field visit in Finland, it was proposed to the Finish partners to conduct a two days training in Moldova. The subjects of the trainings were coordinated with the Focal Point of the Project and with other relevant stakeholders dealing with water governance in Moldova. Consequently, the following block of subjects was proposed for the workshop:

- a. Compensation mechanisms of damage produced by dams and hydropower infrastructure
- b. Discharge Rule of operating dams and hydropower infrastructure on cross-border rivers
- c. Joint Finnish-Russian Commission on the Use of Frontier Waters
- d. Hydrological monitoring
- e. International water Law, negotiations and diplomacy
- f. Multi-Criteria decision analysis

Due to COVID19 outbreak at beginning of spring the Finnish team proposed to postpone the visit in Moldova for two months.

*Note 1:* In June 2020 the contacts with Finish counterparts were resumed with the proposal to organize a 1 day online training on selected topics convened earlier. Due to the fact that the summer months of July and August are holyday months for most of the public servants and experts of research institutions, the contacts from Finland proposed to come back to this issue at the end of summer/beginning of autumn.

*Note 2:* Contacts with Finnish experts were resumed in October. Two dates were proposed for conducting the trainings (December 2020 or January 2021). The proposal was to focus on the subjects from the blocks (a) and (b) mentioned above and based on the Beneficiary feedback additional online trainings could be considered with the remaining subjects. UNDP Project Unit is expected to further take the lead with the organizational issues of this event.

**April 2019. Support of Moldovan team of Dniester Commission during the 2<sup>nd</sup> Meeting of Dniester Commission in Kiev (April 2019).**

Four key results were achieved with the support of the project. The first key result was to delay the approval of Technical Regulations of Dniester HPC and to allow enough time for the Moldovan Government and the technical consultants from EPC-JBA to review them in-depth. Secondly, in the current version proposed by Ukrainian counterpart these Technical Rules give no control or decision-making rights to Moldovan Government whenever these Rules are changed. Therefore, it was proposed the setting up of a legal sub-group to analyze in more details the legal implications of the Regulation.<sup>2</sup> Thirdly, thanks to the project support, there was postponed the approval of a table with multi-annual environmental flows (e.g. time series for over 100 years of hydrological data from the gauging stations of Ukraine located upstream and downstream to Dniester HPC). These data were proposed by Ukrainian counterparts to

be approved by Moldovan team of Dniester Commission with no prior consultation. The aim of Ukrainian counterpart is to include these data in the Technical Regulation. The Project aims to carefully review the methodology of these multi-annual environmental flows before any prior approval. Lastly, the Ukrainian counterpart agreed to include in the minutes of the meeting their readiness to present to Moldovan counterpart the technical, environmental and permissive documentation of Dniester HPC.

**June 11, 2020 – meeting MARDE.**

As a result of a meeting at MARDE with focal point of the Project, the specialists of the Ministry from Integrated Water Management Unit requested additional support for legal assistance and negotiations. It was agreed that the subjects of interest will be developed in a ToR by UNDP and consulted with the Ministry. The ToR was consulted with the MARDE at 10 September. Points suggested by the Ministry included taking into account the current draft Agreement with the idea of having discussions with individuals who have been involved in discussions over time on this Agreement. Ministry also demanded support to defining the mandate of negotiation and the arguments for each point of the Agreement. Ministry also suggested assistance to examining the risks, both from the perspective of signing the Agreement and for rejecting it. Based on the comments received on September 11, the ToR was reviewed and initiated proceedings for the contracting of international expert.

The International Expert was contracted in October 2020 and is available for the full support to the Ministry, team of negotiators and Dniester Commission.

**February – October 2021. Training workshops in the field of water diplomacy and negotiation techniques**

Virtual talks with Finnish partners on cooperation on transboundary water management have been resumed in February.

On March 26, in collaboration with the Finnish Ministry of Agriculture and Forestry was organized via Zoom platform the workshop „Transboundary water management”. The aim of the workshop was to exchange of experience with Finnish water management authorities and consolidate the knowledge of Moldovan water authorities on the regulation of hydropower and streamlining the multi-criteria decision-making process for a sustainable water management in transboundary context. The Moldovan participants that had attended the workshop were members of the Dniester Commission and members of the official delegation empowered to negotiate the draft Agreement on functioning of DHPC between the Government of the Republic of Moldova and the Cabinet of Ministers of Ukraine, as well other interested stakeholders. The attendees received information on the procedures on the use of transboundary watercourses between Finland and Russia, including the presentation of 2 case studies on the provisions and implementation of the Intergovernmental Agreements on cooperation in the field of water (Lake Inari) and, the protection and use of transboundary watercourses and international lakes (Vuoksi River and Lake Saimaa). This exercise was ranked as extremely useful by participants and helped them to understand the mechanisms of cooperation between countries with traditions of mutual respect in the

management of transboundary waters. The workshop was attended by about 55 people from Moldova.

On April 13 took place the workshop "Bilateral agreement vs Dniester Commission - face to face" presented by the international expert Felix Zaharia. The purpose of the workshop was to analyze from the perspective of the responsibilities of the Dniester Commission the issues regulated by the draft Intergovernmental Agreement on the functioning of the DNPC. The expert specifically aimed to develop arguments in favour of elimination from the draft Intergovernmental Agreement of the provisions falling within the competence of the Dniester Commission. The workshop was attended by 27 people.

During July and August, several virtual communications took place with international experts Felix Zaharia and Ionel Zlate on the elaboration of the draft agenda of the workshop "Negotiation aspects in the context of the results of the study and recommendations of the international legal expert and the international hydropower expert" that was initially planned for September 2021, but at the initiative of the Ministry of Environment was transferred for 5 October 2021. The training was organized in hybrid format, 25 persons have attended physically the event, while the other 20 connected through Zoom platform.

On 16 December, the workshop on theoretical and practical aspects in the field of registration and use of public property took place, where the representative of the Public Property Agency provided the historical background and current situation with regards to negotiation process on Naslavcea Dam property issues within the property group of negotiators of the Intergovernmental Agreement on functioning of the Dniester Hydropower Complex, and the expert Felix Zaharia came up with suggestions for addressing the property issues on the Naslavcea dam in the context of negotiating that Agreement. The workshop was attended by 30 people.

### **June – November 2021. Support for the Moldovan side of the Dniester Commission**

Starting with June, the Ministry of Agriculture, Regional Development and Environment has renewed its the dialogue with Ukraine on aspects related to the Dniester Commission. The representatives of the project were invited to attend the meetings of the Moldovan side of the Dniester Commission. Consequently, the adverse effects that were identified within the Study, were presented in the meeting that took place on 30 June, at the Ministry of Agriculture, Regional Development and Environment.

On July 2, the project coordinator attended the regular meeting of the Moldovan side of the Commission in order to develop Preliminary Agenda for the 3<sup>rd</sup> bilateral meeting of Dniester Commission, which was initially scheduled for the end of September 2021.

On July 20, an online meeting with the participation of project's representatives and Apele Moldovei'' Agency took place in order to finalize the Preliminary Agenda of the bilateral meeting of the Dniester Commission.

October was mainly dedicated to the preparatory activities of the 3<sup>rd</sup> bilateral meeting of the Dniester Commission, which took place on October 28-29, 2021 in Orhei, Republic of Moldova, with the participation of over 60 people, among which were members of official delegations of the Republic of Moldova and Ukraine, experts and observers. In this sense, the project has provided logistical support (selection of the

location, organization of equipment, transport, ensuring translation, printing of materials), but also of a technical assistance nature:

- A meeting preceding the reunion of the Dniester Commission with the participation of the State Secretary of Ministry of Environment, the co-chair of the Commission on behalf of Moldovan side, members of Moldovan delegation to the Dniester Commission, the project coordinator and both international experts took place on 27 October. The strategy of dialogue with the representatives of Ukraine was defined during that meeting. The involved experts developed guidelines for the discussion of item 8 of the Agenda of the meeting which referred to the presentation of the likely negative impacts identified by the Study. ;
- presentation by the project experts of the Study of the most important research findings and results (methodology for estimating minimum flows and spring ecological flood - rapporteurs Ana Jeleapov and Ilia Trombitsky, impact on river hydrology and hydro morphology - Ana Jeleapov, impact on hydro biodiversity - Serghei Filipenco and cost estimation for lost ecosystem services - Olga Cazanteva);
- presentation by Ana Jeleapov of the Document analysing the multiannual average values and the calculated monthly and annual natural runoff of the Dniester River in section HPP2 -2 (F-40500 km<sup>2</sup>) for a period of long-term observations from 1895 to 2017.

On November 17, at the Ministry of Environment took place a meeting that summarized the results of the Dniester Commission meetings with the physical presence of the project coordinator and online participation of experts Felix Zaharia and Ionel Zlate.

In accordance with the opinions of the members of Dniester Commission and the management of the Ministry of Environment the meeting of the Dniester Commission in 2021 organized with the support of the Dniester Study project was one of the most successful for the Republic of Moldova. The positive result of these outcomes is due to the support provided by the Project in the elaboration and presentation of the necessary materials, which scientifically supported the position of the Republic of Moldova in demonstrating the identified negative impacts .

On November 18, the first version of comparative observations on the draft Rules for the operation of the Dniester Hydropower Complex from 2017 and 2021, which were improved along the way, was sent to the Ministry of Environment through email.

### OUTPUT III. Awareness rising campaign and cooperation with Civil Society.

Implementation of this Component was mainly possible in the last year of project implementation, as it aimed at providing the public with information on impacts of the functioning of the Dniester HPC, based on completed Impact Study. Thus, after Impact Study completion, a series of activities were conducted based on communication strategy of the project. The activities included: 6 roundtables organized within national basin and sub-basin commissions, press club dedicated to Dniester Day, organization of the visit for national journalists to Naslavcea dam, participation in radio and TV debates. As result the communication campaign, the results of the Dniester Impact Study was presented over 160 times during May-November 2021 in various mass media sources and social media.

**Below, are presented the detailed information with regards to implementation of 3rd Component in chronological order:**

**February 2019. Support civil society to attend the Board of EIB in Brussels/Luxemburg (February 2019).**

The project supported the participation of one CSO representative at the Annual Board of Directors of European Investment Bank in Luxemburg discussing its Energy Financing Strategy in Eastern Europe, including financing of Hydropower infrastructure. The CSO representative raised the Dniester HPC issue and suggested the EIB to consider public and civil society concerns if deciding to financially support the extension of Dniester HPC and the construction of six new HPPs on Dniester. The project supported only the transportation costs.

**April 2019. Support of civil society to attend Dniester Commission in Kiev (April 2019).**

The project supported the attendance at the 2<sup>nd</sup> Dniester Commission in Kiev of four members of the environmental Moldovan NGOs: Iuliana Cantaragiu (National Environmental Center), Rodica Iordanov (Eco-Contact), Pavel Zamfir (Eco-Lex) and Ilya Trombistky (Eco-Tiras). The first three of the above mentioned supported the positioning of Moldovan delegation of Dniester Commission to bring more clarifications on the content and impact of the technical regulations of Dniester HPC, environmental flows methodology and suggestions to set up a legal group within the Dniester Commission that would take care of legal impacts of the acts approved within Dniester Commission.

**May 2019. Dniester Day campaign (May 2019).**

The project team also supported the production of awareness raising video materials were five influencers (Ion Lazarencu, Dmitri Volosin, Lilia Ojovan, Pasha Parfeni, Ana Irina) advocated for Dniester protection. The campaign was conducted by UNDP with no costs from the budget of the Dniester HPC Project and had multiple visualizations. This was a small and needed campaign on awareness rising of Dniester ecological challenges that will prepare the population for a larger information campaign once the results of the study will be available.

**May -December 2021.**

In the context of the achievement of Output 3, the activities were focused on promoting the results of the Study and disseminating the information on the impacts caused by the inappropriate operation of the Dniester Hydropower Complex by Ukrainian side.

The press club from June 3, dedicated to the Dniester Days, was the departure point in the communication campaign launched by the project and was designed to provide to general public information about the impact resulted from the operation of Dniester Hydro Power Complex and presenting the preliminary results of the Study. The media club was attended by a large number of media representatives, and the information was disseminated in **over 65 media and social media sources**. The event was broadcast live on Privesc.eu. The event was attended by the former Minister of Agriculture, Regional Development and Environment, Mr. Ion Perju, Ms. Dima Al-Khatib, UNDP

Resident Representative in the Republic of Moldova, while the project's experts Ana Jeleapov, Ruslan Melian and Serghei Filipenco have delivered presentations with the most important preliminary findings of the Study and responded to press questions.

On July 5, the project coordinator gave an interview to the Moldova.org news site about the impact of the Dniester Hydropower Complex on the Dniester River, the ecosystems, the economy and the population of the Republic of Moldova.

On September 14, a press conference was organized with journalists at Naslavcea, where journalists had the opportunity to take interviews from the Secretary of State of the Ministry of Environment, Iordanca -Rodica Iordanov, Mr. Radu Cazacu, Deputy Director of the „Apele Moldovei” Agency, the authors of the “Study on the social and environmental impact of the Dniester Hydropower Complex”, Ana Jeleapov, Serghei Filipenco and Viorel Miron. The visit was attended by 10 media institutions, and the entire visit was broadcast live on Realitatea.md. The topic of CHN's social and environmental impact was covered by over 30 media and social media sources.

On September 27, the project coordinator together with the experts Ana Jeleapov and Serghei Filipenco and the deputy director of "Apele Moldovei" Agency participated in the show "Concret" on the public television station Moldova 1, where they presented some results of the project.

On December 7, the project coordinator gave an interview to Moldova radio station, the show “Actualitate”, where she spoke about the most significant adverse effects identified by the Social and Environmental Impact Study of Dniester Hydro Power Complex

On December 16, the project coordinator gave an interview to TVR Moldova, for the show "Telematinal".

The results of the Study were also presented in the framework of 6 round tables on basin and sub-basin committees, that aimed at enhancing the understanding about changes/ reasons in river flow patterns and degradation of eco-systems, on which many livelihoods depend in Dniester basin:

- on 20.09.2021 - Bâc sub-basin committee, 40 participants;
- on 23.09.2021- Dniester Basin District Committee, 50 participants;
- on 28.09.2021 - Răut Sub-Basin Committee, 48 participants;
- on 12.10.2021 Naslavcea-Vasilcău Sub-Basin Committee, 20 participants;
- on 21.10.2021 Botna Sub-Basin Committee, 21 participants;
- on 01.11.2021 Ichel and Camenca sub-basin committee, 23 participants.

These have contributed to gaining local knowledge about Dniester water pressures and likely impacts on national economy and local livelihoods.

Based on the technical sub-studies, **10 press articles** were written, which were published on medium / undp platform and taken over by the written and spoken press in the country.

Relevant information on the subject of social and environmental impact of CHN was reflected in 4 infographics, distributed in the social media space.

A video spot, with unique information and captivating images about the Dniester and the Naslavcea Hydroelectric Power Plant was made and posted in the media space.

The brochure with non-technical information, accessible to the general public about the impact of the Dniester Hydropower Complex on the environment, the ecosystems of the Dniester River and the economy of the Republic of Moldova was published in Romanian - 50 copies, Russian - 25 copies and English - 25 copies.

The subject of the Social and Environmental impact of the functioning of the DHPC, as a result of the presentation of the results of the study was reflected over 160 times during the year in various media and social media sources.

The Dniester Day logo was edited and promotional materials were made.

## PART II. RISKS OF THE PROJECT

Risks as defined in Project Document and mitigation measures taken by Project Unit

Description	Type	Impact & Probability 1 (low) to 5 (high)	Mitigation Measures
<p>1. The Agreement on the functioning of the Dniester HPC will be signed prior to obtaining necessary data and information</p>	Political	<p>I = 5 P = 5</p>	<p>At the beginning of the Project this was considered a high political risk beyond the control of UNDP.</p> <p>9 trainings on water diplomacy and negotiations took place (February/March 2019; July 2019; September 2019; December 2019; February 2020, March 2021, April 2021, October 2021, December 2021). Risks and recommendations on concluding transboundary water Agreements were provided. Negotiations and tactics of negotiations discussed. Simulation exercised conducted.</p> <p>At the same time the Beneficiary of the Project was aware that before engaging in further negotiations the Objective 1 of the Project (the Impact Assessment Study) must be achieved. In this sense the a letter signed by the Minister of Economy on 27 February 2020 to the Ministry of Energy and Environmental Protection of Ukraine provision of technical documentation of Dniester HPC by the Ukrainian part was a key condition for further advancement of the negotiations on the Agreement of the Dniester HPC. Prior to this, on 16 September 2019 the MARDRE also submitted a letter to the Ministry of Energy and Coal informing about the UNDP Moldova Project and requesting the technical information of Dniester HPC.</p>
<p>2. Data holders will not provide free and quick (in due time) access to data / information needed to conduct the Study, both in Moldova and Ukraine.</p>	Managerial	<p>I = 5 P = 3</p>	<p>Free / quick access to requested data was crucial for project expected outcomes.</p> <p>In this regard three rounds of letters were drafted and submitted by UNDP Project Team to the national data holders through MARDE as follows: July/August 2019, January/February 2020, August 2020. In addition face to face meetings between the EPC-JBA consortium of companies with key national institutions were conducted on 15 and 16 May 2019 (SHS, Apele Moldovei, AGRM, MARDE, Agentia Cadastru) and follow up discussions via e-mails and Skype continued periodically in 2019 and 2020.</p>



			<p>Aiming at practical monitoring and research on the efficiency of the spring ecological flood on the Dniester River after the discharge by Ukrainian Novodnistrovsk Hydroelectric Power Plant the project has organized field visit to Dniester river starting with 08.04.2021 when the Ukrainian authorities have formally notified Moldova about start of 2021 spring discharges. Thus, a series of 4 field visits on 10 April, 14 April and 15 and 16 May were conducted with project support.</p> <p>For the detailed expertise of the draft Regulation on the operation of the water reservoirs of the Dniester Hydropower Complex and the buffer reservoir, (2017) and the elaboration of proposals to improve the document, but also for the completion of sub-studies of hydrology and morphology of the Dniester river were necessary a series of additional data that were requested from the State Hydrometeorological Service in May 2021.</p> <p>In regard to international data holders the actions taken envisaged: (i) Official letters requests of data from Ukraine through MARDE/MFAIE (May/June 2019, September 2019) (ii) Official data requests from Russian Federation through MARDE/MFAIE (September/October 2019, December 2019) and (iii) a meeting of Moldovan Embassy in Moscow in August 2020. Actions taken by Project Management Team included emails request to the data holders from Ukraine through GEF/OSCE Project (emails dated June 2019, December 2019 and a Skype discussion in August 2020) as well as emails to RusHydroProject from Russian Federation (March and April 2020).</p>
<p><b>3.</b> The Moldovan Negotiation Group will not coordinate the Agenda for re-current negotiation meetings with the Project Management.</p>	<p>Managerial</p>	<p>I=3 P=2</p>	<p>In the course of the Project one single negotiation meeting took place in Kiev in December 2018.</p> <p>No strategic decision was taken to be needed the involvement of the involvement of the Project. It should be outlined that this was also the period when the national and international consultants were contracted.</p> <p>The Project Manager informed should the members of the Negotiation Group informed about the</p>

			<p>planned activities and expected interventions of legal consultants prior and after the meeting from December 2018.</p> <p>Starting with June 2021, the Ministry of Agriculture, Regional Development and Environment has renewed its the dialogue with Ukraine on aspects related to the Dniester Commission. The representatives of the project were invited to attend the meetings of the Moldovan side of the Dniester Commission. Consequently, the adverse effects that were identified within the Study, were presented in the meeting that took place on 30 June, at the Ministry of Agriculture, Regional Development and Environment.</p> <p>On 2 July, the project coordinator attended the regular meeting of the Moldovan side of the Commission in order to develop Preliminary Agenda for the 3rd bilateral meeting of Dniester Commission.</p>
<p>4. The members of Negotiation Group do not allocate enough time to participate in project activities to secure the production the Outputs 1.1 and 1.2 and implicitly achievement of the Specific Objective 1</p>	<p>Managerial</p>	<p>I=4 P=3</p>	<p>Actually, members of negotiation group and Dniester Commission had time to attend the workshops, field visits and to analyses the produced documentation as a result of component 2 of the Project (Capacity building).</p> <p>Consultations and support in this regard is continuing.</p>
<p>5. The Governmental Institutions do not act in transparent way – the access of general public to information and participation in environmental decision making is restricted.</p>	<p>Political</p>	<p>I=2 P=1</p>	<p>For the period of the members of the negotiation team cooperated with the Project to the extend allowed by the mandate they have. The trainings were also attended by members of civil society and experts from environmental public institutions not necessarily involved in the negotiation process.</p> <p>Trainings organized by the Project took place in larger and smaller formats. Prior to organization the list was approved with the Beneficiary.</p> <p>In this regard the Beneficiary was quite open and transparent.</p>

<p>6. The MARDE do not support the establishment of the institute of Observers to the Dniester River Commission and to offer the status of Observer to the most advanced NGO in the field of Dniester River protection.</p>	<p>Political</p>	<p>I=2 P=4</p>	<p>Actually MARDE was quite open in inviting civil society representatives and independent experts in the works of Dniester Commission.</p> <p>At the same time Project supported in travel costs of titular civil society members of Dniester Commission at the 2<sup>nd</sup> meeting Dniester Commission works from Kiev (April 2019) and of two independent experts that supported and formulated the position of the Moldovan team of Dniester Commission at this event.</p> <p>Considerable support was offered by the project for the preparation and organization of the 3<sup>rd</sup> Dniester Commission (28-29 October 2021). The project contribution to those events was considerable, taking also into consideration the involvement/participation of the project experts in the preparation of the Moldovan party of the Dniester Commission by identifying the milestones and defining the dialogue strategy with Ukraine representatives, at the same time, the project offered support in the development of the new version of the DHC Operating Agreement, which stipulates in detail the concerns and requirements of the Republic of Moldova to ensure an adequate DHC operating and monitoring regime.</p>
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**Additional risks identified by Project Management and measures taken/proposed:**

**Risk 7**

Event: Finalization of the second part of the study possible by the middle of November 2020, which will not leave sufficient space to consult it with beneficiary.

Causes:

- (a) Poor coordination among companies conducting different components of the study of impact. Second part of the study depends on finalization of the first part where both companies have shared roles.
- (b) Slow collection of data sets from national institutions
- (c) Lack of quantitative data on biodiversity, water quality and socio-economic impacts leading to hardships

Measures applied:

- (a) Hiring of additional local experts
- (b) Requested support from MADRM
- (c) Direct interaction institutions holding the data sets

(d) Encouraging of EPC-JBA to directly approach the national institutions

Impact: It may lead to the need to a Project extension.

### **Risk 8**

Event: Awareness rising, and communication campaign not done in the period of October-November 2020

Cause: Delay in finalization of the second part of the study.

Measures applied:

(a) Encouragement of EPC-JBA to fasten the finalization of the first part of the study by 30 September 2020 and presentation of the first draft of the second part of the study by 15 October 2020.

Impact: Possible need to extend the Project or to extend solely the component related to communication for the year 2021.

### **Risk 9**

Event: damage assessment methodology not done on time

Cause: access to poor quality of quantitative data on the first part of sub-studies

Measure proposed: recruitment of a national team on consultants to take this task.

Impact: Government won't be able to approve it this year

### **Risk 10**

Event: Lack of access to the technical primary data from Russian Federation. The Institute RusHydroProject (the Institute holding the data) communicated to Moldovan counterparts in August 2020 that they are available to be contracted only to provide interpretation of these data.

Causes: Ownership of primary data is source of income for RusHydroProject.

Measure taken: encouragement of EPC-JBA to directly approach RusHydroProject.

Impact: Moldovan Government will have access to interpretation of data, but lacking primary documents will have a poor negotiating position with Ukrainian counterpart.

## PART III. LESSONS LEARNED

### **Conclusions and lessons learnt.**

#### **Results:**

On the basis of the final results of the project, we may ascertain that it has attained the established objectives despite bottlenecks and challenges along the way of its implementation.

In Component I, it was possible to formulate a justified answer to the Government of the Republic of Moldova on the impacts caused by the DHPC operation on the population, economy and ecosystems of the Republic of Moldova. It was possible to identify the risks and formulate recommendations on their mitigation. A mechanism was proposed for the calculation of prejudice and compensation of damages in case of DHPC faulty operation and concrete measures were developed to decrease/eliminate the adverse effects generated by DHPC.

As a result of the performed study, it was found that the most important impact aspects of DPHC operation may be divided into three categories:

- with negative effects – impact on the hydrological status (pulsating flow wave effect), morphological status (sediment transportation), thermal regime, on the hydro-bionts (the areas covered with macrophytes increased, the level of zooplankton and zoobenthos decreased, significant impact on the ichthyofauna, on the ecosystem services (services of water use, provision with fish, wooden mass, hay, carbon absorption, water purification function, habitats maintenance, cultural services), on the socio-economic situation (impact on agriculture, industry, tourism, contribution to demographic decline, etc.);
- with regulatory effects - - the minimum flows have doubled, and a minimum flow of 100 m<sup>3</sup>/s is ensured (mitigation of drought effects), the maximum flows were reduced in order to attenuate flood risks, seasonal flow regulation takes place;
- effects that need to be further studied - lack of certainty as regard to the permanent discharge of those 100 m<sup>3</sup>/s, water losses through infiltration, volume of infiltrations, impact on groundwater, increased risk of moisture excess in neighboring areas, intrinsic non-compliance with DHC operation rules (human, technical errors).

The study scientifically confirms that the entire DPHC has a significant impact on the environment, and this impact, according to national and international environmental regulations, must be eliminated or compensated. The Ministry of Environment of the Republic of Moldova is thus provided with the necessary means to take specific measures, mainly in cooperation with the Ukrainian partners and secondarily through policies, programs and plans for national and local social-economic development.

Component II on the consultative support and strengthening the negotiation capacities has significantly contributed to strengthening the negotiation and communication skills of the civil servants from the environmental public authorities, members of the Dniester Commission and members of the delegation of negotiators of the DPHC Operating Agreement. Thus, a series of workshops were organized during the implementation period on topics of interests coordinated with the project beneficiary, consultancy was offered at request to the representatives of the ministry, a study visit was organized to Finland, as well as virtual exchange of experience on

the cross-border water management topic between the Ministry of Environment of Moldova and Ministry of Agriculture and Woods of Finland.

Considerable support was offered by the project for the participation of the Moldovan delegation in the 2nd meeting of the Dniester Commission in Kiev (4-5 April 2019), and also for the preparation and organization of the 3rd Dniester Commission (28-29 October 2021). The project contribution to those events was considerable, taking also into consideration the involvement/participation of the project experts in the preparation of the Moldovan party of the Dniester Commission by identifying the milestones and defining the dialogue strategy with Ukraine representatives, at the same time, the project offered support in the development of the new version of the DHC Operating Agreement, which stipulates in detail the concerns and requirements of the Republic of Moldova to ensure an adequate DHC operating and monitoring regime.

Regarding Component III, the communication campaign on the sustainable management of Dniester river, it was possible only in the second half of 2021, after completing the Study. In this period, various press conferences, TV shows (including with the participation of the Ministry of Environment, contracted experts, project team), radio shows, publications of the study results in newspapers, on social media and on the website of the ministry and UNDP, etc. took place. This shows an increased interest of the society in the topic of Dniester water management, and the need to periodically inform the public on the effort made the authorities regarding the sustainable management of Dniester river, including in a cross-border context and in relation to the negotiations with the Ukrainian party. A summary brochure with the most eloquent results of the study was edited and published in three languages (Romanian, English and Russian). Consequently, the project increased the interest of the society in the Dniester topic, and the public expectations are increased towards the state authorities and concrete actions taken to ensure enough quantity and quality of water in Dniester river. These have contributed to gaining local knowledge about Dniester water pressures and likely impacts on national economy and local livelihoods.

### **Bottlenecks**

Numerous impediments were faced in the project implementation period. Their character was multiple and may be defined as follows:

- ✓ Ambitious deadlines for the finalization of the Impact Study. The deadline exceeding was caused by the following reasons:
  - The initially contracted international consortium of companies has failed to deliver on time the Impact Study, due to its complexity, lack of access to initial data sets, weak feedback from the beneficiary, etc.
  - While renewing the team responsible for Study completion, the project encountered difficulties in identifying and hiring national experts due to the small number of specialists of each sub-study (hydrogeology, hydrotechnical, infrastructure, etc.);
  - Weak cooperation among national experts to ensure coherent Study in terms of content and conclusions. As result the project team has taken over the quality assurance role of the sub-studies and compelling the final Study.
  - In the course of Study advancement, the team of experts determined that they needed more time to complete the task, which proved to be quite complex and

- difficult and required collection and analysis of a wide range of data and information;
- Validation of the deliverables on each sub-study was not possible in the established time limits, especially for those results that did not meet the expectations of the beneficiary. This stems from the different views of the experts (the phenomenon “professional individualism”) and beneficiary on certain issues and solution.
  - Inefficiency of interaction between the state institutions which led to the impossibility of participation/contribution of all the relevant institutions in the successful performance of all project components, as well as of the acceptance of some results of it;
  - Difficulty of the data collection process, reluctance of some state institutions to present the requested data or provision of incomplete data;
  - Rudimentary and delayed data offered by the Ukrainian party relating to the chemical and biological parameters upstream the Dniester HPC and those relating to the operation and subsequent development of Dniester HPC;
  - Lack, in the Republic of Moldova, of the Dniester HPC Technical Documentation, which has been developed in 1980’s by the Soviet research institutes, and the refusal of Ukraine and Russian Federation to offer it;
- ✓ Delay with delivery of the final Dniester Impact Study, has consequently delayed the implementation of the awareness activities, as well as the development of the Methodologies for estimating damages and compensatory measures, and the one for estimating the minimum flows.
  - ✓ The project was implemented in a rather complex context, characterized by frequent changes by the Government and, respectively, changes of responsible officials from the Ministry of Environment (former MADRM), Ministry of Regional Development and Infrastructure (former ME) and MFAEI, affecting to some extent the prioritization of the Dniester topic and ownership over project’s results
  - ✓ Regular replacements of the members of the Moldovan side of the Dniester Commission, as well as of the officials involved in the negotiations on the Intergovernmental Agreement between Moldova and Ukraine on the functioning of the Dniester HPC have also affected the implementation of strengthening the negotiation capacities activities
  - ✓ In some cases, the lack of a firm will and clear vision of the project beneficiary regarding the understanding and promotion of the established objectives and unprofessional and noncollegial involvement in solving the onset deficiencies. An example of such deficiencies may be the delayed validation of the sub-studies, especially for those domains in which the beneficiary did not have a clear vision on the results and expectations.
  - ✓ During the project implementation period COVID 19 outbreak has happened. The pandemic has had direct implications on project implementation ( such as impossibility of travelling to Moscow to obtain the Dniester HPC Technical Documentation) and organization of physical training events and awareness activities. The so called “new reality” adaptation period has also interrupted the business as usual work schedule of beneficiary institutions, which has also been a reason for slight delay of project implementation.

### **Solutions identified for bottlenecks:**

- ✓ In the last project implementation year, it was possible to fulfil the planned actions. This was especially due to the change of approach on Component I implementation, which consisted in the unilateral termination of the contract with EPC-JBA Romanian-Irish consortium and contracting local experts with academic profile, including from the Transnistrian region, to develop the necessary sub-studies.
- ✓ The completion of the team of international consultants, starting with 2021, with an expert in hydropower was very useful for the understanding of certain technical aspects of DHC operation and its impact on Dniester river. If before the involvement of such expert in the project the representatives of the Moldovan party of Dniester Commission focused on the findings of the adverse effects of DHC operation (for example, fluctuations, sediments, etc.,) in their dialogue with the Ukrainian party, the expert in hydropower managed to explain the causes of those adverse effects generated by the specific features of the DHC technical operation, as well as to propose concrete solutions for DHC re-technologization to mitigate the impacts of its operation on the environment. This has given to the Moldovan delegation an advantage in the constructive and professional dialogue with the Ukrainian party.
- ✓ In 2021, the discussions on the Methodologies for estimating damages and compensatory measures, as well as the one for estimating the minimum flows, became more intense. The draft documents have been submitted to the beneficiary for comments. To speed up the finalization process, the project team has suggested to the beneficiary joint meetings dedicated to these methodologies.
- ✓ COVID 19 has had its implications on the project activities that presumed public participation, meetings/workshops and/or travel. The project has recalibrated the format of these activities from physical to online one.
- ✓ The early awareness on the Study preliminary findings, has prepared the grounds for Study's results and increased the interest of the public Dniester water security topic, as well as other state authorities that have a role in advancing water security (e.g. President's Office).

## **Recommendations**

1. Continuing providing advisory support and technical assistance for Moldovan authorities for strengthening institutional capacity and the regulatory framework for the management of the Dniester River, including in a transboundary context and negotiation process with Ukrainian side.
2. Continuing the cooperation with the Ministry of Agriculture and Forestry of Finland and the representatives of the Finland. Extending the cooperation with other partners/Commissions, would be beneficial for the members of the Moldovan side of the Dniester Commission.
3. Regularly inform the public about the efforts of the national authorities on sustainable management of the Dniester River, including in a cross- border context and developments in negotiations with the Ukrainian side.
4. Shifting the understanding of beneficiary institutions on their role in project implementation. It is rather the project which is supporting national authorities to advance on Dniester water security issue. The leading role of the national project implementing partner shall be more prominent. It is expected that:



- the stakeholder institutions to be pro-actively involved in project's governance, implementation and maintaining the consequence and coherence in obtaining the results;
  - Beneficiary should be perhaps more involved at the feedback stage for project deliverables (e.g. review and evaluation of the quality of the studies and trainings). Long delays in receiving their feed-back (and in some cases poor or no feedback at all) created difficulties in addressing times the gaps or providing the quality of the study at the level expected by the Beneficiary.
  - Express role setting and recording the relations between the stakeholders yet at the project launching stage, as this procedure is vital for accountability, engagement in the efficient implementation of the objectives and obtaining the expected result;
  - Ensuring a more efficient, trust-based interaction between the state institutions and elimination of the current communication barriers (we mean the refusal of the Zoology Institute to participate in the performance of the study and consideration of its results).
  - Appointment by stakeholder institutions of the most relevant responsible persons who shall correspond to the project requirements, on the basis of which the project has been conceived; replacement of non-performing responsible persons.
5. Before starting such complex projects involving multiple institutions, it would be more appropriate first of all to have a clear commitment from national institutions to cooperate and actively contribute to project implementation.
  6. Strategic involvement and commitments of other high-level authorities in transboundary Dniester management issue (e.g. President's Office, Parliament Commission on Environment)
  7. Identification of a more productive information exchange mechanism between the Moldovan representatives of the Dniester Commission, authorities negotiating the Md-UA Agreement on Dniester HPC functioning and project stakeholders. It would ensure an efficient way of following the progress on both fronts, sharing the information while underlying the impediments and mobilizing intervention;
  8. More openness in regard to beneficiaries when it comes to trainings. Due to confidence of the negotiations process it was difficult to negotiators to be fully open. This somehow created difficulties for national and international experts delivering trainings on negotiations to identify the exact needs of the Government and find the appropriate tools for designing the tactics and strategies of negotiations.