GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title:	Fostering multi-country cooperation over conjunctive surface and groundwater management in the Bug and Neman Transboundary River Basins and the underlying aquifer systems		
Country(ies):	Belarus, [Lithuania], Ukraine, [Poland]	GEF Project ID:[1]	9767
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	5876
Other Executing Partner(s):	UNESCO IHP, UNECE	Submission Date: Resubmission Date:	1 March 2017 11 May 2017
GEF Focal Area(s):	International Waters	Project Duration (Months)	48
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐	Corporate Program: SGP ☐	
Name of parent program:	[if applicable]	Agency Fee ($)	259,450

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	**Trust Fund**	**(in $)**	
		GEF Project Financing	**Co-financing**
IW-1 Program 1 (select) (select)	GEFTF	303,450	1,890,000
IW-2 Program 3 (select) (select)	GEFTF	2,225,300	6,720,000
IW-2 Program4 (select) (select)	GEFTF	202,300	840,000
(select) (select) (select)	(select)		
(select) (select) (select)	(select)		
(select) (select) (select)	(select)		
(select) (select) (select)	(select)		
(select) (select) (select)	(select)		
(select) (select) (select)	(select)		
Total Project Cost		**2,731,050**	**9,450,000**

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: The project aims to advance transboundary water governance through the conjunctive management of surface and groundwater in the Central European adjoining Bug and the Neman river basins as a means to improve water security and sustainability of freshwater ecosystem services, balance competing water uses, and mitigate the expected impacts of climate variability and change.

Project Components	**Financing Type[3]**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**(in $)**	
					GEF Project Financing	**Co-financing**
Component 1.: Improve and harmonize the countries' knowledge of the transboundary water resources, and of the expected impacts of	TA	Outcome 1.1 Countries recognize the transboundary and interlinked nature of the surface waters, aquifers and their dependent ecosystems in the two basins, and	i) Science based assessments of the current state of freshwater resources and dependent ecosystems in the two basins leading to agreement on a	GEFTF	1,059,667	3,000,000

[1] Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.
[2] When completing Table A, refer to the excerpts on GEF 6 Results Frameworks for GETF, LDCF and SCCF and CBIT guidelines.
[3] Financing type can be either investment or technical assistance.

increased climate variability and change.		their high vulnerability to anthropogenic and climatic impacts. Outcome 1.2 Countries reach agreement on the key issues of transboundary concern and their immidiate and root causes, including climate change, and decide to take steps to deal with them. Outcome 1.3 The countries explore and reach consensus on the application of eco-hydrogeology for addressing imbalances in the aquatic environment as a part of the TDA development.	Transboundary Diagnostic Analyses (TDA) in line with GEF, the EU WFD and national legislation. (ii) Agreement reached on baseline conditions (TDA), as well as consensus on designation and classification of water bodies according to EU WFD standard, and on environmental and socioeconomic status indicators . (iii). Definition of the use and the application of eco hydrogeology to address mechanisms that will lead to moderated imbalances.			
Component 2.: Facilitating the establishment of cooperation mechanisms and institutions among countries sharing the basins and their water resources	TA	Outcome 2.1 Strengthened institutional cooperation, coordination and information sharing among riparian countries in each basin, and between the two basins, improves sustainability of the shared resources. Outcome 2.2 Legal arrangements for transboundary cooperation improve cooperation and prevent conflicts	(iv). Preparation of guidelines, outreach documents and awareness raising tools, and terms of reference for the creation and functioning of river basin commissions in the two project basins, and defininging coordination and information sharing mechanisms between the two Commissions as appropriate. (v) Mechanisms for coordination and exchanges with other relevant projects and initiatives put in place.	GEFTF	289,000	1,800,000
Component 3.: Testing of conjunctive surface and groundwater	TA	Outcome 3.1 Testing of conjunctive management options for balancing water	(vi) Implementation of pilot projects and policy measures in the two basins (GEF	GEFTF	674,333	1,400,000

management approaches, through the application of the principles of eco hydrogeology.		nexus conflicts and adapting to climate change and variability identified through the TDAs and other similar processes builds country and regional Institutions and their capacity and commitment to reforms and investments.	support will concentrate in Belarus and Ukraine).			
Component 4.: Facilitating countries' commitment to joint priority actions	TA	Outcome 4.1 Policy makers in countries, having improved their understanding of (i) the surface, groundwater and ecosystems interactions in the two basins, (ii) the implications of expected climatic changes, and (iii) the existing water nexus conflicts, are poised to develop effective conjunctive water resources management strategies. Outcome 4.2 Political commitment reached among countries on implementing priority legal, institutional and policy reforms for the protection and equitable utilization of shared waters and dependent ecosystems of the two basins through conjunctive surface and groundwater management.	(vii) Basin councils, of inter-ministerial nature, focused on harmonization of existing frameworks, and identification of priority reforms, established in each beneficiary country. (viii) Strategic Action Programs for the two basins, in line with national legislation taking into account provisions of the EU Water Framework and Flood Directives and based on the TDA findings, adopting conjunctive surface and groundwater management options, and including measures for reaching the environmental quality targets, and preliminary Basin Management Plans, elaborated by the countries for endorsement at high ministerial level. (ix). Environmental quality targets defined and adopted. Harmonization of environmental status indicators and monitoring procedures agreed upon. (x) Development of bilateral basin agreements and	GEFTF	385,333	2,000,000

			related policy and institutional arrangements for transboundary cooperation and joint sustainable management, facilitated.			
Component 5.: Communication, Dissemination and Replication Activities	TA	Outcome 5.1 Long term sustainability of achievements enhanced through public and political awareness campaigns, stakeholder involvement and replication mechanism	(xi) Selected media events highlight project's progress and achievements, and targeting key legislative national stakeholders. (xii) Targeted capacity building activities to encourage achievement of consensus in countries, disseminate results and findings, foster replication of new practices, behaviors and techniques (xiii) Participation to activities of IW LEARN and of the UNECE Water Convention (including the global network of basins working on climate change), and establishment of website.	GEFTF	192,667	800,000
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
			Subtotal		2,601,000	9,000,000
			Project Management Cost (PMC)[4]	GEFTF	130,050	450,000
			Total Project Cost		2,731,050	9,450,000

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

[4] For GEF Project Financing up to $2 million, PMC could be up to10% of the subtotal; above $2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount ($)
GEF Agency	UNDP	In-kind	200,000
Recipient Government	Belarus, Ukraine	In-kind	4,400,000
Donor Agency	UNECE,	In-kind	1,200,000
Others	Government of Lithuania	In-kind	1,000,000
Others	Government of Poland	In-kind	1,000,000
Donor Agency	UNESCO	In-kind	1,650,000
Total Co-financing			9,450,000

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS [a)]

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee (b)[b)]	Total (c)=a+b
UNDP	GEFTF	Regional	International Waters	(select as applicable)	2,731,050	259,450	2,990,500
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
Total GEF Resources					2,731,050	259,450	2,990,500

a) Refer to the Fee Policy for GEF Partner Agencies.

E. PROJECT PREPARATION GRANT (PPG)[5]

Is Project Preparation Grant requested? Yes ☒ No ☐ If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

Project Preparation Grant amount requested: $100,000					PPG Agency Fee: 9,500		
GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in $)		
					PPG (a)	Agency Fee[6] (b)	Total c = a + b
UNDP	GEF TF	Regional	International Waters	(select as applicable)	100,000	9,500	109,500
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
Total PPG Amount					**100,000**	**9,500**	**109,500**

[5] PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to $50k for PF up to$2m (for MSP); up to $100k for PF up to $3m; $150k for PF up to $6m; $200k for PF up to $10m; and $300k for PF above $10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

[6] PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[7]
Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	*Hectares*
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	*Hectares*
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	*2 Number of freshwater basins*
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	*Percent of fisheries, by volume*
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	*metric tons*
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	*metric tons*
	Reduction of 1000 tons of Mercury	*metric tons*
	Phase-out of 303.44 tons of ODP (HCFC)	*ODP tons*
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	*Number of Countries:*
	Functional environmental information systems are established to support decision-making in at least 10 countries	*Number of Countries:*

PART II: PROJECT JUSTIFICATION

1. *Project Description.* Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area[8] strategies, with a brief description of expected outcomes and components of the project, 4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, CBIT and co-financing; 5) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 6) innovation, sustainability and potential for scaling up.

Conjunctive Surface and Groundwater Management

The increasing acuteness of water scarcity problems, worldwide, requires the adoption of a double approach of water supply management and water demand management. Governments tend to consider river basins as water resources management units and as a spatial basis for the formulation of water management strategies integrating all cross-sectoral issues such as water resources conservation, environment, water resources allocation, water demand management, etc. This is well justified, and is increasingly becoming common practice. The conjunctive management of surface and groundwater is one of the strategies of water supply management best suited to optimize the water resources development, management and conservation within a basin.

[7] Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions*, will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF, SCCF or CBIT.

[8] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which Aichi Target(s) the project will directly contribute to achieving.

Conjunctive Water Management is intended as the efficient utilization of all freshwater resources existing in a specific basin – surface waters, groundwater shallow and deep, but also rainfall, treated wastewaters and other non-conventional sources – according to an overall strategy aimed at improving water availability and reliability. It is crucial for integrated water resources management and helpful to reduce vulnerabilities of water supply systems and mitigate the water supply stress in responding to climate change.

Conjunctive management means using resources in harmony to maximize and stabilize long-term supplies. It does not mean maximizing the use of two separate but interrelated resources for unsustainable short-term gains. Conjunctive management includes two main practices: (i) integrating surface water diversions and groundwater withdrawals to maximize efficiency and minimize impacts on other resource users and ecological processes; (ii) capturing surplus or unused surface water and injecting or infiltrating that water into groundwater aquifers in order to increase recharge rates.

Surface water and groundwater are inextricably linked; understanding of their interactions is essential for developing effective conjunctive water resources management strategies, especially for adaptation to growing climate variability and change that can result in significant impacts on regional and global surface water and groundwater resources. Using groundwater as a complementary source of water has provided an effective means to satisfy the ever-increasing water demands and deal with surface water shortages problems due to the robust capability of groundwater in responding to climate change.

Conjunctive management can involve a variety of water management components and different operational approaches that may cross-political or institutional boundaries. There clearly is no “one-size-fits-all” approach to conjunctive water management. It requires balancing recharge with recovery and monitoring to validate the conjunctive water management. Management should occur at the basin level where the unique set of conditions is well understood and where interested water users can participate and remain informed. Institutional constraints, environmental concerns, economic considerations, and the political climate are also important when implementing conjunctive water management.

Project description:

1) THE GLOBAL ENVIRONMENTAL AND/OR ADAPTATION PROBLEMS, ROOT CAUSES AND BARRIERS THAT NEED TO BE ADDRESSED.

In the North Western European region draining into the Baltic Sea Basin, Belarus, Lithuania, Poland and Ukraine share a post-glacial depositional morphology and extensive transboundary freshwater resources, both surface and groundwater.

The present project focuses on two adjacent and artificially interconnected basins of high regional and global significance: the Bug River Basin shared by Belarus, Poland and Ukraine, and the Neman River Basin shared by Belarus, Lithuania, and with very small parts in Poland. These rivers are little regulated, and show diversified channel depth and width along the river course, characterized by many intermittently flooded areas and shallow ponds, which host rich aquatic biodiversity.

Various aquifers, from shallow unconfined to deeper largely confined ones, including part of the very large Baltic Artesian Groundwater Basin underlie the region. Groundwater contribution to base flow of the two rivers is high, estimated in over 60%. This regional aquifer system closely interacts with lakes and surface water and supports diverse and rich terrestrial and aquatic ecosystems in the four riparian countries, including one of the richest forested wetlands in the region. The transboundary aquifer system underlies the Bug Basin Ecological Corridor as well as one of the European Transboundary Biosphere Reserves.

Key Issues of concern:

- The land surface of the basins has been extensively utilized for agriculture, though there remain important replanted and primeval forested natural areas – many in the low lying lands where groundwater discharges to flood plains, swamps and glacial lakes. The consequence of excessive engineered drainage of swamplands and land reclamation for agriculture is a decrease of both surface and groundwater levels, decline of recharge to aquatic ecosystems, progressive separation of floodplain lakes, as well as eutrophication and decline of biodiversity;
- Mine water discharges from Lublin – Lwow coalfields, usually untreated and disposed to retention basins or to streams;
- Hotspots of over abstraction of groundwater in urban centres;
- Increasing use of the lakes, rivers and the banks and forested plains for tourism and recreation by tour operators unaware of eco-tourism and sustainable principles;
- Untreated wastewaters discharges from poorly operating communal and industrial sewage treatment plants;
- Agriculture and application of agrochemical and the related threats, including land degradation;
- Accumulation of polluted waters in the low lands, especially swamp lands;
- Untreated sewage from rural and urban areas – waste accumulating in streams, lakes and water bodies;
- Lack of basin-wide transboundary water resources management frameworks, and weak national groundwater governance and monitoring. Current policy context and management practices do not recognize the intimate interlinkages between surface and groundwater characterizing the region.

Observed and expected Impacts of climate variability and change:

- Statistically significant increase in annual, winter and summer temperature (largest changes observed in January);
- Statistically significant increase in winter precipitation;
- Decrease in maximum spring flood discharge and increase of the minimum winter flow in large part of the region;
- Possible increase of the risk for eutrophication during the summer season, notably in those parts of the basin where runoff is expected to decrease during this season. Notably pollution with phosphorus compounds could be critical;
- The region has been so far only mildly affected by extreme climatic events. However, medium and long-term projections show that the situation may rapidly change: for example, the length of droughts is expected to increase in the major part of the Neman basin.

2) THE BASELINE SCENARIO

The Bug River Basin and Related Aquifers

The Bug River is the most important transboundary tributary to the Vistula. Belarus, Poland and Ukraine share this 772-km long sub-basin having its source in the L'viv region (Ukraine). The river forms part of the border between Ukraine and Poland, passes along the Polish-Belarussian border, flows within Poland, and empties into the Narew River, a tributary of the Vistula (actually Zegrzynskie Lake, a man-made water reservoir). The Bug has three transboundary tributaries: the Solokija and Rata (Poland-Ukraine), and the Muhavetsa/Muchawiec (Poland- Belarus). The Bug is connected through the Dnieper-Bug Canal and the Muhavets and Pina rivers with the Pripyat River, and is connected through the Narew River with the Neman Basin.
The hydrographic Bug Basin is a natural environmental management unit and therefore in this project the aquifer systems will be considered within this context. The lands overlying the transboundary aquifers are situated in the north-western part of Ukraine, south-western Belarus and the central-eastern part of Poland. The total surface area of the Bug basin is 39.4 thousand km2, which is 19.3% of the Vistula basin. Poland occupies 49% of the basin, while Belarus and Ukraine occupy 23% and 27% respectively.

The average annual rainfall varies from 550 – 800mm across the region and the gauged annual average flow at the confluence with the Wisla is 157m3/s. Of this the annual base flow from the aquifers is estimated at 68%. The amount of runoff from the whole river basin is 4 827 million m3 per year, and about 4% of this total is stored in

retention reservoirs. The river Bug is not regulated, its channel depth and width are diversified along the riverbed and the river creates many intermittently flooded areas and shallow ponds, which host rich aquatic biodiversity.

Belarus, Poland and Ukraine share extensive transboundary groundwater resources. The major one – often referred to as the Mesozoic Transboundary Aquifer System (MTAS) - roughly coincides with the transboundary Bug River Basin. MTAS comprises of groundwater in the Cretaceous, Tertiary & Quaternary formations; the groundwater in pre Cretaceous formations has only limited relevance. Groundwater plays a major role in the total water resources of the region, as well as the Bug basin. In the southern part of the basin, important and extensive transboundary aquifers occur in the Cretaceous limestone aquifers that underlie the upper portion of the basin, and more locally in small, unconsolidated sandy deposits overlying the limestone. In the northern part, groundwater occurrence is in discontinuous transboundary aquifers and is abstracted for supply from extensive, but relatively shallow, aquifers within Tertiary and Quaternary alluvial and glacial sediments. The Wlodawka tributary, which is at the geological contact between the two aquifer systems, is also the region with several groundwater dependent lakes, partially recharged from the south. In the southern part of the river basin, the Cretaceous Limestone form an underlying transboundary aquifer shared by Poland and Ukraine and in the northern part the Tertiary and Quaternary sediments form an overlying transboundary aquifer shared by Poland and Belarus.

Freshwater ecosystems

A large transboundary wetland complex in the middle course of the Bug River stretches across the boundaries of Belarus, Poland and Ukraine. It covers the western part of Polesie bio-geographical region and also partly belongs to the catchments of the Wieprz and Pripyat rivers. This well-preserved natural wetland area constitutes part of the Bug River Ecological Corridor, which is considered a “backbone” of the Pan-European Ecological Network. Various wetland ecosystems include first of all rivers (Bug, its tributaries and other small rivers) with floodplain forests and meadows, as well as numerous lakes, river backwaters, fens, transitional mires and raised bogs.

The regional aquifer system closely interacts with the diverse & rich terrestrial and aquatic ecosystems in the three riparian countries, including one of the richest forested wetlands in the region. The transboundary aquifer system underlies the Bug River Ecological Corridor as well as one of the European Transboundary Biosphere Reserves (the West Polesie Biosphere Reserve, Poland, Shatskyi Biosphere Reserve, Ukraine, Pribuzhskoye Polesie Biosphere Reserve, Belarus). With the increasing use and pressure on groundwater resources in the region, it is essential that the resources of this regional aquifer system are used in a sustainable way, such that the riverine and lacustrine ecosystems dependent on these aquifers do not degrade over time, or due to climate variability. Sustainable management of the Mesozoic Transboundary Aquifers, especially within the Bug Basin Ecological Corridor and the Polesie Transboundary Biosphere Reserve, is an essential aspect to be considered as part of environmentally sustainable development. These are important environments, which create the unique character of this region, and have a significant contribution at the global level. Rational groundwater management, as well as managed eco-tourism in the Bug basin environmental management unit, should take into account those priorities relevant to the whole of the natural environment within the concepts of ecosystems. These priorities become increasingly important, especially in view of the anticipated climatic variability, arising from the onset of climate changes, which could impact the natural ecosystem functioning.

Degradation trends

The land surface of the basin has been extensively utilized for agriculture, though there remain important replanted and primeval forested natural areas – many in the low lying lands where groundwater discharges to flood plains, swamps and peri-glacial lakes. The consequence of land drainage for agriculture is a decrease of surface and ground water levels, decline of recharge to aquatic ecosystems, progressive separation of floodplain lakes, as well as eutrophication and decline of biodiversity. The river itself is beginning to be a tourist destination with such recreational services as river canoeing, hiking & camping in the forested areas. Land degradation is gradually increasing due to the intensity of agriculture. Recharge takes place through infiltration over all agricultural lands, and the whole of the exposed surface of the Cretaceous formations. The natural vegetation includes coniferous forest, broad-leaved forest, derivative broad-leaved forest, small-leaved derivative forest, mossy and grassy swamps and

meadows. The forested lands include mature plantations. In spite of the fact that there are some relatively intact natural values in the Bug river basin, this area is still endangered from numerous threats. A considerable amount of engineered swamp draining has taken place – as a result over 20 species of vertebrate have become extinct in the region. Swamp draining, effectively lowering groundwater level, significantly affects populations of small mammals, living both in swamps and adjacent forests. As the range of species of small animals is decreasing in swamps, this reduced biodiversity is counterbalanced by the population increase in fewer species. The range of species at the bottom of the food chain is reducing, while the range of species higher up the food chain is increasing.

Arable land covers 45 % of the river basin area, and a further 18 % is grassland. Forests cover 27% of the area. Pollution from agriculture (affecting potentially groundwater) and the food-processing industry are additional pressure factors, ranked as widespread but moderate in impact. With the closing of large animal husbandry farms, the impact of the agricultural sector has been significantly reduced in Ukraine in past years (to local and moderate level). Other sources of pressure are: construction materials production (in Poland), metal industry and wood processing (in Belarus), light industry, mining and energy production (in Ukraine). Otherwise, the impact of industrial wastewater discharges is insignificant according to Ukraine, making up about 4% of the discharges to water bodies in the country. Some enterprises in Brest, Belarus, discharge insufficiently treated wastewater reaching the Mukhavets River. Main wastewater discharges to surface waters are from urban sources, making up 40% of all point discharges. Landfills and their drainage waters are significant polluters of surface waters and groundwaters. In Ukraine, many operating landfills are not in line with sanitary conditions, have exceeded their planned capacities, and do not have equipment for processing trash. In Poland, landfills are also a pressure factor.

During the last 50 years, the river network structure of the Bug has been altered, involving land use change, degradation of small rivers, and construction of artificial waterways - drainage canals in particular. The main watercourse of the Bug River is only regulated in its upper stretch in Ukraine (Dobrotvirsk and Sokalsk dams), but its tributaries are heavily regulated, in particular in Ukraine (more than 218 dams) and Poland (more than 400 dams). The impact of these hydromorphological changes is assessed by Ukraine as widespread and severe, and Poland also reports them as a pressure. Draining has reduced the extent of wetlands, and there is a risk of groundwater table decrease due to abstraction from the Cretaceous aquifer in Belarus. Intensive erosion is observed in the border segment of the Bug in Ukraine, and this pressure is assessed as widespread but moderate. Of comparable impact is flooding, with the highest water levels in spring. As a minor factor, the Bug Basin is reported to be affected by transboundary atmospheric pollution from the industrial regions of Western Europe.

Due to the inter-dependence between surface ecosystems and groundwater it is important to take into consideration all the threats affecting the whole water system of the basin. Among basic threats are:

- Over abstraction of groundwater in urbanized centres;
- Excessive engineered drainage of swamplands, rather than the use of such soft solutions as eco-hydrology;
- Increasing use of the lakes, rivers and the banks and forested plains for tourism and recreation – tour operators unaware of eco-tourism and sustainable principles;
- Untreated wastewater discharge from poorly operating communal and industrial sewage treatment plants;
- Agriculture and application of agrochemical and the related threats, including land degradation;
- Accumulation of polluted waters in the low lands, especially swamp lands;
- Untreated sewage from rural and urban areas – waste accumulating in streams, lakes and water bodies;

Climate change and the associated increase in variability is causing groundwater level decline, increased surface water hydrological regime variability and destabilization, shifts of species ranges and biodiversity changes.

The above processes not only directly impact the quality of the environment, but by decreasing hydrological and ecological stability of the entire system, they also diminish resistance and resilience of basic encompassed ecosystems, and reduces their carrying capacity against the stress. In the project area groundwater is fundamental, as it provides 68% of the annual base flows, and in times of climatic stress, it is the 'buffer' source of water, to the aquatic eco-systems in the Bug basin. The volume of groundwater in storage within the aquifer, being equivalent to multi-annual flows, provides good opportunities of its use to relieve stress, but also requires serious management that

secures its natural replenishment. Good management, including enhanced aquifer recharge, implies sustainable land management and the prevention of land degradation. The aquifers are the basic source of water supply for local industry, agriculture, human requirements and they greatly support the surface waters system. However poor resource management, coupled with their unconfined nature, means that the resources are threatened by surface contamination, from land degradation and in places, from excessive groundwater table lowering.

An additional critically important barrier hinders the rational water management and protection of the groundwater dependent ecosystems in the Bug basin area: its transboundary character, and the lack of transboundary cooperation agreements on shared water management. Uncoordinated management at the national level of this shared aquifer system could have far reaching impacts. The absence of joint monitoring of transboundary waters, in particular groundwater, is noted as a gap. In 2006, Ukraine established a Basin Council for water resources management, but the existence of such a body in one country only, is insufficient in a transboundary basin, where the aim is to conclude a trilateral agreement on the Bug and establish a transboundary council or commission for the basin.

The Neman River Basin and Related Aquifers

Agriculture significantly influences the status of water bodies in the Neman Basin (total surface: 98,200 km2), especially in the sub-basins of the Sesupe and Nevezis rivers. Its importance as a pressure factor, according to Belarus, is local but severe. Chemicals are transported to the river from agricultural facilities, and pond fisheries are a major source of pollution. Concerning Lithuania, agricultural pollution is mainly created by the leakage of nitrogen compounds from soil because of the use of mineral fertilizers and animals manure.

The greatest human-induced pressures from urban wastewater discharges in the Belarusian part occur on the Neris River down- stream from Smorgon, and on the Neman River downstream from Grodno, Mostov and Stolbtsy (assessed as local but severe). The main pollutants are suspended solids, phosphates, BOD5, ammonium-nitrogen, petroleum products and total iron. Iron and manganese concentrations are naturally elevated in groundwater, as is fluorine, to a lesser degree. The impact of this factor is assessed as widespread but moderate by Belarus.
Urban areas cover only some 1% of the Polish part of the river basin (mainly around Suwalki, the largest city in the region, with a population of approximately 71,000 inhabitants). About 74 % of the population is served by municipal wastewater treatment (5 large plants providing biological treatment). Due to on-going modernization, the share of wastewater volume treated with improved nutrients removal is increasing. However, a diffuse load from the scattered settlements not served by public networks remains a matter of concern, as well as agriculture and tourism.

Status and transboundary impacts

The results of observations over recent years show an improvement in the quality of surface waters in the basin of the Neman with regard to the concentration of priority pollutants. In the tributaries of the Neman, shared by Poland and Belarus, the levels of most priority pollutants also decreased. The chemical status of rivers in the basin has remained "stable" over the past five years, according to monitoring by Belarus. According to the Belarusian classification of water resources, 3.2% of water bodies are characterized as "clean", 93.6% as "relatively clean" and 3.2% as "moderately polluted".

According to the Neman River basin management plan for the Lithuanian part of the basin, only 52 % of water bodies are in good or very good status. The main reasons for water bodies not reaching good status are diffuse pollution; hydro-morphological alterations and hydropower plans; secondary pollution; point source pollution and international impact. According to Lithuanian assessments, approximately one third of nitrogen and phosphorus loads reaching Curonian lagoon from Neman basin comes from Belarus.

Water status assessment methodologies in riparian countries are different, which makes it difficult to have common assessment of the status of water bodies Neman entire basin.
According to recent monitoring data (assessed by the Inspection for Environmental Protection), the status of surface waters in the Polish part of the Neman River Basin District varies generally from moderate to good, both in terms of biological and physicochemical parameters. The quantitative and chemical status of groundwaters is reported as

good. While the hydrogeological conditions of the Neman Basin are believed to be in all similar to those of the Bug Basin described above, less is known on precise post-Mesozoic aquifer stratigraphic distribution.

As in the case of the Bug River Basin, due to the prevalence of shallow groundwater interactions with surface waters and to their localization within the boundaries of the hydrographic basin, the Neman Basin represents the optimal physical/territorial system within which to define and implement conjunctive surface and groundwater managment. Given the continuity of hydrogeological conditions across the two basins, at the level of of the deeper Mesozoic aquifers, harmonization of managment strategies and quality standards across the basins will be necessary.

Transboundary cooperation in monitoring and responses

Groundwater monitoring of transboundary aquifers was initiated in 2010, based on a bilateral agreement between the Lithuanian Geological Survey and the Kaliningrad Agency of Mineral Resources. Since 1994, the Lithuanian Geological Survey and the Polish Geological Institute have carried out groundwater monitoring in the transboundary area between Lithuania and Poland jointly. Protective zones have been established around water bodies in Belarus to limit economic and other activities, and to reduce their impact.

To tackle the negative impact of wastewater discharges, wastewater treatment facilities have been built and reconstructed in Belarus. The volume of wastewater discharged to the Neman in Belarus has decreased from 157 mln m3 in 2001 to 128 mln m3 in 2009. In recent years, 85–90% of wastewater has been treated according to the standards. There is no joint monitoring of transboundary groundwaters. Belarus considers the current groundwater monitoring network not sufficiently informative, and a network of monitoring wells for observing the state of transboundary groundwater has been gradually developed from 2011-2015 in the framework of the "National Environmental Monitoring System" State Programme of Belarus.
There is still room for improvement in monitoring, as the current list of monitored pollutants is limited; there is a lack of biological (hydro-biological, toxicology) observations; also a lack of monitoring pollutants in bottom sediments; and a joint, harmonized monitoring program for the transboundary watercourses is needed that meets the legislative requirements of the riparian countries.

Transboundary agreements

The protection and use of transboundary waters between Belarus, Lithuania, Poland and Ukraine is regulated through various bilateral agreements, but no basin-wide agreements and river basin commissions exist so far:

- The Agreement on the Environmental Protection Co-operation between the Ministry of the Environment of the Republic of Poland and the State Committee for Ecology of Belarus Republic dated 22.05.1992;
- The Agreement between the Polish and Ukrainian Governments on the Environmental Protection Co-operation, signed in Warsaw, 24.01.1994;
- The Agreement between the Polish and Ukrainian Governments on Water Management Co-operation on Transboundary Waters, signed in Kiev, 10.10.1996;
- The Agreement between the Belarusian and Ukrainian Governments on the Co-operation on Environmental Protection, signed 16.12.1994;
- The Agreement between the Belarusian and Ukrainian Governments on the Joint Use and Protection of Transboundary Waters, signed in Kiev, 16.10.2001;
- Agreement between the stan Federation and Lithuania on Cooperation in Environmental Protection, 1999;
- Agreement between the Government of Republic of Poland and the Government of Republic of Lithuania on Cooperation in the Use and Protection of Transboundary Waters, 2005;
- Agreement between the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus and the Environmental Protection Ministry of the Republic of Lithuania on Cooperation in the Field of Environmental Protection, 1995.

In 2014, Belarus and Lithuania, with the help of UNECE and UNDP-Belarus negotiated a bilateral Protocol for transboundary cooperation which foresees cooperation in developing in the long term, a river basin management plan

for the entire basin. The Protocol however has not yet been signed. An information platform exists already for sharing data on the Neman basin, established in the framework of the UNECE-UNDP ENVSEC project in 2014.

3) THE PROPOSED ALTERNATIVE SCENARIO

The proposed project intends to assist Belarus and Ukraine in (i) joining forces with Poland and Lithuania to reach a common understanding of the water resources of the shared basins, of the existing pressures and drivers of change impacting the sustainability of the resources and of the dependent ecosystems, in particular increasing climatic variability and change and to move towards joint planning and management of the basins, (ii) to come to an agreement on the policy, legal and institutional reforms, and the investments that will be needed to improve water security and resilience to the impacts of climatic variability and change, and to the enhance the sustainability of the transboundary freshwater resources and dependent ecosystems in the Bug and Neman basins, and (iii) accelerate the transformative processes by pilot testing of conjunctive management solutions, and by consolidating transboundary coordination and cooperation. To do so, the project will adopt the TDA – SAP approach and methodology, expanded to include an assessment of the present and likely future impacts of climatic variability and change, an attempt to unravel conflicts at the water nexus, the characterization in terms of quantity and quality of the groundwater resources of the region, both confined and unconfined, and of the conditions regarding gender roles and equality in water resources management. The project will also support countries in implementing the European Union Water Framework Directive and the UNECE Water Convention.

The project will build upon and take advantage of the numerous efforts being undertaken by the countries within the contexts of the implementation of the EU Framework Directive and of the UNECE Water Convention, and establish links with ongoing similar projects in the region, including GEF funded.

The Components of the project are:

Component 1:

Improve and harmonize the countries' knowledge of the transboundary water resources, and of the expected impacts of increased climate variability and change.

Priorites for action will include:
- harmonization and application of the approaches to the characterization and the delineation of water bodies in each of the two project basins;
- comparison, harmonization and application of the system for assessing the status of water bodies in the Bug and Neman river basins;
- identification of pressures and significant impacts upon the state of surface and groundwater in the Bug and Neman river basins;
- analysis of, and accounting for, the effects of climate change on pressures and impacts upon water bodies and their status in the Bug and Neman river basins, building on previous work done in this area.

Based on the above work, it is expected that the following outcomes will be achieved in each project basin:

Outcome 1.1: Countries recognize the transboundary and interlinked nature of the surface waters, aquifers and their dependent ecosystems in the two basins, and their high vulnerability to anthropogenic and climatic impacts.

Outcome 1.2: Countries reach agreement on the key issues of transboundary concern and their causes, including climate change, and decide to take steps to deal with them.

Outcome 1.3: The countries explore and reach consensus on the application of eco-hydrogeology for addressing imbalances in the aquatic environment.

Outputs of Component 1 (in the two basins)

- Science based assessments of the current state of freshwater resources and dependent ecosystems in the two basins leading to agreement on a Transboundary Diagnostic Analyses (TDA) - in line with GEF, the EU WFD and national legislation - addressing: designation and classification of waterbodies, characterization of surface waters, aquifers and dependent freshwater ecosystems; surface - groundwater interactions; the likely impacts of climate variability and change; identification of water nexus challenges and drivers of change; strategic options for conjunctive management.

- Baseline conditions identified, consensus on designation and classification of water bodies according to EU WFD standards reached, and environmental status indicators agreed upon and adopted.

- Definition of the use and the application of eco hydrogeology to address mechanisms that will lead to moderated imbalances.

- Environmental quality targets defined and adopted. Harmonization of environmental and socioeconomic status indicators and monitoring procedures agreed upon.

Component 2:

Facilitating the establishment of cooperation mechanisms and institutions among countries sharing the basins and their water resources.

Outcome 2.1: Strengthened institutional cooperation, coordination and information sharing among riparian countries in each basin, and between the two basins, improves sustainability of the shared resources.

Outcome 2.2: Legal arrangements for transboundary cooperation improve cooperation and prevent conflicts

Outputs of Component 2

- Preparation of guidelines, outreach documents and awareness raising tools, and terms of reference for the creation and functioning of river basin commissions in the two project basins, and defining coordinatioon and information sharing mechanisms between the two Commissions.

- Development of bilateral basin agreements and related policy and institutional arrangements for transboundary cooperation and joint sustainable management, facilitated.

- Mechanisms for coordination and exchanges with other relevant projects and initiatives put in place.

Component 3:

Testing of conjunctive surface and groundwater management approaches, through the application of the principles of eco hydrogeology.

Outcome 3.1: Testing of conjunctive management options for balancing water nexus conflicts and adapting to climate change and variability identified through the TDAs and other similar processes builds country and regional Institutions and their capacity and commitment to reforms and investments.

Output of Component 3

- Implementation of pilot projects and policy measures in the two basins (GEF support will concentrate in Belarus and Ukraine).

Component 4:

Facilitating countries' commitment to joint priority actions.

Outcome 4.1: Policy makers in countries, having improved their understanding of (i) the surface, groundwater and ecosystems interactions in the two basins, (ii) the implications of expected climatic changes, and (iii) the existing water nexus conflicts, are poised to develop effective conjunctive water resources management strategies.

Outcome 4.2: Political commitment reached among countries on implementing priority legal, institutional and policy reforms for the protection and equitable utilization of shared waters and dependent ecosystems of the two basins through conjunctive surface and groundwater management.

Outputs of Component 4

- Basin councils, of inter-ministerial nature, focused on harmonization of existing frameworks, and identification of priority reforms, established in each beneficiary country.

- Strategic Action Programs for the two basins, in line with national legislation taking into account provisions of the EU Water Framework and Flood Directives, and based on the TDA findings, adopting conjunctive surface and groundwater management options, and including measures for reaching the environmental quality targets, and preliminary Basin Management Plans, elaborated by the countries for endorsement at high ministerial level.

Harmonization of environmental status indicators and monitoring procedures agreed upon.

(Development of bilateral basin agreements and related policy and institutional arrangements for transboundary cooperation and joint sustainable management, facilitated.

Component 5:

Communication, Dissemination and Replication Activities.

Outcome 5.1 Long term sustainability of achievements enhanced through public and political awareness campaigns, stakeholder involvement and replication mechanism.

Outputs of Component 5

- Selected media events highlight project’s progress and achievements.

- Targeted capacity building activities to encourage achievement of consensus in countries, disseminate results and findings, foster replication of new practices, behaviors and techniques.
(iv). Environmental quality targets defined and adopted.

- Participation to activities of IW:LEARN and of the UNECE Water Convention (including the global network of basins working on climate change), and establishment of website.

4) INCREMENTAL COST REASONING

The project aims at adding the multi-country, regional dimension needed to reform and/or harmonize present national policies and physical plans, and address the transboundary implications of the shared nature of the resource. This regional dimension will involve and bring about the shared recognition of the system boundaries (in line with the ecosystem approach), the establishment of multi-country mechanisms for cooperation, and the enhancement of regional awareness and stakeholder involvement, all of which is incremental with respect to the “baseline” represented by the fragmented, mostly single-country approach presently adopted by the countries sharing the two

transboundary basins and associated aquifer systems. None of the participating countries is at present ready to fully appreciate the international and the domestic benefits that would eventually be accrued from the integrated, conjunctive management of surface and groundwater. Without the facilitation of the GEF, the countries would continue to implement fragmented and poorly coordinated water resources exploitation policies that would not take into systematic consideration the advancements in scientific understanding of the characteristics of these transboundary systems, nor the transboundary implications of their interconnected and shared nature, thereby exacerbating conflicts among users, threatening water security and the integrity of dependent ecosystems. Transboundary cooperation would remain insufficient for tackling basin challenges and implementing the SDGs. The project will also point out required specifications/adjustments of EU Water Framework Directive (WFD) when applied on the regional scale between an EU and a non-EU country. Hence, the regional benefit that the project will accrue will be threefold: the improved protection and sustainability of a significant transboundary freshwater resources and related ecosystems, reflecting in improvements in the overall stability and water security in the region.

5) GLOBAL ENVIRONMENTAL BENEFITS

The project will accrue global environmental benefits in a number of ways, first of all by fostering cooperation among countries sharing transboundary water systems, i.e.: the overarching goal of the International Waters focal area, and by striving to reverse the degradation trends (i) of the quality of transboundary water resources, caused mainly by pollution from land based activities including toxic chemicals, and (ii) of physical habitats such as wetlands, mangroves, estuaries, as a result of inadequate land and water management, and of excessive water withdrawals.

The project will as well support the achievement of global benefits in other GEF focal areas, through the protection and conservation of freshwater biodiversity in the two basins, the promotion of sustainable land management, and the mainstreaming resilience to climate variability and change into water resources and land management.

It is worthwhile noting that the project and will foster countries' compliance to, and is informed by, a number of regional and global environmental agreements, in particular the 1992 UNECE Water Convention as well as the UNGA Resolution on the Law of Transboundary Aquifers.

Finally, the project will support the achievement of SDGs Targets 5.5 (women empowerment); 6.3, 6.5 and 6.6 (reduce water pollution, foster transboundary cooperation, protect aquatic ecosystems); 13.1 (strengthen climate resilience); 15.1, 15.5 (restoration of freshwater ecosystems, halt loss of biodiversity).

6) INNOVATION, SUSTAINABILITY AND POTENTIAL FOR SCALING UP

While adopting the well tested process for setting the foundations and the enabling environment for cooperation and joint action among countries sharing a waterbody, recommended by the International Waters focal area strategy (the TDA – SAP process, which has proven effective in many GEF "foundational" projects), the proposed project presents however two major innovative aspects:

- The Transboundary Diagnostic Analysis (TDA) that will be conducted as part of the project, will systematically embrace a comprehensive cross sectoral approach analyzing freshwater resources in their entirety (surface and groundwater), and under many perspectives of utilization and interactions and under different future climatic scenarios. This approach is a response to the priorities set forth by the GEF-6 IW Strategy on conjunctive surface and groundwater management, and on the water nexus conflicts.
- Another aspect of innovation is the broad geographic scope of the project, encompassing two adjacent and similar basins, artificially connected and characterized by the largely unregulated flows and by strong surface-groundwater interactions. Cooperation among the countries, both GEF beneficiaries and non-beneficiaries, within this vast peri-glacial region, will maximize the opportunities for broader adoption, and sharing of experiences.

The TDA-SAP process will identify and adopt nature based solutions by applying the innovative principles and methods of Ecohydrology. Ecohydrology is a scientific concept applied to environmental problem solving. It

quantifies and explains the relationships between hydrological processes and biotic dynamics at a catchment scale. The concept is based upon the assumption that sustainable development of water resources is dependent on the ability to restore and maintain evolutionarily established processes of water and nutrient circulation and energy flows at the basin scale. This depends on an in-depth understanding of a whole range of processes involved that have a two-dimensional character:

(i) Temporal: spanning a time frame from the past to the present with due consideration of future global change scenarios;
(ii) Spatial: understanding the dynamic role of aquatic and terrestrial biota over a range of scales from the molecular to the basin-scale.

Both dimensions should serve as a reference system for enhancing the buffering capacity of eco- systems against human impacts by using ecosystem properties as a management tool. This, in turn, depends on the development, dissemination, and implementation of interdisciplinary principles and knowledge based on recent advances in environmental science.

The concept of Ecohydrology has been developed by the Centre for Hydrological Studies of Lodz, Poland; the International Center for Ecology of the Polish Academy of Sciences; UNESCO IHP; UNEP Environmental Technology Centre, Japan.

The sustainability of project outcomes, and their broader uptake, will be strengthened by synergies with the UNECE Water Convention processes, and by the regional drive towards integration within the EU water policy context

Sustainability of project outcomes will also be achived by incorporating into the guidelines and TORs of the two River Basin Commissions the provision to subsume the inter-ministerial councils created by the project for the preparation of the SAPs. Such bodies will include representatives of different ministries relevant for the governance and protection of the natural resources of the two basins, in particular and in addition to water and environment, agriculture, energy, planning and finance.Similar structures are already being set up, for example the EU Water Initiative National Policy Dialogue Steering Committees.

The countries are Parties to the Water Convention which requires the creation and long-term sustaining of river basin organizations. The project will also strive to secure financial support from all ministries involved for the continuing and sustainable functioning of the two River Basin Commissions. Starting during SAP preparation, involvement of IFIs and other possible partners will be sought for the joint identification of bankable projects in line with SAP priorities. In addition, the countries will in 2017 and beyond participate in trainings on how to develop bankable project proposals in the framework of the UNECE-INBO global network of basins working on climate change.

2. Stakeholders. Will project design include the participation of relevant stakeholders from civil society organizations (yes ☒ /no☐) and indigenous peoples (yes ☐ /no☒)? If yes, identify key stakeholders and briefly describe how they will be engaged in project preparation.

One of the main project principles - introduced to ensure a future cooperation in assessing and managing of shared water resources - is building a partnership among project executing parties and (other) stakeholders. An effective public involvement is seen as crucial for a sustainable surface and groundwater management in transboundary areas. In line with the project outreach goals, a participation of the key stakeholders as well as to general public in the project will enhance dissemination of vital surface-ground water-related issues. The project activities will be conducted in consultation with responsible ministries, national and regional water authorities, geological surveys, environmental protection inspectorates as well as with various other organizations, including NGOs and academic and research institutions in the both beneficiary countries. Some of the main stakeholders and the future beneficiaries of the project are listed below.

- Belarus: Ministry of Natural Resources and Environmental Protection, Belarusian Geological Prospecting Research Institute. Central Research Institute for Complex Use of Water Resources and universities;

- Ukraine: Ministry of Environment and Natural Resources, Regional Ecological Inspectorate, National and Regional Geological Surveys, National and Regional Water Management Authority, Regional Environment Protection Authority, National Parks and universities;
- Lithuania: Ministry of Environment, Environmental Protection Agency, Vilnius University, Lithuanian Hydro-meteorological Service, Lithuanian Geological Survey, Center for Environmental Policy, Baltic Environmental Forum.
- Poland: Ministry of Environment, General Directorate for Environmental Protection, Chief and Regional Inspectorate for Environmental Protection, National and Regional Water Management Authority, Geological and Hydrogeological Survey and universities.

3. Gender Equality and Women's Empowerment. Are issues on gender equality and women's empowerment taken into account? (yes ☒ /no☐). If yes, briefly describe how it will be mainstreamed into project preparation (e.g. gender analysis), taking into account the differences, needs, roles and priorities of women and men.

The project will support capacity development of its national partners to adopt approaches that advance women's rights and take account of the full range of their contributions to development, as a foundation for SDGs achievement. In line with the GEF Gender Equality Action Plan, the project will adopt a two-pronged approach:

Mainstreaming gender in project execution - Balanced gender participation in project execution activities will be ensured, including in working groups, the project management unit, text drafting teams etc. Gender consideration will be mainstreamed in all documents produced by the project, and particular attention will be paid to gender in monitoring and reporting activities. The project will work to ensure a balanced participation among men and women in the overall stakeholder involvement strategy and in consultation workshops, and will support both women's and men's contributions individually, rather than assuming that both groups will benefit equally from gender-neutral development interventions.

Integration of the gender perspective into groundwater policies - The development and harmonization of supportive policy and legislative frameworks and institutional capacity building aimed at ensuring that the gender perspective is successfully incorporated into water policies and activities, will be a major objective of the project.

4 Risks. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable).

The only major risk that may prevent the full success of the project is the lack of sustained political support for this cooperative effort in the countries and states sharing the aquifers and river basins and institutional fragmentation at the national level. The project proponents, fully aware of this challenge, have focused practically all project activities to the strengthening of this commitment through improved science and understanding, exchanges and consultations, awareness campaigns and capacity building, policy-level work, etc. It is also expected that non GEF recipient countries participating to the project (Poland and Lithuania) will help improve conditions for cooperation, they were fully engaged and consulted during the project deveopment. Finally, the EU accession political objective of some of the countries will also help in moving the project successfully forward.
Given the nature of the project, oriented at improving science, establishing processes and creating enabling political environments, climate change will not have any impact on the project likelihood of success. On the other hand, climate change and increased climatic fluctuations will have to be taken into full consideration as part of the technical components of the project, from the diagnostic analysis, to the identification of needed priority actions, so that future management of the aquifer will include measures and provisions to face this new challenge to sustainability.

5. Coordination. Outline the coordination with other relevant GEF-financed and other initiatives.

UNDP has a long record of activities in this region and of the comparable activities (i.e. transboundary groundwaters) in other regions. Among others, UNDP implemented a project "Improved management of shared

water resources in the upper Pripyat basin" (2008-2009). This project aimed to define a practical solution for some (surface) water transboundary management issues in the Pripyat river water basin. The project strengthens the culture of a transboundary dialogue between the involved countries, making it easier to new transboundary initiatives to be adequately accounted and further developed.

The project especially builds on the past project "River Basin management and climate change adaptation in the Neman river basin (2011-2015)" implemented by UNECE and UNDP Belarus in the framework of the Environment and Security initiative (ENVSEC www.envsec.org). The project led to a joint understanding of future climate change impacts by preparing a transboundary vulnerability assessment and numerous studies, as well as agreement on how to address them through the development of a basin-wide adaptation strategy. It also addressed monitoring and information exchange. It resulted in a revival of transboundary cooperation both at the expert and political level, culminating in the negotiation of a bilateral Protocol on transboundary water cooperation between Belarus and Lithuanian ministries, still awaiting signature.

The new project can also rely on a very relevant experience about transboundary groundwaters in Europe that has been gained in DIKTAS project (Protection and Sustainable Use of the Dinaric Karst Transboundary Aquifer System). DIKTAS is a full-size GEF project, implemented by UNDP and executed by UNESCO. The project started in 2010 and has the regional objectives similar to the objectives of the proposed project.

This project will be carried out in close cooperation with NATO Pilot Study Project "Sustainable Use and Protection of Groundwater Resources Transboundary Water Management". This project creates an expert platform for discussion about sustainable groundwater management and the efficient way of protection of transboundary water resources. Cooperation will be sought with the organizations responsible for implementation of EU Water Framework Directive (WFD) in order to harmonize the efforts. Attention will be paid to the legacy of recently completed projects and possible post project activities. There are about dozen relevant INTERREG and TACIT projects conducted in the recent years together with some UN related projects such as:

- The Bug River Pilot Project on monitoring and assessment of transboundary rivers established under the UNECE Water Convention (1998-2003);
- Integrated Environmental Evaluation Western Buh River Basin (Ukraine and Poland) - PHASE I: Baseline Assessment and Analysis, financed with UNIDO (2008). Development of transboundary polder system "Beregowo" in Cisa River Basin.
- EU/UNDP project "Support to the development of a comprehensive framework for international environmental cooperation of the Republic of Belarus"

Any other potentially important initiative recognized during the project preparation or execution phase will be considered with due attention.

6. Consistency with National Priorities. Is the project consistent with the National strategies and plans or reports and assessements under relevant conventions? (yes ☒ /no☐). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

The Project is fully consistent with the national priorities in the water and environmental sectors in the two beneficiary countries, as shown in the narrative below.

BELARUS

The Republic of Belarus is supplied with water resources sufficiently to meet the current and future consumption needs. The rivers of the Black Sea (Dnieper, Sozh, Pripyat) and Baltic Sea (Western Dvina, Nieman, Vilia, Western Bug) basins collect on average 55% and 45% of the accumulated river runoff, respectively.

The Water Code of the Republic of Belarus was adopted in 1998 and didn't include the basin principle. The new Water Code of April 30, 2014 indicates river basin planning as one of its key principles. Chapter 17 of the Water Strategy (adopted in August 11, 2011) includes provisions on stepwise introduction of basin principles in the water

resources management practice of the country. The Strategy and Water Code also provide steps towards harmonization of the water management principles with the ones of the EU WFD. Improvement of the ecological status is defined as the aim in new Water Code and hydro biological, hydrochemical and hydro morphological indicators are to be applied.

Article 15 of the new Water Code determines the main river basins of the country as follows: Dnieper, Western Dvina, Western Bug, Nieman and Pripyat. The same article requires the Ministry of Natural Resources and Environmental Protection to develop RBMPs for a period of 5 to 10 years. RBMPs are to be approved by the joint decisions of the corresponding regional executive committees in the territory of which the watershed of respective river is located. Currently two RBMPs are under development: for Dnieper Basin and for Western Bug Basin. Both are in the process of formal adoption and the plan for the upper Dnieper Basin is already being implemented; the one for the Western Bug basin is under finalization.

There are no Basin Management Organizations yet established in Belarus, and the territorial bodies of the Ministry of Natural Resources and Environmental Protection are in charge of managing country's resources while the water use permits are being issued at the central Governmental level. Article 19 of the new Water Code requires establishment of Basin Councils. These are to be advisory councils with their secretariats within territorial bodies of the Ministry of Natural Resources and Environmental Protection of Belarus. So far only the Dnieper Basin Council has been established.

Groundwater is not covered by state water policies, but belong to the domain of mineral resources.

UKRAINE
Ukraine can be divided into seven major river basins, all of them discharging into the Black Sea except the Western Bug, which flows towards the Baltic Sea: Dnipro basin (covering 65% of the country); Dniester basin (12%); Danube basin (7%); the coastal basin grouping all the small rivers that flow directly into the Azov Sea and the Black Sea (7%); Siversky Donets basin (4%); Vistula basin, including two sub-basins: Southern Bug (3%), which is an internal basin; and Western Bug basins (2%).

Ukraine has a formal state policy on approximation with the EU WFD, including development of WFD compliant RBMPs. Thus, on September 17, 2014 the Cabinet of Ministers of Ukraine adopted Resolution No 847-p "On Action Plan for Implementation of the Association Agreement between Ukraine and the EU for the period of 2014-2017". According to the Resolution, Ukraine will develop and approve provisions on RBMPs and the methodology for their development, and also develop RBMPs for the main river basins of the country by 2024.

At present, the provisions of the Water Framework Directive are included in the Water Code by adoption of the law "On Amendments to Some Legal Acts of Ukraine regarding the introduction of integrated approaches in water resources management following the river basin principle" № 3603. The goal of the document is to ensure integrated management of water resources within river basin districts using River Basin Management Plans, as well as introduction of the flood risk assessment and management following Flood Risk Management Plans. However, there is not yet a formal decision determining the boundaries of river basins or RBDs in Ukraine, so the water resources management in Ukraine is still based on the administrative-territorial division.

While there is still no legal requirement in Ukraine to develop RBMPs, with the signing of the Association Agreement, Ukraine took on the obligation to develop such plans. In 2014, with the assistance of SIDA, the RBMP for South Bug River Basin (Black Sea RBD) was developed but is not yet adopted. Currently 3 further RBMPs are in the process of development: For the Tizsa River Basin, Prut River Basin (Danube RBD), and Upper Dnieper River Basin (Black Sea RBD).

There are 9 water basin management administrations (WBMAs) established in Ukraine. These WBMAs are subordinate to the State Water Resources Agency of Ukraine, but have limited authority in managing water resources of their respective river basin, given that the agency in charge of issuing water use permits in Ukraine are the local authorities (oblast state administration).

Also, there are public Basins Councils established in Ukraine. The establishment of Basin Councils is aimed at the support of WBMA activities in the creation of RBMPs and formation of activity programs in the basins of major rivers. Councils were first created within international projects and then on the initiative of WBMA and State Water Resources Agency of Ukraine.

The functioning of these councils is based on agreements between the regions, but there is no legal basis for the Basin Councils. These Councils meet 1-2 times per year with the main funding source being international projects. Very limited funding from the budget of WBMAs and local authorities is sometimes provided.

7. Knowledge Management. Outline the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

Knowledge management is an important aspect of the project, directly incorporated into several of the project outputs. In particular, the knowledge enhancement process leading to the formulation of the TDA will ultimately produce a number of knowledge tools and communication / dissemination materials. These materials produced will be widely shared in the region, including through the opportunities for dissemination provided by the UNECE Convention activities and website. The project will establish its website, following IW LEARN standards, and populate it with progress reports, documents, webinars and other project products. In particular, at least 1% of total project budget will be set aside for knowledge management and information exchange activities organized by IW LEARN and the UNECE Water Convention (e.g. IWC participation, information dissemination through IW LEARN platforms and networks, twinning exercises). Knowledge exchange will include the participation in relevant regional and international workshops and conferences (such as GEF International Waters Conferences, World Water Forum, World Water Week),. The project's legacy will be consolidated in the Project Final Report.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT[9] OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this SGP OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
Ms. Iya Malkina	First Deputy Minister	**MINISTRY OF NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION OF REPUBLIC OF BELARUS**	**02/27/2017**
Mr. Vladyslav Marushevskyi	Head of International Project Coordination Department	**MINISTRY OF ECOLOGY AND NATURAL RESOURCES OF UKRAINE**	**02/14/2017**

[9] For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies[10] and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

Agency Coordinator, Agency name	Signature	Date *(MM/dd/yyyy)*	Project Contact Person	Telephone	Email
Adriana Dinu UNDP-GEF Executive Coordinator		1 March 2017	Mr.Vladimir Mamaev Regional Technical Advisor		vladimir.mamaev@undp.org

C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (APPLICABLE ONLY TO NEWLY ACCREDITED GEF PROJECT AGENCIES)

For newly accredited GEF Project Agencies, please download and fill up the required **GEF Project Agency Certification of Ceiling Information Template** to be attached as an annex to the PIF.

[10] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, SCCF and CBIT