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Selection of Pilot Watersheds/Areas for the INRMW program, Republic of Georgia

Technical Report No. 3

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Integrated Natural Resources Management in the Republic of Georgia Program

Technical Report Number 3

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1.0 INTRODUCTION

1.1 Background

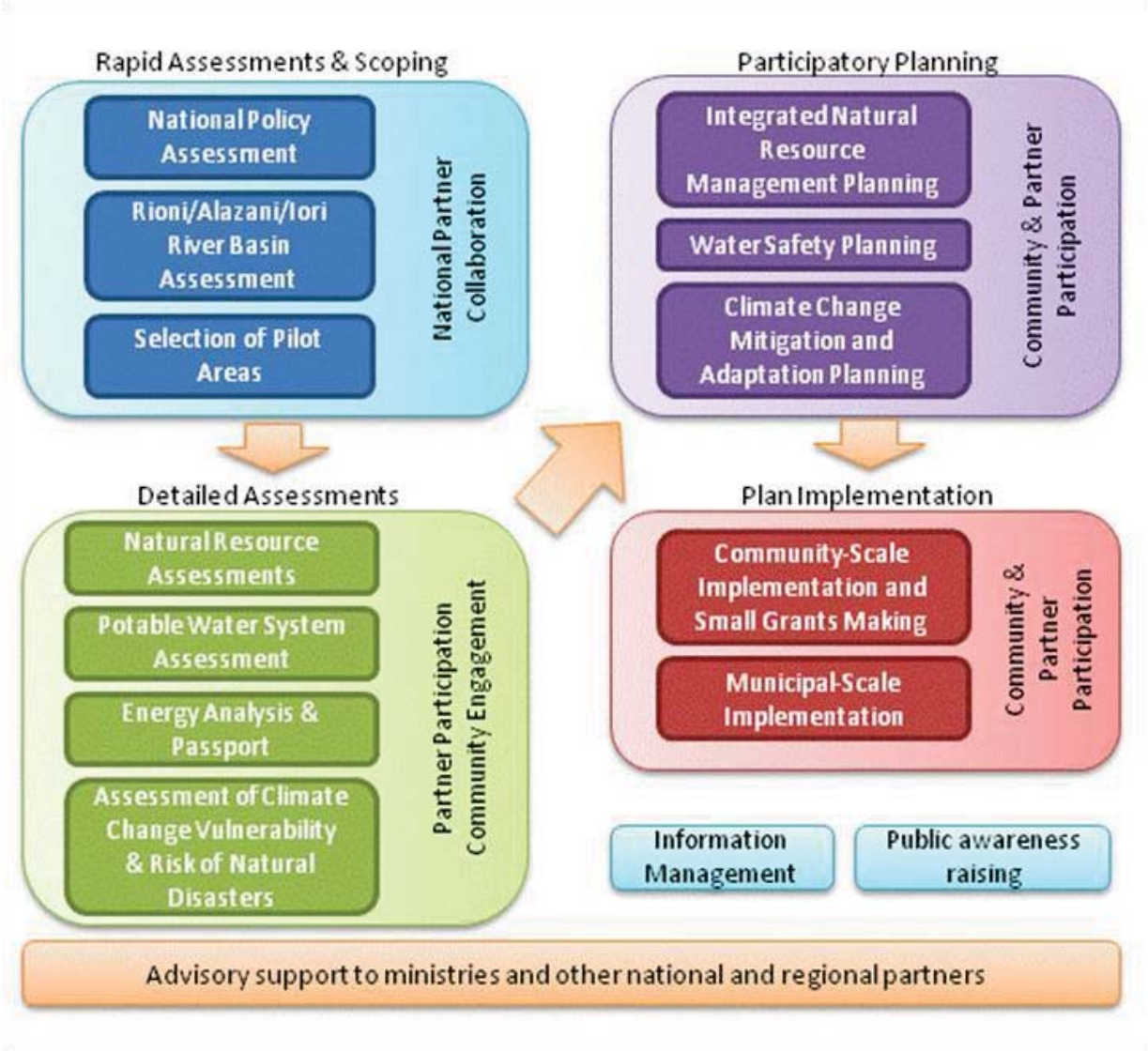
Georgia is a country rich in natural resources with many picturesque and pristine ecosystems, but in the presence of unclear environmental legislation and weak law enforcement, the condition of the country's environment has suffered for many years. Many surface and ground waters are severely polluted due to waste dumping and untreated wastewater discharges. In addition, large areas of forests are cleared owing to illegal logging that was very intensive following the break-up of the Soviet Union, populations of a number of valuable and unique marine and wildlife species are reduced as a result of poaching, and many grasslands are overgrazed. Inappropriate irrigation and agricultural practices have degraded large areas of arable land through soil erosion and salinization. The combined effects of these widespread malpractices in synergy with adverse impacts of natural disasters and climate change undermine the natural resource base and the ecosystem services that Georgia depends upon for sustainable development.

In order to address above issues, in September 2010, USAID-Caucasus launched a multi-year project: "Integrated Natural Resources Management in Watersheds of Georgia" (hereafter INRMW). The project is implemented within the framework of an umbrella program "Global Water for Sustainability" (GLOWS) by a consortium of international and national organizations under leadership of Florida International University (FIU) in a partnership with CARE International, Winrock International, UNESCO-IHE and Caucasus Environmental NGO Network (CENN).

1.2 Objectives and Scope

The primary goal of the INRMW Program is to improve the lives of the current and the future generation of people in Georgia by utilizing and managing natural resources in a more sustainable manner, including water, soil, vegetation, and ecosystems that encompass them. The project aims to introduce innovative approaches and practical models of participatory integrated natural resources management in targeted watersheds by facilitating reforms to and harmonization of national policies and by increasing the capacity of national as well as regional institutions to replicate these approaches and models throughout the country. These models will be introduced in four representative watersheds of Rioni and Alazani-Iori river basins, and efforts will be made to upscale and disseminate them across the country.

The project goal will be achieved by implementing a number of sequential activities, including: baseline assessments of existing laws, policies, institutions and practices in the area of natural resource management as well as other related sectors (e.g. potable water supply and sanitation, energy, agriculture, health protection, disaster management, etc.); rapid assessments of existing socio-economic and environmental situation in targeted river basins; selection of four representative upstream and downstream pilot watersheds/areas for on-the-ground interventions; detailed assessments of the four selected pilot watersheds/areas; development of integrated natural resources management plans in a watershed context within the selected pilot watersheds/areas; implementation of a number of priority interventions at the community level through community small-scale grants program to demonstrate the benefits of sustainable and integrated natural resources management. Below is a diagram of project activities:



The project has already developed the Rapid National Assessment Report that gives a general overview of existing enabling environment in the area of natural resources management as well as related sectors mentioned above, and an analysis of existing shortcomings and barriers towards applying policies and practices for integrated natural resources management in the watershed context. The study looks at the nation-wide situation.

Pilot watersheds/areas Selection Report is the third major deliverable under the project. Its general objective is to suggest four upstream and downstream watersheds/areas of Alazani-Iori and Rioni river basins for demonstration of sustainable, state-of-the art watershed planning and management.

2. METHODOLOGY FOR SELECTION OF PILOT WATERSHEDS/AREAS

2.1 Background, Objectives and Selection Criteria

In March-May 2011, INRMW project team studied a baseline situation in Alazani-Iori and Rioni river basins. The report recommended focusing on pilot areas of the major water arteries of the Rioni and Alazani-Iori river basins (e.g. Rioni, Alazani and Iori) for further interventions, given the fact that these rivers have the highest significance for local populations and economies, as well as the highest negative pressures imposed by various anthropogenic and natural factors. Since the project is demonstrative in nature and has limited time and resources, the report also recommended concentrating on only upstream and downstream areas of the targeted rivers in order to demonstrate better the linkages between upstream and downstream uses of the watershed resources.

For prioritization and selection of smaller pilot watersheds/areas of targeted river basins for development interventions, the INRMW team suggested the use of multiple criteria analysis. The criteria were grouped in accordance with environmental, socio-economic and governance parameters. Given that the hydrological boundaries of watersheds (sub-catchments) of the selected basins do not exactly coincide with municipal borders, considering only natural boundaries would make it almost impossible "to encompass the interlinked political and biophysical processes governing sustainable resource utilization and management, and to ensure proper municipal planning (e.g. water safety planning, energy passports, disaster risk reduction and CCMA planning)". Therefore, for our project purposes, we used a combination of natural and administrative boundaries for defining the scale of the pilot watershed/area.

Stemming from above, the team of experts from FIU-Georgia and GLOWS in close cooperation with their partners, including CARE, CENN, Winrock, SDAP, UNESCO-IHE, as well as in close consultation with the Manager of USDoI-ITAP Project and USAID has developed a set of environmental, socio-economic, governance and other criteria for the selection of four smaller pilot watersheds/areas for on-the ground interventions.

The objective of the evaluation of pilot watersheds/area against a multiple criteria was to select four upstream and downstream pilot watersheds/areas of Alazani-Iori and Rioni river basins for demonstrating sustainable, state-of-the art watershed planning and management practices.

Evaluation of the potential watershed options was conducted in a four-step process. The first step implied development of the long-list of pilot watersheds/areas; the second step – screening the pilot watersheds/areas against a number of minimum qualification criteria in order to develop a short-list of watershed options (please refer to table 1, annex 1 for pilot watershed/area short-listing criteria); the third step – evaluation of the short-listed watersheds/areas against a set of quantitative and qualitative criteria, and selection of four pilot watersheds (please refer to table 2, annex 1 for short-listed watershed evaluation criteria); the fourth step implied validation of the suggested watersheds/areas with national stakeholders (for more details please refer to annex 3).

3. LONG-LIST OF PILOT WATERSHEDS/AREAS

For the purpose of developing a long-list of pilot watersheds/areas, the INRMW team has identified watersheds of rivers (same as micro-catchments) in three pilot river basins which are more than 10 km in length (please refer to annex 2)

Overall, there are 16 watersheds (micro-catchments) in the Alazani River Basin meeting the above criteria. These are:

1. Alazani: length – 351 km; catchment – 12,000 km^2
2. Tsiplovaniskhevi: length – 24 km; catchment – 92 km^2
3. Samkuristskali: length – 18 km; catchment – 121 km^2
4. Ilto: length – 43 km, catchment – 337 km^2
5. Khodasheniskhevi: length – 31 km, catchment – 91 km^2
6. Stori: length – 38 km, catchment – 281 km^2
7. Turdo: length – 28 km, catchment – 114 km^2
8. Lopota: length – 33 km, catchment – 263 km^2
9. Didkhevi: length – 19 km, catchment – 95 km^2
10. Matsantsara: length – 21 km, catchment – 50 km^2
11. Chelti: length – 28 km, catchment – 144 km^2
12. Duruji: length – 26 km, catchment – 91 km^2
13. Bursa: length – 27 km, catchment – 84 km^2
14. Avaniskhevi: length – 24 km, catchment – 68 km^2
15. Sharokhevi: length - 33 km, catchment – 178 km^2
16. Kabali: length – 48 km, catchment – 391 km^2

There are 3 watersheds (sub-catchments) of the rivers having a length of 10km or longer in the Iori River Basin. These are:

1. Iori: length – 320 km; catchment – 4,650 km^2
2. Adzedzi: length – 16 km; catchment – 162 km^2
3. Ole: length – 29 km; catchment – 395 km^2

In total, there are 37 watersheds (sub-catchments) of rivers with a length of 10km or longer in the Rioni River Basin. These are:

1. Rioni: length – 327 km; catchment – 13,400 km^2
2. Natsaruli: length – 14 km; catchment – 52 km^2
3. Tchantchakhi: length – 20 km; catchment – 185 km^2
4. Sakauri: length – 30 km; catchment – 169 km^2
5. Jejora: length - 50 km; catchment – 425 km^2
6. Lukhunistskali: length – 39 km; catchment – 293 km^2
7. Shaora: length – 45 km; catchment – 244 km^2
8. Ladjanuri: length – 32 km; catchment – 296 km^2
9. Kvirila: length – 140 km; catchment – 4513 km^2
10. Gebura: length – 13 km; catchment – 112 km^2
11. Djruchula: length – 21 km; catchment – 210 km^2
12. Dzirula: length – 83 km; catchment – 1258 km^2
13. Dumala: length – 34 km; catchment – 124 km^2
14. Chkherimela: length – 39 km; catchment – 490 km^2
15. Cholaburi: length – 20 km; catchment – 565 km^2
16. Dzusa: length – 25 km; catchment – 111 km^2
17. Buja: length – 43 km; catchment – 186 km^2

18. Tkibula: length – 31 km; catchment – 146 km^2
19. Shabatgele: length – 15 km; catchment – 112 km^2
20. Tskaltsitela: length – 49 km; catchment – 239 km^2
21. Khanistskali: length – 67 km; catchment – 914 km^2
22. Tsablaristskali: length – 29 km; catchment – 230 km^2
23. Sakraula: length – 52 km; catchment – 219 km^2
24. Koristskali: length – 46 km; catchment – 178 km^2
25. Sulori: length – 31 km; catchment – 189 km^2
26. Kumuri: length – 37 km; catchment – 100 km^2
27. Zeskho: length – 19 km; catchment – 150 km^2
28. Tskenistskali: length – 176 km; catchment –2123 km^2
29. Nogela: length – 59 km; catchment – 123 km^2
30. Koruldashi: length – 11 km; catchment – 77 km^2
31. Mukhra: length – 13 km; catchment – 53 km^2
32. Kheledula: length – 35 km; catchment – 315 km^2
33. Khevistskali: length – 32 km; catchment – 97 km^2
34. Gubistskali: length – 36 km; catchment – 442 km^2
35. Tekhuri: length – 101 km; catchment – 1031 km^2
36. Abasha: length – 66 km; catchment – 350 km^2
37. Tsivi: length – 60 km; catchment – 199 km^2

In the cases of large watersheds, we have divided watersheds into upstream, mid-stream and down-stream areas, and considered them as separate options for evaluation and selection. While, in the cases of small watersheds, we have considered the entire watershed areas as options for evaluation and selection.

4. SHORT-LISTING OF PILOT WATERSHEDS/AREAS

4.1 Alazani River Basin

Based on the evaluation of long-list of watersheds/areas of the Alazani River Basin, the following pilot watersheds/areas have been identified and short-listed by the INRMW Team:

1. Alazani upstream watershed/area
2. Alazani downstream area
3. Kabali watershed

The short-listed pilot watersheds/areas have been adjusted to municipal boundaries, and as a result of which, we have come up with a short-list of the following pilot areas (please refer to annex 2):

1. Akhmeta and Telavi municipalities - Alazani upstream watershed/area (Alazani, Tsiplovaniskhevi, Samkuristskali, Ilto, Khodasheniskhevi, Stori, Turdo, Matsantsara, Didkhevi, Lopota)

2. Dedoplistskaro Municipality – Alazani-Iori downstream area (Alazani, Iori, Ole)

3. Lagodekhi Municipality – Kabali watersheds area (Alazani, Kabali)

Table 1. Alazani Basin Pilot Watershed/Area Short-listing Matrix

#	Pilot watershed/ area	Watershed Qualification (Short-Listing) Criteria	Rating Marks		Rating results	Comment
			Yes: +	No: -		
1.	Alazani upstream	1. Manageable number of municipalities	yes: +	no: -	+	The watershed area covers two municipalities: Akhmeta and Telavi
		2. Manageable geographic scale	yes: +	no: -	+	The area covers large areas of Akhmeta and Telavi municipalities
		3. Presence of adequate number of communities/villages	yes: +	no: -	+	Akhmeta includes 13 communities with 59 villages and 2 villages as separate territorial units; Telavi comprises 24 villages
		4. Upstream or downstream location	yes: +	no: -	+	Pilot area has upstream location
		5. Workable degree of infrastructure complexity	yes: +	no: -	+	Pilot area is mostly agriculture based with two cities: Akhmeta and Telavi, both without very complex urban infrastructure
		6. Significant ecological value	yes: +	no: -	+	The area includes large terrains of natural forests with high ecological value, and three protected areas: Tusheti National Park, Batsara-Babaneuli State Natural Reserve and Ilto Managed Reserve
		Final result			**+**	**Eligible**
2.	Tsiplovaniskhevi	1. Manageable number of municipalities	yes: +	no: -	-	The watershed encompasses a very small part of Akhmeta Municipality
		2. Manageable geographic scale	yes: +	no: -	-	The river is less than 30 km in length and the catchment less than 300 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The watershed is unpopulated
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The area has no infrastructure. It is unpopulated
		6. Significant ecological value	yes: +	no: -		

		Final result			**-**	**ineligible**
3	Samkuriskhevi	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	The river is less than 30 km in length and the catchment less than 300 km^2; the watershed encompasses very small area of the Akhmeta Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The watershed is unpopulated
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The area has no infrastructure. It is unpopulated
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**ineligible**
4	Ilto	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	The watershed encompasses less than one third of Akhmeta Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	There are only 8 villages in the watershed
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The area is predominantly unpopulated with vast natural landscapes and scanty rural areas
		Final result			**-**	**ineligible**
5	Khodasheniskhevi	1. Manageable number of municipalities	yes: +	no: -	-	The watershed covers very small area of the Akhmeta Municipality
		2. Manageable geographic scale	yes: +	no: -	-	The river has a length of 31 km and a catchment area of 91 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The watershed encompasses up to 13 villages
		4. Upstream or downstream location	yes: +	no: -	+	
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The area only has agriculture infrastructure, and a combination of natural landscapes and agricultural lands
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**ineligible**
6	Stori	1. Manageable number of municipalities	yes: +	no: -	-	
		2. Manageable geographic scale	yes: +	no: -	-	The river has a length of 38 km and a catchment area of 281 km^2 The watershed encompasses less than a third of Telavi Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The watershed encompasses only two villages
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The area only has agriculture infrastructure, and a combination of natural landscapes and agricultural lands
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**ineligible**
7	Turdo	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	The watershed encompasses very small portion of the Telavi Municipality' The river has a length of 28 km and a catchment of 114 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The watershed encompass only 2-3 villages

		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The area only has agriculture infrastructure and a combination of natural landscapes and agricultural lands
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**ineligible**
8	Lopota	1. Manageable number of municipalities	yes: +	no: -	-	The watershed encompasses less than a third of the territory of Telavi Municipality
		2. Manageable geographic scale	yes: +	no: -	-	The river has a length of 33 km, and a catchment of 263 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The watershed encompass only couple of villages
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The area only has agriculture infrastructure and a combination natural landscapes and agricultural lands
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**ineligible**
9	Didkhevi	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	The watershed encompasses very small area of Telavi Municipality; The river has a length of 19 km, and a catchment of 95 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The watershed has practically no human habitation. Only 1 village is located there
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The area only has agriculture infrastructure and a combination of natural landscapes and agricultural lands
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**ineligible**
10	Matsantsara	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	The watershed encompasses very small area of Telavi Municipality; The river has a length of 21 km, and a catchment of 50 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	There are only couple of villages located in the watershed
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The area has only agriculture infrastructure and a combination of natural landscapes and agricultural lands
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**ineligible**
11	Chelti	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	The watershed encompasses very small area of Kvareli Municipality; The river has a length of 28 km, and a catchment of 144 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	There is only 1 village located within the watershed
		4. Upstream or downstream location	yes: +	no: -	-	The watershed has mid-stream location

		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The area is practically unpopulated and it includes large areas of natural landscapes combined with agriculture lands
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**ineligible**
12, 13,14,15	Duruji; Bursa; Avaniskhevi; Sharokhevi	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	The watersheds encompass very small areas of Kvareli Municipality; The rivers are less than 30 km in length and less than 300 km^2 in catchment area
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The watersheds encompass very small number of communities
		4. Upstream or downstream location	yes: +	no: -	-	The watersheds have mid-stream location
		5. Workable degree of infrastructure complexity	yes: +	no: -		Vast majority of the areas of the watersheds are unpopulated with large areas of natural landscapes. There is only 1 city of Kvareli on the border of Duruji and Bursa watersheds
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**ineligible**
16	Kabali	1. Manageable number of municipalities	yes: +	no: -	+	The watershed is located only within 1 municipality
		2. Manageable geographic scale	yes: +	no: -	+	The watershed encompasses more than a third of the Lagodekhi Municipality; Rivers have length of 48 km, and catchment of 391 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -	+	The watershed encompass more than 15 communities
		4. Upstream or downstream location	yes: +	no: -	+	The watershed has downstream location
		5. Workable degree of infrastructure complexity	yes: +	no: -	+	The watershed has mostly rural infrastructure and unpopulated natural landscapes at the source of the river
		6. Significant ecological value	yes: +	no: -	+	In the upstream areas, the watershed is characterized by natural landscapes and ecosystems of the Greater Caucasus, and a part of the Lagodekhi National Park is located there as well
		Final result			**-**	**eligible**
17	Alazani downstream	1. Manageable number of municipalities	yes: +	no: -	+	The watershed area crosses 1 municipality (Dedoplistskaro)
		2. Manageable geographic scale	yes: +	no: -	+	The watershed area encompasses more than a third of the Dedoplistskaro Municipality; Rivers have a length of 48 km, and catchment of 391 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -	+	The watershed area encompasses 14 villages, 1 city and 2 towns
		4. Upstream or downstream location	yes: +	no: -	+	The watershed has downstream location
		5. Workable degree of infrastructure complexity	yes: +	no: -	+	The watershed has mostly rural infrastructure and unpopulated natural landscapes at the river source
		6. Significant ecological value	yes: +	no: -	+	In the upstream areas the watershed is characterized by natural landscapes and ecosystems of the Greater Caucasus, and part of the Lagodekhi National Park is located there as well
		Final result			**+**	**eligible**

4.2 Iori River Basin

Based on the evaluation of long-list of pilot watershed/area options of the Iori River Basin, the following pilot watersheds/areas have been identified and short-listed by the INRMW Team:

1. Iori upstream watershed/area

Short-listed pilot watersheds/areas were adjusted to municipal boundaries, and as a result of which, we have received the following short-listed area of Iori River Basin (please refer to annex 2):

1. Tianeti Municipality - Iori upstream watershed/area (Iori, Adzezi)

Table 2. Iori Basin Pilot Watershed/Area Short-listing Matrix

#	Pilot watershed/ area	Watershed Qualification (Short-Listing) Criteria	Rating Marks		Rating results	Comment
			Yes: +	No: -		
1.	Iori upstream	1. Manageable number of municipalities	yes: +	no: -	+	The watershed area covers 1 municipality (Tianeti)
		2. Manageable geographic scale	yes: +	no: -	+	The area encompasses the majority of the territory of Tianeti Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	+	There are 84 villages in Tianeti Municipality
		4. Upstream or downstream location	yes: +	no: -	+	Pilot area has upstream location
		5. Workable degree of infrastructure complexity	yes: +	no: -	+	Pilot area is mostly agriculture based with two towns: Tianeti and Sioni
		6. Significant ecological value	yes: +	no: -	+	The area encompasses large territories of natural forests of high ecological value
		Final result			**+**	**Eligible**
2.	Adzedzi	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	The watershed area covers very small area of Tianeti Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	There are only 3-4 villages within the Adzezi watershed
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
3.	Iori mid- stream	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -		
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -	-	Pilot area has mid-stream location
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
4.	Iori downstream	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -		
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The area is practically unpopulated

		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	There is no infrastructure
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
5.	Ole	1. Manageable number of municipalities	yes: +	no: -	-	
		2. Manageable geographic scale	yes: +	no: -	-	The watershed covers less than a third of the area of Dedoplistskaro Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The area is unpopulated
		4. Upstream or downstream location	yes: +	no: -	-	
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	There is no infrastructure
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**

4.3 Rioni River Basin

Based on the evaluation of long-list of watersheds/areas of the Rioni River Basin, the following pilot watersheds/areas have been identified and short-listed by the INRMW Team:

1. Rioni upstream watershed
2. Tskenistskali upstream watershed
3. Chkherimela watershed
4. Khanistskali watershed
5. Tekhuri watershed
6. Rioni downstream area[1]

Short-listed pilot watersheds/areas have been adjusted to municipal boundaries, and as a result of which, we have come up with the following short-list for Iori River Basin (please refer to annex 2):

1. Oni and Ambrolauri municipalities: Rioni upstream watershed area (Rioni upstream, Jejora, Lukhunistskali, Natsaruli, Tchantchakhi, Sakauri, and Shaora)
2. Tsageri and Lentekhi municipalities – Tskenistskali upstream watershed area (Tskenistskali upstream area, Rioni, Ladjanuri, Zeskho, Koruldashi, Kheledula, and Mukhra)
3. Kharagauli Municipality - Chkherimela watershed (Chkherimela, Sakraula, Dzirula, and Dumala)
4. Bagdati Municipality - Khanistskali watershed (Khanistskali, Tsablaristskali, Sakraula, Kvirila, and Khodasheni)
5. Senaki Municipality – Tekhuri watershed area (Tekhuri, Tsivi, and Rioni)
6. Senaki and Khobi municipalities – Rioni downstream area (Rioni downstream area and delta, Tekhuri, and Tsivi)

[1] This pilot watersheds/areas option was added to the short-list as an outcome of consultation with stakeholders during the stakeholder validation workshop, FIU Senior Advisors and USAID Caucasus office

Table 3. Rioni Basin Pilot Watershed/Area Short-listing Matrix

#	Pilot watershed/area	Watershed Qualification (Short-Listing) Criteria	Rating Marks		Rating results	Comment
			Yes: +	No: -		
1.	Rioni upstream	1. Manageable number of municipalities	yes: +	no: -	+	The area crosses large portions of Oni and Ambrolauri municipalities and insignificant portion of Tsageri Municipality
		2. Manageable geographic scale	yes: +	no: -	+	The watershed area has more than 200 km^2 area, and the river more than 10km in length; The area encompasses the majority of Oni and Ambrolauri municipalities and very small portion of Tsageri Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	+	There are over 138 villages in the watershed areas
		4. Upstream or downstream location	yes: +	no: -	+	Pilot area has upstream location
		5. Workable degree of infrastructure complexity	yes: +	no: -	+	Pilot area is mostly agriculture based with two small cities of Oni and Ambrolauri
		6. Significant ecological value	yes: +	no: -	+	The area encompasses extensive territories of natural forests of high ecological value representing Central Caucasus ecosystems
		Final result			**+**	**Eligible**
2,3,4	Natsaruli; Tchantchakhi; Sakauri	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	Watersheds occupy very small areas
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**In-eligible**
5.	Jejora	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	Watershed area encompasses less than a third of Oni Municipality and break-away South Ossetia
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	There are few villages in the watershed
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
6.	Lukhunistskali	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	The watershed occupies less than a third of the area of Ambrolauri Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The watershed is practically unpopulated

		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result				**Ineligible**
7,8	Shaora; Ladjanuri	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	The area occupies less than a third of Ambrolauri Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			-	**Ineligible**
9.	Kvirila	1. Manageable number of municipalities	yes: +	no: -	-	The watershed crosses more than 4 municipalities (Sachkhere, Chiatura, Zestaphoni, Terjola, and Bagdati)
		2. Manageable geographic scale	yes: +	no: -		
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -	-	The majority of the watershed has mid-stream location
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The watershed encompasses highly urbanized areas
		6. Significant ecological value	yes: +	no: -		
		Final result			-	**Ineligible**
10,11	Gebura; Djruchula	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	Watersheds occupy very small areas
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -	-	Watersheds have mid-stream location
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			-	**Ineligible**
12	Dzirula	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -	-	Most of area of the watershed has mid-stream location
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			-	**Ineligible**
13	Dumala	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	Watershed occupies very small area
		3. Presence of adequate number of communities/villages	yes: +	no: -		

		4. Upstream or downstream location	yes: +	no: -	-	Watershed has mid-stream location
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
14	Chkherimela	1. Manageable number of municipalities	yes: +	no: -	+	Watershed is located only within 1 municipality - Kharagauli
		2. Manageable geographic scale	yes: +	no: -	+	Watershed occupies more than half of Kharagauli Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	+	Watershed has more than 15 communities
		4. Upstream or downstream location	yes: +	no: -	+	Watershed has downstream location
		5. Workable degree of infrastructure complexity	yes: +	no: -	+	The area is predominantly rural with one city of Kharagauli
		6. Significant ecological value	yes: +	no: -	+	The area has significant ecological value (part of the Borjomi-Kharagauli PA is located in this area)
		Final result			**+**	**Eligible**
15, 16, 17, 18, 19	Cholaburi; Dzusa; Buja; Tkibula; Shabatgele	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	Watersheds occupy small areas
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -	-	Watersheds have mid-stream location
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
20	Tskaltsitela	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -		
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -	-	Watersheds has mid-stream location
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
21	Khanistskali	1. Manageable number of municipalities	yes: +	no: -	+	Watershed is located within Bagdati Municipality
		2. Manageable geographic scale	yes: +	no: -	+	The watershed encompasses entire Bagdati Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	+	There are more than 15 villages in the watershed
		4. Upstream or downstream location	yes: +	no: -	+	Watersheds has low course location
		5. Workable degree of infrastructure complexity	yes: +	no: -	+	The area is predominantly agriculture based with 1 small city of Bagdati and large areas natural Colchic forests
		6. Significant ecological value	yes: +	no: -	+	Over 67% of Bagdati Municipality is covered with natural forests, and Vartsikhe part of Ajameti Managed Reserve is located within this area
		Final result			**+**	**Eligible**
22	Tsablaristskali	1. Manageable number of municipalities	yes: +	no: -		

		2. Manageable geographic scale	yes: +	no: -	-	River is less than 30km in length
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The area is practically unpopulated
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
23	Sakraula	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	Watershed occupies less than a third of Bagdati Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The area is practically unpopulated
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
24,25,26,27	Koristskali; Sulori; Kumuri; Zeskho	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	Watersheds catchments are less than 200 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
28	Tskenistskali upstream	1. Manageable number of municipalities	yes: +	no: -	+	Watershed area covers significant parts of Lentekhi and Tsageri municipalities
		2. Manageable geographic scale	yes: +	no: -	+	
		3. Presence of adequate number of communities/villages	yes: +	no: -	+	There are more than 15 villages in the area
		4. Upstream or downstream location	yes: +	no: -	+	The watershed area has upstream location
		5. Workable degree of infrastructure complexity	yes: +	no: -	+	The area is predominantly rural area with two urban areas of low infrastructure complexity
		6. Significant ecological value	yes: +	no: -	+	The area is covered with large massifs of natural forests, alpine and sub-alpine landscapes of the Central Caucasus ecosystem
		Final result			**+**	**Eligible**
29, 30, 31	Nogela; Koruldashi; Mukhra;	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	Watersheds cover very small areas
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
32	Kheledula	1. Manageable number of	yes:	no: -		

		municipalities	+			
		2. Manageable geographic scale	yes: +	no: -	-	Watershed occupies less than a third of the Lentekhi Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
33	Khevistskali	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	Watershed occupies very small areas of Samtredia and Chokhatauri municipalities. Its total area is less than 200 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
34	Gubistskali	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -		
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	The area is densely populated and urbanized
		6. Significant ecological value	yes: +	no: -	-	Watershed does not encompass large areas of natural ecosystems of high ecological value
		Final result			**-**	**Ineligible**
35	Tekhuri upstream	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -		
		3. Presence of adequate number of communities/villages	yes: +	no: -	-	The area is unpopulated
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -	-	There is virtually no infrastructure in the area
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
36	Abasha	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	Watershed occupies less than a third of any municipality it crosses
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		

		Final result			**-**	**Ineligible**
37	Tsivi	1. Manageable number of municipalities	yes: +	no: -		
		2. Manageable geographic scale	yes: +	no: -	-	Watershed area is less than 200 km^2
		3. Presence of adequate number of communities/villages	yes: +	no: -		
		4. Upstream or downstream location	yes: +	no: -		
		5. Workable degree of infrastructure complexity	yes: +	no: -		
		6. Significant ecological value	yes: +	no: -		
		Final result			**-**	**Ineligible**
38	Tekhuri downstream	1. Manageable number of municipalities	yes: +	no: -	+	Tekhuri watershed downstream area is located within Senaki Municipality
		2. Manageable geographic scale	yes: +	no: -	+	The area covers more than a third of Senaki Municipality
		3. Presence of adequate number of communities/villages	yes: +	no: -	+	There are more than 15 villages in the area
		4. Upstream or downstream location	yes: +	no: -	+	The area has downstream location
		5. Workable degree of infrastructure complexity	yes: +	no: -		The area is predominantly agriculture based with 1 city of Senaki
		6. Significant ecological value	yes: +	no: -	+	part of the Kolkheti National Park is located within Senaki Municipality
		Final result			**+**	**Eligible**
39	Rioni downstream (part of Khobi, and Senaki)	1. Manageable number of municipalities	yes: +	no: -	+	Rioni downstream area crosses 3 municipalities (Khobi, Senaki and Abasha)
		2. Manageable geographic scale	yes: +	no: -	+	The area covers less than a third of Khobi Municipality and more than a third of Senaki and Abasha municipalities
		3. Presence of adequate number of communities/villages	yes: +	no: -	+	There are more than 15 communities/villages in the area
		4. Upstream or downstream location	yes: +	no: -	+	The area has downstream location
		5. Workable degree of infrastructure complexity	yes: +	no: -	+	The area is peri-urban
		6. Significant ecological value	yes: +	no: -	+	The area encompasses wetlands, marshes of tertiary period, and deltas. Part of the Kolkheti Park is located in this area
		Final result			**+**	**Eligible**

5. EVALUATION OF SHORT-LISTED WATERSHEDS/AREAS

5.1 Alazani-Iori River Basin

For the purpose of selecting the 1st (upstream) pilot watershed/area in Alazani-Iori river basins, we have evaluated two options and subsequently selected the option with the highest score. These options have been as follows: 1. Alazani upstream area: Akhmeta-Telavi municipalities; 2. Iori upstream area: Tianeti Municipality

Table 4. Evaluation Score Card for Short-listed Alazani-Iori Basin Pilot Watersheds/Areas (Upstream)

#	Pilot Watershed	Selection Criteria	Maximum attainable score	Scoring result (Scores obtained)	Comment
1.	Alazani upstream: Telavi-Akhmeta municipalities	**1. Functions and values**			
		1.1. Ecological value	40	40	The area encompasses large territories of natural ecosystems, including alpine and sub-alpine meadows and natural forests. Part of the Tusheti PA, as well as Batsara-Babaneuli and Ilto PAs are located in the targeted areas; Forests have high ecological value of soil stabilization, water regulation, etc.; The area is rich in ground waters that are used for drinking and domestic purposes; Forests are logged commercially, and land resources are extensively used for agriculture; Sand and gravel are extensively extracted from river banks and beds in both Telavi and Akhmeta municipalities and limestone in Telavi Municipality (Lopota watershed); Surface water resources are used for HPP generation (24MW Khadori HPP I 0.6 MW Khadori I, 6 MW Khadori II under construction, and 2.5 MW Boldoda SHPP) and irrigation (Upper Alazani Canal); Local population depends on timber resources for fuel-wood, pastures, small-scale agriculture, and etc. The area has high aesthetic value in terms of richness of biodiversity, beautiful landscapes, and PAs. The area especially that of Telavi Municipality has significant historical value. There are Tush communities residing in Akhmeta who have a very unique tradition and culture. The watershed provides for all ecosystem services, except for commercial fisheries and navigation
		1.2 Health protection value	40	40	
		1.3 Economic/commercial value	20	16	
		1.4 Livelihood support value	40	40	
		1.5 Aesthetic/recreational value	20	20	
		1.6 Cultural value	20	20	
		1.7 Amount of ecosystem services provided by the watershed	20	16	
		Total Score	***200***	***192***	
		2. Negative anthropogenic pressures on watershed and its resources			
		Water resources			
		2.1 Water abstractions and consumption	10	8	The most significant negative pressures on water quantity are from water abstractions and usage of water for hydropower generation, as well as domestic use and irrigation. Water abstractions are higher relative to 80s and 90s; The largest quantity of abstractions occurs in the upper reaches of the Alazani River in Akhmeta and Telavi Municipality; There are no large regulating hydropower schemes in the basin to change the river regime; Wastewater loads from point sources are lower than in 80s, especially from industrial facilities; The most significant amount of discharges are from hydropower sector which implies that the largest volume of water discharged into the surface water bodies is clean; As for diffused source of pollution, agriculture run-off brings less nutrients and chlororganic pesticides to the surface waters, given the reduced loads of agrochemicals compared to the 80s
		2.2 Man-induced river regime change, damming, and diversion	10	0	
		2.3 Wastewater discharges from point sources	10	4	
		2.4 Wastewater discharges from non-point sources	10	6	
		2.5 Other	10	0	
		Land resources			
		2.6 Land use, and land use change	10	0	The most significant negative influence on land resources of the watershed pilot area are from extensive logging, overgrazing and unsustainable pasture management; less significant pressures are imposed by land cultivation, irrigation and use of agrochemicals, this is due to significantly reduced agricultural activities; Currently,
		2.7 Intensive land cultivation	10	6	
		2.8 Unsustainable irrigation	10	6	

2.9 Extensive use of agrochemicals	10	4	there is no trend of expanding urban and agricultural areas
2.10 Extensive Logging	10	10	; Mining and other industrial activities are of limited scale, with the exception of extraction of sand and gravel; Significant pressures on land resources are imposed by solid waste dumping; Nearby soils of old pesticide store- houses in Telavi Municipality and electricity sub-stations with PCB-oil content transformers may also pose as significant threats to land resources
2.11 Overgrazing	10	10	
2.12 Unsustainable pasture management	10	10	
2.13 Mining	10	6	
2.14 Industrial activities	10	4	
2.15 Solid waste dumping	10	10	
2.16 Toxic wastes	10	6	
2.17 Others	10	0	
Landscapes and biological resources			
2.18 Land use, and land use change	10	0	The most significant pressures on landscapes and biodiversity are from extensive logging, overgrazing and poaching, including illegal fishing, as well as by tourism development and environmental pollution to a lesser extent . Extraction of sand and gravel inflicts pressures on riverine ecosystems, especially on aquatic biota
2.19 Extensive logging	10	10	
2.20 Infrastructure development	10	2	
2.21 Unsustainable fishing	10	6	
2.22 Overgrazing	10	10	
2.23 Poaching	10	10	
2.24 Mining	10	8	
2.25 Tourism development	10	6	
2.26 Introduction of exotic/alien species	10	0	
2.27 Environmental pollution	10	4	
2.28 Others	10	0	
Total	***280***	***146***	
3. Negative natural pressures on watershed and its resources			
3.1 Landslides	40	40	Telavi Municipality is high mudflow prone area, especially the eastern part and the left bank of Alazani River; Akhmeta Municipality is characterized by high occurrence of both mudflows and landslides; Climate change does not significantly impact hydro-meteorological conditions and the river regime
3.2 Mudflows	40	40	
3.3 Floods and/or Flash Floods	40	24	
3.4 Avalanches	40	24	
3.5 Droughts	40	2	
3.6 Climate change	40	2	
3.7 Others (e.g. eustasy, sea surges, karsts, river bed sedimentation, and etc.)	40	0	
Total	***280***	***132***	
4. Potential for significant negative pressures and impacts on watershed and its resources			
4.1 Potential for significant anthropogenic pressures and impacts in the future	40	32	If serious preventive and/or mitigation measures are not taken, natural pressures and impacts on watershed will increase. As for the anthropogenic pressures, in the next 5-10 years it is not expected to have significant increase in pressures from various economic activities as well as from population growth, with the exception of commercial logging which is expected to be high; No large-scale infrastructure project was implemented or is planned to be implemented in the region
4.2 Potential for significant natural pressures and impacts in the future	40	40	
Total	***80***	***72***	
5. Negative impacts on watershed and its resources			
Environmental impacts: water resources			

5.1 Reduction in river run-off	10	0	There is no river run-off decrease In the upstream area; There is no data on sedimentation change; Owing to soil and river bank erosion, river/lake silting occurs in the pilot area; In terms of water pollution in up streams of Alazan,i surface waters in Telavi District are mostly polluted by nutrients, however the level of pollution is not high
5.2 Reduction in sedimentation flow	10	-	
5.3 River bed/lake/reservoir silting	10	8	
5.4 Water pollution	10	6	
Environmental impacts: land resources			
5.5 Soil erosion	10	10	Soil erosion is a widespread phenomena in Akhmeta and Telavi municipalities, especially water erosion and erosion caused by overgrazing; Unlike soil salinization and bogging, river bank erosion is also a serious problem; As for soil quality, some studies indicate the contamination of soils by PoPs in areas of obsolete pesticide storage facilities in Telavi Municipality; Soils might also be contaminated in and around waste dumping sites
5.6 Soil salinization	10	2	
5.7 Soil bogging	10	0	
5.8 River bank/coastal erosion	10	10	
5.9 Soil compaction	10	6	
5.10 Soil contamination	10	4	
5.11 Desertification	10	0	
Environmental impacts: biological resources			
5.12 Ecosystem/landscape modification	10	6	The large areas of Akhmeta and Telavi municipalities are covered with natural forests. However, the extent of land use change is much higher in Telavi municipality
5.13 Habitat fragmentation	10	6	
5.14 Habitat loss	10	6	
5.15 Species loss	10	6	
Social-economic and health impacts			
5.16 Health impacts: Illnesses	10	-	There is no information on health impacts of environmental degradation (pollution) in Alazani river basin, including illnesses and deaths. However, in terms of impacts of natural pressures (e.g. disasters, etc.) there are no human deaths recorded due to disasters, though economic losses are high
5.17 Casualties (human deaths)	10	0	
5.18 Impacts on economic assets, including housing, infrastructure, and etc. Economic impacts	10	8	
Total	***180***	***78***	
6. Linkages between resource uses and watershed functions			
6.1 Demonstrated linkage between upstream use and downstream watershed function/state	40	20	There are some impacts of water abstractions in Akhmeta and Telavi municipalities and upstream water consumption on the availability of water in downstream areas, especially in Signagi and Dedoplistskaro municipalities; Due to intensive logging of forests, disaster risk reduction functions of ecosystems are decreased as well as that of ecosystem conservation and recreation values; Furthermore, due to intensive extraction of sand and gravel from river banks and terraces, river bank erosion as well as river bed and reservoirs silting occurs that subsequently reduces flood control functions of water bodies
6.2 Demonstrated linkage between various uses of watershed resources	40	20	
Total	***80***	***40***	
7. Socio-economic situation			
7.1 Poverty level	20	20	Kakheti has one of the highest poverty levels in Georgia (50.22%); Unemployment level is not as high as in other regions, which is due to the high rate of self-employment of rural population in agriculture sector; Population density of Akhmeta Municipality is low (~19/km^2), whereas in Telavi it is higher (~84/km^2) than national average. Average density is about 52/km^2, which falls under the medium range of value as per selection criterion; The average density of two municipalities is 51, which is still lower than the national average
7.2Population density	20	10	
7.3Unemployment level	20	12	
Total	***60***	***42***	
8. Governance structure			
8.1 Existence of regional government structure	20	20	There is a regional government located in Telavi; Telavi Municipal Government is also located in Telavi; Akhmeta

		8.2 Existence of municipal government(s)	20	20	Government is located in the city of Akhmeta; Kakheti Region has its own regional development strategy and municipalities their own development strategies; There were several consultations with Kakheti regional and local governments, where they expressed keen interest in the program
		8.3 Existence of regional and/or municipal development programs/strategies	20	20	
		8.4 Readiness of regional/local governments to participate in the program	20	20	
		Total	***80***	***80***	
		9. Potential for significant catalytic effect			
		9.1 Presence of similar/complementary USAID programs	20	20	UNDP/GEF and FFI/NACRES, as well as local stakeholders are working in Tusheti PA; UNDP has an economic development program in Pankisi Gorge, Akhmeta; USAID EPI works on value chain development all over Georgia; USDoI-ITAP operates all over Georgia, including PAs in Akhmeta Municipality; EU-TACIS has river basin planning project in Alazani River Basin; Previously, there was a USAID/DAI South Caucasus Water Project that had integrated river basin planning pilot project; In addition, there was WB/GEF project which provided small grants to Tusheti communities that worked well
		9.2 Presence of other donor programs/projects and projects in the pipeline and/or government programs	20	20	
		9.3 Presence of success stories and good lessons learned from previous projects/programs	20	20	
		Total	***60***	***60***	
		10. Geographic scale and location			
		10.1 Practical geographic scale and location	**20**	20	Pilot watershed/area has a total area of more 500 km^2 and less than 4,000 km^2, as well as a location within only one administrative region
		Total	**20**	**20**	
		GRAND TOTAL	***1320***	***862***	
2.	Iori upstream: Tianeti Municipality	**1. Functions and values**			
		1.1. Ecological value	40	24	The area encompasses large territories of natural ecosystems, including alpine and sub-alpine meadows as well as natural forests. There are no PAs located in the area; Forests have disaster risk reduction value. Forests are exploited for commercial and to a larger extent for livelihood support; Surface water is used for HPP generation and irrigating downstream agricultural lands; There is only 1 small HPP with approximately ~ 9MW capacity; There are practically no industries in the municipality and thus, there is no demand for industrial water use; Ground water are used for drinking and domestic purposes; The towns of Tianeti and Sioni are resorts of local importance; There are not as many cultural and historical monuments in Tianeti Municipality as in Telavi and Akhmeta municipalities. The watershed performs all possible functions and provides all possible services that the watershed and its resources can provide, with the exception of commercial fisheries, industrial water use and navigation
		1.2 Health protection value	40	40	
		1.3 Economic/commercial value	20	12	
		1.4 Livelihood support value	40	40	
		1.5 Aesthetic/recreational value	20	16	
		1.6 Cultural value	20	4	
		1.7 Amount of ecosystem services provided by the watershed	20	12	
		Total Score	***200***	***148***	
		2. Negative anthropogenic pressures on watershed and its resources			
		Water resources			
		2.1 Water abstractions and consumption	10	4	The most significant negative influences on water quantity are from water abstractions and usage for hydropower generation, domestic use and to a lesser extent for irrigation. Water abstractions are much lower in Tianeti Municipality compared to those in Akhmeta and Telavi municipalities (257.11 mln m^3 - Tianeti Municipality , 475.48 mln m^3 - Telavi Municipality and 215.58 mln m^3 - Akhmeta Municipality); In terms of water quality, the most significant pressures are imposed by discharges and leachates from non-point sources; There are virtually no untreated wastewater discharges from point sources
		2.2 Man-induced river regime change, damming, and diversion	10	2	
		2.3 Wastewater discharges from point sources	10	2	
		2.4 Wastewater discharges from non-point sources	10	4	
		2.5 Others	10	0	

		Land resources	
2.6 Land use, land use change	10	0	The most notable pressures on land resources of the watershed pilot area are from extensive logging, overgrazing and unsustainable pasture management; To a lesser extent, pressures are imposed by land cultivation, and use of agrochemicals, which is due to the significantly reduced agricultural activities as well as low population density; Currently, there is no trend of expanding urban and agricultural areas; Mining and other industrial activities are of limited scale, which is predominantly extraction of sand and gravel; Additionally, significant pressures on land resources are imposed by solid waste dumping. However, as a result of low population density, waste generation is low in the region
2.7 Intensive land cultivation	10	4	
2.8 Unsustainable irrigation	10	0	
2.9 Extensive use of agrochemicals	10	2	
2.10 Extensive Logging	10	10	
2.11 Overgrazing	10	10	
2.12 Unsustainable pasture management	10	10	
2.13 Mining	10	4	
2.14 Industrial activities	10	0	
2.15 Solid waste dumping	10	4	
2.16 Toxic wastes	10	0	
2.17 Others	10	0	
		Landscapes and biological resources	
2.18 Land use, land use change	10	0	The most notable pressures on landscapes and biodiversity are from extensive logging, overgrazing, poaching as well as unsustainable fishing, and to a lesser extent, by tourism development
2.19 Extensive logging	10	10	
2.20 Infrastructure development	10	2	
2.21 Unsustainable fishing	10	4	
2.22 Overgrazing	10	8	
2.23 Poaching	10	10	
2.24 Mining	10	2	
2.25 Tourism development	10	6	
2.26 Introduction of exotic/alien species	10	0	
2.27 Environmental pollution	10	2	
2.28 Other	10	0	
Total	***280***	***100***	
		3. Negative natural pressures on watershed and its resources	
3.1 Landslides	40	40	Tianeti Municipality is highly susceptible to mudflows and landslides; River bank erosion is also characteristic to the municipality; Climate change does not have any visible impact on upstream waters
3.2 Mudflows	40	40	
3.3 Floods and/or flash floods	40	16	
3.4 Avalanches	40	24	
3.5 Droughts	40	2	
3.5 Climate change	40	2	
3.6 Other (e.g. eustasy, sea surges, karsts, river bed sedimentation, and etc.)	40	0	
Total	***280***	***124***	
		4. Potential for significant negative pressures and impacts on watershed and its resources	
4.1 Potential for significant future anthropogenic pressures and impacts	40	40	If serious preventive and/or mitigation measures are not taken, natural pressures and impacts on watershed will increase.
4.2 Potential for significant future natural pressures and impacts	40	40	As for the anthropogenic pressures, following the rehabilitation of Samgori Irrigation system and under continued climate change pressures, water abstractions in upstream areas will increase the possibility of conflict among various water users, and between upstream and downstream water users may emerge as well
Total	***80***	***80***	
		5. Negative impacts on watershed and its resources	
		Environmental impacts: water resources	

5.1 Reduction in river run-off	10	0	In the upstream area there is no river run-off decrease; There is no data on sedimentation change; As a result of soil and river bank erosion, river/lake silting occurs in the pilot area; With regard to water pollution in up streams of the Iori Basin, it is very insignificant
5.2 Reduction in sedimentation flow	10	-	
5.3 River bed/lake/reservoir silting	10	8	
5.4 Water pollution	10	2	
Environmental impacts: land resources			
5.5 Soil erosion	10	10	Soil erosion is a widespread phenomena in Tianeti Municipality, especially water erosion and erosion caused by overgrazing; Unlike soil salinization and bogging, river bank erosion is also a serious problem; As for soil quality, soils might be contaminated in and around the waste dumping sites. However, there are no data available on soil quality
5.6 Soil salinization	10	0	
5.7 Soil bogging	10	0	
5.8 River bank/coastal erosion	10	10	
5.9 Soil compaction	10	8	
5.10 Soil contamination	10	2	
5.11 Desertification	10	0	
Environmental impacts: biological resources			
5.12 Ecosystem/landscape modification	10	6	Large areas of Tianeti Municipality are covered with natural forests. However, as a result of intensive logging, there is degradation of forest ecosystems and species habitats; Furthermore, due to overgrazing there is a degradation of alpine and sub-alpine meadows
5.13 Habitat fragmentation	10	6	
5.14 Habitat loss	10	4	
5.15 Species loss	10	2	
Social-economic and health impacts			
5.16 Health impacts: Illnesses	10	-	There is no information available on health impacts of environmental degradation (pollution) in Iori River Basin, including illnesses and deaths. However, in terms of impacts of natural pressures (e.g. disasters, and etc.) there are no human deaths recorded due to disasters, though economic losses are sizable
5.17 Casualties (human deaths)	10	0	
5.18 Impacts on economic assets, including housing, infrastructure, and etc. Economic impacts	10	6	
Total	180	64	
6. Linkages between resource uses and watershed functions			
6.1 Demonstrated linkage between upstream use and downstream watershed function/state	40	40	Water abstractions for irrigating downstream arable lands of Kvemo Kartli have significant impacts on hydrological regime of low course waters of the Basin; Furthermore, intensive forest logging reduces ecosystem disaster risk reduction values, as well as conservation, aesthetic and recreation values of the watershed area
6.2 Demonstrated linkage between various uses of watershed resources	40	32	
Total	***80***	***72***	
7. Socio-economic situation			
7.1 Poverty level	20	20	Tianeti belongs to Mtskheta-Mtianeti Region, with poverty incidence of 40.6 percent according to the WB 2008 poverty assessment, and 52.2% in accordance with 2009 state assessment. These figures are one of the highest among Georgians; Population density of the Tianety Municipality is 13.4/km^2; Unemployment is medium to high
7.2Population density	20	4	
7.3Unemployment level	20	12	
Total	***60***	***36***	
8. Governance structure			
8.1 Existence of regional government structure	20	0	There is no regional government located in Tianeti ; There is municipal government located in Tianeti; There exists no regional development strategy for targeted area;
8.2 Existence of municipal government(s)	20	20	
8.3 Existence of regional and/or municipal development programs/strategies	20	0	

		8.4 Readiness of regional/local governments to participate in the program	20	4	
		Total	***80***	***24***	
		9. Potential for significant catalytic effect			
		9.1 Presence of similar/complementary USAID programs	20	0	There are practically no other USAID or donor programs in Tianeti Municipality; In the past, there were no similar projects in the pilot area implemented
		9.2 Presence of other donor programs/projects and project in pipeline and/or government programs	20	0	
		9.3 Presence of success stories and good lessons learned from previous projects/programs	20	0	
		Total	***60***	0	
		10. Geographic scale and location			
		10.1 Practical geographic scale and location	**20**	20	Pilot watershed/area has a total area of more than 500 km^2 and less than 4,000 km^2 , as well as a location within only one administrative region
		Total	***20***	***20***	
		GRAND TOTAL	***1320***	***668***	

The evaluation of the two short-listed options of upstream watersheds/areas against a set of criteria has resulted in the following: 1. Alazani upstream area: Akhmeta and Telavi municipalities scored 862 and the option 2. Iori upstream area: Tianeti Municipality scored 668. Thus, based on the scoring results we recommend option 1. Alazani upstream area: Akhmeta-Telavi as the upstream pilot area in Alazani-Iori River basins.

For the selection of the 2nd (downstream) watershed/area in the Alazani-Iori river basins, we have evaluated two options: 1. Alazani-Iori downstream area: Dedoplistskaro Municipality and 2. R. Kabali watershed: Lagodekhi Municipality

Table 5. Evaluation Score Card for Short-listed Alazani-Iori Basin Pilot Watersheds/Areas (Downstream)

#	Selection Criteria	Maximum attainable score	Scoring result (Scores obtained)	Comment
1. Alazani-Iori downstream area: Dedoplistskaro Municipality	**1. Functions and values**			
	1.1. Ecological value	40	40	The area has high ecological, including conservation value. It encompasses semi-arid and arid ecosystems, as well as floodplain forests of Alazani and Iori; These areas are habitats for a number of endemic, rare and endangered species; More specifically, around 500 species of higher plants are distributed throughout in arid and semi-arid ecosystems. There are also 66 mammal species (including 17 Georgia Red List species) and up to 250 birds species. Arid and semi-arid ecosystems represent the edge of the global ranges of Legertine viper, striped hyena, goitered gazelle. Furthermore, these areas are habitats to species that are not specific to arid ecosystems, including lynx and bear typically populating broadleaved, coniferous or mixed forests. Due to the presence of a large artificial lake and floodplain forests, the area is rich in waterfowl and white eagle. Many endemic and/rare species can be seen here, many of them existing in very limited distribution and low
	1.2 Health protection value	40	24	
	1.3 Economic/commercial value	20	20	
	1.4 Livelihood support value	40	40	
	1.5 Aesthetic/recreational value	20	20	
	1.6 Cultural value	20	16	
	1.7 Amount of ecosystem services provided by the watershed	20	12	
	Total Score	***200***	***172***	

			numbers; There are the following PAs in the pilot area: in the Alazani basin part of the municipality : 1. Vashlovani; 2. Artsivis Kheoba and 3. Alaznis Chala in Alazani part of the municipality; and in the Iori basin part of the municipality: 1. Chachuna; 2. Khorugi; 3. Iori floodplain in Iori watershed area of the municipality; As for health protection value, filtrates and ground waters of Alazani watershed are used for drinking and domestic purposes. Iori is not used for drinking and domestic purposes; With regard to economic/commercial value of the pilot area, large territories in Iori watershed part of the municipality are used as winter pastures by people from various regions; cereal and other crops are grown in Dedoplistskaro, mostly in Alazani watershed part of the municipality; There are several hunting farms in the area; PA-based tourism, including bird watching is developed in the municipality; Limestone in large quantities, as well as oil and gas in small quantities are extracted in the municipality; Water resources are not abstracted for irrigation, industrial use and hydropower generation; As for livelihood support, agricultural lands of the municipality support small-scale farm systems and are used as pastures by locals, as well as wood is cut for fuel and other domestic consumption purposes; Regarding aesthetic/recreational value, there are no resorts in the municipality due to the harsh climate. However, given that there exists very specific and unique landscapes and the presence of Pas, many tourists visit the area; There are several historical monuments in the municipality. But, overall, the area is not so rich in cultural heritage as the upper stream municipalities of Kakheti Region; In terms of provision of ecosystem services, the watershed supports agriculture, it provides habitats and sheltering areas for many unique, endangered and rare species, and serves a nesting and resting area for many migratory birds as well; Local forests are cut for fire wood; Mineral resources are extracted in significant qualities, and etc. Due to the water shortage, water resources are only used for drinking and domestic purposes; Thus, the number of ecosystem services provided by the watershed area is limited
	2. Negative anthropogenic pressures on watershed and its resources		
		Water resources	
	2.1 Water abstractions and consumption	10	10
	2.2 Man-induced river regime change, damming, and diversion	10	8
	2.3 Wastewater discharges from point sources	10	2
	2.4 Wastewater discharges from non-point sources	10	4
	2.5 Others	10	0
		Land resources	
	2.6 Land use, and land use change	10	0
	2.7 Intensive land cultivation	10	4
	2.8 Unsustainable irrigation	10	8
	2.9 Extensive use of agrochemicals	10	2
	2.10 Extensive logging	10	8

The most notable pressures on water quantity in the Alazani watershed part of the area are from water abstractions and consumption by upstream users, as well as from water abstractions for drinking and domestic purposes by the local population. In Iori watershed part of the municipality, there are no water abstractions and the most significant pressures on water quantity are from upstream usage for drinking, , irrigation and HPP generation, as well as from river damming and water and sediment flow change within Dedoplistskaro Municipality itself (e.g. Dali Reservoir).
As for negative influences on water quantity they are mostly imposed by non-point sources (agriculture run-off, mining activities and waste dumping)

The most significant pressures on land resources are imposed by unsustainable pasture management (including overgrazing, burning of pastures, and etc) and unsustainable irrigation. Furthermore, oil and gas operations, as well as extraction of limestone in large quantities impose significant pressures on land resources of the municipality. Solid waste dumping in populated areas, including surface run-off also pollute soils. However, given that there is very low population density in the

2.11 Overgrazing	10	10	municipality, this problem is not an extensive phenomena; The use of agrochemicals is also not pose a high threat given the significantly reduced loads; Logging of floodplain, municipal and savanna forests also pose as threats to land resources
2.12 Unsustainable pasture management	10	10	
2.13 Mining	10	8	
2.14 Industrial activities	10	0	
2.15 Solid waste dumping	10	4	
2.16 Toxic wastes	10	2	
2.17 Others	10	2	
Landscapes and biological resources			
2.18 Land use, and land use change	10	2	The most notable threats to landscapes and biodiversity are from overgrazing in winter pastures and in floodplain forests; Grazing even happens in PAs; Logging of forests is also carried out both within and outside PAs; Poaching is a widespread phenomena as well, including illegal hunting and fishing; Increase in Protected Areas based tourism also imposes pressures on landscapes; Environmental pollution from mining activities imposes localized pressures on landscapes and biological resources to some extent; Expansion of alien/invasive plant and animal species, for example in the last decade, a variety of five-toed jerboa (Allactaga elater) and Indian porcupine (Hystrix indica) have expanded its habitat from Azerbaijan to Georgia; Weed species such as wormwoods and tumble weeds expand their habitats due to degradation of pasture lands; In addition, water level regulation imposes pressures on floodplain forests in Iori watershed area of the municipality
2.19 Extensive logging	10	10	
2.20 Infrastructure development	10	2	
2.21 Unsustainable fishing	10	8	
2.22 Overgrazing	10	10	
2.23 Poaching	10	10	
2.24 Mining	10	8	
2.25 Tourism development	10	8	
2.26 Introduction of exotic/alien species	10	8	
2.27 Environmental pollution	10	4	
2.28 Others	10	10	
Total	***280***	***162***	
3. Negative natural pressures on watershed and its resources			
3.1 Landslides	40	0	Traditionally, drought and high winds were significant threats to the watersheds of the Dedoplistskaro Municipality. Currently, this is aggravated by climate change impacts in terms of increase in annual air temperature, decrease in precipitation and river-off as well as increase in frequency and intensity of droughts and high winds. There is also a debris flow in the Dedoplistskaro Municipality which contains mostly gully deposits. These events usually happen once a year. Inundation of some areas in Alazani part of the municipality occurs periodically as well
3.2 Mudflows	40	0	
3.3 Floods and/or flash Floods	40	16	
3.4 Avalanches	40	0	
3.5 Droughts	40	40	
3.6 Climate change	40	40	
3.7 Other (e.g. eustasy, sea surges, karsts, river bed sedimentation, and etc.)	40	40	
Total	***280***	***136***	
4. Potential for significant negative pressures and impacts on watershed and its resources			
4.1 Potential for significant future anthropogenic pressures and impacts	40	40	If some mitigation or preventive measures are not undertaken, pressures and impacts on watershed resources will stay high from unsustainable pasture management and overgrazing, as well as from unsustainable irrigation, and etc. It is planned to expand gas and oil operations in Iori watershed part of the Dedoplistskaro District which will increase the level of threats to watershed and its resources; In the future, the use of water resources from upstream users will increase, which coupled with climate change pressures will have negative environmental impacts on ecosystems of low courses of the Alazani and Iori watersheds
4.2 Potential for significant future natural pressures and impacts	40	40	
Total	***80***	***80***	
5. Negative impacts on watershed and its resources			
Environmental impacts: water resources			
5.1 Reduction in river run-off	10	8	There is a drastic reduction in river run-off in Iori watershed part of the municipality, and the water scarcity is an issue in this area. This issue is of high concern to the population of the village of Mirzaani located in the Iori watershed part of the municipality; In Alazani watershed part of the municipality, the increase in river run-off has
5.2 Reduction in sediment flow	10	8	
5.3 River bed/lake/reservoir silting	10	8	

5.4 Water pollution	10	8	happened in last several decades, and currently, there is no significant water shortage in this area. As for water pollution, at the lowest reaches of the Alazani river, on the Azerbaijan side, concentrations of phenols exceed norms by 5-7 times, metals – 6-8 times and oil products – 2-3 times. These might be an impact of urban run-off from densely populated urban areas of Kakheti as well as minor oil extraction activities. There is no data available on the quality of water on the Georgian part of the Iori Basin. However, overall, the river quality is assessed as "good" by both Georgian and Azeri specialists
Environmental impacts: land resources			
5.5 Soil erosion	10	10	Soil erosion is a widespread phenomena in Dedoplistskaro Municipality, together with soil salinization and bogging; River bank and gully erosion is also a serious problem; As for soil quality, some studies indicate on the contamination of soils by PoPs in areas of obsolete pesticide storage facilities located in the municipality; Soils might also be contaminated in and around sites dumping wastes and oil and gas operations
5.6 Soil salinization	10	10	
5.7 Soil bogging	10	10	
5.8 River bank/coastal erosion	10	10	
5.9 Soil compaction	10	10	
5.10 Soil contamination	10	6	
Environmental impacts: Landscapes and biological resources			
5.11 Desertification	10	10	Natural ecosystems, including floodplain forests and semi-arid and arid landscapes are significantly degraded in Dedoplistskaro due to various natural and man-induced factors (e.g. landscape transformation into pastures and arable lands, overgrazing, unsustainable logging, and desertification); Consequently, habitats of a number of high conservation value species are fragmented and/or lost. Furthermore, due to the illegal hunting, populations of keystone species of Vashlovani PA are significantly reduced in numbers, including wild boar, bear, and etc. As a result of unsustainable natural resource management practices, two species: goiter gazelle (Gazela subgutturossa) and recovery of leopard (Panthera pardus) were completely lost in the past. Currently, reintroduction of these two species in Vashlovani PAs is hindered by illegal hunting; Large areas of Dedoplistskaro are desertified and the process is very intensive
5.12 Ecosystem/landscape modification	10	8	
5.13 Habitat fragmentation	10	8	
5.14 Habitat loss	10	8	
5.15 Species reduction/loss	10	8	
Social-economic and health impacts			
5.16 Health impacts: Illnesses	10	-	There is no information on health impacts of environmental degradation (pollution) in the downstream of the Alazani and Iori rivers basins of the Dedophlitskaro municipality, including illnesses and/or deaths. Droughts, climate change and accelerated desertification have serious economic impacts on municipal economy, in particular on agriculture output, soil fertility, etc
5.17 Casualties (human deaths)	10	0	
5.18 Impacts on economic assets, including housing, infrastructure, and etc. Economic impacts	10	10	
Total	***180***	***140***	
6. Linkages between resource uses and watershed functions			
6.1 Demonstrated linkage between upstream use and downstream watershed function/state	40	34	There is no significant negative impact of upstream water uses on river run-off in Alazani watershed part of the Dedoplistskaro Municipality. On the contrary, this impact is very serious in Iori watershed which is further aggravated by climate change; Furthermore, water regulation on Iori in Dedoplistskaro Municipality has prevented lower reach flood plain forests from flooding that caused degradation of these forests; Unsustainable grazing, wood cutting, hunting and fishing within and outside the protected areas reduce the ecological value of natural ecosystems of Alazani and Iori watersheds; Various mining operations, including sand and gravel, limestone and gas and oil extraction also reduces the ecological value of the watersheds; Unsustainable agriculture practices together with reduced ecological value of the watershed decreases the economic value of the land resources used as arable and range lands
6.2 Demonstrated linkage between various uses/functions of watershed resources	40	40	
Total	***80***	***74***	
7. Socio-economic situation			

		7.1 Poverty level	20	20	Kakheti has one of the highest poverty levels in Georgia; This poverty level is very high in Dedoplistskaro Municipality due to scarcity of natural resources, low industrial development and dominating subsistence economies. Unemployment level is not as high as in other regions, and this is due to the high rate of self-employment of rural population in agriculture sector; Population density of Dedoplistskaro Municipality is very low (~12/km^2)
		7.2Population density	20	6	
		7.3Unemployment level	20	16	
		Total	***60***	***42***	
		8. Governance structure			
		8.1 Existence of regional government structure	20	0	There is no regional government structure in Dedoplistskaro Municipality; Municipal government is located in Dedoplistskaro; Kakheti Region has its own regional development strategy; There were several consultations held with Kakheti Regional Government, in which they expressed keen interest in the program
		8.2 Existence of municipal government(s)	20	20	
		8.3 Existence of regional and/or municipal development programs/strategies	20	20	
		8.4 Readiness of regional/local governments to participate in the program	20	20	
		Total	***80***	***60***	
		9. Potential for significant catalytic effect			
		9.1 Presence of similar/complementary USAID programs	20	20	FFI/NACRES works in Vashlovani PA and with local stakeholders around PAs; IUCN has also on-going program activities related to Vashlovani PA management, educating youth through young rangers clubs, etc; GTZ has climate adaptation program in Dedoplistskaro Municipality; USAID/CENN climate program has climate vulnerability and adaptation activities in Dedoplistskaro; USAID EPI works on value chain development all over Georgia, and Kakheti might be one of the target areas for the program; EU-TACIS has river basin planning project in Alazani River Basin; UNDP/GEF upcoming third national communications project might focus on climate impacts on agriculture sector of Kakheti Region with a focus on Dedoplistskaro; USDoI-ITAP focus its activities on all PAs of Georgia, including those located in Dedoplistskaro District; There was previously a USAID/DAI South Caucasus Water project that had integrated river basin planning pilot project; In addition, there was WB/GEF project that provided small grants to Tusheti communities
		9.2 Presence of other donor programs/projects and projects in pipeline and/or government programs	20	20	
		9.3 Presence of success stories and good lessons learned from previous projects/programs	20	20	
		Total	***60***	***60***	
		10. Geographic scale and location			
		10.1 Practical geographic scale and location	20	20	Pilot watershed/area has a total area of more than 500 km^2 and less 4,000 km^2 , as well as a location within only one administrative region of Kakheti
		Total	***20***	***20***	
		GRAND TOTAL	***1320***	***946***	
2.	Kabali Watershed: Lagodekhi Municipality	**1. Functions and values**			
		1.1. Ecological value	40	40	The area has high ecological value. It is mostly represented by natural ecosystems of the Greater Caucasus, including alpine, sub-alpine meadows and high to low mountainous coniferous forests. There exists Lagodekhi PA strict natural reserve and managed reserve. 121 plant species found in Lagodekhi are endemic to the Caucasus and 9 – endemic to Georgia. Among Georgian endemics, 7 species are endemic to Kakheti or endemic to protected areas. Lagodekhi is famous for its very well preserved beech and hornbeam natural forests. 126 species of vertebrates are found in the Lagodekhi PAs. Georgia Red List and Red Book species are also found in Lagodekhi PAs. As for health protection function, waters (ground waters and filtrates) of the municipality are extracted and used mostly for drinking and domestic purposes; With regard to economic/commercial value of the watershed and its resources, although the municipality is rich in water resources and biomass, they are underutilized; Water is not extracted and used by irrigation and energy sectors. Over 42% of the total water used is
		1.2 Health protection value	40	40	
		1.3 Economic/commercial value	20	12	
		1.4 Livelihood support value	40	40	
		1.5 Aesthetic/recreational value	20	20	
		1.6 Cultural value	20	8	
		1.7 Amount of ecosystem services provided by the watershed	20	8	
		Total Score	***200***	***168***	

			utilized for commercial fisheries, and the rest is consumed by the domestic sector; There are no commercial logging activities in the municipality; Large areas of lands are used as agriculture lands, with arable lands being most extensive in the municipality; The municipality is poor in mineral resources with only small deposits of clay. PA-based tourism is a growing sector in the municipality; Watershed resources, including water, forests, land resources, and fish are used by rural population for their livelihoods. The area has high recreational and aesthetic value due to the presence of large areas of natural landscapes, clean environment, spring waters, and rich biodiversity; The municipality is poor in cultural heritage; In terms of the number of ecosystem services provided, the watershed and its resources support: 1. High ecological diversity (habitats for many species); Forests serve to reduce disaster risks; 2. Water is used for drinking and domestic purposes ; 3. Commercial fisheries; 4. Timber and non-timber resources and fish are also used by local communities for their own consumption; 5. The watershed supports PA-based and ecotourism; 6. Land resources provide basis for agriculture output. However, water resources are not used for irrigating agriculture lands, industrial consumption; HPP generation and navigation
2. Negative anthropogenic pressures on watershed and its resources			
Water resources			
2.1 Water abstractions and consumption	10	2	The most notable threats on water quantity are from water abstractions and its use for drinking and domestic purposes. However, the amount of water abstracted and consumed is insignificant; There are no significant hydro technical schemes on the rivers of Lagodekhi and hence, pressures on water quantity from damming, river diversion are practically absent; As for threats on water quality, they come from untreated sewage discharges, and from urban as well as agriculture run-off
2.2 Man-induced river regime change, damming, and diversion	10	0	
2.3 Wastewater discharges from point sources	10	8	
2.4 Wastewater discharges from non-point sources	10	8	
2.5 Other	10	0	
Land resources			
2.6 Land use, and land use change	10	0	Currently, the biggest threats on land resources of the watershed pilot area are from unsustainable irrigation, illegal logging, and solid waste dumping; Overgrazing is also a threat, but lower than the threats listed above. Mining and other industrial activities are insignificant
2.7 Intensive land cultivation	10	4	
2.8 Unsustainable irrigation	10	10	
2.9 Extensive use of agrochemicals	10	2	
2.10 Extensive Logging	10	8	
2.11 Overgrazing	10	6	
2.12 Unsustainable pasture management	10	6	
2.13 Mining	10	6	
2.14 Industrial activities	10	2	
2.15 Solid waste dumping	10	8	
2.16 Toxic wastes	10	0	
2.17 Others	10	0	
Landscapes and biological resources			
2.18 Land use, and land use change	10	0	The most notable threats to landscapes and biodiversity are from extensive illegal logging, poaching within and outside Pas, and unsustainable irrigation. As a consequence of inefficient and extensive irrigation, it threatens the floodplain areas that are almost entirely bogged; In-stream and river bank sand and gravel extraction operations within Kabali and Alazani watersheds are extensive that pose high risk on aquabiota; To a lesser extent, threats are inflicted from PA-based tourism sector.
2.19 Extensive logging	10	10	
2.20 Infrastructure development	10	2	
2.21 Unsustainable fishing	10	8	
2.22 Overgrazing	10	4	

2.23 Poaching	10	10	There does not exist any medium to large-scale on-going infrastructure projects in the municipality
2.24 Mining	10	6	
2.25 Tourism development	10	6	
2.26 Introduction of exotic/alien species	10	0	
2.27 Environmental pollution	10	2	
2.28 Others	10	0	
Total	***280***	***118***	
3. Negative natural pressures on watershed and its resources			
3.1 Landslides	40	40	Lagodekhi Municipality (in particular, Kabali watershed and other micro-catchments of Alazani river originating and flowing on Southern Slope of the Greater Caucasus) is highly susceptible to mudflows and is under high risk of flash floods and other types of catastrophic floods; Disastrous landslides in the form of debris flow is a frequent phenomenon in the municipality; River bank erosion is also characteristic of the municipality
3.2 Mudflows	40	40	
3.3 Floods and/or flash floods	40	40	
3.4 Avalanches	40	16	
3.5 Droughts	40	0	
3.5 Climate change	40	4	
3.7 Other (e.g. eustasy, sea surges, karsts, river bed sedimentation, and etc.)	40	24	
Total	***280***	***164***	
4. Potential for significant future negative pressures and impacts on watershed and its resources			
4.1 Potential for significant future anthropogenic pressures and impacts	40	40	If serious preventive and/or mitigation measures are not undertaken, natural pressures and impacts of mudflows and flash floods will continue to be significant, or even intensify further; Likewise, poaching, illegal logging and overgrazing will remain serious threats within a 5-year horizon together with unsustainable irrigation
4.2 Potential for significant future natural pressures and impacts	40	40	
Total	***80***	***80***	
5. Negative impacts on watershed and its resources			
Environmental impacts: water resources			
5.1 Reduction in river run-off	10	0	The existing data does not indicate any river run-off change and reduction in sedimentation flow; Numerous operations of sand and gravel extraction might have an impact on river hydrology and hydraulics, however, these potential impacts are not thoroughly studied; Due to soil and river bank erosion, river/lake silting occurs in the pilot area; As for water pollution, data on Kabali water resources are unavailable. However, it can be assumed that downstream waters below settlements are polluted significantly
5.2 Reduction in sedimentation flow	10	-	
5.3 River bed/lake/reservoir silting	10	8	
5.4 Water pollution	10	6	
Environmental impacts: land resources			
5.5 Soil erosion	10	10	Soil erosion together with soil salinization and bogging is a widespread phenomenon in Lagodekhi Municipality; River bank erosion is also a significant issue for the municipality; With regard to soil contamination, there is no data available on soil quality. It only can be presumed that the soil may be contaminated in and around dumping sites and residential areas
5.6 Soil salinization	10	10	
5.7 Soil bogging	10	10	
5.8 River bank/coastal erosion	10	10	
5.9 Soil compaction	10	6	
5.10 Soil contamination	10	2	
Environmental impacts: ecosystems, biological resources			
5.11 Desertification	10	0	Habitat fragmentation and loss, as well as decline in the number of species are significant issues in Lagodekhi Municipality. While ecosystem/landscape degradation occurs in floodplain forests where after cutting forest, the natural landscapes cannot regenerate themselves, or as a result of soil bogging turn into marshy areas; Desertification is not an issue in the watershed area
5.12 Ecosystem/landscape modification	10	8	
5.13 Habitat fragmentation	10	8	
5.14 Habitat loss	10	8	
5.15 Species loss	10	6	

Social-economic and health impacts			
5.16 Health impacts: Illnesses	10	-	There is no information available on health impacts of environmental degradation (pollution) in Kabalii River Basin, including illnesses and deaths. However, in terms of impacts of natural pressures (e.g. natural disasters, and etc.) there are no human deaths recorded due to disasters, though economic losses are significant
5.17 Casualties (human death)	10	0	
5.18 Impacts on economic assets, including housing, infrastructure, and etc. Economic impacts	10	8	
Total	***180***	***100***	
6. Linkages between resource uses and watershed functions			
6.1 Demonstrated linkage between upstream use and downstream watershed/area function/state	40	10	Watershed resources of Lagodekhi Municipality, including Kabali, Chiaura, etc. are not impacted by the use of upstream resources since they are left tributaries of the Alazani River contributing to the formation of the Alazani run-off in downstream areas. Water usage in Lagodekhi do not have any significant impact on water quantity and quality of water in Dedoplistskaro Municipality as well as further down in Azerbaijan as water abstractions and discharges are very insignificant in quantity. As for linkages between resource uses and/or functions within Lagodekhi Municipality, illegal logging operations, extraction of sand and gravel cause the river bank to erode which in turn reduces flood carrying capacity of rivers. Furthermore, illegal logging of forests reduces ecological and aesthetic/recreation value of the ecosystems
6.2 Demonstrated linkage between various uses/functions of watershed resources	40	32	
Total	***80***	***42***	
7. Socio-economic situation			
7.1 Poverty level	20	12	The population density is high in Lagodekhi Municipality (54.4 km^2) and so is unemployment compared to the national average; Although Lagodekhi is within one of the poorest regions of Georgia, it is not among the poorest municipalities of Kakheti Region.
7.2Population density	20	16	
7.3 Unemployment level	20	16	
Total	***60***	***44***	
8. Governance structure			
8.1 Existence of regional government structure	20	0	There is no regional government located in Lagodekhi Municipality; Lagodekhi Municipal Government is located in the city of Lagodekhi; Kakheti has its own regional development strategy; Kakheti Regional Government is highly interested in the program
8.2 Existence of municipal government(s)	20	20	
8.3 Existence of regional and/or municipal development programs/strategies	20	0	
8.4 Readiness of regional/local governments to participate in the program	20	10	
Total	***80***	***30***	
9. Potential for significant catalytic effect			
9.1 Presence of similar/complementary USAID programs	20	20	USDoI-ITAP among others covers Lagodekhi PA; Caucasus Nature Fund (CNF) and Georgian Government have a joint program on improving the management of the Lagodekhi PA; WWF also focuses its activities on Lagodekhi PA; Previously there was a WB/GEF project that supported establishment and development of Lagodekhi PA.
9.2 Presence of other donor programs/projects and projects in pipeline and/or government programs	20	20	
9.3 Presence of success stories and good lessons learned from previous projects/programs	20	20	
Total	***60***	***60***	

		10. Geographic scale and location		
	10.1 Practical geographic scale and location	**20**	20	Pilot watershed/area has a total area of more than 500 km^2 and less than 4,000 km^2, as well as a location within only one administrative region
	Total	***20***	***20***	
	GRAND TOTAL	***1320***	***826***	

Consequently, the evaluation of the two short-listed options of downstream watersheds/areas against a set of criteria has resulted in the following: 1. Alazani-Iori downstream area: Dedoplistskaro Municipality was scored 946 and option 2. Kabali watershed: Lagodekhi Municipality scored 826.

Based on the scoring results we recommend option 1. Alazani-Iori downstream area: Akhmeta-Dedoplistskaro Municipality as the 2nd (downstream) pilot area in Alazani-Iori river basins.

5.2 Rioni Basin

For selection of the 1st (upstream) pilot watershed/area in Rioni Basin we have evaluated two options: 1. Rioni upstream watershed/area: Oni and Ambrolauri municipalities and; 2. Tskenistskali upstream watershed/area: Lentekhi and Tsageri municipalities

Table 6. Evaluation Score Card for Short-listed Rioni Basin Pilot Watersheds/Areas (Upstream)

#	Pilot Watershed	Selection Criteria	Maximum attainable score	Scoring result (Scores obtained)	Comment
1.	Rioni upstream watershed/area: Oni-Ambrolauri			**1. Functions and/or values**	
		1.1. Ecological value	40	40	The area has high ecological value. It is mostly represented by natural ecosystems of the Greater Caucasus, including alpine, sub-alpine meadows and high, middle, low mountain and foothill forests. These forests together with conservation value have disaster risk reduction functions that also contribute to the high ecological importance of the watershed area. In terms of PAs, there is a planned Central Caucasus PA area in the watershed; With regard to the health protection value, the largest portion of water abstracted is ground water which is used for drinking and domestic purposes; Drinking water consumption contributes to the highest share of total water consumption; As for commercial value of the watershed and its resources, the area is extremely rich in water, forest, mineral resources; Waters are used for HPP generation, forests are logged commercially, pine corns and seeds are collected and exported to Europe; Non-ferrous metals, construction materials and various minerals are extracted, and extraction of sand and gravel is particularly high; Water is used for producing bottled water; Grapes are grown to make special wines which are mostly exported abroad; Watershed resources, including water, timber and non-timber resources (mushrooms, berries, medicinal plants, and etc.) are used by the rural population for its own consumption; The area has high recreational and aesthetic value due to presence of large territories of natural landscapes, clean environment, spring and mineral waters, and rich biodiversity; There are several spa resorts in the region; The municipality is rich in cultural heritage; In terms of the number of ecosystem services provided,
		1.2 Health protection value	40	40	
		1.3 Economic/commercial value	20	20	
		1.4 Livelihood support value	40	40	
		1.5 Aesthetic/recreational value	20	20	
		1.6 Cultural value	20	20	
		1.7 Amount of ecosystem services provided by the watershed	20	16	
		Total Score	***200***	***196***	

			the watershed provides all possible ecosystem services, with the exception of navigation
2. Negative anthropogenic pressures on watershed and its resources			
Water resources			
2.1 Water abstractions and consumption	10	4	Threats on water quantity are not currently high, given the low level of water abstractions and usage; Currently there are no large to medium-size hydropower schemes on the rivers of the watershed area having impact on river run-off; Pressures on water quality from point sources are insignificant due to low volumes of wastewaters, including untreated wastewaters discharged into surface waters in relation with Alazani upstream and lower reaches of the Rioni Basin; As for non-point sources, run-off and leachates from waste disposal sites pose significant threats to water and land resources. Nevertheless, compared to figures of domestic waste generation in lower reaches of Rioni, this figure is far lower due to sparse population and density; Pressures from old arsenic and barite mining sites, located in Lukhunistskali and Jejora micro-catchments are high; River Jejora is also polluted from run-off and leachates of old lead, tin and quartzite mines located in South Ossetia
2.2 Man-induced river regime change, damming, and diversion	10	4	
2.3 Pressures from point sources	10	4	
2.4 Pressures from non-point sources	10	10	
2.5 Others	10	0	
Land resources			
2.6 Land use, land use change	10	0	Pressures on land resources of the watershed area from land use and land use change is virtually nil since there is no expansion of agriculture activities as well as transformation of lands to agriculture lands; Pressures from agriculture activities, including the use of agrochemicals are very low; Overgrazing is also a significant issue; Mining, especially extraction of sand and gravel and other construction materials is so extensive that it poses threat to river bed and banks; Pressures from dumping solid wastes is significant, but not as significant as in the downstream areas and up streams of Alazani watershed; Sarcophagus of the toxic wastes located in Lukhunistskali micro catchment pose significant pressures on waters and land resources of nearby areas; In addition, abandoned barites, lead, tin and quartzite mines located in Oni Municipality and South Ossetia pose significant pressures on land resources
2.7 Intensive land cultivation	10	2	
2.8 Unsustainable irrigation	10	0	
2.9 Extensive use of agrochemicals	10	2	
2.10 Extensive Logging	10	10	
2.11 Overgrazing	10	10	
2.12 Unsustainable pasture management	10	8	
2.13 Mining	10	8	
2.14 Industrial activities	10	2	
2.15 Solid waste dumping	10	6	
2.16 Toxic wastes	10	10	
2.17 Other	10	0	
Landscapes and biological resources			
2.18 Land use, and land use change	10	0	The most significant threats to landscapes and biodiversity are from extensive illegal logging, poaching. Illegal fishing is also wide-spread phenomena; Overgrazing occurs in sub-alpine and alpine meadows and forests, and this takes place in large areas of the watershed; Extraction of construction materials, mostly sand and gravel, as well as and from in-stream mining, pose threats to marine life; Surface water pollution in Lukhunistskali and Jejora watersheds pose threats to aquatic biota as well
2.19 Extensive logging	10	10	
2.20 Infrastructure development	10	2	
2.21 Unsustainable fishing	10	8	
2.22 Overgrazing	10	10	
2.23 Poaching	10	10	
2.24 Mining	10	8	
2.25Tourism development	10	6	
2.26 Introduction of exotic/alien species	10	0	
2.27 Environmental pollution	10	8	
2.28 Others	10	8	
Total	***280***	***150***	
3. Negative natural pressures on watershed and its resources			

	3.1 Landslides	40	40	Oni and Ambrolauri municipalities are highly susceptible to landslides, and to a lesser extent to mudflows; The area is also located in a high risk zone for flash floods; Climate change does not have any negative impact on river run-off and other watershed resources
	3.2 Mudflows	40	32	
	3.3 Floods and/or flash floods	40	32	
	3.4 Avalanches	40	24	
	3.5 Droughts	40	0	
	3.6 Climate change	40	2	
	3.7 Other (e.g. eustasy, sea surges, karsts, river bed sedimentation, and etc.)	40	0	
	Total	***280***	***130***	
	4. Potential for significant future negative pressures and impacts on watershed and its resources			
	4.1 Potential for significant future anthropogenic pressures and impacts	40	40	In light of the government plans to lease large areas of forests under long-term concessions, it is expected that the commercial logging will increase in the region; Poaching will remain high if law enforcement is not strengthened and hunting is not well-regulated and managed; Waste management issues have to be solved together with issues of old mining sites; The government plants to construct large-scale Oni cascade that will impose pressures on the watershed resources during and after construction; Furthermore, the government has plans for large-scale tourism infrastructure development which will also have an impact on watershed ecosystems; As for future natural threats, if serious preventive and/or mitigation measures are not undertaken, natural threats and impacts of landslides, floods and flesh floods will continue to remain high and may even intensify further
	4.2 Potential for significant future natural pressures and impacts	40	40	
	Total	***80***	***80***	
	5. Negative impacts on watershed and its resources			
	Environmental impacts: water resources			
	5.1 Reduction in river run-off	10	0	There are no river and sedimentation flow reduction recorded in Rioni upstream area; As for river/lake/reservoir sedimentation due to intensive logging and active geodynamic process, soil erosion is a widespread phenomenon and therefore, it can be presumed that this issue exists in the region. However, due to the absence of information on this issue, the scale and the intensity of the problem are not known. According to 2004-2009 data, waters in Rioni upstream areas were slightly polluted by ammonia. There is no information available on river contamination by heavy metals, such as lead and arsenic, caused by the absence of water quality monitoring points in Lukhunistskali and Jejora watershed where old mines of arsenic, lead, barite and quartzite are located. However, it has to be presumed that rivers are polluted by these substances
	5.2 Reduction in sedimentation flow	10	0	
	5.3 River bed/lake/reservoir silting	10	8	
	5.4 Water pollution	10	8	
	Environmental impacts: land resources			
	5.5 Soil erosion	10	10	Soil erosion along with river bank erosion is a widespread phenomenon in Oni and Ambrolauri municipalities; Soil compaction is not a serious problem due to the very low mechanization of agriculture sector in Racha and low level of agriculture activities; Although there are no data available on soil contamination, it can be presumed that this is the case in and around waste dump sites and old mines
	5.6 Soil salinization	10	0	
	5.7 Soil bogging	10	0	
	5.8 River bank/coastal erosion	10	10	
	5.9 Soil compaction	10	6	
	5.10 Soil contamination	10	8	
	Environmental impacts: ecosystems, biological resources			
	5.11 Desertification	10	0	Due to unsustainable timber extraction, grazing and poaching, habitat fragmentation, habitat loss and species loss are significant issues in the region, while currently ecosystem/landscape modification does not happen due to absence of expansion of agriculture and urban lands or
	5.12 Ecosystem/landscape modification	10	4	
	5.13 Habitat	10	6	

fragmentation			absence of large-scale infrastructure projects under implementation
5.14 Habitat loss	10	6	
5.15 Species loss	10	6	
Social-economic and health impacts			
5.16 Health impacts: Illnesses	10	-	There is no information available on the impacts on health due to environmental degradation (pollution) in Rioni River Basin, including illnesses and deaths. However, in terms of impacts of natural pressures (e.g. natural disasters, etc.) there was 1 death recorded last year due to landslide; Economic losses are significant almost on every occasion
5.17 Casualties (human deaths)	10	2	
5.18 Impacts on economic assets, including housing, infrastructure, and etc. Economic impacts	10	8	
Total	***180***	***82***	
6. Linkages between resource uses and watershed functions			
6.1 Demonstrated linkage between upstream use and downstream watershed/area function/state	40	40	Currently, there are no impacts of resource uses in Racha on downstream areas. Water abstractions and usages are low and there are no large regulation reservoirs in Racha having significant impacts on river run-off and sediment flow in downstream areas; However, construction of large HPP schemes on up streams of Rioni, together with operating HPPs will have cumulative impacts on sediment flows, and thus, on Rioni delta creation; As for linkages between resource uses and/or functions within the pilot watershed area, unsustainable logging and grazing, as well as extraction of sand and gravel from river bed, banks and terraces lowers disaster risk reduction functions of the watershed and its ecosystems (e.g. soil stabilization, flood carrying capacity of river, and etc.); Furthermore, unsustainable logging of forests lowers ecological and aesthetic/recreational values of the ecosystems as well as their commercial values (e.g. tourist development, commercial logging, and etc.); Uncontrolled in-stream operations lowers ecological values of aquatic ecosystems
6.2 Demonstrated linkage between various uses/functions of watershed resources	40	40	
Total	***80***	***80***	
7. Socio-economic situation			
7.1 Poverty level	20	20	Racha-Lechkhumi is a region where about 40% of population receives Targeted Social Assistance (TSA) , which is the highest value all over Georgia; Unemployment is also high amounting about 20%, which is above the national average (16.3% in 2010); Population density is low amounting to about 11/km2, which is far below the national average
7.2Population density	20	6	
7.3Unemployment level	20	20	
Total	***60***	***46***	
8. Governance structure			
8.1 Existence of regional government structure	20	20	The regional government of the region is located in Ambrolauri. Municipality administrations are located in Oni and Ambrolauri; Diagnostic analysis documents for Racha-Lechkhumi and Kvemo Svaneti regions, and separate municipalities outlining needs and priorities of the region and its individual districts, as well as municipal development plans that need an update are available; Regional and municipal authorities of the watershed area are interested to participate in the project and support its implementation
8.2 Existence of municipal government(s)	20	20	
8.3 Existence of regional and/or municipal development programs/strategies	20	20	
8.4 Readiness of regional/local governments to participate in the program	20	20	
Total	***80***	***80***	
9. Potential for significant catalytic effect			
9.1 Presence of similar/complementary USAID programs	20	20	CARE works in Racha on rural development; Oxfam and CENN work in Racha on DRR issues; UNDP and USAID/WI supported the introduction of small-scale renewable and energy efficient technologies in the region; Presumably, NEO project will select Racha as one of its areas of work; The Dutch Government has allocated ODA for cleaning-up
9.2 Presence of other donor programs/projects and project pipelines	20	20	

		and/or government programs			old arsenic sites in Uravi and Tsana
		9.3 Presence of success stories and good lessons learned from previous projects/programs	20	20	
		Total	***60***	***60***	
		10. Geographic scale and location			
		10.1 Practical geographic scale and location	**20**	20	Pilot watershed/area has a total area of more than 500 km^2 and less than 4,000 km^2 , as well as a location within only one administrative region
		Total	***20***	***20***	
		GRAND TOTAL	***1320***	***924***	
2.	Tskenistskali-Rioni upstream watershed/area: Tsageri-Lentekhi	**1. Functions and/or values**			
		1.1. Ecological value	40	40	The area has high ecological value. It is mostly represented by natural ecosystems of the Greater Caucasus, including alpine, sub-alpine meadows and high, middle, low mountain and foothill forests. These forests together with conservation value have disaster risk reduction. In terms of PAs, there is a planned Central Caucasus PA area in the watershed ; As for health protection functions, the largest portion of abstracted ground waters are used for drinking and domestic purposes; Although, water for drinking does not contribute to the highest share of the total water use since well potable water consumption is not as high as in Oni and Ambrolauri; With regard to commercial value of the watershed and its resources, the area is extremely rich in water, forest, mineral resources; Waters are used for HPP generation, forests are logged commercially, construction materials and various minerals are extracted; Grapes in small quantity are grown to make special wines which are mostly exported abroad; Watershed resources, including water, timber and non-timber resources are used by the rural population for their own consumption; The area has high aesthetic value due to the presence of large territories of natural landscapes, clean environment, spring and mineral waters, and rich biodiversity; However, unlike Racha, there are no recreational resorts of local or national importance; Lentekhi and Tsageri municipalities are rich in cultural and historical monuments; In terms of the number of ecosystem services provided, the watershed provides all possible ecosystem services, with the exception of providing water for irrigation and navigation, as well as except for providing resources for development of spa resorts
		1.2 Health protection value	40	40	
		1.3 Economic/commercial value	20	20	
		1.4 Livelihood support value	40	40	
		1.5 Aesthetic/recreational value	20	16	
		1.6 Cultural value	20	20	
		1.7 Amount of ecosystem services provided by the watershed	20	16	
		Total Score	***200***	***192***	
		2. Negative anthropogenic pressures on watershed and its resources			
		Water resources			
		2.1 Water abstractions and consumption	10	4	Pressures on water quantity are not currently high, given the low level of water abstractions and consumption by domestic, industrial and agriculture sectors; Water in large quantity is abstracted for HPP development, but it is almost entirely replenished; Building of Ladjanuri HPP, dam and reservoir of regulation type has caused change in the flow of sediment. At this moment the reservoir is highly silted; Regarding pressures from point sources, the total volume of wastewaters generated are insignificant, but mostly untreated; Among non-point sources, illegal dump sites, abandoned open-pit mines of arsenic and old store houses of pesticides pose the highest threat to water resources in the Tskenistskali and Rioni watersheds of Lechkhumi and Kvemo Svaneti
		2.2 Man-induced river regime change, damming, and diversion	10	4	
		2.3 Pressures from point sources	10	4	
		2.4 Pressures from non-point sources	10	10	
		2.5 Others	10	0	
		Land resources			
		2.6 Land use, and land use change	10	0	Similar to Racha area, in Lechkhumi and Kvemo Svaneti, the most significant pressures on land resources are

	2.7 Intensive land cultivation	10	2	imposed from unsustainable logging and overgrazing; The threats from solid waste dump sites and old arsenic mines are significant
	2.8 Unsustainable irrigation	10	0	
	2.9 Extensive use of agrochemicals	10	2	
	2.10 Extensive Logging	10	10	
	2.11 Overgrazing	10	10	
	2.12 Unsustainable pasture management	10	10	
	2.13 Mining	10	6	
	2.14 Industrial activities	10	2	
	2.15 Solid waste dumping	10	6	
	2.16 Toxic wastes	10	10	
	2.17 Others	10	0	
	Landscapes and biological resources			
	2.18 Land use, and land use change	10	0	The most notable threats to landscapes and biodiversity come from unsustainable logging, overgrazing and poaching. Extraction of construction materials, mostly sand and gravel and from in-stream mining, pose threats to marine life; Surface water pollution from old arsenic mines and store houses of obsolete pesticides might pose significant threats to aquatic biota even though data are not available on environmental quality to know precisely the scale of environmental pollution
	2.19 Extensive logging	10	10	
	2.20 Infrastructure development	10	2	
	2.21 Unsustainable fishing	10	8	
	2.22 Overgrazing	10	10	
	2.23 Poaching	10	10	
	2.24 Mining	10	8	
	2.25 Tourism development	10	2	
	2.26 Introduction of exotic/alien species	10	0	
	2.27 Environmental pollution	10	8	
	2.28 Others	10	0	
	Total	***280***	***138***	
	3. Negative natural pressures on watershed and its resources			
	3.1 Landslides	40	40	Tsageri and Lentekhi municipalities are extremely susceptible to landslides and mudflows; The area is also a high risk zone for flash floods; Climate change studies conducted for Lentekhi Municipality show increase in the annual mean temperature and precipitation. Glacier retreat studies for the period of 1985-2000 revealed 8 meter annual retreat rate and 6-9% decrease in the area covered with glaciers
	3.2 Mudflows	40	40	
	3.3 Floods and/or flash floods	40	34	
	3.4 Avalanches	40	16	
	3.5 Droughts	40	4	
	3.6 Climate change	40	32	
	3.7 Other (e.g. eustasy, sea surges, karsts, river bed sedimentation, etc.)	40	0	
	Total	***280***	***166***	
	4. Potential for significant future negative pressures and impacts on watershed and its resources			
	4.1 Potential for significant future anthropogenic pressures and impacts	40	40	In light of the government plan to lease large areas of forests under long-term concessions, it is expected that commercial logging will increase in the region; Poaching will remain high if law enforcement is not strengthened and hunting is not well-regulated and managed; The government is in the preparatory phase for the construction of two large-size HPP cascades that will have impacts on watershed and its resources during and after construction, both locally and regionally (delta area); Waste management issues have to be resolved together with issues of old mines;
	4.2 Potential for significant future natural pressures and impacts	40	40	

			As for future natural threats, if serious preventive and/or mitigation measures are not undertaken, natural pressures and impacts of landslides, floods and flash floods will continue to remain high and even intensify further
Total	***80***	***80***	
5. Negative impacts on watershed and its resources			
Environmental impacts: water resources			
5.1 Reduction in river run-off	10	0	There is no river run-off reduction recorded in Tskenistskali upstream area; Sediment flow regime has changed after river regulation; As for river/lake/reservoir sedimentation due to intensive logging and active geodynamic process, soil erosion is widespread phenomena, and therefore, it can be presumed that this issue exists in the region. However, due to the absence of information on this issue, the scale and the intensity of the problem are not known. Water quality data on Tskenistskali and Tsageri section of the river Rioni are not available. Presumably, surface waters in the vicinity of arsenic mines must to be polluted by arsenic and other associated metals
5.2 Reduction in sedimentation flow	10	8	
5.3 River bed/lake/reservoir silting	10	8	
5.4 Water pollution	10	8	
Environmental impacts: land resources			
5.5 Soil erosion	10	10	Similar to Oni and Ambrolauri soil and river bank erosion is a significant issue in the pilot area; Soil compaction is not a serious problem due to low mechanization of agriculture sector and low level of agriculture activities in Lechkhumi; Although there are no data available on soil contamination, it can be presumed that soils in and around solid waste dumping sites and old arsenic mines are contaminated with various toxic substances
5.6 Soil salinization	10	0	
5.7 Soil bogging	10	0	
5.8 River bank/coastal erosion	10	10	
5.9 Soil compaction	10	6	
5.10 Soil contamination	10	8	
Environmental impacts: ecosystems, biological resources			
5.11 Desertification	10	0	Due to unsustainable timber extraction, grazing and poaching, habitat fragmentations as well as habitat and species loss are significant issues in the region despite the fact that currently there is no ecosystem/landscape degradation due to the absence of expansion of agriculture and urban lands or absence of large-scale infrastructure projects under implementation
5.12 Ecosystem/landscape modification	10	4	
5.13 Habitat fragmentation	10	8	
5.14 Habitat loss	10	8	
5.15 Species loss	10	6	
Social-economic and health impacts			
5.16 Health impacts: Illnesses	10	-	There is no information available on health impacts as a result of environmental degradation (pollution) in Tskenistskali River Basin, including illnesses and deaths. However, in terms of impacts of natural pressures (e.g. disasters, etc.) there are no human deaths recorded due to natural disasters, though economic losses are significant
5.17 Casualties (human deaths)	10	0	
5.18 Impacts on economic assets, including housing, infrastructure, and etc. Economic impacts	10	8	
Total	***180***	***92***	
6. Linkages between resource uses and watershed functions			
6.1 Demonstrated linkage between upstream use and downstream watershed/area function/state	40	16	Although Ladjanuri regulating HPP scheme has some impact on sediment flow after river regulation, it does not contribute much to the formation of Rioni delta since HPP cascades are mostly built on middle to lower reaches of the basin and thus affecting the delta formation; As for the linkages between various resource uses and functions of watershed resources within the suggested pilot area, unsustainable logging and grazing as well as extraction of sand and gravel from river bed, banks and terraces reduce disaster risk reduction functions of the watershed and its ecosystems (e.g. soil stabilization, flood carrying capacity of river, and etc.); Furthermore, unsustainable logging of forests and unsustainable grazing lowers ecological (conservation) and aesthetic values of the ecosystems as well as their commercial values,
6.2 Demonstrated linkage between various uses and functions of watershed resources	40	40	

			Uncontrolled in-stream mining operations lowers ecological values of aquatic ecosystems, and overgrazing reduces the soil fertility and its economic value
Total	***80***	***56***	
7. Socio-economic situation			
7.1 Poverty level	20	20	Approximately 40% of population receives Targeted Social Assistance (TSA) in Racha-Lechkhumi, which is the highest among all regions in Georgia; Unemployment is also high standing at close to 20%, which is above the national average (16.3%, 2010); Population density is very low around 11.6/km^2, which is far below the national average
7.2Population density	20	6	
7.3Unemployment level	20	20	
Total	***60***	***46***	
8. Governance structure			
8.1 Existence of regional government structure	20	0	There is no presence of regional government in Tskenistskali upstream area. Municipality administrations are located in Tsageri and Lentekhi; Diagnostic analysis documents for Racha-Lechkhumi and Kvemo Svaneti regions as well as for separate municipalities outlining needs and priorities of the region and its individual districts are available; Regional and municipal authorities of the watershed area are interested to participate in the project and support its implementation
8.2 Existence of municipal government(s)	20	20	
8.3 Existence of regional and/or municipal development programs/strategies	20	20	
8.4 Readiness of regional/local governments to participate in the program	20	20	
Total	***80***	***60***	
9. Potential for significant catalytic effect			
9.1 Presence of similar/complementary USAID programs	20	20	CARE works in Lechkhumi on rural development; Oxfam and CENN work in Racha and Lechkhumi on DRR issues; HIPP project works on Alpana HPP feasibility studies in Tsageri Municipality; UNDP plans to implement flood management project in Rioni Basin, and Tsageri as well as Lentekhi municipalities might become a focus area for their project
9.2 Presence of other donor programs/projects and project pipelines and/or government programs	20	20	
9.3 Presence of success stories and good lessons learned from previous projects/programs	20	0	
Total	***60***	***40***	
10. Geographic scale and location			
10.1 Practical geographic scale and location	**20**	20	Pilot watershed/area has a total area of more than 500 km^2 and less than 4,000 km^2 as well as a location within only one administrative region
Total	**20**	**20**	
GRAND TOTAL	***1320***	***890***	

As a result, the evaluation of two short-listed options of upstream watersheds/areas against a set of criteria has resulted in the following: 1. Rioni upstream area: Oni and Ambrolauri municipalities scored 924 and option 2. Tskhenistskali watershed upstream area: Tsageri and Lentekhi municipalities scored 890.

Based on the scoring results we recommend option 1. Rioni upstream area: Oni and Ambrolauri municipalities as the 1st (upstream) pilot area in Rioni River Basin.

For the selection of the 2st (downstream) pilot watershed/area in Rioni Basin we have evaluated four option options: 1. Chkherimela watershed: Kharagauli Municipality; 2. Khanistskali watershed: Bagdati Municipality; 3. Tekhuri watershed: Senaki Municipality; 4. Rioni downstream area: Senaki and Khobi municipalities

Table 7. Evaluation Score Card for Short-listed Rioni Basin Pilot Watersheds/Areas (Downstream)

#	Pilot Watershed	Selection Criteria	Maximum attainable score	Scoring result (Scores obtained)	Comment
1.	Chkherimela watershed: Kharagauli Municipality	**1. Functions and/or values**			
		1.1. Ecological value	40	40	The area has high ecological value, given that it is occupied with high ecological value natural forests, large part of which belongs to the Borjomi-Kharagauli National Park. These forests are characterized by high, middle and low mountain forests of the Lesser Caucasus (Ajara-Trialeti). Forests of the Kharagauli part of the Borjomi-Kharagauli National Park are distinct for its dark coniferous, deciduous and mixed forests. The upper zones of the forest belt are dominated by dark coniferous forests of spruce-groves and silver fir-groves. In subalpine belt, subalpine forests and bushes, as well as subalpine high grasses and meadows are spread throughout. Flora and Fauna of the park is diverse which consists of many rare and endemic plant and animal species; As for health protection value of watershed and its resources, waters abstracted are predominantly used for industrial activities followed by water for drinking and domestic purposes; Although industrial water consumption is the largest among various other essential usage, it is still low compared to water usage in other low reach municipalities; There are several spa and healing resorts in the municipality (e.g. Nunisi, Zvare); With regard to commercial use of watershed resources, there are currently no commercial logging operations in the municipality and waters are not used for HPP generation and irrigation. Industries does consume some water, but in small quantities; Extraction of mineral resources also take place but in smaller quantities; Spring and mineral waters are also produced in small quantities; Watershed resources, including timber and non-timber resources are used by local communities for their own consumption and commercial purposes; The area has high aesthetic/recreational and cultural values. In terms of the number of ecosystem services provided by the watershed, they are limited to ecosystem conservation, DRR, health protection, commercial use, livelihood support and recreational services
		1.2 Health protection value	40	32	
		1.3 Economic/commercial value	20	12	
		1.4 Livelihood support value	40	40	
		1.5 Aesthetic/recreational value	20	20	
		1.6 Cultural value	20	20	
		1.7 Amount of ecosystem services provided by the watershed	20	8	
		Total Score	***200***	***172***	
		2. Negative anthropogenic pressures on watershed and its resources			
		Water resources			
		2.1 Water abstractions and consumption	10	2	Pressures on water quantity are very insignificant given the low level of water abstractions and use, mostly by industrial and domestic sectors; There are no large to medium hydropower schemes on the river of the watershed area having an impact on river run-off; Pressures on water quality from point sources are insignificant due to lower volumes of wastewaters, including untreated wastewaters discharged into the surface waters in relation with Alazani upstream and lower reaches of the Rioni Basin; As for non-point sources, pressures are also insignificant due to low volumes of solid wastes and low level of agricultural activities
		2.2 Man-induced river regime change, damming, and diversion	10	2	
		2.3 Pressures from point sources	10	2	
		2.4 Pressures from non-point sources	10	2	
		2.5 Others	10	0	
		Land resources			
		2.6 Land use, and land use change	10	0	Pressures on land resources of the watershed area from land use and land use change is practically nil since there is no expansion of agriculture activities as well as transformation of lands to agriculture lands; Pressures from agriculture activities, including use of agrochemicals are also very low; Overgrazing is a significant issue together with illegal logging; Mining, especially extraction of sand and gravel as well as other construction materials is extensive that pose threats to
		2.7 Intensive land cultivation	10	2	
		2.8 Unsustainable irrigation	10	0	
		2.9 Extensive use of agrochemicals	10	2	
		2.10 Extensive Logging	10	10	

2.11 Overgrazing	10	10	river beds and banks; Pressures from dumping of solid wastes as well as from industrial activities is insignificant
2.12 Unsustainable pasture management	10	10	
2.13 Mining	10	6	
2.14 Industrial activities	10	4	
2.15 Solid waste dumping	10	4	
2.16 Toxic wastes	10	0	
2.17 Others	10	0	
Landscapes and biological resources			
2.18 Land use, and land use change	10	0	The most significant pressures on landscapes and biodiversity are from extensive illegal logging, poaching and overgrazing. Illegal fishing is also a wide-spread phenomenon; Extraction of construction materials from river banks and from in-stream operations, poses threats to marine life; PA-based tourism is among the growing threats within the Borjimi-Kharagauli National Park. Black Sea transmission line that is currently being built, passes through a number of areas with vulnerable and ecologically important landscapes, including a small section of Borjomi-Kharagauli Park
2.19 Extensive logging	10	10	
2.20 Infrastructure development	10	6	
2.21 Unsustainable fishing	10	8	
2.22 Overgrazing	10	8	
2.23 Poaching	10	10	
2.24 Mining	10	4	
2.25 Tourism development	10	6	
2.26 Introduction of exotic/alien species	10	0	
2.27 Environmental pollution	10	2	
2.28 Others	10	0	
Total	***280***	***110***	
3. Negative natural pressures on watershed and its resources			
3.1 Landslides	40	40	The area falls within the zone of very high landslide risk and moderate mud-flow risk. In terms of flash floods it is under the high risk zone. In June this year, heavy rains caused severe landslides and mudflows that killed 6 people and destroyed many objects of infrastructure
3.2 Mudflows	40	28	
3.3 Floods and/or flash floods	40	32	
3.4 Avalanches	40	16	
3.5 Droughts	40	0	
3.6 Climate change	40	-	
3.7 Other (e.g. eustasy, sea surges, karsts, river bed sedimentation, and etc.)	40	0	
Total	***280***	***116***	
4. Potential for significant future negative pressures and impacts on watershed and its resources			
4.1 Potential for significant future anthropogenic pressures and impacts	40	40	If any control and various other measures are not undertaken, illegal logging and poaching will continue to remain high; In addition, in a view of the government reforms, commercial logging will increase significantly; Similarly for landslides, if serious preventive and/or mitigation measures are not taken, landslides will intensify further
4.2 Potential for significant future natural pressures and impacts	40	40	
Total	***80***	***80***	
5. Negative impacts on watershed and its resources			
Environmental impacts: water resources			
5.1 Reduction in river run-off	10	-	There is no information available on river regime change of the Chkherimela River; As a result of land erosion and active geodynamic processes, it has to be presumed that river bed/lake does occur, even though there are no data or studies available on this issue for Kharagauli Municipality; There is no water quality monitoring on the
5.2 Reduction in sedimentation flow	10	-	
5.3 River bed/lake/reservoir silting	10	8	

5.4 Water pollution	10	2	Chkherimela River. However, it can be assumed that the river is considerably clean due to low anthropogenic pressures
Environmental impacts: land resources			
5.5 Soil erosion	10	8	Soil erosion together with river bank erosion is an issue in Kharagauli municipality similar to majority of municipalities of Georgia
5.6 Soil salinization	10	0	
5.7 Soil bogging	10	0	
5.8 River bank/coastal erosion	10	8	
5.9 Soil compaction	10	0	
5.10 Soil contamination	10	0	
Environmental impacts: ecosystems, biological resources			
5.11 Desertification	10	0	Due to unsustainable timber extraction, grazing and poaching, habitat fragmentation, habitat loss and species loss are significant issues in the region, although currently ecosystem/landscape degradation is insignificant, the undergoing construction of the Black Sea high voltage transmission line will have an impact on natural landscapes, including those of high ecological significance
5.12 Ecosystem/landscape modification	10	6	
5.13 Habitat fragmentation	10	8	
5.14 Habitat loss	10	8	
5.15 Species loss	10	6	
Social-economic and health impacts			
5.16 Health impacts: Illnesses	10	-	There is no information available on health impacts of environmental degradation (pollution) in Rioni River Basin, including illnesses and deaths. This year landslides and mudflows caused death of 6 people and destroyed lots of infrastructure in Kharagauli section of Rikoti Pass
5.17 Casualties (human deaths)	10	6	
5.18 Impacts on economic assets, including housing, infrastructure, etc. Economic impacts	10	6	
Total	***180***	***66***	
6. Linkages between resource uses and watershed functions			
6.1 Demonstrated linkage between upstream use and downstream watershed/area function/state	40	28	Unsustainable logging and overgrazing in Kharagauli forests cause intensification of landslides and mudflows that itself result in river bed silting in downstream areas, which reduces flood carrying capacity of downstream waters; Water usages and discharges in Kharagauli Municipality have no impact on downstream waters given the very low volumes of abstractions and discharges; Unsustainable logging and overgrazing lowers ecological and economic value of the forests as well as disaster risk reduction functions of the ecosystems; Poaching together with illegal logging and overgrazing in Borjomi-Kharagauli National Park also decreases conservation and economic value (in terms of PA tourism development) of the Borjomi-Kharagauli National Park
6.2 Demonstrated linkage between various uses/functions of watershed resources	40	32	
Total	***80***	***60***	
7. Socio-economic situation			
7.1 Poverty level	20	10	Kharagauli Municipality is one the poorest regions of Imereti, with over 74.5% of employable adults being unemployed[2]; This makes up for approximately 30,7% of total population[3]; Population density is also low (~30/km^2)
7.2Population density	20	8	
7.3Unemployment level	20	20	
Total	***60***	***38***	
8. Governance structure			
8.1 Existence of regional government structure	20	0	Regional government is not located in the Kharagauli Municipality. Municipal administration is situated in the

[2] FLEG project
[3] www.cegstar.ge

		8.2 Existence of municipal government(s)	20	20	city of Kharagauli; The municipality has its development program prepared in 2007. However, the document needs to be updated; Imereti regional authority is interested in the program.
		8.3 Existence of regional and/or municipal development programs/strategies	20	20	
		8.4 Readiness of regional/local governments to participate in the program	20	20	
		Total	***80***	***60***	
		9. Potential for significant catalytic effect			
		9.1 Presence of similar/complementary USAID programs	20	20	There are several on-going donor projects on community forests in Kharagauli; CENN works on climate adaptation and mitigation issues in Borjomi-Kharagauli National Park; Caucasus Nature Fund provides assistance to the BKNP; WWF has its program activities in Borjomi-Kharagauli; USAID supported the elaboration of Kharagauli municipal development program; USDoI-ITAP targets all PAs including Borjomi Kharagauli
		9.2 Presence of other donor programs/projects and project pipelines and/or government programs	20	20	
		9.3 Presence of success stories and good lessons learned from previous projects/programs	20	20	
		Total	***60***	***60***	
		10. Geographic scale and location			
		10.1 Practical geographic scale and location	**20**	20	Pilot watershed/area has a total area of more than 500 km^2 and less than 4,000 km^2 as well as a location within only one administrative region
		Total	**20**	**20**	
		GRAND TOTAL	***1320***	***782***	
2.	Khanistskali-Rioni watershed: Bagdati Municipality	**1. Functions and/or values**			
		1.1. Ecological value	40	32	The municipality has high ecological value, given that over 67% of the territory is covered with Colchic broad-leaf forests. Part of the Ajameti Managed Natural Reserve designed to protect relict species of Imeretian oak and water elm located in the municipality. However, these forests are not rich in wildlife; Waters are abstracted and consumed predominantly for drinking and domestic purposes and to a lesser extent for industrial consumption and irrigation purposes. Overall, water abstraction and consumption is very insignificant in Khanistskali watershed compared to the parameters of other lower course watersheds/areas of similar size; In the Rioni watershed part of the municipality there is headwork and the first HPP (64 MW installed capacity) of the Vartsikhe cascade located in the village of Vartsikhe. The area is known for its mineral water and spa resort Sairme and the comparatively smaller resort Zekari; As for commercial value and/or use of watershed resources, there are several concessioners operating in the municipality; The area is rich in ornamental stones, such as tuff, marble, granite that are unutilized/underutilized; Lands in the municipality are fertile and grapes are grown to produce Vartsikhe cognac; Fruits are also grown in the municipality
		1.2 Health protection value	40	24	
		1.3 Economic/commercial value	20	20	
		1.4 Livelihood support value	40	40	
		1.5 Aesthetic/recreational value	20	20	
		1.6 Cultural value	20	16	
		1.7 Amount of ecosystem services provided by the watershed	20	16	
		Total Score	***200***	***168***	
		2. Negative anthropogenic pressures on watershed and its resources			
		Water resources			
		2.1 Water abstractions and consumption	10	4	Pressures on water quantity of Khanistskali watershed are currently not high, given the low level of water abstractions and consumption; Wastewater generation is also low together with solid waste generation and environmental pressures from these sources are insignificant. In the Rioni watershed part of the municipality there is a Vartsikhe reservoir that is almost entirely silted and has lost its sediment regulation function
		2.2 Man-induced river regime change, damming, and diversion	10	4	
		2.3 Pressures from point sources	10	4	
		2.4 Pressures from non-point sources	10	4	

	2.5 Others	10	0	
	Land resources			
	2.6 Land use, and land use change	10	0	The most notable pressures on land resources are from illegal and commercial logging operations, overgrazing unsustainable pasture management, and solid waste dumping. The rest of the pressures are insignificant. Extraction of construction materials also happens, but at low quantities
	2.7 Intensive land cultivation	10	2	
	2.8 Unsustainable irrigation	10	4	
	2.9 Extensive use of agrochemicals	10	2	
	2.10 Extensive Logging	10	10	
	2.11 Overgrazing	10	8	
	2.12 Unsustainable pasture management	10	8	
	2.13 Mining	10	6	
	2.14 Industrial activities	10	2	
	2.15 Solid waste dumping	10	6	
	2.16 Toxic wastes	10	0	
	2.17 Others	10	0	
	Landscapes and biological resources			
	2.18 Land use, and land use change	10	0	The most significant pressures on landscapes and biodiversity are from unsustainable logging, overgrazing, illegal hunting, illegal fishing and extraction of construction materials which is mostly sand and gravel through in-stream mining operations
	2.19 Extensive logging	10	10	
	2.20 Infrastructure development	10	4	
	2.21 Unsustainable fishing	10	8	
	2.22 Overgrazing	10	10	
	2.23 Poaching	10	10	
	2.24 Mining	10	8	
	2.25 Tourism development	10	2	
	2.26 Introduction of exotic/alien species	10	0	
	2.27 Environmental pollution	10	2	
	2.28 Others	10	0	
	Total	***280***	***118***	
	3. Negative natural pressures on watershed and its resources			
	3.1 Landslides	40	40	Bagdati Municipality falls within the low to medium mudflow and medium landslide risk zone category. However, the city of Bagdati and its surroundings are extremely susceptible to landslides and fall within the zone of very high landslide risk. Flash floods risk is also high in the region due to river bank erosion, river bed silting and reduction of flood control capacity of the river
	3.2 Mudflows	40	28	
	3.3 Floods and/or flash floods	40	32	
	3.4 Avalanches	40	16	
	3.5 Droughts	40	0	
	3.6 Climate change	40	2	
	3.7 Other (e.g. eustasy, sea surges, karsts, river bed sedimentation, and etc.)	40	0	
	Total	***280***	***118***	
	4. Potential for significant future negative pressures and impacts on watershed and its resources			
	4.1 Potential for significant future anthropogenic pressures and impacts	40	40	In the light of the government plan to lease large areas of forests under long-term concessions, it is expected that the commercial logging will increase in the region; Overgrazing and poaching will remain high if law enforcement is not strengthened, and hunting is not well-regulated and managed and sustainable pasture management practices
	4.2 Potential for significant future natural	40	40	

pressures and impacts			are not introduced; As for natural disasters, it might intensify if there are no preventive or control measures undertaken and/or sustainable natural resource management practices are not introduced
Total	***80***	***80***	
5. Negative impacts on watershed and its resources			
Environmental impacts: water resources			
5.1 Reduction in river run-off	10	0	There is no evidence of river run-off reduction in Khanistskali watershed; It can be assumed that river bed silting does occur due to river bank erosion and intensive geodynamic processes; Data on Khanistskali water quality are not available, but due to low anthropogenic pressures on water resources, it can be presumed that the waters of Khanistskali are considerably clean
5.2 Reduction in sediment flow	10	8	
5.3 River bed/lake/reservoir silting	10	10	
5.4 Water pollution	10	4	
Environmental impacts: land resources			
5.5 Soil erosion	10	10	Soil erosion together with river bank erosion is a widespread phenomena in the municipality; The rest of the impacts are very insignificant
5.6 Soil salinization	10	0	
5.7 Soil bogging	10	0	
5.8 River bank/coastal erosion	10	10	
5.9 Soil compaction	10	2	
5.10 Soil contamination	10	2	
Environmental impacts: ecosystems, biological resources			
5.11 Desertification	10	0	Due to unsustainable timber logging, grazing and poaching, habitat fragmentation as well as habitat loss and species loss are significant issues in the region. Although currently ecosystem/landscape degradation is insignificant due to absence of land conversion and low rate of infrastructure development, a portion of the Bagdati Municipality will be crossed by the Black Sea Transmission line the construction of which will significantly degrade some portions of natural landscapes
5.12 Ecosystem/landscape modification	10	6	
5.13 Habitat fragmentation	10	8	
5.14 Habitat loss	10	8	
5.15 Species loss	10	6	
Social-economic and health impacts			
5.16 Health impacts: Illnesses	10	-	There is no information available on health impacts of environmental degradation (pollution) in Bagdati Municipality, including illnesses and deaths. However, in terms of impacts of natural pressures (e.g. disasters, etc.) the impacts are mostly economic in nature of low to medium scale
5.17 Casualties (human deaths)	10	0	
5.18 Impacts on economic assets, including housing, infrastructure, etc. Economic impacts	10	6	
Total	***180***	***80***	
6. Linkages between resource uses and watershed functions			
6.1 Demonstrated linkage between upstream use and downstream watershed/area function/state	40	4	There are no impacts of upstream uses on Khanistskali watershed since the river is a low reach tributary of the Rioni River and is not impacted by upstream waters. As for impacts of water uses of the Khanistskali on downstream waters, water abstractions and usages as well as wastewater discharges into surface waters are so insignificant that they do not have any significant impacts on water quantity and quality even locally. However, due to unsustainable logging and grazing, as well as due to extraction of sand and gravel from river bed, banks and terraces, river bank erosion and river bed/reservoir (e.g. Vartsikhe reservoir) silting takes place at a large scale which reduces sediment and water flow regulation capacity of downstream waters, and etc. As for the linkages between various uses of watershed resources within Khanistskali watershed and in entire municipality, unsustainable logging and grazing lowers disaster risk reduction, ecological (conservation) and aesthetic values of the ecosystems as well as their commercial values; Uncontrolled in-stream mining operations reduce
6.2 Demonstrated linkage between various uses and functions of watershed resources	40	32	
Total	***80***	***36***	

					ecological value of aquatic ecosystems, and overgrazing reduces the soil fertility and economic value of agriculture lands
		7. Socio-economic situation			
		7.1 Poverty level	20	10	Data on poverty and unemployment rates of Bagdati Municipality are unavailable; However, it is not amongst the poorest municipalities of Imereti due to well-developed agriculture, food, wine and cognac production as well as the presence of spa resorts; Population density is 36/km^2 which is about twice as low as the national average. However, the figure is not the lowest among all municipalities of Georgia
		7.2Population density	20	8	
		7.3Unemployment level	20	12	
		Total	***60***	***30***	
		8. Governance structure			
		8.1 Existence of regional government structure	20	0	Regional government does not exist in Bagdati Municipality even though the city of Bagdati is close to Kutaisi - the regional center of Imereti. Municipality administration is located in the city of Bagdati; Bagdati Municipality has its own municipal development plan that needs to be updated; Regional and municipal authorities of the watershed area are interested to participate in the project and support its implementation
		8.2 Existence of municipal government(s)	20	20	
		8.3 Existence of regional and/or municipal development programs/strategies	20	20	
		8.4 Readiness of regional/local governments to participate in the program	20	20	
		Total	***80***	***60***	
		9. Potential for significant catalytic effect			
		9.1 Presence of similar/complementary USAID programs	20	0	There are no USAID projects in Bagdati Municipality, neither are there any on-going donor programs in the area of natural resources management; USAID GESI and REP programs worked with Nergeeti community on INRM and renewable energy issues; UNDP assisted Nergeeti community to rehabilitate mini HPP built on Dimi-Rokiti irrigation canal
		9.2 Presence of other donor programs/projects and project pipelines and/or government programs	20	0	
		9.3 Presence of success stories and good lessons learned from previous projects/programs	20	20	
		Total	***60***	***20***	
		10. Geographic scale and location			
		10.1 Practical geographic scale and location	**20**	20	Pilot watershed/area has a total area of no less than 500 km^2 and no more than 4,000 km^2 as well as a location within only one administrative region
		Total	**20**	**20**	
		GRAND TOTAL	***1320***	***730***	
3.	Senaki Municipality – Tekhuri-Tsivi-Rioni	**1. Functions and/or values**			
		1.1. Ecological value	40	24	Tekhuri and Tsivi watershed sections of Senaki Municipality do not have high ecological value given the absence of large areas of natural landscapes/ecosystems of high conservation value. The majority of landscapes is transformed into cultural landscapes or is severely degraded; Very small part of the Kolkheti National Park is located in Senaki Municipality, which mostly in the Rioni watershed part of the municipality. Small areas of wetlands serve for filtration of waters; As for health protection value of the watershed and its resources, major water usages are for drinking and domestic purposes followed by industrial consumption. Abstractions happen from ground water sources; With regard to commercial utilization of watershed resources, the municipality is rich in geothermal waters as well as in inert material and brick clay; The municipality is poor in wood resources; Large areas of lands are used for growing annual and perennial crops; Watershed resources including water, land, timber and
		1.2 Health protection value	40	32	
		1.3 Economic/commercial value	20	12	
		1.4 Livelihood support value	40	40	
		1.5 Aesthetic/recreational value	20	4	
		1.6 Cultural value	20	20	
		1.7 Amount of ecosystem services provided by the watershed	20	12	
		Total Score	***200***	***144***	

			non-timber, fish are used by local communities for their own consumption and/or to generate revenues for their subsistence. The area has low aesthetic/recreational value and high cultural values due to the presence of a number of ancient historical monuments; In terms of the number of ecosystem services provided by the watershed, it is as follows: health protection, e.g. provision of clean drinking water and to population; provision of food base, etc.; livelihood support services; support of commercial activities, e.g. provision of inputs for various industrial activities, including fisheries; Such services as power generation, navigation, disaster risk reduction, conservation are either not provided for or provided at very limited level
2. Negative anthropogenic pressures on watershed and its resources			
Water resources			
2.1 Water abstractions and consumption	10	6	The most notable pressures on water resources of the Tekhuri watershed are imposed by non-point sources, such as agriculture and surface run-off from urban areas as well as waste dumping sites; The remaining pressures are insignificant; With regard to Rioni watershed section of the municipality, significant pressures on water quantity come from river damming, diversion, and on water quality – from surface run-off from agricultural lands and settlements
2.2 Man-induced river regime change, damming, and diversion	10	6	
2.3 Pressures from point sources	10	4	
2.4 Pressures from non-point sources	10	8	
2.5 Others	10	0	
Land resources			
2.6 Land use, and land use change	10	2	Significant pressures on land resources of Senaki municipality are from land cultivation, unsustainable drainage, unsustainable pasture management, including overgrazing, and unsustainable logging; Solid waste dumping without any safeguard measures also poses threats to soil quality; Furthermore, pesticides are intensively used against American butterfly in Samegrelo that poses threat to land resources
2.7 Intensive land cultivation	10	8	
2.8 Unsustainable irrigation/drainage	10	6	
2.9 Extensive use of agrochemicals	10	6	
2.10 Extensive Logging	10	6	
2.11 Overgrazing	10	8	
2.12 Unsustainable pasture management	10	8	
2.13 Mining	10	4	
2.14 Industrial activities	10	2	
2.15 Solid waste dumping	10	8	
2.16 Toxic wastes	10	0	
2.17 Others	10	10	
Landscapes and biological resources			
2.18 Land use, land use change	10	0	The most significant pressures on landscapes and biodiversity of Senaki Municipality are from overgrazing, poaching, mostly illegal fishing, unsustainable logging, extraction of construction materials, and infrastructure development. Introduction of alien species in wetlands is an issue as well, together with environmental pollution of Rioni low reach areas from nutrients loads
2.19 Extensive logging	10	10	
2.20 Infrastructure development	10	8	
2.21 Unsustainable fishing	10	10	
2.22 Overgrazing	10	10	
2.23 Poaching	10	10	
2.24 Mining	10		
2.25 Tourism development	10	4	
2.26 Introduction of exotic/alien species	10	6	
2.27 Environmental pollution	10	8	
2.28 Other	10	0	

Total	***280***	***158***	
3. Negative natural pressures on watershed and its resources			
3.1 Landslides	40	0	Among natural factors, extreme pressures on Tekhuri and Rioni watersheds are imposed by floods and flash floods; Historical and current climate change pressures on Tekhuri watershed resources are from temperature increase by 0.20C - 0.40C and precipitation decrease by 8 - 13%
3.2 Mudflows	40	0	
3.3 Floods and/or flash floods	40	40	
3.4 Avalanches	40	0	
3.5 Droughts	40	0	
3.6 Climate change	40	24	
3.7 Other (e.g. eustasy, sea surges, karsts, river bed sedimentation, and etc.)	40	0	
Total	***280***	***64***	
4. Potential for significant future negative pressures and impacts on watershed and its resources			
4.1 Potential for significant future anthropogenic pressures and impacts	40	40	In the near future, it is expected that infrastructure will be further developed especially in Tekhuri low reaches and Rioni part of the municipality related to the development of Poti free industrial zone. Therefore, pressures on natural resources and ecosystems will continue to remain high; As for natural threats, construction of large HPP hydropower cascades will increase the flood regulation capacity of the Rioni water body. However, without proper management, it will have an impact on the sedimentation flow; Furthermore, climate impacts will continue to exist and even deepen further
4.2 Potential for significant future natural pressures and impacts	40	24	
Total	***80***	***64***	
5. Negative impacts on watershed and its resources			
Environmental impacts: water resources			
5.1 Reduction in river run-off	10	0	There is no evidence on reduction of the river run-off in Tekhuri watershed; However, It can be assumed that river bed silting happens due to river bank erosion; Waters of Rioni low reaches are highly polluted by nutrients
5.2 Reduction in sediment flow	10	8	
5.3 River bed/lake/reservoir silting	10	10	
5.4 Water pollution	10	4	
Environmental impacts: land resources			
5.5 Soil erosion	10	10	Soil and river bank erosion are critical issues in the municipality; Soil bogging also happens due to high water table and improper drainage of lands; There are no data available on soil quality; Nevertheless, it can be assumed that soils in and around waste dumping sites and obsolete pesticide store houses are polluted; In addition, due to intensive use of agrochemicals against American butterfly, soils might also be contaminated by toxic substances
5.6 Soil salinization	10	0	
5.7 Soil bogging	10	0	
5.8 River bank/coastal erosion	10	10	
5.9 Soil compaction	10	4	
5.10 Soil contamination	10	6	
Environmental impacts: ecosystems, biological resources			
5.11 Desertification	10	0	Historically, landscape transformation was a significant issue due to land conversion and other anthropogenic pressures. Although, currently there is no trend of agriculture land expansion as a result of infrastructure development (gas pipelines, roads, power transmission lines, and etc), landscape modification still happens. Furthermore, habitat fragmentation, habitat and species loss are significant issues in the region
5.12 Ecosystem/landscape modification	10	10	
5.13 Habitat fragmentation	10	6	
5.14 Habitat loss	10	6	
5.15 Species loss	10	6	
Social-economic and health impacts			
5.16 Health impacts: Illnesses	10	-	There is no information available on health impacts of environmental degradation (pollution) in Senaki Municipality, including illnesses and deaths. However, in terms of impacts of natural pressures (e.g. disasters, etc.) the impacts are significant in monetary terms; There are were also cases of human deaths from floods (e.g. in 1987)
5.17 Casualties (human deaths)	10	6	
5.18 Impacts on economic assets, including housing, infrastructure, etc.	10	10	

		Economic impacts			
		Total	***180***	***96***	
		6. Linkages between resource uses and watershed functions			
		6.1 Demonstrated linkage between upstream use and downstream watershed/area function/state	40	24	River bank and in-stream sand and gravel extraction in Tekhuri watershed cause river bank and bed erosion as well as river bed silting that reduces flood carrying capacity of downstream waters; In terms of impacts of upstream water consumptions on downstream uses/watershed functions, they are insignificant due to the low level of water abstractions and consumption. Wastewater discharges are also insignificant; Recent data on water quality of Tekhuri River is unavailable, though data on Rioni close to the point of confluence of Tekhuri with Rioni is available. At this point, the water is heavily polluted with nutrients (e.g. ammonia, total nitrogen). However, based on this data the share of Tekhuri in polluting Rioni waters can be detected
		6.2 Demonstrated linkage between various uses and functions of watershed resources	40	32	
		Total	***80***	***56***	
		7. Socio-economic situation			
		7.1 Poverty level	20	8	There is no separate data available on the poverty level of Senaki Municipality. In general, poverty level of Samegrelo Region against the official poverty line is 41.1%, which is lower than national average (~44%). Population density is high in the municipality amounting to 100/km^2, which is higher than the national value; As for unemployment level, it stands at 14.3%, which is lower than national average of 16.8%
		7.2Population density	20	16	
		7.3Unemployment level	20	8	
		Total	***60***	***32***	
		8. Governance structure			
		8.1 Existence of regional government structure	20	0	There is no regional government in Senaki Municipality; Municipal government is located in the city of Senaki; The municipality has its own development strategy that needs an update; Samegrelo authorities are very open to any donor assistance, especially those which target rural population
		8.2 Existence of municipal government(s)	20	20	
		8.3 Existence of regional and/or municipal development programs/strategies	20	20	
		8.4 Readiness of regional/local governments to participate in the program	20	20	
		Total	***80***	***60***	
		9. Potential for significant catalytic effect			
		9.1 Presence of similar/complementary USAID programs	20	0	USAID NEO project among others will work in Samegrelo Region and Senaki might be the area of their ground work; USAID also supports the construction of Senaki-Poti gas pipeline; Other USAID projects, including democratic governance and education programs may also have some activities in Senaki; As for other donor programs that might have synergies with INRMW program, there are none working in Senaki Municipality
		9.2 Presence of other donor programs/projects and project pipelines and/or government programs	20	0	
		9.3 Presence of success stories and good lessons learned from previous projects/programs	20	0	
		Total	***60***	0	
		10. Geographic scale and location			
		10.1 Practical geographic scale and location	**20**	20	Pilot watershed/area has a total area of no less than 500 km^2 and no more than 4,000 km^2 as well as a location within only one administrative region
		Total	**20**	**20**	
		GRAND TOTAL	***1320***	***694***	
4.	Senaki-Khobi municipalities:	**1. Functions and/or values**			
		1.1 Ecological value	40	40	Rioni delta, river mouth and coastal zone within the

Tekhuri-Tsivi-Rioni delta	1.2 Health protection value	40	40	suggested pilot area have very high ecological value due to the complexity, richness, rareness, abundance in relic species and endemism of ecosystems and species that are seen there. Sizable area of the Kolkheti National Park is located within lower parts of Khobi and Senaki municipalities. Swamps play a significant role in purification of waters, etc. As for the health protection value, the largest amount of water abstracted is used for drinking and domestic purposes; The area is rich in healing mineral waters that are underutilized; With regard to commercial value of the watershed resources, small quantity of ground waters abstracted is used by industries; geothermal hot waters are abundant in the region and are used for green houses; Pebble, gravel, brick clay and limestone are extracted for utilization in construction business; peat is extracted in Khobi for production of fertilizers; Delta area is used for small cargo navigation; Local population utilizes land, timber and non-timber (mushrooms, berries, medicinal plants, etc), peat and land resources to maintain their livelihoods; On the subject of the aesthetic/recreation value of the area, Kolkheti PA offers unique sights for visitors and creates the good basis for PA-based tourism development; Furthermore, the area has high potential in terms of development of spa and health resorts; In terms of cultural value, Khobi and Senaki municipalities are very rich in historical monuments of ancient and medieval times; As for provision of ecosystem services, the watersheds of Senaki and Khobi municipalities provide the following services: 1. provisional: drinking water, food, timber, medicinal plants, and etc; 2. Regulating services: water purification, pollination, waste decomposition, erosion and flood control, and etc; 3. cultural services: provision of vivid and unique landscapes; 4. supporting services: ecosystem maintenance. However, watersheds do not provide for navigation, HPP generation, and irrigation services
	1.3 Economic/commercial value	20	16	
	1.4 Livelihood support value	40	40	
	1.5 Aesthetic/recreational value	20	20	
	1.6 Cultural value	20	20	
	1.7 Amount of ecosystem services provided by the watershed	20	12	
	Total Score	***200***	***188***	
	2. Negative anthropogenic pressures on watershed and its resources			
	Water resources			
	2.1 Water abstractions and consumption	10	10	The most significant pressures on water resources of the Tekhuri and Tsivi watersheds are imposed by non-point sources, such as agriculture and surface run-off from urban areas and waste dumping sites; The remaining threats are insignificant; With regard to to Rioni watershed section of the municipality, including delta, significant pressures on water quantity are from river damming, diversion and upstream uses, and on water quality – from point (industrial activities in middle to low reaches) as well as non-point sources (surface run-off from agricultural lands, and settlements)
	2.2 Man-induced river regime change, damming, and diversion	10	10	
	2.3 Pressures from point sources	10	10	
	2.4 Pressures from non-point sources	10	10	
	2.5 Others	10	0	
	Land resources			
	2.6 Land use, land use change	10	2	Significant pressures on land resources of Senaki and Khobi municipalities (Tekhuri, Tsivi and Rioni watersheds) come from land cultivation, unsustainable drainage, unsustainable pasture management, including overgrazing, and unsustainable logging; Solid waste dumping without any safeguard measures also poses threats to soil quality; Furthermore, there is intensive use of pesticides against American butterfly in Samegrelo that poses significant pressures on soil quality; Surface run-off from upstream urban and rural areas also pose threats to downstream
	2.7 Intensive land cultivation	10	8	
	2.8 Unsustainable irrigation/drainage	10	6	
	2.9 Extensive use of agrochemicals	10	6	
	2.10 Extensive Logging	10	6	
	2.11 Overgrazing	10	8	
	2.12 Unsustainable pasture management	10	8	
	2.13 Mining	10	4	
	2.14 Industrial activities	10	2	
	2.15 Solid waste dumping	10	8	

	2.16 Toxic wastes	10	0	
	2.17 Others	10	10	
	Landscapes and biological resources			
	2.18 Land use, and land use change	10	2	The most notable pressures on landscapes and biodiversity of Senaki and Khobi municipalities are from overgrazing, poaching, mostly illegal fishing, unsustainable logging, extraction of construction materials and infrastructure development. Introduction of alien species in wetlands is an issue together with environmental pollution of Rioni low reach area from nutrients loads
	2.19 Extensive logging	10	10	
	2.20 Infrastructure development	10	8	
	2.21 Unsustainable fishing	10	10	
	2.22 Overgrazing	10	10	
	2.23 Poaching	10	10	
	2.24 Mining	10	4	
	2.25 Tourism development	10	4	
	2.26 Introduction of exotic/alien species	10	8	
	2.27 Environmental pollution	10	8	
	2.28 Others	10	0	
	Total	***280***	***182***	
	3. Negative natural pressures on watershed and its resources			
	3.1 Landslides	40	0	Among natural factors, extreme pressures on Tekhuri, Tsivi and Rioni watersheds are imposed by floods and flash floods; Historical and current climate change pressures on watershed resources are from temperature increase by 0.20C -0.40C and precipitation decrease by 8-13%; Eustasy, sea waves and surges also impose pressures on delta and coastal areas, which as a result of climate change are currently accelerated; Furthermore, due to climate change induced glacier retreat in the delta area, there is a trend of an intensified accumulation of sediments carried by glacier-fed rivers that is caused by intensive enrichment of river sediment with moraine materials originated in the process of glacier retreat. Activation of sedimentation processes is clearly manifested in the coastline where the R. Rioni mouth new branch (Nabada) is located. The branch (sleeve) has intruded into the sea by about 150 meters, and this branch has developed its delta with islands similar to the old (historic) mouth, which significantly exceeds the previous one. The silting of the river bed by glacier sediment reduces the river bed carrying (discharge) capacity, especially during floods and its inclination in an area affected by eustasy. This problem, first of all, is most urgent for settlements located around the upper part of this river section (e.g. Patara Poti, Chaladidi, Sabazho, Sagvamichao, Sakorkio, Sachochuo, etc.). A significant part (20-30%) of the lower portion of this segment is occupied by the Kolkheti National Park and other protected areas have been flooded several times and seriously damaged due to the cumulative action of eustasy and river bed silting processes. The impact of sedimentation on the river bed in this segment is very significant
	3.2 Mudflows	40	0	
	3.3 Floods and/or flash floods	40	40	
	3.4 Avalanches	40	0	
	3.5 Droughts	40	0	
	3.6 Climate change	40	40	
	3.7 Other (e.g. eustasy, sea surges, karsts, river bed sedimentation, and etc.)	40	40	
	Total	***280***	***120***	
	4. Potential for significant future negative pressures and impacts on watershed and its resources			
	4.1 Potential for significant future anthropogenic pressures and impacts	40	40	In the near future, it is expected that infrastructure will be further developed especially in Tekhuri and Tsivi low reaches and Rioni part of the municipality due to the development of Poti free industrial zone. Therefore, pressures on natural resources and ecosystems will continue to remain high and may increase in foreseeable future; Furthermore, construction of large HPP hydropower cascades will increase the flood regulation capacity of the Rioni water body. However, without proper management it
	4.2 Potential for significant future natural pressures and impacts	40	40	
	Total	***80***	***80***	

			will have an impact on sedimentation flow that will impact delta formation; Climate impacts especially in delta and coastal areas will continue to pose significant threats
5. Negative impacts on watershed and its resources			
Environmental impacts: water resources			
5.1 Reduction in river run-off	10	0	It can be assumed that river bed silting occurs due to river bank erosion; Sediment flow is reduced following the regulation of Gumati reservoir in downstream areas of Rioni; Waters of Rioni low reaches are highly polluted by nutrients
5.2 Reduction in sediment flow	10	8	
5.3 River bed/lake/reservoir silting	10	10	
5.4 Water pollution	10	4	
Environmental impacts: land resources			
5.5 Soil erosion	10	10	Soil and river bank erosion are critical issues for the municipalities; Soil bogging also occurs due to high water table and improper drainage of lands; There are no data available on soil quality; But, it can be assumed that soils in and around waste dumping sites and obsolete pesticide store houses are polluted, and the same can be said about soils of urban areas; In addition, due to intensive use of agrochemicals against American butterfly, soils might also be contaminated by toxic substances
5.6 Soil salinization	10	0	
5.7 Soil bogging	10	0	
5.8 River bank/coastal erosion	10	10	
5.9 Soil compaction	10	4	
5.10 Soil contamination	10	6	
Environmental impacts: ecosystems, biological resources			
5.11 Desertification	10	0	Historically, landscape modification due to land conversion and other anthropogenic pressures was a significant issue for Senaki and Khobi municipalities. Although, currently there is no trend of agriculture land expansion as a result of infrastructure development (gas pipelines, roads, power transmission lines, and etc), landscape modification still happens. Furthermore, habitat fragmentation, habitat and species loss are significant issues in the region, especially the loss of high value fishes
5.12 Ecosystem/landscape modification	10	8	
5.13 Habitat fragmentation	10	8	
5.14 Habitat loss	10	8	
5.15 Species loss	10	8	
Social-economic and health impacts			
5.16 Health impacts: Illnesses	10	-	There is no information available on the health impacts of environmental degradation (pollution) in Senaki and Khobi municipalities, including illnesses and deaths. However, in terms of impacts of natural pressures (e.g. disasters, etc.) the impacts are significant in monetary terms; There were cases of human deaths from floods (e.g. in 1987)
5.17 Casualties (human deaths)	10	6	
5.18 Impacts on economic assets, including housing, infrastructure, etc. Economic impacts	10	10	
Total	***180***	***100***	
6. Linkages between resource uses and watershed functions			
6.1 Demonstrated linkage between upstream use and downstream watershed/area function/state	40	40	Damming of upstream areas of Rioni has deteriorated fish migration routes in downstream area and delta, and affected Delta formation as well; River bank and in-stream sand and gravel extraction in Tekhuri, Tsivi and Rioni watershed causes river bank and bed erosion as well as river bed silting that reduces flood carrying capacity of downstream waters; In terms of impacts of upstream water uses on downstream uses/watershed functions they are insignificant due to the low level of water abstractions and consumption. Wastewater discharges are also insignificant. Recent data on the water quality of Tekhuri river are unavailable, though there are data available on Rioni close to the point of confluence of Tekhuri with Rioni. At this point, water is heavily polluted with nutrients (e.g. ammonia, total nitrogen). However, based on this data the share of Tekhuri in polluting Rioni waters can be detected;
6.2 Demonstrated linkage between various uses and functions of watershed resources	40	34	
Total	***80***	***74***	
7. Socio-economic situation			
7.1 Poverty level	20	10	There is no separate data available on poverty level of Senaki and Khobi municipalities. In general, poverty level
7.2 Population density	20	16	

7.3Unemployment level	20	8	of Samegrelo Region against official poverty line is 41.1%, which is lower than national average (~44%). Population density is high in the municipalities amounting to 100/km^2 in Senaki and 62.6/km^2 in Khobi, which is higher than the national value; Regarding the unemployment level, it is 14.3% in the region, which is lower than national average of 16.8%
Total	***60***	***34***	
8. Governance structure			
8.1 Existence of regional government structure	20	0	There is no regional government in Senaki and Khobi municipalities; Municipal government is located in the city of Senaki and Khobi, which is situated in Khanistskali watershed; The municipalities have their own development strategies that needs an update; Samegrelo authorities are very open to any donor assistance, especially to those which target rural population and poverty eradication
8.2 Existence of municipal government(s)	20	20	
8.3 Existence of regional and/or municipal development programs/strategies	20	20	
8.4 Readiness of regional/local governments to participate in the program	20	20	
Total	***80***	***60***	
9. Potential for significant catalytic effect			
9.1 Presence of similar/complementary USAID programs	20	20	USAID NEO project among others will work in Samegrelo Region, and Senaki as well as Khobi might be the area of their ground work; USAID also supports the construction of Senaki-Poti gas pipeline; Other USAID projects, including the ones dealing with democratic governance and education programs might also have some activities in Senaki and Khobi; USDoI-ITAP has its program all over Georgia including Kolkheti National Park; As for other donor programs that might have synergies with INRMW program, UNDP flood management project that is about to start will work in Rioni downstream and delta areas; WWF-Caucasus, IUCN have their program activities in Kolkheti National Park; BP may invest in rehabilitation of Kolketi National Park infrastructure; Regarding previous experiences, GEF/WB Protected Areas Project worked on establishment and development of Kolkheti National Park and at the same time had a small grants program for local communities; There was also WB Integrated Coastal Zone Management Project that among others had watershed management components
9.2 Presence of other donor programs/projects and project pipelines and/or government programs	20	20	
9.3 Presence of success stories and good lessons learned from previous projects/programs	20	20	
Total	***60***	***60***	
10. Geographic scale and location			
10.1 Practical geographic scale and location	**20**	20	Pilot watershed/area has a total area of no less than 500 km^2 and no more than 4,000 km^2 as well as a location within only one administrative region
Total	**20**	***20***	
GRAND TOTAL	***1320***	***918***	

Therefore, the evaluation of two short-listed options of downstream watersheds/areas against a set of criteria has resulted in the following: 1. Chkherimela watershed: Kharagauli Municipality scored 782, and option 2. Khanistskhali watershed: Bagdati Municipality – 730, option 3. Tekhuri watershed: Senaki Municipality – 694 and, 4. Rioni lowstream area-Delta: Senaki and Khobi municipalities – 918

Based on the scoring results we recommend the option 4. Rioni lowstream area-Delta: Senaki and Khobi municipalities as the 2st (downstream) pilot area in Rioni River Basin.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

INRMW Team has evaluated various alternative options of upstream and downstream watersheds/areas against a set of environmental, socio-economic, governance and other criteria. More specifically, for the selection of the upstream watershed/area of the Alazani and Iori river basins, two alternative options: 1. Akhmeta-Telavi municipalities: Alazani upper watershed and 2. Tianeti Municipality – Iori upper watershed have been evaluated and compared with each other; for the selection of the downstream watershed/area of the Alazani and Iori river basins: 1. Dedoplistskaro Municipality – Alazani-Iori downstream area and 2. Lagodekhi Municipality – Kabali watershed have been evaluated and compared with each other; for selection of upstream watershed/area in Rioni River Basin 1. Oni and Ambrolauri municipalities – Rioni upper watershed and Tsageri and 2. Lentekhi – Tskhenistskali upper watershed have been evaluated and compared with each other and; for selection of the downstream watershed/area in Rioni River Basin 1. Kharagauli Municipality – Chkherimela watershed, 2. Bagdati Municipality – Khanistskali watershed, 3. Senaki Municipality – Tekhuri watershed and, 4. Senaki and Khobi municipalities – Rioni low reach area-delta have been evaluated. Evaluation of alternative options has resulted in the following:

- Between the two alternative upstream options of Alazani and Iori river basins: Akhmeta-Telavi municipalities: Alazani upper watershed and Tianeti Municipality – Iori upper watershed, the first option has received a higher score than the second option due to its higher ecological, aesthetic/recreational and cultural values, importance of the watershed resources for the area's economy and livelihoods, more significant pressures and impacts on watershed and its resources, better governance structure and higher potential catalytic effect;
- Between two alternative downstream options of Alazani-Iori Basins: Dedoplistskaro Municipality – Alazani-Iori downstream area and Lagodekhi Municipality – Kabali watershed, the first option has received a higher score due to its higher fragility, vulnerability, ecosystem representation and diversity, as well as due to more significant pressures and impacts on ecosystem resources;
- Between two alternative upstream options of Rioni Basin: Oni-Ambrolauri: Rioni upstream watershed and Lentekhi-Tsageri: Tskhenistskali upstream watershed, Oni-Ambrolauri area has received the higher score than Lentekhi-Tsageri area due to higher anthropogenic pressures on ecosystems, better governance structure and higher potential catalytic effect;
- Among the four alternative options of downstream watersheds/areas: Kharagauli Municipality – Chkherimela watershed, Bagdati Municipality – Khanistskali watershed, Senaki Municipality – Tekhuri watershed and, Senaki and Khobi municipalities – Rioni low reach area-delta has received the highest score due to higher ecological value, better representation of downstream ecosystems and more significant pressures and impacts on watershed resources, as well as due to more visible linkages between upstream and downstream uses

6.1 Recommendations

Stemming from the evaluation results of various alternative options of pilot watersheds/areas, the INRMW Team recommends selecting the following four areas for implementation of the on-the-ground activities of the program:

1. Akhmeta and Telavi municipalities;
2. Dedoplistskaro Municipality;
3. Oni and Ambrolauri municipalities;
4. Senaki and Khobi (Rioni lower reach-delta)

ANNEXES

Annex 1. Selection Criteria

For the purpose of short-listing the pilot watershed/areas, the following minimum qualification criteria are set as indicated in *Table 1. Watershed Short-listing Matrix*: 1. Manageable number of municipalities; 2. Manageable geographic scale; 3. Presence of adequate number of communities/villages; 4. Upstream or downstream location; 5. Workable degree of infrastructure complexity; 6. Significant ecological value. Criteria are assigned "yes"/"+" for meeting the criteria or "no"/"-"for not meeting the criteria. The evaluator would mark either yes/no ("+" or "-"), by putting the mark in the column labeled as "Scoring Results". Watershed options not meeting any of the above criteria (e.g. receiving all negative ratings) will be automatically disqualified. Below is a short-listing matrix.

Table 1. Watershed Short-listing Matrix

#	Pilot watershed area	Watershed Qualification (Short-Listing) Criteria	Rating Marks		Rating results	Comment
			Yes: +	No: -		
		1. Manageable number of municipalities[4]	+	-		
		2. Manageable geographic scale[5]	+	-		
		3. Presence of adequate number of communities/villages[6]	+	-		
		4. Upstream or downstream location	+	-		
		5. Workable degree of infrastructure complexity[7]	+	-		
		6. Significant ecological value[8]	+	-		
		Final result				

Pilot watersheds/areas meeting all minimum qualification criteria will be short-listed for further evaluation against a set of environmental, geographic, social-economic, governance and other criteria listed in Table 2.

There are a total of 11 sets of criteria suggested for the selection for 4 smaller pilot watersheds/areas: 1. Watershed functions and values; 2. Negative anthropogenic pressures on watershed and its resources; 3. Negative natural pressure on watershed and its resources; 4. Potential for significant negative pressures and impacts on watershed/area and its resources; 5. Negative impacts on watershed and its resources; 6. Linkages between resource uses and watershed functions ; 8. Socio-economic situation; 9. Governance structures; 10. Potential for significant catalytic effect; 11. Geographic scale and location. Each set of the criteria is divided into smaller sub-criteria, which are assigned certain points. Scoring is conducted from 0 to the maximum attainable score for each sub-criterion. Total maximum attainable score for each option is

[4] No more than 3 municipalities;

[5] 2.1 The river should have a length of more than 30 km; 2.2 The watershed should have a total area of no less than 200 km^2; 2.3 The watershed should encompass no less than a third of the territory of a single municipality;

[6] Pilot watershed/area should encompass no less than 15 villages/communities, given the total number (pull) of communities in each pilot watershed, out of which 10 communities will be selected, is 15;

[7] Something between covering large urban area(s) or peri-urban with very complex infrastructure; or, at the other extreme, not covering any urban area;

[8] Pilot watershed/area should encompass sizable areas of natural ecosystems that are habitats for rare, threatened, endemic or relic species, protected areas, and etc. or should provide an ecosystem healthiness and integrity services.

1320. The highest importance is assigned to ecological and environmental criteria, given the objectives of the project.

Watersheds/areas that obtain the highest total scores will be selected for development interventions

Table 2. Short-Listed Watershed/Area Evaluation Score Card

#	Watershed option	Selection Criteria	Maximum attainable score	Scoring result (Scores obtained)	Comment
		1. Functions and values			
		1.1. Ecological value [9]	40		
		1.2 Health protection value [10]	40		
		1.3 Economic/commercial value [11]	20		
		1.4 Livelihood support value[12]	40		
		1.5 Aesthetic/recreational value[13]	20		
		1.6 Cultural value[14]	20		
		1.7 Amount of ecosystem services provided by the watershed[15]	20		
		Total Score	***200***		
		2. Negative anthropogenic pressures on watershed and its resources[16]			

[9] Importance of the watershed and its ecosystems for maintaining ecosystems integrity, healthiness, high conservation value (e.g. biodiversity richness, relicness, high endemism, habitats for rare, endemic, relic and endangered species, migratory corridors unique natural landscapes/ecosystems), and disaster risk reduction functions as well (e.g. water regulation, soil stabilization and protection, avalanche protection, and etc). Total attainable score for the sub-criteria is 40. The scale of importance is divided into six categories: 1) No importance – 0; 2) Very low importance – between 1 and 8 points; 3) Low importance - between 9 and 16 points; 4) Medium importance – between 17 and 24 points; 5) High importance – between 25 and 32 points; 6) Very high importance - between 33 and 40 points

[10] Degree at which watershed resources are utilized for maintaining the population health. Total attainable score for the sub-criteria is 40. The scale of importance is divided into six categories: 1) No value – 0; 2) Very low value – between 0 and 8 points; 3) Low value - between 9 and 16 points; 4) Medium value – between 17 and 24 points; 5) High value – between 25 and 32 points; 6) Very high value - between 33 and 40 points

[11]Scale of commercial use of resources by private sector/government to receive profits and/or richness of watershed with resources having commercial value. Total attainable score is 20. The scale of values is divided into 6 categories: 1) No value – 0; 2) Very low value – points from 1 through 4; 3) Low value – points from 5 through 8; 4) Medium value – points from 9 through 12; 5) High value – points from 13 through 16; 6) Very high value – points from 17 through 20

[12] Scale of community use of watershed resources for subsistence economies. Total attainable score for the sub-criteria is 40. The scale is divided into six categories: 1) No value – 0; 2) Very low value – between 0 and 8 points; 3) Low value - between 9 and 16 points; 4) Medium value – between 17 and 24 points; 5) High value – between 25 and 32 points; 6) Very high value - between 33 and 40 points

[13] Importance of the watershed for tourism and other types of recreation. Total attainable score is 20. The scale of values is divided into 6 categories: 1) No value – 0; 2) Very low value – points from 1 through 4; 3) Low value – points from 5 through 8; 4) Medium value – points from 9 through 12; 5) High value – points from 13 through 16; 6) Very high value – points from 17 through 20

[14] Historic, ethnographic and religious value. Total attainable score is 20. The scale of values is divided into 6 categories: 1) No value – 0; 2) Very low value – points from 1 through 4; 3) Low value – points from 5 through 8; 4) Medium value – points from 9 through 12; 5) High value – points from 13 through 16; 6) Very high value – points from 17 through 20

[15] Amount of ecosystem services provided by the watershed. Total attainable score is 20. The scale of values is divided into 6 categories: 1) None of the ecosystem services provided – 0; 2) Very low number of ecosystem services provided – points from 1 through 4; 3) Low number of ecosystem services provided – points from 5 through 8; 4) Medium number of ecosystem services provided – points from 9 through 12; 5) Large number of ecosystem services provided – points from 13 through 16; 6) Very large number of ecosystem services provided – points from 17 through 20

[16] Degree of negative environmental pressures imposed on watershed resources by human activities, e.g. various economic activities, population growth, and etc. The criteria are divided into 27 sub-criteria. Maximum attainable score for each sub-criterion is 10. The scale of values is divided into six categories: 1) No pressure s– 0; 2) Very low pressures – between 1 and 2 points; 3) Low pressures – between 3 and 4 points; 4) Medium pressures – between 5 and 6 points; 5) Significant pressures – between 7 and 8 points; 6) Very significant pressures – between 9 and 10 points;

Water resources	
2.1 Water abstractions and consumption	10
2.2 Man-induced river regime change, damming, and diversion	10
2.3 Wastewater discharges from point sources	10
2.4 Wastewater discharges from non-point sources	10
2.5 Others	10
Land resources	
2.6 Land use, and land use change	10
2.7 Intensive land cultivation	10
2.8 Unsustainable irrigation	10
2.9 Extensive use of agrochemicals	10
2.10 Extensive logging	10
2.11 Overgrazing	10
2.12 Unsustainable pasture management	10
2.13 Mining	10
2.14 Industrial activities	10
2.15 Solid waste dumping	10
2.16 Toxic wastes	10
2.17 Surface run-off	10
Landscapes and biological resources	
2.18 Land use, and land use change	10
2.19 Extensive logging	10
2.20 Infrastructure development	10
2.21 Unsustainable fishing	10
2.22 Overgrazing	10
2.23 Poaching	10
2.24 Mining	10
2.25 Tourism development	10
2.26 Introduction of exotic/alien species	10
2.27 Environmental pollution	10
2.28 Others	10
Total	***280***
3. Negative natural pressures on watershed and its resources[17]	

[17] Degree of pressures imposed by natural factors, e.g. hydro-meteorological and geological disasters, climate change, and etc. The criterion is divided into seven sub-criteria. Maximum attainable score for each of them is 40. The scale is divided into six categories: 1) No pressures – 0; 2) Very low pressures – between 0 and 8 points; 3) Low pressures - between 9 and 16 points; 4) Medium pressures –between 17 and 24 points; 5) High pressures – between 25 and 32 points; 6) Very high pressures - between 33 and 40 points

3.1 Landslides	40
3.2 Mudflows	40
3.3Floodsand/orflash Floods	40
3.4 Avalanches	40
3.5Droughts	40
3.6 Climate change	40
3.7 Others (e.g. exotasy, sea surges, karsts, river bed sedimentation, and etc.)	40
Total	***280***
4. Potential for significant negative pressures and impacts on watershed and its resources[18]	
4.1 Potential for significant future anthropogenic pressures and impacts	40
4.2 Potential for significant Future natural pressures and impacts	40
Total	***80***
5. Negative impacts on watershed and its resources[19]	
Environmental impacts: water resources	
5.1 Reduction in river run-off	10
5.2 Reduction in sedimentation flow	10
5.3 River bed/bale/reservoir silting	10
5.4 Water pollution	10
Environmental impacts: land resources	
5.5 Soil erosion	10
5.6 Soil salination	10
5.7 Soil bogging	10
5.8 River bank/coastal erosion	10
5.9 Soil compaction	10
5.10 Soil contamination	10
5.11 Desertification	10
Environmental impacts: biological resources	
5.12 Ecosystem/landscape modification	10
5.13 Habitat fragmentation	10
5.14 Habitat loss	10
5.15 Species loss	10

[18] Potential (likelihood) of significant negative environmental pressures and impacts on watershed resources within a 5-year horizon. The criterion is divided into two sub-criteria. Total attainable score for each of them is 40. The likelihood is divided into 6 categories: 1) No likelihood – 0; 2) Very low likelihood – between 1 and 8 points; 3) Low likelihood – between 9 and 16 points; 4) Medium likelihood – between 17 and 24 points; 5) High likelihood – between 25 and 32 points; 6) Very high likelihood – between 33 and 40 points

[19] Degree of environmental, health, socio-economic impacts. The criterion is divided into 18 sub-criteria. Total attainable score of each of the sub-criteria is ten. The scale of the value is divided into six categories: 1) No impact(s) – 0; 2) Very low impact(s) – between 1 and 2 points; 3) Low impact(s) – between 3 and 4 points; 4) Medium impact(s) – between 5 and 6 points; 5) High impact(s) – between 7 and 8 points; 6) Very high impact(s) – between 9 and 10 points

Social-economic and health impacts	
5.16 Health impacts: Illnesses	10
5.17 Impacts on human lives (human death)	10
5.18 Impacts on economic assets, including housing, infrastructure, and etc. Economic impacts	10
Total	***180***
6. Linkages between resource uses and watershed functions[20]	
6.1 Demonstrated linkage between upstream use and downstream watershed function/state	40
6.2 Demonstrated linkage between various uses of watershed resources	40
Total	***80***
7. Socio-economic situation	
7.1 Poverty level[21]	20
7.2Population density[22]	20
7.3Unemployment level[23]	20
Total	60
8. Governance structure	
8.1 Existence of regional government structure	20
8.2 Existence of municipal government(s)	20
8.3 Existence of regional and/or municipal development programs/strategies	20
8.4 Readiness of regional/local governments to participate in the program	20
Total	80
9. Potential for significant catalytic effect	

[20] Level of linkages between resource uses and ecosystem functions. The criterion is divided into two sub-criteria. Maximum attainable score for each of the sub-criteria is 40. Values are grouped into 6 categories: 1) No linkages – 0; 2) Very low linkages – between 1 and 8 points; 3) Low linkages – between 9 and 16 points; 4) Medium linkages – between 17 and 24 points; 5) High linkages – between 25 and 32 points; 6) Very high linkages – between 33 and 40 points

[21] Maximum attainable score for the sub-criteria is 20. Values are grouped into following 6 categories: 1) No poverty – 0; 2) Very low poverty level – points from 1 through 4; 3) Low poverty level – points between 5 and 8; 4) Medium poverty level – points between 9 and 12; 5) High poverty level – points between 13 and 16; 6) Very high poverty level – points between 17 and 20

[22] Maximum attainable score for the sub-criteria is 20. Values are grouped into following 6 categories:1) Zero population density – 0; 2) Very low population density (between 1 and 10 persons/km^2) – between 1 and 4 points ; 3) Low population density (between 10 and 25 persons/km^2) – between 5 and 8 points; 4) Medium population density (between 25 and 100 persons/km^2) - between 9 and 12 points; 5) High population density (between 100 and 500 persons/km^2) – between 13 and 16 points; 6) Very high population density (more than 500 persons/km^2) – between 17 and 20 points

[23] Maximum attainable score for the sub-criteria is 20. Values are grouped into following 6 categories: 1) Zero unemployment – 0; 2) Very low unemployment – between 1 and 4 points; 3) Low unemployment – between 5 and 8 points; 4) Medium level unemployment – between 9 and 12 points; 5) High unemployment – between 13 and 16 points; 6) Very high unemployment – between 17 and 20 points

	9.1 Presence of similar/complementary USAID programs	20	
	9.2 Presence of other donor programs/projects and project pipelines and/or government programs	20	
	9.3 Presence of success stories and good lessons learned from previous projects/programs	20	
	Total	***60***	
		10. Geographic scale and location	
	10.1 Practical geographic scale and location[24]	**20**	
	GRAND TOTAL		***1320***

[24] Pilot watershed/area should have a total area of no less than 500 km^2 and no more than 4,000 km^2 as well as a location within only one administrative region

Annex 2. Maps of Pilot Watersheds/Areas

Figure 1. Long-list of Pilot Watersheds/Areas

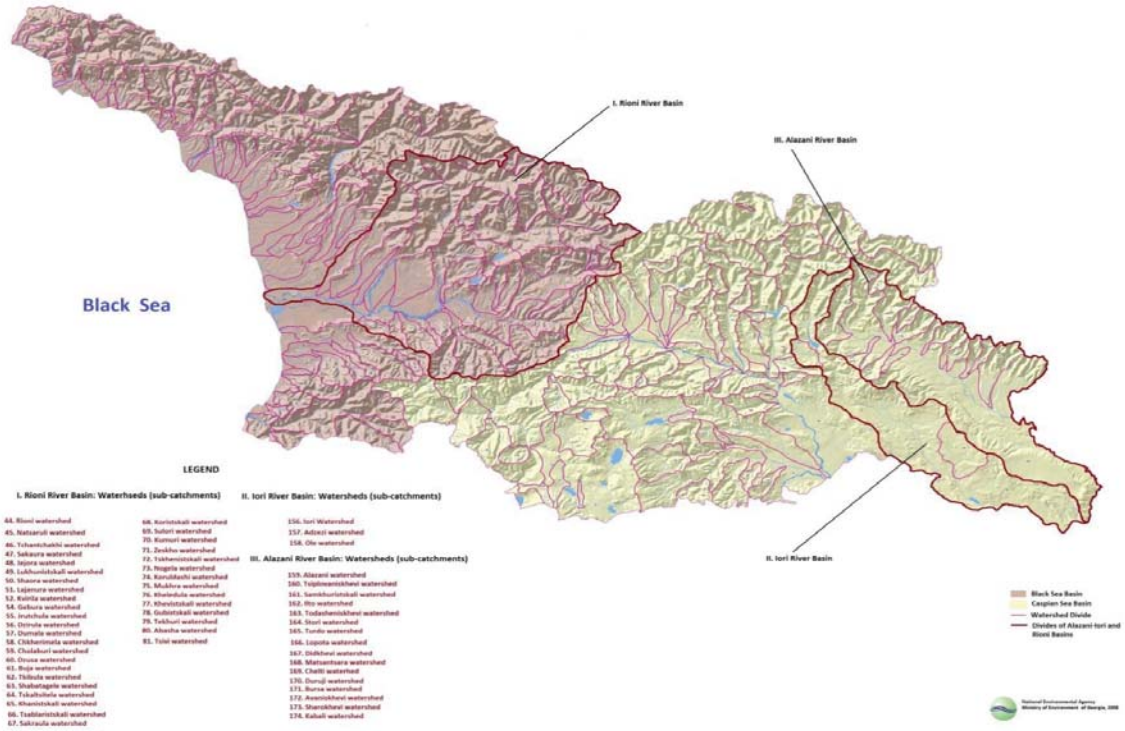


Figure 2. Long-list of Pilot Watersheds in Alazani River Basin

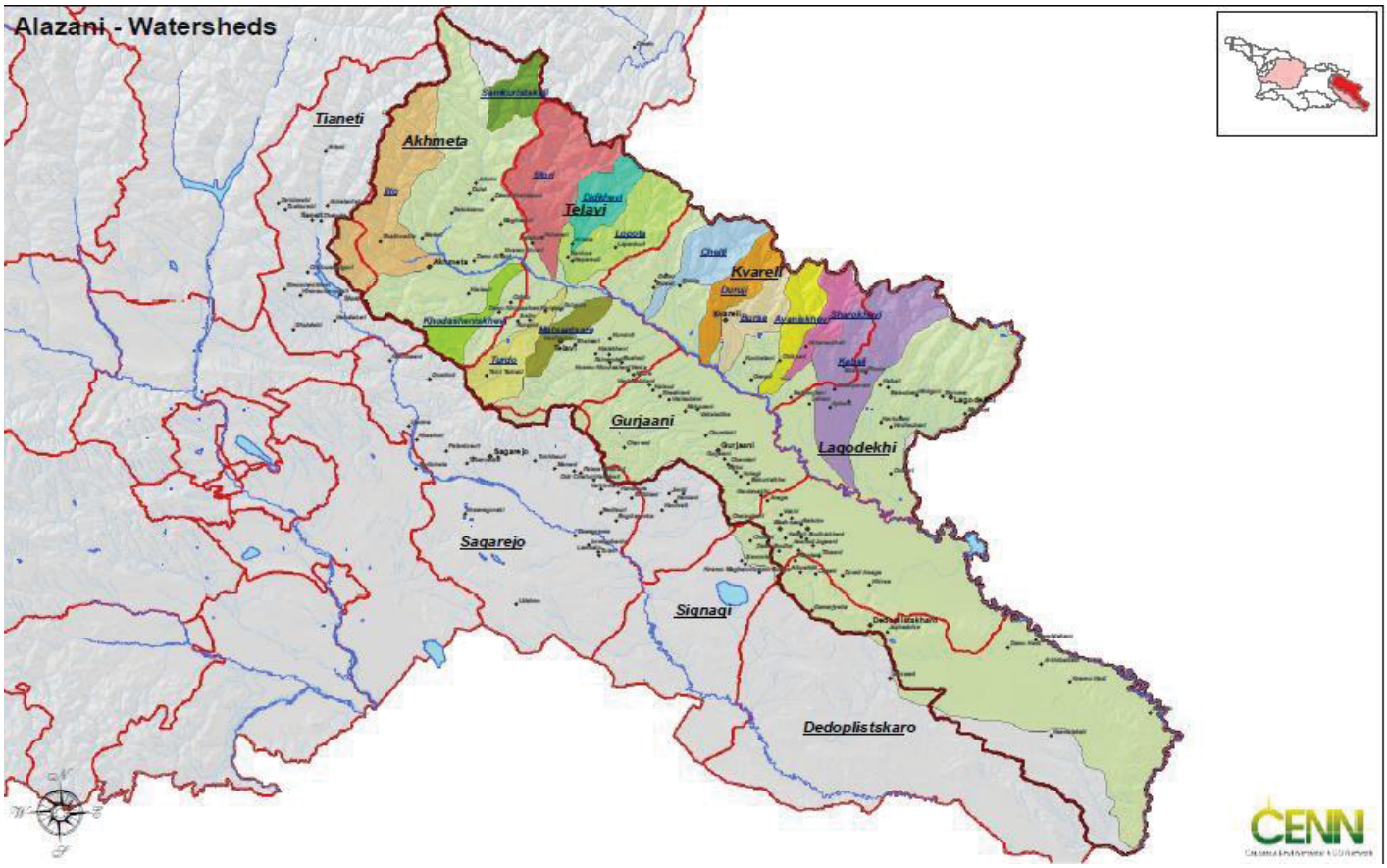


Figure 3. Long-List of Pilot Watersheds in Iori River Basin

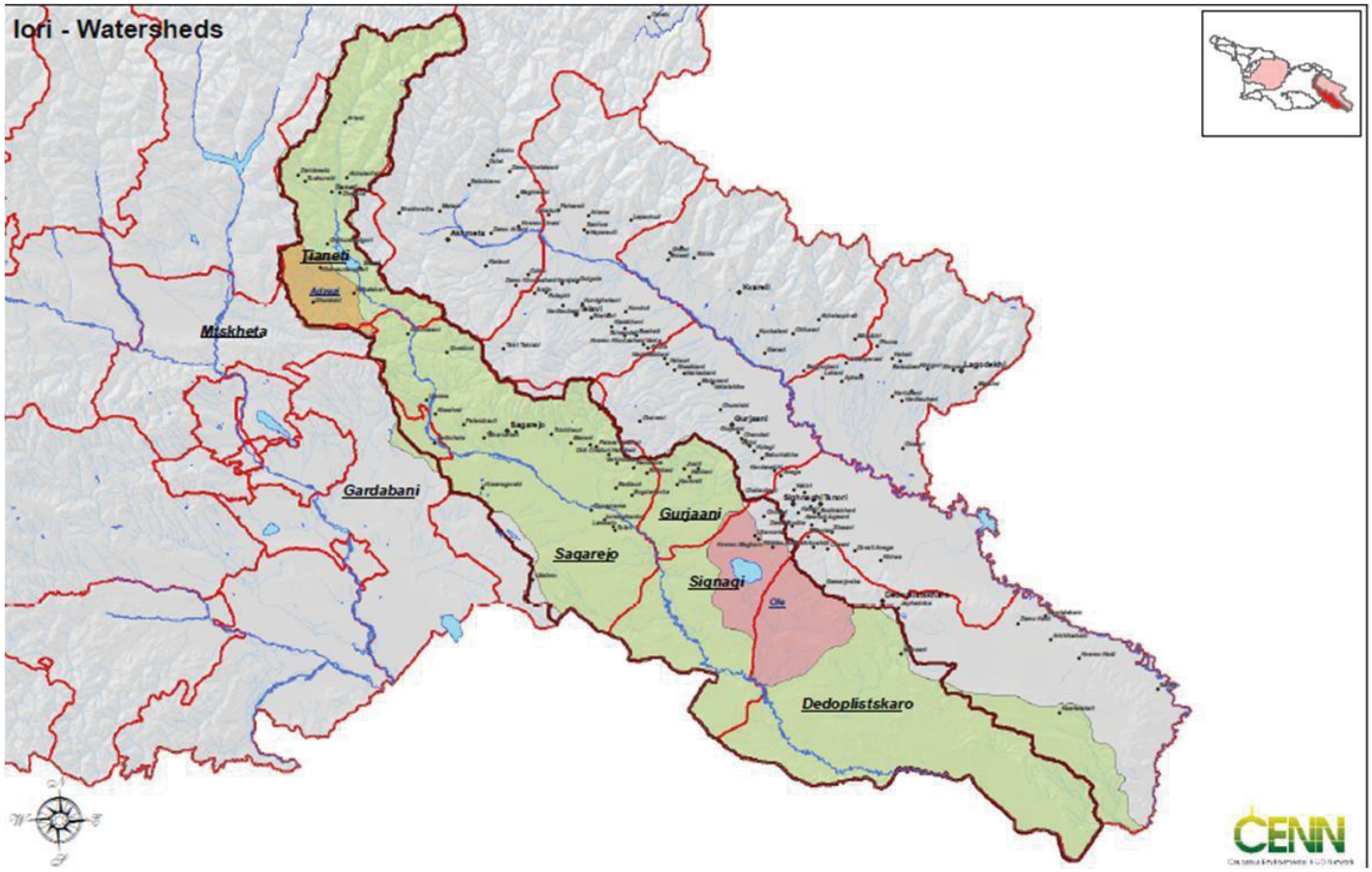


Figure 4. Long-list of Pilot Watersheds in Rioni River Basin

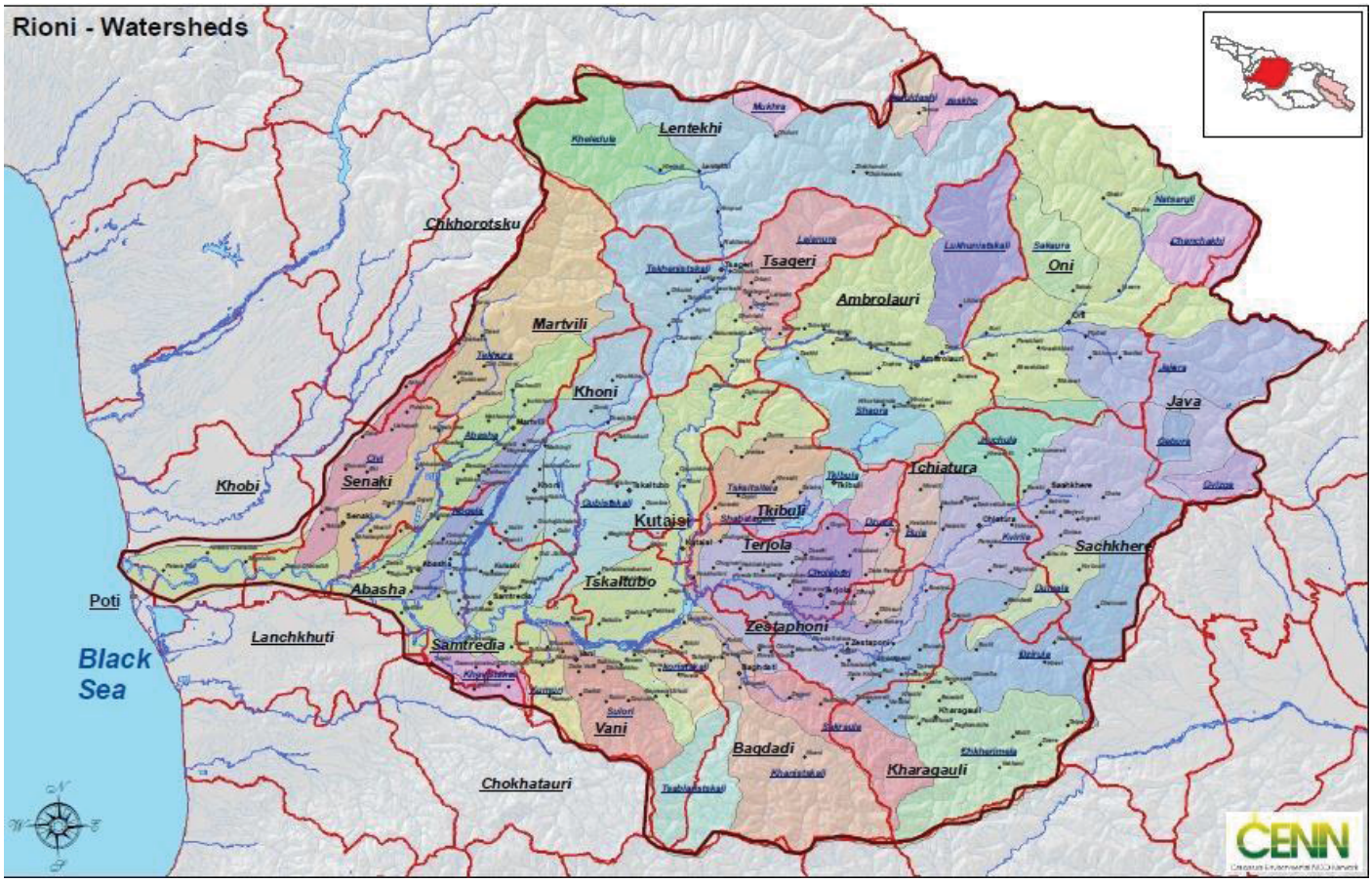


Figure 5. Short-listed Pilot Watersheds/Areas (as per recommendations of INRMW Team)

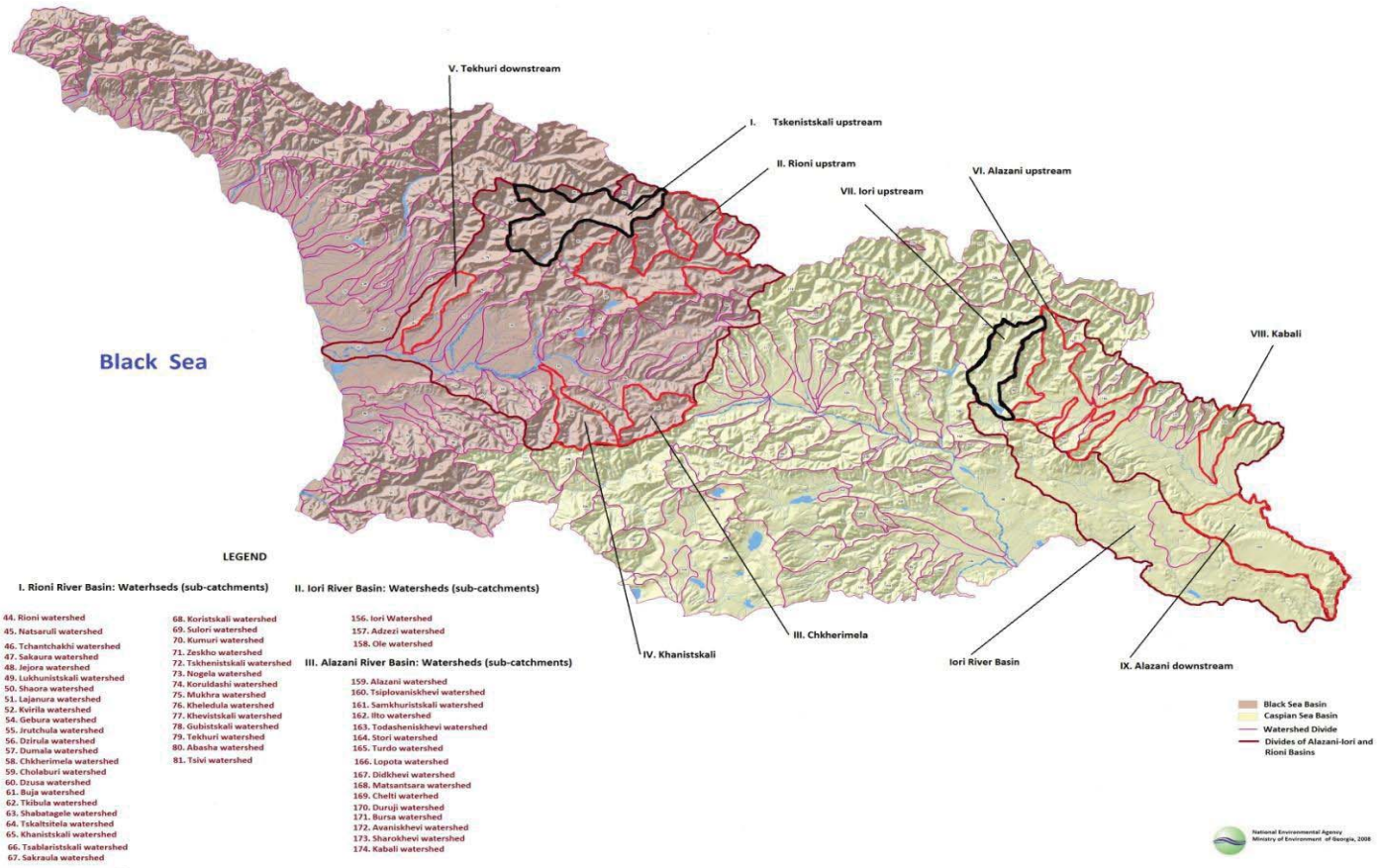


Figure 6. Short-listed Pilot Watersheds/Areas (adjusted to stakeholder suggestions)

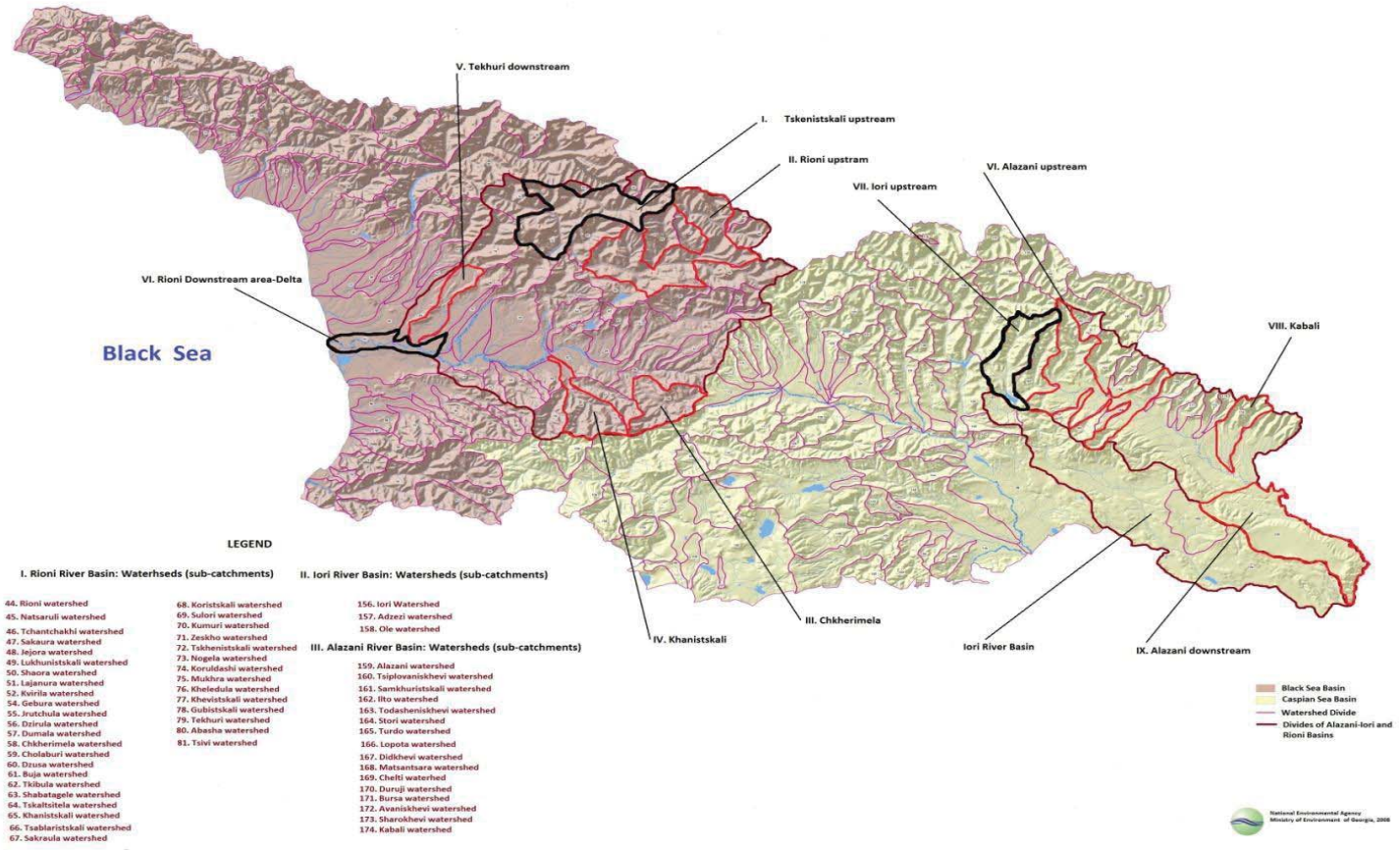


Figure 7. Short-listed Pilot Watersheds Adjusted to Municipal Boundaries: Alazani-Iori River Basins

Figure 8. Short-listed Pilot Watersheds Adjusted to Municipal Boundaries: Rioni Basin

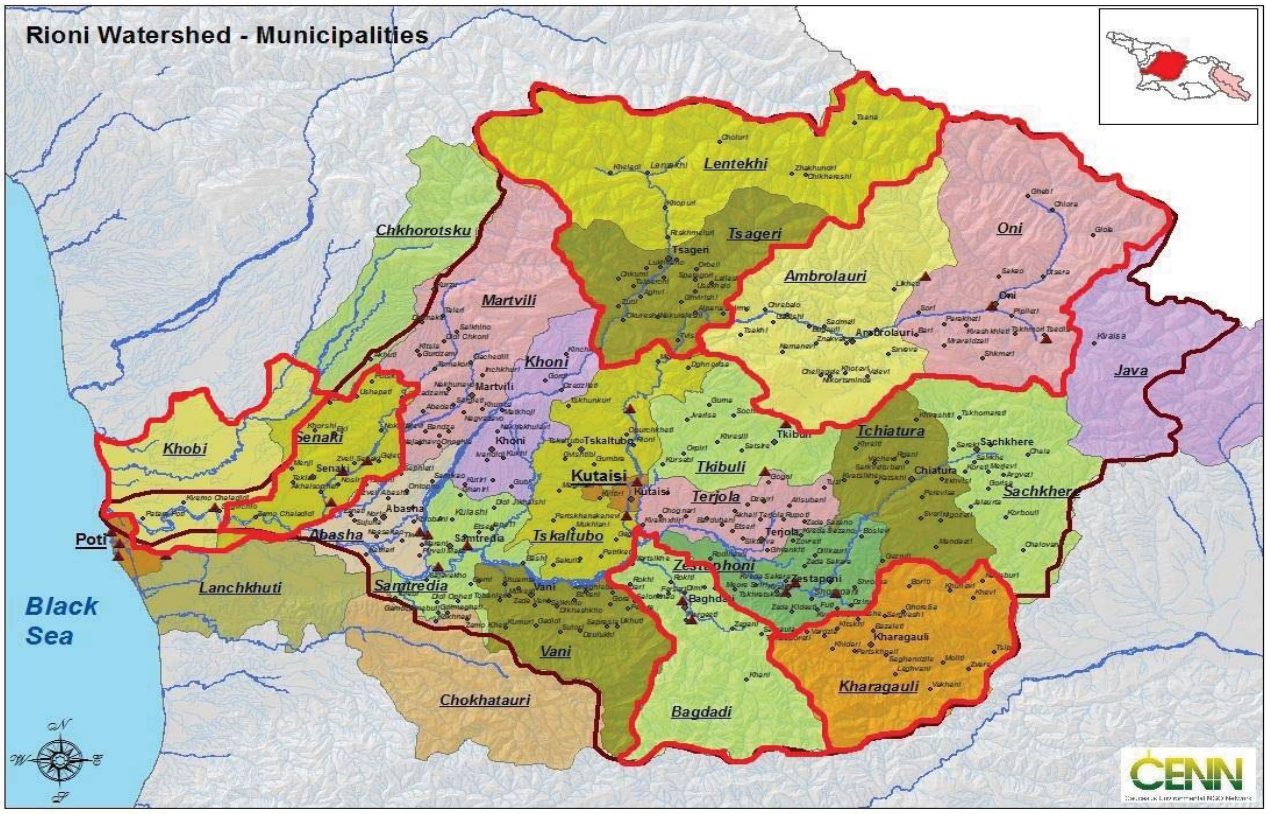
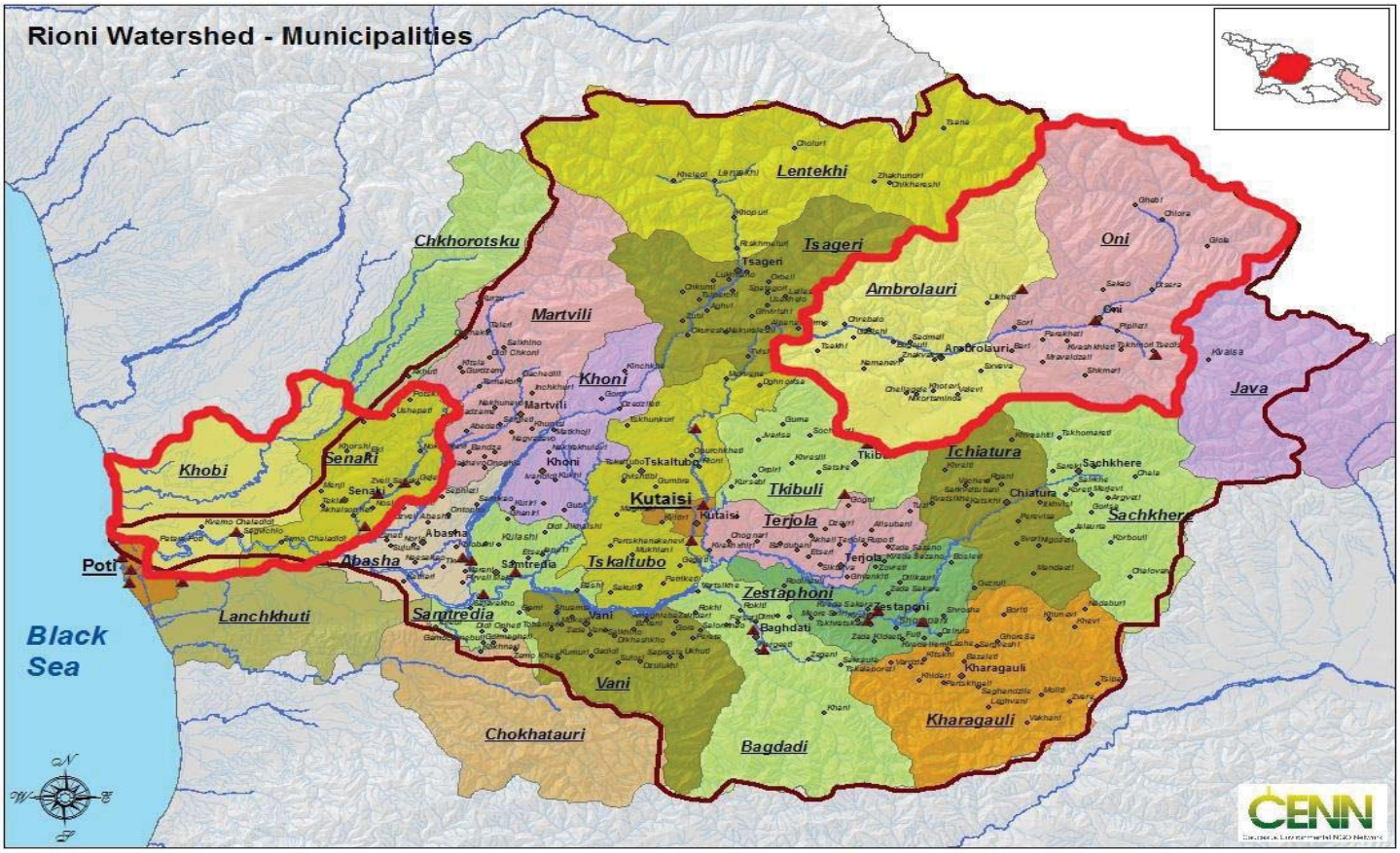


Figure 9. Final List of Pilot Areas of Alazani-Iori River Basins

Figure 10. Final List of Pilot Areas of Rioni Basin



Annex. 3 Pilot Watershed/Area Validation Workshop Report

PILOT WATERSHED/AREA VALIDATION WORKSHOP REPORT

DATE: 7 JULY, 2011

VENUE: INRMW PROJECT OFFICE, 14 TITSIAN TABIDZE STREET

1. Background

In September 2010, USAID-Caucasus launched a multi-year project: "Integrated Natural Resources Management in Watersheds of Georgia" (hereafter INRMW). The project is implemented within the framework of an umbrella program "Global Water for Sustainability" (GLOWS) by a consortium of international and national organizations under leadership of Florida International University (FIU) in partnership with CARE International, Winrock International, UNESCO-IHE and Caucasus Environmental NGO Network (CENN).

The primary goal of the INRMW Program is to improve current and future generation of people in Georgia by utilizing and managing natural resources more sustainably, including water, soil, vegetation, and the ecosystems that encompass them. The project aims to introduce innovative approaches and practical models of participatory integrated natural resources management in targeted watersheds by facilitating reforms and harmonizing national policies and by increasing the capacity of national and regional institutions to replicate these approaches and models throughout the country. These models will be introduced in four representative watersheds of Rioni and Alazani-Iori river basins and efforts will be made to upscale and disseminate them across the country.

2. Workshop Goals and Objectives

The primary goal of the pilot watershed/area validation workshop was to validate the preliminary list of four pilot watersheds/areas developed by the INRMW program team and program partners. To this end, specific objectives of the workshop were as follows:

- To present preliminary list of pilot watersheds/areas to stakeholders
- To trigger discussion around suggested options and solicit feedback from stakeholders
- To validate/make corrections in the list of pilot watersheds/areas

3. Workshop Agenda and Attendees

Agenda:

7 July , 2011 (half-day workshop)		**Venue: INRMW Project Office, 14 Titsian Tabidze Street**
Time:	**Action:**	**Action by:**
3:00 PM-3:20 PM	Welcome speech, and introduction of workshop agenda	**INRMW Country Program Director; USAID**
3:20 PM-3:50 PM	Project progress Key findings of Rapid River Basin Assessment	**Mariam Shotadze, Country Program Director**

3:50 PM-4:20 PM	Questions and answers session	**Audience**
4:20 PM-4:50 PM	Pilot watershed selection process, recommendations on pilot watersheds/areas	**Mariam Shotadze, Country Program Director**
4:50 PM-5:20 PM	Discussion on pilot watersheds	**Audience**
5:20 PM-5:50 PM	Wrap-up	**USAID, Mariam Shotadze, INRMW Country Program Director**
6:00 PM-8:00 PM	**Reception**	

Attendees:

1.	**Giorgi ArabidZe**	**National Food Agency, Ministry of Agriculture**
2.	**Lasha Mshvenieradze**	**National Food Agency, Ministry of Agriculture**
3.	**Tamar Buadze**	**EPI, USAID**
4.	**Tamar Pataridze**	**Agency of Protected Areas, Ministry of Environment Protection**
5.	**Marina Arabidze**	**Georgian Oil and Gas Corporation**
6.	**Elizbar Managadze**	**LLL United Water Supply Company of Georgia** **Projects Management Department**
7.	**Tinatin Zhizhiashvili**	**LLL United Water Supply Company of Georgia** **Department of Environmental Protection**
8.	**Nino Lazashvili**	**USAID/NATELI**
9.	**Paata ShanshiaSvili**	**US Dol ITAP Georgia Project**
10.	**Nino Tkhilava**	**Ministry of Environment Protection, Head of the International Relations and environmental Policy**
11.	**Mariam Ubilava**	**USAID Energy and Environment Office**
12.	**Gary Shu**	**USAID Energy and Environment Office**
13.	**Erica Rounsefell**	**USAID Education program**
14.	**Chris Thompson**	**USAID – EPI project**
15.	**Nana Janashia**	**CENN**
16.	**Nino Tevzadze**	**CENN**
17.	**Marine Arabidze**	**National Environmental Agency, Department of**

		Environmental Monitoring
18.	**Jemal Dolidze**	**National Environmental Agency, Department of Hydrometeorology**
19.	**Zaur Kvaratskhelia**	**National Environmental Agency, Department of Geology**
20.	**David Sharikadze**	**Ministry of Energy and Natural Recourses**
21.	**Russo Kacharava**	**NEO**
22.	**Giorgi Mikadze**	**National Food Agency**
23.	**Tamar Gamgebeli**	**Ministry of Environment Protection**
24.	**Minangula Liparteliani**	**National Food Agency**
25.	**Marita Arabidze**	**Ministry of Energy and Natural Resources**
26.	**Mariam Shotadze**	**INRMW Program Director**
27.	**Eliso Barnovi**	**INRMW Deputy of Program Director**
28.	**Malkhaz Adeishvili**	**CARE international, grant manager for the INRMW of Georgia project**
29.	**Valerian Melikidze**	**SDAP**
30.	**Nana Kvrivishvili**	**CARE**

4. Presentations

Mariam Shotadze introduced the workshop agenda and presented key findings of Rapid River Basin Assessment, pilot watershed selection process, and recommendations on pilot watersheds/areas.

5. Comments, Questions and Answers

Mr. Paata Shanshiashvili, USDoI-ITAP recommended to include Rioni Delta area in the short-list, given its ecological significance and upstream pressures. He also suggested having Khobi -Senaki - Rioni watershed downstream area as one additional option.

The project argument for not including Khobi Municipality in the short-list was that only a very small part of the municipality (Delta and its adjacent area) is located within Rioni Basin. The major portion of the municipality is occupied by Khobistskali watershed. Mr. Shanshiashvili further suggested including entire Khobi Municipality and during the selection of communities, to work only with those located within Rioni watershed.

Mr. Jemal Dolidze, NEA agreed on the recommended options of the pilot watersheds and added that Lagodekhi District is very important concerning landslides and mudflows, as well as concerning the formation of the river regime.

Ms. Nino Tkhilava, MoE expressed her agreement on the suggested pilot watershed areas and highlighted that the municipality level is the optimal scale to implement project activities. Mr. Giorgi Mikade, Ministry of Agriculture also concurred to the recommended options and assigned high importance to the water safety issues in the targeted watersheds, expressed interest in the "Technical Assistance" component in frame of the IRNMW project and made outlines of some interesting proposals for future cooperation

Mr. David Sharikadze, Ministry of Energy expressed keen interest in the project goals and stated that consumption of natural resources in sustainable manner is very crucial for economic development in the country, and natural resources management plans is one of the imperative approaches for achieving these goals.

6. Concluding Remarks

- Absolute majority of the Pilot Watershed Validation Workshop participants agreed with the suggested pilot watersheds/areas and the approach to use the municipal level as a scale for project on-the-ground activities
- There was a suggestion from USDoI-ITAP representative to add Rioni Delta (part of Khobi Municipality) to the list of short-listed watersheds/areas
- It was agreed that the recommendation on the inclusion of Rioni Delta in the short-list of pilot watersheds/areas would be shared with USAID and FIU senior management, and in the event of no objection from their side, the option would be included in the short-list for further evaluation

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