Ministerul Dezvoltării Regionale și Construcțiilor
ADR Nord
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Cooperare pentru dezvoltare

Socio-Economic Development Strategy for the Riscani District

Water Supply and Sewerage Services Component

Riscani 2012

CONTENT

ABBREVIATIONS

SEDS - Socio-Economic Development Strategy
WSS - Water supply and Sewerage
LPA - Local public authority

Introduction

The Socio-Economic Development Strategy for Riscani district has been updated for the purpose of identifying clear paths for the water supply and sewerage sector development in Riscani district in order to ensure people's access to qualitative and accessible services.

The Strategy has been updated using an innovative planning methodology, based on the principle of compiling national development priorities of the sector with local priorities of Riscani district. The updating process was conducted in a participatory manner ensuring active involvement of Ist and IInd level public authorities and state institutions responsible for the water supply and sewerage sector, social institutions and the civil society. Te structure of the Local Group, established by the decision of the district president, is presented in Annex1.

The planning process was coordinated by the **North Regional Development Agency,** which ensured the promotion of regional policies in the field, collaboration with line ministries and institutions specialized in this sector.

The **German Development Cooperation (GIZ)** provided plenary assistance at all stages, particularly technical expertise by national and international experts. GIZ collaboration with **Humboldt University in Germany** has made possible the application of participatory methods and involvement of all stakeholders in identifying the needs and establishing development options.

I. General Information

1.1 Reference to the General Part of the SEDS

The Socio-Economic Development Strategy for Riscani district is a comprehensive document designed to identify the human, social and economic potential and development opportunities for the district, as well as to design the harmonious development vector for the localities for the period between 2010 and 2014.

This document is designed to update the strategy in the water supply and sewerage services sector and is attached as an annex to the SEDS. In establishing the WSS sector development directions, the general provisions of the SEDS for Riscani district were taken into account.

The WSS component has been developed for the period 2012 - 2017 and goes beyond the general terms of the SEDS.

1.2 Methodology for Updating the SEDS, Water Supply and Sewerage Component

The participatory planning methodology allows performing a prioritization of investments in a responsible manner, closer to the real needs of the population.

The methodology used in the updating of the SEDS, water supply and sewerage services component implied several steps:

- ***Creating*** local ***consensus***. The methodology was discussed with the representatives of the district council of Riscani, was accepted and a working structure created locally - Local Group, comprising representatives of Ist and IInd level LPA, WSS operators, civil society and structures disconcentrated in the regions;
- ***Establishment of national priorities*** was done based on the national public policies for the WSS sector;
- ***Local priorities*** have been identified in a participatory manner within a number of activities - focus-group discussions, Round Table No.1, No.2 and No.3., which ensured the active involvement of local actors and provided highlighting of the real and urgent needs of communities.
- Necessary ***data collection*** took place in parallel with participatory activities organized in order to provide the necessary support in the application of the established prioritization criteria. At this stage, local (LPA, Center of Public Health, Environmental Agency) and national institutions (National Center of Public Health, the Agency for Geodetic Resources and Cadastre) were involved.
- ***The analysis phase*** had the ultimate goal of establishing investment prioritization options in accordance with the established priorities, the technical and technological possibilities, but also based on the needs of an effective management of the WSS services. The data analysis was performed by a team of national and international technical WSS experts .
- To discuss the ***water supply and sewerage options,*** a discussion ***(Round Table no. 4)*** all mayors in the district with the Local Group was organized. Water supply options have been proposed based on the possibilities to connect to safe drinking water sources and WSS sector effective management solutions based on intercommunity cooperation in this area.
- ***Medium and long term objectives, Action Plan*** for the period 2012 - 2017 have been prepared by the Local Group assisted by experts during the Round Table no. 5. At this stage it was important to identify the training activities of all actors in the field (Ist and IInd level LPAs, businesses and consumers) to implement the WSS component of SEDS for the district.

The approach applied in the clustering process (groups of villages where an efficient and sustainable WSS service can be organized) was based on the following assumptions:

- The best operation area for a water supply service was established based on the needs existing for this service. It is assumed that the sewerage and wastewater treatment services will follow the organization of water supply service;
- The first step in defining the best choice was the detailed inventory of existing water resources and WSS infrastructure;

- Having collected the information support, the experts have proposed several options to solve the problem for the entire district. First of all the impossibility to use the existing water sources because of the low quality of the water was considered and proposals for connecting to surface water sources were made;
- The infrastructure needs (pumping stations, networks, water tanks) for each option were calculated based on hydraulic modelling;
- Investment costs were calculated for each option;
- To select the best options, the cost-benefit analysis was used.

1.3. National Legal and Institutional Framework in the Field of WSS

Legal framework. The Strategy for water supply and sewerage for the localities in Moldova, target-indicators on water and health approved under the actions related to accession to the London Protocol put the water supply services and sewerage activities within the general economic interest activities and try to align these services to the European concept, based on the following fundamental objectives:

- decentralization of water supply and sewerage services and increasing of responsibilities of local authorities related to the quality of services provided to the population;
- extension of water supply and sewerage systems and increasing the public access to these services;
- promotion of market economy principles and reducing of the monopoly;

At the same time, it should be noted that the law has not been developed in areas such as:

- redefining of concepts and mechanisms for the social protection of the disadvantaged populations and reconsideration of the price / quality ratio;
- attracting of private capital to finance investments in the water supply systems and sewerage infrastructure;
- institutionalization of local credit and extension of its contribution to the funding of water supply and sewerage services.

The Government of Moldova adopted the Decision 1188 of 02.11.2004 on the Action Plan for the functioning of the aqueduct "Soroca-Balti" and water supply to some localities in the country, by which the district of Riscani is part of Soroca – Balti project.

It includes the following activities:

1. Development of project documentation for the construction of ramifications from "Soroca-Balti" aqueduct to Floresti, Drochia, Singerei, Riscani and Telenesti;
2. Implementation of the project on construction of ramifications from "Soroca-Balti" aqueduct to the abovementioned localities.

The administrations of these districts have signed a memorandum on cooperation in the development of water supply systems, using the Soroca - Balti aqueduct as a source. A number of studies and documents have already been developed for water supply to Riscani town and to its surrounding villages via Soroca-Balti aqueduct.

The local activity of water and sewerage services is regulated by framework regulations, which must be adjusted and approved locally. The most relevant regulatory acts for the WSS service are listed in Annex 2.

Institutional framework. At the national level, the central government authorities in charge of water supply and sewerage services are the Ministry of Environment and Ministry of Health. The scope of interventions of these institutions concerns the development of public policies in the area and regulation of the sector.

A number of state services subordinated to ministries and disconcentrated in Riscani district monitor locally the provision of water supply and sewerage services to residents.

1.4 General Information about Riscani District

The territorial-administrative unit the District of Riscani is located in the Northwest of the Republic of Moldova. To the north the district adjoins Edinet district, to the East - Drochia district and Balti municipality, to the South- West - Glodeni district and to the West - Romania.

The district has an area of 936.03 km2. The altitudes range from 280m (Pociumbeni) to 115m (Corlateni).

As of 01.01.2011, the district population amounted to 70 thousand inhabitants, of which 15,900 people or 22.7% live in urban area and 54,100 people or 77.3% - in the rural areas. The density of the population is 96 people per 1km^2. The Riscani district has 55 localities, of which: 2 towns, 26 communes and 27 villages.

The altitudes range from 280m (Pociumbeni) to 115m (Corlateni).

The district climate is temperate - continental, influenced by Atlantic air masses from the West, Mediterranean from the South - West and Excessive- continental from the North - East. The average temperature in January is minus 8-10^{o}C, while in July - 20-25°C.

The annual quantity of air precipitations amounts to about 600 mm/m2. The waters in the district are part of the Black Sea basin. The district is crossed by the following rivers: Prut (river at the border with Romania), the streams Raut, Ciuhur, Copăceanca, Racovet, Pamerniţa and Kamenka.

The hydraulic node “Costesti-Stinca" (joint construction by USSR and Romania) with a capacity of 32MGW, surface of water bodies, serving the hydroelectric station is 59km ^{2} and the water volume - 1280mln m3.

The district also has water ponds with the total area of 4007 ha, including lakes - 3780 ha. About 4500 ha are covered by forests.

The natural resources in the district are represented by construction materials: limestone, clay, sand, gravel, which are found in the proximity of Druta, Corlateni, Braniste and Şaptebani villages.

Riscani district consists of 54 villages, 28 mayoralties (primaria). The total area of the district is 93,602.92 hectares, including agricultural land - 76,592.25 ha, arable land - 58,292.61 ha, 5293.73 ha - perennial plantings, including orchards - 4,061.98 ha, vineyards - 430.22 ha, pastures - 12655.08 ha, woodland - 5052.81 ha.

II. Current Situation in the Water Supply and Sewerage Sector in Riscani District

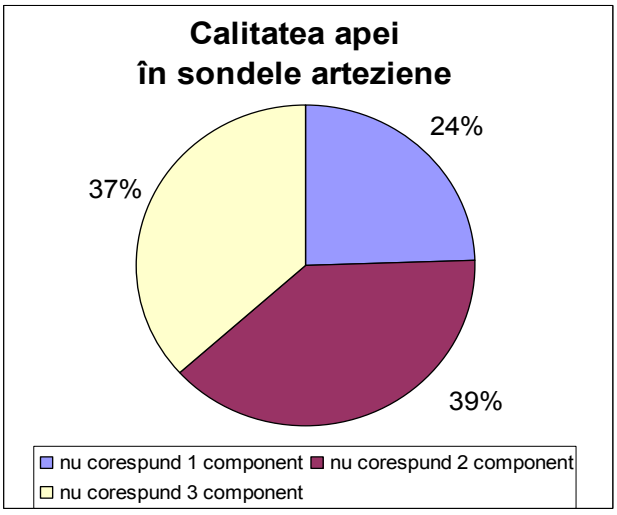
2.1 Water Resources. Water Quality

The hydrographic network of Riscani district is determined by the water basins of Prut and Raut rivers, rivers which is part of Dniester River basin, and also its largest affluent. The water supply in the localities in Riscani district is based on deep groundwater, mine wells and springs. The deep groundwater in the district of Riscani is divided into 2 pools:

1. Sector 1: The Danube Basin - Prut river from the border with Ukraine to the town of Ungheni, with a distribution area of 4475 km2;
2. Sector No.8: Raut river, spring - Floreşti town, with a distribution area of 3225km2;

The study of the technical condition of the wells has identified the existence of about 201 artesian wells, of which 157 were investigated in the field, including 86 public and 71 private. In all wells covered by the study, the water quality **does not meet** sanitary **norms** for the drinking water, by exceeding the concentration of ammonium NH^{+}_{4} and Fluoride F. For the NH +÷ 4 index, the overruns reach values of 3.5 3.8 mg / dm 3 compared with the standard of 0.5 mg / dm 3, for the fluorine (f) index - the overruns reach 2.89 mg/dm ^{3} compared to the standard value of 1.5 mg / dm $^{3.}$ Thus, in 24% of the wells, the water does not meet the standards by one component, 39% - two components and 37% - 3 components (Annex 3). The ammonium concentrations in about half of the wells is 6 times than the normative. Deep groundwater and shallow groundwater can only be found around Branişte, Reteni Vasileuţi, Avrameni, Vaseliuţi.

The distribution of groundwater wells by the quality of water is shown in the diagrams below and on groundwater quality map in the Annex.



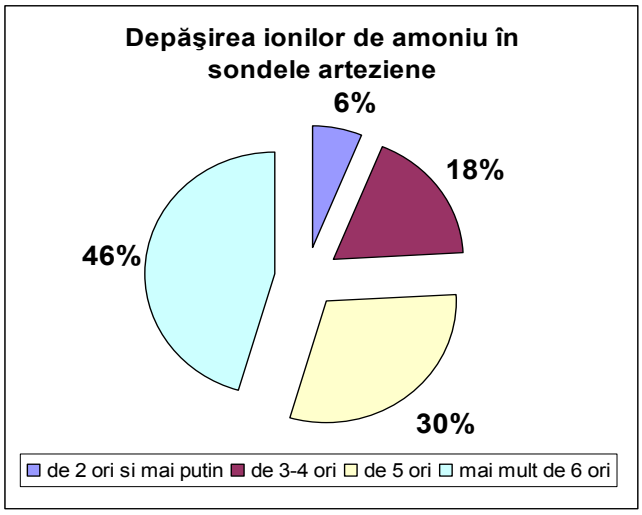


Fig. 1 Water quality in artesian wells
Fig. 2 Ammonium ions in excess in artesian wells

Most of the population drinks water from mine wells and from springs. The study identified 7329 shallow groundwater sources, of which 7248 mine wells and 81 springs. According to the filed data, the quality in water from these sources is as follows: 2018 sources (27.8%) meet quality standards, 1255 sources (17.12%) do not meet the standards by 1 indicator, 4056 (55.3%) do not meet the standards by 2 or more indicators. The situation analysis showed the need to make an inventory and documentation of the shallow water sources. Also, deep groundwater wells must be subject to an inventory and restoration of technical passports and sealing works. If necessary, some wells will be preserved or eliminated.

2.2 Water Supply and Sewerage Services Infrastructure

The current situation concerning the water supply and sewerage services infrastructure according to the study was assessed as insufficient for a sustainable development. The water supply system infrastructure of the district comprises 236,2 km of water networks. 23 of the 55 localities have water supply systems and 5 localities have centralized sewerage systems and treatment plants. The water supply and sewerage systems in rural areas have been built recently and have an insignificant level of wear. The wear degree of water supply systems in Riscani and Costesti towns is high. Water losses exceed 30% and specific water consumption is 38.9 litres / per / day. Most people, 63.3%, use water from mine wells and springs for daily consumption.

The infrastructure of sewerage and wastewater treatment consists of wastewater treatment plants in Riscani and Costesti towns, with a capacity of 2.4 thousand m3/day and 1100 m3/day. A treatment plant with a capacity of 15 m3/day was built in Varatic and Alunis localities. The length of sewerage networks and collectors is 27.7 km. The sewerage system of Riscani towns has 2 sewage pumping stations.

The treatment plants are damaged and are not working. According to statistical data, the treatment capacity is used at 10.6%. The quality of water passing through the treatment plant in the amount of 99,8 thousand m ^{3}/year is classified as "treated poorly". More than 150 tons of sludge are sedimentated annually during the treatment process.

For the treatment plant in Costesti an execution project has been developed, providing for the reconstruction and optimization of the treatment capacity. The management of sewerage services provides for the use the capacities of this plant and for the treatment of wastewater from the neighbouring villages and giving it a regional function.

2.3. Accessibility of Services

2.3.1 Water Supply Service

About 36.7% of the total number of inhabitants in Riscani district have access to drinking water supply service through centralized systems. In Riscani town, the population supplied with water accounts for 83.0% of the total, while in Costesti this number amounts to 53.9%. Of the total of 71.2 thousand people living in Riscani district, 40.51 thousand or 79% live in localities where water supply systems are available.

100 per cent of rural localities where water supply systems are available are communes. These 21 localities are: Pociumbeni, Pociumbăuţi, Horodişte, Boroşenii Noi, Mihăileni, Singureni, Corlăteni, Hiliuţi, Nihoreni, Recea, Şaptebani, Duruitoarea Nouă, Varatic, Zăicani, Sturzeni, Petruşeni, Pîrjota, Malinovscoe, Răcăria, Avrămeni and Branişte.

The localities with water supply systems have an average population of 1929 people, the locality with the highest number of population is Corlateni, with 5,501 people, and Avrameni with the lowest number of people - 485 people.

The average number of households per 1km of street is 28.6 households/1km. The average share of streets without sewerage networks of the total length of streets is 45%. The maximum value of this indicator is recorded in Mihăileni with 95%, while the minimal one, of 21%, in Nihoreni.

The average share of households connected to the water supply in the total number of households is 30%. The maximum value of this indicator is recorded in Singureni, with 74%, while the minimum one - in Mihăileni 8%.

The average number of people per household in localities where the water supply system is available is 2.4 persons per household. The maximum number of people per household is 3.1 pers / household in Singureni, while the minimum number - 1.4 person / household - in Pociumbeni.

Overall, there are 16,820 households and 15,629 families in the 21 localities. The average number of household members in Riscani district is 2,4 people. The fact that there are more households than families shows than there are unpopulated households in rural areas. The total number of people left abroad from all these localities is 3 643 people, or 9% of the total population.

No.	Name of the indicators	MU	District	Urban	Rural	
					Communes	Villages
1	Total localities	No.	55	2	26	27
2	Localities where water supply services are available	No.	23	2	19	2
3	Total population	Thousand people	70	15.9	39.9	14.2
4	Population receiving water service from the public network	Thousands people	25.7	12.9	12.0	0.8
		%	36.7	81.1	30.0	5.6

Based on all available research, it was found that a number of actions aimed to improve the situation concerning water supply to people through centralized systems had been performed during the recent years.

The analysis of data on population access to water supply services proves that the situation in the region is below the target indicators stipulated in the Water and Health Protocol signed by Moldova on 10 March 2000 and to which it became a party on December 15, 2005. According to the joint order of the Ministers of Environment and Health, signed on October 20, 2010, the list of indicators was approved, providing for ensuring the access to

improved water sources to 35% of the rural population by 2015 and 45% by the year 2020. A progressing trend has been recorded in the district with regard to development of water supply services in communes and large villages (30.0%) and less in the villages within a commune or those with a small number of people (5.6%). In conclusion it can be emphasized that the administration of the district and of the communes must make significant efforts to align to target indicators.

2.3.2. Sewerage and wastewater treatment service

In Riscani 55.8% of all water consumers are connected to the sewerage system, while in Costesti town this percentage is 67.4%. In the rural areas, Văratic and Aluniş villages, only the public institutions are connected to sewerage services.

The table below shows the situation regarding public access to sewerage:

No.		MU	District	Urban	Rural	
					Communes	Villages
1	Total localities	No.	55	2	26	27
2	Localities with available sewerage systems	No.	5	2	2	1
3	Total population	Thousands people	70	15.9	39.9	14.2
4	Population receiving sewerage services from the public network	Thousands people	8.226	8.2	0.024	0.002
		%	11.8	51.6	0.6	0.02

The analysis of the situation concerning the access of the population to centralized sewerage systems in terms of accessibility and quality of these services allows us to make the following conclusions:

1. The existing sewerage systems are damaged and do not meet the legal requirements concerning their operation and those on environment protection;
2. The places of untreated or insufficiently treated and not disinfected waste water discharge may become a source of infection and environmental pollution;
3. The sludge from wastewater treatment plants in amounts exceeding 150tons/year causes environment pollution.
4. Because of the lack of a sewerage system, people use cesspools or unsealed wastewater storage tanks, leading to pollution of shallow and deep groundwater (artesian wells).

The statistical data on water supply and sewerage systems in Riscani town show that of 235,300 m3/year of gained water, only 92.800 m3/year (or 39.4%) are channelled and pass through the treatment plant.

2.4 Institutional Framework

Water and sewerage services are of local interest and are organized by the competent local government authorities.

According to the law in force, the responsibilities for the establishment, administration, management and financing of water and sewerage lies with the local authorities - city councils, commune councils and Riscani district council. They are also responsible for creating water supply and sewerage services, for the approval of service fees for monitoring their work.

There are 16 operators in Riscani district, acting based on two legal forms: Municipal Enterprise and Public Association. In 5 mayoralties the service is provided directly by the mayoralty. The basic form of organization of water supply and sewerage service is the municipal enterprise, followed by public associations. The form "section under the mayoralty" does not correspond to the organizational forms established by the Civil Code, which can lead to divergences in the assignment of responsibilities. Annex 4 shows the list of all operators in Riscani district.

It should be noted that the institutional framework of service operators is at an initial stage of development. The study showed the lack of many necessary regulatory documents or their inadequacy for the particularities of the enterprise. Thus, the following documents must be developed: contract on delegation of water supply and sewerage service management, Regulation on the use of communal water and sewerage systems, Regulation on the reception of wastewater, development of technical specifications and authorizations for wastewater discharge to the local sewerage system (if applicable).

2.5 Sector Financing

The socio-economic development strategy of the district for 2009-2014 provides for establishment during the years 2009-2011 of water supply and sewerage for 13 settlements totalling 18,220 thousand lei, of which from local budgets - 6,308 thousand lei and from external resources - 11,912 thousand lei in Nihoreni - water system and sewerage, Braniste - aqueduct, sewerage, Saptebani - aqueduct, sewerage, Racaria - aqueduct, Horodişte - aqueduct, Pîrjota - aqueduct, fountains and sewerage, Alexandreşti - water supply and wells repair, Riscani - sewerage, Corlateni - water supply, sewerage, Singureni - aqueduct, Zaicani - water supply, sewerage, Recea - water supply, sewerage, Costesti - water supply, sewerage.

In fact, during the last three years, water supply and sewage networks have been built and repaired, artesian wells have been built in 12 localities, Nihoreni - aqueduct and treatment plant, Şaptebani - water supply network and artesian well, Racaria - aqueduct, Horodişte - aqueduct, Pîrjota - aqueduct and artesian well, Riscani - aqueduct, Hiliuti - artesian well and aqueduct, Corlateni - aqueduct, Recea - aqueduct, town Costesti - aqueduct, Duruitoarea - aqueduct, Borpsenii Noi - aqueduct, Gălăşeni - aqueduct. A total amount of 18,118.0 thousand lei was used , of which 3497.0 thousand lei from the local budgets, 1150.0 lei thousand lei from the state budget and 1347.0 thousand lei from external resources.

2.6 Sector Planning

Water supply and sewerage services sector planning is not a current priority for first level local authorities, this statement is also supported by the analysis of investment planning documents for Riscani district. Even if some of the district mayoralties have developed a

socio-economic development strategy for their locality, the water supply and sewerage issue is approached relatively shallowly, with no clear direction and implementation solutions. This statement also applies to the district strategic document.

District level planning is chaotic. Each mayoralty develops execution projects without a guiding support for sector development at least at the district level.

The construction, utilities and roads department is responsible for removing these bottlenecks.

At the time of the study 4 localities (Sverdic, Petruşeni, Corlateni and Aluniş) have ongoing projects for water network, Corlateni and Petruşeni villages - for sewerage networks and treatment plants. Costeşti mayoralty runs a treatment plant renovation project. There is also a project for connection of localities which are part of Riscani district to Soroca-Balti aqueduct. The currently existing technical documentation allows the investment of 285 million lei.

2.7 SWOT Analysis of the Sector

The study of the situation of water supply and sewerage services in Riscani district highlights some important issues, listed in the table below:

STRENGTHS	WEAKNESSES
District council involvement in the initiation of water systems development projects, this area is considered a priority for the local government.	Low population access to water supply and particularly to the sewerage service;
Availability of water supply and sewerage infrastructure covering part of the district localities;	Existence of drinking water quality parameters failing to comply with the standards in force; Riscani district does not have its own sources of drinking water.
Existence of technical documentation before starting investment projects;	Big losses in the transmission and distribution network
	High wear level of the infrastructure
	Failure to comply with specific legislation on service management
	Lack of medium and long term development strategy for the service;
	Low capacity of the population to take over the operating and maintenance costs;
	Limited capacity of local authorities to co-finance investment projects in the field;
	Poor public awareness of the need to connect to the utility networks;
	Lack of a regional operator to manage water and sewerage service, necessary for

	an efficient access to funds and higher credibility to donors.
OPPORTUNITIES	**THREATS**
Public / private partnership for "Dniester" cluster	Impossibility to cover the costs of the water supply and sewerage services because of very limited financial resources;
The existence of technical documentation enables faster start of investment projects	The impossibility to continue co-funding some projects may harm the work performed;
Possibility of accessing multiple sources of funding for drinking water infrastructure, increased financial support from foreign donors (EBRD, EIB, EU Commission)	Pollution of surface and groundwater by uncontrolled disposal of waste, manure, makeshift septic system use;
Possibility of implementing investment projects by NFRD;	The high degree of poverty can make water supply and sewerage systems ineffective
The existence of water and sewerage infrastructure can help develop some productive economic activities with major impact on the overall development of the district	Organizational and financial difficulties caused by the process of regionalization. Delays in approving major projects;
For "Prut" cluster, it is important to develop the tourism potential;	High costs to comply with European quality standards
Increased comfort and health of the inhabitants;	Difficulty in ensuring financial support for the investment projects;
Reduction of environmental pollution and of the risk of ill health by setting up water supply and sewerage systems;	
Access to modern technologies and increased efficiency of the drinking water systems;	
Creating a regional water supply system;	
Development and implementation of a feasibility study on water supply and sewerage	
Opportunity to use the sludge from the wastewater treatment plant	
Technical Assistance by GOPA consortium under the project : "Modernization of local public services in Moldova" funded by GIZ	

III Strategic Development Directions for the Water Supply and Sewerage Sector

3.1 Localities' Prioritization and Clustering Criteria

Clustering for drinking water supply

Clustering implies grouping localities in agglomerations justified in terms of cost optimization for drinking water supply. In Riscani district, the basic argument used in the definition of clusters is the low quality of water as result of inventory of the existing water sources. The inventory showed that the quality of water in wells is very low in the whole district. The groundwater is polluted, it contains high levels of ammonia, suspended solids and fluoride. Only in three localities (Reteni, Braniste, Avrameni) the water in wells (source) Braniste is of good quality. But the amount of water sources in these localities is insufficient to ensure a large group of localities. Thus, the only solution for the district is to use surface waters, both from Prut and Dniester rivers, including through Soroca-Balti aqueduct. The study on the grouping of water sources and sewerage utilities in Cahul and Riscani, developed within the "Modernisation of local public services in the Republic of Moldova" project proposed two clusters (Annex 5) for Riscani district. Cluster 1 will cover the western part of the district (around Costesti town) from the Prut River, while Cluster 2 will cover the western part of the district (Riscani town and surrounding villages) from Soroca-Balti aqueduct. Based on classification results, Costeşti cluster was assigned the highest ranking (4.2 points compared to 2.1 for Riscani cluster).

Clustering for sewerage services supply

The sewerage system and the water treatment plant requires a different approach than the one applied for water supply. In order to develop an efficient sewerage system, the following criteria shall be considered:

- - Agglomerations of localities must be large enough to bear the cost of treatment plant operation. In accordance with the European standards, a bearable cost level is obtained from agglomerations of at least 2000 people;
- Sewerage systems with pumping stations imply high costs, such systems must be designed taking into account the possibility of construction of gravitational systems;
- Sites suitable for wastewater treatment plants in places with low levels must be identified, where gravity sewerage systems can be used.

The study conducted within the "Modernization of local public services in Moldova" projects suggests 6 clusters for sewerage and wastewater treatment systems (Annex 6).

3.2 Technical and Technological Solutions. WSS Systems Development Options. Necessary investments.

The water supply systems development planning at the district is performed based on management principles at the level of basins of Prut and Raut basins.

The developed strategy provides for drinking water supply to localities from 2 sources: Soroca - Balti connection (Dniester cluster) by building adduction networks Elizavetovka - Riscani and surface water source of Prut river ("Prut" cluster) by building a water treatment

plant on Văratic village region or construction of Cupcini - Zaicani adduction. "Prut" cluster will ensure water supply to the following localities: Costesti, Proscureni, Păscăuţi, Duruitoarea Veche, Damascani, Petruşeni, Malaesti, Gălăşeni, Şaptebani, Hiliuti, Sturzeni, Alexandreşti, Ivanesti, Cucuietii Noi, Cucuietii Vechi, Horodişte, Zaicani, Varatic, Dumeni, Druta, Duruitoarea Noua, Pociumbeni, Pocimbauti, Pîrjota,

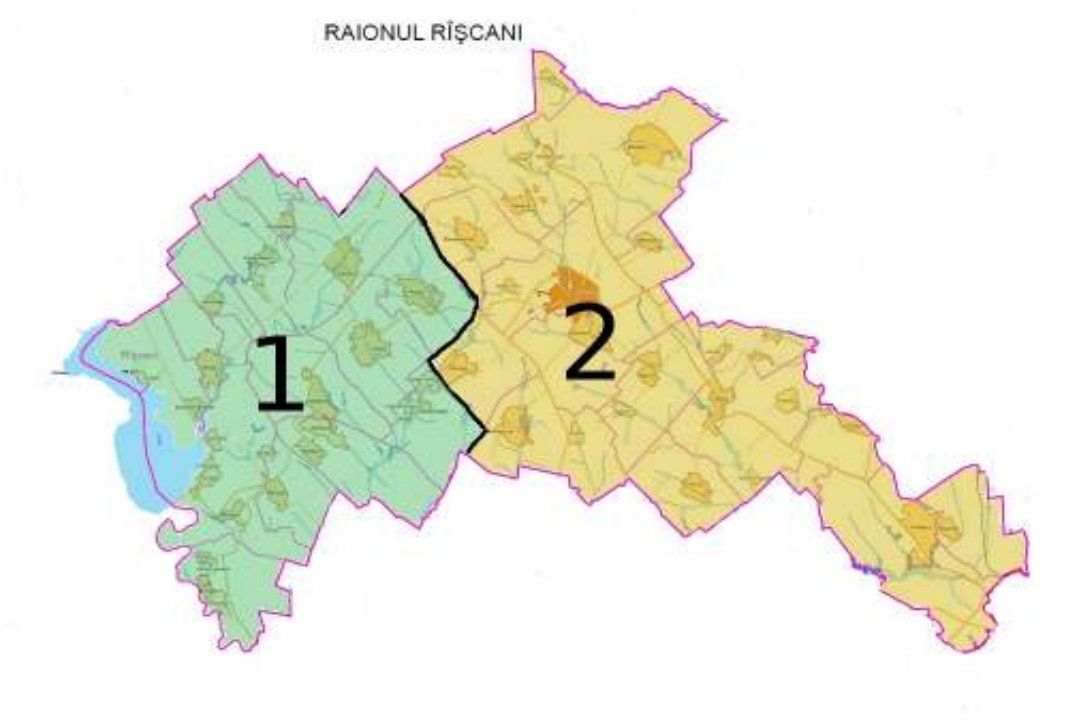
“Dniester" cluster will provide water supply from "Soroca - Balti adduction).

The development of the cluster will ensure drinking water supply for the following localities: Riscani town, villages Nihoreni, Corlateni, Singureni, Grinauti, Sverdiac, Ciobanovca, Racaria, Recea, Slobozia Recea, Aluniş, Ciubara, Bulhac, Ceparia, Ramazan, Balanul Nou, Mihailenii Noi, Mihaileni, Borosenii Noi, Stiubeni, Usurei, Malinovscoie, Moseni, Luparia, Sumna, Vasileuti.

For Braniste, Avrameni and Reteni villages, since the quality of the source water meets the standards, a separate development is planned. This needs to be confirmed by hydrological studies on existing water sources reserves.

Local councils must ensure the implementation of effective, efficient and sustainable management, focused on results. To this end, the institutional development of water supply and sewerage services will be conducted based on the principles of intercommunity cooperation.

For the supply/provision of effective, cost-efficient public services, the water supply and sewerage services development is planned to be carried out in two agglomerations: "Prut" cluster and “Dniester" cluster, as shown in the map below.



Water supply. "Prut” Cluster

The water supply scheme for Prut cluster villages is based on the use of surface source of Prut river. It provides for selection of a site for the treatment plant in the area of Stinca - Costesti pond, from where the water will be transported through pumping stations and

transportation pipeline to the localities from Prut cluster. The adduction networks will be divided into two pressure zones operating in series.

The first pressure area includes the transportation pipeline route Prut - the branch to Varatic - Pocimbauti villages

The second pressure area includes the route of the transportation pipeline Prut - Zaicani, Alexandreşti.

For Prut cluster the situation regarding the physical infrastructure investment needs is 303 km of networks within settlements, 73.5 km of adduction networks, 8 pumping stations, water tanks and water castles (towers) and a surface water treatment plant. Another option provides for the use of water production capacity at Edinet water treatment plant. The appropriateness of this water supply scheme will be studied in a feasibility study.

Water supply. "Dniester" Cluster

Investments required for Dniester cluster include 343.4 km of networks within settlements, 44.34 km of adduction pipes, 2 drinking water tanks (PAR) with a volume of 2000 m^3 each with a chlorination station with a capacity of 2kg chlorine per hour. This water supply scheme is justified by the conceptual design developed by "ACVAPROIECT" institute in 2008. The amount water required according to the calculations under the project for tranche I, which includes the water supply for the town and for Nihoreni village is estimated at the level of 1227$m3^{/}$day. The project does not provide for execution of branches for water to localities within "Dniester" cluster and does not the execution of water supply networks within settlements.

Sewerage and wastewater treatment system

It is quite difficult to plan the development of sewerage and wastewater treatment systems under a financial deficit. At the same time it is necessary to streamline the use of financial resources for the construction of sewerage systems by prioritizing and selecting cost-effective technologies for implementation at district level. One of the ways to solve this problem is the requirement to organize a tender for construction of sewerage and wastewater treatment systems based on the "yellow FIDIC" or in accordance with the "turn-key ready" model. This will allow increasing the accountability of stakeholders and enforce the observance of cost-quality relationship.

Sewerage and wastewater treatment in "Prut" cluster

The development of sewerage and wastewater treatment systems will provide for the use of the scheme by the basins of small rivers in the district. For this purpose, it is proposed to create 5 clusters for the implementation of sewerage and wastewater treatment services. The data on localities that are part of these clusters are presented in Annex 6 . In general terms, these schemes provide for the following:

1. Opportunity study within each locality in order to determine the population's demand for sewerage services;
2. Tracing of sewerage pipes inside the locality;
3. Drawing collection lines between localities and pumping stations as appropriate;
4. Selecting the site for treatment plant location and selecting the optimal technology.

Sewage and wastewater treatment in "Dniester" cluster

The optimal scheme for the development of sewerage and wastewater treatment systems within "Riscani" cluster would be collecting these waters from the component localities and transporting them to the treatment plant in Balti. The effectiveness of this scheme can be

stated in an opportunity study. The scheme provides for the rehabilitation of Riscani treatment plant and transportation of wastewater from adjacent localities. The localities from the Balti region will transport the waters to the sewerage system of Balti.

Other localities will provide for construction of treatment plants for a group of villages or organization of transportation of wastewater with specialized vehicles to other nearby plants.

Investment Needs Assessment

Investment requirements for the technical infrastructure of the administrative-territorial unit are grounded through feasibility studies, developed and approved according to the law by the City Council in whose subordination/coordination water supply and sewerage services operate.

The establishment of investment needs should include the following steps:

- review of the current situation of water supply and sewerage services and establishment of the objective needs of local communities;
- development and approval of own, local strategies for the development of water supply and sewerage services;
- identification of investment objectives required in each local community;
- prioritization of investment objectives;
- identification of human, material and financial resources necessary for the project;

Assessment of investment needs for water supply, wastewater collection and treatment, period 2012-2025

The water supply and sewerage system issues for Riscani district are related to the operating area which includes the town of Costesti and 26 rural communities ("Prut" cluster) for the territory located in the basin of Prut River and an operating area that includes Riscani and 23 rural communities ("Dniester" cluster for the territory located in the basin of Raut/Dniester river.

"Prut" cluster is expected to be serviced by a service operator and its raw water source is: Prut river water source (Costesti - Stanca lake) characterized as having sufficient water and meeting the quality standards.

"Dniester" cluster is expected to have a private management under a public - private partnership.

For the medium and long term it is envisaged to ensure the implementation of investment projects to ensure the achieving of targets set for compliance with European directives and local/district/regional and national plans and strategies. For calculating the investment needs, target indicators for the development of water supply and sewerage services are proposed, coupled with indicators established by the Joint Order of the Ministry of Environment and Ministry of Health related to the Protocol on Water and Health.

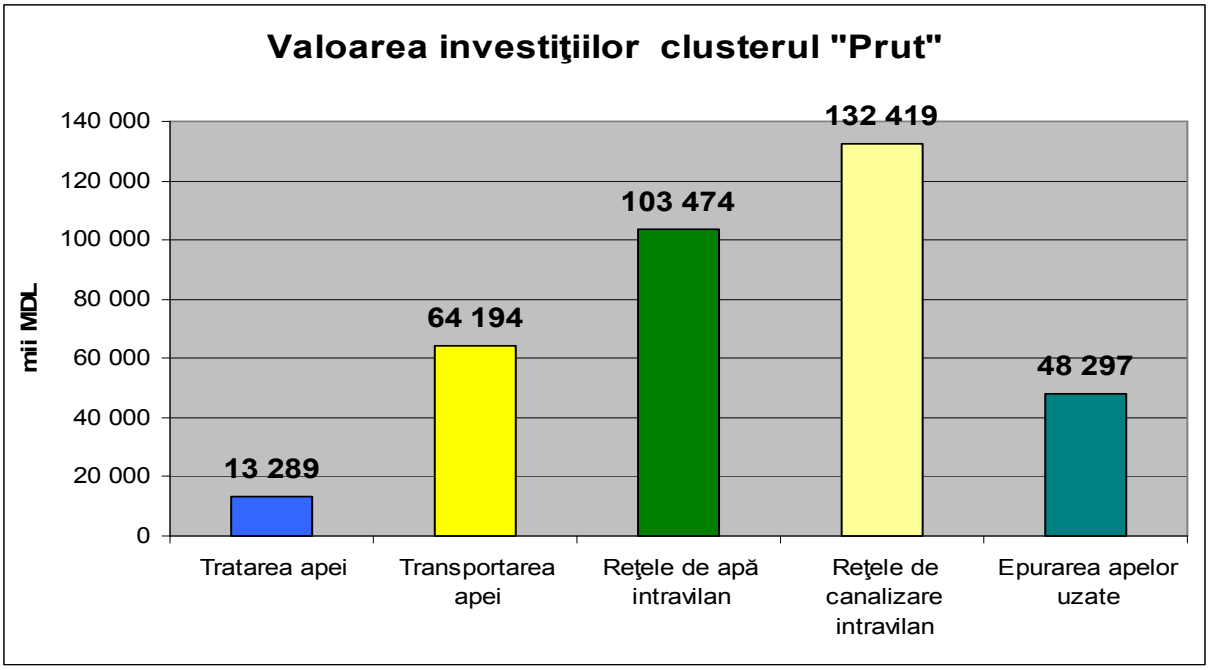
From a strategic perspective, considering the poor quality of the deep groundwater in Riscani district, it is suggested to apply the alternative for the priority implementation in the first phase of investment projects which ensure and improve the existing water supply system by rehabilitating and upgrading it and by expanding it to within the localities, followed by implementation of regional extension projects of the system in the second phase to ensure the access of the population from Prut and Dniester clusters to drinking water.

Therefore, the main investment for Riscani and Costesti towns will be directed towards the rehabilitation of the existing system, immediately taking the necessary measures (measures required to maintain the operation of the plants until the end of life) and a long-term replacement and modernization program (progressive replacing of older parts and facilities of the network, to reach the end of its life, protection of water resources).

Another part of the investment will cover the extension of the existing network within the boundaries of the towns in order to ensure the access of the entire population to the public water and sewerage system.

The overall investment required for the expansion and rehabilitation of water supply and sewerage systems in Prut cluster in the medium and long term, according to an opportunity study, can be summarized as follows:

Investments required for the development of water supply and sewerage service in "Prut" cluster

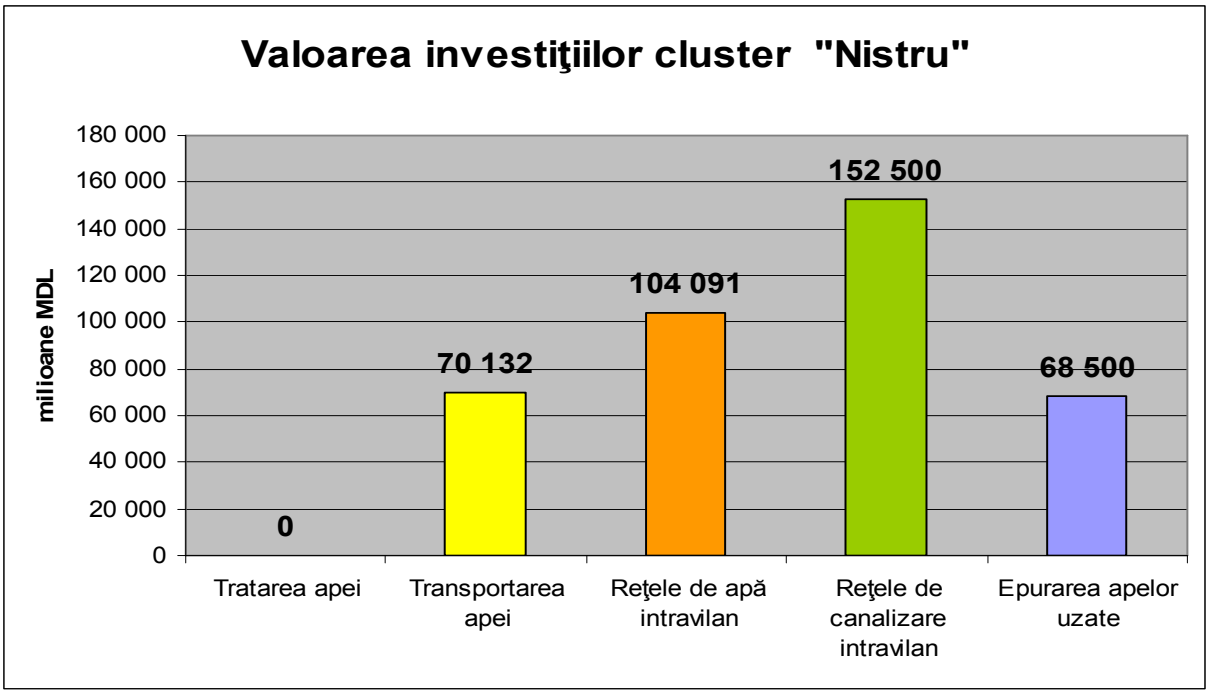


Value of investments in Prut cluster

Water treatment
Water transportation
Water networks within the localities
Sewerage networks within the localities
Wastewater treatment

The total investment needs for "Prut" cluster are estimated at approximately **316.6 mln lei.**

Investments required for the development of water supply and sewerage service in "Dniester" cluster



Total investment needs for “Dniester" cluster are estimated at **395.3 mln. lei**

3.3 Objectives and Priorities for Sector Development

The vision of Riscani district is to ensure conditions of access to accessible and affordable water supply and sewerage services for the entire population and economic agents in the district. The district will protect the drinking water sources and reduce the negative impact on the environment by improving wastewater collection and treatment facilities.

In the **long term** we propose the following objective: to improve the living conditions and reduce development disparities between urban and rural areas by improving the water supply service and reducing the negative impact on the environment by improving the wastewater collection and treatment systems.

Sector Development Priorities

The investment needs in the district have been prioritized in order to make a classification of localities based on their needs emergency level and to combine this classification with the principle of increasing the efficiency and regionalizing the WSS service to determine where investments should be placed first. The prioritizing method reflects both the national and sectoral priorities, as well as those at the local and district levels. Thus, a method of combining these priorities has been identified and applied.

Based on national public policy documents, the following country level priorities were taken into account:

- Reducing morbidity caused by water;
- Expanding the centralized public water supply;
- Ensuring uninterrupted water supply to the population;
- Expanding sewerage services and reducing the pollution;
- Halting the deterioration of the existing infrastructure;
- Improving the access to water and sewerage services for schools and kindergartens.

Local priorities have been identified in a participatory manner. The participants at the roundtable no. 2 suggested several local priorities, joined into 6 groups by similarity criteria. At the roundtable no. 3 a weighting system was used that allowed reducing local priorities to 4 and classifying them in the order of importance:

- Improving the quality of existing services
- Improving the living conditions in disadvantaged localities
- Improving the access to WSS services for the public institutions (except schools, which are a national priority)
- Expanding the existing infrastructure

Appendix 7 shows the national and local priorities with information about each priority criteria and indicators.

Medium Term Objectives

The medium-term objectives have been divided into 4 sections, which reflect the main directions of development in this sector:

1. Improving the management of WSS services;
2. Public information and awareness;
3. Improving the existing infrastructure;
4. Development of new regional WSS systems;

For each section the following objectives have been established:

1. Improving the management of WSS services

1.1. Developing local capacity to ensure a high level of service management;

1.2. Developing local capacity to implement inter-community cooperation in the delivery of the WSS service;

1.3. Increasing the investment potential of local authorities and of WSS service operators;

1.4. Improving existing services through WSS operators' capacity building;

2. Public information and awareness;

2.1. Improving transparency of WSS services;

2.2. Raising consumer awareness and responsibility;

3. Improving the existing infrastructure;

3.1. Identifying and preparing project ideas for improving the existing infrastructure;

3.2. Reducing water losses in Riscani and Costesti networks

4 Development of new regional WSS systems

4.1. Preparing investment projects for 2 clusters established based on inter-community cooperation principles;

4.2. Improving the public access to safe water sources from surface water resources (Dniester and Prut) by expanding the underground pipes networks

Medium and long term target indicators set according to Millennium Development Goals

	MU	Current situation	2015	2017	2025
Rate of population access to improved drinking water supply systems:					
Urban population	%	79.5	83.5	88.5	> 95
Rural Population	%	25.6	35.0	40.0	> 65
Rate of population access to improved Sewerage systems					
Urban population	%	49.35	55.5	60.0	> 75
Rural Population	%	0	3.0	10.0	> 35

3.4 Measures for Achieving the Targets

3 groups of measures are proposed in order to achieve the targets:

- **Investment actions**, required in order to achieve the objectives. This group includes activities of preparing documents for investment projects in the planned clusters.

For "Prut" cluster the development of the feasibility study must be initiated, to define more clearly the best option for connecting to the source of drinking water and the actual value of investments. Also, the order of investment projects development and implementation must be identified, taking into account the prioritization of needs of localities described in Annex XX.

For “Dniester" cluster it is important to monitor the development of Soroca-Balti project and prepare technical documentation for internal networks in localities that are part of this group.

- An important group of activities, called **preparing activities** (non-investment activities) includes meeting the needs related to improving service management, public information and awareness.

These activities must help create an enabling environment for the development of WSS systems throughout the district. First of all, the local public authorities need additional capacity to perform high-value investment projects; the regional service management assumes the availability of additional knowledge about intercommunity cooperation, joint management of WSS services. With regard to these issues, the local authorities also need the state support in the clear regulation of intercommunity cooperation .

- The third group comprises **urgent intervention** to improve the existing WSS infrastructure.

The deplorable state and large losses in water systems, particularly in Costeşti and Riscani, may hinder the efficient implementation of investment projects. Under this group of measures it is proposed to identify the major problems, to upgrade the existing infrastructure, supply the necessary equipment and machineries.

The measures that must be taken in order to achieve the objectives are listed in (Annex 8).

3.5 Monitoring and Evaluation

The adequate monitoring of implementation of the proposed plans is an essential condition to the quality of their implementation. Actions to monitor the entire SESD implementation process, water supply and sewerage services component, are suggested.

This monitoring will be achieved by discussing the implementation projects at certain periods of implementation by the responsible stakeholders. The oversight role lies with the District Council, which through its institutions will supervise and take recovery actions when necessary in order to anticipate the problems and reduce the risk of incurring additional costs. It aims at improving process efficiency and effectiveness of water supply and sewerage services.

The monitoring process will involve systematic collection and analysis of information necessary for progress oversight. The evaluation implies comparing the real impact of the project as reported to the original plans: what was planned to be achieved, what level was

achieved and how the process occurred. The evaluation will take into consideration the criteria of effectiveness, involvement of responsible players, transparency of the process.

The following procedure will be applied to monitor the WSS component of the Socio-Economic Development Strategy of the district:

1. The Economics Department of the District Council well be responsible for monitoring the SEDS, district Council, by collecting monthly progress data. The Working Group established to develop the strategy will meet monthly;
2. In June each year the Economics Department will prepare a monitoring report. The report will include findings on the implementation of the action plan for each activity (Annex 8). The Monitoring report will state the level of action implementation, the terms of achievement, expenses, the results achieved. The deviations from the Action Plan and the proposals for adjustment and correction will be described. The form to be used by the Economics Department is presented in Annex 9
3. The Local Working Group, based on the monitoring report, will propose solutions to update the SEDS, WSS component.
4. Riscani District Council will hold the hearing of the progress report and decide on updating the Socio-Economic Development Strategy annually.

Annex 1

REPUBLIC OF MOLDOVA
RÎŞCANI DISTRICT COUNCIL
PRESIDENT OF RÎŞCANI DISTRICT
РАЙОНА

РЕСПУБЛИКА МОЛДОВА
РЫШКАНСКИЙ РАЙОННЫЙ СОВЕТ
ПРЕДСЕДАТЕЛЬ РЫШКАНСКОЙО

DECISION
Riscani

No. *87* ***„*** *14* ***”*** *July* ***2011***

On establishment of the Working group for Updating the Socio-Economic Development Strategy of Riscani district Water Supply and Sewerage Component.

For the purpose of starting the process of updating the socio-economic strategy of Riscani district for 2009-2014, approved by Riscani District Council by its Decision no. 03/01 of April 29, 2010, with the support of the German International Cooperation Agency (GIZ), which provides assistance through the "Modernization of local public services in Moldova" project (MLPS), in updating the Socio-Economic Development Strategy , Water Supply and Sewerage component for Riscani district and applying the pilot testing of the investment prioritization methodology for the water supply and sewerage sector in rural communities in Moldova.

It is decided:

To establish the Working Group responsible for updating the Socio-Economic Development Strategy for Riscani district, Water Supply and Sewerage Component, comprising the following members:

Alexandru Cheptănaru - Vice-president of the district, Chairman of the group
Igor Frecăuţan - Head of Economics Department
Ion Costeţchi - head of Construction, Utilities and Roads Department
Cezar Salagor - Head of Public Administration Department
Viorel Dandara - Head of the general Department for Education, Youth and Sports
Galina Tăbîrţă - head of the General Finance Department
Mariana Turea- head of the Social Assistance and Family Protection Unit
Denis Ţurcanu – Center for Resources and Investments Sustainability
Vasile Grozavu – Main Inspector of the Environment Inspectorate of Riscani District
Virgil Manole – Main State Sanitary Doctor, Public Health Center, Riscani District
Alexei Sîrbu – Chief Engineer, ÎM "Apă-Canal Riscani"
Aurora Serediuc – Public Association "BAŞTINA"
Aliona Cechină – Public Association "Generaţia Viitorului"

District President ***Ion PAREA***

Annex 2

Legal Framework for the Water Supply and Sewerage Services sector

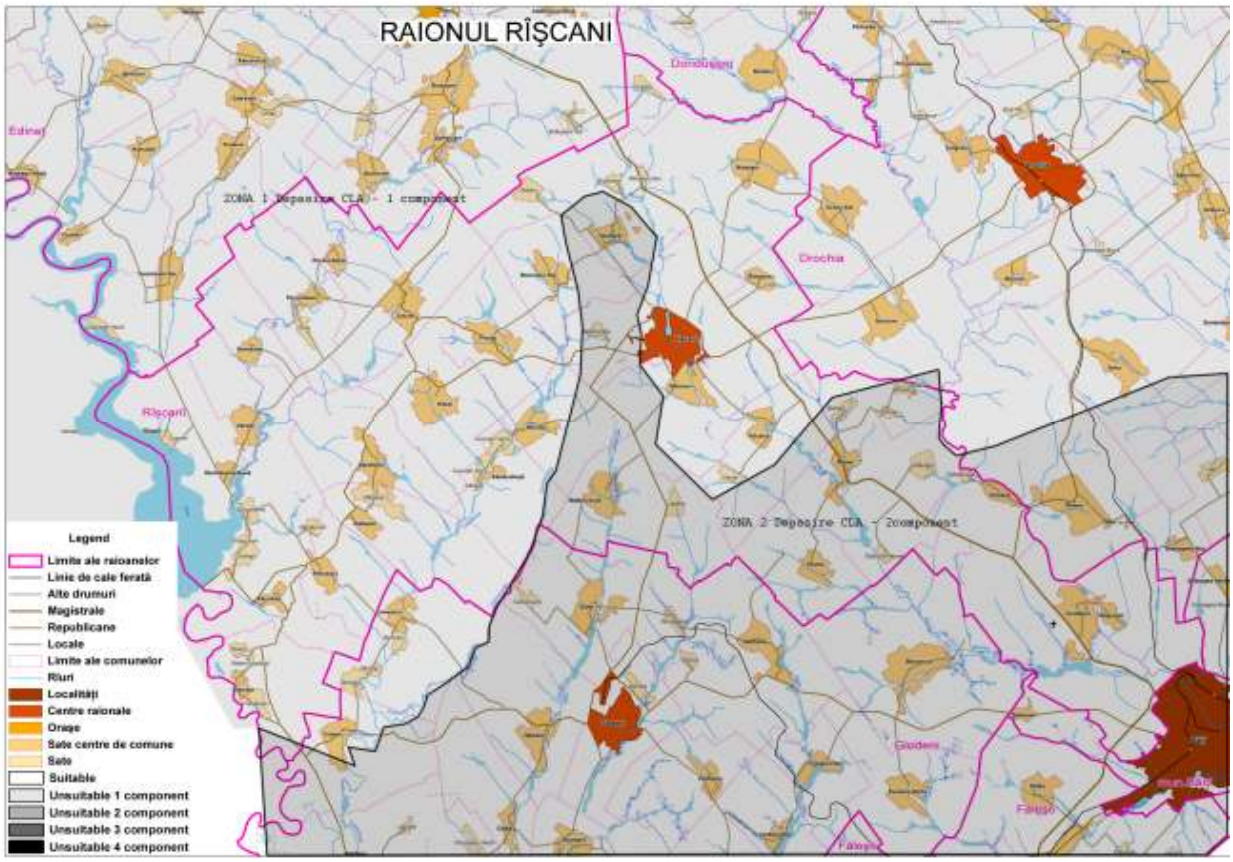
The activity of water supply and sewerage services is regulated by the following laws, government decisions and normative acts:

- Waters Code, no. 1532-XII of June 22, 1993; (replaced by the Law on waters of 2012
- Law no.1515-XII of June 16, 1993 on environment protection;
- Law no.272-XIV of February 10, 199 on drinking water;
- Law no.1402-XV of October 26, 2002 on public utilities;
- Law no.803-XIV of 11.02.2000 on industrial safety at dangerous industrial objects;
- Law no. 440-XIII of April 27, 1995 on waters, rivers and basins protection areas and belts;
- Law no.1515-XII of June 16, 1993 on Sanitary and Epidemiological protection of the population;
- Government Decision no. 1076 of November 16, 2010 "On the classification of emergency situations and methods to collect and present the information on the protection of the population and of the territory in the case of emergency situations;
- Government Decision no. 619 of 16.08.94 „On the regulation of waters relations and rational use of water resources in Moldova";
- Government Decision no. 934 of 15.08.2007 on the establishment of the Automated Information System „State Register of Natural, Drinking Mineral Waters and bottled non-alcoholic beverages"
- Framework regulation on the use of public water supply and sewerage systems. Approved by Government Decision no. 656 of May 27, 2002;
- Hygienic Regulations. Water basins protection against pollution;
- Hygienic Regulations. Requirements for the design, construction and operation of drinking water aqueducts, approved by the Board of the Ministry of Health of the Republic of Moldova, Minutes no. 5 of 31.10.1995;
- Regulation on the technical operation of the water supply and sewerage systems. Order no. 6 of 24.01.2006 RDA.
- Method of developing technological water consumption standards for water supply and sewerage companies operating in Moldova. Approved by MTD, C and U of RM by the order no. 163 of 27.10.1999;
- Instructions for evidence of water sources for fire fighting and supervision of their condition in Moldova. Approved by DC and DT of RM by the order no. 25 of 28.04.2004;
- Framework Regulation for reception of wastewater, issue of technical specifications and authorizations for wastewater discharge to the sewerage systems of the localities. Order no.40 of 18.02.2005 of the Department of Constructions and Territory Development.

Regulation of Technical Security in the use operation of aqueduct and sewerage services. Approved by MPU and H by the order no. 69 of March 11, 1990.

Annex 3

Riscani District Water Quality Map



Annex 4

List of WSS operators in Riscani district

"Dniester" Cluster

Category of the public utility service	Name of the Service Operator	Location	Form of organization
Water supply, sewerage, sanitation	Î.M. "Gospodăria Comunală"	Riscani town	Municipal Enterprise
Water supply	Î.M."ComunServi ce"	Nihoreni v-ge	Municipal Enterprise
Water supply	Î.M."Serv-Com"	Corlăteni v-ge	Municipal Enterprise
Water supply	Î.M. "Prim-Service"	Malinovscoie v-ge	Municipal Enterprise
Water supply	Î.M. "Prim-Service"	Răcăria v-ge	Municipal Enterprise
Water supply	Î.M. Mihaileni Service	Mihaileni v-ge	Municipal Enterprise
Water supply	P.A. Water Users Association	Recea v-ge	Public association
Water supply	Unit under the mayoralty	Boroseni v-ge	
Water supply	Unit under the mayoralty	Vasileuţi v-ge	

"Prut" Cluster

Category of the public utility service	Name of the Service Operator	Location	Form of organization
Water supply, sewerage, sanitation	Î.M. "Apă Canal"	Costeşti town	Municipal Enterprise
Water supply	Î.M. "Apă Canal"	Branişte v-ge	Municipal Enterprise
Water supply	Î.M."Spirevlad-service"	Horodişte v-ge	Municipal Enterprise
Water supply	Î.M. "Moara Ladului"	Zăicani v-ge	Municipal Enterprise
Water supply	Î.M. "Apă Canal"	Sturzeni v-ge	Municipal Enterprise

Water supply	Î.M."Pro Varatic"	Varatic v-ge	Municipal Enterprise
Water supply	Î.M."Duruitoarea Nouă"	Duruitoarea Nouă v-ge	Municipal Enterprise
Water supply	A.O. Ciuguraş	Pocimbăuţi v-ge	Public association
Water supply	A.O. Izvoraş	Hiliuţi v-ge	Public association
Water supply	Unit under the mayoralty	Pîrjota v-ge	
Water supply	Unit under the mayoralty	Pociumbeni v-ge	
Water supply	Unit under the mayoralty	Petruşeni v-ge	

Annex 5. **Composition of water supply clusters**

Cluster 1, Water Supply

No	Localities
1	Alexandresti
2	Avrameni
3	Braniste
4	Costesti
5	Cucuietii Noi
6	Cucuietii Vechi
7	Damascani
8	Druta
9	Dumeni
10	Duruitoarea Noua
11	Duruitoarea Veche
12	Galaseni
13	Hiliuti
14	Horodiste
15	Ivanesti
16	Malaiesti
17	Pascauti
18	Petruseni
19	Pirjota
20	Pociumbauti
21	Pociumbeni
22	Proscureni
23	Reteni
24	Reteni-Vasileuti
25	Saptebani
26	Varatic
27	Zaicani

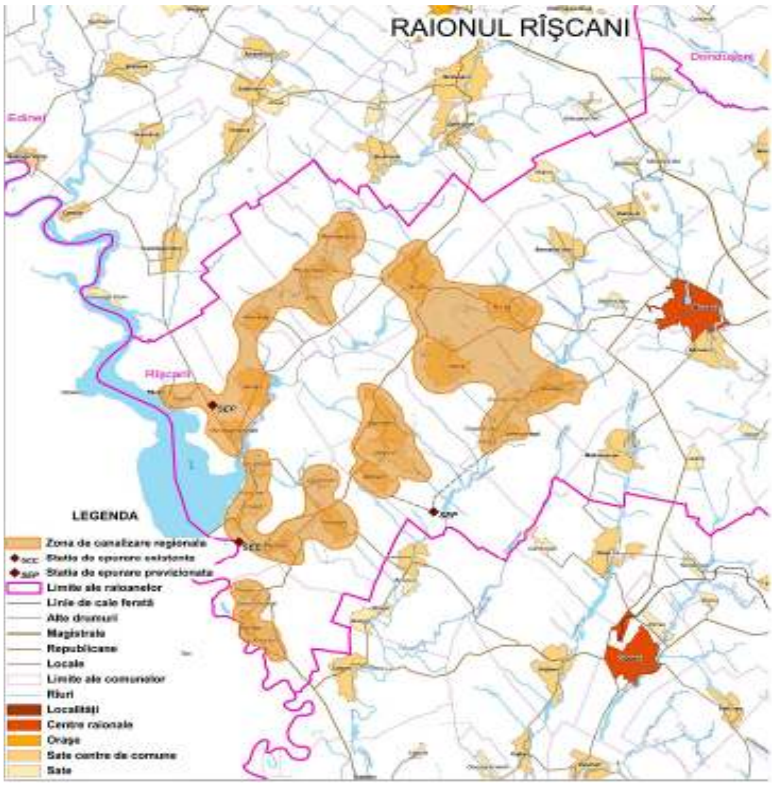
Cluster 2, Water Supply

No	Localities
1	Alunis
2	Balanul Nou
3	Borosenii Noi
4	Bulhac
5	Ceparia
6	Ciubara
7	Corlateni
8	Grinauti
9	Luparia
10	Malinovscoe
11	Mihaileni
12	Mihailenii Noi
13	Moseni
14	Nihoreni
15	Racaria
16	Ramazani
17	Recea
18	Riscani
19	Singureni
20	Slobozia Recea
21	Stiubeieni
22	Sturzeni
23	Sumna
24	Sverdiac
25	Usurei
26	Vasileuti

Annex 6 **Composition of Clusters for Sewerage Services**

	Cluster 1
	Costesti town
	Proscureni
	Pascauti
	Damascani
	Duruitoarea Veche
	Cluster 2
	Zăicani
	Pîrjota
	Hiliuţi
	Sturzeni
	Alexandresti
	Cucuietii Noi
	Cucuietii Vechi
	Ivanesti
	Cluster 3
	Saptebani
	Galaseni
	Malaiesti
	Petruşeni

	Cluster 4
	Pociumbeni
	Pociumbauti
	Druta
	Duruitoarea Noua
	Dumeni
	Văratic
	Horodişte
	Cluster 5
	Reteni
	ReteniVasiliuţi
	Branişte
	Avrameni



National priorities, criteria and indicators

Priority	To reduce the morbidity caused by water.
Suggested criteria	Priority is given to communities with the highest share of fountains where the water quality does not meet GOST standards for the "drinking water"
Indicators	The number of wells (including fountains) and springs in localities where the quality of water: • Does not meet the standards for “drinking water” under 3 or more indexes: 1 point for 10% of wells/springs • Does not meet the quality under 2 indexes: one point for each 20% • Does not meet the quality under 1 index: one point for each 30% Example: there are 30 wells in the village, 25% of them do not meet the “water quality” standards under 3 or more indexes, 25% of them do not meet the standards under 2 indices and the rest do not comply under 1 index. The locality will be assigned 5.4 points (25% /10% + 25%/20% + 50%/30%) in establishing the priority. Maximum number of points: 10 (when none of the wells meets the standards under 3 or more indexes).

Priority	To increase the number of population with access to water from the aqueduct.
Suggested criteria	Priority is given to localities with the lowest number of population connected to the aqueduct.
Indicators	Water supply network in the locality without an aqueduct: 10 The existence of the water network through the aqueduct in the village, the locality receives 1 point less for each 10$ covered by the aqueduct. Aqueduct coverage is calculated based on the number of households connected to the aqueduct divided by the total number of households in the locality. Example: in a locality with 400 households, 100 households are covered by the aqueduct. Thus, the locality receives 7.5 points (10 – 10*100/400)

Priority	To ensure supply of drinking water 24 h per day
Suggested criteria	Priority is assigned to localities where there are interruptions in the water supply
Indicators	Number of days when the water supply was interrupted: Less than 5 days: 0 points 5-9 days: 2 points 10-19 days: 4 points

	20-29 days: 6 points 30-39 days: 8 points 40 and less days: 10 points

Priority	To increase the sanitation system coverage
Suggested criteria	Priority is given to localities where there is no sanitation system or those with the lowest sanitation system coverage level.
Indicators	Availability of the sanitation system and locality coverage: If there is a sewerage system and it covers > 90% of the households: 0 points If there is a sewerage system and it covers > 75% of the households: 2 points If there is a sewerage system and it covers < 75% of the households the number of population of which is less than 2000 people: 4 points If there is a sewerage system and it covers < 75% of the households the number of population of which is less than 2000 people: 6 points If there is no sewerage system in the locality with a population of less than 2000 people: 8 points If there is no sewerage system in the locality with a population of more than 2000 people: 10 points

Priority	To halt the damage of water supply and sanitation system.
Suggested criteria	Priority is given to localities where the water supply and sanitation system is damaged.
Indicators	The local water supply and sanitation system> No infrastructure: 0 points 1 point for each 10% of the aqueduct built before 1995. The share of aqueducts built before 1995 is calculated as the sum of the length of the aqueduct network built before 1995 plus the total length of the local water supply network.

Priority	To improve the access of (pre-) school children to improved water supply and sanitation system
Indicators	Local schools: If the local school lacks any water supply and sanitation system: 10 points If the local school lacks has a water supply system but no sanitation system (or has a sanitation system but no water supply system): 5 points If there is no school in the locality or the school has a water supply and Sanitation system: 0 points

Table-1. Local priorities for Riscani district

Priority	To improve the existing system
Suggested criteria	Priority is given to communities that have experience in improving the Water and Sanitation services (sewerage and water supply service providers)
Indicators	Number of actions undertaken by Apa-Canal or LPA: Cooperation between localities and service providers: 2 points Service organization and operation rules: 1 point Service provision contract with Ist level LPA: 1 point Job description: 1 point Internal safety and prevention service: 1 point The term for taking the samples for the chemical/bacteriological analysis: 1 point

Priority	To improve the living standards in the disadvantaged communities
Suggested criteria	Priority is given to small disadvantaged communities with incomes
Indicators	The points are assigned for: The number of retired people> 40%: 1 point Local population < 500: 1 point Number of economic agents (companies) in the community<5: 1 point

Priority	To improve the access of public institutions to sewerage and water supply services
Suggested criteria	Priority is given to localities with the highest number of public institutions without access to sewerage and aqueduct services.
Indicators	The points are assigned for each public institution (as defined above) and then divided to the number of inhabitants multiplied by 100: Health facilities (health centers and family doctors centers): 2 points if there is no sewerage and water supply system: 1 point if there is an aqueduct but no sewerage system Community Centers: 2 points if there is no sewerage and water supply system: 1 point if there is an aqueduct but no sewerage system Assistance centers (rehabilitation centers): 2 points if there is no sewerage and water supply system 1 point if there is an aqueduct but no sewerage system

Priority	Expanding the aqueduct and sewerage system
Suggested criteria	Priority is given to localities where there is a sewerage system and an aqueduct, but its coverage does not reach 100%
Indicators	For each 10% of connection to water: 1 point For a connection rate of more than 90%[1]: 0 points

Annex 8 **ACTION PLAN**

#	Actions	Deadline	Responsible player	Objectives
Soft actions				
I	**Actions related to WSS services management**			
1	Approval of sector fare policy, annual adjustment of water and sewerage fare	12 months, annually	LPA	1.1
2	Approval of protection area surrounding the wells.	December 2013	LPA	1.1
3	Provision of WS enterprises with accounting and invoicing software.	June 2013	LPA, Ministry of Environment (ME)	1.1
4	Provision of necessary equipment to WS operators	December 2013	LPA, financed from the local budget, Ministry of Environment (Environmental Fund)	1.1
5	Development and approval of contracts for delegation of public services management to service providers and LPAs.	June 2013	LPA	1.1
6	Improving of water supply and sewerage services management in housing blocks and reduction of water theft	June 2014	Ministry of Environment (ME), LPA, Apartment owners associations	1.1
7	Registration of mayoralties' infrastructure objects - networks, wells, pumping stations, storage tanks, with the Cadastre	June 2014	LPA, Ministry of Environment	1.1
8	A clear water and sewerage law - approval of all documents of the ME and LPA.	June 2013	ME, LPA	1.1
9	Creation of local	If necessary	LPA	1.1

	working groups for implementation / monitoring of infrastructure projects - training in monitoring infrastructure projects for LPA members.			
10.	Establishment of inter-community associations based on proposed clusters (for monitoring services)	2012-2013	LPA I, LPA II	1.2
11.	Promotion of inter-community cooperation.	2012-2014	LPA I, LPA II District presidency secretariat	1.2
12	Building of budget planning capacity to support the investment projects.	2012-2017	Finance Division	1.3
13	Building of the capacity to develop and manage project proposals	permanent	CRADI	1.3
14	Ensuring the transparent use of public funds, including for water and sanitation - specialist training, developing PR activities	Quarterly, after implementation	LPA, Finance Division Financed from the district budget	1.4
II	**Actions related to information and awareness**			
15	Information and education activities in high schools, professional teams	2012 - 2017	LPA	2.2
16	Writing of articles in the district newspaper "Evenimentul Actual"	2012 - 2017	LPA, NGOs	2.2
17	Development and dissemination of education and promotion materials.	2012 - 2017	Disconcentrated services, NGOs	2.1
18	Activities - contests for the promotion of water importance for health.	2012 - 2017	LPA	2.1
19	Installation of information stalls in a public place about the importance of water	2012 - 2017	LPA	2.1

	quality and the quality of water in the community			
20	Promotion of the idea of inter-community cooperation, trainings for NGOs.	2012 - 2017	LPA, NGO	2.2
21	Development of a network of NGOs specialized in environment issues	2013	NGOs	2.1
22	Promoting of activities and the concept of efficient organization of water and sewerage through social networks	2012 – 2017	NGOs	2.1
23	Creation of a group of NGOs to monitor the implementation of the strategy for water and sanitation, training for NGOs in monitoring of public policies.	2013	NGOs	2.1
III	**Actions related to preparing investment projects for the clusters**			
24.	Preparing the feasibility study for the western cluster	Second half of 2012	LPA II – construction division, donors	4.1
25.	Preparing the financial package for the Western cluster	First semester 2013	LPA II – construction division, donors	4.1
26.	Preparing the technical project for the West cluster.	2013	LPA II – construction division, donors	4.1
27.	Monitoring of Soroca-Balti aqueduct construction	2012 - 2013	LPA II – construction division, donors	4.1
28.	Revision and adjustment of the existing documents for the east cluster.	2013-2014	LPA II – construction division, donors	4.1
IV	**Actions related to quick interventions**			
29	Inventory of networks and detection of water leaks in Riscani and Costesti towns.	2013	LPA, funded by ME (Environmental Fund)	3.2

30.	Identification of quick intervention needs	Annually	WS operators and LPS II in cooperation with LPA I	3.1
31.	Prioritization of quick interventions	Annually	LPA II	3.1
32.	Preparing of project documentation (feasibility studies) for quick interventions.	2012-2017	WS operators and LPS II in cooperation with LPA I	3.1
33	Modernization of the existing water supply and sanitation networks	2015	LPA, funded by ME (Environmental Fund)	3.2
Investment Projects				
31.	Investments for water supply for Prut cluster	2017+	LPA I, LPA II Cost of investment: 103 473,90 thousand MDL (59652,22 thousand MDL until 2017) No. of connected households: 7433 (5102.3 until 2017) Length of network: 303 km (247.7 until 2017)	4.2
32.	Investments for water supply for Dniester cluster	2017+	To be established	4.2
33.	Wastewater (sewerage network or STAU)	2017+	LPA I, LPA II Cost of investment: 132419 thousand MDL for the sewerage system and 170252 thousand MDL STAU (87879 thousand MDL until 2017) No. of connected households: 12557 (1533 by 2017) Length of network: 191 km (64 before 2017)	4.3

Non-investment actions

#	Action	Purpose of the action
1	Approval of sector fare policy, annual update of fares for water and sewerage services	The fares are important to make the WSS sector efficient, but the current fare calculation policy is politicized. It is necessary to develop a clear fare calculation policy - what kind of operating and maintenance costs should be included in the water and wastewater tariff, also what part of the investment costs should be included
2	Approval of necessary protection areas surrounding the wells.	Most mine wells are not protected, they are sometimes open for public access and thus polluted. Approval of protection areas surrounding the wells will help establish protection areas and efficiently protect the water sources.
3	Provision of WS enterprises with accounting and invoicing software.	The goal is to provide support to Water and Sanitation Operators. One of the highest investments it a good accounting and invoicing software (invoicing and payment control).
4	Provision of necessary equipment to WS operators	Apă Canal lacks the necessary equipment. This includes excavators, leak detection equipment and others. Based on this action, LPA together with service providers will analyze the existing needs of Canal and together with District administration will address donor institutions (possible funding sources).
5	Development and approval of contracts for delegation of public services management to service providers and LPAs.	The public service contracts are a tool to introduce commercial practices based on a contractual relationship between the founder (LPA), the service provider and the service provider itself. The public service contracts will replace the ad-hoc relations which usually prevail in provision of services. The purpose of the action is to prepare and support the LPA in developing and approving such contracts.
6	Improving of water supply and sanitation services management in housing blocks and reduction of water theft	The purpose of this action is to improve the management of public services in housing blocks. This goal can require different activities which are to be established by WS together with LPAs and Condominiums (Apartment owners associations).
7	Registration of mayoralties' infrastructure objects - networks, wells, pumping stations, storage tanks, with the Cadastre	The goal is to register all objects related to WSS infrastructure in the cadastre register.
8	A clear water and	The goal is to prepare and approve the necessary

	sanitation law - approval of all documents of the ME and LPA.	regulations for WSS.
9	Creation of local working groups for implementation / monitoring of infrastructure projects - training in monitoring infrastructure projects for LPA members.	Big investment projects require a good monitoring. Some monitoring shall be made by the district (especially at the stage of transition), but a lot of infrastructure development projects will be within localities. For this purpose, LPA I will monitor the implementation, but it requires the training of the responsible staff.
10.	Establishment of inter-community associations based on proposed clusters (for monitoring services)	Irrespective of the inter-community cooperation arrangements, the mayoralties must have a service monitoring tool and the association is the best tool.
11.	Promotion of inter-community cooperation.	Even the SEDS suggests that WSS should be developed using the cluster concept; the inter-community cooperation between mayoralties still needs to be promoted. The goal is to get the LPA I involved.
12	Building of budget planning capacity to support the investment projects.	Large investment project will need an increased capacity of budget planning, particularly for capital investments. LPA will have to decide which project to focus their financial resources on, and because of the long-term nature of investment projects, the planning must be done for several years in advance. Thus, the purpose of the action is to increase the LPA capacity in developing the necessary competence for the budgetary planning.
13	Building of the capacity to develop and manage project proposals	The purpose of the action is to increase the capacity to develop project proposals and to manage them
14	Ensuring the transparent use of public funds, including for water and sanitation - specialist training, developing PR activities	Large investment projects will require transparency in using public funds. Thus, a lot of information must be prepared and published so that the local society understands and monitors the situation. The purpose of the action is to train specialists for this task.
15	Information and education activities in high schools, professional teams	The WSS sector, particularly when the implementation of large investment projects requires support from the community. Two groups are of a particular importance: high school students and professionals. The purpose of the action is to provide relevant information and to organize education activities for these groups.
16	Writing of articles in the district newspaper "Evenimentul Actual"	The purpose of the action is to prepare articles for the newspaper about: • The general situation concerning the WSS;

		• Health problems caused by polluted drinking eater; • Environmental problems caused by wastewater; • CIC in WSS; • Other issues concerning the WSS.
17	Development and dissemination of education and promotion materials.	The purpose of the action is to prepare booklets and education materials covering the topics listed in the previous action. The booklets and educational materials will be used in working with the community and the school.
18	Activities - contests for the promotion of water importance for health.	The purpose of the action is to organize contests to promote the importance of water for the health.
19	Installation of information stalls in a public place about the importance of water quality and the quality of water in the community	The purpose of the action is to approach the citizens through information stalls about the importance of water quality. The stalls will be installed in each locality.
20	Promotion of the idea of inter-community cooperation, trainings for NGOs.	Even the SEDS suggests that WSS should be developed using the cluster concept; the inter-community cooperation between mayoralties still needs to be promoted. The purpose of the action is to engage NGOs in promoting inter-community cooperation (ICC), therefore, NGOs need appropriate training and NGO representatives should understand the concept of ICC.
21	Development of a network of NGOs specialized in environment issues	The statute of many NGOs includes objectives related to WSS, of not directly, then by approaching environmental problems (or health issues). These NGOs are interested in increasing the awareness about these issues. The purpose of the action is to support NGOs in developing a network and joining other forces, which is especially important when a large infrastructure project is implemented.
22	Promoting of activities and the concept of efficient organization of water and sewerage through social networks	The social networks can be a useful information and awareness tool about WSS issues. This action is complementary to other information actions.
23	Creation of a group of NGOs to monitor the implementation of the strategy for water and sanitation, training for NGOs in monitoring of public policies.	SEDS requires monitoring. Even this chapter suggests a monitoring and evaluation plan, it is important to get the local society involved in the monitoring process. NGOs are particularly important in monitoring the SEDS implementation, thus they will be invited to the working group. The purpose of the action is to train the representatives of NGOs on the monitoring of SEDS

		implementation.
24.	Preparing the feasibility study for the western cluster	The purpose of the action is for the case if the feasibility study for a regional project is prepared. The feasibility studies are important for selecting technical and organizational solutions. Also, it is important to communicate with donor institutions, which will provide funding.
25.	Preparing the financial package for the Western cluster	The financial package is the final decision that will provide the financial support for the investment project. It is necessary to contact the donors/financial institutions, to meet them in order to attract investments for the project. If the decision to finance the loan is taken, this action shall also include the solvency analysis.
26.	Preparing the technical project for the West cluster.	For the technical project a tender must be organized and construction works started.
27.	Monitoring of Soroca-Balti aqueduct construction.	Soroca-Balti aqueduct will be a source of drinking water for the East cluster. The aqueduct modernization project is under preparation and requires monitoring.
28.	Review and adjustment of the existing documentation for the East cluster	Some documents (feasibility study, design) for water supply for at least part of the eastern cluster have already been prepared. They must be reviewed and further developed.
29	Inventory of networks and detection of water leaks in Riscani and Costesti towns.	The water leakages are an important concern for the existing water network, particularly in towns. In order to solve this problem, an inventory must be conducted and water leakages must be detected.
30.	Identification of urgent needs	Smaller investment projects must be implemented, especially those related to the existing infrastructure (such as leak detection, replacing most damaged pipes, upgrading wastewater treatment plants, etc.). These projects have not been identified at the current stage and still need to be identified.
31.	Prioritization of quick interventions	When rapid interventions are being identified, they must be prioritized in order to decide on what to implement first.
32.	Preparing of project documentation (feasibility studies) for quick interventions.	The quick interventions, like other investment projects, require preparation. It is not possible to decide at what stage what documents will be required (quick interventions are smaller, so it may not be necessary to conduct a feasibility study)
33	Modernization of the existing water supply and sewerage networks	Some of the existing networks (water supply and sewerage) require modernization. The purpose of the action is to identify and launch modernization projects, so that when the transit water pipeline is ready, there

		will be no problem with the internal network.

Investment actions

No.	Name of the project	Project costs (million MDL)							
		2012	2013	2014	2015	2016	2017	following years	Total
A.1	cluster 1 (Prut)		4738.25	4137.8	10622.4	19932.2	20 221.6	43 821.67	103 473.90
A.2	cluster2 (Dniester)								
	TOTAL								

No.	Name of the project	Costs of the project [million MDL]								
		2012	2013	2014	2015	2016	2017	following years	Total sewerage	Total with wastewater treatment
A	Agglomeration no. 1									
1	Sewerage		2 987.02					5 703.95	8691.0	
2	With wastewater treatment		15 547.7					0.0		15547.7
B	Agglomeration no. 2									
1	Sewerage					9 944.99	9 945.05	41 420.75	61 310.8	
2	With wastewater treatment					22 177.30	9 944.99	41420.8		73 543.1
	Agglomeration no. 3									
1	Sewerage				9 374.29			19 542.91	28 917.2	
2	With wastewater treatment				15 781.69			19542.9		35 324.6
	Agglomeration no. 4									
1	Sewerage			10 036.37				20 935.06	27 179.0	
2	With wastewater treatment			20 932.4				17142.6		38 075.0
	Agglomeration no. 5									
1	Sewerage				2 054.10			4 266.60	6 320.7	
2	With wastewater treatment				3 495.30			4266.6		7 761.9

	TOTAL		**15 547.70**	**20 932.40**	**19 276.99**	**22 177.30**	**9 944.90**		**132 418.67**	**170 252.26**

Annex 9. **Monitoring Form**

Action (Action Plan)	Action	Short description of the activity	Main results of the activity	Date of the activity	Costs of the activity/action	Deviations from action implementation	Possible corrections to the action
1. updating of statistical data on WSS	1.						
	2.						
	3.						
					Total cost of the action:		
2. Assessment and monitoring of population health depending on environment/water	1.						
	2.						
	3.						
					Total cost of the action:		
3. Organization of roundtables on WSS topics	1.						
	2.						
					Total cost of the action:		

#	Action	Guiding question/Indicator/Data to be provided
1	Approval of sector fare policy, annual update of fares for water and sewerage services	Has the sector fare policy document been prepared? Has the sector fare policy document been adjusted? How many LPAs have changed their fares?
2	Approval of necessary protection areas surrounding the wells.	How many protection zones around wells have been approved? How many have still to be approved?
3	Provision of WS enterprises with accounting and invoicing software.	The number of utilities provided with a new accounting software The number of utilities provided with a new invoicing software

4	Provision of necessary equipment to WS operators	Value (lei) of the new equipment purchased during the year. List of new equipments provided to Apă Canal.
5	Development and approval of contracts for delegation of public services management to service providers and LPAs.	The number of contracts delegating the management of public services to service providers: - Developed. - Approved
6	Improving of water supply and sewerage services management in housing blocks and reduction of water theft	The number of apartment blocks included in actions to improve water and sewerage services, public service management in residential buildings and water theft reduction. Please describe the actions.
7	Registration of mayoralties' infrastructure objects - networks, wells, pumping stations, storage tanks, with the Cadastre	The number of object registered during the year The estimated number of objects to be registered
8	A clear water and sewerage law - approval of all documents of the ME and LPA.	The number of documents approved during the year. The estimated remaining number of documents to be approved.
9	Creation of local working groups for implementation / monitoring of infrastructure projects - training in monitoring infrastructure projects for LPA members.	The number of training courses organized by LPA on monitoring infrastructure projects The number of participants at training courses organized by LPA on monitoring infrastructure projects
10.	Establishment of inter-community associations based on proposed clusters (for monitoring services)	The number of associations established
11.	Promotion of inter-community cooperation.	The number and type of promotion events (meetings, informative mass-media, booklets) to promote inter-community cooperation
12	Building of budget planning capacity to support the investment projects.	Number of training courses for the financial staff of the LPA on good budget planning Number of participants at these courses
13	Building of the capacity to develop and manage project proposals	The number of training courses for the LPA staff on project development Number of participants in these courses
14	Ensuring the transparent use of public funds, including for water and sewerage - specialist training, developing PR activities	The number of training courses for the LPA staff on PR activities Number of participants in these courses
15	Information and education	The number of events, trainings and similar education

	activities in high schools, professional teams	actions organized by high schools on water sector.
16	Writing of articles in the district newspaper "Evenimentul Actual"	The number of articles published about water
17	Development and dissemination of education and promotion materials.	The number of promotion and education materials (booklets) prepared The number of disseminated copies
18	Activities - contests for the promotion of water importance for health.	The number of contests organized to promote the "water for health" concept Number of participants in these contests
19	Installation of information stalls in a public place about the importance of water quality and the quality of water in the community	Number of information panels prepared and installed
20	Promotion of the idea of inter-community cooperation, trainings for NGOs.	The number of trainings on inter-community cooperation organized for NGOs The number of NGOs participating in trainings
21	Development of a network of NGOs specialized in environment issues	Has the NGOs network on environment issues been organized? The number of NGOs participating in the network? What form does this network have?
22	Promoting of activities and the concept of efficient organization of water and sewerage through social networks	Has the Facebook page for water and sewerage issued in the district been created? Number of activities covered through Facebook
23	Creation of a group of NGOs to monitor the implementation of the strategy for water and sewerage, training for NGOs in monitoring of public policies.	The number of public policy monitoring trainings organized by NGOs. The number of NGOs participating in trainings
24.	Preparing the feasibility study for the western cluster	Has the feasibility study been prepared? The stage of feasibility study development
25.	Preparing the financial package for the Western cluster	Have the financial sources for investments been identified? Have the application documents been prepared?
26.	Preparing the technical project for the West cluster.	Has the technical project been prepared? Stage of technical project development.
27.	Monitoring of Soroca-Balti aqueduct construction.	Please provide full information about the progress of Soroca-Bălți aqueduct construction
28.	Review and adjustment of the existing documentation	What are the requirements for the review and adaptation of the existing documents for the eastern

	for the East cluster	cluster? What documents have been updated or prepared?
29	Inventory of networks and detection of water leaks in Riscani and Costesti towns.	The length of networks included in water leaks detection programs
30.	Identification of urgent needs	The number of identified small investment projects.
31.	Prioritization of quick interventions	Have the quick interventions been prioritized?
32.	Preparing of project documentation (feasibility studies) for quick interventions.	What technical documents for quick interventions have been prepared?
33	Modernization of the existing water supply and sewerage networks	Have the existing networks modernization needs been identified (for water supply and sewerage)? What technical documents have been prepared?