Project on ensuring safely managed on-site sanitation systems (SMOOS)
Pilot country: Serbia

Final technical report

The Institute of Public Health of Serbia

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1 Introduction

The WHO/UNICEF team of the Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) has obtained a 3-year grant from Bill and Melinda Gates Foundation to bring together selected national governments and international partners to develop and test data collection tools and methods in urban and rural locations in up to 10 low, middle and high income countries in Africa, Asia, Europe, Middle East and Latin America. The Republic of Serbia has been selected country from the WHO European Region to participate in this project, in order to represent certain on-site sanitation scenarios reflected in geographic and economic diversity.

The project aims to provide direct support to at least 10 selected countries to systematically collect data and to generate estimates for safe management of sanitation services by 2021. Piloting of monitoring tools for different types of on-site sanitation facilities in Serbia related to a typology of emptying and treatment requirements will inform the refinement of guidance for systematic collection and aggregation of data.

The primary output of the project will be a recommended set of harmonized tools and methods which can be used by national authorities to assess the extent to which excreta from on-site sanitation facilities are safely managed.

The responsibilities in managing the sanitation is shared among the different sectors/ministries/institutions (e.g. The Ministry of environmental protection, The Ministry of construction, transport and infrastructure and the Ministry of Health) and for the sake of project implementation, a working group consisting of representatives from responsible ministries is formed at the national level to ensure their participation in the project.

This is a first initial study that addressed small on-site sanitation system in Serbia and represent a very first step towards the improvement of the situation which benefits for the population could been seen in long term. This will also support efforts aiming to raise awareness of people on safe management of on-site sanitation system, establishment of monitoring system in this field, capacity building of the local self-authorities and improvement of infrastructure (extension of the public sewage system and building of the waste water treatment plane).

2 Project concept in Serbia

2.1 Background

In Serbia, 40.8% of the population is connected to improved on-site sanitation facilities (13.4% in urban and 76.2% in rural areas), while 2.1% of Serbian population is connected to unimproved on site sanitation systems (open pit, open defecation), which in total represents 41.8% of the population is not connected to sewer system [1]. This data resulted from the Multiple Indicators Cluster Survey (MICS) in 2019 and showed that the most prevailed technology for fecal wastewater containment in rural areas are septic tanks that can affect the

[1] Republički zavod za statistiku, UNICEF, 2019. Istraživanje višestrukih pokazatelja položaja žena i dece u Srbiji i Istraživanje višestrukih pokazatelja položaja žena i dece u romskim naseljima u Srbiji, 2019, Izveštaj o nalazima istraživanja. Beograd, Srbija: Republički zavod za statistiku i UNICEF.

microbiological safety of drinking water. The presence of *Escherichia coli* in one-third of drinking water samples taken in a study on rapid assessment of drinking water quality and sanitary conditions in rural areas (2016, supported by the WHO)[2], indirectly points to a poor management of on-site sanitation facilities and their adverse effect on the environment.

A recent national representative survey on water, sanitation and hygiene conditions (WASH) in health care facilities (HCFs) (2019, supported by the WHO)[3] showed that all investigated urban HCFs, and 95.3% of rural HCFs are connected to improved sanitation facilities, and that 55.4% of rural HCFs collect wastewater to septic tanks, whereas 0.7% discharge wastewater to open drain, 0.7% use pit latrines with slab and 2% use pit latrines without slab or open pit. As much as 10% of rural health care facilities (only ambulances) reported having no drainage system for grey-water, while 30% of facilities (only ambulances) reported having drainage system connected to septic tank or a pit without onsite treatment, which may require further investigation about their management. The largest proportion of facilities with pit latrines or septic tanks empty them when they fill up; further investigations may be required to understand what are the alternative ways conducted in the remaining facilities. It is assumed that the situation on sanitation in rural schools could be similar.

The existing national data can give an overall picture related mostly to wastewater management through public sewerage. Namely, approximately 3.9 million residents are currently connected to wastewater collection systems (55% of the total population). Public sewerage receives approximately 296 thousand m^3 wastewater annually (72% discharged from households). 52.4% of total generated wastewater is collected, 7.3% receives biological treatment and 1.3% undergoes more stringent treatment. Considering data on safely managed on-site sanitation, there is no systematic national data collection and reporting system in place in Serbia. Besides, the responsibility for this activity has not been neither defined nor regulated at national level, so far.

The data on emptying, transport and treatment of fecal sludge from septic tanks and other types of on-site systems is not being systematically collected and reported in Serbia, neither from rural institutions nor households, which represents a big challenge in assessing the real situation in the field regarding the safe management of excreta and should be further explored. However, in the same time, this survey becomes an opportunity for closing this data gap and exploring possible mechanisms for establishing of routine monitoring programme with agreed tools and methods in line with JMP indicators for safely managed on-site sanitation. Systematic and reliable data from routine monitoring will inform regulatory, managerial and infrastructural requirements towards achieving safely managing on-site sanitation services in all relevant settings.

2.2 Enabling environment

[2] Institut za javno zdravlje Srbije „dr Milan jovanović Batut“. Brza procena zdravstvene ispravnosti vode za piće u seoskom području u Srbiji. Sprovođenje protokola o vodi i zdravlju 2016. Beograd: Institut za javno zdravlje Srbije „dr Milan jovanović Batut“, 2017.

[3] World Health Organization. National survey on water, sanitation and hygiene in health care facilities in the Republic of Serbia. Geneva: World Health Organization; 2020. Licence: CC BY-NC-SA 3.0 IGO.

The Government of the Republic of Serbia has intensified the development, adoption and improvement of the national policy concerning the management of sanitation in urban and rural areas, in parallel with activities in the process of accession to the European Union. As part of the negotiation process, Directive Specific Implementation Plans for Council Directive 91/271/EEC related only to urban wastewater treatment has been developed; however, the transposition of this Directive into Serbian legislation is at an early stage. The Directive has been partially transposed into national legislation.

Moreover, in line with the Protocol on Water and Health, Serbia also adopted national targets focusing on improvement of sanitation in schools and preschools settings, increase the proportion of connections to centralized sewerage systems in rural areas and adoption of action plans for achieving the emission limit values and set target dates for reaching emission limit values of pollutants progressively.

Furthermore, Serbia's participation in the UN-Water Global Analysis and Assessment of Sanitation and Drinking-water (GLAAS) 2014 reporting cycle indicated the existence of urban and rural disparities in the provision of water, sanitation and hygiene services due to lack of specific plans to sustain rural water supply services, regular surveillance, human resource strategies and financing.

Wastewater disposal is regulated at the municipal level. The responsibility for providing people with safe drinking water and sanitation services belong to a local self-government. Local self-governments entrusted the provision of WASH services to public utility companies established in each of 150 municipalities. Their work is regulated by the Law on Communal Activities and cover centralized drinking water supply and sewerage, predominantly prevailing in urban areas. However, there are some suburban areas connected to on-site sanitation facilities. The majority of the rural population relies on small on-site sanitation facilities that are regulated by the local decision on wastewater management in rural areas established by the local self-government in each of the 150 municipalities. Although these local plans are based on Ministry of Infrastructure's Law on Municipal Wastewater Management, they are not uniform and to varying degrees and manners cover and regulate different aspects of SMOSS in rural areas. Additionally, this topic is also under the Ministry of Environmental Protection and is regulated by the Rulebook on the condition for emission of wastewater in surface waters.

Defining tools and methods for assessing different aspects of SMOSS and their piloting at the national scale will be an important methodological basis for establishing a routine data collection system on the safe management of excreta from on-site sanitation. Furthermore, the piloting of tools and methods for monitoring SMOSS, particularly in rural schools and health care facilities, using the network of Institutes of Public Health (IPHs) as a mechanism for routine data collection could be an opportunity to facilitate the establishment of a systematic data collection system on institutional SMOSS with integrated indicators as a new programme line of general interest under the Ministry of Health.

The Institute of Public Health of Serbia (IPHS) is a unique national umbrella institution for public health, whose central role is to coordinate the activities of the entire network of 25 public health institutes in Serbia. IPHS is an expert institution established on the Republic level to provide advice, support and guidance to the Government of the Republic of Serbia in the field of the public health as defined within Health Care Law, Health Insurance Law, and Public Health Law. One of the main activities of the IPHS and the network of IPHs, among

others, include work on preserving and improving the environment and prevention of the harmful effects of risk factors from the environment.

Regulation on the Programme on the protection of the population against communicable diseases ("Official Gazette RS", No 22/2016) assigns responsibility to the IPH of Serbia with the network of IPHs, concerning a disposition of wastewater and aiming at improving of sanitary and hygienic conditions through the establishment of database on the disposal of wastewater, control of wastewater quality, recommendations and measures for the improvements and the monitoring of their implementation. In addition, according to the Law on Public health("Official Gazette RS", No 15/2016), IPH of Serbia with the network of IPHs is responsible for conducting public health activities in the area of environmental health, particularly focusing on the monitoring of, amongst other, the situation on waste and wastewater disposal in all settings, as well as on the sanitary surveillance on hygienic-sanitary conditions in healthcare facilities and schools.

This pilot set baseline data on containment, emptying, transport and treatment related to SMOSS and support further strategic planning for the safe management of on-site sanitation in Serbia and progress tracking towards achieving Sustainable Development Goals (SDGs) targets 6.2, 3.8 and 4a.

2.3 Objectives

Objectives of the pilot study in Serbia were:

- to undertake an analysis of the legal framework and institutional mechanisms, including their strengths and weaknesses for ensuring safely managed on-site sanitation systems (SMOSS),
- to collect comprehensive evidence on types of technologies and existing practice, concerning toilets, containments, emptying and transportation, treatment and safe disposal of faecal sludge and liquid effluent in both settings, institutional and households and to develop indicators that fit the local context.
- to conduct a systematic situation analysis and assessment of small on-site sanitation facilities services (SMOSS, e.g., septic tanks, holding tanks, pit latrines, etc.), through the on-site sanitary inspection, considering various types of technologies and existing practices in containments, emptying, transport, treatment and safe disposal of fecal sludge and liquid effluent from households and rural school and health care facilities.

Project activities to be focused on conducting a systematic situation analysis on SMOSS, encompassing two main components: a qualitative assessment/analysis of the enabling environment for SMOSS and the data collection organized in two rounds:

- The first round to be focused on the collection of existing data from the data providers identified in a qualitative assessment, concerning technology types, technical conditions, toilet, containment, emptying, transport, treatment and disposal related to SMOSS in rural institutions (schools and health care facilities (HCFs) and urban and rural households.
- The second round of data collection to be conducted as a systematic national survey, addressing identified data gaps and defining indicators on technical conditions and on the management of institutional and household SMOSS in urban and rural areas.

To support the conduct of this pilot study, a multisectoral project team and a core project team were established, consisting of representatives from responsible ministries, universities, institutions and NGOs.

3 Methodology

This pilot study was conducted in three phases from June 2020 to December 2021. The first phase was conducted from June to August 2020 and referred to a qualitative assessment of the enabling environment for safely managing on-site sanitation with the main focus on reviewing and analysing of existing evidence, national and local policies and standards, institutional setup, monitoring and surveillance mechanisms, coordination, and financing, concerning both, institutions and households. The analysis aimed at identifying the strengths and the gaps at different levels from policy to implementation through the entire sanitation chain.

This assessment was conducted through a desk review supported by a policy tool, which was created for the purpose of the policy review and the assessment of enabling environment and implementation mechanisms related for safely managing of SMOOS. To support the conduct of this qualitative analysis, a multisectoral project team and a core project team were established that developed the methodological tool for the conduct of the entire pilot study.

The second phase referred to data collection of the existing data from the data providers identified in the abovementioned qualitative assessment, concerning technology types, technical conditions, containment, emptying, transport and treatment related to SMOSS in institutions (rural schools and HCFs) and households. A structured checklist of indicators on toilets, containment, emptying, transport, treatment and disposal from institutional and households on-site systems and in line with JMP indicators was employed at national level and sent to all 150 public utility companies responsible for emptying of septic tanks and transport of faecal sludge to further treatment or discharge and to all municipalities. This data collection round was conducted using capacities of the core project team and the Standing Conference of Towns and Municipalities, which has got organised network for supporting the work of local self-government and units. This analysis served in identifying what indicators have already been monitored by different entities and their mechanisms (household surveys, technical inspections, administrative and regulatory data), as well as to reveal the scale of data gaps to be addressed in the second round of data collection and could be conducted in parallel with qualitative assessment.

As a methodological instrument for the survey on local self-government a created questionnaire consisted of the following sections:

1. Basic data on the local self-government unit
2. Management of emptying, transport and treatment of fecal sludge from pit latrines, septic and holding tanks and small-scale sewage systems (up to 2000 PE) at the local self-government unit
    - Assembly Decisions governing the performance of utility services
    - Scope and management of utility services
3. Inspection surveillance over management of containment, emptying, transport and treatment of faecal sludge on-site

4. Planning in the field of sanitation at the level of the local self-government unit
5. Human resources for performing tasks involving emptying, transport and treatment of fecal sludge from septic and holding tanks and small-scale sewage systems
6. Financing services and investments in the local self-government unit
7. Coordination

It was employed in the field, using an online tool (Google forms) and thought the network and support of the Standing Conference of Towns and Municipalities.
For detailed methodological tool, refer to the annex II of this document.

This assessment was complemented with the key-informant interviews in 4 districts, selected one per each statistical region (Vojvodina region, City Belgrade region, Western Serbia and South-East Serbia) and considering geographical and other diversities.

The third phase was conducted as a systematic national survey, regarding the small on-site sanitation facilities in households in rural and urban areas, as well as in school and health care facilities in rural areas in Serbia. This assessment was designed as observational, cross-sectional study to be conducted on a representative number of septic tanks and pit latrines of the households not connected to public sewer systems in both urban and rural areas, as well on a number of septic tanks and pit latrines belonging to schools and health care facilities not connected to public sewer systems in rural areas.

On-site sanitary inspection of SMOSS was carried out in all regions, districts, and municipalities of the Republic of Serbia from April to September 2021.

All participating entities were given a specific unique code, personal data, as well as personal attitudes, behavioral habits or health information were not collected though this checklist so that their identity could not be identified in any way. All data collected was presented cumulatively after statistical analysis. Informed consent was provided to each participating entity (households, schools, and health care facilities).

Information on SMOSS from households, schools, and health care facilities will be encoded by specialized and procedural methods, and will not be shared with third parties under any conditions or put away after the end of SMOSS project lifetime.

This survey was carried out within the capacities (technical and human) of the network of 25 IPHs under the MoH, located in each district. For detailed study design and the questionnaire for assessing on-site sanitation in households, rural schools and HCFs, refer to the annex I of this document.

4 Results

4.1 Result of the policy analysis

4.1.1 Identified gaps in Serbian regulatory framework at national level

The Government of the Republic of Serbia has intensified the development, adoption and improvement of the national policy concerning the management of sanitation in urban and rural areas, in parallel with activities in the process of accession to the European Union.

As part of the negotiation process, Directive Specific Implementation Plans for Council Directive 91/271/EEC related only to urban wastewater treatment has been developed, however, the transposition of this Directive into Serbian legislation is at an early stage. The Directive has been partially transposed into national legislation.

Moreover, in line with Protocol on Water and Health, Serbia also adopted national targets focusing on improvement of sanitation in schools and preschools settings, increase % of connections to centralized sewerage systems in rural areas and adoption of action plans for achieving the emission limit values and set target dates for reaching emission limit values of pollutants progressively.

Furthermore, Serbia's participation in the UN-Water Global Analysis and Assessment of Sanitation and Drinking-water (GLAAS) 2014 reporting cycle indicated the existence of urban and rural disparities in the provision of water, sanitation and hygiene services due to lack of specific plans to sustain rural water supply services, regular surveillance, human resource strategies and financing.

The Law on Waters is the basic legal act for water management. In order to ensure its full implementation, it is necessary to pass all bylaws prescribed by that law which elaborate certain provisions of that law, order or prohibit some behavior in one situation, ie elaborate the relationship regulated by that law, in accordance with its purpose and goal. This also applies to planning documents (water management plans in water areas, flood risk management plans and water protection plan against pollution).

The obligatory element of water management plans must be the communal activity of drinking water supply by the public water supply system and collection, drainage and treatment of wastewater by the public sewerage system, in the part related to construction planning and financing of water facilities, as follows:

1) for water supply: water intakes, drinking water treatment plants, main pipelines and tanks with devices belonging to them;

2) for sewerage of settlements: main collectors, wastewater treatment plants, sludge treatment, discharges from plants to the receiver and other facilities defined in the Law on Waters as water facilities for these purposes.

When the management of on-site sanitation in households and institutions (preschools, schools and health care and social care facilities) comes in question, Serbian regulatory framework is developed to some extent, broadly covering different dimensions of sanitation chain (from catchment to treatment) by different laws and regulations, and the other legal acts. All regulations and policies considered in this analysis are summarised in Annex.

Management of on-site sanitation in households and institutions in Serbia is regulated by different laws and by-law covering:

- Planning on the on-site sanitation (spatial and urban planning, sewage network development environmental protection, financial planning);
- Sanitation at point of use (requirements for access to and use of sanitation facilities for different population groups and type of facilities and related aspects of privacy, quantity, menstrual hygiene, cleaning and maintenance, monitoring, etc.);
- Containment and/or on-site sanitation treatment – household and institutions (related to technical standards for building an on-site sanitation facility, authorization and

registration, effluent standards, management of liquid effluent, discharge of wastewater, treatment. control of nuisances, operational and worker health and safety, monitoring);

- Emptying of on-site sanitation facilities (related to Standards for equipment for emptying of septic tanks, quality of service, licensing, setting the fee for emptying service, worker health and safety, environmental protection, surveillance and monitoring);
- Transport of excreta and wastewater to treatment (related to standards, permitting and licensing, worker health and safety, environmental protection, surveillance and monitoring;)
- Treatment plants that receive fecal sludge from on-site sanitation (related to standards for safe treatment, treated effluent and sludge, emission limit values exceedance management, control of effluent quality, Reuse of treated effluent worker health and safety, environmental protection, surveillance and monitoring;
- Treatment plant sludge management (SM) (requirements for surveillance and monitoring, SM treatment, pathogen inactivation, control and reduction of antimicrobial resistance, for sludge use / disposal, for sludge disposed of after treatment in treatment plant)
- Costing and financing of national and local implementation plans addressing components of sanitation chain

Table 2. Identified gaps in Serbian policy framework related to the safe management of on-site sanitation at national level

Dimension	Aspect	Identified gap
Planning	Water protection against dispersed sources of pollution (septic tanks, pit latrines, etc…)	Priorities for dispersed sources of pollution such as septic tanks, pit latrines, etc. are not defined as a separate priority in the Strategy on water management on the territory of the Republic of Serbia until 2034, but only under a) Priorities for concentrated sources paragraph 4 and 5 through building of sewerage network. Priorities for water protection from sources of pollution are not defined as a separate priority in the Strategy of Public Health in the Republic of Serbia 2018–2026, section 4.2.3 Improving the supply of healthy drinking water
	Keeping of on-site sanitation systems cadaster	Keeping of on-site sanitation systems cadaster is not the subject of identified and reviewed plans
	Sanitation safety plan in place or risk management approach required	Sanitation safety planning approach is not addressed in any planning, strategic or regulating document
Sanitation / excreta disposal / point of use	Access to and use of non-shared household toilets	Access to and use of non-shared household toilets is not explicitly addressed in regulation; however, definition of septic tanks as auxiliary

		building that is located on the same plot on which the main residential, business or public service building was built or can be built, as well as auxiliary space within a apartment. These could implicate that toilets are not shared between different apartments, but still individual household or buildings with less than 3 apartments are not covered.
	Requirements for menstrual hygiene facilities for women (such as provision of private cabinet for washing; sanitary bags and closed bins for safe disposal of used menstrual products) in institutions (schools/preschools, healthcare and social care facilities)	Requirements for menstrual hygiene facilities for women are not prescribed: • patients and staff in HCFs • staff in preschool facilities • pupils and staff in schools • users and staff in social care facilities
	Handwashing facilities available at the toilet (shared/public and institutional)	Sanitary facility or sanitary unit is not defined in the definitions under the rulebook, but could be considered as both toilet bowl and hand washing facility in broader sense (differences in terminology across languages) The Rulebook on general sanitary conditions that must be provided for facilities subject to sanitary supervision can be applied for all health care, social care and educational facilities, but this does not include individual households.
Containment and/or on-site sanitation treatment – household and institutions	Will be complemented with information from local self-government and service providers in the next project phase	Will be identified in the next project phase
Emptying of on-site sanitation facilities	Licensing for emptying service providers	Rulebook on conditions regarding technical-technological equipment and organizational and personnel qualification for performing activities in the field of water management, as well as on the manner of keeping records of issued and revoked licenses ("Official Gazette of RS", No. 23/12 and 57/13) determines the conditions that public companies, ie other legal entities must meet in order to perform the service of collecting, draining and treating wastewater through the public sewerage system, but not the conditions for providing

		septic tank emptying services.
Transport of excreta and wastewater to treatment	Permitting and licensing	1.Rulebook on conditions regarding technical-technological equipment and organizational and personnel qualification for performing activities in the field of water management, as well as on the manner of keeping records of issued and revoked licenses ("Official Gazette of RS", No. 23/12 and 57/13) determines the conditions that public companies, ie other legal entities must meet in order to perform the service of collecting, draining and treating wastewater through the public sewerage system, but not the conditions for providing septic tank emptying services. 2.The Law on Waste Management regulates the types and classification of waste; waste management planning; waste management entities; responsibilities and obligations in waste management; organizing waste management; management of special waste streams; conditions and procedure for issuing permits; transboundary movement of waste; waste reporting and databases; waste management financing; supervision, as well as other issues of importance for waste management. The provisions of this law do not apply to: 6) faeces, if they are not covered by paragraph 2, item 2) of this Article; The provisions of this Law, to the extent that waste management is regulated by other regulations, shall not apply to: 1) wastewater; 2) by-products of animal origin, including derived products to which veterinary regulations apply, other than those intended for incineration, use in biogas plants or composting plants or disposal at a sanitary landfill under special conditions, in accordance with special regulation;
Treatment plants that receive fecal sludge from on-site sanitation	National standards / guidelines for treated effluent	In the relevant national legislation, the discharge of treated effluent into the recipient is assumed in which case prescribed Emission limit values (ELVs) must be met. Requirements for reuse of treated effluent are not prescribed yet. With the Article 98 the Law on Waters, Combined approach prescribed by Water

		Framework Directive (2000/60/EC) is introduced into national law. It is taken into account in the process of water permitting and IPPC permitting.
Treatment plant sludge management (SM)	SM services (who provides, responsibilities)	Not systematically arranged, on case to case basis
	Monitoring of performance of SM services	It has not been addressed in regulation, yet
	Requirements for control and reduction of antimicrobial resistance	It has not been addressed in regulation, yet
	Is the waste to resource recognized and addressed in sanitation sector	It has not been addressed in regulation, yet
	Requirements for sludge use / disposal	It has not been addressed in regulation, yet
Costing and financing of national and local implementation plans addressing components of sanitation chain	Will be complemented with information from local self-government and service providers in the next project phase	The financing of that sanitation is done through the price of the service. The costs of infrastructural equipping of the plots i.e., the construction of onsite sanitation facilities and accompanying installations, as well as maintenance and emptying service are borne by the individual owners of the facilities. Local self-government units do not plan and do not allocate funds from the budget for these purposes, except in cases of public facilities such as preschools or health centers, when it is part of the total investment. When it comes to the costs for the purchase and maintenance of equipment for emptying septic tanks, they are included in the price of the service that the operators who perform these tasks provide to the users. In the case where the PUC is the operator the revenues from the service of emptying septic tanks, as well as the associated costs of work, current costs and depreciation, represent, as a rule, a maximum of several percents of entire budgets of these companies.

4.1.2 Existing institutional set up and responsibilities related to the management of on-site sanitation

Adequate institutional framework and good organization of the water sector, with sufficient and competent professional staff and a satisfactory material base, are a prerequisite for the successful functioning and development of the water sector.

In general, wastewater disposal is regulated at the municipal level. Responsibility for providing people with safe drinking water and sanitation services belong to a local self-government. Local self-governments have entrusted the provision of WASH services to public utility companies established in each of 150 municipalities. Their work is regulated by the Law on Communal Activities and cover centralized drinking water supply and sewerage, predominantly prevailing in urban areas. However, there are some suburban areas connected to on-site sanitation systems. The majority of the rural population rely on on-site sanitation systems that are regulated by the local decision on wastewater management in rural areas established by the local self-government in each of the 150 municipalities. Although these local plans are based on Ministry of Infrastructure's Law on Municipal Wastewater Management, they are not uniform and to varying degrees and manners cover and regulate different aspects of on-site sanitation in rural areas.

The primary responsibility for water management is delegated to the Ministry of Agriculture, Forestry and Water Management (MAFWM) and the Ministry of Environmental Protection (MEP). Provincial secretariats, public water management companies, local self-governments and public utility companies are responsible for the implementation of the requirements.

Republic Water Directorate within the MAFWM, with its Department for Water Protection and Department for Strategic Planning, has the main responsibility for implementation of the Directive, once in place.

Collection and treatment of urban wastewater is carried out by about 150 public utility companies. Most of them perform also other utility services and activities. Public Utility Companies are established and they operate following the Law on Communal Activities which is within the competence of the Ministry of Construction, Transport and Infrastructure. According to the Strategy for Water Management in the Republic of Serbia up to 2034, such division of responsibilities, along with insufficient inter-sectorial coordination and cooperation, does not ensure efficient sanitation management.

Water management is the responsibility of the Government. The Government carries out this activity through the Ministry and other ministries, bodies of the autonomous province, bodies of local self-government units and public water management companies. It should be emphasized that there is a functional dependence between these entities and only their coordinated activity can ensure the successful functioning and development of the water sector.

According to the Law on Waters, the local self-government is responsible for water management of the second order, issuing water acts for facilities of local importance, as well as acts for discharging wastewater into the public sewer (Local legal acts i.e. Decision). Among its most important activities, there is the performance and development of communal activities (collection and treatment of wastewater, etc.), which is regulated by a special law.

Activities of general interest related to water management in a certain territory are operationally performed by public water management companies. These companies prepare plans and programs, organize the maintenance of water facilities and systems in public ownership and flood defense and protection against erosion and torrents, prepare opinions for the issuance of water acts, identify surface water bodies and groundwater intended for human consumption, keep registers of protected areas and an information system for its territory.

According to the Constitution and the Law on Local Self-Government, arranging, ensuring the performance and development of communal services is one of the original competencies of the municipalities. In that sense, the management of communal waters i.e., water supply and collection and treatment of wastewaters, is the responsibility of local self-

government units, and they are obliged to create conditions for appropriate quality, scope, availability and continuity, as well as supervision over service provision. To perform these activities, local self-governments establish public utility companies (PUCs).

A special place is occupied by communal companies that deal with water supply and sewerage, which operate in accordance with the law governing communal activities and the law governing local self-government. These companies, most often in the status of public utility companies (hereinafter: PUCs) established by local self-government units, provide organized supply of drinking water to the population and other users and collect wastewater, treat it and discharge into recipient. The obligation to obtain an appropriate license for technical and technological equipment and organizational and personnel training also exists for these companies, which is a prerequisite for a satisfactory and uniform level of service in this area throughout the Republic of Serbia. The Republic Water Directorate conducts the licensing procedure for these companies as well.

In addition to the mentioned entities, special organizations within the state administration and local self-government and public companies and other organizations operating outside the water sector also deal with activities in the field of water.

Chambers of commerce also have their place, within which certain activities in the field of water are monitored and directed, as well as public companies related to forest management and energy resources.

Scientific research organizations and institutes (IJČ, Institute of Hydrotechnics and Water Ecological Engineering, Siniša Stanković Institute, Geological Survey of Serbia, etc.), faculties, design and planning organizations, as well as construction, industrial and other companies with service.

4.1.3 Water protection against pollution

Adopting the Law on Waters in accordance with EU directives, emphasis in this area is placed on the aspect of environmental protection, i.e. achieving environmental goals. A combined approach has been adopted, which includes on-site pollution control, through the establishment of emission limit values and environmental quality standards. The "polluter pays" principle has also been introduced, which should enable, in addition to better protection of water quality, a higher degree of financing of the water sector.

The fact is that the current situation in the field of water protection against pollution is primarily a consequence of lack of funds, primarily for the construction and maintenance of wastewater treatment plants, both settlements and industrial and other consumers, and not the absence of adequate regulations.

The population connected to the sewerage and industrial plants represent the most significant concentrated sources of pollution, while dispersed sources of pollution include all surface and underground loads of substances that may constitute "pollution" and which directly or indirectly reach watercourses, and originate from: the population not connected to the sewer, inadequate tillage and leaching from forest and soil surfaces (due to inadequate forest and land resources management), livestock, unregulated communal landfills and other human activities. These make a significant pressures and impacts on water resources from dispersed sources of pollution.

Part of the scattered sources of pollution is the population that is not connected to public, but to individual sewage systems (or other types of sanitation with a negligible impact from the aspect of water protection from pollution). It is estimated that 12% of organic pollution, 15% of nitrogen and 15% of phosphorus reach the water.

The results of this qualitative assessment have been aggregated in this report and presented at the national workshop on sanitation.

4.2 The results of the survey on local self-government with respect to the management of on-site sanitation

4.2.1 General information on the local self-government units

72 local self-government units (LGUs) participated in this survey:

- Western Serbia and Belgrade: 26 LGUs,
- Eastern and Southern Serbia: 26 LGUs,
- Autonomous province (AP) Vojvodina: 20 LGUs.

In this survey all 150 local self-government units were electronically invited to participate in the survey, of which 72 (about 50%) responded. Out of that, 52 local self-government units are municipalities (72.2%), 3 are city municipalities (4.2%), and 17 are cities (23.6%). The distribution of local self-government units as participants in the research is shown in Figure 1.

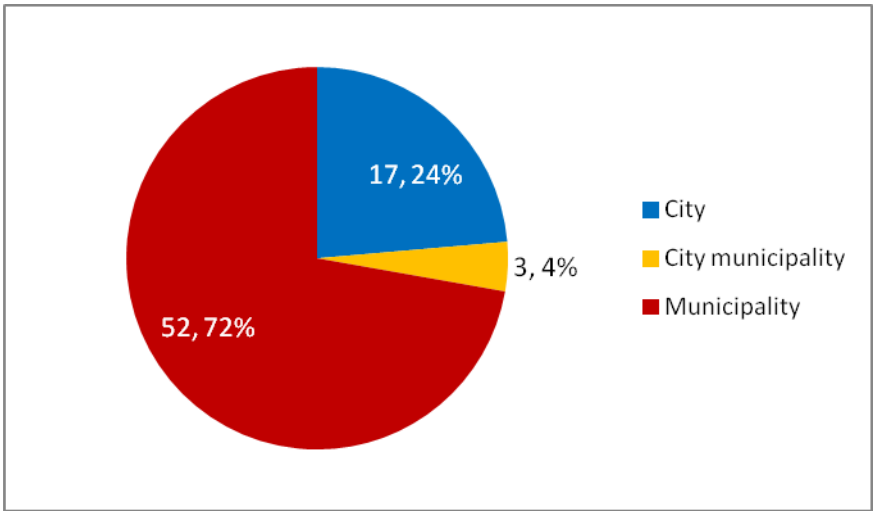

Figure 1. Distribution of local self-government units by type

According to the available data from the census, it was determined that the number of inhabitants in the local self-government units ranges from less than 20 thousand to over 100 thousand. Almost one half of participating local self-government units has less than 20,000 inhabitants. The distribution of local self-government units by population categories is shown in Figure 2.

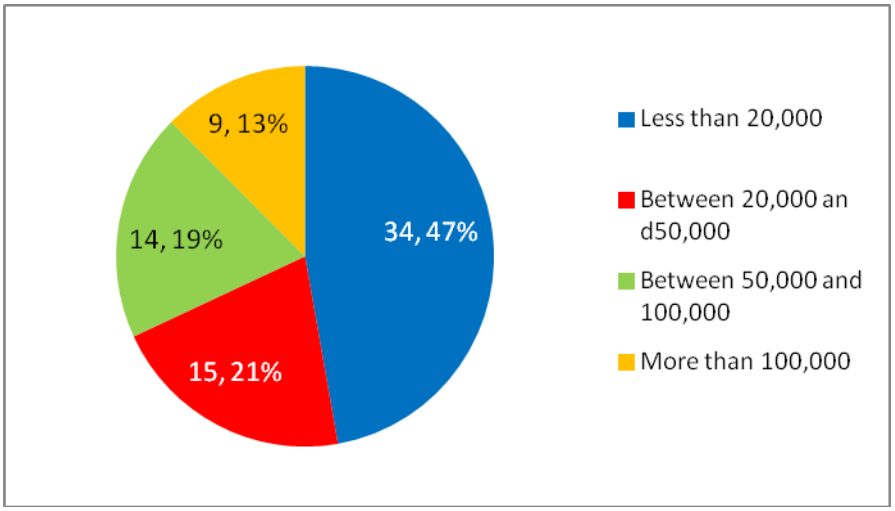

Figure 2. Distribution of local self-government units according to the number of inhabitants

The average number of households on the territory of the local self-government unit is 22379, and ranges from 1474 to 606433 households. The average number of school and preschool facilities on the territory of the local self-government unit is 39, ranging from 2 to 890; the average number of health care facilities is 12, and ranges from 1 to 92 per local government unit.

The predominant economic activities of local self-government units, namely agriculture, industry and services, are shown in Figure 3. The most local self-government units, 44 of them, stated agriculture as the predominant type of economic activity, one quarter (17 LGUs) stated industry, while 10 LGUs state services as the predominant type of activity.

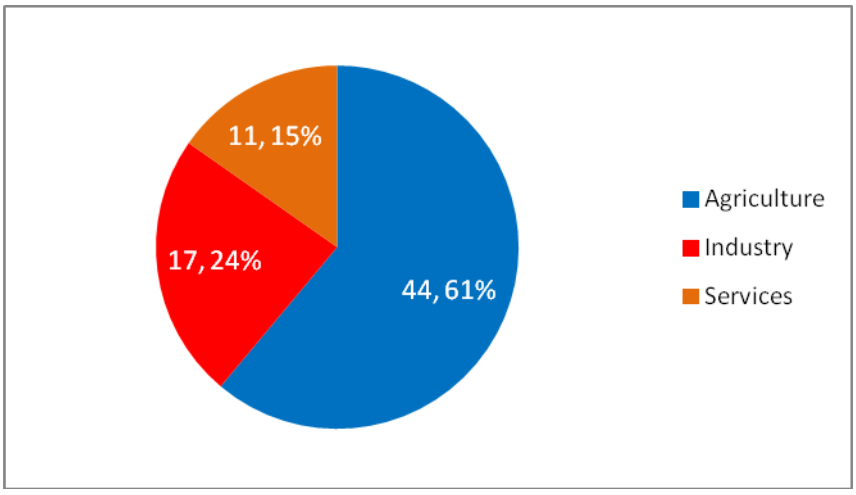

Figure 3. Distribution of local self-government units by economic activities

The distribution of local self-government units according to the level of development is shown in Figure 4. One third of the participating local self-government units belong to the first and second groups, whose level of development is either above the national average (according to the national regulation), or between 80 and 100% of the national average; one third of LSG units belong to the third group whose level of development is between 60% and 80% of the national average; one third of local self-government units belong to the fourth group of development and devastated areas, whose level of the development is less than 60% and 50% of the national average, respectively.

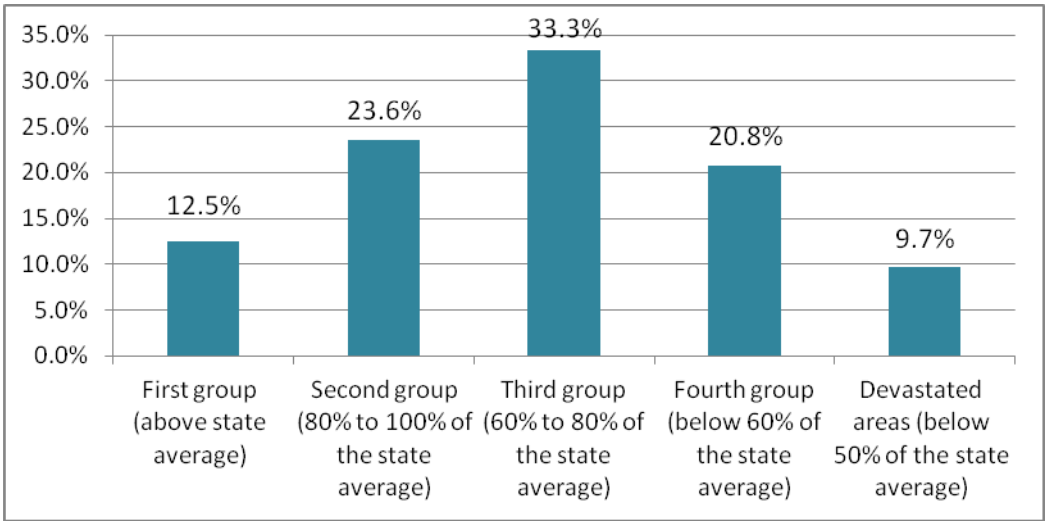

Figure 4. Distribution of local self-government units by the level of development

4.2.2 Management of emptying, transport and treatment of fecal sludge from pit latrines, septic and holding tanks and small-scale sewage systems (up to 2000 PE) at the local self-government unit

Assembly Decisions governing the performance of utility services

Pursuant to the current Law on Communal Activities ("Official Gazette of the RS", No. 88/11, 104/16 and 95/18, Article 4 and Article 13), the local self-government unit (LGU) regulates the conditions for performing communal activities, the rights and obligations of the users of communal services, the scope and quality of communal services and the manner of performing supervision over the performance of communal activities, providing in particular the appropriate coverage, scope and quality of communal services.

Observing the question, whether the Assembly of the local self-government unit brought a decision, that regulates the performance of communal activities with respect to treatment and drainage of the atmospheric and wastewater, three quarters of the local self-government units answered affirmatively (54 LGUs, 75%), and only one quarter negatively (18 LGUs, 25%), irrespectively of the type, the size and the level of the development of the local self-government. In general, the most of these decisions were officially adopted in the last 5 to 10 years at the level of local self-government.

More than two thirds of the examined local self-government units issued the decision (35 local self-government units) or some other act or document (13 local self-government units) which regulates the performance of utility service related to emptying, transport and treatment of fecal waste from septic and holding tanks. One third of participating local self-government units (33.3%) has brought neither a single document nor a decision that regulates this communal activity. It is noticed that decisions or other documents on the organization of work in this area were brought in over 80% of cities, in all three city municipalities and in 60% of municipalities, but the difference between them is not statistically significant.

The definition and regulation of various aspects and the dimensions for performing communal activities related to emptying, transport and treatment of faeces from septic and holding tanks, soak pits, leach fields, etc. differ between local self-government units. The most regulated aspect are the conditions for the construction of septic and holding tanks, where 51 local self-government units or 75% of LGUS had it regulated out of which 10% done it only partially.

When it comes to the technologies for the on-site containment, storage and treatment of fecal matter, only 16 (25%) of local self-government units had it regulated by the decision. In these cases, the following types of technologies are regulated: flush toilet with septic tank connected to a soak pit or leach field (3 LGUS), flush toilet with single pit or open-bottomed tank, dry toilets with single pit (abandoned when full), flush toilet with twin pits for alternating use, dry toilet with collecting pit (left when full), dry toilet with double pit (fossa alterna) (one LGU per type), and none of the participating LGUs regulated composite toilets.

The local self-government units have defined and regulated to a certain extent (arround a half of the positive answers) the following aspects related to the emptying, transport and treatment of faecal sludge from septic and holding tanks and collection pits:
• Operation and maintenances of septic and holding tanks (46.4%, partially 11.6%)
• Manner of submitting requests for pumping and transport of fecal waste from septic and holding tanks (30.9%, partially 16.2%)
• Time limit for the provider of utility service involving storm water and wastewater treatment and drainage to perform the pumping and transport of fecal waste from septic and holding tanks upon receiving a request of a septic or holding tank owner (32.3%, partially 10.3%)
• Method of pumping of fecal waste from septic and holding tanks (39.1%, partially 10.1%)
• Method of transport of fecal waste from septic and holding tanks (37.7%, partially 14.5%)
• Type of vehicles for transporting fecal waste from septic and holding tanks (46.4%, partially 5.8%)
• Place where fecal waste from septic and holding tanks is discharged / disposed of (47.8%, partially 5.9%).

To a lesser extent (arround a third of positive responses) the following aspects are regulated:
• Method for maintenance of pit latrines (21.7%, and partially 8.7%)
• Disinfecting procedure for vehicles for transporting fecal waste from septic and holding tanks (22.1%, partially 4.4%)
• Quality control of discharged waters (23.9%, partially 4.5%)
• Procedures and time limit for abandoning septic and holding tanks (20.9%, partially 5.9%)
• Requirements and conditions to be met for service providers (operators) for emptying, transport and treatment services (22.1%, partially 5.9%)
• Occupational health and safety of workers performing fecal waste pumping, transport and treatment services (26.5%, partially 2.9%)
• Protection of pedestrian zones and streets from fecal waste spillage during transport (22.1%, partially 10.3%)
• Actions in emergency situations (threatened environmental and human health) (26.9%, partially 9.0%)
• Elements for pricing utility service involving pumping and transport of fecal waste from septic and holding tanks (32.8%, partially 4.5%)
• Payment relief for special user categories (20.9%, partially 6.0%)
• Keeping records on the supervision of septic and holding tanks (32.3%, partially 10.3%)
• Frequency of emptying the contents of septic tanks and collection pits (28.8%, partially 18.2%).

The following aspects are the least regulated less than a quarter of positive responses):

- Operation and maintenances of on-site technologies for containment and storage/treatment of wastewater and fecal sludge (8.7%, partially 10.1%)
- Fecal waste treatment method in the treatment plant (16.2%, partially 7.3%)
- Fecal waste treatment methods during transport (such as mixing, dewatering, aerobic digestion) (3.0%, partially 4.5%)
- On site treatment method for fecal wastewater (proposed: reduction of pathogens, aging of liquid and solid fractions, disinfection) (majority 2.8%, except for removal of liquid fraction (15%) and disinfection (10%))
- Requirements for sludge disposal and reuse after treatment (2.9%, partially 2.9%)
- Control of unpleasant odors, insects and noise during containment of fecal wastewater (6.0%, partially 10.4%)
- Control of unpleasant odors, insects and noise when pumping fecal waste sludge (6.0%, partially (4.4%, partially 10.3%)
- Control of unpleasant odors, insects and noise during treatment at the plant or other disposal sites (4.4%, partially 8.8%)
- Monitoring the quality of provided service (16.4%, partially 10.4%)
- Keeping a register of emptying septic tanks and collection pits (13.2%, partially 10.3%)
- Specific management requirements and methods for pumping, transport and treatment of fecal waste from septic and holding tanks from schools (10.4%, partially 4.5%)
- Specific management requirements and methods for pumping, transport and treatment of fecal waste from septic and holding tanks from healthcare facilities (10.4%, partially 3.0%), and
- Reporting on performed activities related to small on-site sanitation management by service providers (9.1%, partially 10.6%).

Additional comments on the content and regulate aspects in the decisions was given by 19 local self-government units and refer to their weak enforcement and implementation due to poor and inadequately equipped public utility companies (service providers), planned revisions of existing decisions, and that some of the mentioned aspects are regulated by other laws and bylaws (Law on Communal Activities, Law on Water).

The elements that are prescribed for the construction of septic and holding tanks and collection pits are (from the most common to the least listed):
• Impermeable,
• properly located,
• at the proper distance from other facilities,
• enough far from groundwater and watercourses or water supply sources
• not built on a public area,
• discharge opening present,
• ventilation cover present,
• prescribed number and dimensions of chambers applied,
• spillage from the pit prevented,
• conditions for regular emptying provided, as well as the discharge into the public sewerage and environmental protection,
• regular disinfection of the septic and holding tanks,
• using a dug well for pits prohibited,
• discharge of the wastewater from the septic tank into the natural recipient prohibited,
• access to rodent insects is prevented.

In most cases, the emptying of septic and holding tanks and collection pits is being performed when the pits are filled, either by order of the inspector or on user request.
It is noticed that the quality of semi-tretaed wastewater from septic tanks and collection pits is not prescribed aspect or element when it comes to the construction requirement for these on-site sanitation facilities.

Scope and management of utility services

Performing communal activities, the treatment and the drainage of atmospheric and wastewater is provided on the entire territory of the municipality in only 13 (18.1%) local self-government units. Differences between cities and municipalities were noticed. Out of 15 cities, only one half (8 local self-government units, 47%) have secured this activity on the entire territory, none of the 3 city municipalities, and only 5 (10%) municipalities. There are also differences in the level of development. Out of 13 LGUs that have secured the performance of this activity on the entire territory, 9 of them (69.2%) belong to the first and second level of development, and 4 LGUs (30.8%) belong to the third group. There is not a single local self-government belonging to the fourth group of development or devastated areas that has ensured the performance of this activity on the entire territory of the municipality.
On the other hand, communal activities related to emptying, transport and treatment of faecal wastewater from septic tanks and collection pits on the entire territory of the municipality where there is no public sewerage network is provided by one half of local government units (40 LGUs, 55.6%). However, when the level of development is taken into account, it can be noticed that 70-85% of local self-governments belonging to the fourth level of development and devastated areas do not have this activity, as well as 30% of local self-governments from the third and second level of development, and only 11% of local self-governments .
The number of settlements on the territory of the local self-government unit that are not connected to the public sewerage network ranges from zero to 600 (average 36 settlements on the territory of the local self-government). The percentage of households not connected to the public sewerage network is shown in Figure 5. In general, in half of local self-government

units less than 50% of households are connected to the public sewerage network, and in the other half more than 50%.

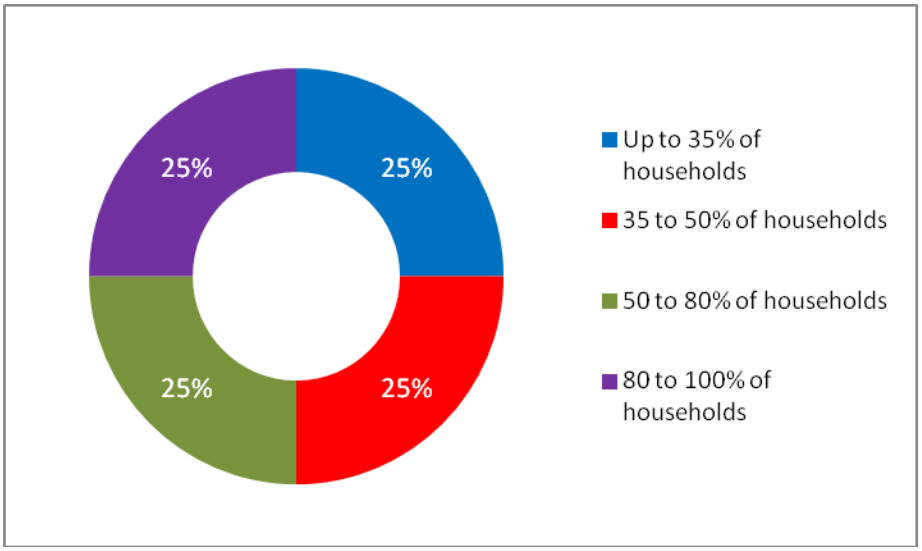

Figure 5. Percentage of households on the territory of the local self-government unit that are not connected to the public sewerage network

Providers of emptying, transport and treatment of feacal sludge from septic and holding tanks and collection pits are:

- public utility companies,
- private entities,
- individuals.

Almost all local self-government units listed the names of public utility companies and other entities that perform the service of emptying, transport and treatment of fecal sludge from septic tanks on their territory. However, there are individuals who perform this service, even without the supervision of local self-government units.

The records of communal service providers for the treatment and drainage of atmospheric and wastewater were established by 33 (45.8%) local self-government units, but only 8 of them (11.1%) keep special records on communal service providers who perform emptying, transport and treatment of fecal sludge from septic tanks. These records are very poor and incomplete and contain the following elements: the number of emptying on a monthly basis, data on equipment for emptying and transport of fecal sludge and data on staff performing the activity.

Unfortunately, most local self-government units did not prescribe special conditions when entrusting the business of emptying, transport and treatment of faecal sludge from septic tanks to other legal entities. Eventually, it is prescribed that individuals with the written consent and approval can perform activities using a specialized / dedicated vehicle (tank) for the transport of fecal sludge, which excludes the transport of inadequate vehicles (tractors, etc.).

Finally, almost two thirds of local self-government units keep a local register of environmental polluters and sources of pollution, prescribed by Article 75 of the Law on Environmental Protection (44 LGUs, 61%). It is noticed that in most cases they are cities (15 out of 17 cities), only half of all municipalities (29 out of 52 municipalities) and none of the 3 city municipalities, where the described differences are statistically significant.

4.2.3 Inspection surveillance over management of containment, emptying, transport and treatment of faecal sludge on-site

Inspection's overseeing is being performed over on-site sanitation at the level of the local self-government units. In total, in 51 local self-government units (70.8%) the inspection is performed only on the basis of a user's request or complaint, in only 2 local self-government units (2.8%) regular inspection's surveillance is performed on the basis of a surveillance plan and in 18 LGUs (25.4%) it is a mix of both, on the user's request and planned (regular).
Out of the total number of respondents, in one third of the local self-government units the communal inspection prepares an annual plan and a control or checklist for observing and monitoring on-site sanitation (24 LGUs, 33.3%), while in two thirds of local self-government units there are no annual plans or control lists. In these plans, individual households are mostly represented supervised entities, followed by schools, preschools and health facilities. The average realization of the annual plan is 65%, but only 26 units of local self-government answered this question.
In more than half of the local self-government units (38 local self-government units, 52.8%) the priorities for the inspection related to wastewater and fecal sludge emptying and transport are based on the risk assessment and are proportional to the assessed risk, while in other local self-government units that is not the case. The assessed level of the risk for collection, emptying, transport and treatment of fecal sludge from on-site sanitation is medium in 42% of participating local governments, low in 32% of LGUs, high in 16% of local LGUs, and either critical or negligible risk is reported in 2 local self-government units (5% of responses).

Control lists or checklists for monitoring on-site sanitation systems mostly contain only two following elements that are being inspected at the level og LGU:

- Regular emptying of on-site sanitation systems (septic tanks, holding tanks, pit latrines, etc),
- Uncontrolled spillage of contents on public and other public areas.

Aspects that are not covered by the control or checklists for the monitoring of on-site sanitation systems at the level od LGU are the following:
• Maintenance of on-site sanitation systems,
• Compliance with construction requirements,
• Design in line with requirements (distance from water supply source, number of chambers, etc.),
• Disinfection upon emptying,
• Onsite treatment (bio septic tank, mini purifier, etc.).
These aspects should be considered and included in inspection lists.

Unfortunately, none of the participating local self-government units maintains an electronic database by categories of users (households, schools, healthcare facilities) based on collected data from the checklists.

The report on inspection's surveillance is submitted to the following bodies of local self-government units: assembly of local self-government (one third), council of local self-government (one half), commission for inspection's surveillance (one half of answers), and also to the following legal entities: communal inspection, coordination body for inspection supervision, municipal commission for inspection supervision, revision agency, and

competent republic inspection. It seems that the reporting on the surveillance results is not precisely defined and regulated at local level and should be improved.
The local self-government units themselves submit a report on performed inspections, usually to the coordination commission (one half of the answers), but not to the Ministry of Construction, Transport and Infrastructure or the Ministry of Environmental Protection (only one fifth of the answers), which leaves room for clear definition and improvement.

The report on performed inspections of on-site sanitation systems is available to the public through the web presentation of administrative bodies in 32 (44.4%) local self-government units

When asked on the concrete number of recoded sites where untreated wastewater drains into the environment (for example directly into a water body, private farm, or other area not intended for fecal sludge disposal) and that are not covered by the sewerage system of the public utility company for the following users, the unit local governments responded descriptively (avoiding direct referencing on numbers). Out of a total of 72 participating local self-government units, 23 local self-governments (33%) answered that they do not have data or do not keep records on the number of municipal wastewater discharges sites, but several of them also emphasized that they know that there are a large number of unregistered discharge sites. In 21 LGUs (28%) there are no recorded discharge sites. In this case, only the municipality of Lucani stated that there is not any discharge of wastewater without treatment, 7 LGUs stated "no" or "no recorded discharge sites", while the others reported the number 0. Also, no answer was entered for the city of Belgrade, so it is possible that among those who recorded zero (0) there are possibly those considered there were not recorded discharge sites, but there were not discharge sites at all. Only 20 local self-government units (26%) reported there are up to ten recorded discharges, while 8 local self-governments reported there are over ten outlets, out of which 3 local self-governments have got over one hundred registered discharge sites. Reported data do not provide clear and precise picture on the numbers of discharge sites of untreated communal wastewater into the environment, considering that there are very few LGUs that reported certain numbers of such sites.

A wastewater treatment plant exists in one third of participating local self-government

In 25 out of 72 local self-government units (34.7%) it was determined that there is a wastewater treatment plant (WWTP), and only 13 WWTPs (50% of those who have that facility) receive the contents of on-site sanitation systems. 4 LGUs reported that there is another type of treatment of fecal sludge from on-site sanitation systems.

It should be noted here that according to current information, slightly more than 50 wastewater treatment plants have been built in the Republic of Serbia in settlements with more than 2,000 inhabitants. Out of the constructed plants, 32 are in operation, of which a small number work according to the project criteria, while the rest work with efficiency far below the projected one. This study did not aim at detailed analysis of wastewater treatment plants, but when it comes to the efficiency of treatment of faecal sludge from on-site sanitation systems, it should be taken into account that WWTP construction and wastewater treatment is still a priority issue to be address in general, at the national level, including in urban areas with regulated sewage systems.
When asked if they know for any examples of good practice regarding the disposal or treatment of fecal contents from on-site sanitation systems, including small sewage systems,

respondents from only 8 local governments (11%) answered in the affirmative, citing mostly improved technical solutions in the construction of septic tanks, as well as small treatment plants of wastewater from small industry that are not connected to sewage systems and have biodegradable wastewater that is treated. There is only one case example of the faecal sludge reuse in agriculture form the small WWTP ("Podgorina frucht" from Osecina).
Examples of poor practice were given by 16 LGUs (22%). The most common case after emptying on-site sanitation system is the discharge of fecal contents to irregular place, directly into water recipients (rivers, streams, canals), into channels for drainage of atmospheric water, irrigation channels, into public or private areas, or even on agricultural land without prior analysis and treatment. The Municipality of Bački Petrovac reported the wet fields in Gložan as an example of bad practice, explaining that this technology of wastewater treatment does not give satisfactory results. Given that as many as 53% of respondents answered with "I'm not sure" when it comes to the examples of good practice, and 43% when the poor practice was in question, it seems that the issue of management of on-site sanitation is somehow out of focus and that raising awareness is necessary and needed.
When it comes to the measures taken by the local self-government unit to prevent environmental pollution originating from fecal wastes from households or institutions not connected to the public sewerage network, 38% of respondents had no answer or believed that the measures taken are not adequate. In 20% of the surveyed municipalities and cities, the construction of a WWTP, expansion of the sewerage network or subsidies for connection to sewerage, or a similar type of investment in technical terms is planned or in progress. In 42% of cases, the measures are more of an administrative type and relate to decision-making, prohibitions and regulations, inspection and application of punitive measures, prescribed manner of construction for septic tanks, use of PUC services and ensuring regular emptying of septic tanks. The results on this issue also contribute to the observation that it is necessary to intensify activities related to raising awareness of the impact of unsafe management of on-site sanitation to the environment and strengthening capacity on the safe management of SMOSS.

4.2.4 Planning in the field of sanitation at the level of the local self-government unit

Local self-government units generally have the adopted planning documents based on Article 11 of the Law on the Planning and Construction. Spatial plans were adopted by 67 local self-government units (93.1%); general regulation plans were adopted by 64 LGUs (88.9%); detailed regulation plans were adopted by over three quarters of the surveyed local self-government units (55 local self-government units, 76.4%). On the other hand, general urban plans were adopted by one half of the surveyed LGUs (30 LGUs, 50%), and spatial plans of the special purpose area were adopted by only 30 surveyed LGUs (41.7%), which is shown in Figure 6.

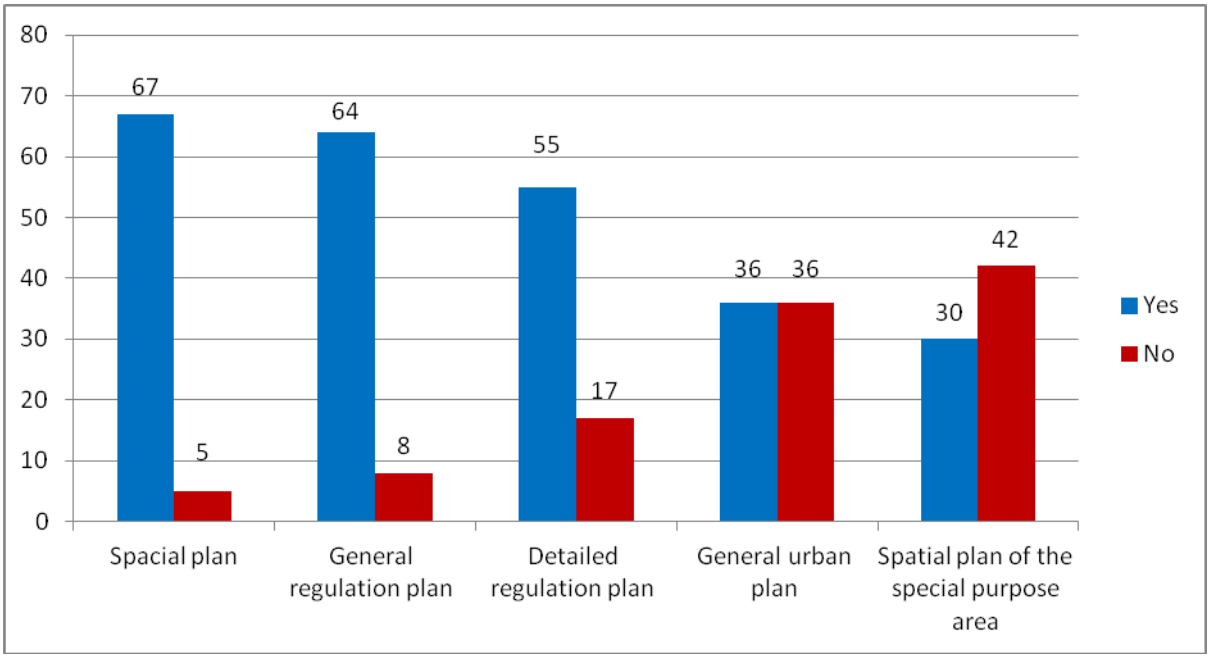

Figure 6. Number of local self-government units that have brought and adopted the following planning documents

Conditions and the requirements for the construction of septic tanks in most local self-government units are prescribed in the spatial plans of local self-government units (63.9%) and general regulation plans (51.3% local self-government units). A smaller percentage of LGUs prescribe conditions for the construction of septic tanks in detailed regulation plans (36.1% of LGUs), i.e. in general urban plans (22.2% of LGUs), as spatial plans of special purpose areas (only 13.9% of LGUs), which is shown in Figure 7.

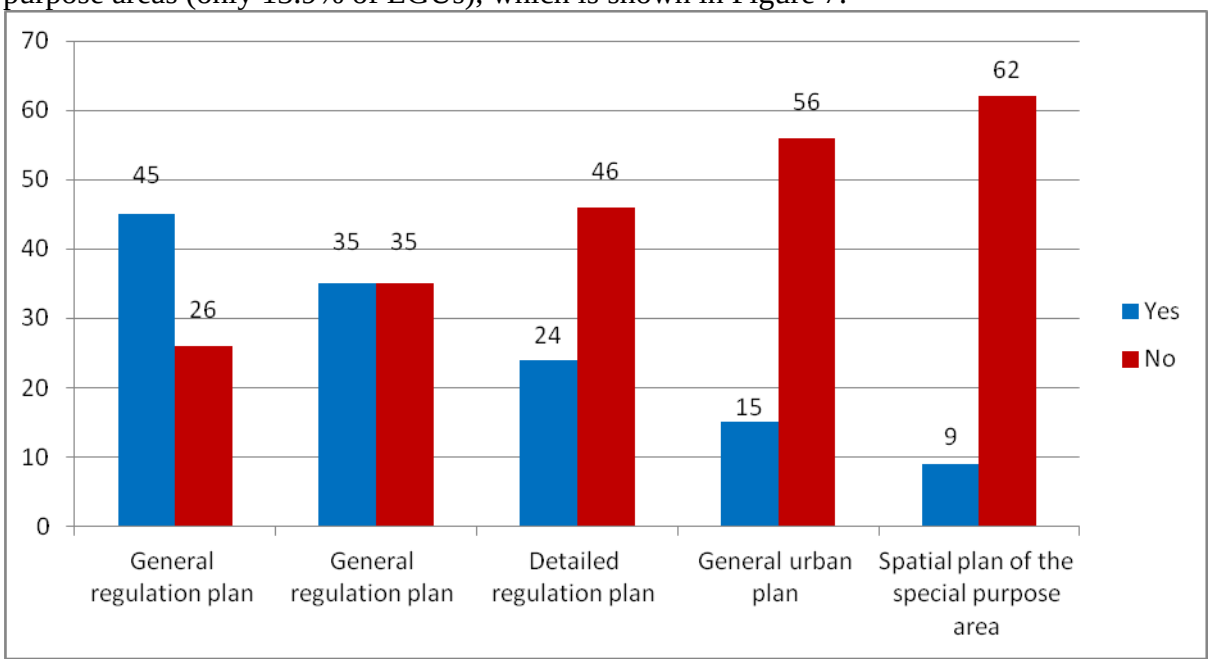

Figure 7. Types of planning documents with the prescribed conditions and requirements for the construction of septic tanks in local self-government units

These prescribed conditions for the construction of septic tanks, which are defined in the plans at the level of local self-government units, include the following:

• Construction elements and requirement for the septic tanks – dimensions (depth, width, volume); concrete watertight pits, with ventilation to remove gases that may be explosive;
• Information on usage purpose;
• Distance from: neighboring buildings, watercourses, wells, streets, fences of the complex, plot boundaries, regulation lines ...;
• Method of discharge - vehicles, the duration of the discharge process.

Unfortunately, it is recognized that projects related to the on-site sanitation systems and small sewage systems are neither the focus of project activities at local level, nor a priority in strategic documents, because more than two thirds of local governments in their strategic documents do not foresee and prioritize these activities (48 LGUs, 66.7%), which is shown in Figure 8.

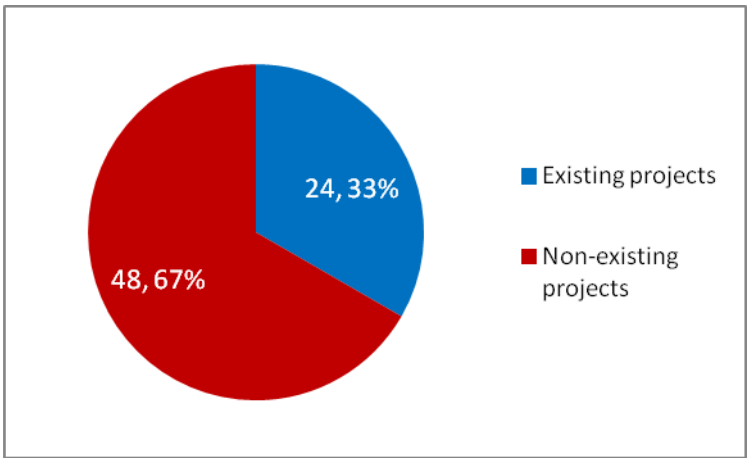

Figure 8. Project activities related to on-site sanitation systems and/or small sewage systems on the territory of local self-government units

In accordance with the abovementioned, only 24 local self-government units (33.3%) have projects related to the on-site sanitation systems and/or small sewerage systems, mostly related to the expansion of the public sewerage network (20 responses), construction wastewater treatment plants (18 responses) and construction of new small sewage systems (15 responses). Far fewer projects (1 to 5 answers) are aimed at introducing organized emptying of on-site sanitation technologies, subsidies for connection to the public sewerage network and construction of self-purifiers, introduction of green technologies, safe reuse of faecal sludge after treatment, construction of collection collectors, analyzing wastewater, biomass and energy management, and more.
Service users from the territory of the local self-government unit may submit a complaint, report a malfunction or inquire about the service in several ways: directly, by telephone, via the Internet and in other ways. The total number of registered complaints from users in the previous calendar year was 8464, while 8,301 were resolved or responded in an average 48 hours to a week.

The main challenges and shortcomings in managing of on-site sanitation systems at the territory of local self-government unit are:
• Lack of finance (60 LGUs, 83.3%);
• Terrain inaccessibility (36 LGUs, 50%);
• Changes in population size (25 LGUs, 34.7%);
• Lack of human resources (40 LGUs, 55.6%);
• Lack of project documentation (49 LGUs, 68.1%);
• Insufficient implementation of legislation (30 LGUs, 41.7%);
• Lack of systematic monitoring (39 LGUs, 54.2%);
• Other challenges and problems such as outdated project documentation, undefined recipients, lack of environmental awareness are cited in a small number of LGUs' answers.

4.2.5 Human resources for performing tasks involving emptying, transport and treatment of fecal sludge from septic and holding tanks and small-scale sewage systems

The segment of the analysis that deals with the situation and needs in terms of human resources capacity in local administrations for the performance of pumping, removal and treatment of faeces from septic tanks and collection pits and small sewage systems consisted of three closed issues. To the question whether the local self-government units assess the needs for human capacities in the area of performing communal services of pumping, removal and treatment of faeces, only 6 of them gave a positive answer (8.5%), while 65 LGUs (90.3%) answered that do not make such an assessment. A deeper analysis did not determine the correlation of this parameter with the size, type and development of the LSG units, because three cities and three municipalities of different sizes and levels of development gave positive answers.
Further analysis through the issue concerning the frequency of human capacity needs assessments revealed that out of only 6 local self-government units that perform this assessment, two of them do it annually, one every three years, two on an ad hoc basis, while one estimates its capacities annually, but also ad hoc as needed.
The local self-government units assessed the state of the capacity of the following services within the administration: the inspection service, the sewerage service, and the environmental protection service. Most local self-government units state that the current staff capacities in all three services in the subject area are less than 50%, while the capacities in the range of 50 to 75% and over 75% are filled in a smaller number of local self-government units, as shown in Figure 9. No differences were found between LSG units according to structure, population or level of development.

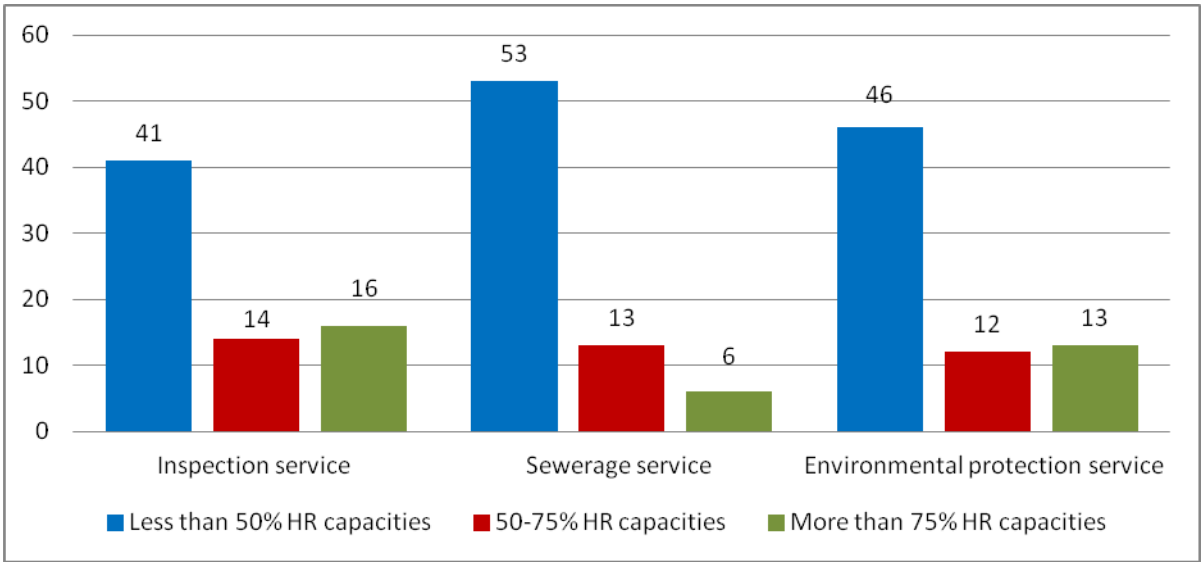

Figure 9. Current personnel capacities for pumping, removal and treatment of faeces from septic and collection pits and small sewage systems on the territory of local self-government units by sectors

4.2.6 Financing services and investments in the local self-government unit

Financing is an important aspect of the organization and functioning of communal activities. The Law on Communal Activities stipulates that activities in which the end user can be determined are primarily financed from tariffs, which is certainly the case with the activities of emptying, transport and treatment of faecal sludge from SMOSS. The law also determines the elements for tariff formulation, determinations and changes. As elements, the following are stated: expenses recorded in the financial reports, expenses for construction and reconstruction of communal infrastructure facilities and procurement of equipment, according to the adopted programs and plans of communal activity performers and profit of communal activity performers.

The local self-government unit is obliged to monitor tariffs, and especially their compliance with the principles set out in the Law (consumer pays, polluter pays, price sufficiency to cover business expenses, affordability and a single price for all users, unless the difference based on different costs for different categories of consumers). The decision on tariff changes of utility services is made by the utility operator, and the consent to this decision, for a number of activities and jobs, including emptying, transport and treatment of faecal sludge from SMOSS, is given by the competent local government unit.

Regarding the price for the service of emptying, transport and treatment of faecal sludge from individual households, school and preschool institutions, it is interesting to note that different prices are used in different local self-government units, while there are also cases where municipalities do not have insight into the price (20 out of a total of 72 responses), because their public utility companies do not perform those services and do not keep record on other private companies or entrepreneurs who offer these jobs to customers.

When it comes to the basis for calculation the cost for service, in some cases the service is charged per cubic meter of fecal content, somewhere the billing is done per tank emptying, there are cases where the billing unit is a ton, but also those where the working hour is the basis for calculation. Finally, in two cases, the price is calculated per tank and per kilometer of transport. It is interesting to note that in some cases the price for individual households in urban and rural settlements is different, as a rule it is higher in rural areas, as in the example

of the municipality of Blace. This can be explained by the higher costs that arise due to longer transport to rural zone, because the basic unit of account is the mobile tank, i.e. emptying.
Analyzing the situation in terms of the price for different categories of users, the largest number of participating local self-government units reported no differences in tariffs for different categories. However, in 21 local self-governments, the price for school and preschools and facilities for providing health services is higher than for individual households. No further analysis of the reasons for this situation of different tariffs for different user categories has been performed, but one of the assumptions could be that prices for individual households are subsidized.

When asked about subsidies for special categories of socially endangered consumers, such as socially vulnerable households, elderly households, persons with disabilities, national minorities, refugee camps migrant reception centers and unhygienic settlements, local self-government units gave various answers. Out of the 72 LGUs that participated in the survey, only 12 approved subsidies for some of the vulnerable groups. In addition, 11 local self-government units approve subsidies for socially vulnerable households, followed by the category of persons with disabilities, this category in seven local self-governments has a subsidized price, followed by elderly households, which are subsidized in four local self-governments, while all other categories are subsidized in one or two local self-government units.
When looking at this issue from the point of view of local self-government units, it can be concluded that two municipalities (Bujanovac and Surdulica) subsidize five different categories, while Subotica subsidizes four of them, including users who are entitled to allowance for assistance and care of another child. Kursumlija and Lucani subsidize three socially endangered categories, and Kanjiza two. Another six local self-governments subsidize only one category, five of them socially vulnerable households, while Blace subsidizes only persons with disabilities. The level of subsidies for socially vulnerable categories of beneficiaries ranges from 10 to 100%. The distribution of the number of subsidized socially vulnerable categories of beneficiaries in local self-government units is shown in Figure 10.

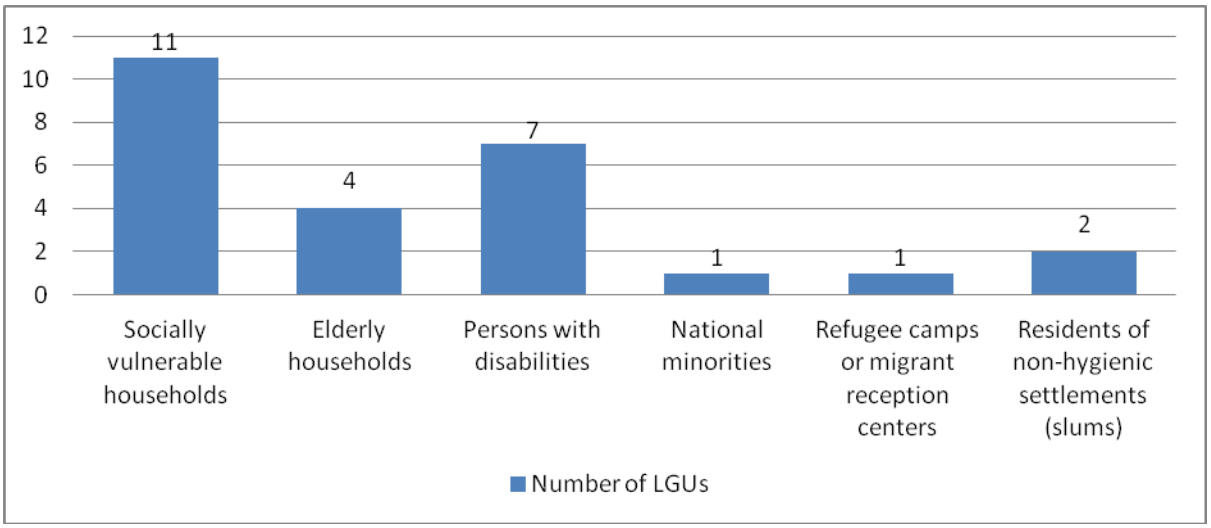

Figure 10. Distribution of the number of subsidized socially endangered categories of users in local self-government units

The average level of investment in regular operation and maintenance for emptying, transport and treatment of fecal sludge and in renovation of equipment for emptying, transport and treatment of fecal sludge on an annual basis in local government units is small. Out of the 72 participating LGUs, 42 reported a value of zero, which indicates that they do not have an wastewater treatment plant, two did not answer this question, and 28 of them entered a value other than zero. The answers to this question should be taken carefully, because the given values range from 100,000 to 500 million dinars. The relevance of the answer can be questioned due to the fact that Subotica entered a value of zero on this question, and it is clear that with two wastewater treatment plants it must have certain costs for these purposes.
The analysis of other databases, primarily those available through the Association for Water Technology and Sanitary Engineering, leads to the information that in fact only half of the local self-government units that have entered value for this issue have an operational facility. This difference can possibly be explained by investing in the development of technical documentation and other preparatory work.
When asking "what is the level of investment in the improvement and expansion of the public sewerage network system on an annual level", local self-government units mostly answered textually, i.e. 42 LGUs entered a value other than zero, and two LGUs did not give any answer. The stated values of investments range from 100,000 to 300 million dinars. Similar to the previous question, the answers are not consistent and cannot be taken with certainty.
Asking "what is the percentage of realized connections to the sewerage network in relation to the planned number for the previous year", 49 local self-government units entered a value other than zero, two did not give an answer, and 21 stated that they fulfilled 0% of the plan in the previous year. The percentages for those who entered the value range from 1 to 100%. It can be concluded that these questions are not clear enough and that they leave a lot of room for free interpretation of those who enter the answers, so they should consider reformulating them.

4.2.7 Coordination

Thoughout this segment of the survey, we wanted to determine whether there are mechanisms for public involvement and participation at the local level, as well as what is the cooperation between different organizational units, but also with other entities outside the administration, such as public utilities and international development organizations.

> Most local governments do not have an established policy / strategy for involving the public in policy making in the area of safe management of on-site sanitation systems.

62 (86.1%) do not have policy, strategy or procedure for involving the public or local communities in the policy making related to safe management of SMOSS, while only 9 of them (12.5%) adopted such documents. Further analysis revealed that there are statistically significant differences according to the size of local self-government units. Namely, out of 9 LGUs that have these policies or strategies, 7 of them (77.8%) are LGUs with more than 50 thousand inhabitants, and the remaining 2 (22.2%) are LGUs with less than 50 thousand inhabitants.
All local self-government units that responded that they have a policy, strategy or procedure for involving the public or local communities in the process of policy making related to SMOSS, stated that the mechanism for achieving regular consultation with local communities

is participatory budgeting and donations and cooperation with local public utilities are also listed. Non of participating LGUs has a "Green Council" as forseen the mechanism for pablic participation.

> Cooperation between organizational departments within a local self-government unit, as well as between local self-government units and other public sector is satisfactory.

When it comes to cooperation between organizational units within local self-government units in the sector of emptying, transport and treatment of faecal sludge from SMOSS, most LGUs assess it as satisfactory. The exchange of data between organizational units within a local self-government unit is also satisfactory on this issue. A slightly lower average score was observed with respect to cooperation with other public sector units, donors or partners. The assessment of the coordination of cooperation in the sector of emptying, transport and treatment of of faecal sludge from SMOSS is shown in Figure 11.

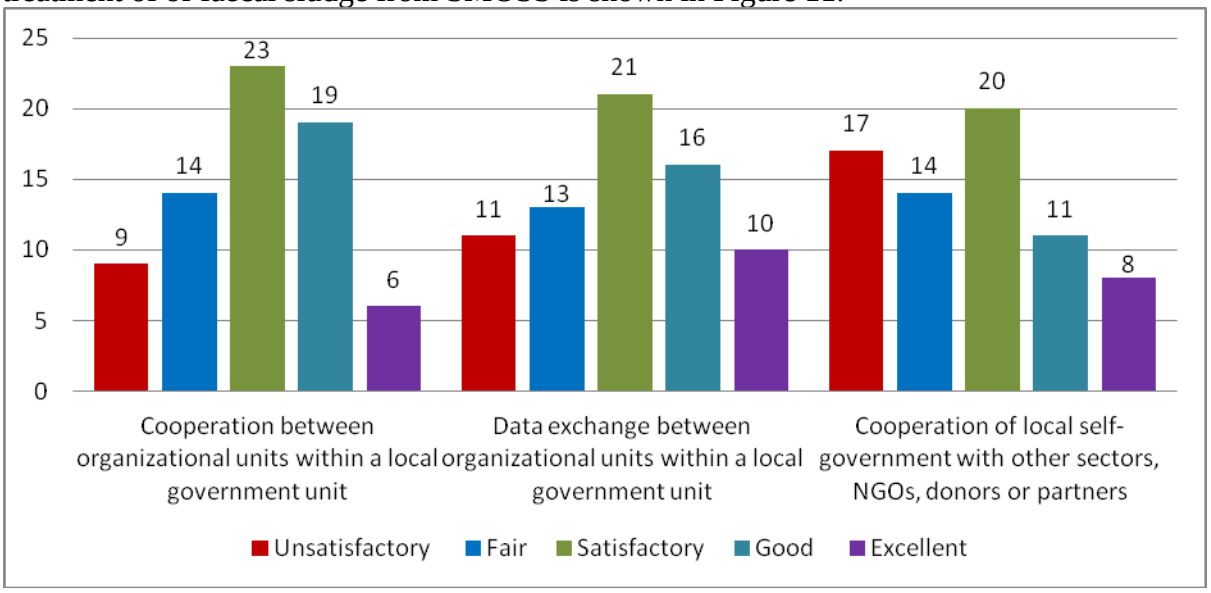

Figure 11. Assessment of the coordination and cooperation in the sector of emptying, transport and treatment of of faecal sludge from SMOSS

Finally, local governments were asked what is the area of the most active cooperation with partners or donors. The largest number of local self-government units actively cooperate in the field of the construction of infrastructure (53 LGUs, 73.6%), construction of wastewater treatment plants (51 LGUs, 70.8%), policy development, emptying, transport and treatment of of faecal sludge from SMOO (27 LGUs, 37.5%), as well as capacity building for monitoring (21 LGUs, 29.2%). Some local self-governments added that the cooperation refers to the expansion and reconstruction of the sewage system.

In that sense, most local self-government units do not cooperate with any development partner or donor in the field of emptying, transport and treatment of of faecal sludge from SMOO (30 LGUs, 44.1%). 26 local self-government units (38.2%) cooperate with only one development partner or donor, and 12 local self-government units (17.6%) cooperate with two or more partners, which leaves room for improvement in this area.

4.3 Survey results on service providers

4.3.1 General data about service providers

73 public utility companies from the territory participated in the research:

- Western Serbia and Belgrade (31 PUCs),
- Eastern and Southern Serbia (20 PUCs),

Out of the 73 public utility companies (PUCs) that participated in the survey, 22 are located in cities (30% of responses), and 51 PUCs in municipalities (70%).

Local self-government units establish public utility companies to perform comunnal activities. Out of 73 surveyed companies, 65 of them (89%) were established to perform several communal activities. Half of the surveyed public utility companies are licensed to perform wastewater collection, transport and treatment by the public sewerage system. Licensing for emptying, transport and treatemnt of fecal sludge from the on-site sanitation systems (e.g. septic tanks, holding tanks, pit lattrines, collection pits, etc.) has not been forseen in regulation, so far.

Only 28 surveyed public utility companies (38.4%) perform emptying, removal and treatment of faecal sludge from SMOSS throughout its territory, 6 PUCs (8.2%) perform operations on the territory of several local self-government units, while 32 companies (48.8%) perform these tasks only in a part of the territory of their jurisdiction. It was determined that 7 companies (9.6%) do not perform this activity, at all. This is shown in Figure 1.

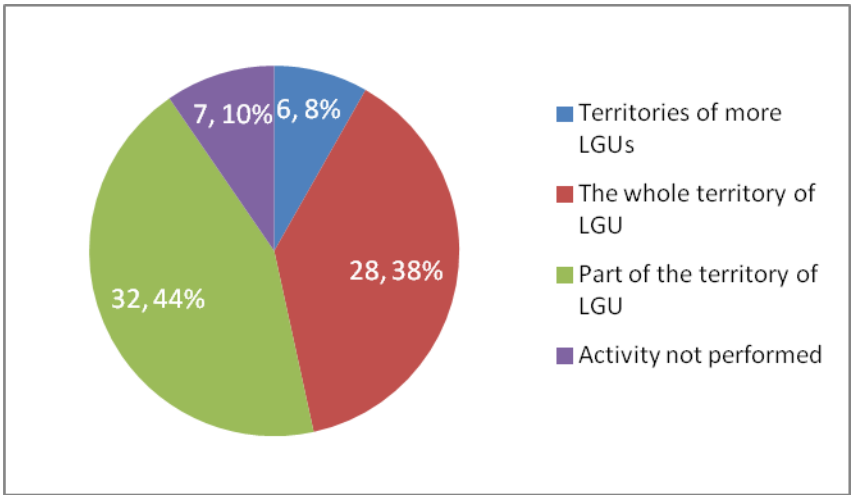

Figure 1. Distribution of public utility companies according to the territory of performing activities

In addition to public utility companies, emptying, removal and treatment of faecal sludge from SMOSS are performed by other private entities at the same territory. Only 15 (20%) public utility companies reported on exictance of such private entities. In these cases, they are mostly aware that those entities are actually individuals who preforme these services, but they do not know their number and do not keep records of them. According to the received data, only 5 public utility companies answered that private entities that perform

these activities are licensed (38.5% of the answers). In other cases, the criteria for the selection nad contracting of private entities are generally unknown, the public utility company does not have this information or they consider that the criteria are set by the local self-government unit. In a fewer number of cases, criteria refer to adequate technical and human resources capacities, including equipment, organization, skilled personell.

Unfortunately, in 85% of cases, other private entities performe emptying, removal and treatment of faecal sludge from SMOSS, not being contracted by the territorially competent public utility company.

4.3.2 Regulations, standards and guiding documents for emptyning, transport and tratment provided by public utility companies

Most public utility companies do not have a Rulebook that prescribes the technical conditions that must be met during the construction of on-site sanitayion systems (septic tanks, holding tanks, pit latrines, etc.

Only 8 public utility companies (11%) have adopted the Rulebook which prescribes the technical conditions for the construction of of on-site sanitation systems. These regulations largely regulate the following conditions: permeability of the pit, proximity of groundwater, watercourses and drinking water sources, location of the septic tank, presence of discharge openings, conditions for regular emptying and discharge into public sewers, as well as environmental protection conditions. However, they prescribe to a small extent the number and dimension of chambers, the presence of a ventilation cover, regular emptying of fecal contents other than public sewers, regular disinfection of the tank, as well as the characteristics such as the size, soil type and others of soak pits or leach fields.

Public utility companies have set priorities for users for emptying and transport services in case of unplanned partial or complete failure of service, which cannot be resolved within 24 hours. In these cases, health, preschool and school institutions have priority in 28 companies (43%).

4.3.3 Monitoring/ records of emptying, transport and treatment of fecal sludge from pit latrines, septic and holding tanks and small-scale sewage systems (up to 2000 PE)

Most public utility companies do not keep records of the on-site sanitation systems (septic tanks and collection pits, pit latrines or small sewage systems).

Based on the existing evidences of public utility companies, the average number of recorded on-site sanitation by categories of users is shown in Figure 2.

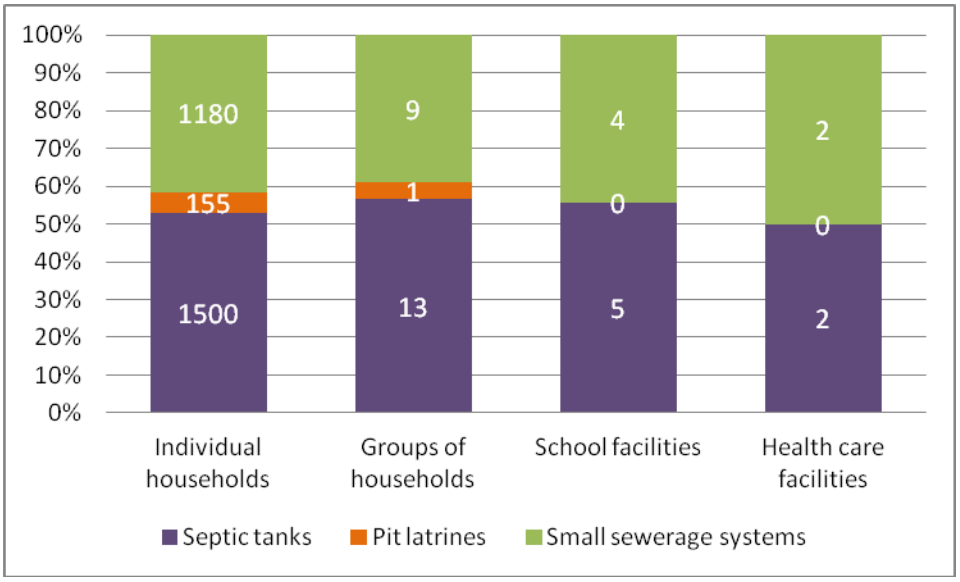

Figure 2. Average number of sanitary facilities by user categories

Public utility companies that participated in the survey, in most cases, do not keep records of the on-site sanitation systems (66 PUCs, 90.4%); many companies claim that records are not kept, others do not know whether records are kept, and some companies state that records on the on-site sanitation systems are kept by local self-government units or communal inspections.

In accordance with the previous, public utility companies in a small number of cases reported data from the records on the on-site sanitation systems. However, a small number of record keeping companies (6 PUCs) stated that the records contained the following data: the number of septic tanks and collection pits and their capacity, number of closed off septic tanks, emptying of fecal sludge from the SMOSS annually, number of users (individual households, groups of households, school and preschool facilities and facilities for providing health services) and the number of emptying from different of users type during the year.

The records do not contain data on the construction and technical conditions of the SMOSS and the type of applied on-site treatment of faecal sludge. Most public utility companies claim that faecal matter from septic tanks and collection pits is not treated and discharged into the public sewer, others are unfamiliar with the way faecal matter is treated, while a small number of companies state that there is mechanical or biological treatment of fecal matter and that are taken to a wastewater treatment plant.

The companies that keep records of septic tanks and collection pits came to the data that the number of septic tanks and collection pits ranges from 15 to 7400 (on average about 1400 pits) and that there are as many closed septic tanks and collection pits. The number of individual households that use them ranges from zero to 7965 (average 1500 households), and the number of groups of households that use them ranges from zero to 13 (average 2). The average number of school and preschool facilities that use septic tanks is 5 (range 0-20), and the number of health care facilities is 2 (range 0-10).

The total number of emptying during the year ranges from 6 to 3000 (on average 470 emptying), the number of emptying from individual households is on average 300 (range 0-3000), the average number of emptying from groups of households is 63 (range 0-540), 30 school and preschool facilities (range 0-348), and 19 health care facilities (0-240).

None of the public utility companies that participated in the survey keep records on pit latrines (73 PUCs, 100%). Most companies claim that it is not known who keeps records on pit latriens or that are not kept at all. Some companies state that records on pit latrines are kept by the local self-government units, local communities or the sanitary inspection.

Although no records are kept of pit latrines, several public utility companies stated on average 155 households use them (ranged from 0 to 1,500 individual households). Only one PUC stated that there was one school building that used pit latrines. According to data from public utility companies and their knowledge, there are not groups of households or health care facilities that use pit latrines.

Participating public utility companies, in most cases, do not keep records of small sewerage systems (62 PUCs, 87.3%); Many companies claim that records are not kept, others do not know whether records are kept, they claim that they do not have small sewerage systems, and some companies state that records of small sewerage systems are kept by local self-government units, communal inspection or users themselves.

In accordance with the previous, public utility companies in a small number of cases reported on the data from the records of small sewerage systems. However, a small number of record keeping companies (7 PUCs) stated that the records contained the following data: number of small sewerage systems and number of users (individual households, groups of households, school and preschool facilities and health care facilities). Only one public utility company stated that the type of treatment of fecal sludge is in the records, but they did not specify what the treatment is.

The companies that keep records of small sewerage systems reported the number of individual households connected ranges from 25 to 2600 (average 1180 households), and that the number of groups of households using them ranges from zero to 20 (average 9). The average number of school and preschool facilities that use small sewage systems is 4 (range 0-12), and of health care facilities is 2 (range 0-6).

Emptying, transport and treatment

The number of responses of PUCs that provide services of emptying, transport and treatment of fecal sludge to different users categories, either do not provide services or do not keep records, or did not respond is shown in Figure 3. It is shown that in most cases the service is provided to individual households and to a lesser extent to household groups, schools and preschools and health facilities.

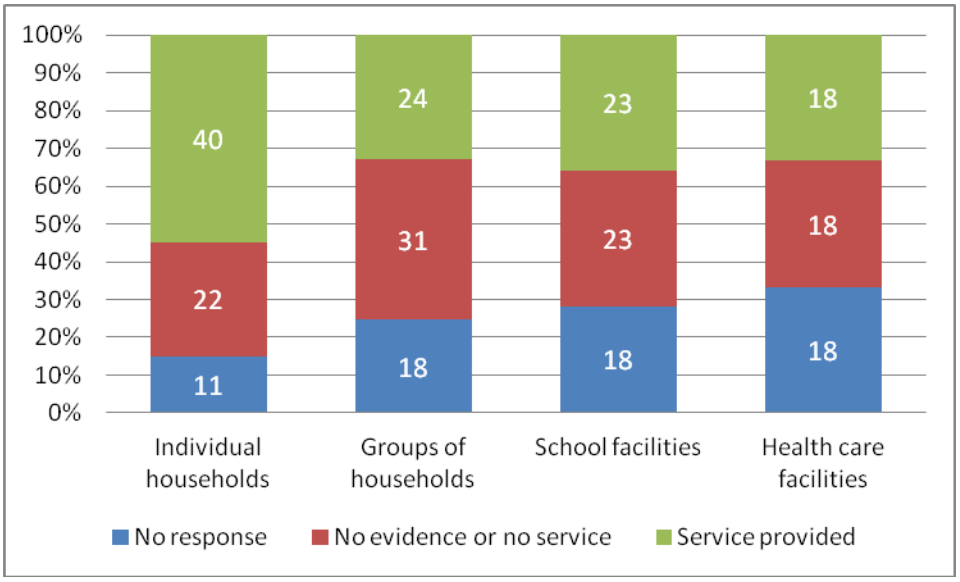

Figure 3. Number of public utility companies that either provide the service of emptying, transport and treatment of fecal sludge to different categories of users, or do not keep records or do not provide the service or did not respond

Out of 62 PUCs that provide service of emptying, transport and treatment, 22 PUCs responded that they do not keep records of services provided or do not perform such services from individual households. When observing the remaining responses (40 PUCs), it is found that the average amount of fecal sludge that PUCs collect and transport from septic tanks and collection pits from individual households is about 2,000 m^3 per year (range from 6 to 25,000 m^3). The average amount of fecal content that JKP "Gradska cistoća", Belgrade draws and removes from septic tanks and collection pits from individual households on an annual level is about 25,000 m^3. Extreme values were registered by JKP "Standard", Knjaževac and JKP "Nash Dom", Požega, which stated that they collect about 930,000 m^3, or about 889,847 m^3 per year from septic tanks and collection pits from individual households. The average number of emptying from individual households equals 363 services, ranging from 1 to 3800 services per year.

Out of 55 public utility companies that responded, 31 PUCs answered that they do not keep records of services provided, i.e. that they do not perform services of emptying, transport and treatment of fecal sludge from septic tanks and collection pits from groups of households. When observing the remaining responses (24 PUCs), it is found that the average amount of fecal content that PUCs collect and transport from septic tanks and collection pits from the group of households is about 3,000 m^3 per year (range from 3 to 35,000 m^3). The average amount of fecal content that JKP "Gradska čistoća", Belgrade collect and transport from septic tanks and collection pits from the group of households per year is about 25,000 m^3, while JKP "Standard", Knjaževac states that they collect and transport from septic tanks and collection pits from the group households about 35,000 m^3 per year. The average number of emptying from household groups equals 121, and ranges from 2 to 500 services per year.

Out of 55 public utility companies that responded, 32 PUCs answered that they do not keep records of services provided, i.e. that they do not perform services of emptying, transport and treatment of fecal sludge from septic tanks and collection pits from school and preschool facilities. When observing the remaining answers (23 PUCs), it is found that the average amount of fecal content that PUCs collect and transport from septic tanks and collection pits from school and preschool facilities is about 350 m^3 per year (range from 2 to 3100 m^3). Extreme values were recorded for JKP "Universal", Alibunar and JKP "Bogatić", Bogatić, who stated that they collect and transport from septic tanks and collection pits from

school and preschool facilities about 3,100 m^3, or 2,262 m^3 per year. The average number of pumping services from school and preschool facilities equals 39, and ranges from 2 to 350 services per year.

Out of 55 public utility companies responded, 37 PUCs answered that they do not keep records of services provided, i.e. that they do not perform services of pumping and removal of fecal matter from septic tanks and collection pits from HCF. When looking at the remaining responses (18 PUCs), it is found that the average amount of fecal content that PUCs collect and transport from septic tanks and collection pits from HCF is about 240 m^3 per year (range 5-1800 m^3). Extreme values were recorded for PUC "8. August ", Srpska Crnja, JKP" Bogatić ", Bogatić and JKP" Univerzal ", Alibunar, who stated that they draw and take away from septic tanks and collection pits from health institutions about 700 m^3, ie 1,092 m^3 and 1,800 m^3 per year. The average number of pumping services from health institutions equals 43, and ranges from 1 to 240 services per year.

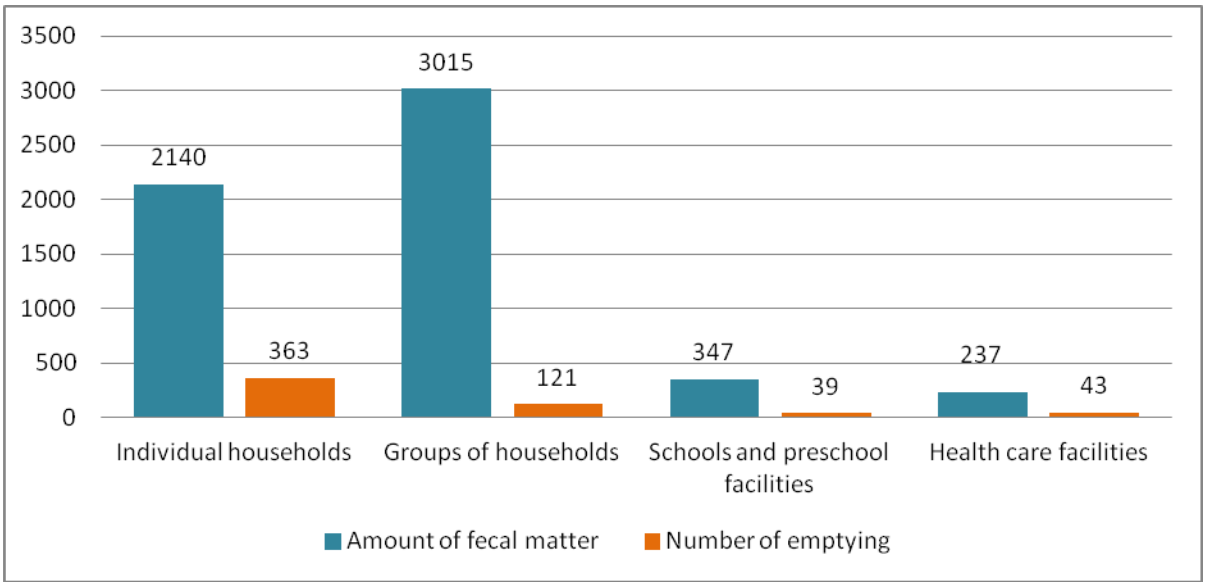

Figure 4. Average amount of fecal matter collected and average number of emptying of fecal matter from septic tanks and collection pits by user categories

Analysis of all the above, it is concluded that about 60% of surveyed public utilities generally do not keep records of services provided or do not provide services for emptying and transport of fecal matter from septic tanks and collection from any category of users: individual households, groups of households, school and preschool facilities and health facilities. The average amount of fecal content that PUCs collect and transport from septic tanks and collection pits on an annual basis is very small and depends on the category of users. Proportional to the average amount of fecal content that PUCs collect and transport from septic tanks and collection facilities on an annual basis is the number of services provided for pumping and removal of fecal content from septic tanks and collection pits. Belgrade as the capital, or to be precise JKP "Gradska cistoća", Belgrade stands out as a large provider of subject services. Figure 4 shows the average quantities of fecal sludge that are collected and the average number of emptying from septic tanks and collection pits according to user categories.

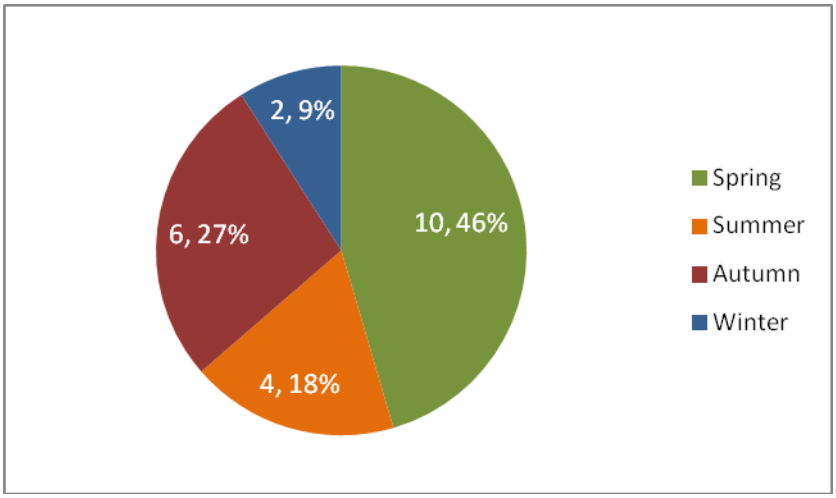

Figure 5. Period of the year when the provision of services for pumping, removal and treatment of fecal matter to users by public utility companies is most often performed

In general, the services of emptying and transport of fecal matter from septic tanks and collection pits are most often performed in the spring, as shown in Figure 5. The most common reasons for providing these services in that period are heavy rainfall (18 out of 23 responses), and melting snow and floods.

Emptying

Public utility companies that participated in this research provide services of emptying and transport of fecal sludge from all types of on-site sanitation. The largest number of PUCs provide services of pumping and transport of fecal sludge from septic tanks and collection pits (42 responses), from small sewage systems (2 responses), and from pit latrines, mobile toilets, facilities that are not connected to the city sewerage network, as well as from clogged drains and public sewer connections.

To provide services, the public utility companies most often use vacuum trucks (42 responses), and to a lesser extent small motor pumps, hand tools (shovels, spades, buckets, rope), manual pumps, vacuum cleaners, as well as sewage tanks or tanks with motorized pump, drain-jet vehicles, tractors and sidecar with a vacuum pump.

To provide these services, participating public utility companies have, on average, one truck for emptying and transport of fecal sludge, with an average capacity of about 5 m^3 (range from 1 to 8 m^3).

Transport

After emptying, and before transport of fecal sludge, public utility companies workers usually do not clean emptied sanitary facilities (field toilets, septic tanks and other facilities) (62 PUCs, 92.5%). This is shown in Figure 6.

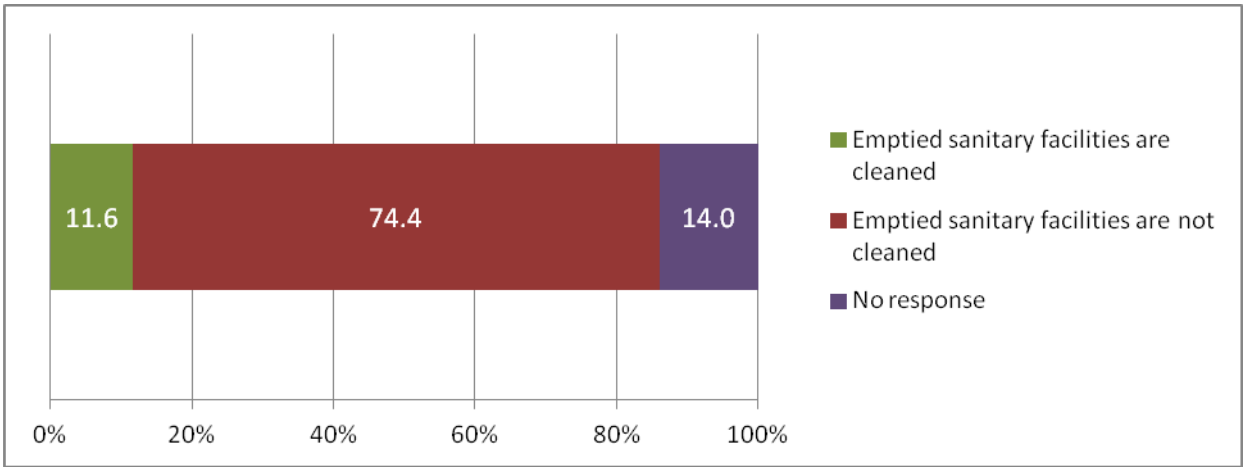

Figure 6. Cleaning of emptied sanitary facilities after emptying, and before transport of fecal sludge

During the further transport of fecal sludge from the place of emptying to the place of disposal, service providers pass through populated areas (47 PUCs, 70.1%), with the most public utility companies claiming that the contents cannot be spilled into the environment (57 PUCs, 85, 1%), which is shown in Figure 7. Even if the fecal content is spilled into the environment, the most common reasons are the following: poor infrastructure, i.e. poor terrain configuration, technical reasons (e.g. faulty transport equipment), as one example is the accident on vacuum truck valve.

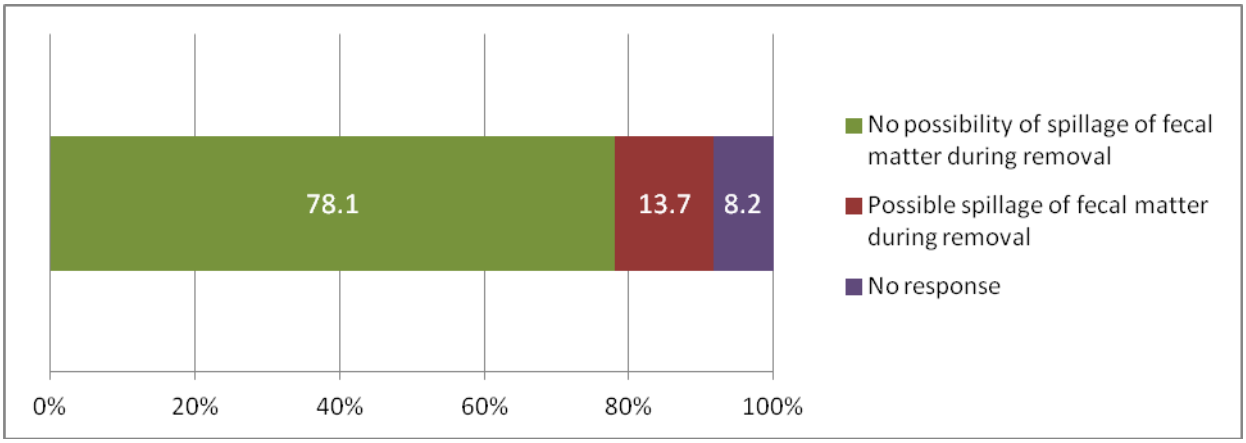

Figure 7. Existence of the possibility of spillage of fecal substances into the environment during removal

The analysis of all the above shows that the public utility companies that participated in the research provide services for pumping and removal of fecal matter, mostly from septic tanks and collection pits, most often in the spring due to heavy rainfall. The average public utility company owns one vehicle for pumping and transporting fecal matter, most often by type of vacuum truck, with a capacity of about 5 m^3.

Although service providers pass through populated areas during the transport of fecal material, in most cases there is no spillage of contents into the environment.

Treatment and disposal

None of the participating public utility companies provides services for the on-site treatment of fecal sludge from SMOSS (field toilets, septic tanks, etc.).

None of the surveyed public utility companies provides services for the treatment during the transport of fecal sludge.

68 out of 73 public utility companies answered the question whether the fecal sludge from SMOSS and small sewage systems is taken to the wastewater treatment plant. Out of them, 21 public utility companies (30.9%) transport fecal sludge to the wastewater treatment plant, while the other 47 PUCs do not do that, but dispose fecal sludge in one or more ways: in the public sewerage system (27 of 47 PUCs, 79.4%), to a sanitary landfill (6 PUCs, 27.2%), to a wild (non-sanitary) landfill (5 PUCs, 22.7%), directly into a watercourse (3 PUCs, 14.3%)), and a company disposes of fecal matter in an open pit, at a burial place or to a treatment plant where the contents are temporarily disposed of because the plant is not working. No company disposes of fecal contents on the farm, at the temporary disposal station or buries the fecal contents on the spot.

As the main reason for disposing of fecal matter in this way, public utility companies state that there is no wastewater treatment plant (36 out of 58 responses, 62.1%), then that it is a temporary solution (15 out of 48 responses, 31.2%).), that the wastewater treatment plant exists but does not work (6 out of 47 PUCs, 12.8%), and even that the wastewater treatment plant does not receive this type of waste (4 out of 46 PUCs, 8.9%).

JKP "Vodovod i Kanalizacija" Novi Sad clarifies that there are three small capacity treatment plants, so regular emptying into them would disrupt their work. JKP "Vodovod i kanalizacija" Subotica states that on the territory of the municipality of Subotica there is only one place for emtying cisterns with municipal wastewater.

When asked whether the place for disposal of fecal matter is legal, 59 out of 73 public utility companies responded. The majority of respondents believe that the place for disposal is legal (32 PUCs, 54.2%), a large number of them are not sure or do not know (22 PUCs, 37.3%), while a small number answer that the place is not legal (5 PUCs, 8.5 %).

When asked to estimate the amount of fecal content that is treated before discharge into the final recipient per year, 56 out of 73 public utility companies reponded. However, most of their responses were that they had no information, that fecal contents were not treated prior to discharge into the final recipient, or a reported "zero, which it was not clear whether the activity was not performed or the data was not known. The analysis of 19 numerical responses leads to the data that the average amount of fecal sludge treated before the final discharge is around 160 thousand tons per year, ranging from 5 to over one million tons per year. The greatest values were given by the representatives of public utility companies from Kragujevac and Knjaževac, while the city of Belgrade does not have that information.

When asked what is the average distance from the point of emptying fecal sludge to the place of final disposal, 61 out of 73 public utility companies answered. Most companies state that the distance is less than 25 km (52 PUCs, 85.2%), between 25 and 50 km (7 PUCs, 11.5%) or more than 50 km, but less than 100 km (2 PUCs, 3.3%). The distribution of responses is shown in Figure 8.

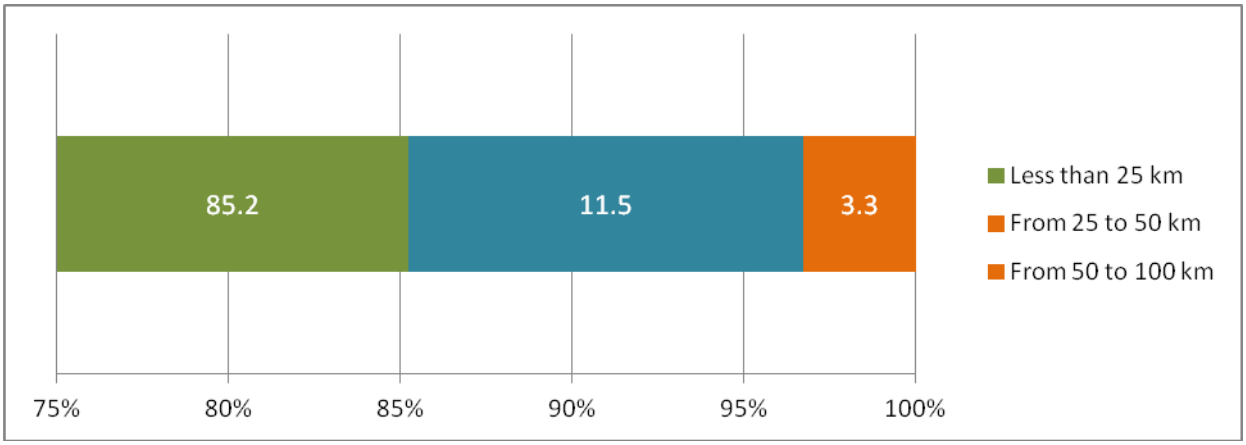

Figure 8. Distance from the point of emptying to the place of final disposal

Finally, when asked to indicate the number of recorded sites of municipal wastewater discharge without prior treatment into the environment (for example directly into a water body, farm, or other area not intended for sewage disposal) that are not covered by the PUC sewerage system, 61 public utility companies responded out of 73 participated. In most cases, respondents state that they do not know the answer or that they do not have data (18 answers). In 23 cases, public utility companies indicate "zero", where it is not clear whether it is the absence of recorded sites of municipal wastewater discharge witout prior treatment or the absence of information. Only one company clearly stated that there were no recorded sites of municipal wastewater discharge without prior treatment into the environment. The analysis of 19 numerical responses shows that the average number of recorded sites of municipal wastewater discharge without prior treatment into the environment is 54, ranging from 1 to 900 discharges. It is noticed that even public utility companies in big cities do not possess this particular information.

4.3.4 Human resources

A significant part of this survey questionnaire is dedicated to human resources in public utility companies. This segment covers the topics of HR capacity, occupational safety and training.

The rulebook on safety and protection at work is owned by most public utility companies.

The Rulebook on occupational safety and protection or some other internal document of this type is brought by 52 public utility companies (78.8% of 66 answers), 14 companies (21.2%) do not have this type of document, while 7 companies did not give an answer.

When asked whether workers enter sanitary facilities, such as pit latrines, septic tanks or collection pits, during the emptying of fecal sludge, the answer was given by 68 out of 73 public utility companies. However, it can be seen that the answer is negative for most companies (65 PUCs, 95.6%), while only three PUCs (4.4%) answered that workers enter into those sanitary facilities.

Most public utility companies provide protective equipment to workers who perform emptying of fecal sludge.

Around one fifth (22.1%) of participating PUCs do not provide protective equipment to workers.

In all 53 cases where the equipment is secured for the workers, it consists of protective gloves and rubber boots, while 51 companies also provide work suits, and 46 of them also provide protective masks. Other equipment that PUCs provide to their workers includes hats, helmets, gas masks, rubber suits, raincoats, fluorescent vests, and goggles.

Most employees of public utility companies wear protective equipment when performing the emptying of fecal sludge.

67 out of 73 public utility companies answered the question whether the workers, in accordance with the regulations, wear protective equipment all the time when performing the activity of pumping fecal content from septic tanks and collection pits. In most cases, workers wear protective equipment (54 PUCs, 80.6%), in 8 companies workers do not wear protective equipment (11.9%), while 5 companies answered that workers only occasionally wear protective equipment (7.5%).

Most public utility workers do not use disinfectants and cleaners to clean sanitary facilities during manual pumping of fecal matter.

With respect to usage of the cleaning materials and disinfectants for cleaning on-site sanitation facilities after manual emptying 65 out of 73 public responded. Most companies answered that they do not perform manual emptying (40 PUCs, 61.5%) and in their case this question is not applicable. Of the remaining companies that manually empty fecal sludge, in most cases disinfectants and cleaners are not used (20 PUCs, 30.8%), while only five companies (7.7%) responded that disinfectants are used for cleaning and disinfection.

Most workers in public utility companies wash their hands with soap and water after performing the activity of fecal sludge emptying.

Hand washing after performing fecal sludge emptying is implemented and applied in 58 PUCs (87.9%), while in 8 PUCs (12.1%) this is not the case.

Less than half of the workers of public utility companies use disinfectants and cleaning agents when spilling fecal sludge during its transport.

64 out of 73 public utility companies answered the question related to the use of cleaning and disinfection agents during the spillage of fecal sludge during its transport. Slightly more than half of the public utility companies answered that workers use cleaning and disinfection agents in case of spillage during the transport (35 PUCs, 54.7%), and slightly less than half do not use (29 PUCs, 45.3%).

Most employees of public utility companies undergo training related to the minimum safety standards at work.

When training on minimum safety standards at work was questioned, 67 PUCs out of 73 participating responded. In most cases, it was found that workers undergo this training (60 PUCs, 89.6%), while only 7 PUCs (10.4%) do not conduct this type of training. Out of 60 companies that answered affirmatively to this question, 12 (20%) conduct training on occupational safety only once, with new workers. The largest number of public utility companies (26 PUCs, 43.3%) keep training on occupational safety for their employees regularly, once a year, while one third of companies (22 PUCs, 36.7%) conduct training occasionally, but not regularly.

The training of workers on occupational safety is the responsibility of persons whose jobs can be classified into two categories: manager/person/occupational safety officer on the one hand, or an external agency or a constructed trainer, on the other hand.

Unskilled workers, workers with primary education and workers with secondary education are equally represented among workers of public utility companies employed and engaged in emptying of fecal sludge from SMOSS.

Regarding the education of workers i.e. their qualifications and the structure of workers performing emptying, transport and treatment of fecal sludge from SMOSS, 59 answers were received from 73 surveyed public utility companies. Workers with secondary education, primary education, and non-qualified workers are equally represented in public utility companies. Among the workers of other levels of education, there are also those with higher education level.

Most public utility companies do not have sufficient human resources for emptying, transport and teatment of fecal sludge.

When sufficiency in HR capacity for this service was asked, out of 66 companies that answered this question, 39 (59.1%) do not have enough human resources, while 27 (40.9%) work with sufficient HR capacity. This issue was further elaborated, so that the PUC was asked to assess the current staffing capacity of the company for emptying, transport and treatment of fecal sludge from SMOSS. 65 answers were received which show the need for building capacities for the provision of this service. The distribution of answers is as follows: 41 public utility companies (63.12%) report that the capacities are less than 50%, 13 PUCs (20%) consider that between 50 and 75%, and in 11 companies (16.9%) the capacities are higher than 75%.

Most public utility companies do not have sufficient human resources to manage and maintain wastewater treatment plants.

Public utility companies were also asked whether they had sufficient human resources for the management and maintenance of wastewater treatment plants. 62 answers were received to this question, and the distribution is similar to the previous one, more precisely, in this case as well, most public utility companies state that their capacities are insufficient. Expressed in the figures, the distribution is as follows: 46 PUCs (74.2%) consider that the capacities are less than 50%, 10 PUCs (16.1%) consider that the capacities are between 50 and 75%, and only 6 companies (9.7%) estimates that capacities are greater than 75%.

Most public utility companies do not have a dedicated working unit/sector for regular emptying and monitoring of septic tanks.

A total of 70 answers were received to the question whether there is a a dedicated working unit/sector for regular emptying and monitoring of septic tanks within the public utility company. In most cases, public utility companies do not have such a unit (60 PUCs, 85.7%), while only 10 of them (14.3%) answered that such specific sector exists in their company.

Most public utility companies do not report on the activities of emptying, transport and treatment of fecal sludge from SMOSS.

Representatives of public utility companies were also asked whether their companies submit a report on the activities of emptying, transport and treatment of fecal sludge from SMOSS and 67 out of 73 public utility companies responded. The vast majority of companies (60 PUCs, 89.6%) do not report, while only 7 of them (10.4%) report on these activities. The topic of reporting is further elaborated through the question to whom they report. Only 10 public utility companies answered this question. Except for a few invalid answers, all other PUCs answered that they report to the founder or the competent body of the local self-government unit.

4.3.5 Financing

The last section of the questionnaire for public utility companies referred to the financing of emptying, transport and treatment of fecal sludge from SMOSS and small sewage systems. Regarding the prices and the basis for its calculation for the service of emptying, transport and treatment of fecal sludge from SMOSS, it is recognized that the prices of services depend on the categories of users, i.e. individual households, schools and preschools, and healthcare facilities. The price of the service in most cases is formed on the basis of the following parameters: type of user (household or institution), volume of service, volume of fecal sludge, number of working hours, and some PUCs state the distance of service users, i.e. distance from wastewater treatment plants. The answers are in line with those given by the local self-government units, so the prices differ among them, as well as the basis for calculation. Some public utility companies do not have information on prices because they do not provide this service.

When asked whether there are subsidies for special categories of socially endangered consumers, 60 public utility companies out of 73 that participated in the research responded. Out of that, 11 public utility companies answered that subsidies are given to socially endangered households, three PUCs stated that persons with disabilities pay a subsidized price, 2 PUCs subsidize elderly households, and in individual cases there are subsidies for members of national minorities and residents of unhygienic settlements. No cases of subsidies have been reported for refugee camps or reception centers for migrants.

When the revenues from the service of emptying, transport and treatment of fecal sludge from SMOSS are observed, 60 out of 73 public utility companies responded. Of these, 34 companies reported income in various amounts, while the rest did not provide an answer to this question or reported that they do not provide services or that they do not have income from that activity. The average public utility company generates revenue of about 10 million

dinars a year. It is not clear whether all reported revenues are with VAT or without taxes because the question was open.

The answers to the question about the percentage of income from the emptying, transport and treatment of fecal sludge from SMOSS in relation to the total income of the company are also interesting. The percentages that are earned from these jobs in any public utility company do not exceed 5%, and in most cases are less than 1% of total revenues.

When asked what is the do tariffs cover the cost for service of emptying, transport and treatment of fecal sludge from SMOSS, 49 utility companies answered, and the distribution of answers is shown in Figure 9. In general, most public utility companies cover less than 50 % of costs (22 PUCs, 44.9%), between 50 and 90% of costs are covered by tariffs in 8 PUCs (18.3%), while 18 companies cover all costs through tariffs (36.7%).

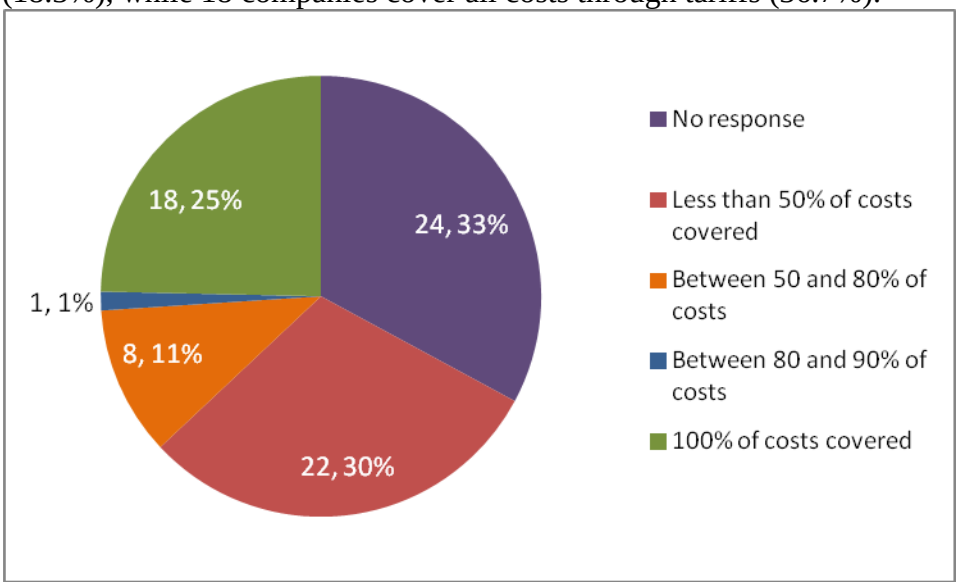

Figure 9. Level of service coverage by tariffs for emptying, transport and treatment of fecal sludge from SMOSS

Those utility companies that do not cover all costs were asked whether they show that loss in the financial plan, as well as how it is covered. Out of the 35 responds, 29 (82.9%) do not report losses in the financial plan, while 6 (17.1%) do report. Most of the losses on performing these tasks are covered from other activities of the company (22 cases), and only in a small number of cases from the local budget or from other sources (heating and water supply).

Finally, public utility companies were asked to estimate the average level of investment in regular maintenance of equipment emptying, transport and treatment of fecal sludge on an annual basis and the level of investment in equipment renewal. The obtained answers are very different and range from 0 to as much as 4.5 million RSD. In 17 cases there is no investment, while in 32 cases the utility companies did not give an answer, which can be interpreted in the same way.

4.4 Results on sanitation services in households, schools, and healthcare facilities

4.4.1 Results for households

The study sample comprised 1059 households across the country, i.e., 207 households in urban areas and 852 households in rural areas. Almost two-thirds of respondents had a secondary education level (65%). Almost half of the households had an average income in the previous year between 30.000 to 60.000 RSD (42%); one in five households had income less than 30.000 RSD (19%) or between 60.000 to 100.000 RSD (19%). One in ten households had a total income above 100.000 RSD, and one in ten failed to respond to this question.

A typical household consists of three members (median value), ranging from 1 to 30 members. One-third of households have 1-2 members. One-fourth of households have five or more members. Household members were defined as people either related or unrelated who are living together and taking food from the same cooking pot. Only 149 households (14%) in the survey have children under the age of five years. Out of these households, there was one child (median value) who could not use the household toilet/latrine for defecation (range 0-3 children).

More than half of the visited households reported there was a plan to connect to the public sewer system within a few years, when the public sewer is constructed, or according to public authorities' plans (54%). However, in most areas, there was no public sewage system that households could connect to at the time of the survey (85%).

Household toilets

Out of 1059 households, we identified 4 households without any sanitation facility, i.e., one household where defecation was performed into a bucket, and three households where defecation is performed into the open (field, yeard, bush, open land). Six households used dry toilets without water flush and without toilet slab. Together, sanitation facilities in these 10 households (1% of all visited households in the study) are considered unimproved. Improved toilets were reported in 1049 households (99%), including flush toilets connected to piped water (97%), dry toilets with toilet slabs without water flush (1%), and pour-flush toilets with a manual flush from the bucket (1%).

All toilets / sanitation facilities are located inside the house (97%). Occasionally, household toilets were placed in the yard/plot within the premises (2%), and were 15 meters away from the house (median value), ranging from one to 300 meters. The majority of households do not share their sanitation facilities with other households (97%). Out of 23 households that reported sharing their sanitation facilities with others (3% across the country), 2 households are located in urban areas, and 23 are located in rural areas.

On average, the sanitation facility at the household is used by all the people who are living in the household (3 household members as median value). Only 16 households reported that there was at least one member of the household who doesn't usually use the toilet for defecation (2%). The reasons for not using the toilet included disability / injury / reduced physical mobility (3 households), babies (5 households), or elderly family members who cannot access the toilet (3 households). Among households that have children under the age of five years, the child can use the latrine/toilet on their own (59 households). In other cases, when children cannot use the sanitation facility individually, children's stool was disposed of

by putting it/rinsing into toilet/latrine (33 households) or throwing it into the garbage (solid waste) (49 households).

In general, sanitation facilities at households were installed 30 years previously (median value), ranging from one to 80 years. On the day of the survey, toilets were clean, meaning free from fecal smears on pans, walls and floors; toilet pan was free from used cleaning materials, and the walls and doors of the toilet were in place so that other people could not look inside and hear sounds from the cubicle while the toilet is in use, and that the toilet provides security to the intended users). In the majority of households, no human feces was found in the yard. Three out of 4 households with signs of open defecation had improved sanitation facilities installed inside the house.

All households enable proper hand-washing practices through hand-washing taps placed in the toilet (1021 households, 96%), or within 5 meters away from the toilet (2%). In only one household, there was no hand-washing point; the same household had no sanitation facility installed.

In addition, 300 households reported having a pit latrine as an additional sanitation facility (28%). Typically, that facility is located on household premises, at 20-meter distance from the household (median value), range one to 250 meters. The additional pit latrine is generally not shared with other people or households (93%). Visited pit latrines were clean on the day of the survey (free from fecal smears on pans, wallss and floors; free from used cleaning materials), with walls and doors in place. However, the nearest hand washing spot was typically more than 5 meters away from the pit latrine.

Basic sanitation services

According to the JMP criteria, households with improved sanitation facilities which not shared with other households are classified as having basic sanitation services. Those using improved sanitation facilities which are shared with other households are classified as having limited service. Households with unimproved sanitation facilities and households with no toilets (open defecation) are classified as having no service. Based on these criteria, 1028 households across the country (97%) were categorized as providing basic sanitation services, 22 households (2%) provided limited services, and only 10 households (1%) provided no sanitation services. The distribution of households by basic sanitation services is presented in Figure 1.

The distribution of basic sanitation services was similar across different areas. In urban areas, 203 households (98%) provided basic sanitation services, 2 households (1%) provided limited services, and 2 households (1%) had no sanitation services. In rural areas, 824 households (97%) provided basic sanitation services, 20 households (2%) provided limited services, and 8 households (1%) had no sanitation services.

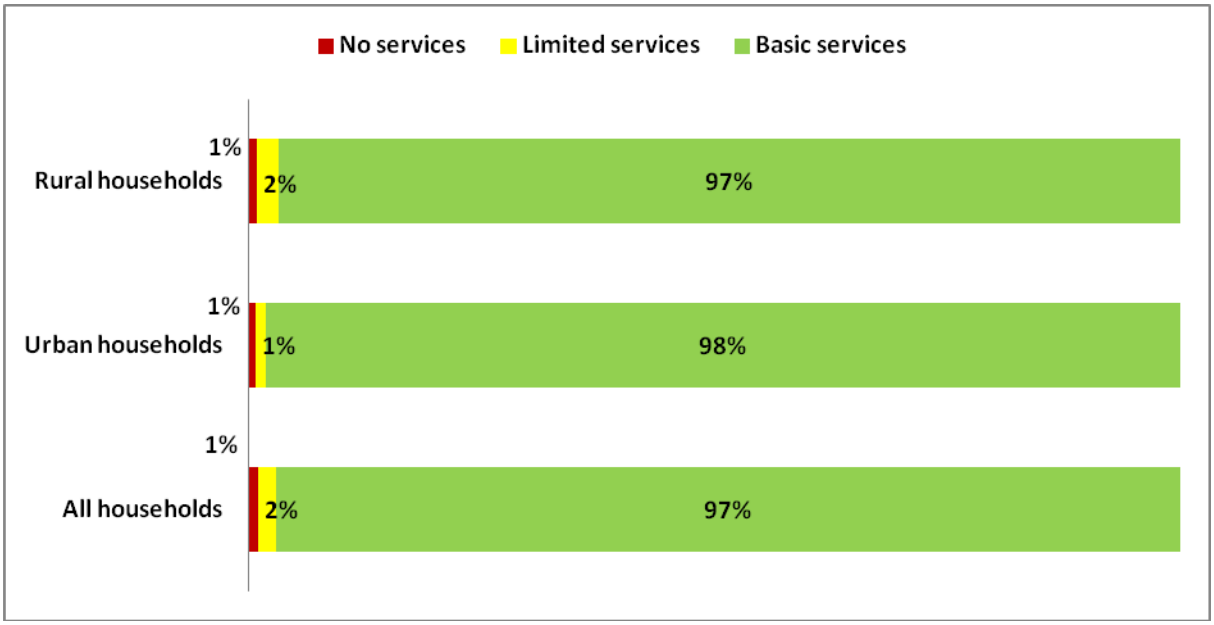

Figure 1. Distribution of visited households (total=1059, urban=207, rural=852) by basic sanitation services

Advanced sanitation services

Advanced level of sanitation standard for households was defined as being safely managed. Safely managed means that excreta are safely disposed of onsite or removed and treated offsite among households that use improved facilities not shared with other households. The details for the safe management are presented in the following section of the report. Based on the basic and advanced criteria, 108 households were categorized as providing advanced sanitation services (10%), 920 households (87%) provided basic services, 22 households (2%) provided limited services, and 10 households (1%) provided no sanitation services. The distribution of households by basic sanitation services is presented in Figure 2.

The distribution of advanced sanitation services was similar across different areas. In urban areas, 35 households were categorized as providing advanced sanitation services (17%), 168 households (81%) provided basic sanitation services, 2 households (1%) provided limited services, and 2 households (1%) had no sanitation services. In rural areas, 73 households were categorized as providing advanced sanitation services (9%), 751 households (88%) provided basic sanitation services, 20 households (2%) provided limited services, and 8 households (1%) had no sanitation services.

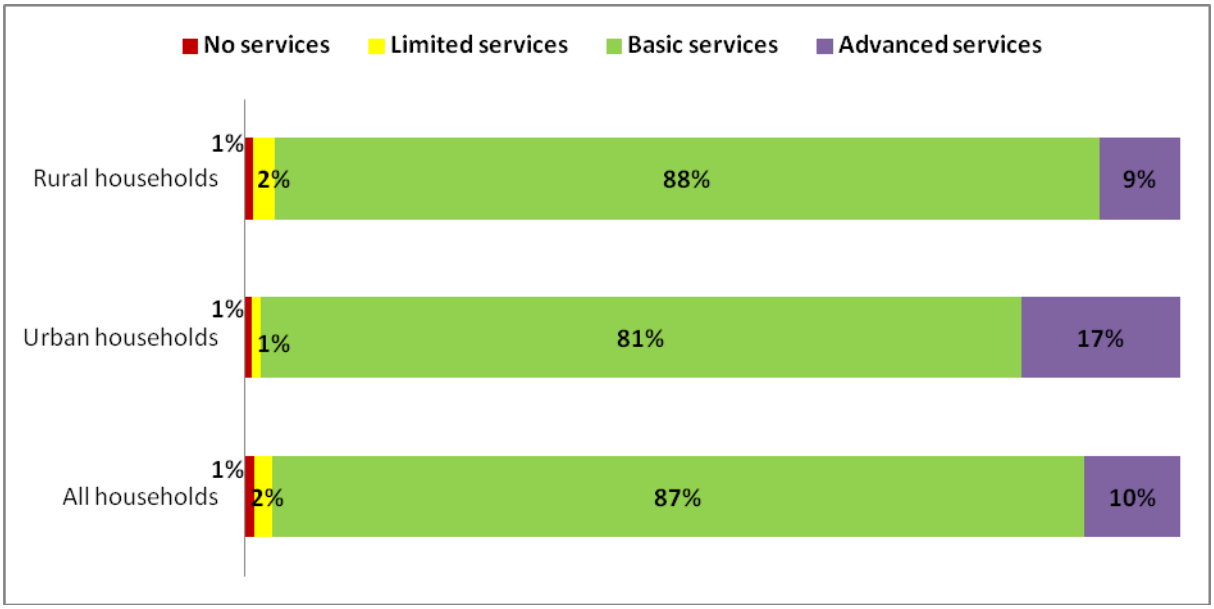

Figure 2. Distribution of visited households (total=1059, urban=207, rural=852) by advanced sanitation services

Containment, emptying, transport, and disposal

First, fecal materials from the household toilets are drained safely into impermeable septic tanks (369 households, 35%), impermeable twin pits and holding tanks (28 households, 2%). Unsafe options of drainage of fecal sludge from the toilet were reported in 662 households (63%), including permeable septic tanks with unsealed bottom, permeable twin pits, permeable pits (no ring or brick). Overall, 54 households (5% of all households in the survey) had pipes leading fecal matter directly from the toilet into the field, thus having no containment.

For safe options of drainage from septic tanks/pit latrines, we considered emptying by service provider/ public utility company, other entities/persons, on their own (572 households, 54%), drained by pipes on leach field (13 households, 1%) or drained by pipes into soak pit (16 households, 2%). These 601 households (57%) were considered safely drained from septic tanks. To define safely contained sanitation facilities, the two above-mentioned criteria were combined – safely drained from the household toilets and safely drained from the septic tank/pit latrine. In total, 363 households (34%) had safely contained sanitation facilities, and 696 households (66%) had unsafely contained sanitation facilities. The distribution was similar across areas: safe containment was reported in 67 urban households (32%) and 296 rural households (35%).

A typical containment facility (i.e., septic tank or a pit) was built 30 years prior to the survey (median value), ranging from one to 150 years ago (excluding 54 households without containment and 39 households with unknown data). Only 10% of households had permission for the construction of the septic tank, more than two-thirds did not have permission for its construction (72%), while 13% of the households do not know. Households in the urban areas more often reported having permission to construct septic tanks than households in rural areas (16% of urban households vs. 9% of rural households).

The septic tank or a pit are located in the household backyard (64%), near the front side / close to the main entrance (20%), located inside the dwelling structure (8%), or the pit is below the super structure of the latrine (2%). The capacity of the containment facility is approximately 10 cubic meters (median values), ranging from 1 to 60 cubic meters

(excluding 265 households with unknown data). The latrine pit/septic tank at the moment is almost full to one-third empty (341 households, 32%), half-empty to more than half empty (500 households, 47%). There was a difference in the fullness of the latrine pit/septic tank at the time of the survey between areas. In urban areas, households' tanks /pits were almost full to one-third empty (36% of urban households vs. 31% of rural households). In rural areas, households' tanks /pits were half-empty or more than half empty (49% of rural households vs. 38% of urban households).

The containment facility is at 40-meter distance to the nearest drinking water source (median value), ranging from 1 to 5000 meters, applicable to 615 households that reported having any water source nearby. That water source was uphill from the containment facility in one-third cases, downhill or at the same level in one-third cases.

Most households have no abandoned (closed) pit latrines / septic tanks on the premises (907 households 86%). Households that reported having closed pit latrines / septic tanks on their property reported that the tanks were closed with solid material (26 cases), or were disinfected and buried (10 cases) or buried without previous disinfection (68 cases). Abandoned pits or septic tanks were more often reported in urban areas (12% of households) than in rural areas (8% of households).

To respondents' best knowledge, the existing latrine pit/ septic tank did not leak, overflow, or flood at any time in the previous year (83%). However, the leakage of the current latrine pit/ septic tank was more often reported in urban areas (14% of households) than in rural areas (10% of households). The leakage / overflow or flooding of the existing septic tank was reported in 35 out of 363 households with safely contained sanitation facilities (10% of safely contained) and in 77 out of 696 households with unsafely contained sanitation facilities (11% of unsafely contained).

Almost two-thirds of households emptied their latrine pits/septic tanks (641 households, 61%), 364 households never emptied their septic tanks (34%), while 54 households had no containment of fecal matter (no septic tanks, 5%). The last time households' latrine pit/septic tank filled up was 1-5 years ago (35%), more than 5 years ago (8%), or never (47%). After emptying, most households continued using the same pit, while five households dug/opened a new pit. Most often, households perform emptying of pit latrine / septic tank twice a year (146 households, 23%), once a year (118 households, 18%), once in two-to-three years (82 households, 13%), every month or more often (76 households, 12%), once in ten years (48 households, 8%), once in four-to-five years (38 households, 6%), and only when filled up (33 households, 5%). However, 16% of households failed to report the frequency of emptying. The frequency of septic tank emptying was similar among urban and rural households.

Among 641 households that emptied their tanks, the process was performed by a public utility company (135 households, 21% of households who performed emptying), private service providers (245 households, 38%), neighbors, family members, friends (159 households, 25%), or on their own (99 households, 15%)). Only households that employed a public utility company for tank emptying were considered as having safe delivery (135 households, 13% of the whole sample). Households in urban and rural areas employed different service providers for the emptying. In urban areas, emptying was performed most often by a public utility company (53 urban households, 45% of households who performed emptying), private service providers (42 urban households, 36%), neighbors, family members, friends (18 urban households, 15%). On the other hand, in rural areas, emptying was performed most often by private service providers (203 rural households, 39%) or neighbors, family members, friends (141 rural households, 27%). Public utility companies were engaged in the emptying of 16% of septic tanks in rural areas (82 rural households).

Rural households emptied latrine pits /septic tanks on their own more often than urban households (95 rural households, 18% vs. 4 urban households, 3% of households who performed emptying).

During the process of emptying, the pit/septic tank was easily accessible for the workers (96% of households that emptied their septic tanks). The process was motorized (95%), and there was no need to enter into the pit/septic tank (98%). Workers wore personal protection equipment, including boots and gloves (81%), face masks, and body covers (39%); eye goggles, helmets, and protective coats were used less often (about 16% of cases). Workers in urban areas wore all types of personal protection equipment more often than workers in rural areas.

Typically, household members contacted the service provider who emptied their pit/septic tank by phone/e-mail (471 households, 74%). In most cases, household members were satisfied with the emptying service (515 households, 80%). The dominant reasons for not being satisfied with the service were the high cost of service, too much physical effort or stress for a household member, the length of the procedure, and exposure to extensive bad smells and odors (only 71 households responded).

After emptying, fecal content was transported by the same provider who emptied the tank. The owner of the transportation means – van/carts/pick up/tractor was typically the same provider who performed emptying and transport. Most often, providers used vacuum tankers with protected removal pipes and motorized machines for transport so that fecal effluents would not spread in the surrounding environment (510 households, 80% of households who performed emptying).

More than half of household members did not know where fecal content was disposed of after emptying and transport (54%). According to responses from other households, fecal content was most frequently disposed to a crop field to be applied as a fertilizer (95 households, 15% of households who performed emptying). Less than one in ten households disposed of fecal content on a non-sanitary / wild landfill (60 households, 9%), a sanitary landfill (51 households, 8%), or a public sewer (50 households, 8%). Only 14 households responded that fecal content was disposed to a wastewater treatment plant (2%). In rare cases, fecal content was transported to a moving water body (10 responses), an open-pit (9 responses), buried onsite (6 responses), or disposed to a farm (2 responses). On average, fecal content was transported more than 100 meters away from the households (283 households, 44%). In about half of the visited households, households members did not know how far from the household fecal content was disposed of.

When it comes to the final disposal of fecal content after emptying and transport, there is a significant difference between urban and rural areas. In urban areas, fecal content was most frequently disposed of by transport to public sewer (23% of urban households that performed emptying). In rural areas, however, fecal content was most frequently disposed to a crop field to be applied as a fertilizer (17% of rural households that performed emptying), transported to a non-sanitary / wild landfill (11% of rural households), or transported to a sanitary landfill (9% of rural households). More household members in urban areas did not know where and how far from the household fecal content was disposed of.

In the majority of cases, households had to pay for the emptying and transport (517 households 81% that performed emptying). Households in urban areas more often had to pay for the services than households in rural areas (91% of urban households vs. 78% of rural households). The service fee was estimated from 392 households that provided that information. On average, households paid 3000 RSD for the services (median value), ranging

from 350-100.000 RSD. The price of emptying was similar among households with different incomes. Households with an average income up to 100.000 RSD paid 2000 RSD for the services, whereas households with an average income of more than 100.000 RSD paid 3000 RSD for the services (all median values). The average cost of emptying services was 3500 RSD in urban areas and 2000 RSD in rural areas (all median values). Most households are not subsidized for the cost of the services of emptying and transport (93%).

Among 641 households that emptied their tanks, 597 households reported that they never treated fecal sludge from the septic tank or latrine pit on site (56% of households that emptied septic tanks). In 19 households, fecal sludge is treated by planting a drying bed followed by liquid treatment. In 11 households, a substance was added for self-purification. Other methods of treatment of fecal sludge from the septic tank are rarely used, such as unplanted drying beds only, unplanted drying beds followed by liquid treatment, mechanical drying, and composting (1 response for each method). All of these methods are reported in households in rural areas. Typically, treated fecal sludge is used as crop manure, used as vegetable manure, disposed of on land and water, and disposed of on a landfill (15-20 responses for each method). None of the households uses fecal sludge to produce biogas or charcoal. All of these methods are reported in households in rural areas. In urban areas, treated fecal sludge was almost exclusively disposed of on land and water.

Only in 25 households (2% of all visited households), a family member engages in any sort of fecal sludge treatment process, equally distributed in urban and rural areas.

Most households do not use any of the fecal contents while is in the pit of the latrine (94%). Some households use it in kitchen garden / food crops (24 responses), for non-food crops / plants (6 responses), directly to the fishpond as fish feed (3 responses), for poultry feed (1 response), or to produce biogas or charcoal (1 response). These households are located in rural areas.

When households were asked if they agreed that the treated fecal sludge could be used as fertilizer for agricultural cultivations, the responses were tied: 38% disagreed, 30% agreed, and 31% had no opinion on that question. The distribution of responses was similar among households in urban and rural areas.

Safe management of sanitation services

Safe management of sanitation facilities is estimated using several critera, related to the containment, drainage, emptying, transport, and disposal.

Among 364 households where septic tanks were not emptied, 34 households met the criteria for the safe management of not emptied septic tanks, including having improved and safely contained sanitation facilities (9% of households whose septic tanks were not emptied; 3% of all visited households). The rest of the households where septic tanks were not emptied (330 households) were not safely contained and thus considered unsafely managed offsite of unsafely contained (91% of households where septic tanks were not emptied; 31% of all visited households).

The proportion of safely managed not emptied septic tanks was similar between households in urban areas (7% of urban households whose septic tanks were not emptied; 2% of all visited urban households) and households in rural areas (10% of rural households whose septic tanks were not emptied; 3% of all visited rural households).

Among 695 households where septic tanks were emptied (including 54 households without septic tanks), 74 households met the criteria for the safe management of emptied septic tanks, including having improved and safely contained sanitation facilities and being safely

delivered by a public utility company (68 households) or emptied by private entities and buried onsite (6 households) (11% of households whose septic tanks were emptied; 7% of all visited households).

The proportion of safely managed emptied septic tanks was higher among households in urban areas (23% of urban households whose septic tanks were emptied; 14% of all visited urban households) than in rural areas (8% of rural households whose septic tanks were emptied; 5% of all visited rural households).

Among 695 households where septic tanks were emptied, 312 households had improved and safely contained sanitation facilities, but were emptied and delivered by private entities, and were thus categorized as unsafely managed offsite of safely contained (45% of households whose septic tanks were emptied; 30% of all visited households).

The proportion of unsafely managed offsite of safely contained emptied septic tanks was similar between households in urban areas (47% of urban households whose septic tanks were emptied; 30% of all visited urban households) and in rural areas (44% of rural households whose septic tanks were emptied; 29% of all visited rural households).

Among 695 households where septic tanks were emptied, 309 households were emptied and delivered by either public utility companies or private entities but not safely contained in the first place (including 54 households without septic tanks). Therefore, they were categorized as unsafely managed offsite of unsafely contained emptied septic tanks (44% of households whose septic tanks were emptied; 29 % of all visited households).

The proportion of unsafely managed offsite of unsafely contained emptied septic tanks was higher among households in rural areas (48% of rural households whose septic tanks were emptied; 32% of all visited rural households) than in urban areas (30% of urban households whose septic tanks were emptied; 19% of all visited urban households).

The distribution of all surveyed households by the management of septic tanks is presented in Table 1 and Figure 3.

Table 1. Distribution of all surveyed households by the management of septic tanks

Total sample = 1059 households	
NOT EMPTIED septic tanks = 364 households	**EMPTIED septic tanks =695 households**
Safely managed onsite (not emptied) = 34 households (3.2%)	**Safely managed offsite (emptied and delivered by PUC) = 68 households** **Safely managed offsite (emptied by private entities and buried onsite) = 6 households** **TOTAL = 74 households (7.0%)**
Unsafely managed offsite of unsafely contained (not emptied, but not safely contained in the first place) = 330 households (31.2%)	**Unsafely managed offsite of unsafely contained (emptied and delivered by either PUC or private entities, but not safely contained in the first place) = 255 households** **Including no septic tanks (54 households)** **TOTAL = 309 households (29.2%)**
	Unsafely managed offsite of safely contained (emptied and delivered by private entities) = 312 households (29.5%)

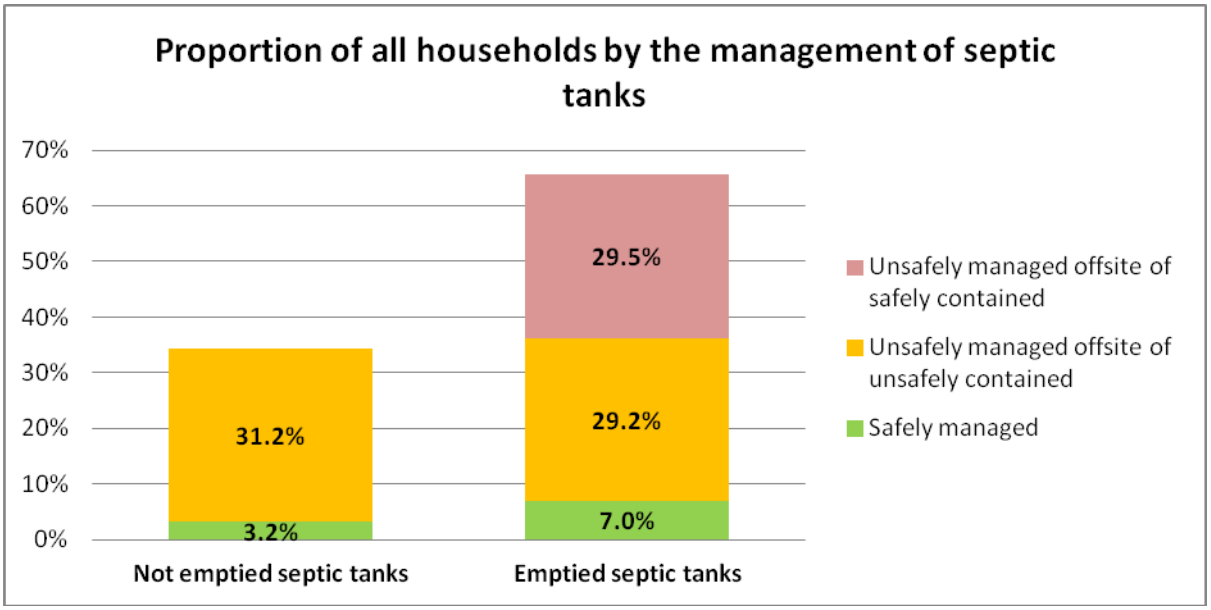

Figure 3. The proportion of all visited households by the management of septic tanks

The distribution of urban households by the management of septic tanks is presented in Table 2 and, Figure 4.

Table 2. Distribution of urban households by the management of septic tanks

Urban subsample = 207 households	
NOT EMPTIED septic tanks = 76 households	**EMPTIED septic tanks =131 households**
Safely managed onsite (not emptied) = 5 households (2.4%)	**Safely managed offsite (emptied and delivered by PUC) = 30 households Safely managed offsite (emptied by private entities and buried onsite) = 0 households TOTAL = 30 households (14.5%)**
Unsafely managed offsite of unsafely contained (not emptied, but not safely contained in the first place) = 71 households (34.3%)	**Unsafely managed offsite of unsafely contained (emptied and delivered by either PUC or private entities, but not safely contained in the first place) = 25 households Including no septic tanks (14 households) TOTAL = 39 households (18.8%)**
	Unsafely managed offsite of safely contained (emptied and delivered by private entities) = 62 households (30.0%)

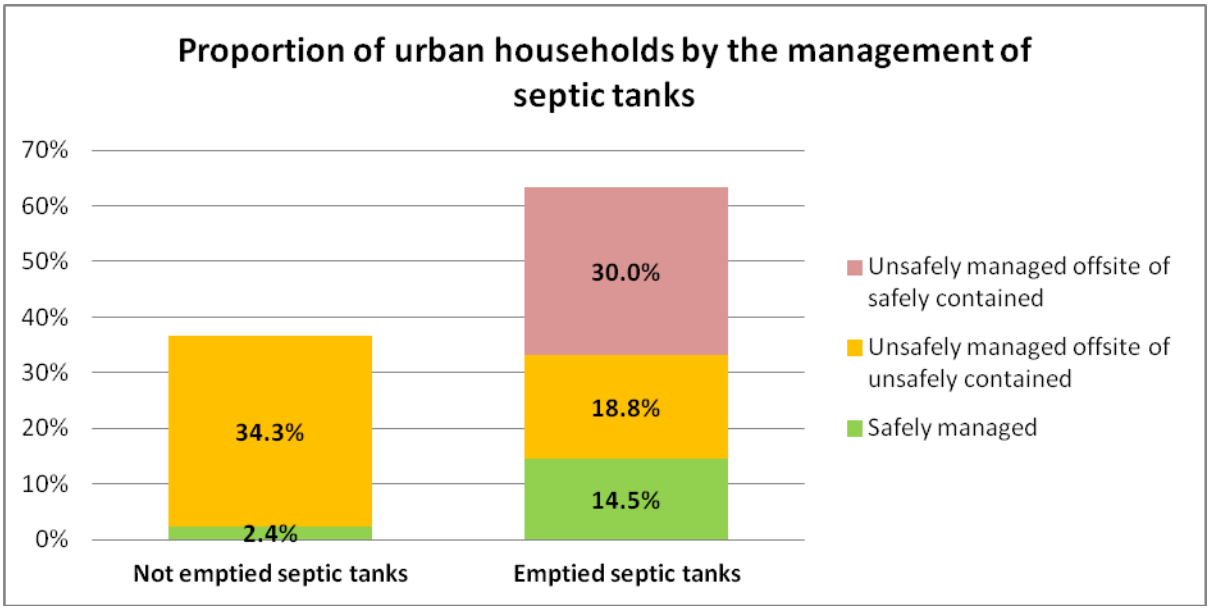

Figure 4. The proportion of urban households by the management of septic tanks

The distribution of rural households by the management of septic tanks is presented in Table 3 and Figure 3.

Table 3. Distribution of rural households by the management of septic tanks

Rural subsample = 852 households	
NOT EMPTIED septic tanks = 288 households	**EMPTIED septic tanks = 564 households**
Safely managed onsite (not emptied) = 29 households (3.4%)	**Safely managed offsite (emptied and delivered by PUC) = 38 households** **Safely managed offsite (emptied by private entities and buried onsite) = 6 households** **TOTAL = 44 households (5.2%)**
Unsafely managed offsite of unsafely contained (not emptied, but not safely contained in the first place) = 259 households (30.4%)	**Unsafely managed offsite of unsafely contained (emptied and delivered by either PUC or private entities, but not safely contained in the first place) = 230 households** **Including no septic tanks (40 households)** **TOTAL = 270 households (31.7%)**
	Unsafely managed offsite of safely contained (emptied and delivered by private entities) = 250 households (29.3%)

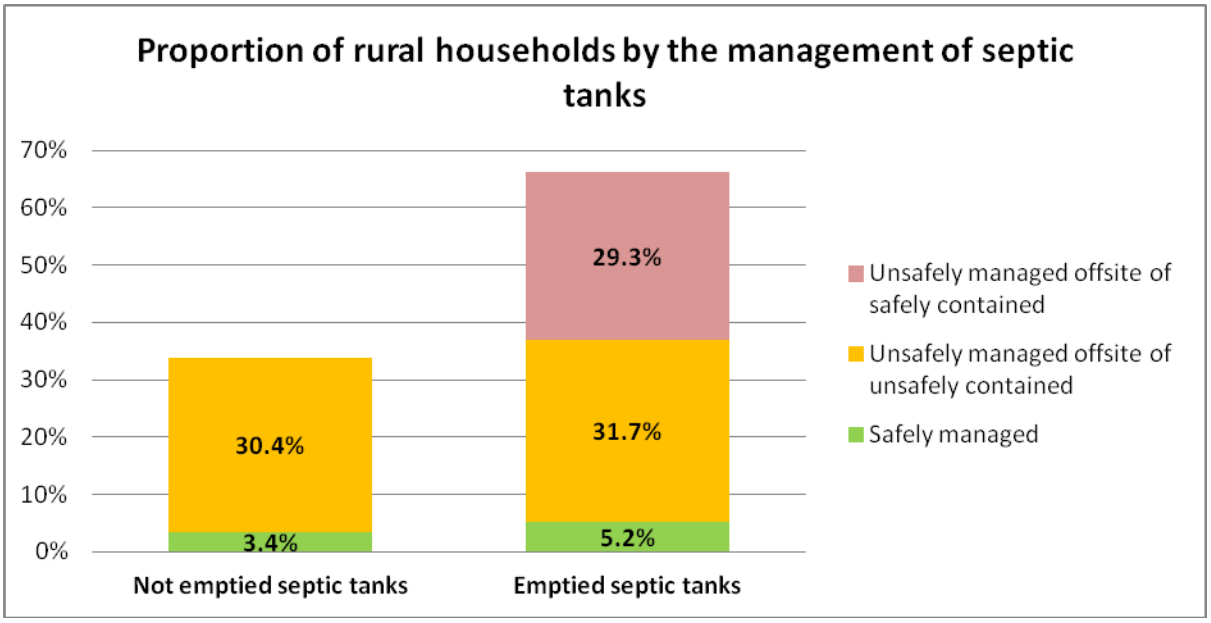

Figure 5. The proportion of rural households by the management of septic tanks

Risk matrix for households

The proposed risk matrix was based on questions marked as R1, R2, R3, R4, and R5 in the checklist, which are related to the type of toilet, sharing of sanitation facilities, containment of facilities, hand-washing practices, and emptying of containment facilities.

Questions were summed up. Since each questions can have only one point, the final result is a number between 0 (zero) and 5 (five).

Table 4. The proportion of households by risk matrix levels

Points range	**0-1 points**	**2-3 points**	**4-5 points**
Risk	**Low risk**	**Medium risk**	**High risk**
Number (%) of all households	678 (64.0%)	377 (35.6%)	4 (0.4%)
Number (%) of urban households	129 (62.3%)	78 (37.7%)	0
Number (%) of rural households	549 (64.4%)	299 (35.1%)	4 (0.5%)

About two-thirds of all households, both in urban and rural areas, met 0-1 points, thus being categorized as low risk. One-third of households met 2-3 points, thus being categorized as medium risk. Only four households across the country, all in rural areas, met 4-5 points, thus being categorized as at high risk.

4.4.2. Results for schools

The study sample included 264 rural schools across the country. On average, 67 pupils (34 boys and 33 girls) attend a typical school (all median values); the total number of pupils ranged from 1 to 742 per school. Children aged 7 to 15 years (45% of schools), aged 6 to 15

(18%), aged 7 to 11 years (27%), and aged 6 to 11 (7%) attend the visited schools. The vast majority of schools have no pupils with a physical disability (230 schools, 87%). In general, the school building was constructed more than 50 years ago (66%), 31 to 50 years ago (24%), or less than 30 years ago (11%).

Only one-third of the examined school reported there was a plan to connect to the public sewer system (36%) within a few years, when the public sewer is constructed, or according to public authorities' plans. However, most villages currently have no public sewage system to connect to (92%). In a typical rural school, a genitor is engaged to take care of water supply and sanitation.

School toilets

All 264 schools had toilet facilities for the pupils. Improved toilets were reported in 260 schools (98%), including flush toilets connected to piped water (97%) and dry toilets with toilet slab without water flush (1%). Only 4 schools had dry toilets without toilet slabs and without water flush (2%), which are considered unimproved.

All toilets for pupils are located within school premises, most of them inside the school building (94%). In most schools (224 schools, 85%) toilet compartments for pupils are sex-separated, i.e., cubicles for girls and boys are located in separate toilet rooms. In case toilet compartments are communal (not sex-separated), they are still marked in some way for girls and boys (16 out of 40 communal compartments). On the survey day, at least one toilet was in use for pupils at school in 259 schools (98%) but not usable in 5 schools (2%). The term usable / in use refers to toilets or latrines that are accessible to students (doors are unlocked or a key is available at all times), functional (the toilet is not broken, the toilet hole is not blocked, and water is available for flush/pour-flush toilets), and private (there are closable doors that lock from the inside and no large gaps in the structure).

On average, a typical school has 2 toilet cabins / cubicles for boys, 3 cabins / cubicles for girls, and no communal cabins (all median values). Less than half of schools also have urinals. Most schools have separate toilet facilities for teachers (83%).

The majority of toilets for pupils were clean on the day of the survey (free from fecal smears on pans, walls, and floors), with walls and doors in place, with flushing mechanisms reachable by hand for all children, with toilet seats or pit slabs made of material that can be cleaned easily, and with natural ventilation. Toilet paper was available in both girls' and boys' toilets in 80% of schools. Only 41% of schools had up-to-date records of cleaning visible and signed by the cleaners, whereas half of the surveyed schools had no such records.

Toilets in the schoolyard (15 schools) were located 3-50 meters away from the school building. The path leading to the toilet is properly lit and can be conveniently used in any weather in half of the cases.

All schools enable proper hand-washing practices through hand-washing taps that are placed in the toilet (242 schools, 92%) or within 5 meters away from the toilet (6%). There was no school without an existing hand-washing point.

When it comes to vulnerable groups, schools are not well-equipped. One in five schools (22%) have at least one toilet facility accessible to younger children, i.e., with smaller seats. Only 9 schools (3%) possess at least one toilet facility accessible to children with physical disabilities. More than half of the surveyed schools (55%) do not have covered garbage bins in girls' toilet compartments necessary for the disposal of menstrual hygiene means. However, two-third of schools offer educational programs promoting safe and private menstrual hygiene for older girls.

28 schools reported having a pit latrine as an additional sanitation facility. Typically, that facility is located on school premises, not used by pupils or school staff, and not shared with other people or households. Visited pit latrines were clean on the survey day (free from fecal smears on pans, walls, and floors; free from used cleaning materials), with walls and doors in place. However, the nearest hand washing spot was typically more than 5 meters away from that toilet.

Basic sanitation services

According to the JMP criteria, schools with improved sanitation facilities that are sex-separated and usable at the time of the survey are classified as having basic sanitation services. Those using improved sanitation facilities which are either not sex-separated or not usable are classified as having limited service. Schools with unimproved or no toilets are classified as having no service. Based on these criteria, 222 schools (84%) were categorized as providing basic sanitation services, 38 schools (14%) provided limited services, and only 4 schools (2%) provided no sanitation services. The distribution of schools by basic sanitation services is presented in Figure 6.

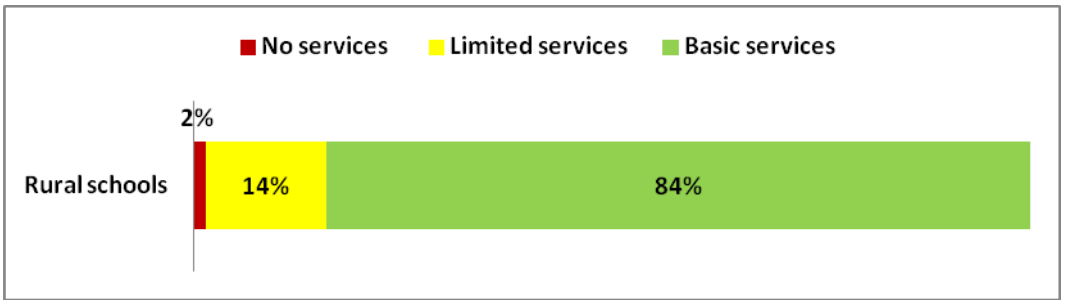

Figure 6. Distribution of visited rural schools (n=264) by basic sanitation services

Advanced sanitation services

Advanced level of sanitation standard for schools was defined by combining the following criteria: cleanliness of toilets, adequate number of toilets according to the number of pupils (less than 25 pupils per toilet), toilets for girls provided with options for disposal of menstrual waste (waste bins with lid), and accessible toilets for children with limited mobility.

On the day of the visit, toilets for pupils were generally clean (260 schools, 98%). To calculate the number of children using a single toilet cabin, the total number of children at school was divided by the total number of toilet cabins. The number of children per cabin less than 25 was considered adequate. Most schools (215 schools, 81%) had the adequate number of cabins for children.

On the other hand, criteria for sanitation of vulnerable categories were not fully met. Less than half of schools (120 schools, 46%) had toilets for girls with covered garbage bins that are considered as meeting the options for disposal of menstrual waste. Most schools, however, provided no options for the disposal of menstrual waste.

In addition, most schools had no accessible toilets for children with limited mobility (255 schools, 97%). Toilets for children with limited mobility are considered accessible if they meet the following conditions: toilets can be accessed without stairs or steps with a clear path leading to the facility (clear, level path free of obstructions and lined with rocks or landmark posts of guide string, and ramp gradient should be less than 1 in 12 and have raised sides to prevent a wheelchair from rolling off); handrails for support should be attached either to the floor or sidewalls; there should be enough space inside for a wheelchair user to enter, turn,

close the door and park by the toilet; the door should be at least 80 cm wide and should open outward with minimal or no difference in floor height between outside and inside; and the door handle and seat should be within reach of children using wheelchairs or crutches/sticks, including a fixed raised pan or movable wooden raised toilet seat.

Based on the criteria mentioned above, 7 schools were categorized as providing advanced sanitation services (3%), 215 schools (81%) provided basic services, 38 schools (14%) provided limited services, and 4 schools (2%) provided no sanitation services. The distribution of schools by advanced sanitation services is presented in Figure 7.

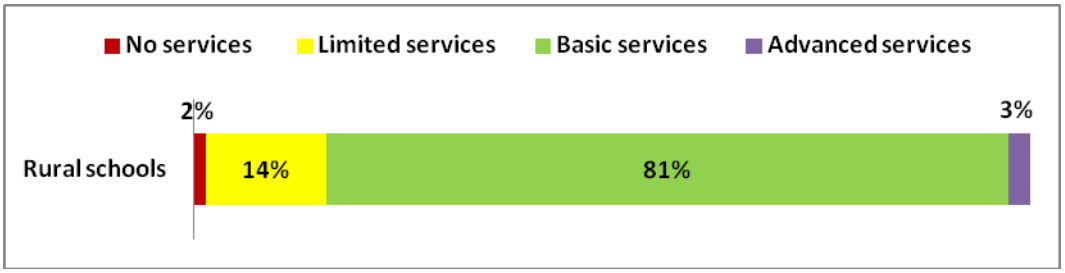

Figure 7. Distribution of visited rural schools (n=264) by advanced sanitation services

Containment, emptying, transport, and disposal

First, fecal materials from the school toilets are drained safely into impermeable septic tanks (155 schools, 59%), impermeable twin pits or holding tanks (3%). Unsafe options of drainage of fecal sludge from the toilet were reported in 100 schools (38%), including permeable septic tanks with unsealed bottom, permeable twin pits, permeable pits (no ring or brick). Six schools had pipes leading fecal matter directly from the toilet into the field, thus having no containment.

For safe options of drainage from septic tank/pit latrine, we considered emptying by a service provider/ public utility company, other entities/persons, on their own (174 schools, 66%), drained by pipes on leach field or into soak pit (5 schools, 2%). These 179 schools (68%) were considered safely drained from septic tanks. To assess safely contained sanitation facilities, the two above-mentioned criteria were combined. In total, 143 schools (54%) had safely contained sanitation facilities, and 121 schools (46%) had unsafely contained sanitation facilities.

A typical containment facility (i.e., septic tank or a pit) was built 35 years ago (median value), ranging from one to 100 years ago (excluding 38 schools with unknown data). One-third of schools had permission for the construction of septic tanks (35%), and one-third did not have permission for its construction (38%), while one-fifth of schools do not know (22%). The septic tank or a pit are located in the school backyard (68%), near the front side / close to the main entrance (16%), located inside the dwelling structure (9%), or the pit is below the superstructure of the latrine (3%). The place of the septic tank is clearly marked (48%) but not fenced (82%). The capacity of the containment facility is approximately 24 cubic meters (median values), ranging from 3 to 200 cubic meters (excluding 109 schools with unknown data). The latrine pit/septic tank at the moment is almost full to one-third empty (73 schools, 28%), half-empty to more than half empty (111 schools, 33%).

The containment facility is at 70 meters to the nearest drinking water source (median value), ranging from 7 to 700 meters, applicable to 230 schools that reported having any water source nearby. That water source was uphill from the containment facility in one-third cases, downhill or at the same level in one-third cases.

The majority of schools have no abandoned (closed) pit latrines / septic tanks on the premises (198 schools, 75%). Schools that reported having closed pit latrines / septic tanks on their property reported that the tanks were closed with solid material (19 cases), or were disinfected and buried (15 cases) or buried without previous disinfection (11 cases). To respondents' best knowledge, the existing pit/ septic tank did not leak, overflow, or flood at any time in the previous year (89%).

Almost two-thirds of schools emptied their latrine pits/septic tanks (167 schools, 63%), 91 schools never emptied their septic tanks (35%), while 6 schools had no containment of fecal matter (no septic tanks, 2%). The last time school's latrine pit/septic tank filled up was 1-5 years ago (36%), more than 5 years ago (16%), or never (44%). After emptying, most schools continued using the same pit, while three schools dug/opened a new pit. In general, schools perform emptying of pit latrine / septic tank only when they fill up (102 schools, 61% of 167 schools that emptied their tanks), once a year (25 schools, 15%), once in three years (19 schools, 11%), or less often (15 schools, 9%). Only 2 schools reported that emptying is performed once in a few months.

Among 167 schools that emptied their tanks, the process was performed by a public utility company (124 schools, 74% of schools who performed emptying), private service providers (24 schools, 14%), neighbors (11 schools, 7%), or staff member (7 schools, 4%). Only schools that employed a public utility company for tank emptying were considered as having safe delivery (124 schools, 47% of the whole sample). During the process of emptying, the pit/septic tank was easily accessible for the workers (95% of schools that emptied their septic tanks); the process was motorized (96%), and there was no need to enter into the pit/septic tank (99%). The workers wore personal protection equipment, including boots and gloves (86%), face masks, and body covers (70%); eye goggles, helmets, and protective coats were used less often (about 38% of cases).

Typically, school staff contacted the service provider who emptied their pit/septic tank by phone/e-mail (140 schools, 84%). In most cases, school staff was satisfied with the emptying service (146 schools, 87%). The dominant reasons for not being satisfied with the service were the high service cost and exposure to extensive bad smells and odors (only six schools responded).

After emptying, fecal content was transported by the same provider who emptied the tank. The owner of the transportation means – van/carts/pick up/tractor was typically the same provider who performed emptying and transport. Most often, providers used vacuum tankers with protected removal pipes and motorized machines for transport so fecal effluents would not spread in the surrounding environment (156 schools, 93%).

More than half of school members did not know where fecal content was disposed of after emptying and transport (54%). According to responses from other school staff, fecal content was most frequently disposed to wastewater treatment plants (19 schools, 11% of schools who performed emptying), public sewer (22 schools, 13%), sanitary landfills (21 schools, 13%). In 8 schools, fecal content was disposed to a crop field to be applied as a fertilizer (5%). In rare cases, fecal content was disposed to a non-sanitary / wild landfill, moving water body, or an open pit (2 schools for each response). Only one school reported that fecal content was buried on site. On average, fecal content was transported more than 100 meters away from the school (73 schools, 44%). In about half of visited schools, staff members did not know how far from school fecal content was disposed of.

In the majority of cases, schools had to pay for the emptying and transport (139 schools, 83%). The service fee was estimated from 81 schools that provided that information. On

average, schools paid 8000 RSD for the services (median value), ranging from 1000-100.000 RSD. The money for emptying service was obtained from the local self-government (122 schools, 73%) or the school itself (10% of cases). Almost three-quarters of schools are not subsidized for the cost of the emptying and transport services (72%), and half of the schools have a dedicated budget line for emptying services within the school budget (48%).

Among 167 schools that emptied their tanks, 107 schools reported that they never treated fecal sludge from the septic tank or latrine pit on site (64% of schools that emptied septic tanks). In 4 schools, fecal sludge is treated by planting a drying bed followed by liquid treatment. In only one school, a member of staff engages in any fecal sludge treatment process. Typically, treated fecal sludge is disposed of on land and water or a landfill. Only 6 schools allow neighboring households to use fecal contents directly from the pit latrine / septic tank.

When school staff was asked if they agreed that the treated fecal sludge could be used as fertilizer for agricultural cultivations, the responses were tied: 39% disagreed, 32% agreed, and 27% had no opinion on that question.

Safe management of sanitation services

Safe management of sanitation facilities is estimated using several critera, related to the containment, drainage, emptying, transport, and disposal.

Among 91 schools where septic tanks were not emptied, 19 schools met the criteria for the safe management of not emptied septic tanks, including having improved and safely contained sanitation facilities (21% of schools whose septic tanks were not emptied; 7% of all visited schools). The rest of the schools where septic tanks were not emptied (72 schools) were not safely contained and thus considered unsafely managed offsite of unsafely contained (79% of schools where septic tanks were not emptied; 27% of all visited schools).

Among 173 schools where septic tanks were emptied (including 6 schools without septic tanks), 96 schools met the criteria for the safe management of emptied septic tanks, including having improved and safely contained sanitation facilities and being safely delivered by a public utility company (95 schools) or emptied by private entities and buried onsite (1 school) (56% of schools whose septic tanks were emptied; 36% of all visited schools).

Among 173 schools where septic tanks were emptied, 28 schools had improved and safely contained sanitation facilities, but were emptied and delivered by private entities, and were thus categorized as unsafely managed offsite of safely contained (16% of schools whose septic tanks were emptied; 11% of all visited schools).

Among 173 schools where septic tanks were emptied, 49 schools were emptied and delivered by either public utility companies or private entities but not safely contained in the first place (including 6 schools without septic tanks). Therefore, they were categorized as unsafely managed offsite of unsafely contained (28% of schools whose septic tanks were emptied; 19% of all visited schools).

The distribution of schools by the management of septic tanks is presented in Table 5 and Figure 8.

Table 5. Distribution of rural households by the management of septic tanks

Total sample = 264 schools	
NOT EMPTIED septic tanks = 91 schools	**EMPTIED septic tanks = 173 schools**

Safely managed onsite (not emptied) = 19 schools (7.2%)	**Safely managed offsite (emptied and delivered by PUC) = 95 schools Safely managed offsite (emptied by private entities and buried onsite) = 1 school TOTAL = 96 schools (36.4%)**
Unsafely managed offsite of unsafely contained (not emptied and not safely contained) = 72 schools (27.3%)	**Unsafely managed offsite of unsafely contained (emptied and delivered by either PUC or private entities but not safely contained in the first place) = 43 schools Including no septic tanks (6 schools) TOTAL = 49 schools (18.6%)**
	Unsafely managed offsite of safely contained (emptied and delivered by private entities) = 28 schools (10.6%)

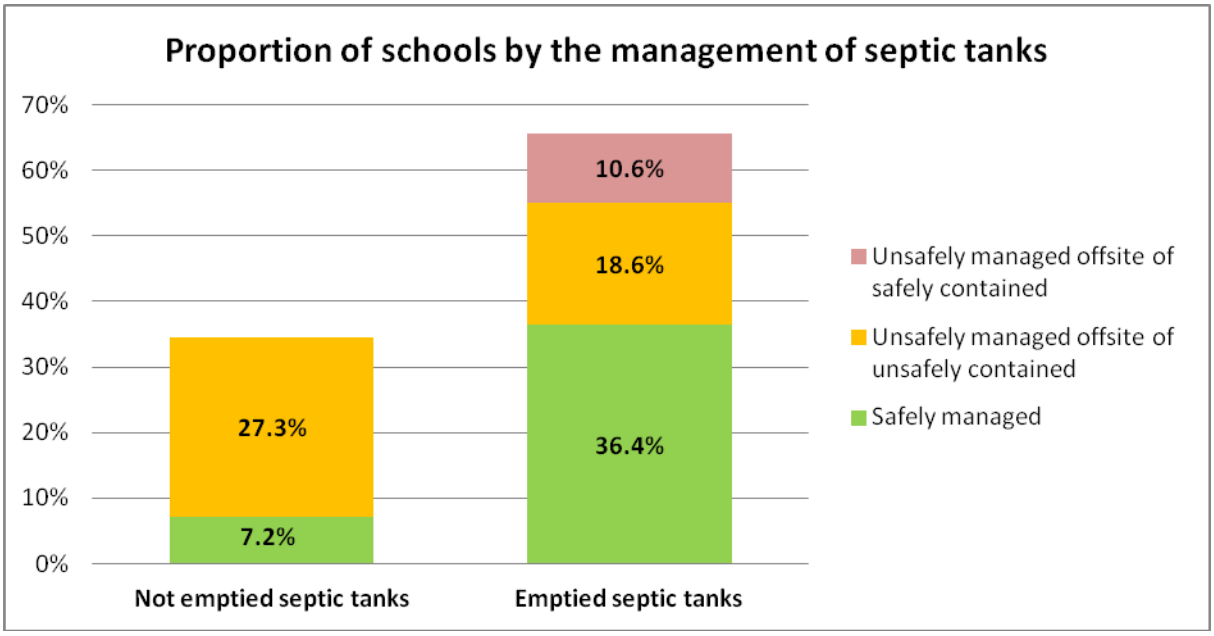

Figure 8. The proportion of schools by the management of septic tanks

4.4.3. Results for healthcare facilities

The study was conducted in 253 healthcare facilities in rural areas across the country. On an average month, 374 patients visit a typical facility (median value), ranging from zero to over 15.000 patients per healthcare facility. The facilities employ one doctor (range 0-36) and one nurse (range 0-79) per facility (both median values). In total, there are two staff members per facility (range 0-158); two-thirds of the staff are female. In general, healthcare facility building was constructed 31 to 50 years ago (46%), more than 50 years ago (40%), or less than 30 years ago (14%).

Less than one-third of the examined healthcare facilities reported a plan to connect to the public sewer system (27%) within a few years, when the public sewer is constructed, or according to public authorities' plans. However, most villages currently have no public sewage system to connect to (94%). In a typical rural health facility, a technician is engaged

to take care of water supply and sanitation.

Healthcare facility toilets

Out of 253 visited healthcare facilities, eight (3%) had no toilet facilities for the patients. Improved sanitation facilities were reported in 244 healthcare facilities (96%), including flush toilets connected to piped water (95%), dry toilets with toilet slabs without water flush (1%), and pour-flush toilets with a manual flush from the bucket (one HCF). The unimproved sanitation facilities were reported in 9 healthcare facilities (4%), including one that had dry toilets without toilet slab and without water flush, two facilities had no other option but open defecation (field, yeard, bush, open land), and 6 facilities without any sanitation facility.

A typical healthcare facility has one toilet cabin for patients (median value), ranging from one to 10 cabins (out of 245 healthcare facilities with toilets for patients available).

The majority of available toilets for patients were clean on the day of the survey (free from fecal smears on pans, walls, and floors and free from used cleaning materials, such as paper, stones, and sticks), with toilet seats or pit slabs made of material that can be cleaned easily (porcelain, concrete, steel, plastic), and with natural ventilation and adequate lighting. Most toilets/latrines for patients were available within 30 meters from the point of care. Toilet paper was available in patients' toilets in 71% of healthcare facilities (applicable to 245 healthcare facilities with available toilets for patients). Half of the healthcare facilities with toilets for patients had up-to-date cleaning records visible and signed by the cleaners, whereas less than half of healthcare facilities had no such records.

All healthcare facilities enable proper hand-washing practices through hand-washing taps placed in the toilet (222 HCFs, 91% out of 245 healthcare facilties with available toilets for patients) or within 5 meters away from the toilet (6%). There were three healthcare facilities without an existing hand-washing point (all in building over 50 years old). The signs of open defecation in the yard or on facility premises were reported in 3 healthcare facilities, all with toilets available for patients.

Basic sanitation services

According to the JMP criteria, healthcare facilities providing basic sanitation services should have improved and usable (accessible, functional, and private) sanitation facilities for the patients, with at least one sex-separated toilet with menstrual hygiene facilities, at least one toilet dedicated for staff, and at least one toilet accessible for people with limited mobility. Healthcare facilities using improved sanitation facilities but without meeting all other requirements are classified as having limited service. Healthcare facilities with unimproved or no toilets are classified as having no service. Based on these criteria, only 3 healthcare facilities (1%) were categorized as providing basic sanitation services, 241 healthcare facilities (95%) provided limited services, and 9 healthcare facilities (24%) provided no sanitation services. The distribution of healthcare facilities by basic sanitation services is presented in Figure 9.

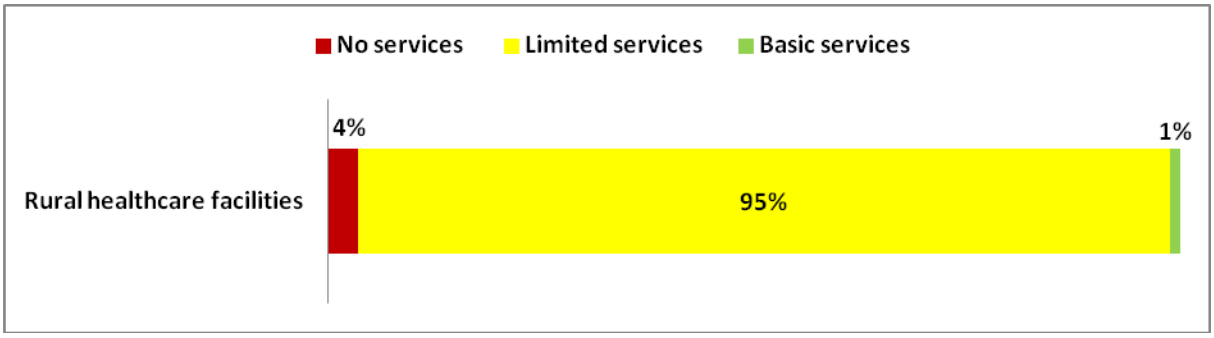

Figure 9. Distribution of visited rural healthcare facilities (n=253) by basic sanitation services

Most healthcare facilities met some of the individual criteria for basic sanitation services, such as having improved sanitation facilities (244 HCFs, 96%), having at least one toilet for patients at the facility usable at the time of the survey, i.e., available, functional and private at the time of the survey (212 HCFs, 83%), and having improved toilets designated for staff (202 HCFs, 80%).

On the other hand, healthcare facilities did not meet the criteria regarding sanitation for vulnerable groups, including women and persons with limited mobility. About one-third of toilets for patients are sex-separated (71 HCFs, 28%) and had means to meet women's menstrual hygiene needs (90 HCFs, 36%).

Only 28 healthcare facilities across the country (11%) had improved toilets designated for people with limited mobility, which are constructed in a way so that can be accessed without stairs or steps, with handrails for support attached either to the floor or sidewalls, the doors being at least 80 cm wide, and the door handle and seat being within reach of people using wheelchairs or crutches/sticks.

Containment, emptying, transport, and disposal

First, fecal materials from the healthcare facility toilets are drained safely into impermeable septic tanks (144 HCFs, 57%), impermeable twin pits or holding tanks (2%). Unsafe options of drainage of fecal sludge from the toilet were reported in 104 healthcare facilities (41%), including permeable septic tanks with unsealed bottom, permeable twin pits, permeable pits (no ring or brick). 15 healthcare facilities had pipes leading fecal matter directly from the toilet into the field, thus having no containment (6%).

For safe drainage options from septic tank/pit latrine, we considered emptying by a service provider/ public utility company, other entities/persons, on their own (169 HCFs, 67%), drained by pipes into soak pit (6 HCFs, 2%). These 175 healthcare facilities (69%) were considered safely drained from septic tanks. To assess safely contained sanitation facilities, the two above-mentioned criteria were combined. In total, 142 healthcare facilities (56%) had safely contained sanitation facilities, and 111 healthcare facilities (44%) had unsafely contained sanitation facilities.

A typical containment facility (i.e., septic tank or a pit) was built 40 years ago (median value), ranging from one to 80 years ago (excluding 15 healthcare facilities without containment and 60 with unknown data). One-fourth of healthcare facilities had permission for the construction of septic tanks (26%), and one-third did not have permission for its construction (37%), while one-third of healthcare facilities do not know (32%). The septic tank or a pit are located in the backyard of the facility (71%), near the front side / close to the main entrance (16%), located inside the dwelling structure (4%), or the pit is below the

superstructure of the latrine (3%). The place of the septic tank is most often neither clearly marked (59%) nor fenced (82%). Reportedly, the capacity of the containment facility is approximately 16 cubic meters (median value), ranging from 2 to 75 cubic meters (excluding 146 healthcare facilities with unknown data). The latrine pit/septic tank at the time of the survey is almost full to one-third empty (56 HCFs, 22%), half-empty to more than half empty (92 HCFs, 36%).

The containment facility is at 100 meters to the nearest drinking water source (median value), ranging from 5 to 2000 meters, applicable to 121 healthcare facilities that responded to the question. That water source was uphill from the containment facility in one-fourth cases, downhill or at the same level in one-third cases.

Most healthcare facilities have no abandoned (closed) pit latrines / septic tanks on the premises (200 HCFs, 79%). Healthcare facilities that reported having closed pit latrines / septic tanks on their property reported that the tanks were closed with solid material (9 cases), disinfected and buried (2 cases), or buried without previous disinfection (8 cases). To respondents' best knowledge, the existing pit/ septic tank did not leak, overflow, or flood at any time in the previous year (81%).

Almost two-thirds of healthcare facilities emptied their latrine pits/septic tanks (162 HCFs, 64%), 76 healthcare facilities never emptied their septic tanks (30%), while 15 healthcare facilities had no containment of fecal matter (no septic tanks, 6%). The last time their latrine pit/septic tank filled up was 1-5 years ago (31%), more than 5 years ago (12%), or never (44%). After emptying, most healthcare facilities continued using the same pit, while one healthcare facility dug/opened a new pit. In general, healthcare facilities perform emptying of pit latrine / septic tanks only when they fill up (93 HCFs, 57% of 162 HCFs that emptied septic/holding tanks), once a year (21 HCFs, 13%), once in three years (20 HCFs, 12%), or less often (15 HCFs, 9%). Only 7 healthcare facilities reported that emptying is performed once in a few months.

Among 162 healthcare facilities that emptied their tanks, the process was performed by a public utility company (120 HCFs, 74% of healthcare facilities who performed emptying), private service providers (13 HCFs, 8%), or locals from the village (26 HCFs, 16%). Only healthcare facilities that employed a public utility company for tank emptying were considered as having safe delivery (120 HCFs, 47% of the whole sample). During the process of emptying, the pit/septic tank was easily accessible for the workers (96% of healthcare facilities that emptied their septic tanks), the process was motorized (99%), and there was no need to enter into the pit/septic tank (96%). The workers wore personal protection equipment, including boots and gloves (79%), face masks, and body covers (55%); eye goggles, helmets, and protective coats were used less often (about 28% of cases).

Typically, healthcare facilities contacted the service provider who emptied their pit/septic tank by phone/e-mail (140 HCFs, 86%). Only one-third of healthcare facilities keep evidence of emptying their pits / septic tanks (53 HCFs, 33%). In most cases, healthcare staff was satisfied with the emptying service (145 HCFs, 90%). The dominant reasons for not being satisfied with the service were the high cost of service, the duration of the procedure, and exposure to extensive bad smells and odors (only 10 HCFs responded).

After emptying, fecal content was transported by the same provider who emptied the tank. The owner of the transportation means – van/carts/pick up/tractor was typically the same provider who performed emptying and transport. Most often, providers used vacuum tankers with protected removal pipes and motorized machines for transport, so that fecal effluents would not spread in the surrounding environment (151 HCFs, 93%).

Almost two-thirds of healthcare staff did not know where fecal content was disposed of after emptying and transport (61%). According to responses from other healthcare staff, fecal content was most frequently disposed to wastewater treatment plants (14 HCFs, 9% of healthcare facilities who performed emptying), public sewer (19 HCFs, 12%), or sanitary landfill (19 HCFs, 12%). Only from 3 healthcare facilities fecal content was disposed to a crop field to be applied as a fertilizer (2%). In rare cases, fecal content was disposed to a non-sanitary / wild landfill (4 HCFs, 2%), moving water body, or an open pit (2 HCFs for each response). No healthcare facility reported that fecal content was buried on site. On average, fecal content was transported more than 100 meters away from the healthcare facilities (70 HCFs, 43%). In more than half of visited healthcare facilities, staff did not know how far from healthcare facilities fecal content was disposed of.

In the majority of cases, healthcare facilities had to pay for the emptying and transport (135 HCFs, 83%). The service fee was estimated from 80 healthcare facilities that provided that information. On average, healthcare facilities paid 8000 RSD for the services (median value), ranging from 500-100.000 RSD. The money for emptying service was obtained from the local self-government (120 HCFs, 74%) or the healthcare facility itself (11% of cases). Almost three-quarters of healthcare facilities are not subsidized for the cost for the services of emptying and transport (74%), and half of the healthcare facilities have a dedicated budget line for emptying service within their own budget (49%).

Among 162 healthcare facilities that emptied their tanks, 99 healthcare facilities reported that they never treated fecal sludge from the septic tank or latrine pit on site (64% of HCFs that emptied septic tanks). In 4 healthcare facilities, fecal sludge was treated by planting a drying bed followed by liquid treatment. Typically, treated fecal sludge is disposed of on land and water or a landfill. In only one healthcare facility, a member of staff engages in any fecal sludge treatment process. Only 6 healthcare facilities allow neighboring households to use fecal contents directly from the pit latrine / septic tank.

When healthcare facilities staff was asked if they agreed that the treated fecal sludge could be used as fertilizer for agricultural cultivations, the responses were tied: 38% disagreed, 25% agreed, and 77% had no opinion on that question.

Safe management of sanitation services

Safe management of sanitation facilities is estimated using several critera, related to the containment, drainage, emptying, transport, and disposal.

Among 76 healthcare facilities whose septic tanks were not emptied, 22 healthcare facilities met the criteria for the safe management of not emptied septic tanks, including having improved and safely contained sanitation facilities (29% of HCFs whose septic tanks were not emptied; 9% of all visited schools). The rest of the healthcare facilities where septic tanks were not emptied (54 HCFs) were not safely contained and thus considered unsafely managed offsite of unsafely contained (71% of healthcare facilities where septic tanks were not emptied; 21% of all visited HCFs).

Among 177 healthcare facilities where septic tanks were emptied (including 15 HCFs without septic tanks), 91 HCFs met the criteria for the safe management of emptied septic tanks, including having improved and safely contained sanitation facilities and being safely delivered by a public utility company (51% of healthcare facilities whose septic tanks were emptied; 36% of all visited HCFs).

Among 177 healthcare facilities where septic tanks were emptied, 51 healthcare facilities had improved and safely contained sanitation facilities, but were emptied and delivered by private

entities, and were thus categorized as unsafely managed offsite of safely contained (29% of healthcare facilities whose septic tanks were emptied; 20% of all visited HCFs).

Among 177 healthcare facilities where septic tanks were emptied, 35 healthcare facilities were emptied and delivered by either public utility companies or private entities but not safely contained in the first place (including 15 HCFs without septic tanks). Therefore, they were categorized as unsafely managed offsite of unsafely contained (20% of healthcare facilities whose septic tanks were emptied; 14% of all visited HCFs).

The distribution of healthcare facilities by the management of septic tanks is presented in Table 6 and Figure 10.

Table 6. Distribution of healthcare facilities by the management of septic tanks

Total sample = 253 HCFs	
NOT EMPTIED septic tanks = 76 HCFs	**EMPTIED septic tanks = 177 HCFs**
Safely managed onsite (not emptied) = 22 HCFs (8.7%)	**Safely managed offsite (emptied and delivered by PUC) = 91 HCFs (36.0%)**
Unsafely managed offsite of unsafely contained (not emptied and not safely contained) = 54 HCFs (21.3%)	**Unsafely managed offsite of unsafely contained (emptied and delivered by either PUC or private entities but not improved or not safely contained in the first place) = 20 HCFs** **Including no septic tanks (15 HCFs)** **TOTAL = 35 HCFs (13.8%)**
	Unsafely managed offsite of safely contained (emptied and delivered by private entities) = 51 HCFs (20.2%)

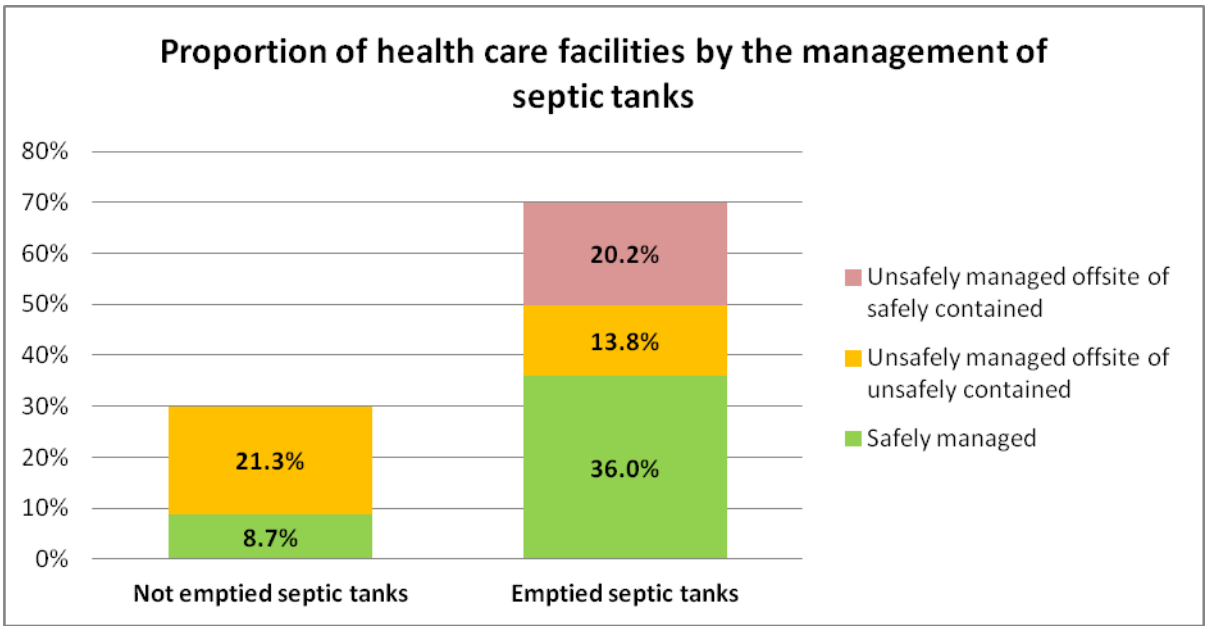

Figure 10. The proportion of healthcare facilities by the management of septic tanks

4.4.4. Summary of results for households, schools, and healthcare facilities

To sum up, the differences between urban and rural households, rural schools, and rural healthcare facilities surveyed in the presented study according to sanitation criteria are presented.

First, when it comes to the type of sanitation facility, almost all visited objects had improved sanitation facilities, including flush toilets connected to piped water (95%), dry toilets with toilet slab without water flush (1%), and pour-flush toilets with a manual flush from the bucket. 99% of all households, including 99,2% of urban households and 99,1% of rural households, had improved toilets. Similarly, 98,5% of the rural schools and 96,4% of the rural healthcare facilities had improved toilets (Figure 11).

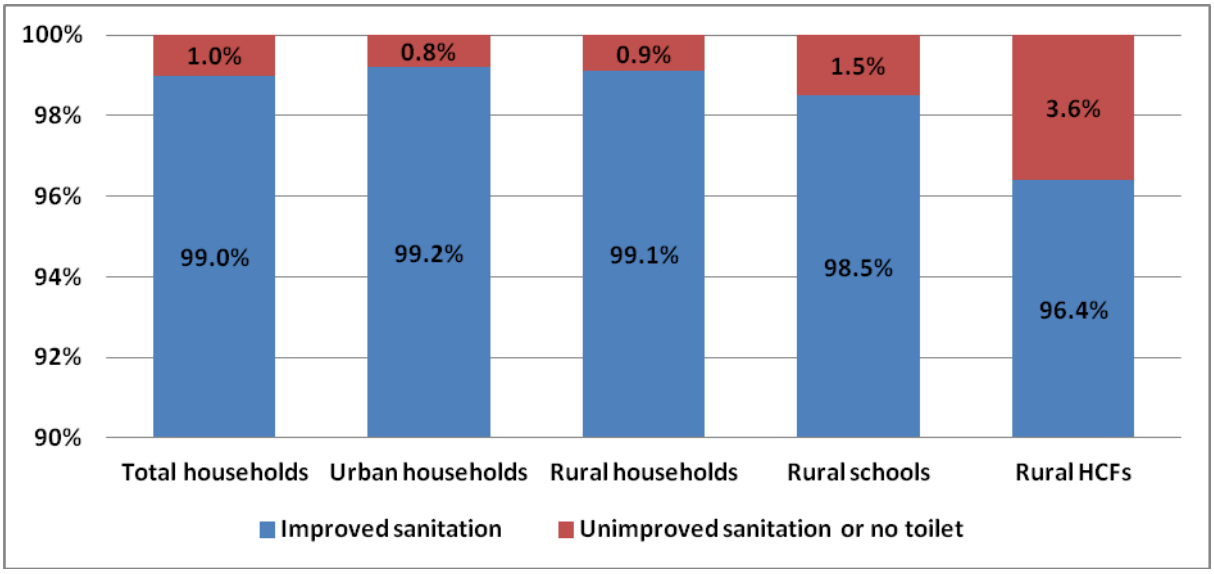

Figure 11. Distribution of sanitation facilities by types (improved / unimproved) in households, schools, and healthcare facilities

Second, safely contained sanitation facilities meet the criteria for safe drainage from the household toilets and safe drainage from the septic tanks/pit latrines. In total, 34% of all households, 32% of urban households, and 35% of rural households had safely contained sanitation facilities. However, more than half of the surveyed rural schools (54%) and healthcare facilities (56%) had safely contained sanitation facilities. The distribution of sanitation facilities by types (improved / unimproved) in households, schools, and healthcare facilities is presented in Figure 12.

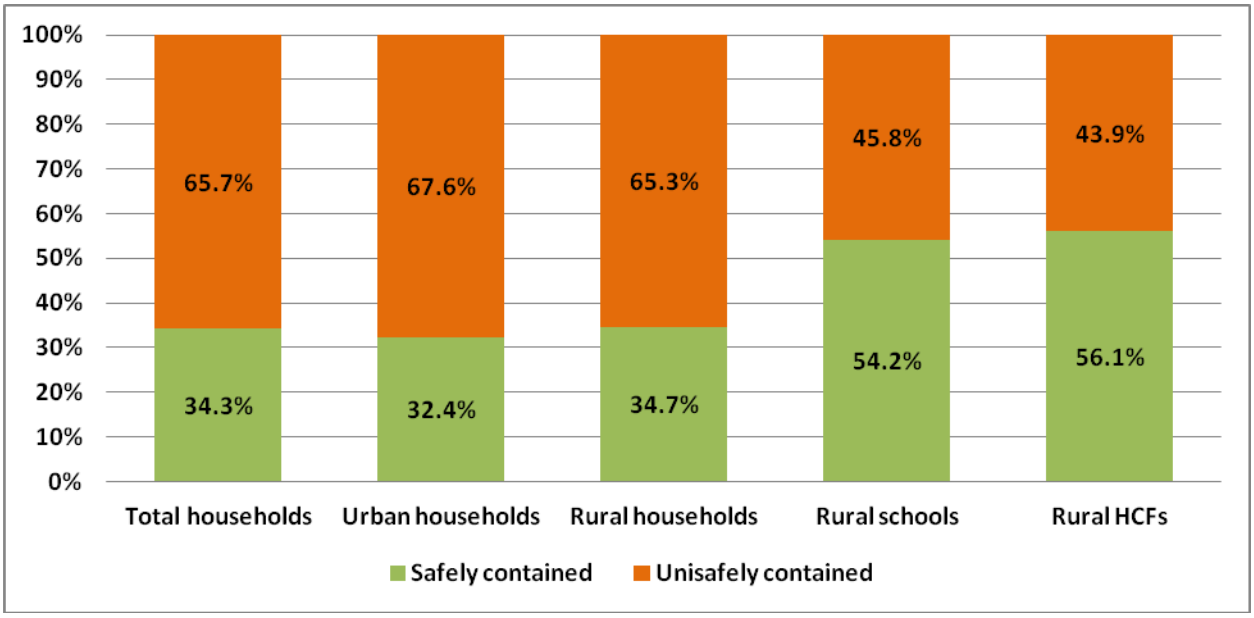

Figure 12. Distribution of containment facilities (latrine pits and septic tanks) by containment (safely contained / unsafely contained) in households, schools, and healthcare facilities

Third, there was no difference in the proportion of emptied latrine pits / septic tanks between households, schools, and facilities. Almost two-thirds of all households (60,5%), schools (63,3%), and healthcare facilities (64%) reported emptying their latrine pits/septic tanks. The distribution of containment facilities (latrine pits and septic tanks) by emptying (emptied / not emptied / no containment facility) in households, schools, and healthcare facilities is shown in Figure 13.

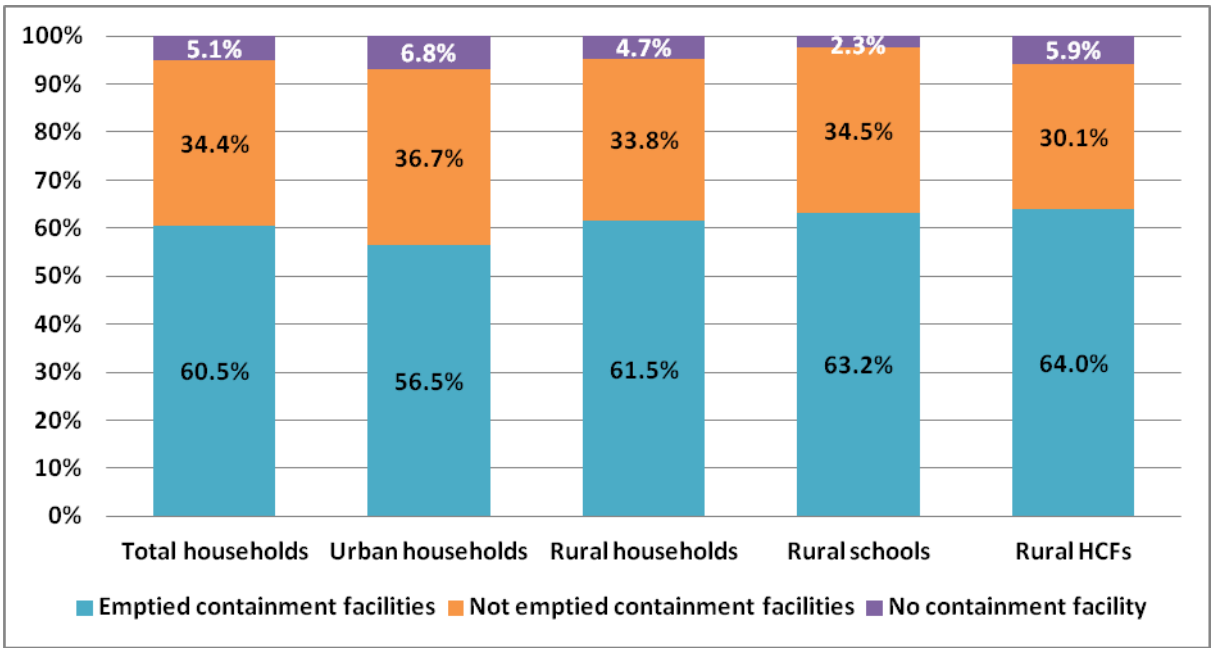

Figure 13. Distribution of containment facilities (latrine pits and septic tanks) by emptying (emptied / not emptied / no containment facility) in households, schools, and healthcare facilities

Fourth, we observed a significant difference between households, schools, and healthcare facilities in the emptying and transport services providers. Safe delivery of emptied

containment facilities covered employing a public utility company for emptying and transport of fecal content from the containment facility. Among containment facilities emptied from the households, only 21,1% were safely delivered by a public utility company, i.e., 45,3% of households in urban areas and 15,6% of households in rural areas. On the other hand, more containment facilities were safely delivered by a public utility company from rural schools (74,3% of emptied septic tanks / latrine pits) and rural healthcare facilities (74,1%). The distribution of emptied containment facilities (latrine pits and septic tanks) by delivery (safely delivered / unsafely delivered) in households, schools, and healthcare facilities is presented in Figure 14.

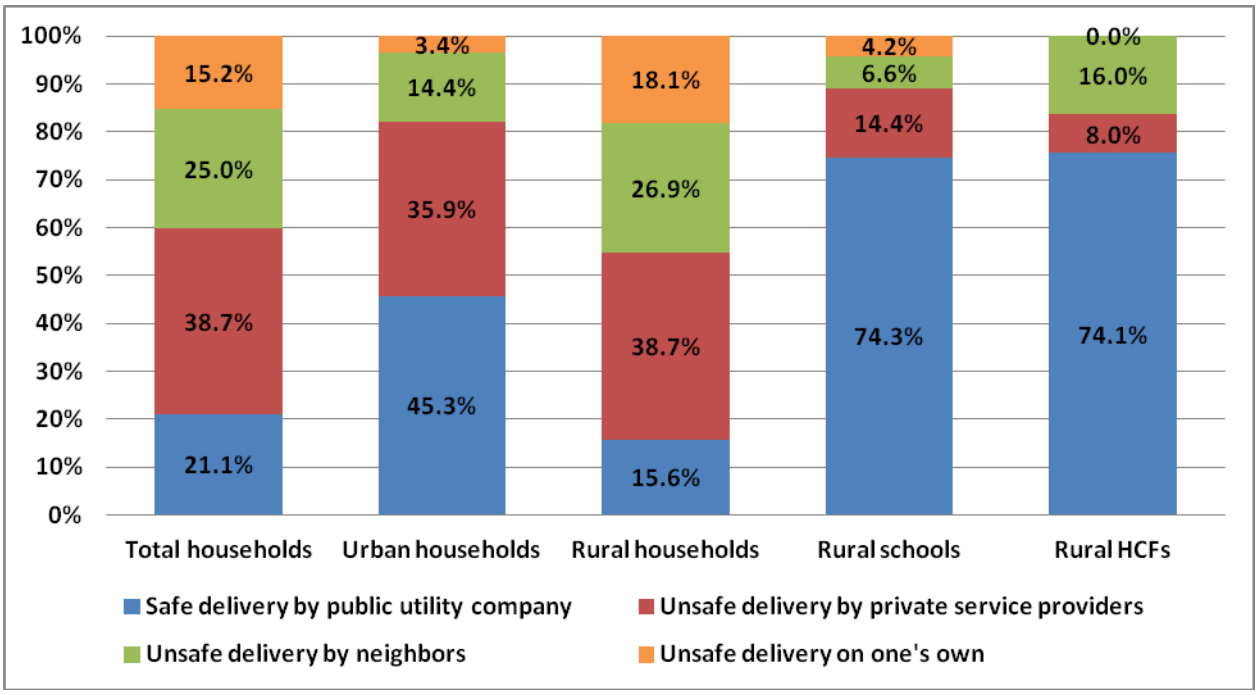

Figure 14. Distribution of emptied containment facilities (latrine pits and septic tanks) by delivery (safely delivered / unsafely delivered) in households, schools, and healthcare facilities

Fifth, we observed a significant difference between households, schools, and healthcare facilities in disposing of fecal content from the emptied containment facilities. Among households, particularly those in rural areas, fecal content was most frequently disposed to crop fields as a fertilizer (15% of households who performed emptying). Less than 10% of all households delivered fecal content to non-sanitary / wild landfills, sanitary landfills, a public sewer, or applied other methods of disposal. However, in urban areas, fecal content was more often disposed to a public sewer. On the other hand, rural schools and healthcare facilities disposed of fecal content from their septic tanks / latrine pits by transporting it to wastewater treatment plants (11% of schools and 9% of healthcare facilities who performed emptying), to a public sewer (13% of schools and 12% of HCFs), sanitary landfill (13% of schools and 12% of HCFs). Rural schools and healthcare facilities reportedly practiced other disposal options less often. The distribution of emptied containment facilities (latrine pits and septic tanks) by disposal options is shown in Figure 15.

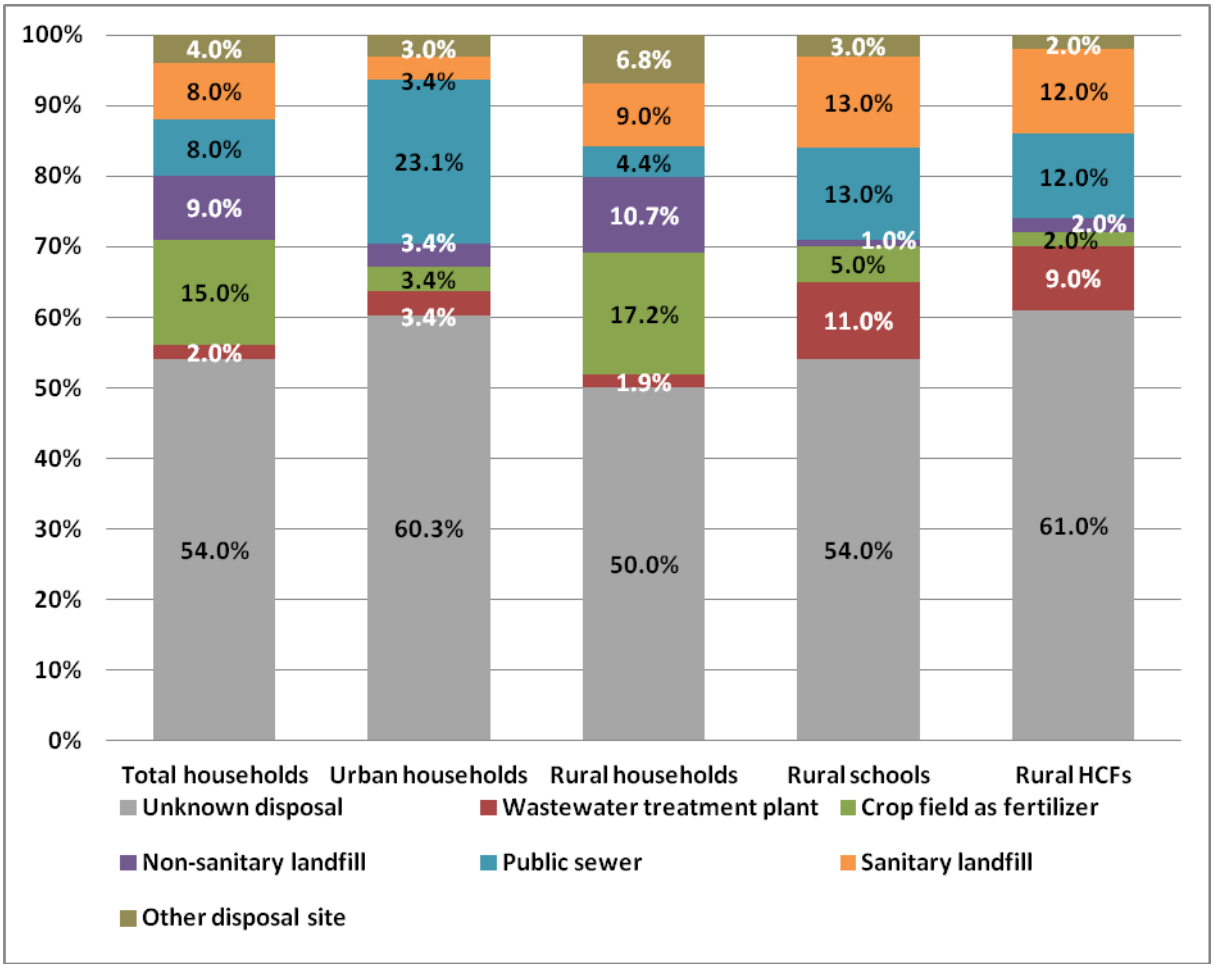

Figure 15. Distribution of emptied containment facilities (latrine pits and septic tanks) by disposal options

Sixth, the proportion of safely managed sanitation facilities was significantly different between households, schools, and healthcare facilities. Only 10% of all households, including 16,9% of urban households and 8,6% of rural households, met the criteria for safe management of sanitation facilities. On the contrary, 43,6% of rural schools and 44,7% of rural healthcare facilities met the criteria for safe management of sanitation facilities. The distribution of containment facilities (latrine pits and septic tanks) by safe management (safely managed / unsafely managed) in households, schools, and healthcare facilities is presented in Figure 16.

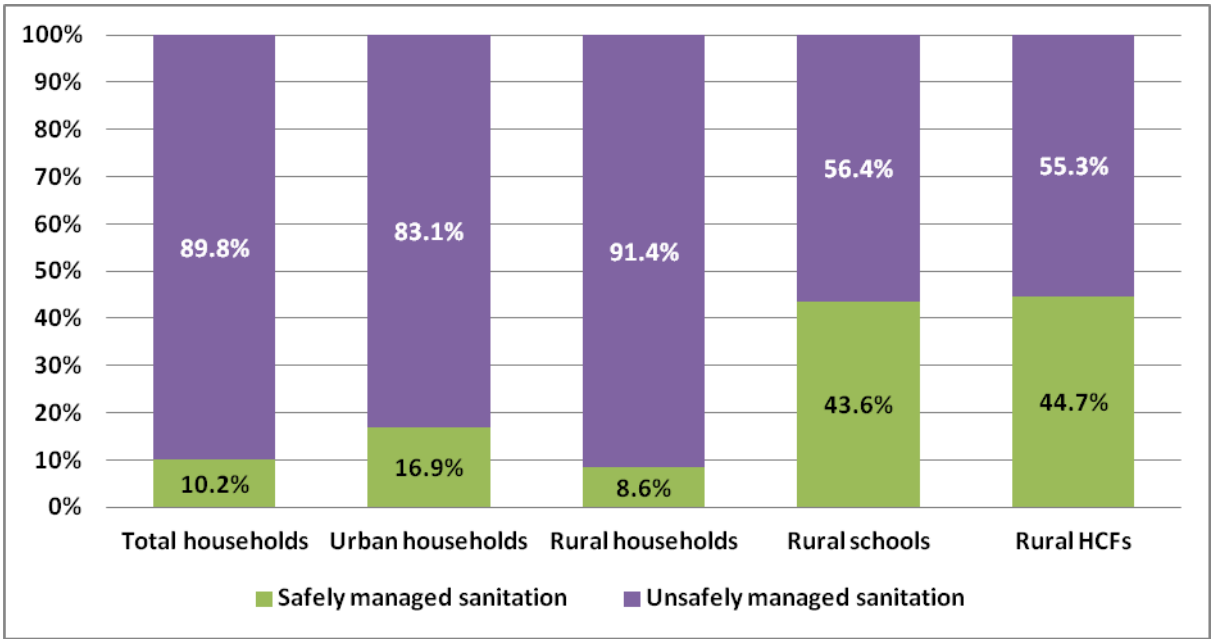

Figure 16. Distribution of containment facilities (latrine pits and septic tanks) by safe managment (safely managed / unsafely managed) in households, schools, and healthcare facilities

5. Conclusions

Based on the presented results, the following conclusions can be drawn.

Conclusions with the opportunities for scaling up routing monitoring of SMOSS

- This was the first national survey that comprehensively investigated a management of on-site sanitation facilities throughout entire sanitation chain, starting with an in-depth analysis of national and local policies and the enabling environment for safe management of on-site sanitation facilities, followed by a survey on the local self-governments and service providers to understanding of on-site sanitation practice in households and rural schools and healthcare facilities.
- It helped in understanding the local regulations on emptying, transport and treatment practices, capacities (human, technical and financial) and existing data, as well as in identification and understanding of gaps related to legal acts, emptying practice, transport, treatment and disposal.
- Methodological tools, developed in this survey such as a checklist for policy analysis and the questionnaires for the local self-governments, service providers, households, schools and HCFs represents a valuable pool of indicators for assessing the extent of safe management of on-site sanitation facilities in different settings.
- Developed indicators will serve as a basis for improving existing national and developing a new instrument for establishing of routing monitoring of SMOSS.
- Data collected from different stakeholders involved in different phases of the management of SMOSS can complement each other related to emptying techniques, workers protection, transport, treatment and disposal and decrease bias from self-reporting.
- Opportunities for policy improvement.

The following key stakeholders for establishing the monitoring system for SMOSS were identified with certain opportunities:

- National statistical office - opportunity to incorporate indicators on assessing safe management of SMOSS at the level of households in census, as well as indicators on performing of public utility companies with respect to SMOSS in the annual survey on public utility companies on emptying, transport and treatment.
- Local self-government units/local authorities-opportunities for establishing local registers on SMOSS through expanding excising local cadastres on polluters, previously amending relevant national regulations.
- Standing Conference of Towns and Municipalities - raising awareness of local authorities on the importance of establishing the local registers on SMOSS.
- The Institute of Public Health of Serbia with the network of institute of public health - developed indicators in the checklist for sanitary surveillance of septic tanks in schools and HCFs to be incorporated in the methodology of the monitoring of WASH in HCFs and schools.

Challenges associated with scaling up routine monitoring of SMOSS

- Monitoring of SMOSS is not addressed neither in national legislation nor in local legal acts;
- Roles and responsibilities for routing monitoring of SMOSS are not defined in the policy;
- Budget line for financing of the routine monitoring need to be defined and approved;
- Hard to reach informal providers;
- Lot of missing answers from LGUs and service providers, as well as from households with respect to treatment and a final disposal of fecal sludge;
- Lack of a systematic approach in managing SMOSS at both, national and local levels.
- Keeping registers and reporting on SMOSS management are not covered in the regulations;
- COVID19 crisis take over entire focus and slow down prioritization and visibility of SMOSS at both, national and local level.
- Low awareness of national authorities, LGUs and service providers for the need of establishing the monitoring system for SMOSS.

Future activities

- Conducting a national workshop/meeting with the all relevant stakeholders to present the results of this national survey with the aim to move back focus to sanitation recognized as a priority after the previous GLAAS 2018 reporting and to define further steps for improving of the situation, including considerations for establishing of a routine monitoring of SMOSS.
- Selection and agreement on a list of indicators from developed tools that fit to the framework and scope of setting up future monitoring system.
- Discussions with national statistics to include questions in census and exciting surveys such as a survey on public utility companies.
- Discussions with national statistics to include questions for performing service providers with respect to emptying, transport and treatment of fecal sludge from SMOSS in a survey of public utility companies, which has already started and questionnaire has been shared.
- Liaise with the network of the local self-government units led by the Standing Conference of Towns and Municipalities for raising awareness on the need for establishing local registers on SMOSS.

Areas that need further guidance

- National methodological tool/questionnaire to be improved or approved.
- Integration of SMOSS indicators into census and a national survey of service providers.
- Overcoming missing answers.
- Legislation improvement related to SMOSS: definitions, keeping registers and reporting, monitoring and reporting on SMOSS management practice.

ANNEXES

I. ANNEX

Study design

Number of on-site sanitation facilities for sanitary inspection

To obtain statistically significant findings at national scale, the number of on-site sanitation facilities to be inspected (N_{SMOSS}) is calculated to be representative of households, schools, and health care facilities in the country, with a confidence level of at least 95% and level of precision (or margin of error) of 5%. Obtained data at national scale will not be used for representing regional or municipal situation with respect to SMOSS situation. These formulas yield a representative number in this assessment according to Kasiulevičius et al. (2006).

$$N_{SMOSS} = z^2 * p\,(1-p) / c^2$$

With z = z-score (number of standard deviations for a given confidence level; z equals 1.96 for a 95% confidence level); p = estimated proportion of the attribute that is present in the population (arbitrary set at 0.5); and c = confidence interval, expressed as decimal (0.05 = ±5).

Furthermore, the obtained N_{SMOSS} is corrected for the size of population of interest (number of HCFs reported), as per the following:

$$\text{Final } N_{SMOSS\ (corrected)} = N_{SMOSS} / (1 + (N_{SMOSS} - 1 / \text{population size}))$$

In order to calculate the number of on-site sanitation facilities to be inspected, the following data were taken into consideration:

For households – the proportion of households not connected to public sewer system (p_h) was obtained from the 2019 MICS survey[4]. The average proportion of households that are currently not connected to public sewerage system is 41.8% on the national / state level. The variations of this proportion by urban-rural areas, across regions, districts, and municipalities, were taken into consideration for the primary and secondary stratification of the household samples.

For households – the number of households in the Republic of Serbia was obtained from the 2011 Census of Population Households and Dwellings in the Republic of Serbia[5]. The

[4] Republički zavod za statistiku, UNICEF, 2019. Istraživanje višestrukih pokazatelja položaja žena i dece u Srbiji i Istraživanje višestrukih pokazatelja položaja žena i dece u romskim naseljima u Srbiji, 2019, Izveštaj o nalazima istraživanja. Beograd, Srbija: Republički zavod za statistiku i UNICEF.

[5] 2011 Census of Population, Households and Dwellings in the Republic of Serbia. Population. Household according to the number of members. Data by settlements. Belgrade, 2013. Available at: www.popis2011.stat.rs

total number of households in the country eligible for the study (i.e. not connected to the public sewer system) is 982859. The number of households by regions, districts, and municipalities was taken into consideration for the primary and secondary stratification of the samples.

For schools and healthcare facilities – the proportion of facilities not connected to public sewer system (p_s and p_z) was obtained from the 2019 MICS survey. The average proportion of facilities that are currently not connected to public sewerage system was considered to equal 72.5% in rural areas.

For schools – population size of schools in rural areas in the Republic of Serbia was obtained from the 2020 inventory of rural schools, property of the Institute of Public Health "dr Milan Jovanović Batut". The total number of schools in rural areas in the country eligible for the study (i.e. not connected to the public sewer system) was 1407. The number of rural schools by regions, districts, and municipalities was taken into consideration for the primary and secondary stratification for the final selection.

For health care facilities – population size of health care facilities in rural areas in the Republic of Serbia was obtained from the 2018 inventory of health care facilities, property of the Institute of Public Health "dr Milan Jovanović Batut".The total number of health care facilities in rural areas in the country eligible for the study (i.e. not connected to the public sewer system) was 1312. The number of rural health care facilities by regions, districts, and municipalities was taken into consideration for the primary and secondary stratification for the final selection.

Based on all these criteria, the calculated number small on-site sanitation facilities to be visited at households, schools, and health care facilities is:

1. For households – the exact number of small on-site sanitation facilities is 1054, which is rounded to 1055;
2. For schools – the exact number of small on-site sanitation facilities is 252, which is rounded to 255;
3. For health care facilities – the exact number of small on-site sanitation facilities was 249, which is rounded to 250.

Finally, the total number of small on-site sanitation facilities belonging to households, schools, and health care facilities for the study is 1560.

Primary stratification

According to the 2011 Census of Population Households and Dwellings in the Republic of Serbia, the country is divided into five statistical regions, each containing a certain number of districts. For the purpose of this assessment, four Broad Areas were created:

1. Broad Area BA1 – Vojvodina, comprising 7 districts,
2. Broad Area BA2 – Belgrade, comprising 17 city municipalities,
3. Broad Area BA3 – West Serbia and Šumadija, comprising 9 districts, and
4. Broad Area BA4 – South and East Serbia, including Kosovsko-mitrovački district and enclaves, comprising 10 districts.

Primary stratification of households by four Broad Areas was performed according to the total number of households, and the number of eligible households in urban and in rural areas separately. As mentioned above, the number of households which are eligible for the survey, meaning that they are not connected to public sewer system was obtained from the 2011

Census of Population, Households and Dwellings in the Republic of Serbia and from the 2019 MICS survey.

Primary stratification of households by Broad Area is presented in Table 2.

Table 2. Primary stratification of households by Broad Area

Broad Area (BA)	**Number of eligible households in urban areas**	**Selected households in urban areas**	**Number of eligible households in rural areas**	**Selected households in rural areas**	**Total number of eligible households**	**Selected households total**
BA1: Vojvodina	55969	**60**	222616	**239**	278586	**299**
BA2: Belgrade	66934	**71**	81274	**87**	148208	**158**
BA3: West Serbia and Šumadija	42787	**46**	276994	**297**	319781	**343**
BA4: South and East Serbia, Kosovo and enclaves	36780	**40**	199504	**214**	236284	**254**
Total	202470	**217**	780388	**838**	982859	**1055**

Primary stratification of schools by four Broad Areas was performed according to the 2020 list of rural schools, property of the Institute of Public Health “dr Milan Jovanović Batut”.This is presented in Table 3.

Table 3. Primary stratification of rural schools by Broad Area

Broad Area (BA)	**Number of schools reported in rural areas**	**Selected rural schools total**
BA1: Vojvodina	275	**50**
BA2: Belgrade	91	**16**
BA3: West Serbia and Šumadija	475	**86**
BA4: South and East Serbia, Kosovsko-mitrovački district and enclaves	566	**103**
Total	1407	**255**

Primary stratification of health care facilities by four Broad Areas was performed according to the 2018 list of health care facilities, property of the Institute of Public Health “dr Milan Jovanović Batut”.This is presented in Table 4.

Table 4. Primary stratification of health care facilities by Broad Area

Broad Area (BA)	**Number of health care facilities reported in rural areas**	**Selected rural health care facilities total**
BA1: Vojvodina	325	**62**
BA2: Belgrade	74	**14**
BA3: West Serbia and Šumadija	453	**86**
BA4: South and East Serbia, Kosovo and enclaves	460	**88**
Total	1312	**250**

Secondary stratification

Secondary stratification of the small on-site sanitation facilities used by households, schools, and health care facilities was performed according to their reported number for each district of the Broad Area. As mentioned above, these data were obtained from the 2019 MICS survey, or collected by the Institute of Public Health "dr Milan Jovanović Batut".

Secondary stratification of households

Secondary stratification of households in BA1 Vojvodina is presented in Table 5.

Table 5. Secondary stratification of households, schools, and health care facilities in Broad Area BA1 Vojvodina

Codes of districts in BA1	**Number of eligible households in urban areas**	**Selected households in urban areas**	**Number of eligible households in rural areas**	**Selected households in rural areas**	**Total number of eligible households**	**Selected households total**
S1D01 Južnobački	21169	**23**	51508	**55**	72677	**78**
S1D02 Južnobanatski	8214	**9**	35571	**38**	43785	**47**
S1D03 Severnobački	5869	**6**	18900	**20**	24769	**26**
S1D04 Severnobanatski	4549	**5**	15474	**17**	20023	**22**
S1D05 Srednjebanatski	4633	**5**	26299	**28**	30932	**33**
S1D06 Sremski	6620	**5**	50089	**27**	56709	**32**
S1D07	4916	**7**	24776	**54**	29692	**61**

Zapadnobački						
Total for BA1	55969	**60**	222616	**239**	278586	**299**

Secondary stratification of households in BA2Belgradeis presented in Table 6.

Table 6. Secondary stratification of households in Broad Area BA2 Belgrade (cumulative data)

City municipalities (cumulative) in BA2	**Number of eligible households in urban areas**	**Selected households in urban areas**	**Number of eligible households in rural areas**	**Selected households in rural areas**	**Total number of eligible households**	**Selected households total**
City municipalities only in urban area (Vračar, Savski venac, Stari grad, Zvezdara, Novi Beograd)	30801	**33**	0	**0**	30801	**33**
City municipalities only in rural area (Barajevo, Sopot)	96	**0**	11770	**12**	11866	**12**
City municipalities with greater urban area (Voždovac, Zemun, Palilula, Čukarica)	30553	**33**	17377	**19**	47930	**52**
City municipalities with greater rural area (Surčin, Lazarevac, Mladenovac, Obrenovac, Grocka)	5484	**5**	52128	**56**	57611	**61**
Total for BA2	66934	**71**	81274	**87**	148208	**158**

Note: Detailed data of the stratification of the households by each of the 17 municipalities will be provided to field teams

Secondary stratification of households in BA3 West Serbia and Šumadija is presented in Table 7.

Table 7. Secondary stratification of households in Broad Area BA3 West Serbia and Šumadija

Codes of districts in BA3	Number of eligible households in urban areas	Selected households in urban areas	Number of eligible households in rural areas	Selected households in rural areas	Total number of eligible households	Selected households total
S3D09 Kolubarski	3266	**4**	26180	**28**	29446	**32**
S3D10 Mačvanski	3869	**4**	54928	**59**	58796	**63**
S3D11 Moravički	5080	**5**	25465	**27**	30545	**32**
S3D12 Pomoravski	4320	**5**	30405	**33**	34725	**38**
S3D13 Rasinski	3977	**4**	39531	**42**	43508	**46**
S3D14 Raški	7307	**8**	37528	**40**	44834	**48**
S3D15 Šumadijski	8453	**9**	26699	**29**	35152	**38**
S3D16 Zlatiborski	6516	**7**	36258	**39**	42774	**46**
Total for BA3	42787	**46**	276994	**297**	319781	**343**

Secondary stratification of households in BA4 South and East Serbia, Kosovsko-mitrovački district and enclavesis presented in Table 8.

Table 8. Secondary stratification of households in Broad Area BA4 South and East Serbia, Kosovsko-mitrovački district and enclaves

Codes of districts in BA4	Number of eligible households in urban areas	Selected households in urban areas	Number of eligible households in rural areas	Selected households in rural areas	Total number of eligible households	Selected households total
S4D17 Borski	3192	**3**	14449	**15**	17641	**18**
S4D18 Braničevski	3196	**3**	30081	**30**	33277	**33**
S4D19 Jablanički	4219	**4**	32743	**34**	36961	**38**
S4D20 Kosovsko-mitrovički ienclaves	n.a.	**3**	n.a.	**9**	n.a.	**12**
S4D21 Nišavski	9595	**10**	43589	**45**	53184	**55**
S4D22 Pčinjski	4123	**4**	18032	**19**	22155	**23**
S4D23 Pirotski	2603	**3**	9258	**9**	11861	**12**
S4D24 Podunavski	4677	**5**	25508	**26**	30185	**31**
S4D25 Toplički	2067	**2**	12246	**13**	14312	**15**
S4D26 Zaječarski	3109	**3**	13600	**14**	16708	**17**
TOTAL BA4	36780	**40**	199504	**214**	236284	**254**

Note: The number of households for Kosovsko-mitrovački district and enclave was not available from the 2011 Census. Therefore, the number of eligible households in urban and rural areas had to be assumed.

Secondary stratification of schools and health care facilities

Secondary stratification of schools and health care facilities in BA1 Vojvodina is presented in Table 9.

Table 9. Secondary stratification of schools and health care facilities in Broad Area BA1 Vojvodina

Codes of districts in BA1	**Number of eligible schools in rural areas**	**Selectedschools**	**Number of eligible HCFs in rural areas**	**Selected HCFs**
S1D01 Južnobački	35	**6**	60	**11**
S1D02 Južnobanatski	37	**7**	47	**9**
S1D03 Severnobački	38	**7**	29	**6**
S1D04 Severnobanatski	31	**6**	28	**5**
S1D05 Srednjebanatski	56	**10**	50	**10**
S1D06 Sremski	51	**9**	79	**15**
S1D07 Zapadnobački	27	**5**	32	**6**
Total for BA1	275	**50**	325	**62**

Secondary stratification of schools and health care facilities in BA2Belgradeis presented in Table 10.

Table 10. Secondary stratification of schools and health care facilities in Broad Area BA2 Belgrade (cumulative data)

City municipalities (cumulative) in BA2	**Number of eligible schools in rural areas**	**Selected schools**	**Number of eligible HCFs in rural areas**	**Selected HCFs**
City municipalities only in rural area (Barajevo, Sopot)	25	**4**	9	**2**
City municipalities with greater urban area (Voždovac, Zemun, Palilula, Čukarica)	12	**2**	35	**7**
City municipalities with greater rural area (Surčin, Lazarevac, Mladenovac, Obrenovac, Grocka)	54	**10**	30	**5**
Total for BA2	91	**16**	74	**14**

Note: Detailed data of the stratification of the schools by each of the 11 municipalities will be provided to field teams

Secondary stratification of schools and health care facilities in BA3 West Serbia and Šumadija is presented in Table 11.

Table 11. Secondary stratification of schools and health care facilities in Broad Area BA3 West Serbia and Šumadija

Codes of districts in BA3	**Number of eligible**	**Selectedschools**	**Number of eligible HCFs**	**Selected HCFs**

	schools in rural areas		in rural areas	
S3D09 Kolubarski	58	**11**	28	**6**
S3D10 Mačvanski	82	**14**	79	**15**
S3D11 Moravički	47	**9**	38	**7**
S3D12 Pomoravski	52	**9**	65	**12**
S3D13 Rasinski	69	**13**	76	**14**
S3D14 Raški	62	**11**	63	**12**
S3D15 Šumadijski	45	**8**	37	**7**
S3D16 Zlatiborski	60	**11**	67	**13**
Total for BA3	475	**86**	453	**86**

Secondary stratification of schools and health care facilities in BA4 South and East Serbia, Kosovsko-mitrovački district and enclavesis presented in Table 12.

Table 12. Secondary stratification of schools and health care facilities in Broad Area BA4 South and East Serbia, Kosovsko-mitrovački district and enclaves

Codes of districts in BA4	Number of eligible schools in rural areas	Selected schools	Number of eligible HCFs in rural areas	SelectedHCFs
S4D17 Borski	41	**7**	50	**10**
S4D18 Braničevski	88	**16**	57	**11**
S4D19 Jablanički	90	**16**	51	**10**
S4D20 Kosovsko-mitrovički i enclaves	35	**6**	68	**13**
S4D21 Nišavski	115	**21**	68	**13**
S4D22 Pčinjski	50	**9**	49	**9**
S4D23 Pirotski	27	**5**	23	**4**
S4D24 Podunavski	53	**10**	39	**8**
S4D25 Toplički	32	**6**	23	**4**
S4D26 Zaječarski	35	**7**	32	**6**
TOTAL BA4	566	**103**	460	**88**

The selection of small on-site sanitation facilities at households, schools, and health care facilities

After primary and secondary stratification, filed teams from all four Broad Areas will be provided with the lists of urban and rural settlements in their districts, as well as the lists of eligible schools and health care facilities in their districts. Field teams will randomly select the households, schools, and health care facilities, whose septic tanks and pit latrines will be inspected during the surveillance.

The exclusion criteria for the selection of household are:

- connection to a public sewer system
- respondents from household under age 18

- refusal to participate
- on-site sanitation facility at household, school or HCF is under construction and/or reconstruction at the time of survey

The total number of inspected small on-site sanitation facilities belonging to households, schools, and health care facilities must be equal to the calculated number of all three entities. Should any small on-site sanitation facility at household, school, or health care facility be unavailable at the time of the study, the field team will replace it with another one randomly.

Proposed algorithm for the sampling of households
The selection of individual households to be surveyed will be done by random sampling method. In summary, field teams from each district will be given a list of settlements in the district (available from Census), as well as the number of households to be visited (calculated from secondary stratification). For example, assuming that district A has 140 settlements (census data), and the number of households to be visited is 50. Dividing 140 with 50 gives a step interval of 2.8, or approximately 3. Team members will use a random number generator to get the order of the first settlement to be selected (from 1 to 140), for example number 33. Starting from the settlement that is on the 33rd place of the list, the team will use the step interval of 3 to choose the subsequent villages: 36, 39, 42, … etc., until they get 50 villages selected. In the selected settlements team members will try to find a household who is willing to participate. If it turns out that the village is connected to the public sewer, the team will leave the village and replace it with the subsequent one from the list, using the step interval as described above. On the other hand, if a household refuses to participate, field teams will continue searching for qualifying household in the same village randomly – the so called "random walk" procedure. This technique is unbiased because the starting point and the path of travel along the village are determined randomly by the field teams. However, the probability of bias toward cooperative, available households is always present. Field teams will therefore be encouraged to make effort to convince reluctant households to be interviewed, because their unwillingness to participate may be related to poor socio-economic conditions in the first place (and possibly poor sanitation).

Coding of households, schools, and health care facilities

For the purpose of this assessment, all households, schools, and health care facilities will be assigned with a unique code. All codes consist of 8 characters.

The coding is explained in the following:

- *Digit 1:*Letter S stands for the Republic of Serbia,
- *Digit 2:* Stands for the Broad Area (1 = Vojvodina; 2 = Belgrade; 3 = West Serbia and Šumadija; 4 = South and East Serbia, Kosovo and enclaves),
- *Digit 3:* Letter D stands for the district,
- *Digits 4-5:* Stand for the code of each district (from 01 to 26),
- *Digit 6:* Letters D, S, or Z will be assigned for households, schools, and health care facilities, respectively,
- *Digits 7-8:* Stand for the number of household, school, or health care facility that was visited during the study (01-xy). Please note that "xy" is the maximum number of

households, schools, or health care facilities in the assessment. These numbers can be found in Tables 4-6 for each district.

Important note: Digits 1-5 of the code are unique for every district. They are predefined and should not be replaced, changed or misspelt.
Digits 6-8 will be assigned by the field teams, according to the instructions provided above. Field teams are responsible for keeping the record of the coding process.

Material and methods

Field teams will use the checklists to perform sanitary inspection of SMOSS and collect data on their management. Only professionals nominated for the survey by the local institutes of public health, and those who underwent training will be appointed to conduct field work.

Checklist for sanitary inspection

For the purpose of this assessment, three checklists were created, i.e. for small-sanitation systems belonging to households, schools, and health care facilities (all in Annex). All checklists were developed and adapted from similar studies conducted in Bangladesh, Cambodia, from the SNV, JMP, WHO 2016 Draft Checklist, as well as by using similar national checklists created for the WASH in schools survey in Serbia (2016), and WASH in HCFs survey in Serbia (2019). These checklists are in accordance with WHO Guidelines for sanitation and health[6].

In short, to collect data on existing practices in managing SMOSS (e.g. containment technology, emptying of fecal sludge, transport and treatment) each checklist consists of 6 sections:

1. Section 1 covers general data on the households, schools, and health care facilities. All entities will be given a specific code, so that their identity cannot be identified. No first names and personal data of the respondents will be collected. As elaborated above, each of them will be assigned by unique code.
2. Section 2 provides data on the type and characteristics of toilets. This includes the types of toilet present at households, schools, and health care facilities, general sanitary characteristics of the toilets (accessibility, functionality, privacy, availability, usability), and hand washing facilities. For schools, special attention is given to the toilets for children and for teachers, as well as for children with physical disabilities. For health care facilities, special attention is given to the toilets for patients and for medical staff, as well as for persons with physical disabilities.
3. Section 3 covers fecal sludge containment. This section relates to septic tanks and/or pit latrines for the containment of fecal sludge after drainage from the toilet in households, schools, and health care facilities. Respondents will be asked when a containment facility was built or installed, if they obtained permission for its construction, to estimate the capacity of the containment facility, the location of the septic tank / pit latrine in relation to the building,

[6]Guidelines on sanitation and health. Geneva: World Health Organization, 2018. ISBN: 978-92-4-151470-5

the distance of the septic tank / pit latrine to the nearest drinking water source, and its position regarding the water source, and if there was a leakage, overflow or flooding of the septic tank / pit latrine.

4. Section 4 covers fecal sludge emptying. In this section respondents will be asked where and how fecal sludge is drained from the septic tank/pit latrine on the premises, when the last time the septic tank / pit latrine were filled up, what they did when the septic tank / pit latrine needed to be emptied, who performed the emptying process, and if they were satisfied with emptying service. They will also be asked if there were any abandoned (closed) pit latrines / septic tanks on the premises and what procedures were followed for their closure.

5. Section 5 covers fecal sludge transportation and disposal. This section relates to the transportation and final disposal of fecal sludge after emptying of septic tanks and/or pit latrines from households, schools, and health care facilities. Respondents will be asked if and how is fecal content transported after emptying, who transported the emptied fecal content last time after emptying, where is fecal content disposed after emptying and transport and at what distance from the entity. Respondents will also report how much they paid for the emptying and transportation services and whether they were subsidized for these services.

6. Section 6 covers fecal sludge treatment and reuse. This section relates to the possibilities of treatment of fecal sludge from the septic tanks or pit latrines on site. Respondents will be asked if they perform any treatment on site, where the on-site treated fecal sludge (solids) is disposed (or given / sold to), if they use any of the fecal contents while is in the pit of the latrine or give it to neighboring households, and the possible reuse of treated fecal sludge as fertilizer for agriculture.

On-site inspection

Field teams should become familiar with the checklist prior to the start of the assessment. While collecting the data, it is important to pay attention and follow consistently the instructions or the specifications provided in the notes to the questions, because this will help the teams to complete the checklist accurately and completely.

Is should be noted that some questions in the checklist are marked with a sign of a water droplet with eyes, as following: 

This sign means that the members of the field team should observe and inspect the situation on their own, and should not only rely on the comments by the members of households, school, or health care facilities.

All questions should refer to the situation at the time of the visit. In case the question may not be applicable, the respective answer option should be selected according to the instructions in the notes.

Based on the on-site observation of on-site sanitation facility, each participant will be provided with the advice, if the high risk for contact with human excreta and/or for contamination of environment is present. For this purpose risk matrix for rapid assessment is created based on the selected questions and corresponding answers.

Here are the instructions for the field team members:

1. Please note that questions 2.1, 2.2, 2.14, 3.1, and 4.1 in the checklist are marked as R1, R2, R3, R4, and R5. This means that they indicate possible risk to household members.

2. Please note that in these questions some responses (but not all) are denoted as [RISK].

3. Go carefully through the checklist and verify the responses to these questions. If the participant provided any of the responses denoted as [RISK], give one point for that question, indicating that risk is present. If the participant gave response not marked as above, give 0 (zero) points for that question, indicating no risk.

4. Sum up all questions R1+R2+R3+R4+R5. Since each questions can have only one point, the final result can be a number between 0 (zero) and 5 (five).

R1+R2+R3+R4+R5 = _____ + _____ + _____ + _____ + _____ = _____ points

5. Interpret the obtained sum as follows:

0-1 points	2-3 points	4-5 points
Low risk	Medium risk	High risk

6. Read the result out loud to the household member. Indicate clearly which questions from the checklist present possible risks to their health. Provide household members with a piece of advice on measures they could implement safely and economically to mitigate the risk indicated above. Discuss all the possible options based on the problems identified on site. Be professional and refrain from criticizing or judging their lifestyles and living conditions.

Field work

Field teams will plan the visits to households, schools, and health care facilities in advance. During the on-site visits, observations will be carefully recorded in the checklist by mean of a printed copy with a dark pen and with clear handwriting. At the end of the visit, field teams will check that all questions are answered, and will make sure that all possible mistakes or unclear answers are spotted and timely addressed.

To be able to complete the checklists, field teams will ask for a member of the household, school staff, or health care facility staff to accompany the visit. All respondents must be adults. Because of the very technical nature of the questions in the checklist, a respondent at school should be the genitor, whereas for health care facilities, it should be a member of technical staff, rather than a nurse or a medical doctor. Respondents should respond some of the questions on their own, not instructed by the field teams, in order to avoid bias. Respondents should also help field teams with those questions where there is uncertainty on the correct answer or where observation is not sufficient to provide an answer.

A single visit to households, schools, and health care facilities should last about 45 minutes. Field teams should be polite, kind, and objective. They will make sure that the respondents understand the purpose of the survey and should specify that their role is to collect the data that will be provided to decision makers and health authorities.

Field teams should not raise expectations that the problems with fecal sludge containment, emptying, transport and disposal will immediately be solved. If respondents complain explicitly about problems in their community, municipality, school or health care facility, field teams will remain objective and give neutral answers (e.g. “I know these things are difficult”).

Field teams should professionally treat all respondents in a respectful and polite way and appreciate the respondent’s participation by thanking them at the beginning and at the end of the visit.

Due to current COVID-19 pandemic, personal protective measure will be applied for the members of the field teams, as well as for the interviewees from household, schools and health care facilities. Personal protective measures refer to wearing of face masks, shields, and gloves, physical distancing of at least 2 meters and hand disinfection. Given that subjects of the observation are on-site sanitation technologies located outside the building, it is foreseen that the inspection of those systems will be conducted outdoor, so the risk of spreading of the virus is considered very low.

Information sheet and Informed consent

Participation in this assessment is on voluntary basis and for each sanitary inspection information sheet will given and informed consent will be asked. To ensure that the respondent is informed on the scope of the assessment and on the anonymity of their answers, an informed consent should be signed by the respondents in all households, schools, and health care facilities. Template of informed consent forms will be provided to the field teams for households, schools, and health care facilities.

Field teams should reassure the respondents that there are no right or wrong answers and that no answer will have anyhow effect on personal evaluation of the household, school staff, health care facility staff, or facility evaluations.
An informed consent will be provided, a copy should be given to the respondent and the original form should be signed by both respondent and surveyor and kept for the records. The respondent should have enough time to read the information sheet and informed consent form and have their questions answered.

Each signed informed consent should be stored in paper form as project documentation within each local IPH

Weekly progress update

At the end of each week, field teams will meet with the coordinator to discuss on the progress of the project and on challenges encountered during the week and submit paper forms. A

regular weekly update should cover the following topics: progress on timeline, paper forms and informed consents should be collected by the team coordinator and adequately filed, as they need to be kept for one year of time in case of the need to be checked later in time, quality of the data, completeness of uploaded files.

All issues encountered during field work should and resolved with the survey coordinators and / or survey manager.

The checklists should be scanned and renamed following the instructions:

Household / school / health care facility identification code, *hyphen* the date of the visit in the format DDMMYY.

For example: S1D02Z06-170421.pdf

Explanation: this is a health care facility (Z) in Broad Area BA1, district D02, under the number S06, visited onApril 17th 2021.

Checklists should be uploaded on Google drive in the folder “Checklists”.

Taking pictures

Field work can be complemented by pictures of the on-site sanitation systems, only with the permission of the household member, school, or health care facility staff.
Pictures should only show critical issues observed by the team. Pictures should not show single persons or their faces.

The electronic files of the pictures should be renamed following the instructions:

Household / school / health care facility identification code, *hyphen* the number of the question (with no dots), *hyphen* the number of the picture taken at that spot *hyphen* the date in the format DDMMYY, *hyphen*surname of the interviewer.

For example: S1D02S04-36-02-190321-Petrovic.jpg

Explanation: this is a school (S) in Broad Area BA1, district D02, under the number S04, picture taken for question 3.6, picture number 02 on the same spot, taken on March 19th 2021.

Pictures should be uploaded on Google drive in the folder “Pictures”.

Instructions for data entry

Field teams will be provided with a single database that contains three worksheets: worksheet “Domaćinstva” for the data from the households, worksheet “Škole” for the data obtained at schools, and worksheet “Zdravstvene ustanove” for the data obtained at health care facilities.

Databases should be regularly filled and saved on the computer and other storage units (SD, USB memory, external hard disk, etc.). Databases should be sent to data manager only after completing all data from the checklist. Data manager will contact the responsible persons for possible corrections of the database.

The final database should be renamed following the instructions:

District identification code, *dash*SMOSS, dash "baza".

For example: D1S02_SMOSS_baza.xls or xlsx format

Explanation: this is a database of the D02 district in Broad Area BA1.

Databases should be uploaded on Google drive in the folder "Databases".

Basic and advanced sanitation services criteria

JMP criteria for basic and advanced sanitation services applied for households[7], schools[8], and healthcare facilities[9] are presented in Table 13.

Table 13. Criteria for sanitation services for households, schools, and healthcare facilities

Services*	Criteria for sanitation services		
	Households	**Schools**	**Healthcare facilities**
Advanced	Safely managed sanitation facilities	Toilets clean, adequate number of children per cabin (less than 25), and options for menstrual waste disposal, and toilets accessible to children with physical disabilities	Not defined for this study
Basic	Improved sanitation facilities not shared with other households	Improved sanitation facilities for children and usable and sex-separated	Improved and usable sanitation facilities for patients, at least one toilet dedicated for staff, at least one sex-separated toilet with menstrual hygiene facilities, at least one toilet accessible for people with limited mobility
Limited	Improved sanitation facilities shared with	Improved sanitation facilities for children,	At least one improved sanitation facility, but not all

[7]WHO and UNICEF. The JMP ladder for sanitation. Available at: https://washdata.org/monitoring/sanitation
[8]WHO and UNICEF. WASH in schools. The JMP ladder for sanitation. Available at: https://washdata.org/monitoring/schools
[9]WHO and UNICEF. WASH in the 2030 Agenda. New global indicators for drinking water, sanitation and hygiene. 2017.

	other households	usable or sex-separated	requirements for basic service are met
No services	Unimproved sanitation facilities or no toilet (open defecation)	Unimproved sanitation facilities for children or no toilet	Unimproved sanitation facilities for patients or no toilet

*Color-coding of sanitation services that is applied in Figures of the report

Annex 1a: Questionnaire for household

SECTION 1: GENERAL DATA ON HOUSEHOLDS

S1	Questions	Answers
1.1	Household code	
1.2	Settlement (Text)	
1.3	Municipality (Text)	
1.4	District (Text)	
1.5	Location of the household	1=Urban 2=Rural
1.6	Education of respondent	1=Primary school 2=Secondary school 3=High school 4=University
1.7	Total household income in last 12 months, include all sources (approximately)	1=Less than 30.000 RSD 2=30.000 to 60.000 RSD 3=60.000 to 100.000 RSD 4=More than 100.000 RSD 999=Do not know
1.8	Number of household members (people either related or unrelated who are living together and taking food from the same cooking pot constitute a household)	Number: _____
1.9	Number of under-five years aged children	Number: _____
1.10	How many children do you have in the household who cannot / do not use latrine for defecation? **Note*: If there is no toilet, put 88	Number: _____ 88=Not applicable (no toilet)
1.11	Is there a plan to connect the household to the public sewer system?	1=No 2=Yes 999=Do not know
1.12	If yes, when is it expected to happen? **Note*: If there is no plan to connect to public sewer, put 88	Number: _____ 88=Not applicable (not planned)
1.13	Is there currently a public sewage system to connect to?	1=No 2=Yes 999=Do not know

SECTION 2: DATA ON TYPE AND CHARACTERISTICS OF POINT OF USE

S2	Questions	Answers
2.1 **R1**	What is the type of toilet which the household members are using? **Note*: Observe the toiled and estimate the type according to instructions ***Note*: If the household owns>1 functional latrine those remain in use by household members, take	1=Flush toilet connected to piped water 2=Pour flush toilet(manual flush from the bucket) 3=Dry toilet (no water flush) with toilet slab 4=Dry toilet (no water flush) without toilet slab [RISK]

	data for the latrine that remains in bad condition. ****Note*: If the household has a pit latrine in addition to the toilet in the house, make sure to answer questions in section 2B.	5=Defecation into bucket or similar object [RISK] 6=Open defecation (field, yeard, bush, open land) [RISK]
2.2 **R2**	Do you share this toilet with other people/individual/households, who are not members of this household?	1=No 2=Yes [RISK] 88=Not applicable (no toilet) [RISK]
2.3	How many people, including children, use this toilet?	Insert the actual reported number: _____ 999=Do not know
2.4	Where is the toilet / sanitation facility located?	1=In own dwelling 2=In own yard/plot (within the premises) 3=Outside own premises
2.5	Distance of the toilet from the user household? (approximately in meter, spot measurement only) **Note*: If toilet is inside the dwelling, put 0	Insert the distance in meter: _____ 0= inside the dwelling
2.6	The last time passed stool by children <5y, what was done to dispose of the stools? * *Note*: If there are no children under 5, put 88	1=Child used latrine/toilet 2=Put/rinsed into toilet/latrine 3=Put/rinsed into drain or ditch 4=Thrown into garbage (solid waste) 5=Buried 6=Left it open 7=Used as manure 88=No children under 5 999=Do not know
2.7	Is there at least one member in your household that doesn't usually use this toilet for defecation?	1=No 2=Yes 999=Do not know
2.8	If any or all members in the household do not use this toilet, what are the reasons for this? **Note*: Multiple options possible, to be separated with comma in the database	1=Elderly people, cannot visit latrine 2=Disabled / Injured / Reduced physical mobility 3=Some of the members not interested to use the latrine 4=Long distance 5=Lack of privacy and safety 999=Do not know
2.9	When was the toilet installed?	Insert no. of years: _____ 999=Do not know
2.10	Are the walls and / or the door of the toilet in place? **Note*: Observe if the design of the toilet (walls and door) prevents other people from seeing and hearing what someone is doing when they use it, and if the toilet provides security to the intended users	1=No 2=Yes
2.11	Is the toilet free from fecal smears on pan, wall and floor?	1=No 2=Yes
2.12	Is the toilet pan free from used cleaning materials? (paper, stones and sticks)	1=No 2=Yes
2.13	Did you see the presence of human feces in the yard or compound?	1=No 2=Yes
2.14 **R3**	Where is the nearest hand washing spot in relation to the toilet?	1=Tap in the toilet 2=Tap outside the toilet within 5m 3=Tap outside the toilet more than 5m [RISK] 4=Hand washing point does not exist [RISK]

SECTION 2B: DATA ON TYPE AND CHARACTERISTICS OF PIT LATRINE (In case that household possesses additional toilet i.e. pit latrine different from the main one)

S2B	Question	Answer
2.15	Do you share pit latrine with other people/individual/households, who are not members of this household?	1=No 2=Yes
2.16	How many people, including children, use this latrine?	Insert the actual reported number: _____ 999=Do not know
2.17	Where is the pit latrine located?	1=In own yard/plot (within the premises) 2=Outside own premises
2.18	Distance of the pit latrine from the user household? (approximately in meter, spot measurement only)	Insert the distance in meter: _____
2.19	Are the walls and / or the door of the pit latrine in place? *Note*: Observe if the design of the latrine (walls and door) prevents other people from seeing and hearing what someone is doing when they use it, and if the latrine provides security to the intended users	1=No 2=Yes
2.20	Is the pit latrine free from fecal smears on pan, wall and floor?	1=No 2=Yes
2.21	Is the pit latrine floor free from used cleaning materials? (paper, stones and sticks)	1=No 2=Yes
2.22	Where is the nearest hand washing spot in relation to the pit latrine?	1=Tap within 5m 2=Tap more than 5m 3=Hand washing point does not exist

SECTION 3: DATA ON FECAL CONTAINMENT

S3	Question	Answer
3.1 **R4**	Where is fecal sludge drained and contained from the toilet?	1=Impermeable septic tank (regardless of no. of chambers) 2=Permeable septic tank with unsealed bottom [RISK] 3=Impermeable twin pits 4=Permeable twin pits [RISK] 5=Holding tank 6=Permeable pit (no ring or brick) [RISK] 7=With solid waste [RISK] 8=No containment [RISK]
3.2	When was a containment facility built/installed? * *Note*: If there is no septic tank or bucket is used for containment, put 88	Insert no. of years: _____ 88=Not applicable (no containment or bucket for containment) 999=Do not know
3.3	Do you have permission for the construction of septic tank? **Note*: If there is no septic tank, put 88	1=No 2=Yes 88=Not applicable (no septic tank) 999=Do not know
3.4	What is the capacity of the containment facility?	In cubic meters (approximately): _____ 999=Do not know
3.5	Approximately how full is your latrine pit/septic tank at the moment?	1=Almost full 2=One-third portion empty 3=Half portion empty 4=More than half empty 5=Cannot see the latrine 999=Do not know
3.6	How is the location of the containment facility (where in the pit /septic tank located)? *Note: If there is no septic tank, put 88	1=Near the front side / close to the main entrance 2=Backyard 3=Located inside the dwelling structure

		4=Pit is below the super structure of the latrine 88=Not applicable (no septic tank) 999=Do not know
3.7	Did the pit/tank leak, overflow or flood at any time in last one year so that pit/tank contents came out?	1=No 2=Yes 88= Not applicable 999=Do not know
3.8	What is the distance to nearest drinking water source? *Note*: If there is no septic tank, put 88	Insert no. of meters: _____ 88=Not applicable (no septic tank) 999=Do not know
3.9	Is that drinking water source uphill or downhill from the containment facility? *Note*: If there is no septic tank, put 88	1=Downhill 2=Uphill 3=At the same level 88=Not applicable (no septic tank)

SECTION IV: EMPTYING

S4	Questions	Answers
4.1 **R5**	Where/how is fecal effluent drained from septic tank/pit latrine? *Note*: Responses 3-6 must be observed and confirmed on site	1=Emptying by service provider/PUC, other entities/persons, on their own 2=Drained underground (for permeable septic tanks or pits) [RISK] 3=Drained to the surface due to overflow [RISK] 4=Drained by pipes to the surface [RISK] 5=Drained by pipes into water body [RISK] 6=Drained by pipes on leach field 7=Drained by pipes into soak pit
4.2	When was the last time your latrine pit/septic tank filled up? *Note*: If there is no septic tank, put 88	1=Never 2=1-2 years ago 3=2-5 years ago 4=5-10 years ago 5=More than 10 years ago 88=Not applicable (no septic tank) 999=Do not know
4.3	When the pit/septic tank last needed emptying, what did you do? *Note*: If there is no septic tank, put 88 **Note*: Provide only one answer	1=Emptied pit/septic tank and continued using it 2=Dug/opened new pit 3=Switched to second pit (if twin pit) 4=Left it/nothing was done 5=Use of mercury for deepening the pit 6=Others: specify _____ 88=Not applicable (no septic tank) 999=Do not know
4.4	Who did the emptying? *Note*: If there was no emptying or there is no septic tank, put 88	1=Public Utility Company 2=Private service provider 3=Other entities/individuals: specify: _____ 4=Emptied by yourself 88=Not applicable (no emptying) 999=Do not know
4.5	Was the pit/septic tank easily accessible for the emptiers? *Note*: If there was no emptying but other measures were taken, put 88	1=Easily accessible 2=Not easily accessible 3=Not accessible at all 88=Not applicable (no emptying) 999=Do not know
4.6	To empty the pit/septic tank, did someone need to enter into the pit/septic tank? *Note*: If there was no emptying but other measures were taken, put 88	1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know

4.7	Did emptier use any of the following? *Note*: Respond with yes or no for each option and enter separately into the database **Note*: If there was no emptying but other measures were taken, put 88	4.71=Boots 1=No 2=Yes 4.72=Gloves 1=No 2=Yes 4.73=Face mask 1=No 2=Yes 4.74=Body cover 1=No 2=Yes 4.75=Eye goggles 1=No 2=Yes 4.76=Helmet 1=No 2=Yes 4.77=Protective coat 1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
4.8	How was emptying performed predominantly last time? *Note*: If there was no emptying but other measures were taken, put 88	1=Motorized 2=Manual 88=Not applicable (no emptying) 999=Do not know
4.9	How did you contact the service provider who emptied your pit/septic tank? *Note*: If there was no emptying but other measures were taken, put 88	1=Contacted by phone/e-mail 2=Someone from the house visited the service provider personally 3=Communicated government authority/NGO/comm. provider 4=Talked to other persons 5=Other: specify_____ 88= Not applicable (no emptying) 999=Do not know
4.10	Are there any abandoned (closed) pit latrine / septic tanks on the premises in your household?	1=No 2=Yes 999=Do not know
4.11	How was it performed/what procedure was used to close pit latrine / septic tank? *Note*: If no pit latrine / septic tank was closed, put 88	1=Buried 2=Disinfected and buried 3=Closed with solid material 4=Nothing was done 88=Not applicable (not closed) 999=Do not know
4.12	Were you satisfied with emptying service last time? *Note*: If there was no emptying, put 88	1=No 2=Yes 3=Partially 88=Not applicable (no emptying) 999=Do not know
4.13	What was/were the reason/reasons you were not satisfied with the emptying service? *Note*: If there was no emptying, put 88	4.131=Too expensive 1=No 2=Yes 4.132=Too much physical effort for a member of my household 1=No 2=Yes 4.133=Stressful for a member of my household 1=No 2=Yes 4.134=Took too long 1=No 2=Yes 4.135=Exposed to extensive bad smells and odors 1=No 2=Yes 4.136=Unsafe procedure 1=No 2=Yes 88=Not applicable (no emptying or satisfied) 999=Do not know

SECTION 5: TRANSPORTATION AND DISPOSAL

S5	Questions	Answers
5.1	Is fecal content being transported after emptying from the pit/septic tank? *Note*: If there was no emptying, put 88	1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
5.2	Who transported the emptied fecal content last time after emptying? *Note*: If there was no emptying or no transport, put 88	1=Public Utility Company 2=Private service provider 3=Other entities/individuals: specify: _____ 4=Transported on our own 88= Not applicable (no emptying or no transport)

		999= Do not know
5.3	Where was fecal content disposed last time, after emptying and transport? *Note*: If there was no emptying or no transport, put 88	1=Disposed to Wastewater treatment plant 2=Disposed to public sewer 3=Disposed to sanitary landfill 4=Disposed to non-sanitary / wild landfill 5=Disposed to moving water body 6=Disposed to moving water body 7=Disposed to the farm 8=Crop field as fertilizer 9=Buried in situ 10=Disposed to open pit 88=Not applicable (no emptying or no transport) 999=Do not know
5.4	What is the distance from the household to disposal site? *Note*: If there was no emptying or no transport, put 88	1=Less than 10m 2=10m to 30m 3=30m to 100m 4=More than 100m 88=Not applicable (no emptying or no transport) 999= Do not know
5.5	What were the means of transportation? *Note*: If there was no emptying or no transport, put 88	1=Used protected removal pipe and motorized machine so that fecal effluents does not spread in the surrounding environment i.e. vacuum tanker 2=Vehicle without pumping system 3=Manually carried 4=Other: specify: _____ 88=Not applicable (no emptying or no transport) 999=Do not know
5.6	Who was the owner of the transportation means – van/carts/pick up/tractor? *Note*: If there was no emptying or no transport, put 88	1=Public Utility Company 2=Private service provider 3=Other entities / individuals 4=Household member 88=Not applicable (no emptying or no transport) 999=Do not know
5.7	Did you have to pay for the emptying and transportation? *Note*: If there was no emptying, put 88	1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
5.8	How much money did you pay? *Note*: If there was no emptying, put 88	Actual amount in RSD: _____ 88=Not applicable (no emptying) 999=Do not know
5.9	Is your household subsidized for the cost for the services of emptying and transport? *Note*: If there was no emptying, put 88	1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know

SECTION 6: TREATMENT AND REUSE

S6	Questions	Answers
6.1	Do you treat fecal sludge from your septic tank or latrine pit on site? *Note*: If there was no emptying, or fecal sludge was transported by a public utility company, put 88	1=No 2=Yes, planted drying bed followed by liquid treatment 3=Yes, unplanted drying bed only 4=Yes, unplanted drying bed followed by liquid treatment 5=Yes, mechanical drying 6=Yes, composting 7=Substance for self-purification added 88=Not applicable (no emptying or transported by public utility company) 999=Do not know
6.2	Are you aware that fecal sludge is needed to be	1=No

	treated before disposal and/or reuse? **Note*: If there was treatment, put 88	2=Yes 88=Not applicable (no treatment) 999=Do not know
6.3	Does anyone of the household engage in any sort of fecal sludge treatment process? **Note*: If there was treatment, put 88	1=No 2=Yes 88=Not applicable (no treatment) 999=Do not know
6.4	Where is the on-site treated fecal sludge (solids) disposed (or given/sold) to? **Note*: If there was treatment, put 88	1=Disposal on land and water 2=Landfill 3=Safe burial 4=Use to vegetable manure 5=Use as crop manure 6=Producing biogas or charcoal 88=Not applicable 999=Don't know
6.5	Do/did the household use any of the fecal contents while is in the pit of the latrine?	1=No 2=Yes, directly to the fishpond as fish feed 3=Yes, for poultry feed 4=Yes, in kitchen garden / food crops 5=Yes, non-food crops / plants 6=Yes, producing biogas or charcoal 7=Use for composting 999=Do not know
6.6	Do you agree that the treated fecal sludge could be used as fertilizer for agricultural cultivations?	1=Strongly disagree 2=Disagree 3=Do not know 4=Agree 5=Strongly agree 9=Does not apply to me (no opinion on this)

Reference sources: Resource materials from Cambodia study, SNV, JMP, WHO 2016 Draft Checklist, Bangladesh checklist for SMOSS survey, etc.

Annex 1b: Questionnaire for schools

SECTION 1: SCHOOL IDENTIFICATION AND GENERAL CHARACTERISTICS

S1	Questions	Answers
1.1	School code	
1.2	Settlement (Text)	
1.3	Municipality (Text)	
1.4	District (Text)	
1.7	Position at school of the respondent	
	Contact cell phone to school **Note:* Not to be entered into database	
1.8	Total number of pupils in school	Number: _____
1.9	Number of boys in school	Number: _____
1.10	Number of girls in school	Number: _____
1.11	Age groups of children in school	1=Younger than 7 years 2=7 to 11 years 3=11 to 15 years
1.12	Number of children with physical disabilities in school	Number: _____
1.13	How old is the school building?	1=School built less than 1 year ago 2=Building 1 to 10 years old 3=Building 11 to 30 years old 4=Building 31 to 50 years old

		5=Building is more than 50 years old
1.14	Is there a plan to connect the school to the public sewer system?	1=No 2=Yes 999=Do not know
1.15	If yes, when is it expected to happen? **Note*: If there is no plan to connect to public sewer, put 88	Number: _____ 88=Not applicable (not planned)
1.16	Is there currently a public sewage system to connect to?	1=No 2=Yes 999=Do not know
1.17	Is any member of school staff engaged to take care of water supply, sanitation, etc.?	1=No such person 2=Yes, school genitor 3=Yes, one of the teachers 4=Yes, school principal 999=Do not know

SECTION 2: DATA ON TYPE AND CHARACTERISTICS OF POINT OF USE

S2	Questions	Answers
2.1	**Does the school have any toilet facilities independently from the type?**	1=No 2=Yes
2.2	What is the type of toilet which the school staff and pupils are using? **Note*: Observe the toiled and estimate the type according to instructions ***Note*: If the school owns>1 functional latrine those remain in use by school staff and pupils, take data for the latrine that remains in bad condition. ****Note*: If the school has a pit latrine in addition to the toilet in school, make sure to answer questions in section 2B.	1=Flush toilet connected to piped water 2=Pour flush toilet(manual flush from the bucket) 3=Dry toilet (no water flush) with toilet slab 4=Dry toilet (no water flush) without toilet slab 5=Defecation into bucket or similar object 6=Open defecation (field, yeard, bush, open land)
2.3	Where is the toilet / sanitation facility for pupils located?	1=In own dwelling 2=In own yard/plot (within school premises) 3=Outside school premises
2.4	Distance of the toilet from the school? (approximately in meter) **Note*: If toilet is inside the dwelling, put 0	Insert the distance in meter: _____ 0= inside the dwelling
2.5	Are toilet compartments for girls and boys located in separate toilet rooms?	1=No 2=Yes
2.6	If communal, are toilet compartments marked in some way for girls and boys?	1=No 2=Yes
2.7	How many toilet compartments for children are in use? **Note*:For “in use”, only count toilets that are able to be used at the time of the survey. ***Note*:"Exclusively for girls/boys" refers to toilet compartment located in separate toilet rooms. "Communal" refers to toilet compartment located in one toilet room, regardless of being marked by gender.	2.71 Only for boys: _____ 2.72 Only for girls: _____ 2.73 Communal for boys and girls: _____

2.8	How many toilet compartments for children are not in use? **Note*:Toilets “not in use” should include toilets that are broken or have a blocked toilet hold, with no water available for flushing (if water toilet), with no closable doors. ***Note*:"Exclusively for girls/boys" refers to toilet compartment located in separate toilet rooms. "Communal" refers to toilet compartment located in one toilet room, regardless of being marked by gender.	2.81 Only for boys: _____ 2.82 Only for girls: _____ 2.83 Communal for boys and girls: _____
2.9	Does the school also have urinals?	1=No 2=Yes
2.10	Is there at least one toilet facility accessible to younger children(i.e. with smaller seats)?	1=No 2=Yes
2.11	Is there at least one toilet facility accessible to children with physical disabilities? **Note*: To be considered accessible, a toilet/latrine should be available that meets all of the following conditions: can be accessed without stairs or steps with a clear path leading to the facility (clear, level path free of obstructions and lined with rocks or landmark posts of guide string, and ramp gradient should be less than 1 in 12 and have raised sides to prevent a wheelchair from rolling off); handrails for support are attached either to the floor or sidewalls; there is enough space inside for a wheelchair user to enter, turn, close the door and park by the toilet; the door is at least 80 cm wide and opens outward with minimal or no difference in floor height between outside and inside; and the door handle and seat are within reach of children using wheelchairs or crutches/sticks, including a fixed raised pan or movable wooden raised toilet seat	1=No 2=Yes
2.12	Are the walls and / or the door of the toilet in place? **Note*: Observe if the design of the toilet (walls and door) prevents other people from seeing and hearing what someone is doing when they use it, and if the toilet provides security to the intended users	1=No 2=Yes
2.13	Are all flushing mechanisms reachable by hand for all children?	1=No 2=Yes
2.14	Are there covered garbage bins present in the girls’ toilet compartments?	1=No 2=Yes
2.15	Is toilet paper available in both girls’ and boys’ toilets at the time of the survey?	1=No 2=Yes

2.16	Are toilet seats or pit slabs made of material that can be cleaned easily (porcelain, concrete, steel, plastic)?	1=No 2=Yes
2.17	Do toilets have natural ventilation (window, opening for ventilation)?	1=No 2=Yes
2.18	Is the toilet free from fecal smears on pan, wall and floor?	1=No 2=Yes
2.19	Is the toilet pan free from used cleaning materials? (paper, stones and sticks)	1=No 2=Yes
2.20	Did you see the presence of human feces in the yard or compound?	1=No 2=Yes
2.21	Do teachers have their own toilet facilities (separate from children's facilities)?	1=No 2=Yes
2.22	For outdoor toilets: Is there a path to the toilet which can be conveniently used in any weather and season?	1=No 2=Yes
2.23	For outdoor toilets: Are there properly working lights on the path to the toilet?	1=No 2=Yes
2.24	Where is the nearest hand washing spot in relation to the toilet?	1=Tap in the toilet 2=Tap outside the toilet within 5m 3=Tap outside the toilet more than 5m 4=Hand washing point does not exist
2.25	Are thereprograms for promoting safe and private menstrual hygiene for older girls? **Note*: If there are no pupils above 11 years at school, put 88	1=No 2=Yes 88=Not applicable (no pupils above 11 years)
2.26	Are up-to-date records of cleaning visible and signed by the cleaners?	1=Yes, signed by the cleaners 2=No, no signatures or outdated records 3=No, no records

SECTION 2B: DATA ON TYPE AND CHARACTERISTICS OF PIT LATRINE (In case that school possesses additional toilet i.e. pit latrine different from the main one)

S2B	Question	Answer
2.27	Do you share pit latrine with other people/individual/households, who are not members of this school?	1=No 2=Yes
2.28	How many people, including children, use this latrine?	Insert the actual reported number: _____ 999=Do not know
2.29	Where is the pit latrine located?	1=In own yard/plot (within school premises) 2=Outside school premises
2.30	Distance of the pit latrine from the school? (approximately in meter)	Insert the distance in meter: _____
2.31	Are the walls and / or the door of the pit latrine in place? **Note*: Observe if the design of the latrine (walls and door) prevents other people from seeing and hearing what someone is doing when they use it, and if the latrine provides security to the intended users	1=No 2=Yes

2.32	Is the pit latrine free from fecal smears on pan, wall and floor?	1=No 2=Yes
2.33	Is the pit latrine floor free from used cleaning materials? (paper, stones and sticks)	1=No 2=Yes
2.34	Where is the nearest hand washing spot in relation to the pit latrine?	1=Tap within 5m 2=Tap more than 5m 3=Hand washing point does not exist

SECTION 3: DATA ON FECAL CONTAINMENT

S3	Question	Answer
3.1	Where is fecal sludge drained and contained from the toilet?	1= Impermeable septic tank (regardless of no. of chambers) 2=Permeable septic tank with unsealed bottom 3=Impermeable twin pits 4=Permeable twin pits 5=Holding tank 6=Permeable pit (no ring or brick) 7=With solid waste 8=No containment
3.2	When was a containment facility built/installed? * *Note*: If there is no septic tank or bucket is used for containment, put 88	Number of years: _____ 88=Not applicable (no containment or bucket for containment) 999=Do not know
3.3	Do you have permission for the construction of septic tank? **Note*: If there is no septic tank, put 88	1=No 2=Yes 88=Not applicable (no septic tank) 999=Do not know
3.4	Is the place of the septic tank clearly marked? **Note*: If there is no septic tank, put 88	1=No 2=Yes 88=Not applicable (no septic tank) 999=Do not know
3.5	Is the place of the septic tank fenced? **Note*: If there is no septic tank, put 88	1=No 2=Yes 88=Not applicable (no septic tank) 999=Do not know
3.6	What is the capacity of the containment facility?	In cubic meters (approximately): _____ 999=Do not know
3.7	Approximately how full is your latrine pit/septic tank at the moment?	1=Almost full 2=One-third portion empty 3=Half portion empty 4=More than half empty 5=Cannot see the latrine 999=Do not know
3.8	How is the location of the containment facility (where in the pit /septic tank located)? *Note: If there is no septic tank, put 88	1=Near the front side / close to the main entrance 2=Backyard 3=Located inside the dwelling structure 4=Pit is below the super structure of the latrine 88=Not applicable (no septic tank) 999=Do not know

3.9	Did the pit/tank leak, overflow or flood at any time in last one year so that pit/tank contents came out?	1=No 2=Yes 88= Not applicable 999=Do not know
3.10 	What is the distance to nearest drinking water source? **Note*: If there is no septic tank, put 88	Insert no. of meters: _____ 88=Not applicable (no septic tank) 999=Do not know
3.11	Is that drinking water source uphill or downhill from the containment facility? **Note*: If there is no septic tank, put 88	1=Downhill 2=Uphill 3=At the same level 88=Not applicable (no septic tank)

SECTION IV: EMPTYING

S4	Questions	Answers
4.1 	Where/how is fecal effluent drained from septic tank/pit latrine? **Note*: Responses 3-6 must be observed and confirmed on site	1=Emptying by service provider/PUC, other entities/persons, on their own 2=Drained underground (for permeable septic tanks or pits) 3=Drained to the surface due to overflow 4=Drained by pipes to the surface 5=Drained by pipes into water body 6=Drained by pipes on leach field 7=Drained by pipes into soak pit
4.2	When was the last time your latrine pit/septic tank filled up? **Note*: If there is no septic tank, put 88	1=Never 2=1-2 years ago 3=2-5 years ago 4=5-10 years ago 5=More than 10 years ago 88=Not applicable (no septic tank) 999=Do not know
4.3	When the pit/septic tank last needed emptying, what did you do? **Note*: If there is no septic tank, put 88 ***Note*: Provide only one answer	1=Emptied pit/septic tank and continued using it 2=Dug/opened new pit 3=Switched to second pit (if twin pit) 4=Left it/nothing was done 5=Use of mercury for deepening the pit 6=Others: specify _____ 88=Not applicable (no septic tank) 999=Do not know
4.4	Who did the emptying? **Note*: If there was no emptying or there is no septic tank, put 88	1=Public Utility Company 2=Private service provider 3=Other entities/individuals: specify: _____ 4=Emptied by yourself 88=Not applicable (no emptying) 999=Do not know
4.5	Was the pit/septic tank easily accessible for the emptiers? **Note*: If there was no emptying but other measures were taken, put 88	1=Easily accessible 2=Not easily accessible 3=Not accessible at all 88=Not applicable (no emptying) 999=Do not know
4.6	To empty the pit/septic tank, did someone need to enter into the pit/septic tank? **Note*: If there was no emptying but other	1=No 2=Yes 88=Not applicable (no emptying)

	measures were taken, put 88	999=Do not know
4.7	Did emptier use any of the following? **Note*: Respond with yes or no for each option and enter separately into the database ***Note*: If there was no emptying but other measures were taken, put 88	4.71=Boots 1=No 2=Yes 4.72=Gloves 1=No 2=Yes 4.73=Face mask 1=No 2=Yes 4.74=Body cover 1=No 2=Yes 4.75=Eye goggles 1=No 2=Yes 4.76=Helmet 1=No 2=Yes 4.77=Protective coat 1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
4.8	How was emptying performed predominantly last time? **Note*: If there was no emptying but other measures were taken, put 88	1=Motorized 2=Manual 88=Not applicable (no emptying) 999=Do not know
4.9	How did you contact the service provider who emptied your pit/septic tank? **Note*: If there was no emptying but other measures were taken, put 88	1=Contacted by phone/e-mail 2=Someone from the house visited the service provider personally 3=Communicated government authority/NGO/comm. provider 4=Talked to other persons 5=Other: specify_____ 88= Not applicable (no emptying) 999=Do not know
4.10	How often do you perform emptying of pit latrine / septic tank	1=Only when filled up 2=Once a year 3=Once in three years 4=Once in five years 5=Once in five years 999=Do not know
4.11	Are there any abandoned (closed) pit latrine / septic tanks on the premises in your school?	1=No 2=Yes 999=Do not know
4.12	How was it performed/what procedure was used to close pit latrine / septic tank? **Note*: If no pit latrine / septic tank was closed, put 88	1=Buried 2=Disinfected and buried 3=Closed with solid material 4=Nothing was done 88=Not applicable (not closed) 999=Do not know
4.13	Were you satisfied with emptying service last time? **Note*: If there was no emptying, put 88	1=No 2=Yes 3=Partially 88=Not applicable (no emptying) 999=Do not know
4.14	What was/were the reason/reasons you were not satisfied with the emptying service? **Note*: If there was no emptying, put 88	4.141=Too expensive 1=No 2=Yes 4.142=Too much physical effort for members of school staff 1=No 2=Yes 4.143=Stressful for members of school staff 1=No 2=Yes 4.144=Took too long 1=No 2=Yes 4.145=Exposed to extensive bad smells and odors 1=No 2=Yes 4.146=Unsafe procedure 1=No 2=Yes 88=Not applicable (no emptying or satisfied) 999=Do not know

SECTION 5: TRANSPORTATION AND DISPOSAL

S5	Questions	Answers
5.1	Is fecal content being transported after emptying from the pit/septic tank? **Note*: If there was no emptying, put 88	1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
5.2	Who transported the emptied fecal content last time after emptying? **Note*: If there was no emptying or no transport, put 88	1=Public Utility Company 2=Private service provider 3=Other entities/individuals: specify: _____ 4=Transported on our own 88= Not applicable (no emptying or no transport) 999= Do not know
5.3	Where was fecal content disposed last time, after emptying and transport? **Note*: If there was no emptying or no transport, put 88	1=Disposed to Wastewater treatment plant 2=Disposed to public sewer 3=Disposed to sanitary landfill 4=Disposed to non-sanitary / wild landfill 5=Disposed to moving water body 6=Disposed to moving water body 7=Disposed to the farm 8=Crop field as fertilizer 9=Buried in situ 10=Disposed to open pit 88=Not applicable (no emptying or no transport) 999=Do not know
5.4	What is the distance from the school to disposal site? **Note*: If there was no emptying or no transport, put 88	1=Less than 10m 2=10m to 30m 3=30m to 100m 4=More than 100m 88=Not applicable (no emptying or no transport) 999= Do not know
5.5	What were the means of transportation? **Note*: If there was no emptying or no transport, put 88	1=Used protected removal pipe and motorized machine so that fecal effluents does not spread in the surrounding environment i.e. vacuum tanker 2=Vehicle without pumping system 3=Manually carried 4=Other: specify: _____ 88=Not applicable (no emptying or no transport) 999=Do not know
5.6	Who was the owner of the transportation means – van/carts/pick up/tractor? **Note*: If there was no emptying or no transport, put 88	1=Public Utility Company 2=Private service provider 3=Other entities / individuals 4=School member 88=Not applicable (no emptying or no transport) 999=Do not know
5.7	Did you have to pay for the emptying and transportation?	1=No 2=Yes

	Note: If there was no emptying, put 88	88=Not applicable (no emptying) 999=Do not know
5.8	How much money did you pay? *Note*: If there was no emptying, put 88	Actual amount in RSD: _____ 88=Not applicable (no emptying) 999=Do not know
5.9	Is your school subsidized for the cost for the services of emptying and transport? *Note*: If there was no emptying, put 88	1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
5.10	Is there dedicated budget line for emptying service allocated in your school budget? *Note*: If there was no emptying, put 88	1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
5.11	Who secured money for emptying service? *Note*: If there was no emptying, put 88	1=School 2=Local self-government 3=National budget - Ministry of education 4=Parents 5=Other: specify: _____ 88=Not applicable (no emptying) 999=Do not know

SECTION 6: TREATMENT AND REUSE

S6	Questions	Answers
6.1	Do you treat fecal sludge from your septic tank or latrine pit on site? *Note*: If there was no emptying, or fecal sludge was transported by a public utility company, put 88	1=No 2=Yes, planted drying bed followed by liquid treatment 3=Yes, unplanted drying bed only 4=Yes, unplanted drying bed followed by liquid treatment 5=Yes, mechanical drying 6=Yes, composting 7=Substance for self-purification added 88=Not applicable (no emptying or transported by public utility company) 999=Do not know
6.2	Are you aware that fecal sludge is needed to be treated before disposal and/or reuse? *Note*: If there was treatment, put 88	1=No 2=Yes 88=Not applicable (no treatment) 999=Do not know
6.3	Does anyone of the school engage in any sort of fecal sludge treatment process? *Note*: If there was treatment, put 88	1=No 2=Yes 88=Not applicable (no treatment) 999=Do not know
6.4	Where is the on-site treated fecal sludge (solids) disposed (or given/sold) to? *Note*: If there was treatment, put 88	1=Disposal on land and water 2=Landfill 3=Safe burial 4=Use to vegetable manure 5=Use as crop manure 6=Producing biogas or charcoal 88=Not applicable 999=Don't know
6.5	Does/did the school allow neighboring households to use fecal contents directly from the pit latrine / septic tank?	1=No 2=Yes 999=Do not know

6.6	Do you agree that the treated fecal sludge could be used as fertilizer for agricultural cultivations?	1=Strongly disagree 2=Disagree 3=Do not know 4=Agree 5=Strongly agree 9=Does not apply to me (no opinion on this)

Reference sources: Resource materials from Cambodia study, SNV, JMP, WHO 2016 Draft Checklist, Bangladesh checklist for SMOSS survey, WASH in schools survey in Serbia checklist (2016), WASH in HCFs survey in Serbia checklist (2019), etc.

Annex 1c: Questionnaire for HCFs

SECTION 1: HEALTH CARE FACILITY IDENTIFICATION AND GENERAL CHARACTERISTICS

S1	Questions	Answers
1.1	Health care facility code	
1.2	Settlement (Text)	
1.3	Municipality (Text)	
1.4	District (Text)	
1.6	Position at health care of the respondent	
1.7	Contact cell phone to health care facility **Note:* Not to be entered into database	
1.8	How many patients visit the facility on average every month?	Number: _____
1.9	How many doctors are working at the facility?	Number: _____
1.10	How many nurses are working at the facility?	Number: _____
1.11	Approximate number of total female staff	Number: _____
1.12	Approximate number of total male staff	Number: _____
1.13	Is there a plan to connect the health care facility to the public sewer system?	1=No 2=Yes 999=Do not know
1.14	If yes, when is it expected to happen? **Note*: If there is no plan to connect to public sewer, put 88	Number: _____ 88=Not applicable (not planned)
1.15	Is there currently a public sewage system to connect to?	1=No 2=Yes 999=Do not know
1.16	Is any member of health facility staff engaged to take care of water supply, sanitation, etc.?	1=No such person 2=Yes, a technician 999=Do not know

SECTION 2: DATA ON TYPE AND CHARACTERISTICS OF POINT OF USE

S2	Questions	Answers
2.1 	What is the type of toilet in the health care facility? **Note*: Observe the toiled and estimate the type according to instructions ***Note*: If the health care facility owns>1 functional latrine those remain in use by staff	1=Flush toilet connected to piped water 2=Pour flush toilet(manual flush from the bucket) 3=Dry toilet (no water flush) with toilet slab 4=Dry toilet (no water flush) without toilet

	and patients, take data for the latrine that remains in bad condition. ****Note*: If the facility has a pit latrine in addition to the toilet in facility, make sure to answer questions in section 2B.	slab 5=Defecation into bucket or similar object 6=Open defecation (field, yeard, bush, open land)
2.2	How many toilets/latrines for patients are there at the facility? **Note*: If there are no toilets for patients, put 0	Number of toilets: _____
2.3	How many toilets/latrines are accessible (available) for patients at the facility? **Note*:Please refer to WHO/UNICEF JMP definition for accessible toilets: Toilets/latrines are accessible when on premises (outside or outside of the building, within the property of the facility), and doors are unlocked or with a key available at all times.	Number of accessible toilets: _____
2.4	If not all toilets/latrines are accessible (available) for patients at the facility, what are the issues? **Note*:If toilets/latrines are all available or if there is no toilets/latrines for patients at the facility, select not applicable 88.	2.41=Toilets/latrines are not on premises 1. No 2. Yes 2.42=Toilets/latrines are locked and key not available 1. No 2. Yes 88=Not applicable (all toilets accessible or no toilets)
2.5	Are available toilets/latrines for patients at the facility functional? **Note*:Please refer to WHO/UNICEF JMP definition for functional toilets: the hole or pit is not blocked, water is available for flush/pour flush toilets, and there are no cracks or leaks in the toilet structure. ***Note*:If there is no functional toilet/latrine for patients at the facility, specify 0.	Number of functional toilets: _____
2.6	If not all available toilets/latrines for patients are functional, what are the issues? **Note*:If toilets/latrines are all available or if there is no sanitation for patients, select not applicable 88.	2.61=The hole or pit is blocked 1. No 2. Yes 2.62=Water not available for flush / pour flush 1. No 2. Yes 2.63=Cracks or leaks in the toilet / toilet structure 1. No 2. Yes 88=Not applicable (all toilets functional or no toilets)
2.7	Are available toilets/latrines for patients at the facility private? **Note*:Please refer to WHO/UNICEF JMP definition for private toilet/latrine: the toilet/latrine stall should have (partitioning) walls without major holes, and a door which is unlocked when not in use (or for which a key is available at any time) and which can	Number of private toilets: _____

	be locked from the inside during use. ***Note*:If toilets/latrines are not available and cannot be checked for privacy, specify 0.	
2.8	If not all available toilets/latrines for patients are private, what are the issues? **Note*:If toilets/latrines are all private or if there is no sanitation for patients, select not applicable 88.	2.81=No partitioning walls/doors 1. No 2. Yes 2.82=Walls or doors with major holes 1. No 2. Yes 2.83=Doors cannot be locked from the inside during use 1. No 2. Yes 88=Not applicable (all toilets private or no toilets)
2.9	How many <u>usable</u> toilets/latrines for patients are there at the facility? **Note*:Please refer to WHO/UNICEF JMP definition for a usable toilet/latrine, a toilet should be <u>available, functional and private</u> at the time of the survey or questionnaire. ***Note*:If there is no usable toilet/latrine for patients at the facility, specify 0 ****Note*: The pictures should clearly show the presence or the absence of the specified conditions.	Number of usable toilets: _____
2.10	Are there sex-separated toilet rooms/latrines for patients? **Note*:If there is a private room with only one toilet and one hand washing facility that can be used by one female or one male exclusively at a time, select Yes. If there is one room with multiple cubicles for mixed use, select No. ***Note*:If there are no toilets for patients at the facility, put 88	1=No 2=Yes 88=Not applicable (no toilets)
2.11	Do female toilets/latrines provide facilities to manage menstrual hygiene needs? **Note*:A toilet can be considered to meet the needs of menstrual hygiene management if it meets both of the following conditions: a bin with a lid on it within the cubicle; water and soap available in a private space for washing. ***Note*:If there are no toilets, put 88. ****Note*:The pictures should clearly show the presence or the absence of the specified conditions.	1=No 2=Yes 88=Not applicable (no toilets)
2.12	What menstrual hygiene needs are not met in female toilets/latrines? **Note*:If all female toilets/latrines provide means for menstrual hygiene management or if there is no sex-separated sanitation, select not applicable 88	2.121=There is no bin within the toilet room/cubicle 1. No 2. Yes 2.122=There is bin with no lid on it within the toilet room/cubicle 1. No 2. Yes 2.123=Water not available in a private

		space for washing 1. No 2. Yes 2.124=Soap not available in a private space for washing 1. No 2. Yes 88=Not applicable (all toilets provide means or no toilets)
2.13	Is there toilet paper available in the toilet? **Note*:If there are no toilets for patients at the facility, select not applicable 88	1=No 2=Yes 88=Not applicable (no toilets)
2.14	Are toilet seats or pit slabs made of material that can be cleaned easily (porcelain, concrete, steel, plastic)? **Note*:If there are no toilets for patients at the facility, select not applicable 88	1=No 2=Yes 88=Not applicable (no toilets)
2.15	Do toilets have natural ventilation (window, opening for ventilation)? **Note*:If there are no toilets for patients at the facility, select not applicable 88	1=No 2=Yes 88=Not applicable (no toilets)
2.16	Is the toilet free from fecal smears on pan, wall and floor? **Note*:If there are no toilets for patients at the facility, select not applicable 88	1=No 2=Yes 88=Not applicable (no toilets)
2.17	Is the toilet pan free from used cleaning materials? (paper, stones and sticks) **Note*:If there are no toilets for patients at the facility, select not applicable 88	1=No 2=Yes 88=Not applicable (no toilets)
2.18	Do the toilets/latrines have adequate light, (especially if outdoors)? **Note*:If there are no toilets for patients at the facility, select not applicable 88	1=No 2=Yes 88=Not applicable (no toilets)
2.19	Did you see the presence of human feces in the yard or compound?	1=No 2=Yes
2.20	Are toilets/latrines available within 30 meters from the point of care? **Note*:If there is more than one point of care, select the one closest to the toilets. ***Note*:If there are no toilets for patients at the facility, select not applicable 88	1=No 2=Yes 88=Not applicable (no toilets)
2.21	Is there at least one improved toilet designated for staff only? **Note*:Please select Yes only if the toilet hygienically separates human excreta from human contact. Please refer to WHO/UNICEF JMP definition for "Improved" facilities. "Improved" facilities include both network and on-site sanitation: flush and pour flush toilets connected to sewers, flush and pour flush toilets or latrines connected to septic tanks or pits, ventilated improved pit latrines, pit latrines with slabs, and composting toilets, including twin pit latrines and container-based	1=Yes 2=No, there are unimproved toilets/latrines only 3=No, there is no toilet designated for staff

	systems. The toilet/latrine slab should be made from smooth materials for ease of cleaning, such as concrete, fiberglass, porcelain or stainless steel. Technologies that do not meet the requirements for improved sanitation are unhygienic on-site sanitation systems, such as pit latrines without slabs, hanging latrines, bucket latrines, or areas for open defecation without a facility.	
2.22 	Is the toilet/latrine designated for staff usable? *_Note_:Please refer to WHO/UNICEF JMP definition for usable toilets/latrines: •<u>available</u>: doors are unlocked or a key is available at all times; •<u>functional</u>: the toilet is not broken, the toilet hole is not blocked, and water is available for flush/pour-flush toilets; and •<u>private</u>: there are closable doors that lock from the inside and no large gaps in the structure. **_Note_:If there are no toilets/latrines or no toilets/latrines designated for staff, select Not applicable 88. ***_Note_:The pictures should clearly show the presence or the absence of the specified conditions.	1=Yes, it is available, functional and private 2=No 88=Not applicable (no toilets for staff)
2.23 	Is there at least one improved toilet that meets the needs of people with reduced mobility? *_Note_:Please select Yes only if the toilet is improved, meaning that it hygienically separates human excreta from human contact. “Improved” facilities include both network and on-site sanitation: flush and pour flush toilets connected to sewers, flush and pour flush toilets or latrines connected to septic tanks or pits, ventilated improved pit latrines, pit latrines with slabs, and composting toilets, including twin pit latrines and container-based systems. The toilet seat/slab should be made from concrete, fiberglass, porcelain or stainless steel for ease of cleaning. *_Note_:This question refers to staff or patient toilets. A toilet can be considered accessible if it meets all the following conditions: can be accessed without stairs or steps, handrails for support are attached either to the floor or sidewalls, the door is at least 80 cm wide, the door handle and seat are within reach of people using wheelchairs or crutches/sticks.	1=Yes 2=No, there are toilets for people with limited mobility but these do not meet their needs 3=No, there is no such toilet

	***Note*:The pictures should clearly show the presence or the absence of the specified conditions.	
2.24 	What needs of people with reduced mobility are not met by the dedicated toilet/latrine? **Note*:If there are no toilets/latrines for people with reduced mobility, or all well-equipped, select Not applicable 88.	2.24=Stairs or steps present 1. No 2. Yes 2.242=No handrails 1. No 2. Yes 2.243=Door is not wide enough 1. No 2. Yes 2.244=Door handle and seat are not within reach 1. No 2. Yes 88=Not applicable (all toilets equipped or no toilets)
2.25 	Is the toilet for people with reduced mobility usable? **Note*: To be considered usable, a toilet should be available, functional and private at the time of the survey or questionnaire. **Note*:If there are no toilets/latrines for people with reduced mobility, or all well-equipped, select Not applicable 88. ***Note*:The pictures should clearly show the presence or the absence of the specified conditions.	1=Yes 2=No, toilets are present and but not completely usable 88=Not applicable (no toilets for people with reduced mobility)
2.26 	Where is the nearest hand washing spot in relation to the toilet?	1=Tap in the toilet 2=Tap outside the toilet within 5m 3=Tap outside the toilet more than 5m 4=Hand washing point does not exist
2.27 	Are up-to-date records of cleaning visible and signed by the cleaners?	1=Yes, signed by the cleaners 2=No, no signatures or outdated records 3=No, no records

SECTION 2B: DATA ON TYPE AND CHARACTERISTICS OF PIT LATRINE (In case that health care facility possesses additional toilet i.e. pit latrine different from the main one)

S2B	Question	Answer
2.27	Do you share pit latrine with other people/individual/households, who are not members of this facility?	1=No 2=Yes
2.28	How many people, including children, use this latrine?	Insert the actual reported number: _____ 999=Do not know
2.29	Where is the pit latrine located?	1=In own yard/plot (within facility premises) 2=Outside facility premises
2.30	Distance of the pit latrine from the facility? (approximately in meter)	Insert the distance in meter: _____
2.31 	Are the walls and / or the door of the pit latrine in place? **Note*: Observe if the design of the latrine (walls and door) prevents other people from seeing and hearing what someone is doing when they use it, and if the latrine provides	1=No 2=Yes

	security to the intended users	
2.32 	Is the pit latrine free from fecal smears on pan, wall and floor?	1=No 2=Yes
2.33 	Is the pit latrine floor free from used cleaning materials? (paper, stones and sticks)	1=No 2=Yes
2.34 	Where is the nearest hand washing spot in relation to the pit latrine?	1=Tap within 5m 2=Tap more than 5m 3=Hand washing point does not exist

SECTION 3: DATA ON FECAL CONTAINMENT

S3	Question	Answer
3.1 	Where is fecal sludge drained and contained from the toilet?	1= Impermeable septic tank (regardless of no. of chambers) 2=Permeable septic tank with unsealed bottom 3=Impermeable twin pits 4=Permeable twin pits 5=Holding tank 6=Permeable pit (no ring or brick) 7=Bucket 8=No containment
3.2	When was a containment facility built/installed? * *Note*: If there is no septic tank or bucket is used for containment, put 88	Number of years: _____ 88=Not applicable (no containment or bucket for containment) 999=Do not know
3.3	Do you have permission for the construction of septic tank? **Note*: If there is no septic tank, put 88	1=No 2=Yes 88=Not applicable (no septic tank) 999=Do not know
3.4 	Is the place of the septic tank clearly marked? **Note*: If there is no septic tank, put 88	1=No 2=Yes 88=Not applicable (no septic tank) 999=Do not know
3.5 	Is the place of the septic tank fenced? **Note*: If there is no septic tank, put 88	1=No 2=Yes 88=Not applicable (no septic tank) 999=Do not know
3.6	What is the capacity of the containment facility?	In cubic meters (approximately): _____ 999=Do not know
3.7	Approximately how full is your latrine pit/septic tank at the moment?	1=Almost full 2=One-third portion empty 3=Half portion empty 4=More than half empty 5=Cannot see the latrine 999=Do not know
3.8 	How is the location of the containment facility (where in the pit /septic tank located)? *Note: If there is no septic tank, put 88	1=Near the front side / close to the main entrance 2=Backyard 3=Located inside the dwelling structure 4=Pit is below the super structure of the latrine 88=Not applicable (no septic tank)

		999=Do not know
3.9	Did the pit/tank leak, overflow or flood at any time in last one year so that pit/tank contents came out?	1=No 2=Yes 88= Not applicable 999=Do not know
3.10	What is the distance to nearest drinking water source? **Note*: If there is no septic tank, put 88	Insert no. of meters: _____ 88=Not applicable (no septic tank) 999=Do not know
3.11	Is that drinking water source uphill or downhill from the containment facility? **Note*: If there is no septic tank, put 88	1=Downhill 2=Uphill 3=At the same level 88=Not applicable (no septic tank)

SECTION IV: EMPTYING

S4	Questions	Answers
4.1	Where/how is fecal effluent drained from septic tank/pit latrine? **Note*: Responses 3-6 must be observed and confirmed on site	1=Emptying by service provider/PUC, other entities/persons, on their own 2=Drained underground (for permeable septic tanks or pits) 3=Drained to the surface due to overflow 4=Drained by pipes to the surface 5=Drained by pipes into water body 6=Drained by pipes on leach field 7=Drained by pipes into soak pit
4.2	When was the last time your latrine pit/septic tank filled up? **Note*: If there is no septic tank, put 88	1=Never 2=1-2 years ago 3=2-5 years ago 4=5-10 years ago 5=More than 10 years ago 88=Not applicable (no septic tank) 999=Do not know
4.3	When the pit/septic tank last needed emptying, what did you do? **Note*: If there is no septic tank, put 88 ***Note*: Provide only one answer	1=Emptied pit/septic tank and continued using it 2=Dug/opened new pit 3=Switched to second pit (if twin pit) 4=Left it/nothing was done 5=Use of mercury for deepening the pit 6=Others: specify _____ 88=Not applicable (no septic tank) 999=Do not know
4.4	Who did the emptying? **Note*: If there was no emptying or there is no septic tank, put 88	1=Public Utility Company 2=Private service provider 3=Other entities/individuals: specify: _____ 4=Emptied by yourself 88=Not applicable (no emptying) 999=Do not know
4.5	Was the pit/septic tank easily accessible for the emptiers? **Note*: If there was no emptying but other measures were taken, put 88	1=Easily accessible 2=Not easily accessible 3=Not accessible at all 88=Not applicable (no emptying) 999=Do not know
4.6	To empty the pit/septic tank, did someone need to enter into the pit/septic tank?	1=No 2=Yes

	**Note*: If there was no emptying but other measures were taken, put 88	88=Not applicable (no emptying) 999=Do not know
4.7	Did emptier use any of the following? **Note*: Respond with yes or no for each option and enter separately into the database ***Note*: If there was no emptying but other measures were taken, put 88	4.71=Boots 1=No 2=Yes 4.72=Gloves 1=No 2=Yes 4.73=Face mask 1=No 2=Yes 4.74=Body cover 1=No 2=Yes 4.75=Eye goggles 1=No 2=Yes 4.76=Helmet 1=No 2=Yes 4.77=Protective coat 1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
4.8	How was emptying performed predominantly last time? **Note*: If there was no emptying but other measures were taken, put 88	1=Motorized 2=Manual 88=Not applicable (no emptying) 999=Do not know
4.9	How did you contact the service provider who emptied your pit/septic tank? **Note*: If there was no emptying but other measures were taken, put 88	1=Contacted by phone/e-mail 2=Someone from the house visited the service provider personally 3=Communicated government authority/NGO/comm. provider 4=Talked to other persons 5=Other: specify_____ 88= Not applicable (no emptying) 999=Do not know
4.10	Do you keep evidence of emptying of septic tank?	1=No 2=Yes 88=Not applicable (no septic tank) 999=Do not know
4.11	How often do you perform emptying of pit latrine / septic tank?	1=Only when filled up 2=Once a year 3=Once in three years 4=Once in five years 5=Once in five years 999=Do not know
4.12	Are there any abandoned (closed) pit latrine / septic tanks on the premises of health care facility?	1=No 2=Yes 999=Do not know
4.13	How was it performed /what procedure was used to close pit latrine / septic tank? **Note*: If no pit latrine / septic tank was closed, put 88	1=Buried 2=Disinfected and buried 3=Closed with solid material 4=Nothing was done 88=Not applicable (not closed) 999=Do not know
4.14	Were you satisfied with emptying service last time? **Note*: If there was no emptying, put 88	1=No 2=Yes 3=Partially 88=Not applicable (no emptying) 999=Do not know
4.15	What was/were the reason/reasons you were not satisfied with the emptying service? **Note*: If there was no emptying, put 88	4.151=Too expensive 1=No 2=Yes 4.152=Too much physical effort for health care facility staff 1=No 2=Yes 4.153=Stressful for health care facility staff 1=No 2=Yes 4.154=Took too long 1=No 2=Yes

		4.155=Exposed to extensive bad smells and odors 1=No 2=Yes 4.156=Unsafe procedure 1=No 2=Yes 88=Not applicable (no emptying or satisfied) 999=Do not know

SECTION 5: TRANSPORTATION AND DISPOSAL

S5	Questions	Answers
5.1	Is fecal content being transported after emptying from the pit/septic tank? **Note*: If there was no emptying, put 88	1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
5.2	Who transported the emptied fecal content last time after emptying? **Note*: If there was no emptying or no transport, put 88	1=Public Utility Company 2=Private service provider 3=Other entities/individuals: specify: _____ 4=Transported on our own 88= Not applicable (no emptying or no transport) 999= Do not know
5.3	Where was fecal content disposed last time, after emptying and transport? **Note*: If there was no emptying or no transport, put 88	1=Disposed to Wastewater treatment plant 2=Disposed to public sewer 3=Disposed to sanitary landfill 4=Disposed to non-sanitary / wild landfill 5=Disposed to moving water body 6=Disposed to moving water body 7=Disposed to the farm 8=Crop field as fertilizer 9=Buried in situ 10=Disposed to open pit 88=Not applicable (no emptying or no transport) 999=Do not know
5.4	What is the distance from the health care facility to disposal site? **Note*: If there was no emptying or no transport, put 88	1=Less than 10m 2=10m to 30m 3=30m to 100m 4=More than 100m 88=Not applicable (no emptying or no transport) 999= Do not know
5.5	What were the means of transportation? **Note*: If there was no emptying or no transport, put 88	1=Used protected removal pipe and motorized machine so that fecal effluents does not spread in the surrounding environment i.e. vacuum tanker 2=Vehicle without pumping system 3=Manually carried 4=Other: specify: _____ 88=Not applicable (no emptying or no transport) 999=Do not know
5.6	Who was the owner of the transportation means – van/carts/pick up/tractor? **Note*: If there was no emptying or no transport, put 88	1=Public Utility Company 2=Private service provider 3=Other entities / individuals 4=Member of health care facility

		88=Not applicable (no emptying or no transport) 999=Do not know
5.7	Did you have to pay for the emptying and transportation? **Note*: If there was no emptying, put 88	1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
5.8	How much money did you pay? **Note*: If there was no emptying, put 88	Actual amount in RSD: _____ 88=Not applicable (no emptying) 999=Do not know
5.9	Is your health care facility subsidized for the cost for the services of emptying and transport? **Note*: If there was no emptying, put 88	1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
5.10	Is there dedicated budget line for emptying service allocated in the budget of your HCF? **Note*: If there was no emptying, put 88	1=No 2=Yes 88=Not applicable (no emptying) 999=Do not know
5.11	Who secured money for emptying service? **Note*: If there was no emptying, put 88	1=HCF 2=Local self-government 3=National budget 4=Other: specify: _____ 88=Not applicable (no emptying) 999=Do not know

SECTION 6: TREATMENT AND REUSE

S6	Questions	Answers
6.1	Do you treat fecal sludge from your septic tank or latrine pit on site? **Note*: If there was no emptying, or fecal sludge was transported by a public utility company, put 88	1=No 2=Yes, planted drying bed followed by liquid treatment 3=Yes, unplanted drying bed only 4=Yes, unplanted drying bed followed by liquid treatment 5=Yes, mechanical drying 6=Yes, composting 7=Substance for self-purification added 88=Not applicable (no emptying or transported by public utility company) 999=Do not know
6.2	Are you aware that fecal sludge is needed to be treated before disposal and/or reuse? **Note*: If there was treatment, put 88	1=No 2=Yes 88=Not applicable (no treatment) 999=Do not know
6.3	Does anyone of the health care facility engage in any sort of fecal sludge treatment process? **Note*: If there was treatment, put 88	1=No 2=Yes 88=Not applicable (no treatment) 999=Do not know
6.4	Where is the on-site treated fecal sludge (solids) disposed (or given/sold) to? **Note*: If there was treatment, put 88	1=Disposal on land and water 2=Landfill 3=Safe burial 4=Use to vegetable manure 5=Use as crop manure 6=Producing biogas or charcoal 88=Not applicable

		999=Don’t know
6.5	Does/did the health care facility allow neighboring households to use fecal contents directly from the pit latrine / septic tank?	1=No 2=Yes 999=Do not know
6.6	Do you agree that the treated fecal sludge could be used as fertilizer for agricultural cultivations?	1=Strongly disagree 2=Disagree 3=Do not know 4=Agree 5=Strongly agree 9=Does not apply to me (no opinion on this)

Reference sources: Resource materials from Cambodia study, SNV, JMP, WHO 2016 Draft Checklist, Bangladesh checklist for SMOSS survey, WASH in schools survey in Serbia checklist (2016), WASH in HCFs survey in Serbia checklist (2019), etc.

II. ANNEX

ANNEX IIa. Questionnaire for local self-government units

Respective colleagues,

In front of you is a questionnaire as an integral part of research conducted by the Ministry of Health, Ministry of Environmental Protection, Institute of Public Health of Serbia "Dr Milan Jovanovic Batut" and the Standing Conference of Towns and Municipalities, within the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) "PROJECT ON ENSURING SAFELY MANAGED ON-SITE SANITATION SYSTEMS (SMOSS)”.

This research is one of the key elements of the analysis of the situation in the field of collection, drainage, emptying, transport and treatment of faecal sludge from pit latrines, septic tanks, holding tanks and small sewage systems (up to 2000 PE) in Serbia. Considering that this analysis will assess the situation from the perspective of the regulation, responsibilities, coordination mechanisms, monitoring and financing, as well as that this area is regulated by the local self-government units, your participation in the research is extremely important.

The analysis will show the extent to which wastewater from households and institutions (schools and health care facilities) that are not connected to the public sewerage system is safely managed in Serbia, as well as identify strengths and weaknesses and define indicators for establishing systematic surveillance and monitoring of all relevant aspects of safe wastewater management from pit latrines, septic tanks, holding tanks and small sewage systems. Also, the obtained results will serve as a starting point for defining plans and measures for improvement in this area, both at the policy level and the level of its implementation in practice.

The questionnaire is divided into seven segments. To complete it successfully, it will be necessary for the cooperation of various organizational units within the local self-government. For this purpose we have created an online questionnaire form, using "Google form" application.

For compiling this questionnaire, please use this link (…….). You will also have opportunity and option to download and print this questionnaire. However, please enter the answers collected, using abovementioned link at the Google form.

If for some reason you are not able to fill in the questionnaire at once, or you want to go back and change some of the entered answers, you will be able to do so, by receiving a message to your email with a link to reopen your questionnaire in which all previous answers will be saved.

Data you have provided in this questionnaire will be exclusively used for the sake of situation analysis, and will be presented as aggregated. Your contact details will not be published and will be used only in case of need for further clarification of your answers.

For all additional information and possible clarifications of certain issues related to this questionnaire, please contact: Miodrag Gluscevic in SCTM at the email: miodrag.gluscevic@skgo.org and/or Dr. Dragana Jovanovic at the Institute of Public Health of Serbia "Dr Milan Jovanovic Batut" at the email: dragana_jovanovic@batut.org.rs.

We would like to thank you in advance for taking your time to take part in this survey and contribute to the quality of the in the field of collection, drainage, emptying, transport and treatment of faecal sludge from pit latrines, septic tanks, holding tanks and small sewage systems (up to 2000 PE) in Serbia.

Please fill in and submit the questionnaire no later than September 15, 2020.

Note: This questionnaire applies to pit latrines, septic and holding tanks and small-scale sewage sanitation systems (up to 2,000 PE). This questionnaire does not apply to the public sewerage system above 2,000 PE.

Septic tank is an underground chamber made of concrete, fiberglass, or plastic through which domestic wastewater flows for basic on-site treatment. Settling and anaerobic processes reduce solids and organics, but the treatment efficiency is only moderate (referred to as "primary treatment").
Holding tank refer to a sealed, buried tank used for collecting and holding household's wastewater until emptied. It consists of one or more impermeable chambers without drainage and overflow. It must be emptied frequently, and is suitable for facilities with a small amount of wastewater (holiday home).
Small-scale wastewater treatment system is a system for collecting and treating wastewater from a group of individual households, septic and holding tanks (up to 2,000 PE).

I Basic data on the local self-government unit

Town/ city/municipality_____ County _____
Respondent's name and surname: _____
Contact information: Phone: _____ e-mail:
_____
Function (job): _____

Population according to the census: _____
Less than 20,000 / 20,000-50,000 / 50,000-100,000 / Over 100,000

Number of households according to the census: _____
Number of school and preschool facilities: _____

Number of health care facilities: _____

What is the predominant economic activity of the municipality: (circle one or more answers)
Agriculture YES NO
Industry YES NO
Services YES NO

Which group does the municipality belong to according to its development level? Split into groups

II Management of emptying, transport and treatment of fecal sludge from pit latrines, septic and holding tanks and small-scale sewage systems (up to 2000 PE) at the local self-government unit

IIa Assembly Decisions governing performance of utility services

Has the Assembly of the local self-government unit issued the decision governing the performance of utility service involving stormwater and wastewater treatment and drainage? YES NO
If YES, write the title of the decision:_____, number and year of publication of the decision: _____

Are the tasks falling within the scope of the utility service involving pumping, transport and treatment of fecal waste from septic and holding tanks governed under the decision of the local self-government unit? YES NO
If NO, indicate another document governing these tasks: _____

Does the **decision** or another document of the local self-government unit define the following aspects: (circle all applicable)

- Requirements that must be met in the construction of septic tanks, holding tanks, soak pits, leach fields YES NO Partially
- Technologies for containment and storage/treatment of wastewater and faecal sludge on-site YES NO Partially

  If YES, which of the following on-site technologies are regulated
  - Flush toilet with septic tank connected to a soak pit or leach field YES NO
  - Flush toilet with single pit or open-bottomed tank YES NO
  - Flush toilet with impermeable holding tank YES NO
  - Dry toilets with single pit (abandoned when full) YES NO
  - Flush toilet with twin pits for alternating use YES NO
  - Dry toilets with twin pits (*fossa alterna*) YES NO
  - Composting toilet YES NO
- Operation and maintenances of technologies for containment and storage/treatment of wastewater and faecal sludge on-site YES NO Partially
- Manner of submitting requests for pumping and transport of fecal waste from septic and holding tanks YES NO Partially
- Time limit for the provider of utility service involving storm water and wastewater treatment and drainage to perform the pumping and transport of fecal waste from septic and holding tanks upon receiving a request of a septic or holding tank owner YES NO Partially
- Method of pumping of fecal waste from septic and holding tanks YES NO Partially
- Method of transport of fecal waste from septic and holding tanks YES NO Partially
- Type of vehicles for transporting fecal waste from septic and holding tanks YES NO Partially
- Disinfecting procedure for vehicles for transporting fecal waste from septic and holding tanks YES NO Partially

- Place where fecal waste from septic and holding tanks and discharged/ disposed of YES NO Partially
- Fecal waste treatment methods during transport (such as mixing, dewatering, aerobic digestion) YES NO Partially
- Fecal waste treatment method in the treatment plant YES NO Partially
- Requirements for sludge disposal and recovery after treatment YES NO Partially
- Discharge quality control YES NO Partially
- Frequency of discharge of fecal wastewater and faecal sludge from septic and holding tanks YES NO Partially

If YES, how the emptying frequency is defined:

- When it is filled YES NO
- Upon the order by respective inspector YES NO
- Seasonally YES NO
- Quarterly YES NO
- Once in six months YES NO
- Once a year YES NO
- Other, please specify_____

- Procedures and time limit for abandoning septic and holding tanks YES NO Partially
- Requirements for service providers (operators) for emptying, transport and treatment services YES NO Partially

- Occupational health and safety of workers performing fecal waste pumping, transport and treatment services YES NO Partially
- Protection of pedestrian zones and streets from fecal waste spillage during transport YES NO Partially
- Control of unpleasant odors, insects and noise when pumping fecal waste sludges YES NO Partially
- Control of unpleasant odors, insects and noise during on-site treatment YES NO Partially
- Control of unpleasant odors, insects and noise during treatment at the plant YES NO Partially
- Monitoring the quality of provided service YES NO Partially
- Maintaining of a registry of emptying of septic and holding tanks YES NO Partially
- Specific management requirements and methods for pumping, transport and treatment of fecal waste from septic and holding tanks of schools at the territory of the municipality YES NO Partially
- Specific management requirements and methods for pumping, transport and treatment of fecal waste from septic and holding tanks of health care institutions at the territory of the municipality YES NO Partially
- Actions in emergency situations (threatened environment and human health) YES NO Partially
- Elements for pricing utility service involving pumping and transport of fecal waste from septic and holding tanks YES NO Partially
- Price discrimination for special user categories YES NO Partially
- Keeping records on the supervision of septic and holding tanks YES NO Partially
- Reporting on performed activities related to small on-site sanitation management by service providers YES NO Partially

Comments related to certain aspects in the Decisions: _____

What elements (aspects) in the construction of technologies for containment and storage/treatment of wastewater and faecal sludge on-site are prescribed for this type of auxiliary facility: (circle everything that is applicable)

• Impermeability	YES	NO
• Number and dimensions of chambers	YES	NO
• Proximity to groundwater and watercourses	YES	NO
• Proximity to water supply sources	YES	NO
• Septic tank location	YES	NO
• Presence of discharge opening	YES	NO
• Presence of ventilation cover	YES	NO
• Regular disinfection after emptying	YES	NO
• Spillage from the pit	YES	NO
• Septic tank overflow	YES	NO
• Quality of wastewater	YES	NO
• Conditions for regular emptying	YES	NO
• Conditions for connection and discharge into public sewer	YES	NO
• Environmental protection	YES	NO

• Other (specify what): _____

IIb Scope and management of utility services

Is the utility service involving storm water and wastewater treatment and drainage available at the whole territory of the municipality in the local self-government unit? YES NO

Is the utility service involving pumping, transport and treatment of fecal waste from septic and holding tanks available at the whole territory of the municipality where there is no public sewerage system in the local self-government unit?

YES NO

What is the percentage of households in the municipality that are not connected to the public sewerage system? By 5% categories

What is the number of settlements at the territory of the municipality that are not connected to the public sewerage system? Write the number of settlements: _____

Has the local self-government unit set up records of entities performing the utility service involving storm water and wastewater treatment and drainage? YES NO

Does the local self-government unit keep separate records of entities performing the utility service involving pumping, transport and treatment of fecal waste from septic tanks? YES NO

If YES, indicate whether the records contain the following information:

- Number of emptying per month: YES NO
- Fecal waste emptying and transport equipment: YES NO
- Information on staff: YES NO

Which economic operators perform the utility service involving emptying, transport and treatment of fecal waste from septic tanks? (check all that apply)

Public utility company (name): _____

Other economic operators (indicate all operators):

Name, Tax Identification Number (TIN) and Company ID No.:

_____

Name, TIN and Company ID No.: _____

Name, TIN and Company ID No.: _____

Name, TIN and Company ID No.: _____

Name, TIN and Company ID No.: _____

Other individuals / operators who perform service without supervision by local self-government:
YES NO I don't know

Has the local self-government unit prescribed specific requirements when entrusting and contracting the enterprises for the services of emptying, transport and treatment? YES NO
If YES, indicate the specific requirements: _____

III Inspection surveillance over management of containment, emptying, transport and treatment of faecal sludge on-site

Does the competent authority of the local self-government unit maintain a local register of environmental pollution sources under Article 75 of the Law on Environmental Protection?
YES NO

Does the local self-government unit carry out inspections of **septic and holding tanks**: (only one answer)

- Regular
- Extraordinary
- Regular and extraordinary

Does the local self-government unit have an annual plan and an inspection checklist according to the type of inspected septic and holding tanks? YES NO
Are the following users included in the annual plan:

- Individual households YES NO
- Schools and preschools YES NO
- Health care institutions YES NO
- Other entities YES NO

What is the achievement level of annual targets against the plan? _____ (%)

Do you define further priorities for inspections related to wastewater and fecal sludge emptying and transport, based on the risk assessment? YES NO
If YES, what is the risk level of collecting, emptying, transport and treatment of fecal sludge from septic tanks? Select only one of the offered answers

- Negligible
- Low
- Medium
- High
- Critical

Does the inspection checklist contain the following parameters in the monitoring of septic and holding tanks and pit latrines: (circle all applicable)

- Design in line with requirements (distance from water supply source, number of chambers, etc.) YES NO
- Check compliance with construction requirements YES NO
- Tanks and ancillary installations are properly maintained YES NO
- Regular emptying YES NO
- Disinfection upon emptying YES NO
- Uncontrolled spillage of sludge on public and other free surfaces YES NO
- Onsite treatment (bio septic tank, mini purifier, etc.) YES NO

Based on the data in the inspection checklists, do you keep an electronic database by user category (households, schools, health care institutions)? YES NO
If YES, please indicate the degree of risk of inspected facilities at the territory of the municipality by category:

	Total number of inspected facilities	Households (Number)	Schools and preschools (Number)	Health care institutions (Number)
Negligible risk				
Low risk				
Medium risk				
High risk				
Critical risk				
Total number of facilities				

Which body of the local self-government unit is the inspection report submitted to? (circle all applicable)

- Assembly YES NO
- Council YES NO
- Commission YES NO
- Other (indicate):_____

To whom does the local self-government unit submit a report on inspections performed? (circle all applicable)

- Ministry of Construction, Transport and Infrastructure YES NO
- Ministry of Environmental Protection YES NO
- Coordination Commission YES NO

Is the report publicly available on the website of the administrative authority? YES NO

Indicate the number of recoded untreated wastewater drains into the environment (for example directly into a water body, private farm, or other area not intended for fecal sludge disposal) that are not covered by the sewerage system of the public utility company for the following users:
Individual households: _____
Household groups: _____
School and preschool facilities: _____
Health care facilities: _____

Is there a wastewater treatment plant on the territory of the local self-government unit?
YES NO
If YES, does the wastewater treatment plant accept and treat fecal sludge from pit latrines, septic and holding tanks? YES NO

If NO, is there another treatment method of fecal sludge from pit latrines, septic and holding tanks?
YES NO

Are you aware of any good practice examples in your local self-government unit regarding the disposal or treatment of fecal sludge of septic and holding tanks and small-scale sewage systems (describe):
YES NO
_____
_____

Are you aware of any bad practice examples in your local self-government unit regarding the disposal or treatment of fecal sludge of septic and holding tanks and small-scale sewage systems (describe):
YES NO

_____
_____

What measures has the local self-government unit taken to prevent environmental pollution originating from fecal substances from households or institutions that are not connected to the public sewerage system? (describe):

_____
_____

IV Planning in the field of sanitation at the level of the local self-government unit

Has the local self-government unit set up the following plans? (circle all applicable)

- Spatial plan YES NO
- General regulation plan YES NO
- Detailed regulation plan YES NO
- General urban plan YES NO
- Spatial plan of the special purpose area YES NO

Which of the above-mentioned documents defines conditions for the design and construction of containment technologies (e.g. septic tanks, holding tanks, latrines) ?
Please, specify here the defined conditions from the document(s):_____

Has the local self-government foreseen any programme or project activities related to pit latrines, septic tanks or small-scale sewage systems? YES NO

Is there a project in the local self-government unit related to septic and holding tanks or small-scale sewage systems in the municipality? YES NO
If YES, what is the project about? (circle all applicable)

- Expanding the public sewerage system YES NO
- Constructing a wastewater treatment plant YES NO
- Constructing new small-scale sewage systems YES NO
- Introducing organized emptying of pit latrines, septic and holding tanks and small-scale sewage systems YES NO
- Subsidies for connecting to the public sewerage system YES NO
- Subsidies for constructing self-purifiers YES NO
- Introducing green technologies YES NO
- Safe reuse of sludge after treatment YES NO
- Other (indicate): _____

What are the main challenges and difficulties in managing small-scale sewage systems (up to 2000 PE) in the municipality? (circle all applicable)

- Lack of finance YES NO
- Terrain inaccessibility YES NO
- Changes in population size YES NO
- Lack of staff YES NO
- Lack of project documentation YES NO
- Insufficient implementation of legislation YES NO
- Lack of systemic monitoring YES NO

- Other (indicate): _____

How can users file an appeal of a complaint, report a malfunction, or inquire about a service? (circle all applicable)?

- Face to face YES NO
- By telephone YES NO
- In writing YES NO
- Via Internet YES NO

What is the total number of registered user complaints and reclamations in the previous calendar year? _____

What is the total number of registered responses to user complaints and reclamations in the previous calendar year? _____

What is the average time required to respond to user complaints and reclamations?
Up to 48 hours / Up to a week / Up to two weeks / Up to a month / Longer than a month

V Human resources for performing tasks involving emptying, transport and treatment of fecal sludge from septic and holding tanks and small-scale sewage systems

Does the local self-government unit assess the need for human resource capacity in the area of performing communal services of emptying, transport and treatment of faecal sludge?
YES NO

How often is the assessment of the human capacity needs performed?
• Once a year
• Every three years
• Every four years or more
• On an ad hoc basis

Please, estimate the status of current human resource capacities in the following sectors:

• Inspection Service	Less than 50%	50-75%	More than 75%
• Sewerage service	Less than 50%	50-75%	More than 75%
• Environmental Protection Service	Less than 50%	50-75%	More than 75%

VI Financing services and investments in the local self-government unit

Indicate the prices of fecal sludge emptying, transport and treatment services by defined user categories depending on the scope of service provision:
Individual households: _____
Household groups: _____
School and preschool facilities: _____
Health care facilities: _____

Care for special categories of service users and service prices depending on user category:

Categories of service users	Is the category of socially vulnerable consumers recognized as eligible for subsidies	Number of registered socially vulnerable households in the municipality by category	Amount of subsidy for each category (RSD or % of bill)
Socially vulnerable households	YES NO		
Elderly households	YES NO		
National minorities	YES NO		
Refugee camps or migrant reception centers	YES NO		

What is the total cash revenue that has actually been generated by performing the activities of emptying, transport and treatment of fecal sludge? _____ (RSD)

What is the total amount of investment in regular operation and maintenance for emptying, transport and treatment of fecal sludge? _____ (RSD)

What is the total amount of investment in renovation of equipment for emptying, transport and treatment of fecal sludge? _____ (RSD)

What is the total annual amount of investment in system improvement and expansion - connections to the public sewerage system? _____ (RSD)

What is the level of investment needed for the extension of the public sewerage system (new connections)? _____ (RSD)

How many new users were connected to the sewerage system according to plan in the previous year? _____ (%)

VII Coordination

Does the local self-government unit have a policy / strategy / procedure for involving the public / local communities in policy-making in the field of septic and holding tank management? YES NO

If YES, please indicate which mechanism (circle all applicable):

- Green Council YES NO
- Participatory budgeting YES NO
- Regular consultations with local communities defined by the local decision YES NO
- Some other mechanism, specify _____

On a scale from 1 to 5, how would you rate the cooperation between organizational units within a local government unit related to collection, drainage, emptying, transport and treatment of faecal sludge?

1-Unsatisfactory 2 - Fair 3 - Satisfactory 4 - Good 5-Excellent

On a scale from 1 to 5, how would you rate the data exchange between organizational units within a local government unit related to collection, drainage, emptying, transport and treatment of faecal sludge?

1-Unsatisfactory 2 - Fair 3 - Satisfactory 4 - Good 5-Excellent

What fields does the local self-government unit actively cooperate with partners/donors:

- Policy making YES NO
- Infrastructure construction YES NO
- Construction of wastewater treatment plant YES NO
- Capacity building for monitoring YES NO
- Other (insert): _____

How many development partners/donors does the local self-government unit actively cooperate within the field of containment, emptying, transport, treatment and safe reuse of faecal sludge? Please, enter a number: _____

On a scale from 1 to 5, how would you rate a cooperation of local-self government with other sectors, NGOs, donors or partners related to collection, drainage, emptying, transport and treatment of faecal sludge?

1-Unsatisfactory 2 - Fair 3 - Satisfactory 4 - Good 5-Excellent

Annex IIb. Questionnaire for emptying, transport and treatment service providers

General data about service provider

Name of the company: _____
Address: _____
Town / city _____ Municipality _____ District _____
Respondent's name and surname: _____
Contact information: Phone: _____ e-mail: _____
Function (job): _____

Year when company was established: _____

Was the company established for other utilitiy servives?
YES NO

Does the company own a licence for utility services emptying, transport and treatment of fecal sludge through public sewage system?
YES NO

Area covered by company: (circle one answer)

- **Service not provided on the territory**
- **Part of the territory of the local self-government unit**
- **The whole of the local self-government unit**
- **Territory of more than one local self-government unit**

Are there other providers of this utility service in the same area?
YES NO
If YES, insert number of public companies: _____
Insert number of private companies: _____

Do you have concluded contracts with these private companies for emptying, transport and treatemnt of fecal sludge?
YES NO

Do these companies have licenses to perform the utility services?
YES NO
If NO, what are the criteria and standards for choosing them: _____

Guides for emptying, transport and treatment of fecal sludge

Does the public utility company own a guide book that defines technical aspects that need to be fulfilled during the construction of septic and holding tanks?
YES NO
If YES, which aspects are included: (circle all applicable)

- A tank is impermeable **YES NO**
- Number and dimensions of the chambers **YES NO**

- Proximity of groundwater and surface waters **YES NO**
- Proximity of water sources **YES NO**
- Location of the septic tank **YES NO**
- Presence of an opening for emptying **YES NO**
- Presence of ventilation shaft **YES NO**
- Regular desinfection of the tank **YES NO**
- Spillage of fecal sludge from the tank **YES NO**
- Quality of the fecal effluent **YES NO**
- Conditions for regular emptying **YES NO**
- Conditions for emtpying into public sewage **YES NO**
- Conditions for environmental protection **YES NO**
- Characteristics (size, soil type, other) of soak pits or leach fields **YES NO**
- Other aspects (specify): _____

Does the public utility company prioritize the following users for emptying and transport services in case of unplanned partial or complete failure of service, which cannot be resolved within 24 hours?

- Health care facilities **YES NO**
- Preschool facilities **YES NO**
- School facilities **YES NO**

Monitoring/ records of emptying, transport and treatment of fecal sludge from pit latrines, septic and holding tanks and small-scale sewage systems (up to 2000 PE)

Does the public utility company unit keep evidence / records of **septic and holding tanks**?
YES NO
If NO, indicate who keeps the evidence / records? _____

Does the public utility company unit provide reports on the aspects from the evidence regarding **septic and holding tanks**?
YES NO

If records of **septic and holding tanks** exist, indicate whether it contains the following data:

Evidence aspects	**Evidence/records**			**Report to authorities**	
Number of septic and holding tanks	**YES**	**number**	**NO**	**YES**	**NO**
Septic and holding tank capacity	**YES**		**NO**	**YES**	**NO**
Type of tank construction method (permeability)	**YES**		**NO**	**YES**	**NO**
Method or type of on-site treatment of fecal sludge (If YES, please fulfill question***)	**YES**		**NO**	**YES**	**NO**
Number of closed off septic and holding tanks	**YES**	**number**	**NO**	**YES**	**NO**
Emptying of fecal sludge of septic and holding tanks annually	**YES**	**number**	**NO**	**YES**	**NO**
Number of individual households using them	**YES**	**number**	**NO**	**YES**	**NO**
Number of emptying in	**YES**	**number**	**NO**	**YES**	**NO**

individual households annually					
Number of household groups using them	**YES**	**number**	**NO**	**YES**	**NO**
Number of emptying in household groups annually	**YES**	**number**	**NO**	**YES**	**NO**
Number of school and preschool facilities using them	**YES**	**number**	**NO**	**YES**	**NO**
Number of emptying in school and preschool facilities annually	**YES**	**number**	**NO**	**YES**	**NO**
Number of health care facilities using them	**YES**	**number**	**NO**	**YES**	**NO**
Number of emptying in health care facilities annually	**YES**	**number**	**NO**	**YES**	**NO**
Are the data disaggregated according to the type of settlement (urban and other)	**YES**		**NO**	**YES**	**NO**

*** Indicate fecal sludge treatment method for septic and holding tanks:

_____

Does the public utility company keep evidence / records of **pit latrines**?
YES NO
If NO, indicate who keeps the evidence / records? _____

Does the public utility company unit provide reports on the aspects from the evidence regarding **pit latrines**?
YES NO

If there is a record of **pit latrines**, indicate whether it contains the following information:

Evidence aspects	**Evidence/records**			**Report to authorities**	
Number of pit latrines	**YES**	**number**	**NO**	**YES**	**NO**
Pit latrine capacity	**YES**		**NO**	**YES**	**NO**
Type of construction method of pit latrines (permeability)	**YES**		**NO**	**YES**	**NO**
Method or type of on-site treatment of fecal sludge (If YES, please fulfill question***)	**YES**		**NO**	**YES**	**NO**
Number of closed off / buried pit latrines	**YES**	**number**	**NO**	**YES**	**NO**
Emptying of fecal sludge of pit latrines annually	**YES**	**number**	**NO**	**YES**	**NO**
Number of individual households using them	**YES**	**number**	**NO**	**YES**	**NO**
Number of emptying in individual households annually	**YES**	**number**	**NO**	**YES**	**NO**
Number of household groups using them	**YES**	**number**	**NO**	**YES**	**NO**
Number of emptying in household groups annually	**YES**	**number**	**NO**	**YES**	**NO**
Number of school and preschool facilities using them	**YES**	**number**	**NO**	**YES**	**NO**
Number of emptying in school and preschool facilities annually	**YES**	**number**	**NO**	**YES**	**NO**
Number of health care facilities	**YES**	**number**	**NO**	**YES**	**NO**

using them					
Number of emptying in health care facilities annually	**YES**	**number**	**NO**	**YES**	**NO**
Are the data disaggregated according to the type of settlement (urban and other)	**YES**		**NO**	**YES**	**NO**

*** Indicate fecal sludge treatment method for pit latrines: _____

Does the public utility company keep evidence / records of **small-scale sewage systems (up to 2000 PE)**? **YES NO**
If NO, indicate who keeps the evidence / records? _____

Does the public utility company unit provide reports on the aspects from the evidence regarding **small-scale sewage systems (up to 2000 PE)**?
YES NO

If records of **small-scale sewage systems** exist, indicate whether they contain the following information:

Evidence aspects	**Evidence/records**			**Report to authorities**	
Number of small-scale sewage systems	**YES**	**number**	**NO**	**YES**	**NO**
Method or type of treatment of fecal sludge of a small-scale sewage system	**YES**		**NO**	**YES**	**NO**
Number of closed off / buried pit latrines	**YES**	**number**	**NO**	**YES**	**NO**
Emptying of fecal sludge of pit latrines annually	**YES**	**number**	**NO**	**YES**	**NO**
Number of individual households using them	**YES**	**number**	**NO**	**YES**	**NO**
Number of emptying in individual households annually	**YES**	**number**	**NO**	**YES**	**NO**
Number of household groups using them	**YES**	**number**	**NO**	**YES**	**NO**
Number of emptying in household groups annually	**YES**	**number**	**NO**	**YES**	**NO**
Number of school and preschool facilities using them	**YES**	**number**	**NO**	**YES**	**NO**
Number of emptying in school and preschool facilities annually	**YES**	**number**	**NO**	**YES**	**NO**
Number of health care facilities using them	**YES**	**number**	**NO**	**YES**	**NO**
Number of emptying in health care facilities annually	**YES**	**number**	**NO**	**YES**	**NO**
Are the data disaggregated according to the type of settlement (urban and other)	**YES**		**NO**	**YES**	**NO**

*** Indicate fecal sludge treatment method for small-scale sewage systems (up to 2000 PE):
_____

Questions about emptying and transport services

On average, how much total waste (in m3) do you collect from on-site sanitation facilities and how many times do you provide service to the following facilities per year?

Users	**Total waste emptied (m3 per year)**	**Number of services per year**
Individual households		
Groups of households		
Health care facilities		
School facilities		

Are there periods when you provide utility services more often?
YES NO
If YES, please indicate the season when utility services are provided more often? (Check all that apply)

- In spring **YES NO**
- In summer **YES NO**
- In autumn **YES NO**
- In winter **YES NO**

If YES, please explain why are utility services provided more often? (Check all that apply)

- Due to floods **YES NO**
- Due to heavy rains **YES NO**
- Other reasons (specify)**:** _____

Questions about emptying service

What sort of on-site facilities do you empty? (Check all that apply)

- Pit latrines **YES NO**
- Septic tanks **YES NO**
- Holding tanks **YES NO**
- Small on-site sewers **YES NO**
- Other on-site facilities (specify): _____

What type of equipment do you use for emptying? (Check all that apply)

- Vacuum trucks **YES NO**
- Vacutugs **YES NO**
- Small motorized pumps **YES NO**
- Hand tools (shovels, spades, buckets, rope) **YES NO**
- Non-motorized manual pumps **YES NO**
- Other tools (specify): _____

How many trucks do you use for emptying and transport of fecal sludge?
_____
What is an average capacity of trucks? _____ (m3)

Questions about transport service

Before transporting fecal sludge from on-site sanitation facilities, do workers clean the empty on-site facility?
YES NO

Does the company transport fecal sludge through urban or rural settings?
YES NO

During the transport of fecal sludge, does sludge spill into the surrounding environment?
YES NO
If YES, please indicate the reasons for spillage into the environment? (Check all that apply)

- Poor infrastructure **YES NO**
- Terrain configuration **YES NO**
- Technical reasons (failure of transport equipment) **YES NO**
- Lack of procedures for transport equipment maintenance **YES NO**
- Other (specify): _____

Questions about treatment and disposal service

Do you provide any treatment of fecal sludge onsite (pit latrine, septic or holding tanks)?
YES NO
If yes, what treatment is it? (Check all that apply)

- Mixing **YES NO**
- Dewatering **YES NO**
- Aerobic digestion **YES NO**
- Other (specify): _____

Do you provide any treatment of fecal sludge during transport?
YES NO
If yes, what treatment is it? (Check all that apply)

- Mixing **YES NO**
- Dewatering **YES NO**
- Aerobic digestion **YES NO**
- Other (specify): _____

Do you transport fecal sludge to a treatment plant?
YES NO
If NO, where do you discharge the collected fecal sludge? (Check all that apply)

- Into public sewage system **YES NO**
- Directly to water body **YES NO**
- Sanitary landfill **YES NO**
- Wild (unsanitary) landfill **YES NO**
- Open pit, dumping lake **YES NO**
- Burying site (off-site) **YES NO**
- Transfer station **YES NO**
- On site burial instead of transport **YES NO**
- Other (specify): _____

What is the reason for disposing fecal sludge that way? (Check all that apply)

- There is no treatment plant **YES NO**
- Treatment plant is not operating **YES NO**
- Waste is not suitable for treatment plant **YES NO**

- Temporary solution **YES NO**
- Cost of depositing at treatment plant is too high
- Other (specify): _____

Is the discharge location legal? (circle one answer)
YES NO I DON'T KNOW

What is the average distance from on-site sanitation facility to final waste discharge (km)? (circle one answer)
Less than 25 km 25 to 50 km 50 to 100 km More than 100 km

Indicate the number of recoded untreated wastewater drains into the environment (for example directly into a water body, private farm, or other area not intended for fecal sludge disposal) that are not covered by the sewerage system of the public utility company for the following users:
Total: _____

Questions related to workers / human resources

Do you have any internal document (guideline, decision, instruction, etc.) that closely defines safety procedures and personal protection equipment for the workers?
YES NO

Do workers enter the on-site sanitation facilities while emptying?
YES NO

Is personal protection equipment provided to workers who perform emptying of fecal sludge?
YES NO
If YES, indicate what type of protection equipment is provided to workers? (Check all that apply)
- Gloves **YES NO**
- Facial masks **YES NO**
- Overalls **YES NO**
- Boots **YES NO**
- Other protection (specify): _____

Do workers wear personal protection equipment as required?
YES NO OCCASIONALLY

Do workers use cleaning materials and disinfectants to clean on-site sanitation facilities after manual emptying?
YES NO Not applicable (no manual emptying)

Do workers wash their hands with soap and water after the manual job is done?
YES NO

Do workers use cleaning materials and disinfectants when there is a spill?
YES NO

Do workers attend training on minimum safety standards?
YES NO

How often are trainings for workers provided? (circle one answer)

- Only once upon employment
- On a regular basis once a year
- Sometimes, but not regularly

Please specify job title of person responsible for training for safety standards:

_____

What is the education level of workers for emptying and transport? (Check all that apply)

- Non-qualified **YES NO**
- Primary school **YES NO**
- Secondary school **YES NO**
- Other (specify): _____

Does the public utility company have enough human resources for utility services emptying, transport, and treatment of fecal sludge?

YES NO

How many human resources does the company employ for the following services: (Check all that apply)

- Emptying, transport, and treatment of fecal sludge from septic tanks

Less than 50% 50 to 75% More than 75%

- Management and maintenance of treatment plants

Less than 50% 50 to 75% More than 75%

Does the public utility company have a sector dedicated to regular emptying and monitoring of septic tanks?

YES NO

Does the public utility company submit reports about the provided services of emptying, transport and treatment of fecal sludge from septic tanks?

YES NO

If YES, who are the reports submitted to? _____

Finances

What is the fee of provided service of emptying, transport and treatment? _____**RSD**

How is the fee of the service calculated? (Check all that apply)

- Type of user (households or institutions) **YES NO**
- Scope of service **YES NO**
- Volume of emptyied fecal material **YES NO**
- Number of working hours **YES NO**
- Others (specify): _____

Is emptying, transport and treatment service subsidized in any way?

YES NO

If YES, to whom? (Check all that apply)

- Low-income households **YES NO**
- Elderly households **YES NO**
- All households free of charge once a year **YES NO**

- National minorities **YES NO**
- Migrant camps **YES NO**
- Health care facilities **YES NO**
- School facilities **YES NO**
- Others (specify) **_____**

What is the estimated income from emtpying, transport and treatement services?
_____RSD

What is the estimated income from emtpying, transport and treatement services in relation to the total incomes of the company? **_____%**

What level of return on investment is provided from emtpying, transport and treatement services? (circle one answer)
Less than 50% of investment 50 to 80% 80 to 99% 100% of investment

If the level of return on investment is less than 100%, is the eventual loss of income from emtpying, transport and treatement services indicated in the annual financial plan?
YES NO

If the level of return on investment is less than 100%, how are eventual losses covered in the company's plan: (Check all that apply)

- From the municipality budget **YES NO**
- From other services of the company **YES NO**

III. ANNEX

Appraisal of standards and regulations and national requirements on safe management of on-site sanitation

This checklist was designed according to JMP core and expanded questions and indicators for SDG monitoring, WHO Guidelines on sanitation and health (2018), the international WHO standards for water, sanitation and hygiene (WASH) in healthcare facilities (HCF), and other relevant international resources provide by the WHO project team.

In the first section, please review the available national policies, regulations, standards, plans, targets and the other legal acts, and compile the provided checklist to complete the list of the available specific requirements for on-site sanitation related to corresponding aspect, providing details and references to the official documents and responsible entity/es for the implementation at national and local level. Please, be reminded to provide the reference for each requirement indicated in the national policies, regulations, standards, plans, targets and the other legal acts. In case of additional requirements in place, these can be added in the notes to the specific questions, or in case of additional legal documents that could not be mentioned in the main table; these can be added in the last section of the checklist.

In the second section, please list all national policies, regulations, standards, plans, targets and the other legal acts on sanitation providing general scope of corresponding legal document on sanitation, as well as responsible ministry.

1. Requirements in place for the management of on-site sanitation

Planning

In the current standards and regulations in Serbia, is there any requirement or recommendation with respect to planning of on-site sanitation (applicable to institutional and household on-site sanitation systems)?

☐ Yes ☐ No ☒ Partially

If yes, is any of the aspects listed below considered in such standards and regulations? (select all true answers)

	Aspects	Specific requirements for on- site sanitation related to corresponding aspect	Legal reference(s)	Type of legal reference (L) Law or regulation; (S)Standards; (G)Guidelines (P) Strategic plans; (T) Targets	Responsible entity/es for the implementation at national and local level
☒	Spatial and urban planning	**Law on Planning and Construction** **1.1. Planning documents** **Article 11** Planning documents are spatial and urban plans. Spatial plans are: • Spatial plan of the Republic of Serbia; • Regional spatial plan • Spatial plan of the special purpose area (protected areas) Urban plans are: • General urban plan (for cities); • Spatial plan of the Local Self-Government Unit; • General regulation plan; • Detailed regulation plan; **2.3. Spatial plan of local self-government units** **Article 19** The spatial plan of local self-government units is adopted for the territory of the local self-government and determines guidance for the development of activities and designated areas, as well as for those for sustainable and balanced development in territorial units of local self-government. **Article 20** The spatial plan of local self-government units contains in particular:	Law on Planning and Construction ("Official Gazette of RS" No. 72/09, 81/09-correction, 64/10-US, 24/11, 121/12, 42/13-US, 50 / 13-US, 98/13-US, 132/14, 145/14, 83/18, 31/19,37/2019 and 9/2020) and the Spatial Plan of the municipality	(L)	The Ministry of Construction, Transport and Infrastructure

		1) coverage of the construction area; 2) spatial planning; 3) international settlements and distribution of services and activities; 4) spatial development of traffic and infrastructure systems; 5) planning of the territory that envisages the development of an urban plan or urban project; 6**) base for spatial planning in rural areas/villages;** **7) planning of protection, arrangement, use and development of natural and cultural goods and environments;** 8) rules of arrangement and rules of construction for parts of the territory for which the preparation of urban plans is not envisaged; 9) measures and instrument for the plan implementation; 10) measures for balanced territorial development of local self-government units. The report on the strategic procedure of environmental impact is an integral part of the documentation basis of the planning documentation. **Article 53a paragraph 1** Location conditions contain all urban, technical and other conditions and data necessary for the development of the conceptual design, project for construction permit and project for construction, in accordance with this law and are issued for the cadastral parcel that meets the requirements for construction plot/location. **Rulebook on general rules for parceling, regulation and construction** **Article 27** At the same constructional plot/location, auxiliary facilities can be built (garages, pantries**, septic tanks**, wells, cisterns for water, summer kitchen, **pit latrines**, etc.), ie facilities that are in the function of the main facility, and are built on the same plot/location as the main residential, business or public purpose facility was built. **Article 45** A dump and a **pit latrine** must be located at least 20 m away from the residential building, well, or water source, and only at a lower elevation/downstream. **Regulation on location conditions** **Articles 14, 24 and 25.** Location conditions need to be obtained in order to determine urban, technical and other conditions for the needs of technical documentation on the basis of which a construction of a septic tank for wastewater collection in settlements, where there is no sewerage network is performed.	Rulebook on general rules for parceling, regulation and construction ("Official Gazette of RS", No. 22/2015) Regulation on location conditions ("Official Gazette of RS", No. 35/2015, 114/2015 and 117/2017)	(L) (L)	
☒	Sewage network development	**Strategy on water management on the territory of the Republic of Serbia until 2034** **6.2.3. Water protection against pollution**	Strategy on water management on the territory of the Republic of Serbia		

		General priorities are: 1) problem solving of collecting wastewater from Croatian settlements and industry with reduced water loads, especially domicile water and water in the basins the most endangered, having the highest specific loads; **2) improvement of the water protection system against pollution from dispersed sources of pollution, primarily from agriculture;** 3) expanding the scope of investments for water protection from pollution; 4) enabling institutional and other capacities for protection of water against pollution at the national, regional and local level, especially in the field of implementation of existing legal provisions; 5) expansion and modernization of the water quality and wastewater monitoring system; 6) harmonization of legal and institutional frameworks for water protection against pollution with the existing water protection system in the EU. **a) Priorities for concentrated sources** Prioritization for building the sewerage network or Wastewater treatment plant (WWTP) is determined on the basis of a degree of construction of sewerage systems. If the connection to the public sewerage system is higher than 60%, priority should be given to the construction of the treatment plant, while otherwise the priority is to complete the network. In the construction of WWTPs, larger settlements on smaller watercourses have an advantage, especially those with a high degree of connection to public sewerage systems (all settlements with more than 10,000 inhabitants), and then settlements with low connection to public systems (mostly settlements with less than 10,000 inhabitants and connection less than 50% of the population), ie the criterion for defining the priority is the wastewater specific load of the relevant water body recipient. Within the construction of the sewerage network and main collectors, priority is given to: 1) primary and secondary sewerage network; (1) in settlements with more than 2,000 inhabitants and in which existing individual systems endanger the health of the population, (2) in settlements where WWTPs are built have excess capacity, (3) if there are no built WWTPs, but the settlements are located close to potential recipients, (4) **settlements with less than 2,000 inhabitants in which the construction of central sewerage systems has started (conditionally, more than 30% of the population),** (5**) in settlements with less than 2,000 inhabitants, without public sewerage (or with sewerage systems covering less than 30% of the population), and with public water supply, focus on individual wastewater treatment systems;** 2) main collectors:	until 2034, "Official Gazette of RS", No. 3/2017		

		(1) if their construction is time-aligned with the construction of the WWTP settlement, (2) if their construction is not time-aligned with the construction of the WWTP, but the collector improves the protection of public health, protection of water supply sources or improves the quality of water in the watercourse that represents the recipient. **Strategy of Public Health in the Republic of Serbia 2018–2026** **4.2.4. Improving the waste management system** 4.2.4.1. Regulations in the field of waste management will be harmonized with EU regulations; 4.2.4.2. Regional and local waste management plans will be developed; 4.2.4.3. A new national waste management strategy will be developed; 4.2.4.4. National plans for individual waste streams will be developed; 4.2.4.5. The number of inhabitants covered by organized solid waste collection will increase to 90%; 4.2.4.6. The capacities of public utility companies will be continuously strengthened in order to improve the waste management system; 4.2.4.7. A sustainable packaging waste collection system will be established; 4.2.4.8. The number of inhabitants living in the area covered by the **sewerage system** will increase by 20%; 4.2.4.9. The share of **wastewater treated** before discharge into recipients will increase by 20%.	Strategy of Public Health in the Republic of Serbia 2018–2026. Official Gazette of RS, No. 61/2018		
☐	Water protection against dispersed sources of pollution (septic tanks, pit latrines, etc…)	**IDENTIFIED GAP: Priorities for dispersed sources of pollution such as septic tanks, pit latrines, etc. are not defined as a separate priority in the Strategy on water management on the territory of the Republic of Serbia until 2034, but only under a) Priorities for concentrated sources paragraph 4 and 5 through building of sewerage network.** **Priorities for water protection from sources of pollution are not defined as a separate priority in the Strategy of Public Health in the Republic of Serbia 2018–2026, section 4.2.3 Improving the supply of healthy drinking water**			
☒	Financial planning Existence of national financial plans and whether they include costed plans for non-sewered sanitation systems	**Strategy on water management on the territory of the Republic of Serbia until 2034** **2.3.3. Economic policy and financing of water management** **a) Economic policy makers** In the process of harmonization of domestic legislation with European regulations and directives, new legal regulations have been adopted in our country in recent times, including those related to holders of economic and management functions in the water sector and in the field of communal water supply and **sewerage**. The changes in relation to the previous regulations are in line with the relevant changes made in other countries, primarily in countries in transition, and the essence is greater decentralization, i.e. the transfer of competencies from the central state level to the level of local self-governments. Decentralization was particularly related to the economic policy of the water sector and the organization of drinking water supply and **sewerage services**. **b) Financing of water management**	Strategy on water management on the territory of the Republic of Serbia until 2034, "Official Gazette of RS", No. 3/2017		

		The basis for stable sources of financing is provided by appropriate legal and institutional solutions, which determine the sources and scope of necessary funds, responsibilities and payment mechanisms, customers. The Law on Waters provides the basis for securing real income by introducing the principles of “user pays” and “polluter pays”. As sources of financing water management can be stated: the price of water, after the establishment of its economical level; national budget for waters of the Republic of Serbia and the national budget for waters of the autonomous province; Capital Investment Authorities of the Autonomous Province; EU funds; **source revenues of local self-government units**; investor's own funds; donations and other funds (international financial institutions, bank loans dealing with financing of infrastructure projects, etc.). **V MEASURES TO ACHIEVE THE ESTABLISHED WATER MANAGEMENT OBJECTIVES** **5.3. Planning and implementation** **Paragraph 6** Planning of investment activities at the level of local self-government, which includes facilities for public water supply and **sewerage in settlements**, **is realized through development programs and urban plans, which are prepared by competent state institutions - water directorates, institutes or other organizational forms**. It is necessary that public utility companies dealing with water supply and sewerage in settlements be included in the development of these programs and plans, so that the planning is based on relevant parameters. Operational implementation of plans and programs takes place through the competent utility companies. If the unification is done within one ministry and these communal activities, the state would be an important subject in planning investment activities in this segment of the water sector, primarily in the case of regional hydro systems and construction of water facilities for performing the mentioned communal activities. **National investment programme "Serbia 2025" - addresses infrastructural development and construction of sewerage networks** **Detailed information on financing and whether they include costed plans for non-sewered sanitation systems is subject to the local financial plans and will be collected and complemented through the questionnaire for local self-government units.**	**Not publically available**		
☒	Environmental protection	**Strategy on water management on the territory of the Republic of Serbia until 2034** **b) Protection of water from pollution** **III OBJECTIVES AND GUIDELINES FOR WATER MANAGEMENT** **3.3.1. Guidelines for water use, water protection against pollution and protection against the harmful effects of water, including cases where the sub-basin is located in several water areas**	*Strategy on water management on the territory of the Republic of Serbia until 2034, “Official Gazette of*		

		b) Water protection against pollution The main purpose of water protection against pollution is to protect human health and the environment, through achieving and maintaining good status of surface and groundwater (ecological status / potential and chemical status), reducing hydromorphological pressures on natural water bodies, prevention and control of water pollution and rational use of available resources. Water protection against pollution is planned and implemented within the framework of integrated water management, on the basis of harmonized strategic and planning acts of the water sector and other sectors, by applying: 1) **the principle of reducing pollution at the place of origin, ie reducing the amount of hazardous substances at the source of pollution, by implementing the necessary measures to protect water from pollution and controlling the operation of facilities and devices for wastewater treatment;** 2) a combined approach, which is achieved through discharge control measures (emission standard) and environmental quality control measures (water quality standard), taking a stricter criterion than the two; 3) **the "polluter pays" principle, which obliges polluters to bear the costs of measures to eliminate / reduce pollution;** 4) the principles of best available techniques, which oblige all entities, participants in water-related activities, to apply the best available techniques. Protection against concentrated sources of pollution will be improved by the construction and adequate functioning of communal infrastructure, the work of inspection services and the implementation of monitoring. The construction of sewerage systems and WWTPs, in accordance with the EU Directive on urban wastewater treatment, should cover all settlements larger than 2,000 EC. However, the Republic of Serbia does not have the economic possibility to realize such a condition in the planning period. **In settlements with less than 2,000 inhabitants that have no public sewerage and have a public water supply, adequate wastewater treatment should be provided by individual systems, given the present decline in population. Exceptions are settlements (mostly suburban) in which the construction of sewage facilities has begun and which can be connected to city systems.** The basic criteria for selecting priorities for the construction of sewerage systems and WWTPs in settlements larger than 2,000 inhabitants are the specific load of the receiver (kg of specific pollution per m3 of small or medium water) and its capacity to receive pollution, as well as the degree of construction and connection to the sewerage network. Based on the first criterion - receiver characteristics, plants should be built first in settlements located in protected zones, then in larger settlements along small watercourses (watercourses with unfavorable	*RS", No. 3/2017*		

		hydrological regime in terms of small and medium waters), and only finally in settlements near large watercourses (Danube, Tisza, Sava). If the construction of the sewerage network is observed, priority should be given to the construction and completion of the network in settlements with a low degree of connection, while in the case of a higher degree of construction of the network, priority should be given to wastewater treatment plants. Irrespective of this attitude, if a local self-government is ready to invest a larger amount of its own funds in the construction of a WWTP, the state should support this initiative, with appropriate incentive measures. In order to comprehensively protect water from pollution and water protection, the construction of atmospheric sewage must follow the complete urbanization of the settlement and we must not allow a significant lag in its construction in relation to sewage systems for wastewater. During the construction of these systems, a modern approach should be applied, which includes measures and works on the entire catchment area from the place of origin to the recipient, depending on the characteristics of the catchment and the set goal (protection of water and soil quality, speed control and runoff, etc.). Measures and works applied for drainage of rain runoff should be connected with activities on protection from harmful effects of water and protection of water from pollution, as well as with urbanization and building rules. **In the case of dispersed sources of pollution, special attention should be paid to the dominant dispersed sources of pollution in the given territory, namely to the population (septic tanks, pit latrines...), intensive livestock, and then to agriculture, through systematic monitoring and control of fertilizers and plant protection products.** The arrangement of municipal and industrial landfills should be done in accordance with modern practice and EU standards, and illegal landfills should be eliminated as much as possible, by determining special locations for solid waste disposal. The waste management system, to be established at the state level, will certainly contribute to reducing the impact of these potential dispersed pollutants. In the case of protected areas, the criteria for their determination should first be determined and certain categories of protected areas should be determined, in accordance with the Law on Waters, taking into account both the social and economic aspects. Protection within the sanitary protection zones of existing water sources and quality control and protection of water bodies used for recreation and bathing will be implemented by the competent local self-government, while in areas intended for water abstraction for human consumption protection measures will be implemented by the water sector, including additional protection of water bodies. groundwater that will be identified as potential sources of regional systems (strategic reserves). Monitoring of parameters of ecological and chemical status of surface waters and chemical and quantitative status of groundwater, including waters in protected areas, is the basis for improving the situation in the field of water protection against pollution, and must be carried out in the prescribed manner.			

☐	Keeping of on-site sanitation systems cadaster	**IDENTIFIED GAP: Not in plan**			
☐	Sanitation safety plan in place or risk management approach required	**IDENTIFIED GAP: Not in plan**			

Notes:

Strategy on water management on the territory of the Republic of Serbia until 2034 "Official Gazette RS", no. 3/2017

b) Strategic and planning documents relevant to the water sector

Strategic, planning and normative acts that are the basis for water management on the territory of the Republic of Serbia are defined by the Law on Waters. Mutual harmonization of these and other strategic and planning documents adopted at the level of the Republic of Serbia, and including the aspect of water, is mandatory and refers to:

1) Law on the Spatial Plan of the Republic of Serbia from 2010 to 2020, which determines the long-term basis for the organization, arrangement, use and protection of the space of the Republic of Serbia. In the part related to water resources, special importance is given to their sustainable and strictly controlled use, as well as the protection of water from irrational privatization, pollution and inadequate use. Large watercourses (Danube, Sava and Tisza) are given a multifunctional role, surface waters should have a special significance for the supply of arid and waterless areas, groundwater as a public good must be under special control, while other rivers, lakes, swamps and ponds should be protect and use according to international standards;
2) National Strategy for Sustainable Development for the period 2009-2017. year ("Official Gazette of RS", No. 57/08), which promotes the principles of integrating environmental issues into other sectoral policies and the inclusion of environmental costs in the price of products ("user pays" and "polluter pays"). In the water sector, sustainable development implies optimal water management, while preserving and improving water quality and their rational use;
3) Strategy of Agricultural Development of Serbia ("Official Gazette of RS", No. 78/05), which sees the improvement of the situation in the water sector through the policy of sustainable water management, economic start-up, European integration and constitution of a water system compatible with EU requirements. Agriculture and Rural Development Strategy of the Republic of Serbia for the period 2014-2024. year ("Official Gazette of RS", No. 85/14) defines the goals, priorities and frameworks of political and institutional reforms in the field of agriculture and rural development;
4) National Environmental Protection Program, which is a means for rational solution of priority problems in the field of environmental protection in the country and covers the period until 2019. For the water sector, estimated funds for the implementation of this Program for the period 2010-2019. years amount to about 860 million Euros;
5) National Strategy for Sustainable Use of Natural Resources and Goods ("Official Gazette of RS", No. 33/12), which should provide, together with the Spatial Plan of the Republic of Serbia, strategic planning of sustainable use and protection of natural resources and goods in the Republic of Serbia;
6) National Strategy for Approximation in the Field of Environment for the Republic of Serbia ("Official Gazette of RS", No. 55/05, 71/05 - correction, 101/07, 65/08 and 16/11), which should provide the basis for Chapter 27 accession negotiations;
7) Biodiversity Strategy of the Republic of Serbia for the period 2011-2018. year ("Official Gazette of RS", No. 13/11), which should ensure the protection and sustainable use of biological diversity;
8) Approximation strategy for the water sector, which was done within the technical assistance for the development of the National Strategy for Approximation in the Field of Environment for the Republic of Serbia (EAS);
9) Decree on Determining the Water Management Basis of the Republic of Serbia, which represents, until the adoption of the Strategy, the basic document which determines the basic strategy of water use, water protection from pollution and water protection on the entire territory of the Republic of Serbia for the period until 2021. The basic postulate applied in the Water Management Basis of the Republic of Serbia is that the entire territory of the Republic of Serbia must be managed

uniquely and rationally, within the integral arrangement, use and protection of all resources and potentials.
In addition to the above, when preparing planning and investment documentation in the field of water, other documentation from the regional or local level must be taken into account, which may have an impact on water management or within which certain issues in this area are considered and resolved.

Sanitation / excreta disposal / point of use

In the current standards and regulations in Serbia, is there any requirement or recommendation with respect to sanitation / excreta disposal / point of use (applicable to institutional and household on-site sanitation systems)?

x Yes □ No □ Partially

If yes, is any of the aspects listed below considered in such standards and regulations? (select all true answers)

	Aspects	Specific requirements for on- site sanitation related to corresponding aspect	Legal reference(s)	Type of legal reference (L) Law or regulation; (S)Standards; (G)Guidelines (P) Strategic plans; (T) Targets	Responsible entity/es for the implementation at national and local level
☒	Access to and use of non-shared household toilets	**Law on Planning and Construction** Article 2. General terms, Item 24. Auxiliary building is a building that is in the function of the main building, the town is located on the same plot on which the main residential, business or public service building was built or can be built (garages, pantries, septic tanks, wells, water tanks, etc.). **Rulebook on Conditions and standards for design of residential buildings and apartments** (refers only to buildings with more than 3 apartments) **4. Apartment in the building** **Parts of the apartment** **Article 9**	Law on Planning and Construction (Official Gazette of RS, No. 72/09, 81/09-correction, 64/10-US, 24/11, 121/12, 42/13-US, 50 / 13-US, 98/13-US, 132/14, 145/14, 83/18, 31/19,37/2019 and 9/2020 Rulebook on Conditions and standards for design of residential buildings and apartments ("Official Gazette of RS",	*L* *L*	

		The housing unit consists of the following groups of spaces: 1) residential premises; 2) **auxiliary spaces**; 3) spaces for movement; 4) open spaces. **Auxiliary spaces** are apartments for storing food (kitchen pantry, closet for food), personal hygiene (**bathroom, toilet**), storage space, as well as maintenance of the apartment (wardrobe, space or room for household needs, closet for household needs). **Rulebook on general rules for parceling, regulation and construction** Article 27. Conditions for construction of other facilities on the same building plot The location conditions on the same construction plot can determine the construction of other facilities of the same or compatible purpose according to certain conditions for the zone in which the construction plot is located. On the same construction plot, auxiliary facilities can be built, ie facilities that are in the function of the main facility, and are built on the same plot on which the main residential, business or public purpose facility was built (garages, pantries, septic tanks, wells, cisterns for water, summer kitchen, field toilet, etc.). **IDENTIFIED GAP: Access to and use of non-shared household toilets is not explicitly addressed in regulation; however, definition of septic tanks as auxiliary building that is located on the same plot on which the main residential, business or public service building was built or can be built, as well as auxiliary space within a apartment. These could implicate that toilets are not shared between different apartments, but still individual**	no. 58/2012, 74/2015 and 82/2015) Rulebook on general rules for parcelling, regulation and construction (Official Gazette of RS, No. 22/2015)	*L*	

		household or buildings with less than 3 apartments are not covered.			
☒	Minimum number of toilets in institutions (schools/preschools, healthcare and social care facilities)	**For health care facilities:** **Paragraph 6 of the Article 44 of the Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service:** Terms and conditions within rooms – Article 44 Healthcare activity in a health institutions or private practice can be carried out in a building where the following general conditions are provided: 1) they are constructed of materials that can not adversely affect human health and which provide sound, thermal and hydro isolation; 2) they are connected to the electrical and telephone network; 3) water supply, sewage and heating are provided; 4) have separate rooms for storing clean and dirty laundry; 5) there is cold and hot water in work rooms, patient rooms and sanitary facilities; 6) have a sanitary facility with an entrance hall with a waiting room, and in the hospital, one sanitary facility and a shower with a bath per 10 patient rooms; 7) have natural and artificial illumination, as follows: in the office and laboratories 250 - 500 lux, in the waiting room 100 lux and in the corridors 50 lux; 8) that in all rooms, depending on the purpose, a temperature of 18-25 degrees Celsius is provided; 9) the floors and walls are constructed of materials that can be easily maintained and disinfected; 10) each building-technical and functional unit in the health institution has a sanitary facility for men and women (separate for patients and for staff) and special rooms for storing equipment and facilities for the maintenance of general hygiene and personnel wardrobe; 11) that the premises where the healthcare activity is performed by a health institution or private practice, such as: a specialist radiology clinic, a specialist clinic for hyper or hypoparental medicine, a laboratory for microbiological and virology diagnostics and a clinic in which jobs are performed in one of the listed healthcare activities have a separate, or separate entrance from the entrance to the residential and business premises; 12) operating room, delivery rooms, haemodialysis and intensive care units have secured air conditioning. **For preschool facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities** Requirements for preschools with respect to indoor space for children – Norms for space, equipment and didactic material for preschool facilities / 1. Space of the preschool facility / 1. Group of rooms for children / 3. Sanitary rooms for children 3. Sanitary rooms for children - Sanitary room for children consists of a nursing and hygiene part and a sanitary part with toilets for children;	Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service, Official Gazette of RS, No. 43/2006, 112/2009, 50/2010, 79/2011, 10/2012 – other rulebook, 119/2012 - other rulebook, 22/2013 and 16/2018 Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities, Official Gazette of RS – Educational gazette, No. 1/2019	(L) (L)	

		- The number of toilets according to hygiene norms equals: one toilet per 10 children and one hand-wash basin per 7 children, or 2-3 toilets and 3-4 hand-wash basins per one room for children, - The size of toilet seat and its mounting height from the ground should be in accordance with children's age (for example, mounting height for toilet seat of 26 cm should be planned for children less than 3 years, mounting height of 30 cm for children from 3 to 5.5 years, and mounting height of 40 cm for preschool children), - The size of hand-wash sink and its mounting height from the ground should be in accordance with children's age (for example, mounting height for hand-wash sink of 50-55 cm should be planned for children less than 3 years, mounting height of 60 cm for children from 3 to 4 years, and mounting height of 65 cm for children aged 4 to preschool children), - Sanitary room for children is connected to the room for children; the only exception to this architectural rule being allowed for children in the preschool preparation program, - The floors in sanitary rooms must not be slippery and should be coated with materials that are easily cleaned and water-proof, - Spatial arrangement of sanitary rooms inside the preschool facility depends on the number of children per facility floors, - Dividing walls between toilet seats should reach up to 1.3 m from the ground, - Walls of the sanitary rooms should be coated with ceramic tiles or other water-proof and easily maintained materials up to 1.6 m from the ground, - Sanitary rooms should be ventilated naturally, with additional mechanical ventilation only when necessary. For preschool facilities staff: Requirements for preschools with respect to indoor space for children – Norms for space, equipment and didactic material for preschool facilities / 1. Space of the preschool facility / 3. Group of utility rooms / 3. Sanitary rooms for staff 3. Sanitary rooms for staff - Sanitary rooms for staff are prescribed for each preschool facility, regardless of the capacities of the facility; - On average one toilet per 10 employees, - All toilets have spaces with hand-wash basins, one hand-wash facility per 2 toilet seats, - Spatial arrangement of sanitary rooms inside the preschool facility depends on the number of users per facility floors, - All sanitary rooms, toilets and spaces for hand-wash must be well-lit and well-ventilated, - Sanitary rooms for teachers are planned in the nearest vicinity of the teachers' rooms, and sanitary rooms for kitchen staff are planned in the nearest vicinity of the kitchen, - Sanitary rooms for staff can contain an additional room for hygiene maintenance (trocadero). **For school facilities:**	Rulebook on detailed conditions for establishing, beginning of work and performing an	(L)	

		From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities Norms for school space, equipment and didactic material for primary school facilities / 1. Space for school facility / School building / Additional rooms / V) Sanitary rooms Sanitary rooms Sanitary rooms in schools are planned according to the number of pupils. The spatial arrangement of sanitary rooms depends on the number of users (pupils and staff) by floors. Sanitary rooms are connected to the main communications – corridors and halls and should be facing North. Sanitary rooms are separated for pupils and staff. All toilets have hand-washing anteroom containing one hand-wash basin per 2 toilet seats. Next to sanitary rooms are additional rooms for hygiene maintenance (trocadero). Sanitary rooms for children with disabilities should be planned in the construction of new school buildings, during construction and reconstruction of the new buildings. For the reconstruction of the old buildings, sanitary rooms should be planned if technically feasible, according to the Rulebook on technical standards of planning, construction and building of objects, so as to provide access and movement of persons with disabilities, children and adults. Sanitary rooms for pupils - Sanitary rooms in schools are separated for boys and girls. - The number of toilets according to hygiene norms equals: one toilet and two urinals per 40 male pupils; one toilet per 20 female pupils. Sanitary rooms for staff - Sanitary rooms for staff in schools are separated for male teachers and female teachers. - The number of toilets according to hygiene norms equals: one toilet and two urinals per 20 male teachers; one toilet per 10 female teachers. **For social care facilities for the elderly:** **Article 43 of the Rulebook on detailed conditions and standards for the provision of social care services** Article 43 (for elderly in nursing homes) Maintenance of personal hygiene and hygiene of the rooms Washbasin, shower, and toilet are provided for ten users in the accommodation objects or residential units **Article 52 of the Rulebook on detailed conditions and standards for the provision of social care services** Article 52 (for small social care facilities)	activity of primary school facilities, Official Gazette of RS – Educational gazette, No. 5/2019 Rulebook on detailed conditions and standards for the provision of social care services, Official Gazette of RS, No. 42/2013,89/2018 and 73/2019	(L)	

		Maintenance of personal hygiene and hygiene of the rooms Washbasin, shower, and toilet are provided for five users in the accommodation objects or residential units			
☒	Sex separated toilets in institutions (schools/preschools, healthcare and social care facilities)	**For health care facilities:** **Paragraph 10 of the Article 44 of the Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service:** Healthcare activity in a health institutions or private practice can be carried out in a building where the following general conditions are provided: 10) each building-technical and functional unit in the health institution has a sanitary facility for men and women (separate for patients and for staff) and special rooms for storing equipment and facilities for the maintenance of general hygiene and personnel wardrobe; **Sex separated toilets are not addressed in regulation for preschools** **For school facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities** Norms for school space, equipment and didactic material for primary school facilities / 1. Space for school facility / School building / Additional rooms / V) Sanitary rooms Sanitary rooms for pupils - Sanitary rooms in schools are separated for boys and girls. - The number of toilets according to hygiene norms equals: one toilet and two urinals per 40 male pupils; one toilet per 20 female pupils. Sanitary rooms for staff - Sanitary rooms for staff in schools are separated for male teachers and female teachers. - The number of toilets according to hygiene norms equals: one toilet and two urinals per 20 male teachers; one toilet per 10 female teachers.	Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service, Official Gazette of RS, No. 43/2006, 112/2009, 50/2010, 79/2011, 10/2012 – other rulebook, 119/2012 - other rulebook, 22/2013 and 16/2018 Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities, Official Gazette of RS – Educational gazette, No. 5/2019 Rulebook on detailed conditions and standards for the provision of social	(L) (L)	

		For social care facilities **Article 7 of the Rulebook on detailed conditions and standards for the provision of social care services:** Article 7 Maintenance of personal hygiene and hygiene of the rooms Rooms for the maintenance of personal hygiene are separated for male and female users of social care services.	care services, Official Gazette of RS, No. 42/2013,89/2018 and 73/2019	(L)	
☒	Location of sanitation facility used for the safe disposal of human urine and feces	**For preschool facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities** Requirements for preschools with respect to indoor space for children – Norms for space, equipment and didactic material for preschool facilities / 1. Space of the preschool facility / Urban planning of the preschool facilities / Location Location: Location for the preschool facility building should provide: - Communal infrastructure – access road for pedestrians and vehicles, supply with healthy drinking water, disposal of wastewater, and connection to electrical network, according to other regulations Requirements for preschools with respect to indoor space for children – Norms for space, equipment and didactic material for preschool facilities / 1. Space of the preschool facility / Architectural planning / Object (building) of a preschool facility Object (building) of a preschool facility: Object (building) of a preschool facility should also fulfil the following technical requirements: The construction land should be equipped with public water supply, public sanitary supply, electric network, telephone line, cable line, heating and gas line. **For school facilities:** From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities Norms for school space, equipment and didactic material for primary school facilities / 1. Space for school facility / Location Location: Before determining the position – location of the primary school complex, the following requirements should be provided: - Communal infrastructure – access road for pedestrians and vehicles, supply with healthy drinking water, disposal of wastewater, and connection to electrical network, according to other regulations	Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities, Official Gazette of RS – Educational gazette, No. 1/2019 Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities, Official Gazette of RS – Educational gazette, No. 5/2019	(L) (L)	

		Norms for school space, equipment and didactic material for primary school facilities / 1. Space for school facility / School building – object / Other technical requirements / Equipment and installations / B) Water supply and sanitation facilities B) Water and sanitation supply - In places where public water and sewage networks are available, the adequate connections to them should be provided in the school building. School building (object) should provide the adequate amount of drinking water according to school capacities, and sanitary and anti-fire protection according to the appropriate legal regulations. - In areas where no public water supply network is available, water supply should be delivered in the second best possible way (hydrophores etc). - Sanitary installations are mandatory in all schools for all sanitary rooms and connections to public sewage system. In areas where no public sewage system is in place, a septic tank should be installed in the vicinity of the school. - Water supply is obligatory in all classrooms, in the main halls, in front of the dining room, in the kitchen, in laboratories and preparation rooms, in sanitary rooms. **For social care facilities** **Article 6 of the Rulebook on detailed conditions and standards for the provision of social care services:** Article 6 Location of the object and equipment The object for social care services has a connection to electric network and a phone line, connections and installations for water supply and waste water disposal.	Rulebook on detailed conditions and standards for the provision of social care services, Official Gazette of RS, No. 42/2013,89/2018 and 73/2019	(L)	
☒	Access to and use of sanitation facilities and services for the safe disposal of human urine and feces	**For all institutions** **Articles 1-2 and Article 20 of the Rulebook on technical standards of planning, projecting and construction of facilities, which ensure access to persons with disabilities, children and old persons:** Figures 1 and 2 in the Annex of this document	Rulebook on technical standards of planning, projecting and construction of facilities, which ensure access to persons with disabilities, children and old persons, Official Gazette of RS No.22/2015	(L)	
☒	Access to and use of sanitation facilities for people with reduced	**For all institutions** **Law on Planning and Construction:**	Law on Planning and Construction ("Official Gazette	(L)	

	mobility in: - healthcare facilities and - social care facilities	**5. Undistrubed motion and access for persons with disabilities, children and the elderly** **Article 5** Public and business buildings, as well as other facilities for public use (streets, squares, parks, etc.), must be designed, built and maintained so that all users, especially people with disabilities, children and the elderly, have access, undisturbed motion and stay, i.e. use in accordance with the relevant technical regulations, which are an integral part of the standards that define mandatory technical measures and conditions of design, planning and construction, which ensure undisturbed motion and access for persons with disabilities, children and the elderly. Residential and residential-commercial buildings with ten or more apartments must be designed and built in such a way that all users, especially persons with disabilities, children and the elderly, are allowed access, undisturbed motion, residence and work. **Articles 1-2 and Article 20 of the Rulebook on technical standards of planning, projecting and construction of facilities, which ensure access to persons with disabilities, children and old persons:** Figures 1 and 2 in the Annex of this document **For social care facilities** **Article 6 of the Rulebook on detailed conditions and standards for the provision of social care services:** Article 6 Location of the object and equipment The object for social care services has a connection to electric network and a phone line, connections and installations for water supply and waste water disposal.	of RS" No. 72/09, 81/09-correction, 64/10-US, 24/11, 121/12, 42/13-US, 50 / 13-US, 98/13-US, 132/14, 145/14, 83/18, 31/19,37/2019 and 9/2020) Rulebook on technical standards of planning, projecting and construction of facilities, which ensure access to persons with disabilities, children and old persons, Official Gazette of RS No.22/2015 Rulebook on detailed conditions and standards for the provision of social care services, Official Gazette of RS, No. 42/2013,89/2018 and 73/2019	(L) (L)	
☒	Access to and use of sanitation facilities for staff/pupils with reduced mobility in	**For preschool facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities** Requirements for preschools with respect to indoor space for children – Norms for space, equipment and	Rulebook on detailed conditions for establishing, beginning of work	(L)	

	schools/preschools	didactic material for preschool facilities / 1. Space of the preschool facility / Architectural planning / Object (building) of a preschool facility Object (building) of a preschool facility: Object (building) of a preschool facility should also fulfil the following technical requirements: For children and adults with physical disabilities is necessary to diminish architectural obstacles so as to enable easier access to the building, rooms for children, sanitary rooms, and corridors in accordance to other legal regulations in this domain. **For school facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities** Norms for school space, equipment and didactic material for primary school facilities / 1. Space for school facility / School building – object School building – object: For pupils with developmental issues and physical disabilities is necessary to diminish architectural obstacles so as to enable easier access to the school building, classrooms, sanitary rooms, and corridors in accordance to other legal regulations in this domain.	and performing an activity of preschool facilities, Official Gazette of RS – Educational gazette, No. 1/2019 Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities, Official Gazette of RS – Educational gazette, No. 5/2019	(L)	
		For all institutions **Articles 1-2 and Article 20 of the Rulebook on technical standards of planning, projecting and construction of facilities, which ensure access to persons with disabilities, children and old persons:** Article 1 This Rulebook prescribes closer standards that define mandatory technical measures and conditions for planning, design and construction of facilities, which ensure unhindered movement and access to persons with disabilities, children and the elderly. Accessibility, within the meaning of this Rulebook, refers to public and business buildings, public buildings (streets, squares, parks, etc.), as well as residential and residential business buildings with ten or more flats. Accessibility, in terms of this Rulebook, refers to the planning of new facilities and space, designing and building and upgrading new facilities. Accessibility, in the sense of this Rulebook, refers to the reconstruction and adaptation of existing facilities, when technically possible. Article 2 Facilities for public use, in terms of this Rulebook, are: banks, hospitals, health centers, elderly homes, cultural objects, facilities for the needs of state bodies, territorial autonomy and local self-government bodies, business facilities, post offices, rehabilitation centers, traffic terminals, sports and recreational facilities, catering facilities, hotels, hostels, schools and other facilities. WC - Toilet Article 20	Rulebook on technical standards of planning, projecting and construction of facilities, which ensure access to persons with disabilities, children and old persons, Official Gazette of RS No.22/2015	(L)	

		Toilet must be designed to allow the fulfilment of the following conditions: 1) the width of a light opening of at least 90 cm, open to the outside; 2) an accessible door handle according to the provisions of Article 23 of this Regulation; 3) built-in mechanism for opening the door from the outside in the event of a call for assistance, appropriate electrical installations; 4) Console type toilet bowl together with seating board from 45 cm to 50 cm high. With a toilet bowl, there are two hand holders of 90 cm in length, placed on a wall in the height range of 80 cm to 90 cm above the floor surface; 5) at least one arm holder which must be foldable and this is obligatory one from the accessible side of the toilet bowl and the other can be fixedly fixed to the wall; 6) the distance of the front edge of the toilet bowl from a wall of at least 65 cm; 7) the trigger of the water discharge device in the toilet bowl placed at a height of 70 cm above the floor surface, or the sensory discharge of the water in the WC; 8) a console washbasin of at least 50 cm wide at a height of 80 cm, with a siphon placed in or along the wall; 9) tap - single lever or integrated sensor opening and closing of water; 10) the width of the use space in front of the toilet bowl is at least 90 cm; 11) the width of the use space in front of the wash basin of at least 90 cm; 12) free wheelchair space for wheelchairs at least of a circle diameter of 150 cm; 13) inclined turning mirror placed by the lower edge at a height of 100 cm; 14) clothes hangers at a height of 120 cm; 15) an alarm device with a pressure switch or a pull-out tape at a height of 60 cm; 16) all other equipment accessible to the wheelchair user who does not interfere with movement, fixed to the wall, made contrasting with respect to the floor and walls; 17) an access sign is placed on the front door of the cab at a height of 140 cm to 160 cm. In case the toilet is in public use, it is obligatory to be accessible. In public toilets and toilets in facilities for public use (hotels, restaurants with more than one hundred places, health centers, schools, faculties, etc.), in which four or more cabins are required, at least one cabin in male and female part of the WC shall be designed in accordance with the requirements of this Regulation and at least one washstand meeting the requirements of item 8) of this Regulation. The guided walkway is set from the front door of the building to the public toilet door with a minimum width of 40 cm.			
☒	Access to and use of sanitation facilities for patients and staff in healthcare and social care facilities	**For health care facilities** **Paragraph 10 of the Article 44 of the Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service:** Healthcare activity in a health institutions or private practice can be carried out in a building where the following general conditions are provided: 10) each building-technical and functional unit in the health institution has a sanitary facility for men and women (separate for patients and for staff) and special rooms for storing equipment and facilities for the maintenance of general hygiene and personnel wardrobe;	Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service, Official Gazette of	(L)	

		For social care facilities **Article 9 of the Rulebook on detailed conditions and standards for the provision of social care services:** Article 9 Undisturbed functioning of users: Rooms available for users are accessible. Floors in all rooms are made of non-slippery materials.	RS No. 43/2006, 112/2009, 50/2010, 79/2011, 10/2012 – other rulebook, 119/2012 - other rulebook, 22/2013 and 16/2018 Rulebook on detailed conditions and standards for the provision of social care services, Official Gazette of RS, No. 42/2013,89/2018 and 73/2019	(L)	
☒	Access to and use of sanitation facilities for children and staff in schools/preschools	**For preschool facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities** Requirements for preschools with respect to indoor space for children – Norms for space, equipment and didactic material for preschool facilities / 1. Space of the preschool facility / Urban planning of the preschool facilities / Location Location: Location for the preschool facility building should provide: - Communal infrastructure – access road for pedestrians and vehicles, supply with healthy drinking water, disposal of wastewater, and connection to electrical network, according to other regulations Requirements for preschools with respect to indoor space for children – Norms for space, equipment and didactic material for preschool facilities / 1. Space of the preschool facility / Architectural planning / Object (building) of a preschool facility Object (building) of a preschool facility: Object (building) of a preschool facility should also fulfil the following technical requirements: - The construction land should be equipped with public water supply, public sanitary supply, electric network, telephone line, cable line, heating and gas line.	Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities, Official Gazette of RS – Educational gazette, No. 1/2019	(L)	

		Requirements for preschools with respect to indoor space for children – Norms for space, equipment and didactic material for preschool facilities / 1. Space of the preschool facility / 1. Group of rooms for children / 3. Sanitary rooms for children 3. Sanitary rooms for children - Sanitary room for children is connected to the room for children; the only exception to this architectural rule being allowed for children in the preschool preparation program. **For school facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities** Norms for school space, equipment and didactic material for primary school facilities / 1. Space for school facility / Location Location: Before determining the position – location of the primary school complex, the following requirements should be provided: - Communal infrastructure – access road for pedestrians and vehicles, supply with healthy drinking water, disposal of wastewater, and connection to electrical network, according to other regulations	Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities, Official Gazette of RS – Educational gazette, No. 5/2019	(L)	
☐	Requirements for menstrual hygiene facilities for women (such as provision of private cabinet for washing; sanitary bags and closed bins for safe disposal of used menstrual products) in institutions (schools/preschools, healthcare and social care facilities)	**IDENTIFIED GAPS:** **NONE FOR HEALTH CARE FACILITIES (patients and staff)** **NONE FOR PRESCHOOL FACILITIES (staff)** **NONE FOR SCHOOL FACILITIES (pupils and staff)** **NONE FOR SOCIAL CARE FACILITIES (users and staff)**			
☒	Requirements for sanitation facilities dedicated to children in healthcare and social care facilities	**For all facilities** **Articles 1-2 and Article 20 of the Rulebook on technical standards of planning, projecting and construction of facilities, which ensure access to persons with disabilities, children and old persons:** Article 1 This Rulebook prescribes closer standards that define mandatory technical measures and conditions for planning, design and construction of facilities, which ensure unhindered movement and access to persons with disabilities, children and the elderly. Accessibility, within the meaning of this Rulebook, refers to	Rulebook on technical standards of planning, projecting and construction of facilities, which ensure access to	(L)	

		public and business buildings, public buildings (streets, squares, parks, etc.), as well as residential and residential business buildings with ten or more flats. Accessibility, in terms of this Rulebook, refers to the planning of new facilities and space, designing and building and upgrading new facilities. Accessibility, in the sense of this Rulebook, refers to the reconstruction and adaptation of existing facilities, when technically possible. Article 2 Facilities for public use, in terms of this Rulebook, are: banks, hospitals, health centers, elderly homes, cultural objects, facilities for the needs of state bodies, territorial autonomy and local self-government bodies, business facilities, post offices, rehabilitation centers, traffic terminals, sports and recreational facilities, catering facilities, hotels, hostels, schools and other facilities. WC - Toilet Article 20 Toilet must be designed to allow the fulfillment of the following conditions: 1) the width of a light opening of at least 90 cm, open to the outside; 2) an accessible door handle according to the provisions of Article 23 of this Regulation; 3) built-in mechanism for opening the door from the outside in the event of a call for assistance, appropriate electrical installations; 4) Console type toilet bowl together with seating board from 45 cm to 50 cm high. With a toilet bowl, there are two hand holders of 90 cm in length, placed on a wall in the height range of 80 cm to 90 cm above the floor surface; 5) at least one arm holder which must be foldable and this is obligatory one from the accessible side of the toilet bowl and the other can be fixedly fixed to the wall; 6) the distance of the front edge of the toilet bowl from a wall of at least 65 cm; 7) the trigger of the water discharge device in the toilet bowl placed at a height of 70 cm above the floor surface, or the sensory discharge of the water in the WC; 8) a console washbasin of at least 50 cm wide at a height of 80 cm, with a siphon placed in or along the wall; 9) tap - single lever or integrated sensor opening and closing of water; 10) the width of the use space in front of the toilet bowl is at least 90 cm; 11) the width of the use space in front of the wash basin of at least 90 cm; 12) free wheelchair space for wheelchairs at least of a circle diameter of 150 cm; 13) inclined turning mirror placed by the lower edge at a height of 100 cm; 14) clothes hangers at a height of 120 cm; 15) an alarm device with a pressure switch or a pull-out tape at a height of 60 cm; 16) all other equipment accessible to the wheelchair user who does not interfere with movement, fixed to the wall, made contrasting with respect to the floor and walls; 17) an access sign is placed on the front door of the cab at a height of 140 cm to 160 cm. In case the toilet is in public use, it is obligatory to be accessible. In public toilets and toilets in facilities for public use (hotels, restaurants with more than one hundred places, health centers, schools, faculties, etc.), in which four or more cabins are required, at least one cabin in male and female part of the WC shall	persons with disabilities, children and old persons, Official Gazette of RS No.22/2015		

		be designed in accordance with the requirements of this Regulation and at least one washstand meeting the requirements of item 8) of this Regulation. The guided walkway is set from the front door of the building to the public toilet door with a minimum width of 40 cm. **For social care facilities for children and young** **Article 52 of the Rulebook on detailed conditions and standards for the provision of social care services:** Article 52 (for young people requiring third and forth level of support) Maintenance of personal hygiene and hygiene of the rooms Washbasin, shower, and toilet are provided for five users in the accommodation objects or residential units **Article 56 of the Rulebook on detailed conditions and standards for the provision of social care services:** Article 56 (for young people requiring first and second level of support) Maintenance of personal hygiene and hygiene of the rooms Washbasin, shower, and toilet are provided for six users in the accommodation objects or residential units	Rulebook on detailed conditions and standards for the provision of social care services, Official Gazette of RS, No. 42/2013,89/2018 and 73/2019	(L)	
☒	Accessibility of toilets in institutions (schools/preschools, healthcare and social care facilities) - inside the building; distance	**For health care facilities:** **Paragraphs 3,5,6 of the Article 44 of the Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service** Healthcare activity in a health institutions or private practice can be carried out in a building where the following general conditions are provided: 3) water supply, sewage and heating are provided; 5) there is cold and hot water in work rooms, patient rooms and sanitary facilities; 6) have a sanitary facility with an entrance hall with a waiting room, and in the hospital, one sanitary facility and a shower with a bath per 10 patient rooms; **For preschool facilities:**	Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service, Official Gazette of RS No. 43/2006, 112/2009, 50/2010, 79/2011, 10/2012 – other rulebook, 119/2012 - other rulebook, 22/2013 and 16/2018 Rulebook on detailed conditions for establishing,	(L)	

		From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities Requirements for preschools with respect to indoor space for children – Norms for space, equipment and didactic material for preschool facilities / 1. Space of the preschool facility / 1. Group of rooms for children / 3. Sanitary rooms for children 3. Sanitary rooms for children - Sanitary room for children consists of a nursing and hygiene part and a sanitary part with toilets for children; - The number of toilets according to hygiene norms equals: one toilet per 10 children and one hand-wash basin per 7 children, or 2-3 toilets and 3-4 hand-wash basins per one room for children, - The size of toilet seat and its mounting height from the ground should be in accordance with children's age (for example, mounting height for toilet seat of 26 cm should be planned for children less than 3 years, mounting height of 30 cm for children from 3 to 5.5 years, and mounting height of 40 cm for preschool children), - The size of hand-wash sink and its mounting height from the ground should be in accordance with children's age (for example, mounting height for hand-wash sink of 50-55 cm should be planned for children less than 3 years, mounting height of 60 cm for children from 3 to 4 years, and mounting height of 65 cm for children aged 4 to preschool children), - Sanitary room for children is connected to the room for children; the only exception to this architectural rule being allowed for children in the preschool preparation program, - The floors in sanitary rooms must not be slippery and should be coated with materials that are easily cleaned and water-proof, - Spatial arrangement of sanitary rooms inside the preschool facility depends on the number of children per facility floors, - Dividing walls between toilet seats should reach up to 1.3 m from the ground, - Walls of the sanitary rooms should be coated with ceramic tiles or other water-proof and easily maintained materials up to 1.6 m from the ground, - Sanitary rooms should be ventilated naturally, with additional mechanical ventilation only when necessary. **For school facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities** Norms for school space, equipment and didactic material for primary school facilities / 1. Space for school facility / School building / Additional rooms / V) Sanitary rooms Sanitary rooms - Spatial arrangement of sanitary rooms depends on the number of users (pupils and staff) by floors.	beginning of work and performing an activity of preschool facilities, Official Gazette of RS – Educational gazette, No. 1/2019 Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities, Official Gazette of RS – Educational gazette, No. 5/2019	(L) (L)	

		- Sanitary rooms are connected to the main communications – corridors and halls and should be facing North.			
☒	Requirements for ensuring privacy in toilets in households and institutions (schools/preschools, healthcare and social care facilities)	**For health care facilities:** **Paragraphs 10 of the Article 44 of the Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service:** Healthcare activity in a health institutions or private practice can be carried out in a building where the following general conditions are provided: 10) each building-technical and functional unit in the health institution has a sanitary facility for men and women (separate for patients and for staff) and special rooms for storing equipment and facilities for the maintenance of general hygiene and personnel wardrobe; **For all institutions:** **Paragraphs 1,2,3 of the Article 20 of the Rulebook on technical standards of planning, projecting and construction of facilities, which ensure access to persons with disabilities, children and old persons:** WC - Toilet Article 20 Toilet must be designed to allow the fulfillment of the following conditions: 1) the width of a light opening of at least 90 cm, open to the outside; 2) an accessible door handle according to the provisions of Article 23 of this Regulation; 3) built-in mechanism for opening the door from the outside in the event of a call for assistance, appropriate electrical installations;	Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service, Official Gazette of RS No. 43/2006, 112/2009, 50/2010, 79/2011, 10/2012 – other rulebook, 119/2012 - other rulebook, 22/2013 and 16/2018 Rulebook on technical standards of planning, projecting and construction of facilities, which ensure access to persons with disabilities, children and old persons, Official Gazette of RS No.22/2015	(L) (L)	
☒	Safety/hygiene of toilets for user's health (prevent human contact with faeces) in households and	**For health care facilities:** **Paragraphs 1, 3, 5 of the Article 44 of the Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service:** Healthcare activity in a health institutions or private practice can be carried out in a building	Rulebook on miscellaneous terms and conditions for healthcare	(L)	

	institutions (schools/preschools, healthcare and social care facilities)	where the following general conditions are provided: 1) they are constructed of materials that can not adversely affect human health and which provide sound, thermal and hydro isolation; 3) water supply, sewage and heating are provided; 5) there is cold and hot water in work rooms, patient rooms and sanitary facilities;	activities in health institutions and other forms of the health service, Official Gazette of RS No. 43/2006, 112/2009, 50/2010, 79/2011, 10/2012 – other rulebook, 119/2012 - other rulebook, 22/2013 and 16/2018		
☒	Illumination of sanitation facilities in institutions (schools/preschools, healthcare and social care facilities)	**For health care facilities:** **Paragraphs 7 of the Article 44 of the Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service:** Healthcare activity in a health institutions or private practice can be carried out in a building where the following general conditions are provided: 7) have natural and artificial illumination, as follows: in the office and laboratories 250 - 500 lux, in the waiting room 100 lux and in the corridors 50 lux; **For school facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities** Norms for school space, equipment and didactic material for primary school facilities / 1. Space for school facility / School building / Additional rooms / Other technical requirements	Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service, Official Gazette of RS No. 43/2006, 112/2009, 50/2010, 79/2011, 10/2012 – other rulebook, 119/2012 - other rulebook, 22/2013 and 16/2018 Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities, Official Gazette of RS – Educational gazette, No.	(L) (L)	

		Artificial illumination built into school buildings must fulfil the requirements according to standard SRPS EN 15193 – „Energy performance of the buildings – Energy requirements for illumination”: – in sanitary rooms and communiations at least 120 lux;	5/2019		
☒	Ventilation of sanitation facilities in institutions (schools/preschools, healthcare and social care facilities)	**For health care facilities:** **Paragraphs 3 of the Article 44 of the Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service:** Healthcare activity in a health institutions or private practice can be carried out in a building where the following general conditions are provided: 3) water supply, sewage and heating are provided; **For preschool facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities** Requirements for preschools with respect to indoor space for children – Norms for space, equipment and didactic material for preschool facilities / 1. Space of the preschool facility / 1. Group of rooms for children / 3. Sanitary rooms for children 3. Sanitary rooms for children - Sanitary rooms should be ventilated naturally, with additional mechanical ventilation only when necessary. **For school facilities:**	Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service, Official Gazette of RS No. 43/2006, 112/2009, 50/2010, 79/2011, 10/2012 – other rulebook, 119/2012 - other rulebook, 22/2013 and 16/2018 Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities, Official Gazette of RS – Educational gazette, No. 1/2019 Rulebook on detailed conditions for establishing, beginning of work and performing an	(L) (L) (L)	

		From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities Norms for school space, equipment and didactic material for primary school facilities / 1. Space for school facility / School building / Additional rooms / Other technical requirements Ventilation Natural ventilation should be provided in all rooms of primary school buildings.	activity of primary school facilities, Official Gazette of RS – Educational gazette, No. 5/2019		
☒	Handwashing facilities available at the toilet (shared/public and institutional)	**For health care facilities:** **Paragraphs 6 of the Article 44 of the Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service:** Healthcare activity in a health institutions or private practice can be carried out in a building where the following general conditions are provided: 6) have a sanitary facility with an entrance hall with a waiting room, and in the hospital, one sanitary facility and a shower with a bath per 10 patient rooms; **IDENTIFIED GAP: sanitary facility or sanitary unit is not defined in the definitions under the rulebook, but could be considered as both toilet bowl and hand washing facility in broader sense (differences in terminology across languages)** **For preschool facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities** Requirements for preschools with respect to indoor space for children – Norms for space, equipment and didactic material for preschool facilities / 1. Space of the preschool facility / 1. Group of rooms for children / 3. Sanitary rooms for children 3. Sanitary rooms for children - Sanitary room for children consists of a nursing and hygiene part and a sanitary part with toilets for children; - The number of toilets according to hygiene norms equals: one toilet per 10 children and one hand-	Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service, Official Gazette of RS No. 43/2006, 112/2009, 50/2010, 79/2011, 10/2012 – other rulebook, 119/2012 - other rulebook, 22/2013 and 16/2018 Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities, Official Gazette of RS – Educational gazette, 1/2019	(L) (L)	

		wash basin per 7 children, or 2-3 toilets and 3-4 hand-wash basins per one room for children, - The size of hand-wash sink and its mounting height from the ground should be in accordance with children's age (for example, mounting height for hand-wash sink of 50-55 cm should be planned for children less than 3 years, mounting height of 60 cm for children from 3 to 4 years, and mounting height of 65 cm for children aged 4 to preschool children). **For school facilities:** **From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities** Norms for school space, equipment and didactic material for primary school facilities / 1. Space for school facility / School building / Additional rooms / V) Sanitary rooms Sanitary rooms All toilets have hand-washing anteroom containing one hand-wash basin per 2 toilet seats. Next to sanitary rooms are additional rooms for hygiene maintenance (trocadero).	Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities, Official Gazette of RS – Educational gazette, 5/2019	(L)	
☐	Safety of connection between the toilet and containment (septic tank, holding tank) to prevent uncontrolled spread of feces in the environment– households and institutions	It is regulated by the Local Decisions at the level of local self-government			
☒	Routine cleaning procedure of sanitation facilities in place in institutions (schools/preschools, healthcare and social care facilities)	**For all institutions and households** **Paragraphs 4,5 of the Article 16 of the Law on the protection of the population against infectious diseases:** **General measures** Article 15 General measures for the protection of the population against infectious diseases are carried out in facilities subject to sanitary surveillance, that is, over facilities, premises, devices, equipment and persons performing activities in the field of health care, social care, education, food business, catering, tourism, trade and services, internal and international traffic, sports and recreation. Article 16 General measures for the protection of the population against infectious diseases are: 1) provision of safe drinking water through facilities for public supply of drinking water, sanitary and hygienic and recreational needs, as well as sanitary protection of sources; 2) provision of health-safe food, items in contact with food and objects of general use, as well as sanitary and hygienic conditions for their production and trade; 3) ensuring the health safety of bathing, pool waters, public fountains and springs and other waters of	Law on Protection of the Population from Infectious Diseases (Official Gazette of RS, No. 15/16 and 68/20)	(L)	

		public health interest; 4) provision of sanitary, technical and hygienic conditions in facilities under sanitary control and other facilities in which social or public activity is performed; 5) carrying out preventive disinfection, disinfection and deratization in populated areas, on public areas, in residential buildings, in public transport vehicles, in sanitary facilities and in their immediate surroundings and in other facilities where social or public activity is performed; 6) removal of human and animal secretions, corpses, organs and tissues, wastewater and other waste materials in a manner and under conditions that do not endanger the health of the population, sources of drinking water and the environment. Disinfection, disinfection and pest control is carried out in order to maintain hygiene and reduce, stop growth and reproduction or completely remove the presence of microorganisms, harmful membranes and rodents on the premises and in the facility referred to in paragraph 1 of this Article. Disinfection as a general measure also implies daily and permanent disinfection of hands, accessories, objects, equipment, work surfaces and sanitary facilities in all facilities in which food is prepared, produced, stored or served in objects subject to sanitary control, and are obliged to carry it out users of areas, premises or facilities referred to in paragraph 1 of this Article, as a continuous daily process in maintaining the hygiene of business premises. Disinfection, disinfection and deratisation as a general measure are carried out by institutions or public health institutes, other legal entities and entrepreneurs if they fulfill the prescribed conditions. **For all institutions and households** **Article 11 of the Law on Sanitary Surveillance:** Article 11 Legal entities, organizations, entrepreneurs and natural persons performing activities in facilities subject to sanitary surveillance are obliged to maintain hygiene in the facility and its immediate environment with regard to the hygienic state of the facility while using this facility, they maintain the hygiene of premises, facilities, devices, furniture, equipment, accessories, dedicated means of transport, hygiene of working clothes and footwear for employed persons and take other hygienic measures in order to protect the health of the population in accordance with the law. Working clothes and footwear referred to in paragraph 1 of this Article can not be used outside the workplace.	Law on Sanitary Surveillance (Official Gazette of RS, No 125/2004)	(L)	
☒	Routine maintenance procedure of sanitation facilities in place in institutions (schools/preschools, healthcare and social care facilities)	**For all institutions and households** **Articles 15-16 of the Law on the protection of the population against infectious diseases: see above** **For all institutions and households** **Article 11 of the Law on Sanitary surveillance: see above**	Law on Protection of the Population from Infectious Diseases (Official Gazette of RS, No. 15/16 and 68/20) Law on Sanitary	(L) (L)	

			Surveillance (Official Gazette of RS, No 125/2004)		
☒	Monitoring of accessibility to sanitation facilities (flush toilets, pour flush toilets, and pit latrines with slab) in households and institutions	Established surveillance over sanitation in HCFs according to SDG indicators Regulation on the Protection of the Population against communicable diseases, ie the Program which is its integral part, aim at achieving the protection of public health from infectious diseases, through the measures, activities and procedures to be 2 implemented to achieve the goals, priorities, organizations, carriers and participants in the implementation of the Program and monitoring the implementation of the Program. The program is being implemented by the network of the institutes of public health. Some activities are performed in liaison with preventive centres or hygienic-epidemiological services of health centres, where the coordinating and professional-methodological role has got the Institute of Public Health of Serbia. Cooperation is of the great importance with local self-government, inspection bodies, prevention commissions for nosocomial infections, utilities, health, school, preschool and other institutions. The priority areas of the Program are: - supply of the population with hygienically correct drinking water - hygienic disposition of solid and liquid waste materials - improvement of sanitary and hygienic conditions in larger buildings of hygienic-epidemiological significance - improvement of sanitary and hygienic conditions in collective facilities nutrition - Improving the health of children and youth by supervising the accommodation facilities children and youth - improvement of sanitary and hygienic conditions in health care institutions	Regulation on the protection of the population against communicable diseases with the Programme on the protection of the population against communicable diseases (Sl.glasnik RS, br. 22/2016)	(L)	

Notes: The following Rulebook prescribes additional requirements for public buildings, including health care facilities, for cleaning and maintenance of sanitary-hygienic conditions

Rulebook on general sanitary conditions that must be fulfilled in facilities subject to sanitary surveillance, Official Gazette of RS, No 47/2006

Article 5
The facility must meet the following requirements: 1) that it is supplied with hygienically correct drinking water; 2) the discharge of wastewater, as well as the removal of solid and other waste materials from the facility, is done hygienically; 3) that artificial and, as far as possible, natural light is provided, as well as natural, ie artificial ventilation and prescribed or required air temperature; 4) that it is neat and clean, that hygiene measures (editing, cleaning, washing, maintenance, ventilation, disinfection, disinfestations, pest control, etc.) are maintained, hygiene of the interior space and premises, facilities, devices, furniture, equipment, , dedicated means of transport and their equipment, and achieves a proper hygienic state of the facility and its immediate environment; 5) that according to the type of activity in the facility, adequate premises, facilities, devices, furniture, equipment, accessories and intended means of transport are provided.
Article 6
The facility is supplied with water from the system for public supply of the population with drinking water. At locations where there is no system for public supply of the population with drinking water, or the existing system of insufficient capacity, the facility is supplied with water from its own source (a special source, own well, etc.), in such a way that the facility can

be provided hygienic correct water. The facility must provide liquid hot and cold, hygienically proper drinking water, under the pressure necessary for the unhindered and sanitary-hygienic and health aspects of safe operation of the business. In the facility, a device must be provided at each point where the hand wash is handled, as well as the necessary accessories and tools for washing, drying and disinfecting the hands.
Article 7
The facility is connected to an existing sewerage network or to a sealed septic tank of adequate capacity, in accordance with the law.
The site of the septic tank, which is part of the object, is determined in such a way as to prevent the harmful effect of the septic tank on the hygienic condition of the object, the hygienic state of its immediate environment, and provide unhindered access to the pit necessary for its regular discharge and cleaning.
Article 8
Solid waste materials from the facility are collected in dedicated containers with lids, made of resistant and impervious material, suitable for cleaning, washing and disinfection.
Article 9
The facility is provided artificially, and according to natural and technical possibilities and natural light.
In order to provide artificial lighting and supply of electricity to the facility, the facility is connected to a public electricity network or to another source of electricity from which it is possible to provide continuous supply of electricity to the facility.
Artificial light is provided in all rooms of the building.
Article 10
The facility provides natural, or artificial ventilation.
On artificial ventilation openings, according to environmental conditions, protective nets are installed, that is, filters to prevent the penetration of dust, smoke, harmful gases, odors etc.
Dust, smoke, waste gases, water vapor, fragrances, etc. they are taken away from the facility by special ventilation channels, through the device for collecting, purifying and disposing of these products, from the place of production to the final disposition.
Ventilation ducts and filters must be regularly maintained according to the manufacturer's instructions.
Article 11
Microclimatic conditions must be provided in the facility, from the sanitary and hygienic and health aspects, necessary for the safe operation of the business.
In the premises of the faces where persons are staying and for which a certain temperature is not prescribed, the air temperature must not be lower than 18 ° C.
Heating is provided by connecting the object to a district or district heating system or individual heating bodies in a way that does not endanger the performance of the business and does not impair the hygienic condition of the facility.
Article 14
The hygienic measures specified in Article 5, item 4) of this Rulebook, which maintain the prescribed hygienic condition of the facility, shall be carried out in the interior and premises of the facility.
The premises in the building must be functionally linked to the type of activity in the facility, in such a way that the smooth operation of the facility and maintenance of the hygienic condition in the facility is ensured.
Doors and windows on the building must not be damaged and must be made of materials suitable for easy maintenance.
Article 15
The floors of the premises in the building must be made of solid and non-permeable materials, resistant to mechanical damage, to washing agents, disinfectants and other aggressive substances.
The floors must be clean, flat, without damage, made in a way suitable for hygiene and should not be slippery.
Drainage of wastewater from the technological process is ensured in a manner that prevents their discharge onto the floor surface.
In rooms where there is water spillage, the floor surfaces must be drained so that the spilled water goes to the floor drains provided by the devices to prevent the return of unpleasant odors and the entry of rodents from the sewer.
In the premises of the building plumbing, sewage, ventilation, electrical, telephone and other installations are marked in the prescribed manner and are installed and implemented so as not to interfere with the safe operation and hygiene maintenance.
Sewage pipes can be implemented only through dedicated, technical channels, and exceptionally through the space for communication, ie sanitary space, through the vertical.
The sewers for the revision of the sewerage network in the facilities can not be placed in the interior and in the premises.

Article 16
The walls and ceilings of the premises in the building must not be damaged, they must be clean, flat, smooth and suitable for maintaining hygiene.
Article 17
Devices, utensils and utensils used for performing activities must meet the prescribed standard and quality.
Furniture and equipment in buildings must comply with the prescribed standard, quality and specific purpose.
Devices, dishes, accessories, equipment and furniture from st. 1 and 2 of this Article and must be regularly maintained technically and hygienic, and their surfaces must not be damaged.
The layout of devices, equipment and furniture in the facility should be such that it prevents the crossroads of technological pathways for clean and dirty and provides unhindered access for technical and hygienic maintenance.
Waste bins, in which solid waste is collected from the rooms, is emptied into dedicated containers, cleaned, washed and disinfected and can not be used for other purposes.

Note No 2:Some health care facilities are accredited according to the following rules and standards:

Rules on accreditation of health institutions, Official Gazette of the Republic of Serbia, No. 112/2009
Article 1 This Rulebook shall determine the manner, procedure and conditions for the accreditation of health institutions.
Article 2 Accreditation is the procedure for assessing the quality of work of a health institution, based on the application of an optimal level of established standards of work of a healthcare institution in a particular field of health care, that is, branches of medicine.
Article 13 External evaluation is carried out in a health institution and it is realized: - Review of prepared documentation and health documentation; - discussion with the healthcare management bodies; - interview with employees who participated in the self-assessment procedure (teams for self-assessment of the quality of work of a health institution); - visiting the health institution and reviewing the spatial capacities; - inspection of the equipment of the medical institution with medical equipment; - talking with patients and employees; 4 - the final meeting where the managing authorities and employees are informed about the accreditation visit.

AZUS - Accreditation program, self-assessment guide http://www.azus.gov.rs/wp-content/uploads/2010/01/Vodic-za-samoocenjivanje.pdf
AZUS - Accreditation program, external audit guide http://www.azus.gov.rs/wp-content/uploads/2010/01/Vodic-za-spoljasnje-ocenjivace.pdf
Standards for accreditation of healthcare institutions of secondary and territorial levels of health care http://www.azus.gov.rs/wp-content/uploads/2009/12/Standardi-sekundarni-i-tercijarni-nivo.pdf

Note No 3: Requirements for sanitary equipment for preschool facilities. From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities, Official Gazette of RS – Educational gazette, 1/2019
Equipment for toilets in preschools for small children:
The number of toilets for children: 2-3 toilets per group of children; Hand-wash basins with cold and warm water: 3-4 per group; cupboard for toiletries and paper towels storage: 1 piece; hooks for wardrobe: 2 pieces; mirror per hand-wash sink: 1 piece; shelf for napkins (for toddler groups): 1 piece; place for bathing children (for toddler groups): 1 piece; rubbish bin: 1 piece
Equipment for toilets in preschools for schools staff:
The number of toilets for staff: 1 per 10 employees; Hand-wash basins with cold and warm water: 1 per 10 employees; cupboard for toiletries and paper towels storage: 1 piece; hooks for wardrobe: 2 pieces; mirror per hand-wash sink: 1 piece; railing for hand-towels: 1 piece; rubbish bin: 1 piece

Note No 4: Requirements for sanitary equipment for school facilities. From the Rulebook on detailed conditions for establishing, beginning of work and performing an activity of primary school facilities, Official Gazette of RS – Educational gazette, 5/2019
Project examples for school objects – Type A (primary school with 720-960 pupils, 24-32 classes)
The number of sanitary rooms for pupils: 6 sanitary blocks for pupils; 2 sanitary blocks for staff; plus 2 sanitary blocks next to the gym, plus 2 rooms for physical activity teacher with wardrobe, shower and a toilet.

Project examples for school objects – Type B (primary school with 100-480 pupils, less than 16 classes)
he number of sanitary rooms for pupils: 4 sanitary blocks for pupils; 1 sanitary block for staff; plus 2 sanitary blocks next to the gym, plus 1 room for physical activity teacher with wardrobe, shower

and a toilet.

Project examples for school objects – Type G (primary school with less than 100 pupils)
he number of sanitary rooms for pupils: 1 sanitary block for pupils; 1 sanitary block for staff; no sanitary blocks next to the gym (use sanitary blocks for pupils instead).

Containment and/or on-site sanitation treatment – household and institutions (health care facilities and schools)

In the current standards and regulations in Serbia, is there any requirement or recommendation with respect to containment and / or on-site sanitation treatment (applicable to institutional and household on-site sanitation systems)?

☒ Yes ☐ No ☐ Partially

If yes, is any of the aspects listed below considered in such standards and regulations? (select all true answers)

	Aspects	Specific requirements for on- site sanitation related to corresponding aspect	Legal reference(s)	Type of legal reference (L) Law or regulation; (S)Standards; (G)Guidelines (P) Strategic plans; (T) Targets	Responsible entity/es for the implementation at national and local level
☒	Technical standards for building an on-site sanitation facility (design characteristics for prevention of leaking, damage, cracking and flooding: a) septic tanks b) pit latrine c) holding tank	**Law on Standardization** This law regulates the principles and goals of standardization in the Republic of Serbia, the organization and activities of the national standardization body, as well as the adoption, publication, withdrawal and application of Serbian standards and related documents. **SRPS EN 12566-1** The standard sets out requirements for prefabricated septic tanks and associated equipment for the partial treatment of domestic wastewater for a population of up to 50 US (total population and equivalent population). Pipe dimensions, loads, water permeability, marking and quality control were determined. Excluded are: - septic tanks exclusively for "gray" water; - septic tanks built on site. **SRPS EN 12566-2** The standard sets out recommended requirements for ground infiltration systems ranging in size from a single house to 50 PT that receive domestic wastewater from septic tanks manufactured in accordance	Law on Standardization ("Official Gazette of RS", No. 36/09 and 46/15) SRPS EN 12566-1 Small water treatment systems up to 50 US (total population and population equivalents) - Part 1: Prefabricated septic tanks SRPS EN 12566-2 Small wastewater	(L) (S) (S)	Ministry of Economy The Institute for Standardization of Serbia publishes standards Engineers Designers apply standards

		with the requirements given in EN 12566-1 and EN 12566-4.	treatment systems up to 50 PT - Part 2: Soil infiltration systems		
		SRPS EN 12566-3 This standard specifies requirements, test methods, marking and conformity assessment for packaged and / or on-site installed wastewater treatment plants (including cottages and business premises) for a population of up to 50 inhabitants. Small plants are used to treat raw household wastewater in accordance with this standard	SRPS EN 12566-3 Small wastewater treatment systems up to 50 US (total population and population equivalents) - Part 3: Domestic wastewater treatment plants, packaged and / or installed on site	(S)	
		SRPS EN 12566-4 This standard specifies requirements for on-site septic tanks made of prefabricated kits and ancillary equipment for the partial treatment of domestic wastewater for a population up to 50 US (total population and equivalent population). Pipe dimensions, loads, water permeability, marking and quality control were determined. This standard does not cover septic tanks exclusively for "gray" water	SRPS EN 12566-4 Small water treatment systems up to 50 US (total population and population equivalents) - Part 4: Septic tanks with prefabricated units, installed on site	(S)	
		SRPS EN 12566-5 Wastewater engineering	SRPS EN 12566-5 Small water purification systems up to 50 PT - Part 5: Filtration systems for pre-effluent purification	(S)	
		SRPS EN 12566-6 This standard specifies requirements, test methods, conformity assessment and marking of prefabricated units for secondary treatment of effluent from septic tanks in accordance with SRPS EN 12566-1 or SRPS EN 12566-4 for small water treatment systems up to 50 US (total population) and number of equivalent inhabitants)	SRPS EN 12566-6 Small wastewater treatment systems up to 50 US (total population and population equivalents) - Part 6:	(S)	

		SRPS EN 12566-7 This standard specifies requirements, test methods, marking and evaluation of conformity for a package and / or installed tertiary treatment unit	Prefabricated effluent treatment units from septic tanks SRPS EN 12566-7 Small wastewater treatment systems up to 50 US (total population and population equivalents) - Part 7: Prefabricated tertiary treatment units	(S)	
☒	Requirements for on-site disposal systems in case there is no connection to sewerage system	**Article 20 of the Law on Planning and Construction** The spatial plan of a local self-government unit shall contain in particular: 8) rules of arrangement and rules of construction for parts of the territory for which the development of an urban plan is not envisaged. **III Design and connection conditions that must be obtained from holders of public authorizations in the process of issuing location conditions** **Example No 1:** Technical conditions for sewerage: - if there is no street sewerage, wastewater is temporarily conducted into a built-in impermeable toilet-	Law on Planning and Construction ("Official Gazette of RS", No. 72/2009, 81/2009 - amended, 64/2010 - US decision, 24/2011, 121/2012, 42/2013 - US decision, 50 / 2013 - decision US, 98/2013 - decision US, 132/2014, 145/2014, 83/2018, 31/2019, 37/2019 - other law and 9/2020) Regulation on location conditions ("Official Gazette of RS", No. 35/2015, 114/2015 and 117/2017) Spatial plan of the city of Loznica	(L) (L) (Other)	Ministry of Construction, Transport and Infrastructure Local self-government Public utility company (PUC)

		septic tank, from which the impure water refers to certain landfills. - during the transition period and the activities of building an integrated municipal sewerage system, it is necessary to build hygienic impermeable septic tanks. The volume of the septic tank is calculated according to water consumption and the duration of the process. -septic pits set up: -min. 2m from the fence of the complex. -min. 5m from the accommodation facility. -min. 10m from the regulation line; i -min. 20m from the well. **Example No 2:** Article 23, paragraph 1. A septic tank is built of solid construction material (concrete and brick) in accordance with the technical norms prescribed for that type of facility. **Example No 3:** Article 3 (1) The internal sewerage in buildings and on plots consists of the following installations: - horizontal and vertical sewerage in the building and on the plot. - drainage facilities (drains, gutters). - control windows; - facilities and devices for preliminary wastewater treatment (pre-treatment). - facilities and devices for pumping wastewater to a higher level (pumping stations). - devices for preventing the return flow of wastewater (non-return valves, frog cover ...). - individual facilities for wastewater collection – septic tank or collection pit. - control shaft. The Rulebook regulates in detail the conditions for the construction and use of internal sewerage.	Decision of the City of Pančevo on drainage and treatment of wastewater and atmospheric water ("Official Gazette of the City of Pančevo", No. 26/2011 - consolidated text, 13/2013 and 6/2014) Rulebook on technical conditions for connection to public sewerage, JKP "Vodovod Valjevo"	(L) (L)	
☒	Prior authorization or permitting for building an on-site sanitation facility a) septic tanks b) pit latrine c) holding tank	**Article 2, paragraph 1, item 24 of the Law on Planning and Construction:** auxiliary facility is a facility that is in the function of the main facility, and is being built on the same plot on which the main residential, business or public facility was built or can be built, garages, pantries, septic tanks, wells, water cisterns, etc.);	Law on Planning and Construction ("Official Gazette of RS", No. 72/2009, 81/2009 - amended, 64/2010 - US decision, 24/2011, 121/2012, 42/2013 - US decision, 50 / 2013 - decision US, 98/2013 - decision	(L)	Ministry of Construction, Transport and Infrastructure Local self-government

		Article 3 of the Rulebook on special type of facilities and special type of works for which it is not necessary to obtain an act of the competent authority, as well as types of facilities under construction, etc.: At the request of the investor for the construction of certain types of facilities, i.e. the performance of certain works, the body responsible for issuing the construction permit shall issue a decision on the approval for the performance of works. **Rulebook on the procedure of conducting the unified procedure electronically** Acting upon the request for issuing a decision in accordance with Article 145 of the Law	US, 132/2014, 145/2014, 83/2018, 31/2019, 37/2019 - other law and 9/2020) Rulebook on special type of facilities and special type of works for which it is not necessary to obtain an act of the competent authority, as well as types of facilities under construction, ie types of works performed, based on the decision on approval for performance of works, as well as scope and content documentation that is attached to the request and the procedure carried out by the competent authority ("Official Gazette of RS", No. 2/2019) Rulebook on the procedure of conducting the unified procedure electronically ("Official Gazette of RS" No. 68/2019)	(L) (L)	
☒	Registration of onsite facilities a) septic tanks b) pit latrine	**Law on Planning and Construction** **Central record of unified procedures** Article 8g. The Business Registers Agency maintains a single, central, public, electronic database, which combines data from all registers of unified procedures in the territory of the Republic of Serbia, as well as acts contained in those registers (hereinafter: central records), through the central records registrar.	Law on Planning and Construction ("Official Gazette of RS", No. 72/2009, 81/2009 - amended,	(L)	Ministry of Construction, Transport and Infrastructure

	c) holding tank	and ensures the availability of such data and acts in accordance with the law, as well as access to acts published by the competent authorities in accordance with Article 8c paragraph 3 of this law. **Rulebook on the procedure of conducting the unified procedure electronically** **Keeping and content of the register of unified procedures and the Central Records** **Contents of the register** **Article 51** The register contains data on the course of each individual case, and in particular: 1) name, surname, residence, address of the apartment and unique identification number of the applicant if he is a natural person, i.e. business name, registered office and identification and tax identification number, if he is a legal entity. 2) name, surname, residence, address of the apartment and unique parent of the investor, i.e. financier, if a natural person, i.e. business name, registered office and personal and tax identification number, if it is a legal entity. 3) the number of the cadastral parcel, i.e. cadastral parcels in relation to which the unified procedure is carried out, as well as the name of the cadastral municipality and the municipality where that parcel is located. 4) designation of the class and purpose of the facility in connection with the construction of which the unified procedure is carried out. 5) date of submission of requests to the competent authority and dates of submission of appropriate requests to holders of public authorizations for submission of conditions for design and connection, i.e. for submission of other data in the service of issuing conditions for design and connection. 6) date of receipt of conditions for design and connection, i.e. other data by holders of public authorizations and applicants. 7) date of implementation of other actions related to the unified procedure. An integral part of the register are the acts of the competent authority and holders of public authorizations issued within the unified procedure, as well as all documentation submitted and obtained in the unified procedure. **Contents of the Central Records** **Article 52** The Central Records combine data, acts and documentation of all registers on the territory of the Republic of Serbia.	64/2010 - US decision, 24/2011, 121/2012, 42/2013 - US decision, 50 / 2013 - decision US, 98/2013 - decision US, 132/2014, 145/2014, 83/2018, 31/2019, 37/2019 - other law and 9/2020) Rulebook on the procedure of conducting the unified procedure electronically ("Official Gazette of RS" No. 68/2019)	(L)	Local self-government National Agency for Business Registers
☒	Wastewater drainage system from on site	**Example:** Article 3 (1) The internal sewerage in buildings and on plots consists of the following installations:	Rulebook on technical conditions	(L)	Public utility company (PUC)

	sanitation in place a) septic tanks b) pit latrine	- horizontal and vertical sewerage in the building and on the plot. - drainage facilities (drains, gutters). - control windows; - facilities and devices for preliminary wastewater treatment (pre-treatment). - facilities and devices for pumping wastewater to a higher level (pumping stations). - devices for preventing the return flow of wastewater (non-return valves, frog cover ...). - individual facilities for wastewater collection – septic tank or collection pit. - control shaft. The Rulebook regulates in detail the conditions for the construction and use of internal sewerage.	for connection to public sewerage, JKP "Vodovod Valjevo"		
☒	Requirements for effluent standards (emission limit values) from on-site treatment	**Article 93 of the Law on Waters:** To prevent the deterioration of water quality and the environment, physico-chemical parameters and emission limit values for pollutants are determined, as well as the ways and conditions of pollutant discharge and application of emission limit values, for: 1) technological wastewater before its discharge into the public sewer. 2) technological and other waste waters that are directly discharged into the recipient. 3) water that is discharged from the public sewerage system into the recipient after treatment. 4) wastewater discharged into the recipient from the septic tank and collection pit. The Government, at the proposal of the Minister and the Minister responsible for environmental protection, shall determine the physico-chemical parameters and emission limit values of pollutants, methods and conditions of pollutant discharge, as well as methods and conditions of application of emission limit values referred to in paragraph 1 of this Article. to reach them. **Article 23 of the Law on Environmental Protection** Water can be used and loaded, and wastewater can be discharged into water with the application of appropriate treatment, in a way and to a level that does not pose a danger to natural processes or to restore water quality and quantity and that does not reduce the possibility of their multipurpose use. Water protection and use is achieved within the framework of integrated water management by undertaking and implementing measures for the conservation of surface and groundwater and their reserves, quality, and quantity, as well as protection in accordance with a special law. A legal entity and / or an entrepreneur that has wastewater treatment plants or needs to build them and that discharges its wastewater into the recipient or public sewer, except for plants subject to the issuance of an integrated permit, is obliged to adopt an action plan for gradual achievement of emission limit values. pollutants into water, determine deadlines for their gradual achievement, as well as to act in accordance with the action plan, in accordance with the regulation governing the limit values of emissions of pollutants into water and deadlines for their achievement. **Article 1 of the Regulation on limit values for emissions of pollutants into water and deadlines for their achievement** This Regulation determines emission limit values for certain groups or categories of pollutants (hereinafter: pollutants) for: technological wastewater before its discharge into the public sewer; technological and other wastewater that is discharged directly into the recipient; water that is discharged from the public sewerage system into the recipient after treatment and wastewater that is discharged	Law on Waters ("Official Gazette of RS", No. 30/2010, 93/2012, 101/2016, 95/2018 and 95/2018 - other law) Law on Environmental Protection ("Official Gazette of RS", No. 135/2004, 36/2009, 36/2009 - other law, 72/2009 - other law, 43/2011 - US decision, 14/2016, 76/2018, 95/2018 - other law and 95/2018 - other law) Regulation on limit values for emissions of pollutants into water and deadlines for their achievement ("Official Gazette of RS", No. 67/11,	(L) (L) (L)	Ministry of Agriculture, Forestry and Water Management Republic Water Directorate Ministry of Environmental Protection Local self-government Public communal company (PUC) Institute of Public Health

		from the septic tank and collection pit into the recipient, as well as deadlines for reaching them. **Article 8, paragraph 2** Discharge of technological wastewater into the public sewerage system shall be performed in accordance with the act on discharge of wastewater into the public sewerage issued by the competent body of the local self-government unit.	48/12 and 1/16)		
☒	Requirement for management of liquid effluent from septic tank and latrine pits	**III Design and connection conditions that must be obtained from holders of public authorizations in the process of issuing location conditions**	Regulation on location conditions ("Official Gazette of RS", No. 35/2015, 114/2015 and 117/2017)	(L)	Local self-government
☒	Discharge of wastes from on-site sanitation (preventing discharge to open ground, open drain, or a water body)	**Article 93 of the Law on Waters** To prevent the deterioration of water quality and the environment, physico-chemical parameters and emission limit values for pollutants are determined, as well as the ways and conditions of pollutant discharge and application of emission limit values, for: 1) technological wastewater before its discharge into the public sewer. 2) technological and other waste waters that are directly discharged into the recipient. 3) water that is discharged from the public sewerage system into the recipient after treatment. 4) wastewater discharged into the recipient from the septic tank and collection pit. The Government, at the proposal of the Minister and the Minister responsible for environmental protection, shall determine the physico-chemical parameters and emission limit values of pollutants, methods and conditions of pollutant discharge, as well as methods and conditions of application of emission limit values referred to in paragraph 1 of this Article. to reach them. **Article 23 of the Law on Environmental Protection** Water can be used and loaded, and wastewater can be discharged into water with the application of appropriate treatment, in a way and to a level that does not pose a danger to natural processes or to restore water quality and quantity and that does not reduce the possibility of their multipurpose use. Water protection and use is achieved within the framework of integrated water management by undertaking and implementing measures for the conservation of surface and groundwater and their reserves, quality, and quantity, as well as protection in accordance with a special law. A legal entity and / or an entrepreneur that has wastewater treatment plants or needs to build them and that discharges its wastewater into the recipient or public sewer, except for plants subject to the issuance of an integrated permit, is obliged to adopt an action plan for gradual achievement of emission limit values. pollutants into water, determine deadlines for their gradual achievement, as well as to act in accordance with the action plan, in accordance with the regulation governing the limit values of emissions of pollutants into water and deadlines for their achievement.	Law on Waters ("Official Gazette of RS", No. 30/2010, 93/2012, 101/2016, 95/2018 and 95/2018 - other law) Law on Environmental Protection ("Official Gazette of RS", No. 135/2004, 36/2009, 36/2009 - other law, 72/2009 - other law, 43/2011 - US decision, 14/2016, 76/2018, 95/2018 - other law and 95/2018 - other law)	(L) (L)	Ministry of Agriculture, Forestry and Water Management Republic Water Directorate Ministry of Environmental Protection Local self-government Public communal company (PUC) Institute of Public Health

		Article 1 of the Regulation on limit values for emissions of pollutants into water and deadlines for their achievement This Regulation determines emission limit values for certain groups or categories of pollutants (hereinafter: pollutants) for: technological wastewater before its discharge into the public sewer; technological and other wastewater that is discharged directly into the recipient; water that is discharged from the public sewerage system into the recipient after treatment and wastewater that is discharged from the septic tank and collection pit into the recipient, as well as deadlines for reaching them. **Article 8, paragraph 2** Discharge of technological wastewater into the public sewerage system shall be performed in accordance with the act on discharge of wastewater into the public sewerage issued by the competent body of the local self-government unit. **Article 18** Wastewater from septic tanks and collection pits is discharged exclusively into the public sewer. Exceptionally, in the case when wastewater from septic tanks and collection pits cannot be discharged into the public sewer, the limit values for the emission of pollutants in accordance with Article 13, para. 1 and 3 of this regulation.	Regulation on limit values for emissions of pollutants into water and deadlines for their achievement ("Official Gazette of RS", No. 67/11, 48/12 and 1/16)	(L)	
☒	Requirements for rainwater and surface run-off drainage and disposal to prevent contamination of environment	**III Design and connection conditions that must be obtained from holders of public authorizations in the process of issuing location conditions**	Regulation on location conditions ("Official Gazette of RS", No. 35/2015, 114/2015 and 117/2017)	(L)	Local self-government
☒	Treatment/Disinfection of wastewater at the health care facility to prevent environmental contamination	**Article 93 of the Law on Waters** To prevent the deterioration of water quality and the environment, physico-chemical parameters and emission limit values for pollutants are determined, as well as the ways and conditions of pollutant discharge and application of emission limit values, for: 1) technological wastewater before its discharge into the public sewer. 2) technological and other waste waters that are directly discharged into the recipient. 3) water that is discharged from the public sewerage system into the recipient after treatment. 4) wastewater discharged into the recipient from the septic tank and collection pit. The Government, at the proposal of the Minister and the Minister responsible for environmental protection, shall determine the physico-chemical parameters and emission limit values of pollutants, methods and conditions of pollutant discharge, as well as methods and conditions of application of emission limit values referred to in paragraph 1 of this Article. to reach them. **Article 23 of the Law on Environmental Protection** Water can be used and loaded, and wastewater can be discharged into water with the application of appropriate treatment, in a way and to a level that does not pose a danger to natural processes or to restore water quality and quantity and that does not reduce the possibility of their multipurpose use.	Law on Waters ("Official Gazette of RS", No. 30/2010, 93/2012, 101/2016, 95/2018 and 95/2018 - other law) Law on Environmental Protection ("Official Gazette of RS", No. 135/2004, 36/2009, 36/2009 - other law,	(L) (L)	Ministry of Agriculture, Forestry and Water Management Republic Water Directorate Ministry of Environmental Protection Local self-government Public communal company (PUC)

		Water protection and use is achieved within the framework of integrated water management by undertaking and implementing measures for the conservation of surface and groundwater and their reserves, quality, and quantity, as well as protection in accordance with a special law. A legal entity and / or an entrepreneur that has wastewater treatment plants or needs to build them and that discharges its wastewater into the recipient or public sewer, except for plants subject to the issuance of an integrated permit, is obliged to adopt an action plan for gradual achievement of emission limit values. pollutants into water, determine deadlines for their gradual achievement, as well as to act in accordance with the action plan, in accordance with the regulation governing the limit values of emissions of pollutants into water and deadlines for their achievement. **Article 1 of the Regulation on limit values for emissions of pollutants into water and deadlines for their achievement** This Regulation determines emission limit values for certain groups or categories of pollutants (hereinafter: pollutants) for: technological wastewater before its discharge into the public sewer; technological and other wastewater that is discharged directly into the recipient; water that is discharged from the public sewerage system into the recipient after treatment and wastewater that is discharged from the septic tank and collection pit into the recipient, as well as deadlines for reaching them. **Article 8, paragraph 2** Discharge of technological wastewater into the public sewerage system shall be performed in accordance with the act on discharge of wastewater into the public sewerage issued by the competent body of the local self-government unit. **Article 18** Wastewater from septic tanks and collection pits is discharged exclusively into the public sewer. Exceptionally, in the case when wastewater from septic tanks and collection pits cannot be discharged into the public sewer, the limit values for the emission of pollutants in accordance with Article 13, para. 1 and 3 of this regulation.	72/2009 - other law, 43/2011 - US decision, 14/2016, 76/2018, 95/2018 - other law and 95/2018 - other law) Regulation on limit values for emissions of pollutants into water and deadlines for their achievement ("Official Gazette of RS", No. 67/11, 48/12 and 1/16)	(L)	Institute of Public Health
☒	Treatment of toxic wastes in HCFs before discharge to wastewater system	**Article 93 of the Law on Waters** To prevent the deterioration of water quality and the environment, physico-chemical parameters and emission limit values for pollutants are determined, as well as the ways and conditions of pollutant discharge and application of emission limit values, for: 1) technological wastewater before its discharge into the public sewer. 2) technological and other waste waters that are directly discharged into the recipient. 3) water that is discharged from the public sewerage system into the recipient after treatment. 4) wastewater discharged into the recipient from the septic tank and collection pit. The Government, at the proposal of the Minister and the Minister responsible for environmental protection, shall determine the physico-chemical parameters and emission limit values of pollutants, methods and conditions of pollutant discharge, as well as methods and conditions of application of emission limit values referred to in paragraph 1 of this Article. to reach them.	Law on Waters ("Official Gazette of RS", No. 30/2010, 93/2012, 101/2016, 95/2018 and 95/2018 - other law) Law on	(L)	Ministry of Agriculture, Forestry and Water Management Republic Water Directorate Ministry of Environmental Protection Ministry of Health

		Article 23 of the Law on Environmental Protection Water can be used and loaded, and wastewater can be discharged into water with the application of appropriate treatment, in a way and to a level that does not pose a danger to natural processes or to restore water quality and quantity and that does not reduce the possibility of their multipurpose use. Water protection and use is achieved within the framework of integrated water management by undertaking and implementing measures for the conservation of surface and groundwater and their reserves, quality, and quantity, as well as protection in accordance with a special law. A legal entity and / or an entrepreneur that has wastewater treatment plants or needs to build them and that discharges its wastewater into the recipient or public sewer, except for plants subject to the issuance of an integrated permit, is obliged to adopt an action plan for gradual achievement of emission limit values. pollutants into water, determine deadlines for their gradual achievement, as well as to act in accordance with the action plan, in accordance with the regulation governing the limit values of emissions of pollutants into water and deadlines for their achievement. **Article 1 of the Regulation on limit values for emissions of pollutants into water and deadlines for their achievement** This Regulation determines emission limit values for certain groups or categories of pollutants (hereinafter: pollutants) for: technological wastewater before its discharge into the public sewer; technological and other wastewater that is discharged directly into the recipient; water that is discharged from the public sewerage system into the recipient after treatment and wastewater that is discharged from the septic tank and collection pit into the recipient, as well as deadlines for reaching them. **Article 8, paragraph 2** Discharge of technological wastewater into the public sewerage system shall be performed in accordance with the act on discharge of wastewater into the public sewerage issued by the competent body of the local self-government unit. **Article 18** Wastewater from septic tanks and collection pits is discharged exclusively into the public sewer. Exceptionally, in the case when wastewater from septic tanks and collection pits cannot be discharged into the public sewer, the limit values for the emission of pollutants in accordance with Article 13, para. 1 and 3 of this regulation.	Environmental Protection ("Official Gazette of RS", No. 135/2004, 36/2009, 36/2009 - other law, 72/2009 - other law, 43/2011 - US decision, 14/2016, 76/2018, 95/2018 - other law and 95/2018 - other law) Regulation on limit values for emissions of pollutants into water and deadlines for their achievement ("Official Gazette of RS", No. 67/11, 48/12 and 1/16)	(L) (L)	Local self-government Public communal company (PUC) Institute of Public Health
☒	Prevention of discharge of hazardous chemical waste and pharmaceuticals from HCF into wastewater	**Article 93 of the Law on Waters** To prevent the deterioration of water quality and the environment, physico-chemical parameters and emission limit values for pollutants are determined, as well as the ways and conditions of pollutant discharge and application of emission limit values, for: 1) technological wastewater before its discharge into the public sewer. 2) technological and other waste waters that are directly discharged into the recipient. 3) water that is discharged from the public sewerage system into the recipient after treatment. 4) wastewater discharged into the recipient from the septic tank and collection pit. The Government, at the proposal of the Minister and the Minister responsible for environmental	Law on Waters ("Official Gazette of RS", No. 30/2010, 93/2012, 101/2016, 95/2018 and 95/2018 - other law)	(L)	Ministry of Agriculture, Forestry and Water Management Republic Water Directorate Ministry of

		protection, shall determine the physico-chemical parameters and emission limit values of pollutants, methods and conditions of pollutant discharge, as well as methods and conditions of application of emission limit values referred to in paragraph 1 of this Article. to reach them. **Article 23 of the Law on Environmental Protection** Water can be used and loaded, and wastewater can be discharged into water with the application of appropriate treatment, in a way and to a level that does not pose a danger to natural processes or to restore water quality and quantity and that does not reduce the possibility of their multipurpose use. Water protection and use is achieved within the framework of integrated water management by undertaking and implementing measures for the conservation of surface and groundwater and their reserves, quality, and quantity, as well as protection in accordance with a special law. A legal entity and / or an entrepreneur that has wastewater treatment plants or needs to build them and that discharges its wastewater into the recipient or public sewer, except for plants subject to the issuance of an integrated permit, is obliged to adopt an action plan for gradual achievement of emission limit values. pollutants into water, determine deadlines for their gradual achievement, as well as to act in accordance with the action plan, in accordance with the regulation governing the limit values of emissions of pollutants into water and deadlines for their achievement. **Article 1 of the Regulation on limit values for emissions of pollutants into water and deadlines for their achievement** This Regulation determines emission limit values for certain groups or categories of pollutants (hereinafter: pollutants) for: technological wastewater before its discharge into the public sewer; technological and other wastewater that is discharged directly into the recipient; water that is discharged from the public sewerage system into the recipient after treatment and wastewater that is discharged from the septic tank and collection pit into the recipient, as well as deadlines for reaching them. **Article 8, paragraph 2** Discharge of technological wastewater into the public sewerage system shall be performed in accordance with the act on discharge of wastewater into the public sewerage issued by the competent body of the local self-government unit. **Article 18** Wastewater from septic tanks and collection pits is discharged exclusively into the public sewer. Exceptionally, in the case when wastewater from septic tanks and collection pits cannot be discharged into the public sewer, the limit values for the emission of pollutants in accordance with Article 13, para. 1 and 3 of this regulation.	Law on Environmental Protection ("Official Gazette of RS", No. 135/2004, 36/2009, 36/2009 - other law, 72/2009 - other law, 43/2011 - US decision, 14/2016, 76/2018, 95/2018 - other law and 95/2018 - other law) Regulation on limit values for emissions of pollutants into water and deadlines for their achievement ("Official Gazette of RS", No. 67/11, 48/12 and 1/16)	(L) (L)	Environmental Protection Ministry of Health Local self-government Public communal company (PUC) Institute of Public Health
☒	Requirements for on-site treatment	**Article 20 of the Law on Planning and Construction** The spatial plan of a local self-government unit shall contain in particular: 8) rules of arrangement and rules of construction for parts of the territory for which the development of an urban plan is not envisaged.	Law on Planning and Construction ("Official Gazette of RS", No. 72/2009, 81/2009 - amended,	(L)	Ministry of Construction, Transport and Infrastructure

			64/2010 - US decision, 24/2011, 121/2012, 42/2013 - US decision, 50 / 2013 - decision US, 98/2013 - decision US, 132/2014, 145/2014, 83/2018, 31/2019, 37/2019 - other law and 9/2020)	(L)	Local self-government Public utility company (PUC)
		III Design and connection conditions that must be obtained from holders of public authorizations in the process of issuing location conditions	Regulation on location conditions ("Official Gazette of RS", No. 35/2015, 114/2015 and 117/2017)	(Other)	
		Example No 1: Technical conditions for sewerage: - if there is no street sewerage, wastewater is temporarily conducted into a built-in impermeable toilet-septic tank, from which the impure water refers to certain landfills. - during the transition period and the activities of building an integrated municipal sewerage system, it is necessary to build hygienic impermeable septic tanks. The volume of the septic tank is calculated according to water consumption and the duration of the process. -septic pits set up: -min. 2m from the fence of the complex. -min. 5m from the accommodation facility. -min. 10m from the regulation line; i -min. 20m from the well.	Spatial plan of the city of Loznica	(L)	
		Example No 2: Article 23, paragraph 1. A septic tank is built of solid construction material (concrete and brick) in accordance with the technical norms prescribed for that type of facility.	Decision of the city of Pančevo on drainage and treatment of wastewater and atmospheric water ("Official Gazette of the City of Pančevo", No. 26/2011 - consolidated text, 13/2013 and 6/2014)	(L)	

		Example No 3: Article 3 (1) The internal sewerage in buildings and on plots consists of the following installations: - horizontal and vertical sewerage in the building and on the plot. - drainage facilities (drains, gutters). - control windows; - facilities and devices for preliminary wastewater treatment (pre-treatment). - facilities and devices for pumping wastewater to a higher level (pumping stations). - devices for preventing the return flow of wastewater (non-return valves, frog cover ...). - individual facilities for wastewater collection – septic tank or collection pit. - control shaft. The Rulebook regulates in detail the conditions for the construction and use of internal sewerage.	Rulebook on technical conditions for connection to public sewerage, JKP "Vodovod Valjevo"		
☒	Control of nuisances (odours, flies and noise, etc) from on-site treatment	**7. Other measures to prevent and reduce air pollution** **Article 55, paragraph 4 of the Law on Air Protection** The operator of a stationary source of pollution, when unpleasant odors can be emitted in the process of performing activities, is obliged to apply measures that will lead to odor reduction even though the concentration of emitted substances in the waste gas is below the emission limit value. **Example:** Article 14, paragraph 6 Tenants are obliged to prevent the excessive spread of unpleasant odors and odors from food from their special parts of the building.	Law on Air Protection ("Official Gazette of RS", No. 36/2009 and 10/2013) Decision on general house rules in residential and residential-commercial buildings on the territory of the city of Kruševac ("Official Gazette of the City of Kruševac", No. 4/2018)	(L) (L)	Ministry of Environmental Protection Local self-government (inspection, communal police)
☒	Operational and worker health and safety	**Article 1 of the Law on Safety and Health at Work** This law regulates the implementation and improvement of safety and health at work of persons who participate in work processes, as well as persons who find themselves in the work environment, in order to prevent injuries at work, occupational diseases and diseases related to work. **Article 37a** Employer in construction, agriculture, forestry and fishing, mining, processing industry, electricity, gas, steam and air conditioning supply (except electricity and gaseous fuel trade through the gas network), water supply, wastewater management, control of waste disposal processes and similar activities, as well as in the activities of health and social protection, is obliged to appoint for safety and health at work a person who has at least acquired higher education in basic academic studies in the amount of at least 180	Law on Safety and Health at Work ("Official Gazette of RS", No. 101/2005, 91/2015 and 113/2017 - other law)	(L)	Ministry of Labor, Employment and Veterans and Social Affairs Public communal company (PUC)

		ECTS points, basic vocational studies, or studies lasting up to three years from the scientific or professional field within the educational-scientific field of technical-technological sciences, natural-mathematical sciences or medical sciences. **Article 1 of the Rulebook on personal protective equipment at work and personal protective equipment** This Rulebook prescribes the minimum requirements that the employer is obliged to meet in ensuring the application of preventive measures when using means and equipment for personal protection at work.	Rulebook on personal protective equipment at work and personal protective equipment ("Official Gazette of RS", No. 92/2008 and 101/2018)	(L)	
☒	Monitoring of: a) design b) technical standards c) structural integrity of on-site sanitation (construction)	**Article 4 of the Rulebook on the content, manner and procedure of preparation and manner of performing control of technical documentation according to the class and purpose of facilities** Technical control includes checking: compliance with all conditions and rules contained in the location conditions; compliance with the Law and other regulations, technical norms, standards and quality norms; mutual harmonization of all parts of technical documentation; compliance of the project with the results of previous research (previous works); assessment of appropriate foundations for building foundations; checking the correctness and accuracy of technical-technological solutions of the facility and solutions for construction of facilities; stability and load-bearing capacity of the building structure and safety of the facility; rationality of designed construction products; impact on the environment and neighboring facilities, as well as checking the fulfillment of basic requirements for the facility. **Article 100 of the Law on Waters** The legal entity that collects, drains and treats wastewater and water protection is obliged to control the correctness of facilities for collection, drainage and treatment of wastewater, primarily in terms of water permeability, every five years, and in the case of devices for measuring the amount of wastewater once a year . The control of the correctness of the facilities referred to in paragraph 1 of this Article shall be performed by an authorized legal entity, in accordance with this Law and the law governing the construction of facilities, and shall issue a certificate to that effect. The provisions of para. 1 and 2 of this article also refer to septic tanks and collection pits.	Rulebook on the content, manner and procedure of preparation and manner of performing control of technical documentation according to the class and purpose of facilities ("Official Gazette of RS", No. 73/2019) Law on Waters ("Official Gazette of RS", No. 30/2010, 93/2012, 101/2016, 95/2018 and 95/2018 - other law)	(L) (L)	Ministry of Construction, Transport and Infrastructure Ministry of Agriculture, Forestry and Water Management Republic Water Directorate Local self-government
☒	Requirements for closing of on-site sanitation at the end of life cycle	**Article 24** When connecting to the sewerage network, the user, who until then provided the drainage of wastewater through a septic tank, is obliged to empty, disinfect and close the septic tank and inform the PUC and the communal inspector about it.	Decision on drainage and treatment of atmospheric and wastewater ("Official Gazette of the City of Sremska Mitrovica",	(L)	Local self-government

		The communal inspector is obliged, at the request of the PUC, to perform a control on the performed actions referred to in paragraph 1 of this Article and to submit the minutes on the performed control to the PUC.	No. 9/2011, 5/2014 and 13/2015)		

Notes: According to the law, for septic tanks and collection pits as auxiliary facilities an investor is required to ask for issuance and obtain a decision on approval for the execution of works. The issued decision on approval are kept in the Register of Unified Procedures. The Central Record of Unified Procedures is a unique, central, public, electronic database maintained within the Agency for Business Register, which combines data, acts and documentation of all registers of unified procedures on the territory of the Republic of Serbia.

The closure of septic tanks is not regulated by law or regulations, but local governments regulate it with their decisions.

Emptying of on-site sanitation facilities

In the current standards and regulations in Serbia, is there any requirement or recommendation with respect to emptying of on-site sanitation facilities (applicable to institutional and household on-site sanitation systems)?

☒ Yes ☐ No ☐ Partially

If yes, is any of the aspects listed below considered in such standards and regulations? (select all true answers)

	Aspects	Specific requirements for on- site sanitation related to corresponding aspect	Legal reference(s)	Type of legal reference (L) Law or regulation; (S)Standards; (G)Guidelines (P) Strategic plans; (T) Targets	Responsible entity/es for the implementation at national and local level
☒	Standards for equipment for emptying of septic tanks	**Article 4, paragraph 3 of the Law on Communal Activities** The unit of local self-government shall regulate, in accordance with the law, the conditions for performing communal activities, the rights and obligations of users of communal services, the scope and quality of communal services and the manner of supervising the performance of communal activities, providing in particular: 1) appropriate coverage, scope and quality of communal services, which includes in particular: health and hygiene according to prescribed standards and norms, accuracy in terms of delivery deadlines, safety and protection of users in obtaining services, reliability, accessibility and durability in providing services; Removal of wastewater and faeces from septic tanks is done only by a special vehicle - tanks. Care must be taken not to spoil wastewater and faeces while removing them	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18) The decision governing the performance of utility service of the local self-government ISO 9001	L D	Local self-government, PUC or entrepreneur, or other legal entity entrusted with the performance of septic tank cleaning and removal of faeces, the owner of the septic tank

		ISO 9001 is to increase the efficiency of the organization through the application of a process approach. Its advantage is to provide links between individual processes, sectors and their interaction. **The ISO 14001** system is an internationally recognized standard that defines the way in which the environmental management system is implemented in every company or organization. The ISO 14001 system helps to establish: - sustainable management of waste and waste streams; - environmental protection plan of the organization. **ISO 45001 (until recently OHSAS 18001)** is an internationally recognized standard for health and safety (OHS) at work. This standard covers all regulations, all forms, training, protective equipment and everything that workers must have in order to protect their safety at work.	ISO 14001 ISO 45001 (until recently OHSAS 18001)	S S S	
☒	Frequency of emptying	**Article 4, paragraph 6 of the Law on Communal Activities** The government regulates: 1) criteria for performing communal activities, namely for: the minimum scope that covers the areas, ie the number of inhabitants for whom a certain communal service is provided; frequency of utility service provision; the content of the utility service; indicator of quality and efficiency of service provision; The owner of the facility whose internal sewage installations are connected to the septic tank is obliged to maintain the septic tank in good condition, to take care of its regular cleaning, as well as not to allow the septic tanks to overflow. The owner, ie the user of the facility, is responsible for the overflow of the septic tank which causes damage to the neighbors, unless it is proven that the overflow is a consequence of floods, groundwater and similar phenomena. In the event that two or more separate facilities are connected to one septic tank, the obligation and the responsibility is joint and several.	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18) The decision governing the performance of utility service of the local self-government	L B	Local self-government, PUC or entrepreneur, or other legal entity entrusted with the performance of septic tank cleaning and removal of faeces, the owner of the septic tank
☒	Responsibilities for emptying services	**Article 4, paragraph 1 of the Law on Communal Activities** The local self-government unit, in accordance with this law, provides organizational, material and other conditions for the construction, maintenance and functioning of communal facilities and for the technical and technological unity of the system, and regulates and ensures the performance of communal activities and their development. **Article 4, paragraph 6 of the Law on Communal Activities** The government regulates: 1) criteria for performing communal activities, namely for: the minimum scope that covers the areas, ie the number of inhabitants for whom a certain communal service is provided; frequency of utility service provision; the content of the utility service; indicator of quality and efficiency of service provision; In case of septic tank spillage, the owner of the facility is responsible for endangering other facilities, ie	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18) The decision governing the	L	Local self-government, PUC or entrepreneur, or other legal entity entrusted with the performance of septic tank cleaning and removal of faeces, the owner of the septic tank

		goods (land, groundwater and surface water), unless the spill is caused by force majeure. The owner, ie the user of the facility, is responsible for the overflow of the septic tank which causes damage to the neighbors; unless it is proven that the overflow is a consequence of floods, groundwater and similar phenomena. In the event that two or more separate facilities are connected to one septic tank, the obligation and the responsibility is joint and several. Septic tanks are cleaned by a competent company or entrepreneur, ie another legal entity entrusted with the task of cleaning septic tanks and removing faeces.	performance of utility service of the local self-government The decision governing the performance of utility service of the local self-government Spatial plan of the local self-government	B B S	
☒	Licensing for emptying service providers	**Law on Waters and the Rulebook** In accordance with the Law on Waters and the Rulebook on conditions regarding technical-technological equipment and organizational and personnel training for performing activities in the field of water management, as well as on the manner of keeping records of issued and revoked licenses (Official Gazette of RS, No. 23/12 and 57/13) The Ministry of Agriculture, Forestry and Water Management issues, among others, licenses to public companies, ie other legal entities for the performance of waste water collection, drainage and treatment through the public sewerage system. **Rulebook on conditions regarding technical-technological equipment and organizational and personnel qualification for performing activities in the field of water management, as well as on the manner of keeping records of issued and revoked licenses** **IDENTIFIED GAP: The Rulebook determines the conditions that public companies, ie other legal entities must meet in order to perform the service of collecting**, draining **and treating wastewater through the public sewerage system, but not the conditions for providing septic tank emptying services.**	Law on Waters ("Official Gazette of RS", No. 30/10, 93/12, 101/16, 95/18 and 95/18 - other law) Rulebook on conditions regarding technical-technological equipment and organizational and personnel qualification for performing activities in the field of water management, as well as on the manner of keeping records of issued and revoked licenses ("Official	L B	Ministry of Construction, Transport and Infrastructure, Ministry of Agriculture, Forestry and Water Management - Republic Water Directorate, local self-government units, PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks

		Article 4, paragraph 6 of the Law on Communal Activities The government regulates: 2) the content, manner and conditions for starting the performance of communal activities referred to in Article 2, paragraph 3 of this Law, which specifically regulates: professional qualification of staff and technical capacity that must be fulfilled by performers of communal activities for performing certain communal activities, if not regulated other regulations;	Gazette of RS", No. 23/12 and 57/13) Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18)	L	
☒	Setting the fee for emptying service	**Article 13, paragraph 1 of the Law on Communal Activities** The assembly of the local self-government unit prescribes by decisions the way how the performance of public utilities, as well as general and specific rights and obligations of the holder of public utilities and service users in their territory, including how to pay the price utilities, the way of controlling the use and collection of utilities and authorities acting public utilities in the exercise of control measures were controllers authorized to undertake. **Example:** The owner of the facility whose internal sewage installations are connected to the septic tank, is obliged to pay for the performed services according to the performed septic tank cleaning service, which is calculated according to the cubic meter of excreted faeces. The price for 1 m^3 of faeces taken out of the septic tank is determined by the public utility company established for cleaning septic tanks by applying elements for the formation of the price of the utility service in accordance with the Law on Utilities, with the consent of the founder. The elements for forming the price of the communal service are: 1) type, scope and quality of communal services determined by standards and norms; 2) the value of funds engaged in the provision of services; 3) scope and quality of invested work in performing communal services; 4) the amount of material costs in the performance of utility services, according to the standards and norms of energy consumption, material and other costs, or planned calculations; 5) other elements depending on market conditions and specifics of communal services	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18) The decision governing the performance of utility service of the local self-government	L B	Ministry of Construction, Transport and Infrastructure, local self-government units, PUC
☒	Protection of workers' exposure - Worker health and safety	**Article 9, paragraphs 1, 11, 23 and 27 of the Law on Safety and Health at Work** The employer is obliged to provide the employee with work at the workplace and in the work environment in which safety and health measures at work have been implemented. The employer is obliged to, when organizing work and work process, provide preventive measures to protect the lives and health of employees, as well as to provide the necessary financial resources for their implementation. The employer is obliged to provide preventive measures before the start of work of the employee, during work, as well as at any change of technological procedure, by choosing	Law on Safety and Health at Work ("Official Gazette of RS", No. 101/05, 91/15 and 113/17 - other law)	L	PUC or entrepreneur, or other legal entity entrusted with the performance of septic tank cleaning and removal of faeces, the owner of the septic tank

		working and production methods that ensure the greatest possible safety and health at work, based on safety and health regulations at work, labor law, technical regulations and standards, regulations in the field of health care, occupational hygiene, health and pension and disability insurance, etc. The employer is obliged to employees to use the instruments of labor and means and equipment for personal protection at work that have implemented the prescribed measures for safety and health at work and to ensure control of its use as intended The employer is obliged to train the employee for safe and healthy work when establishing an employment relationship, ie other employment, transfer to other jobs, when introducing new technology or new means of work or changing work equipment, as well as when changing the work process that may cause a change in measures for safe and healthy work. During the training for safe and healthy work, the employer is obliged to acquaint the employee with all types of risks in the jobs for which he is assigned and about specific measures for safety and health at work in accordance with the act on risk assessment. The training referred to in paragraph 1 of this Article shall be provided by the employer during working hours, and the costs of training may not be borne by the employee. Training for safe and healthy work of the employee must be adjusted to the specifics of his workplace and is carried out according to the program, the content of which the employer must, when necessary, renew and change. **Article 4, paragraph 4 of the Law on Communal Activities** For use, for storage and maintenance of funds for performing communal activities, maintaining cleanliness and environmental protection, general arrangement of settlements, external appearance of the facility and arrangement of surfaces, the local self-government unit may prescribe general conditions for maintaining communal order and measures for their implementation. **Article 14 of the Law on Communal Activities** The executor of communal activity is obliged to organize his work and business in a way that ensures: 1) permanent and uninterrupted provision of communal services to users under the conditions and in the manner regulated by law, regulations and standards adopted on the basis of law; 2) prescribed or agreed scope and quality of communal services, which implies accuracy in terms of deadlines, safety of users in obtaining services and health and hygiene in accordance with positive regulations; 3) undertaking measures for maintenance, development and protection of communal facilities, plants and equipment, which are used for performing communal activities; 4) development and improvement of the quality and types of communal services, as well as improvement of the organization and efficiency of work. **ISO 45001 (until recently OHSAS 18001)** ISO 45001 (until recently OHSAS 18001) is an internationally recognized standard for health and safety (OHS) at work. This standard covers all regulations, all forms, training, protective equipment and	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18) ISO 45001 (until recently OHSAS 18001)	L S	

		everything that workers must have in order to protect their safety at work.			
☒	Control of nuisances (odours, flies and noise, etc) and spillages	**Article 4, paragraph 4 of the Law on Communal Activities** For use, for storage and maintenance of funds for performing communal activities, maintaining cleanliness and environmental protection, general arrangement of settlements, external appearance of the facility and arrangement of surfaces, the local self-government unit may prescribe general conditions for maintaining communal order and measures for their implementation. **Example:** The places where faeces are delivered must be arranged in such a way that faeces are not spoiled and unpleasant odors do not spread. These places must be equipped with vehicle washing installations, and each vehicle must be washed and disinfected after emptying. It is forbidden to pour the contents from septic tanks on public areas or any other place.	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18) The decision governing the performance of utility service of the local self-government	L B	Local self-government units, PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks
☒	Pedestrian and traffic safety	**Article 4, paragraph 4 of the Law on Communal Activities** For use, for storage and maintenance of funds for performing communal activities, maintaining cleanliness and environmental protection, general arrangement of settlements, external appearance of the facility and arrangement of surfaces, the local self-government unit may prescribe general conditions for maintaining communal order and measures for their implementation. **Article 14 of the Law on Communal Activities** The executor of communal activity is obliged to organize his work and business in a way that ensures: 1) permanent and uninterrupted provision of communal services to users under the conditions and in the manner regulated by law, regulations and standards adopted on the basis of law; 2) prescribed or agreed scope and quality of communal services, which implies accuracy in terms of deadlines, safety of users in obtaining services and health and hygiene in accordance with positive regulations; 3) undertaking measures for maintenance, development and protection of communal facilities, plants and equipment, which are used for performing communal activities; 4) development and improvement of the quality and types of communal services, as well as improvement of the organization and efficiency of work.	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18)	L	Local self-government units, PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks
☒	Standards for safe excreta burying	**The decision governing the performance of utility service of the local self-government** The places where faeces are delivered must be arranged in such a way that faeces are not spoiled and unpleasant odors do not spread. These places must be equipped with vehicle washing installations, and each vehicle must be washed and disinfected after emptying. It is forbidden to pour the contents from septic tanks on public areas or any other place. **ISO 9001** is to increase the efficiency of the organization through the application of a process approach. Its advantage is to provide links between individual processes, sectors and their interaction.	The decision governing the performance of utility service of the local self-government ISO 9001	B S	PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks

		The ISO 14001 system is an internationally recognized standard that defines the way in which the environmental management system is implemented in every company or organization. The ISO 14001 system helps to establish: - sustainable management of waste and waste streams; - environmental protection plan of the organization. **ISO 45001 (until recently OHSAS 18001)** is an internationally recognized standard for health and safety (OHS) at work. This standard covers all regulations, all forms, training, protective equipment and everything that workers must have in order to protect their safety at work.	ISO 14001 ISO 45001 (until recently OHSAS 18001)	S S	
☒	Standards for emptying or excreta burying for pit latrines	**ISO 9001** is to increase the efficiency of the organization through the application of a process approach. Its advantage is to provide links between individual processes, sectors and their interaction. **The ISO 14001** system is an internationally recognized standard that defines the way in which the environmental management system is implemented in every company or organization. The ISO 14001 system helps to establish: - sustainable management of waste and waste streams; - environmental protection plan of the organization. **ISO 45001 (until recently OHSAS 18001)** is an internationally recognized standard for health and safety (OHS) at work. This standard covers all regulations, all forms, training, protective equipment and everything that workers must have in order to protect their safety at work.	ISO 9001 ISO 14001 ISO 45001 (until recently OHSAS 18001)	S S S	PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks
☒	Surveillance of enforcement of emptying	The decision governing the performance of utility service of the local self-government: Supervision over the implementation of the discharge is performed by the organizational unit of the local self-government unit in charge of communal affairs and the communal police. Supervision over the work of utilities is performed by local self-government bodies through their bodies, and inspection supervision over the implementation of provisions is performed by communal inspection and environmental protection inspection according to the scope of their work, in accordance with the local self-government decision, Law on communal activities and other regulations. The contractor of communal activity, as well as other legal and natural persons, are obliged to enable the inspector to perform supervision without hindrance, to provide him with the necessary documentation and other evidence without delay and to state the facts that are important for supervision. Regulations on internal organization and systematization predict service for regular cleaning and monitoring of septic tanks	The decision governing the performance of utility service of the local self-government Spatial plan of the local self-government	B B	Local self-government units, PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks
☒	Monitoring of the frequency of emptying	**Article 4, paragraph 4 of the Law on Communal Activities** For use, for storage and maintenance of funds for performing communal activities, maintaining	Law on Communal Activities ("Official Gazette	L	Ministry of Construction, Transport and

		cleanliness and environmental protection, general arrangement of settlements, external appearance of the facility and arrangement of surfaces, the local self-government unit may prescribe general conditions for maintaining communal order and measures for their implementation. Regulations on internal organization and systematization predict service for regular cleaning and monitoring of septic tanks	of RS", No. 88/11, 104/16 and 95/18) Spatial plan of the local self-government	B	Infrastructure, local self-government units, PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks

Notes:

Transport of excreta and wastewater to treatment

In the current standards and regulations in Serbia, is there any requirement or recommendation with respect to transport of excreta and wastewater to treatment (applicable to institutional and household on-site sanitation systems)?

☐ Yes ☐ No ☒ Partially

If yes, is any of the aspects listed below considered in such standards and regulations? (select all true answers)

	Aspects	Specific requirements for on- site sanitation related to corresponding aspect	Legal reference(s)	Type of legal reference (L) Law or regulation; (S)Standards; (G)Guidelines (P) Strategic plans; (T) Targets	Responsible entity/es for the implementation at national and local level
☒	Permitting and licensing	**Law on Waters and the following Rulebook** In accordance with the Law on Waters and the Rulebook on conditions regarding technical-technological equipment and organizational and personnel training for performing activities in the field of water management, as well as on the manner of keeping records of issued and revoked licenses (Official Gazette of RS, No. 23/12 and 57/13) The Ministry of Agriculture, Forestry and Water Management issues, among others, licenses to public companies, ie other legal entities for the performance of waste water collection, drainage and treatment through the public sewerage system **Rulebook on conditions regarding technical-technological equipment and organizational and personnel qualification for performing activities in the field of water management, as well as on the manner of keeping records of issued and revoked licenses** **IDENTIFIED GAP: The Rulebook determines the conditions that public companies, ie other legal entities must meet in order to perform the tasks of collecting, draining and treating wastewater through the public sewerage system, but not the conditions for providing septic tank emptying services.**	Law on Waters ("Official Gazette of RS", No. 30/10, 93/12, 101/16, 95/18 and 95/18 - other law) Rulebook on conditions regarding technical-technological equipment and organizational and personnel qualification for	L L	Ministry of Construction, Transport and Infrastructure, Ministry of Agriculture, Forestry and Water Management - Republic Water Directorate, local self-government units, PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks

			performing activities in the field of water management, as well as on the manner of keeping records of issued and revoked licenses ("Official Gazette of RS", No. 23/12 and 57/13) Law on Waste Management ("Official Gazette of RS", No. 36/2009, 88/2010, 14/2016 and 95/2018 – other law)	L	
		Articles 1-4 of the Law on Waste Management The aim of this law is to provide and ensure conditions for: 1) waste management in a way that does not endanger human health and the environment; 2) prevention of waste generation, especially through the development of cleaner technologies and rational use of natural resources, as well as elimination of the danger of its harmful effects on human health and the environment; 3) reuse and recycling of waste, separation of secondary raw materials from waste and use of waste as an energy source; 4) development of procedures and methods for waste disposal; 5) remediation of unregulated landfills; 6) monitoring the condition of existing and newly formed landfills; 7) developing awareness of waste management. **IDENTIFIED GAP 2: The Law on Waste Management regulates the types and classification of**			

		waste; waste management planning; waste management entities; responsibilities and obligations in waste management; organizing waste management; management of special waste streams; conditions and procedure for issuing permits; transboundary movement of waste; waste reporting and databases; waste management financing; supervision, as well as other issues of importance for waste management. Waste management is performed in a way that ensures the lowest risk to endangering the life and health of people and the environment, control and reduction measures: 1) pollution of water, air and soil; 2) dangers to flora and fauna; 3) dangers of accidents, explosions or fires; 4) negative impacts on landscapes and natural assets of special values; 5) noise levels and unpleasant odors. The provisions of this law do not apply to: 6) faeces, if they are not covered by paragraph 2, item 2) of this Article; The provisions of this Law, to the extent that waste management is regulated by other regulations, shall not apply to: 1) wastewater; 2) by-products of animal origin, including derived products to which veterinary regulations apply, other than those intended for incineration, use in biogas plants or composting plants or disposal at a sanitary landfill under special conditions, in accordance with special regulation;			
☒	Standards for transport of excreta and wastewater from households to a treatment plant using small - scale piped sewer	**ISO 9001** is to increase the efficiency of the organization through the application of a process approach. Its advantage is to provide links between individual processes, sectors and their interaction. **The ISO 14001** system is an internationally recognized standard that defines the way in which the environmental management system is implemented in every company or organization. The ISO 14001 system helps to establish: - sustainable management of waste and waste streams; - environmental protection plan of the organization. **ISO 45001 (until recently OHSAS 18001)** is an internationally recognized standard for health and safety (OHS) at work. This standard covers all regulations, all forms, training, protective equipment and everything that workers must have in order to protect their safety at work.	ISO 9001 ISO 14001 ISO 45001 (until recently OHSAS 18001)	S S S	PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks
☒	Standards for transport of excreta and wastewater from households to a treatment plant using mobile vehicles	**ISO 9001** is to increase the efficiency of the organization through the application of a process approach. Its advantage is to provide links between individual processes, sectors and their interaction. **The ISO 14001** system is an internationally recognized standard that defines the way in which the environmental management system is implemented in every company or organization. The ISO 14001 system helps to establish: - sustainable management of waste and waste streams; - environmental protection plan of the organization.	ISO 9001 ISO 14001	S S	PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks

		ISO 45001 (until recently OHSAS 18001) is an internationally recognized standard for health and safety (OHS) at work. This standard covers all regulations, all forms, training, protective equipment and everything that workers must have in order to protect their safety at work.	ISO 45001 (until recently OHSAS 18001)	S	
☒	Standards for transport of excreta and wastewater from health care facility to a treatment plant using mobile vehicles	**ISO 9001** is to increase the efficiency of the organization through the application of a process approach. Its advantage is to provide links between individual processes, sectors and their interaction. **The ISO 14001** system is an internationally recognized standard that defines the way in which the environmental management system is implemented in every company or organization. The ISO 14001 system helps to establish: - sustainable management of waste and waste streams; - environmental protection plan of the organization. **ISO 45001 (until recently OHSAS 18001)** is an internationally recognized standard for health and safety (OHS) at work. This standard covers all regulations, all forms, training, protective equipment and everything that workers must have in order to protect their safety at work.	ISO 9001 ISO 14001 ISO 45001 (until recently OHSAS 18001)	S S S	PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks
☒	Standards for the connection of piped sewer to the treatment plant	**ISO 9001** is to increase the efficiency of the organization through the application of a process approach. Its advantage is to provide links between individual processes, sectors and their interaction. **The ISO 14001** system is an internationally recognized standard that defines the way in which the environmental management system is implemented in every company or organization. The ISO 14001 system helps to establish: - sustainable management of waste and waste streams; - environmental protection plan of the organization. **ISO 45001 (until recently OHSAS 18001)** is an internationally recognized standard for health and safety (OHS) at work. This standard covers all regulations, all forms, training, protective equipment and everything that workers must have in order to protect their safety at work.	ISO 9001 ISO 14001 ISO 45001 (until recently OHSAS 18001)	S S S	PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks
☒	Protection of workers' exposure - Worker health and safety	**Article 9, paragraphs 1, 11, 23 and 27 of the Law on Safety and Health at Work: see above** **Article 4, paragraph 4 of the Law on Communal Activities: see above** **Article 14 of the Law on Communal Activities: see above**	Law on Safety and Health at Work ("Official Gazette of RS", No. 101/05, 91/15 and 113/17 - other law) Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18)	L L	PUC or entrepreneur, or other legal entity entrusted with the performance of septic tank cleaning and removal of faeces, the owner of the septic tank

		ISO 45001 (until recently OHSAS 18001) is an internationally recognized standard for health and safety (OHS) at work. This standard covers all regulations, all forms, training, protective equipment and everything that workers must have in order to protect their safety at work.	ISO 45001 (until recently OHSAS 18001)	S	
☒	Control of nuisances (odours, flies and noise, etc) and spillages	**Article 4, paragraph 4 of the Law on Communal Activities** For use, for storage and maintenance of funds for performing communal activities, maintaining cleanliness and environmental protection, general arrangement of settlements, external appearance of the facility and arrangement of surfaces, the local self-government unit may prescribe general conditions for maintaining communal order and measures for their implementation. The decision governing the performance of utility service of the local self-government: The places where faeces are delivered must be arranged in such a way that faeces are not spoiled and unpleasant odors do not spread. These places must be equipped with vehicle washing installations, and each vehicle must be washed and disinfected after emptying. It is forbidden to pour the contents from septic tanks on public areas or any other place.	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18) The decision governing the performance of utility service of the local self-government	L S	Local self-government, PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks
☒	Pedestrian and traffic safety	**Article 4, paragraph 4 of the Law on Communal Activities** **Article 4** For use, for storage and maintenance of funds for performing communal activities, maintaining cleanliness and environmental protection, general arrangement of settlements, external appearance of the facility and arrangement of surfaces, the local self-government unit may prescribe general conditions for maintaining communal order and measures for their implementation. **Article 14 of the Law on Communal Activities** **Article 14** The executor of communal activity is obliged to organize his work and business in a way that ensures: 1) permanent and uninterrupted provision of communal services to users under the conditions and in the manner regulated by law, regulations and standards adopted on the basis of law; 2) prescribed or agreed scope and quality of communal services, which implies accuracy in terms of deadlines, safety of users in obtaining services and health and hygiene in accordance with positive regulations; 3) undertaking measures for maintenance, development and protection of communal facilities, plants and equipment, which are used for performing communal activities; 4) development and improvement of the quality and types of communal services, as well as improvement of the organization and efficiency of work.	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18)	L	Local self-government, PUC or entrepreneur, or other legal entity entrusted with cleaning septic tanks
☒	Monitoring and surveillance on transport	The decision governing the performance of utility service of the local self-government: Supervision over the implementation of services is performed by the organizational unit of the local self-government unit in charge of communal affairs and the communal police. In performing the inspection, the communal inspector is authorized to: - controls whether the activity of drainage and treatment of atmospheric and waste waters is performed in the manner and under the measures determined by the decision of the local self-government unit and acts adopted on the basis of that decision;	The decision governing the performance of utility service of the local self-government	B	Local self-government JLS

		- order the execution of established obligations and taking measures to eliminate deficiencies in the performance of activities of drainage and treatment of atmospheric and wastewater; - takes other measures determined by law.			
Notes					

Treatment plants that receive fecal sludge from on-site sanitation

In the current standards and regulations in Serbia, is there any requirement or recommendation with respect to treatment of fecal sludge from on-site sanitation systems (applicable to institutional and household on-site sanitation systems)?

☒ Yes ☐ No ☐ Partially

If yes, is any of the aspects listed below considered in such standards and regulations? (select all true answers)

	Aspects	**Specific requirements for on- site sanitation related to corresponding aspect**	**Legal reference(s)**	**Type of legal reference** (L) Law or regulation; (S)Standards; (G)Guidelines (P) Strategic plans; (T) Targets	**Responsible entity/es for the implementation at national and local level**
☒	Standards for safe treatment at treatment plant	**ART 1. of the Law on Standardization** **ART 1. -** This law regulates the principles and goals of standardization in the Republic of Serbia, the organization and activities of the national standardization body, as well as the adoption, publication, withdrawal and application of Serbian standards and related documents. **ART.133, 134, 136 of the Law on Planning and Construction** **ART.133** - The Ministry issues a construction permit for the construction of facilities, as follows: 7) ... and wastewater treatment plants with a capacity of over 200l/s **Art.134**. - Local self-government units are entrusted with the issuance of construction permits for the construction of facilities that are not specified in Article 133 of this Law. **ART.136**. - An integral part of the construction permit is an excerpt from the project for the construction permit, with the specification of all special parts of the building.	*Law on Standardization (Official Gazette of RS, No. 36/09 and 46/15)* *Law on Planning and Construction (Official Gazette of RS, No. 72/09, 81/09–correction, 64/10 – CC Decision, 24/11, 121/12, 42/13 - CC Decision, 50/13 - CC Decision, 98/13 - CC Decision, 132/14, 145/14, 83/18, 31/19, 37/19*	L L	Ministry of Economy Ministry of Construction, Transport and Infrastructure Local Self Government Ministry of Agriculture, Forestry and Water Management

		ART. 3, 4 , 5 of the Rulebook on the content, manner and procedure of preparation and manner of performing control of technical documentation according to the class and purpose of the facilities **ART. 3. -** Technical documentation contains an organized set of textual, numerical and graphic attachments, i.e. documents and projects that are made in order to determine the location, functional, technical and design characteristics of the facility, construction and performance of works and which ensures compliance with location conditions, applicable regulations, standards and norms. **Art. 4**. - Technical control includes checking: compliance with all conditions and rules contained in the location conditions; compliance with the Law and other regulations, technical norms, standards and quality norms; mutual harmonization of all parts of technical documentation; compliance of the project with the results of previous research (previous works); assessment of appropriate foundations for building foundations; checking the correctness and accuracy of technical-technological solutions of the facility and solutions for construction of facilities; stability and load-bearing capacity of the building structure and safety of the facility; rationality of designed construction products; impact on the environment and neighboring facilities, as well as checking the fulfillment of basic requirements for the facility. **Art. 5**. - Technical documentation ensures that the facility, as a whole, i.e. in each separate part, is suitable for the intended use, as well as that, in an economically acceptable time of use, the facility meets the following basic requirements: 1) mechanical resistance and stability; 2) fire safety; 3) hygiene, health and the environment; 4) safety and accessibility during use; 5) noise protection; 6) energy saving and heat retention; 7) sustainable use of natural resources. **ART.100 of the Law on Waters** **Mandatory control of the integrity of constructions** **ART.100 -** Any legal entity that undertakes wastewater collection, evacuation, and treatment or water protection shall inspect the integrity of wastewater collection, evacuation, and treatment constructions, above all with regard to water-tightness, every five years, and shall inspect wastewater quantity measurement devices once a year. The inspection of the integrity of constructions per Paragraph 1 of this article shall be performed and a certificate thereon issued by an authorized legal entity pursuant to this Law and the law which regulates the erection of constructions. The provisions of Paragraphs 1 and 2 of this article shall also apply to septic and collection pits.	*– other law and 9/20)* Rulebook on the content, manner and procedure of preparation and manner of performing control of technical documentation according to the class and purpose of the facilities (Official Gazette of RS, No. 73/19) Law on Waters (Official Gazette of RS, No. 30/10, 93/12, 101/16, 95/18 and 95/18- other law)	S L	
☒	National standards / guidelines for treated effluent	**IDENTIFIED GAP: In the relevant national legislation, the discharge of treated effluent into the recipient is assumed in which case prescribed Emission limit values (ELVs) must be met. Requirements for reuse of treated effluent are not prescribed yet.**	*Law on Waters (Official Gazette of*	L	Ministry of Agriculture, Forestry and Water

		ART. 98 of the Law on Waters **ART. 98**. – Treatment of wastewater form paragrah 1 of this article *(Any legal entity, entrepreneur, or individual who discharges wastewater directly into a recipient must provide wastewater treatment)* is performed to a level which complies with ELVs, or to a level which does not impair the environmental quality standards of the recipient, in accordance with regulations governing environmental quality standards for surface and ground waters, limit values of priority, hazardous and other polluting substances and regulation governing emission of polluting substances into water, taking into account more stringent criteria of these two. With this Article, Combined approach prescribed by Water Framework Directive (2000/60/EC) is introduced into national law. It is taken into account in the process of water permitting and IPPC permitting.	*RS, No. 30/10, 93/12, 101/16, 95/18 and 95/18-other law)*		Management Ministry of Environmental Protection
☒	National standards for treatment of wastewater	**ART. 98 of the Law on Waters** **ART. 98 -** Any legal entity, entrepreneur, or individual who discharges or disposes of any substance(s) which may pollute water, except for the individual who uses the water for own, drinking and sanitary needs, shall, prior to the release thereof into a public sewerage system or recipient, partially or completely remove such substances pursuant to this Law and special laws which regulate environmental protection and/or regulations delivered based on these laws. Treatment of wastewater form paragraph 1 of this article is performed to a level which complies with ELVs, or to a level which does not impair the environmental quality standards of the recipient, in accordance with regulations governing environmental quality standards for surface and ground waters, limit values of priority, hazardous and other polluting substances and regulation governing emission of polluting substances into water, taking into account more stringent criteria of these two. Exceptionally, more stringent terms of waste water discharge, that is more stringent values from prescribed ELVs from paragraph 2 of this article are established by water permit and/or integrated permit in accordance with regulation from paragraph 2. of this article and on the basis of environmental quality standards and limit values from article 93a of this law and the law governing integrated prevention and control of environmental pollution. The local self-governing unit shall deliver an enactment about the discharge of wastewaters into the public sewerage system. **ART. 14, 16, 17 of the Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement** **ART. 14 -** Urban waste waters discharged from the public sewerage system into the recipient shall meet at least the prescribed emission limit values for the plant with secondary treatment referred to in Appendix 2, Title III. Urban waste waters, Table 2, Emission limit values for urban waste waters discharged into the recipient. Until the construction of a plant with secondary treatment, in accordance with deadlines provided for in the plan for protection of water against pollution, discharge of urban waste waters shall be carried out in accordance with the requirements contained in water permits, along with the testing of waste water quality against the indicators for the planned treatment level and with the continual registration of the	*Law on Waters (Official Gazette of RS, No. 30/10, 93/12, 101/16, 95/18 and 95/18-other law)*	L L	Ministry of Environmental Protection Ministry of Agriculture, Forestry and Water Management

		monitored quantity of discharged waste water from the public sewerage system. **ART. 16 -** In the case that construction of public sewerage and urban waste waters treatment system is not economically viable with respect to the benefit that would be generated in terms of environmental protection, individual systems or other appropriate manners of treatment shall be used to achieve emission limit values or the same level of water protection. In the case that higher level of urban waste waters treatment originating from agglomerations smaller than 150,000 PE would not contribute to reduction of the recipient pollution, a lower level of treatment can be applied, with the following requirements: 1) At least secondary treatment or appropriate treatment of urban waste waters along with the testing of urban waste waters as prescribed by the law regulating the waters; 2) When it is proved by an environmental impact assessment study that the discharge of urban waste waters upon the applied treatment will not deteriorate the recipient quality. **ART. 17 -** Urban waste waters discharged from agglomerations with loads higher than 10,000 PE before being discharged into the recipient located in protected areas shall meet the requirements related to emission limit values upon the treatment carried out in the tertiary level installation referred to in Appendix 2, Title III. Urban waste waters, Table 2, Emission limit values for urban waste waters discharged into the recipient.	*Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement (Official Gazette of RS, No. 67/11, 48/12 and 01/16)*		
☒	National standards for treated sludge	**ART. 23. of the Law on Environmental Protection** **ART. 23.** - Sludge generated in the process of municipal wastewater treatment must be treated, disposed of and used in a way that does not endanger the environment and human health, in accordance with the law governing the protection of water from pollution. Sludge generated in the process of technological wastewater treatment must be treated, disposed of and used in accordance with the law governing waste management, except for sludge which is mining waste generated in the process of exploitation and preparation of mineral raw materials. **ART. 98 of the Law on Waters** **ART. 98. Paragraph 6 -** Sludge generated in the process of municipal wastewater treatment is treated, used or disposed of in a way that does not endanger the environment and human health, in accordance with this law, the regulation governing the emission limit values of pollutants into water and special laws governing agricultural land and waste management. **ART. 15 of the Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement** **ART. 15** - Emission limit values for the remains occurring in urban waste water treatment process are provided for in Appendix 2, Title III. Urban waste waters, Table 7, Emission limit values for the remains occurring in urban waste water treatment process (hereinafter referred to as: remains from treatment	*Law on Environmental Protection (Official Gazette of RS, No. 30/10, 93/12, 101/16, 95/18 and 95/18-other law)* *Law on Waters (Official Gazette of RS, No. 30/10, 93/12, 101/16, 95/18 and 95/18-other law)* Regulation on limit	L L L	Ministry of Environmental Protection Ministry of Agriculture, Forestry and Water Management

		process). The remains from treatment process can be used for agricultural and other purposes (e.g. for landfill coverage, for landscaping), provided that they meet the prescribed emission limit values referred to in Appendix 2, Title III. Urban waste waters, Table 7, Emission limit values for the remains from urban waste waters treatment process. Before the use, the generated remains from urban waste waters treatment process shall be treated in such a manner to reduce the number of pathogens and to adapt them to characteristics for certain purpose. The treatment of remains generated in technological waste waters treatment shall be carried out in compliance with the law that regulates waste management. <u>*Footnotes in the Table 7 regarding the use of sludge:*</u> (II) When using residues from treatment in agriculture, it is necessary to pay attention to the cycle of agricultural production, proved that soil pH ranges between 6 and 7. If treatment residues are used at pH lower than 6, increase in metal mobility must be taken into account and absorption thereof by plants, thus making it necessary to take lower limit values. Treatment residues are used in the way that plants need for nutrients is taken into account, as well as quality of soil and care must be taken to avoid pollution of surface and ground waters (III) Treatment residues can be used to cover landfills, in parks for green areas, for the improvement of soil quality where no crops will be grown for a year at least, and grazing is not planned for the year as well, for landscaping. In all the mentioned cases, soil pH should range between 6 and 7 (IV) When land is specifically used, for example for vegetable growing and grazing, certain limits are made due to risk to human health from the remaining pathogens. In that case, treatment residues are treated before use in order to reduce number of pathogens to acceptable level.	values for emissions of pollutants in waters and deadlines for their achievement (Official Gazette of RS, No. 67/11, 48/12 and 01/16)		
☒	Requirements for effluent standards from treatment plant (Emission limit values, including microbiological parameters)	**ART. 1, 13 of the Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement** **ART. 1.** - This Regulation establishes emission limit values for certain groups or categories of pollutants (hereinafter referred to as: pollutant) for the following: technological waste waters before discharge thereof into the public sewerage; technological and other waste waters directly discharged into the recipient; waters that are discharged upon their treatment from the public sewerage into the recipient, and waste waters that are discharged from septic and collection pits into the recipient, as well as deadlines for the achieve of the mentioned ELVs. The provisions of this Regulation shall not apply to the emissions generated in the thermal treatment of waste. **Emission limit values for pollutants in waste waters that are discharged from public sewerage system into the recipient upon treatment thereof** **ART. 13. Par.1, 2 and 3** – Emission limit values for pollutants in urban waste waters discharged into the recipient are provided for in Appendix 2, Title III. Urban waste waters, Table 2, Emission limit values for urban waste waters discharged into the recipient.	*Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement (Official Gazette of RS, No. 67/11, 48/12 and 01/16)*	L	Ministry of Environmental Protection Ministry of Agriculture, Forestry and Water Management

		Emission limit values for pollutants in urban waste waters, depending on the capacity of waste water treatment plant, i.e. with respect to the population equivalent (PE), are provided for in Appendix 2, Title III. Urban waste waters, Table 3, Emission limit values for urban waste waters according to the waste water treatment plant capacity. When treated waste waters are discharged into the surface waters used for bathing and recreation, water supply and irrigation, they shall meet the required limit values referred to in Appendix 2, Title III. Urban waste waters, Table 4, Emission limit values for treated urban waste waters discharged into the surface waters used for bathing and recreation, water supply and irrigation. (Includes microbiological parameters: coliform, fecal coliforms and fecal streptococci)			
☒	Requirements for treated sludge from treatment plant standards (Emission limit values, including microbiological parameters)	**ART. 15 of the Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement** **ART. 15 -** Emission limit values for the remains occurring in urban waste water treatment process are provided for in Appendix 2, Title III. Urban waste waters, Table 7, Emission limit values for the remains occurring in urban waste water treatment process (hereinafter referred to as: remains from treatment process). The remains from treatment process can be used for agricultural and other purposes (e.g. for landfill coverage, for landscaping), provided that they meet the prescribed emission limit values referred to in Appendix 2, Title III. Urban waste waters, Table 7, Emission limit values for the remains from urban waste waters treatment process. Before the use, the generated remains from urban waste waters treatment process shall be treated in such a manner to reduce the number of pathogens and to adapt them to characteristics for certain purpose. The treatment of remains generated in technological waste waters treatment shall be carried out in compliance with the law that regulates waste management. ***Prescribed parameters***: Inorganic substances (Lead, Cadmium, Chromium, Nickel, Mercury, Copper, Zinc, Arsenic) Organic substances (AOH, RSV, PCCD/F) Pathogens (Salmonella, Enterovirus) **Rulebook on categories, testing and classification of waste:** This Ordinance also provides minimum criteria for waste disposal in the form of limit values of appropriate quality parameters and, accordingly, the manner of its disposal.	*Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement (Official Gazette of RS, No. 67/11, 48/12 and 01/16)* Rulebook on categories, testing and classification of waste (Official Gazette of RS, No. 56/10 and 93/19)	L L	Ministry of Environmental Protection Ministry of Agriculture, Forestry and Water Management
☒	ELV exceedance management	**ART. 101, 196, 204 of the Law on Waters** **Obligations in the event of an immediate pollution threat** **ART. 101. -** If there is an immediate pollution threat, or any threat of pollution of surface or ground water, the legal entity, entrepreneur, or individual referred to in Article 98 of this law shall undertake measures to prevent, or reduce and remediate, such water pollution and shall plan the funding and	*Law on Waters (Official Gazette of RS, No. 30/10, 93/12, 101/16,*	L	Ministry of Environmental Protection Ministry of

		timeframe therefor. If any legal entity, entrepreneur, or individual fails to undertake water pollution reduction and/or remediation measures per Paragraph 1 of this article, the public water management enterprise shall undertake such measures and charge the costs to the party. **Inspection oversight** **ART. 196**. - The Ministry, via the inspector responsible for water management affairs (hereinafter: the Water Inspector), shall provide inspection oversight pertaining to the implementation of the provisions of this Law and any regulations based thereon. The Water Inspector shall also provide inspection oversight of the implementation of this Law, other regulations and/or general enactments pertaining to the erection of new or reconstruction of existing constructions or the undertaking of other works which might bring about changes to the water regime. The ministry responsible for health affairs, via the health inspector, shall provide inspection oversight pertaining to the health safety of drinking water, water for sanitary and hygienic needs, and water for bathing. The ministry responsible for environmental protection affairs, via the environmental protection inspector, shall provide inspection oversight pertaining to the quality of wastewaters discharged into recipients. The autonomous province shall be entrusted with inspection oversight per Paragraphs 1, 2, 3 and 4 of this article within the territory of the autonomous province, as an entrusted public administration task. The City of Belgrade shall be entrusted with inspection oversight per Paragraphs 1, 2, 3 and 4 of this article within the territory of the City of Belgrade, as an entrusted public administration task. **Measures ordered by the environmental protection inspector** **ART. 204. -** In discharging his or her duties pursuant to Article 201 of this Law, the environmental protection inspector shall be authorized to: 1) prohibit wastewater discharge if any emission limit value per Article 93, Paragraph 2 of this law has been exceeded; 2) prohibit wastewater discharge in the cases identified in Article 97, Items 1, 2, 4 and 6 of this Law; 3) order to the one who is discharging wastewaters to set flow meters and continuously measure waste water quantities, as well as to inspect waste water quality parameters and to deliver a report on performed measurements to the public water management company, ministry competent for environmental protection, and the administrative authority competent for state water quality monitoring. 3a) order temporarily discontinue of operations or activities to any legal entity, entrepreneur, or individual referred to in article 99. Paragraph 1 and 2 of this law 4) order water quality testing in cases where there is a suspicion that the emission limit values have been exceeded; 5) inspect the business books and business premises of the person liable to pay the fee for water pollution from this Law, in order to collect the data necessary for the calculation of the fees; 6) submits a request for initiating misdemeanor proceedings and a report for an economic crime, in accordance with this Law; 7) undertake other measures and actions for which he is authorized by this Law or a regulation adopted on the basis thereof. Any measure per Paragraph 1, Items 1 through 4 of this article shall be ordered by means of a determination issued by the environmental protection inspector.	*95/18 and 95/18-other law)*		Agriculture, Forestry and Water Management Ministry of Finances

		ART. 154, 155 of the Law on Fees for the Use of Public Goods **Fee for water pollution** **ART. 154. -** Fee for water pollution is paid for direct or indirect pollution of the recipient's water in proportion to the degree of pollution of wastewater, or other substances that degrade the recipient's water quality and worsen the conditions of its use. **Obligor of compensation** **ART. 155. -** Obligor of payment of compensation for water pollution is a legal entity, entrepreneur, ie natural person who: 1. discharges wastewater that directly pollutes the recipient's water or worsens its quality and conditions of its use, including persons discharging wastewater based on water permits or decisions on integrated environmental protection conditions (integrated permits, impact assessment studies, etc.), persons who discharge wastewater into the public sewerage system or into septic tanks, in the amount of more than 30 cubic meters (m3) per day, as well as legal entities which discharge sanitary and other waste waters, and to which water is not delivered through public water supply facilities (water supply); 2. manufactures or imports mineral fertilizers, chemical plant protection products and phosphate-based detergents and places them on the market on the territory of the Republic of Serbia.	Law on Fees for the Use of Public Goods (Official Gazette of RS, No. 95/18, 49/19 and 86/19 – adjusted dinar amounts)	L	
☒	Control of effluent quality	**ART. 99, 105 of the Law on Waters** **Obligation to measure the quantity and quality of wastewater** **ART. 99. -** Legal entity, entrepreneur, or natural person referred to in Article 98 of this Law, is obliged to install devices for measuring and continuously measure the amount of wastewater, to examine the parameters of wastewater quality and their impact on the recipient, to keep the reports on the performed measurements for at least five years and to submit them to the public water management company, the ministry in charge of environmental protection and the Environmental Agency once a year. The person referred to in paragraph 1 of this Article who has devices, facilities, ie wastewater treatment plants, is obliged to measure the quantities and examine the quality of wastewater before and after treatment, to ensure regular operation of devices, facilities, or wastewater treatment plants water and to keep a diary of their work. If in the process of production in a certain plant or part of the plant waste waters containing hazardous substances are generated, the person referred to in paragraph 1 is obliged to measure the quantity and test the quality of wastewater before connecting it with other wastewater streams. The Minister and the Minister responsible for environmental protection shall prescribe in more detail: 1) manner, conditions and place for installation of devices for measuring quantities, taking samples and testing the quality of wastewater and their impact on the recipient; 2) the content of the report on the performed measurements of quantities and testing of wastewater quality and their impact on the recipient and the manner and deadlines for its delivery. **ART. 105**. - Testing of wastewater quality may be performed by a legal entity authorized by the Ministry of Agriculture, Forestry and Water Management to perform these activities. Examination of surface and groundwater quality may be performed by a legal entity authorized by the Ministry to	*Law on Waters (Official Gazette of RS, No. 30/10, 93/12, 101/16, 95/18 and 95/18-other law)*	L	Ministry of Environmental Protection Ministry of Agriculture, Forestry and Water Management Accreditation Body of Serbia

		perform these activities. The Minister authorizes the legal entity referred to in para. 1 and 2 of this Article, if there are: 1) act on granting accreditation by the competent accreditation body; 2) references for performing the tasks referred to in paragraph 1 of this Article. The decision of the Minister referred to in paragraph 3 of this Article is final in the administrative procedure and an administrative dispute may be initiated against him. List of authorized legal entities para. 1 and 2 of this Article shall be published on the website of the Ministry. **Rulebook on methods and conditions for wastewater quantity measurement and quality testing, and the content of the measurement report** This Rulebook prescribes in more detail the manner and conditions for measuring the quantity and testing of wastewater quality and the content of the report on the performed measurements. **Measurement of the quantity of wastewater** **ART. 7. Paragraph 7.** - Measurement of the quantity of wastewater is performed in accordance with Serbian standards given in Annex 3. - Reference methods for conducting wastewater monitoring, which is printed with this rulebook and forms an integral part of it, and if there are no such standards, appropriate international and European standards can be applied. **Sampling and testing methods** **ART. 20.** - In sampling, preparation of samples, their storage and warehousing, handling of samples, as well as in field testing and analysis of wastewater samples, reference methods are applied according to the requirements of SRPS ISO/IEC 17025, set out in Annex 3. If such standards do not exist, apply appropriate international and European standards as well as non-standardized methods developed in accredited laboratories and validated according to the requirements of SRPS ISO/IEC 17025, which give equivalent results in terms of measurement uncertainty of testing in accordance with the requirements of regulations governing ELVs. General competence requirements for testing laboratories and calibration laboratories - Standard	Rulebook on methods and conditions for wastewater quantity measurement and quality testing, and the content of the measurement report (Official Gazette of RS, No. 33/2016) SRPS ISO/IEC 17025:2017	L S	
☐	Reuse of treated effluent	**IDENTIFIED GAPS: There are no references to the reuse of treated effluent in the national legislation.**			
☒	Type and classification of waste	**ART. 7, 8 of the Law on Waste Management** **Types of waste** **ART. 7.** - Types of waste in terms of this Law are: 1) municipal waste (household waste); 2) commercial waste;	*Law on Waste Management (Official Gazette of RS, No. 36/09,*	L	Ministry of Environmental Protection

		3) industrial waste. Waste referred to in paragraph 1 of this Article, depending on the hazardous characteristics that affect human health and the environment, may be: 1) inert; 2) harmless; 3) dangerous. **Waste classification** **ART. 8.** Waste is classified according to the waste catalog. The waste catalog is a summary list of non-hazardous and hazardous waste by origin and composition. Hazardous waste is classified, when necessary, according to the concentration limit values of hazardous substances. The owner and/or other holder of waste, i.e. the operator, is obliged to classify waste in the prescribed manner, in accordance with this Law. In order to determine the composition and hazardous characteristics of waste, the person referred to in paragraph 4 of this Article is obliged to perform testing of hazardous waste, as well as waste that according to the origin, composition and characteristics may be hazardous waste. The Minister responsible for environmental protection (hereinafter: the Minister) shall prescribe: 1) the waste catalog; 2) list of waste categories (Q list); 3) list of hazardous waste categories according to origin and composition (Y list); 4) list of hazardous characteristics of waste (H list); 5) list of waste components due to which waste is considered hazardous (C list); 6) limit values of the concentration of hazardous components in the waste on the basis of which the characteristics of the waste are determined; 7) list of procedures and methods of waste disposal and reuse (D list and R list); 8) types, content and form of the report on waste testing; 9) types of parameters for determining the physical and chemical properties of hazardous waste intended for physical and chemical treatment; 10) types of parameters for waste testing for the needs of thermal treatment; 11) types of parameters for waste testing and testing of eluate intended for disposal; 12) manner and procedure of waste classification. In the regulation referred to in paragraph 6, item 2), 3) and 5) of this Law, the Minister shall determine the list of Serbian standards that contain technical requirements for waste categories and components. The inclusion of a substance or object in the list referred to in paragraph 7 of this Article does not mean that it is waste in all cases, but shall be considered waste only if it meets the requirements in accordance with this Law. The re-classification of hazardous waste as non-hazardous waste cannot be achieved by diluting or mixing the waste with the aim of reducing the initial concentration of hazardous substances to a level below the limit values for defining hazardous waste.	*88/10, 14/16 and 95/18 – other law)*		

		Waste may be considered non-hazardous waste in accordance with the waste catalog referred to in paragraph 2 of this Article. **Rulebook on categories, testing and classification of waste** This Rulebook prescribes: Catalog of waste; list of waste categories (Q list); a list of categories of hazardous waste according to their nature or the activity by which they are generated (Y list); a list of waste components that make it hazardous (C list); list of hazardous waste characteristics (X list); list of procedures and methods of waste disposal and reuse (D and R list); concentration limits of hazardous components in waste on the basis of which waste characteristics are determined; types of parameters for determining the physico-chemical properties of hazardous waste intended for physico-chemical treatment; types of parameters for waste testing for thermal treatment; types of parameters for waste testing and testing of eluate intended for disposal; types, content and form of the waste testing report and the manner and procedure of waste classification. In this Rulebook, following categories are identified: <u>19 08 wastes from waste water treatment plants not otherwise specified:</u> 19 08 01 waste from mechanical separation on gratings 19 08 02 wastes from sand filter 19 08 05 sludge from urban waste water treatment 19 08 06* saturated or spent ion exchange resins 19 08 07* solutions and sludge from ion exchange regeneration 19 08 08* wastes from membrane system containing heavy metals 19 08 09 mixtures of fats and oils from oil/water separation containing only edible oils and fats 19 08 10* mixtures of fats and oils from oil/water separation other than those specified in 19 08 09 19 08 11* sludges containing dangerous substances from biological treatment of industrial effluents 19 08 12 sludges from biological treatment of industrial effluents other than those mentioned in 19 08 11 19 08 13 * sludges containing hazardous substances from all other treatments of industrial waste water 19 08 14 sludges from the treatment of other industrial waste water other than those mentioned in 19 08 13 19 08 99 Waste not otherwise specified **Asterisk marks hazardous waste* 20 03 other municipal wastes **20 03 04 sludge from septic tanks** 20 03 06 wastes from sewage	Rulebook on categories, testing and classification of waste (Official Gazette of RS, No. 56/10 and 93/19)	L	
☒	Worker health and safety	**ART. 1 of the Law on Safety and Health at Work** This law regulates the implementation and improvement of safety and health at work of persons who participate in work processes, as well as persons who find themselves in the work environment, in order to prevent injuries at work, occupational diseases and diseases related to work. The rights, obligations and responsibilities of employers and employees, competencies and measures whose application and implementation ensures safety and health at work are exercised in accordance with this law and regulations adopted on the basis of the law.	*Law on Safety and Health at Work (Official Gazette of RS, No. 101/05, 91/15 and 113/17 – other law)*	L	Ministry of Labor, Employment, Veterans and Social Affairs
☒	Control of nuisances (odours, flies and noise,	**ART 2. of the Law on Protection against Noise in the Environment** **Protection of the environment from noise**	*Law on Protection*	L	Ministry of Environmental

	etc) from treatment facilities	**ART 2. -** Protection of the environment from noise is provided by determining the conditions and taking protection measures that are part of an integrated system of environmental protection and relate to: 1) spatial, urban and acoustic planning; 2) sound protection; 3) strategic assessment of the impact of plans and programs, i.e. assessment of the impact of projects on the environment, as well as on the issuance of a permit for the construction and operation of the plant, i.e. performance of activities; 4) prescribing limit values of noise indicators in the environment; etc. **ART 55. of the Law on Air Protection** **Other measures for prevention and reduction of air pollution** **Measures for prevention and remediation** **ART 55. Paragraph 4. -** The operator of a stationary source of pollution, where in the process of performing activities may emit unpleasant odor gases, is obliged to apply measures that will lead to odor reduction concentration of emitted substances in waste gas below the emission limit value. **From the Law on Protection of the Population from Infectious Diseases** Implementation of preventive disinfection, disinsection and deratization in facilities under sanitary supervision and their immediate surroundings and in other facilities where social or public activities are performed, is one of the general measures for protection of the population from infectious diseases, in accordance with the Law on Protection of the Population from Infectious diseases. **ART. 8 of the Law on Sanitary Surveillance** **ART. 8, Para. 10. other facilities** Facilities subject to sanitary supervision are defined by the Law on Sanitary Surveillance.	*against Noise in the Environment (Official Gazette of RS, No. 36/09 and 88/10)* Law on Air Protection (Official Gazette of RS, No. 36/09 and 10/13) Law on Protection of the Population from Infectious Diseases (Official Gazette of RS, No. 15/16 and 68/20) Law on Sanitary Surveillance (Official Gazette of RS, No 125/2004)	L L L	Protection Ministry of Health
☐	Certification of proprietary systems				
☒	Monitoring and surveillance of treatment plants	**ART. 100 of the Law on Waters** **Obligation to control the correctness of facilities** **ART. 100. –** A legal entity that collects, drains and treats wastewater and water protection is obliged to control the correctness of facilities for collection, drainage and treatment of wastewater, primarily in terms of water tightness, every five years, and in the case of devices for measuring the quantity of wastewater once a year. The control of the correctness of the facilities referred to in paragraph 1 of this Article shall be performed by an authorized legal entity, in accordance with this Law and the law governing the construction of facilities, and shall issue a certificate thereof. The provisions of para. 1 and 2 of this article also refer to septic tanks and collection pits.	*Law on Waters (Official Gazette of RS, No. 30/10, 93/12, 101/16, 95/18 and 95/18-other law)*	L	Ministry of Construction, Transport and Infrastructure Local Self Government Ministry of Agriculture, Forestry

		ART. 175 of the Law on Planning and Construction **Rights and duties of the construction inspector** **Article 175** In performing the inspection supervision, the construction inspector has the right and duty to check whether: 12) a use permit has been issued for the facility used; 13) the facility is used for the purpose for which the construction or use permit was issued; 14) perform other tasks determined by law or a regulation adopted on the basis of law. The construction inspector is authorized to supervise the use of the facility and to take measures if it determines that the use of the facility endangers human life and health, environmental safety, endangers the environment and if improper use affects the stability and safety of the facility.	Law on Planning and Construction (Official Gazette of RS, No. 72/09, 81/09 - corr, 64/10 – CC Decision, 24/11, 121/12, 42/13 - CC Decision, 50/13 - CC Decision, 98/13 - CC Decision, 132/14, 145/14, 83/18, 31/19, 37/19 – other law and 9/20)	L	and Water Management

Notes:

Treatment plant sludge management (SM)

In the current standards and regulations in Serbia, is there any requirement or recommendation with respect to treatment plant sludge management (SM) (applicable to institutional and household on-site sanitation systems)?

☐ Yes ☐ No ☒ Partially

If yes, is any of the aspects listed below considered in such standards and regulations? (select all true answers)

	Aspects	**Specific requirements for on- site sanitation related to corresponding aspect**	**Legal reference(s)**	**Type of legal reference** (L) Law or regulation; (S)Standards; (G)Guidelines (P) Strategic plans; (T) Targets	**Responsible entity/es for the implementation at national and local level**
☒	Is sludge management (SM) recognized in sanitation sector	**ART. 23. of the Law on Environmental Protection** **ART. 23**. - Sludge generated in the process of municipal wastewater treatment must be treated, disposed of and used in a way that does not endanger the environment and human health, in accordance with the law governing the protection of water from pollution. Sludge generated in the process of technological wastewater treatment must be treated, disposed of and used in accordance with the law governing waste management, except for sludge which is mining waste generated in the process of exploitation and preparation of mineral raw materials.	Law on Environmental Protection (Official Gazette of RS, No. 30/10, 93/12, 101/16, 95/18 and 95/18-other law)	L	Ministry of Environmental Protection Ministry of Agriculture, Forestry and Water

		ART. 98. of the Law on Waters **ART. 98. Paragraph 6** - Sludge generated in the process of municipal wastewater treatment is treated, used or disposed of in a way that does not endanger the environment and human health, in accordance with this law, the regulation governing the emission limit values of pollutants into water and special laws governing agricultural land and waste management.	Law on Waters (Official Gazette of RS, No. 30/10, 93/12, 101/16, 95/18 and 95/18-other law)	L	Management
		ART. 15 of the Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement **ART. 15** - Emission limit values for the remains occurring in urban waste water treatment process are provided for in Appendix 2, Title III. Urban waste waters, Table 7, Emission limit values for the remains occurring in urban waste water treatment process (hereinafter referred to as: remains from treatment process). The remains from treatment process can be used for agricultural and other purposes (e.g. for landfill coverage, for landscaping), provided that they meet the prescribed emission limit values referred to in Appendix 2, Title III. Urban waste waters, Table 7, Emission limit values for the remains from urban waste waters treatment process. Before the use, the generated remains from urban waste waters treatment process shall be treated in such a manner to reduce the number of pathogens and to adapt them to characteristics for certain purpose. The treatment of remains generated in technological waste waters treatment shall be carried out in compliance with the law that regulates waste management.	Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement (Official Gazette of RS, No. 67/11, 48/12 and 01/16)	L	
		From the Rulebook on categories, testing and classification of waste In the Rulebook on categories, testing and classification of waste, following categories of sludge as waste are identified: <u>19 08 wastes from waste water treatment plants not otherwise specified:</u> 19 08 01 waste from mechanical separation on gratings 19 08 02 wastes from sand filter 19 08 05 sludge from urban waste water treatment 19 08 06* saturated or spent ion exchange resins 19 08 07* solutions and sludge from ion exchange regeneration 19 08 08* wastes from membrane system containing heavy metals 19 08 09 mixtures of fats and oils from oil/water separation containing only edible oils and fats 19 08 10* mixtures of fats and oils from oil/water separation other than those specified in 19 08 09 19 08 11* sludges containing dangerous substances from biological treatment of industrial effluents 19 08 12 sludges from biological treatment of industrial effluents other than those mentioned in 19 08 11 19 08 13 * sludges containing hazardous substances from all other treatments of industrial wastewater 19 08 14 sludges from the treatment of other industrial waste water other than those mentioned in 19 08 13 19 08 99 Waste not otherwise specified **Asterisk marks hazardous waste* 20 03 other municipal wastes	Rulebook on categories, testing and classification of waste (Official Gazette of RS, No. 56/10 and 93/19)	L	

		20 03 04 sludge from septic tanks 20 03 06 wastes from sewage			
☐	Surveillance of SM	**IDENTIFIED GAP: Not systematically arranged, on case to case basis**			
☐	SM services (who provides, responsibilities)	**IDENTIFIED GAP: Not systematically arranged, on case to case basis**			
☐	Monitoring of performance of SM services	**IDENTIFIED GAP: Not systematically arranged, on case to case basis**			
☒	Requirements for SM treatment	**ART. 15 of the Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement** Requirements for sludge treatment are partially covered in legislation through prescribing ELV values for sludge generated on Urban Waste Water Treatment Plants, in case it will be further used: **ART. 15** - Emission limit values for the remains occurring in urban waste water treatment process are provided for in Appendix 2, Title III. Urban waste waters, Table 7, Emission limit values for the remains occurring in urban waste water treatment process (hereinafter referred to as: remains from treatment process). The remains from treatment process can be used for agricultural and other purposes (e.g. for landfill coverage, for landscaping), provided that they meet the prescribed emission limit values referred to in Appendix 2, Title III. Urban waste waters, Table 7, Emission limit values for the remains from urban waste waters treatment process. Before the use, the generated remains from urban waste waters treatment process shall be treated in such a manner to reduce the number of pathogens and to adapt them to characteristics for certain purpose. The treatment of remains generated in technological waste waters treatment shall be carried out in compliance with the law that regulates waste management. *Footnotes in the Table 7 regarding the use of sludge:* (II) When using residues from treatment in agriculture, it is necessary to pay attention to the cycle of agricultural production, proved that soil pH ranges between 6 and 7. If treatment residues are used at pH lower than 6, increase in metal mobility must be taken into account and absorption thereof by plants, thus making it necessary to take lower limit values. Treatment residues are used in the way that plants need for nutrients is taken into account, as well as quality of soil and care must be taken to avoid pollution of surface and ground waters, (III) Treatment residues can be used to cover landfills, in parks for green areas, for the improvement of soil quality where no crops will be grown for a year at least, and grazing is not planned for the year as well, for landscaping. In all the mentioned cases, soil pH should range between 6 and 7, (IV) When land is specifically used, for example for vegetable growing and grazing, certain limits are made due to risk to human health from the remaining pathogens. In that case, treatment residues are treated before use in order to reduce number of pathogens to acceptable level.	Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement (Official Gazette of RS, No. 67/11, 48/12 and 01/16)	L	Ministry of Environmental Protection Ministry of Agriculture, Forestry and Water Management

☒	Requirements for pathogen inactivation	**ART. 15 of the Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement** **ART. 15** - Residues from urban waste water treatment may be used for agricultural and other purposes (eg to cover landfills, to repair landscapes) if they meet the prescribed emission limit values set out in Annex 2. Chapter III. Municipal wastewater, Table 7. Emission limit values for residues from municipal wastewater treatment. Prior to use, the resulting residues from municipal wastewater treatment must be treated in such a way as to reduce the number of pathogens and adapt them to the properties for the appropriate purpose. *With this Regulation, limit values are prescribed for pathogens Salmonella and Enterovirus.*	Regulation on limit values for emissions of pollutants in waters and deadlines for their achievement (Official Gazette of RS, No. 67/11, 48/12 and 01/16)	L	Ministry of Environmental Protection
☐	Requirements for control and reduction of antimicrobial resistance	**IDENTIFIED GAP: Not systematically arranged, on case to case basis**			
☐	Is the waste to resource recognized and addressed in sanitation sector	**IDENTIFIED GAP: Not systematically arranged, on case to case basis**			
☐	Requirements for sludge use / disposal	**IDENTIFIED GAP: Not systematically arranged, on case to case basis**			
☒	Standards for sludge disposed of after treatment in treatment plant	**From the Rulebook on categories, testing and classification of waste** This Rulebook provides minimum criteria for waste disposal in the form of limit values of appropriate quality parameters and, accordingly, the manner of its disposal.	Rulebook on categories, testing and classification of waste (Official Gazette of RS, No. 56/10 and 93/19)	L	Ministry of Environmental Protection

Notes:
In the framework of the project funded by European Union, a proposal of National sludge management strategy and implementation plan was prepared in December 2018. From the legal point of view, it gave the overview of the transposition of only legal basis for sludge management at EU level - Sewage sludge directive, 86/278/EC, which seeks to encourage the use of sewage sludge in agriculture and to regulate its use in such a way as to prevent harmful effects on soil, vegetation, animals and humans. The proposed strategy also gave the broader picture of the state of play regarding the sludge management and the expectations in future since a number of waste water treatment plants construction is planned and expected rates of generated sludge are huge. The preparation of a separate Law on sludge management is proposed by the project, but it is yet left unclear whether it will be applied or sludge management will be incorporated into the Law on waste management. Most certainly the sludge management will be in the competence of the Ministry of Environmental Protection, and the new policies and legislative solutions will give much clearer and more comprehensive picture of the sludge management.

Costing and financing of national and local implementation plans addressing components of sanitation chain

In the current standards and regulations in Serbia, is there any requirement or recommendation with respect to costing and financing of national and local implementation plans addressing components of sanitation chain (applicable to institutional and household on-site sanitation systems)?

☒ Yes ☐ No ☐ Partially

If yes, is any of the aspects listed below considered in such standards and regulations? (select all true answers)					
Aspects		**Specific requirements for on- site sanitation related to corresponding aspect**	**Legal reference(s)**	**Type of legal reference** (L) Law or regulation; (S)Standards; (G)Guidelines (P) Strategic plans; (T) Targets	**Responsible entity/es for the implementation at national and local level**
☒	Sanitation/ excreta disposal/point of use	**Article 2 of the Law on Republic Administrative Fees** Article 2 For files and actions in administrative matters, as well as for other files and actions with bodies, fees shall be paid in accordance with the provisions of this Law.	Law on Republic Administrative Fees ("Official Gazette of RS", No. 43/2003, …, 98/2020 – adjusted dinar amounts)	(L)	Local self-government
☒	Containment	**Article 2 of the Law on Republic Administrative Fees** Article 2 For files and actions in administrative matters, as well as for other files and actions with bodies, fees shall be paid in accordance with the provisions of this Law.	Law on Republic Administrative Fees ("Official Gazette of RS", No. 43/2003, …, 98/2020 – adjusted dinar amounts)	(L)	Local self-government
☒	Emptying	**From the Law on Communal Activities** **VII Financing of utility activities** Sources of funds for performing and developing communal activities **Article 24** Funds for the performance and development of communal activities are provided from: 1) revenues from the sale of utility services. 2) revenues from utility fees. 3) income from the concession fee, i.e. the fee paid by the private partner on the basis of a public contract, if any. 4) budget revenues of the local self-government unit. 5) earmarked funds of other levels of government. 6) other sources, in accordance with the law. Communal activities where the end user can be determined are primarily financed from the prices of communal services, and communal activities where the end user cannot be determined are financed from the budget of the local self-government unit, i.e. communal fees. Principles for determining the prices of communal services	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18)	(L)	Local self-government Public communal company (PUC) Another operator

		Article 25 Utility prices are determined based on the following principles: 1) application of the "consumer pays" principle. 2) application of the "polluter pays" principle. 3) sufficiency of the price to cover operating expenses. 4) compliance of utility prices with the principle of affordability. 5) non-existence of price differences between different categories of consumers, unless the difference is based on different costs of providing utility services. If different calculation methods are applied for different categories of utility users, care will be taken to ensure that the price is proportional to the cost of providing that service. The local self-government unit may prescribe that in the procedure of controlling the use of the communal service, a special price shall be charged in the case of the use of the communal service in a manner that is in contradiction with the regulations governing that communal activity. Utility prices can be paid in advance.			
☒	Transport of excreta and wastewater to treatment	**From the Law on Communal Activities** **VII Financing of utility activities** Sources of funds for performing and developing communal activities **Article 24** Funds for the performance and development of communal activities are provided from: 1) revenues from the sale of utility services. 2) revenues from utility fees. 3) income from the concession fee, i.e. the fee paid by the private partner on the basis of a public contract, if any. 4) budget revenues of the local self-government unit. 5) earmarked funds of other levels of government. 6) other sources, in accordance with the law. Communal activities where the end user can be determined are primarily financed from the prices of communal services, and communal activities where the end user cannot be determined are financed from the budget of the local self-government unit, i.e. communal fees. Principles for determining the prices of communal services **Article 25** Utility prices are determined based on the following principles: 1) application of the "consumer pays" principle. 2) application of the "polluter pays" principle. 3) sufficiency of the price to cover operating expenses. 4) compliance of utility prices with the principle of affordability. 5) non-existence of price differences between different categories of consumers, unless the difference is based on different costs of providing utility services. If different calculation methods are applied for different categories of utility users, care will be taken to ensure that the price is proportional to the cost of providing that service.	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18)	(L)	Local self-government Public communal company (PUC) Another operator

		The local self-government unit may prescribe that in the procedure of controlling the use of the communal service, a special price shall be charged in the case of the use of the communal service in a manner that is in contradiction with the regulations governing that communal activity. Utility prices can be paid in advance.			
☒	Treatment of fecal sludge from on-site facility	**From the Law on Communal Activities** **VII Financing of utility activities** Sources of funds for performing and developing communal activities **Article 24** Funds for the performance and development of communal activities are provided from: 1) revenues from the sale of utility services. 2) revenues from utility fees. 3) income from the concession fee, i.e. the fee paid by the private partner on the basis of a public contract, if any. 4) budget revenues of the local self-government unit. 5) earmarked funds of other levels of government. 6) other sources, in accordance with the law. Communal activities where the end user can be determined are primarily financed from the prices of communal services, and communal activities where the end user cannot be determined are financed from the budget of the local self-government unit, i.e. communal fees. Principles for determining the prices of communal services **Article 25** Utility prices are determined based on the following principles: 1) application of the "consumer pays" principle. 2) application of the "polluter pays" principle. 3) sufficiency of the price to cover operating expenses. 4) compliance of utility prices with the principle of affordability. 5) non-existence of price differences between different categories of consumers, unless the difference is based on different costs of providing utility services. If different calculation methods are applied for different categories of utility users, care will be taken to ensure that the price is proportional to the cost of providing that service. The local self-government unit may prescribe that in the procedure of controlling the use of the communal service, a special price shall be charged in the case of the use of the communal service in a manner that is in contradiction with the regulations governing that communal activity. Utility prices can be paid in advance.	Law on Communal Activities ("Official Gazette of RS", No. 88/11, 104/16 and 95/18)	(L)	Local self-government Public communal company (PUC) Another operator
Notes:					

Additional Feedback
Please add additional information and references of relevant national regulations and policies or programmes addressing aspects related to management of SMOSS, if any.

Contact information of respondent

First Name	Last Name
Dragana Katarina	Jovanovic Paunovic
Affiliation	Work title
Institute of Public Health of Serbia	Head of the department on drinking and bathing water quality

Thank you for taking the time to fill out this checklist.

2. Relevant policies and standards

National Laws				
Law/item	**Title**	**Date**	**General scope of relevant listed policies and standards**	**Ministry**
Law	Law on Air Protection	Official Gazette of RS, No. 36/2009 and 10/2013	This law regulates the management of air quality and determines the measures, manner of organization and control of the implementation of protection and improvement of air quality as a natural value of general interest that enjoys special protection. The provisions of this law do not apply to pollution caused by radioactive substances, industrial accidents and natural disasters.	Ministry for Environmental Protection
Law	Law on Communal Activities	Official Gazette of RS, No. 88/11, 104/16 and 95/18)	This law determines communal activities and regulates general conditions and the manner of their performance.	Ministry of Construction, Transport and Infrastructure
Law	Law on Environmental Protection	Official Gazette of RS, No. 135/2004, 36/2009, 36/2009 - other law, 72/2009 - other law, 43/2011 - US decision, 14/2016, 76/2018, 95/2018 - other law and 95/2018 - other law	This law regulates the integrated system of environmental protection which ensures the realization of the human right to life and development in a healthy environment and a balanced relationship between economic development and the environment in the Republic of Serbia.	Ministry for Environmental Protection
Law	Law on Fees for the Use of Public Goods	Official Gazette of RS, No. 95/18, 49/19 and 86/19 – adjusted dinar amounts	This law regulates fees for the use of public goods, as follows: payer, basis, amount, manner of determination and payment, affiliation of income from fees, as well as other issues of importance for determining and paying fees for use of public goods.	Ministry of Finances
Law	Law on Planning and Construction	Official Gazette of RS, No. 72/09, 81/09-correction, 64/10-US, 24/11, 121/12, 42/13-US, 50 / 13-US, 98/13-US, 132/14, 145/14, 83/18, 31/19,37/2019 and 9/2020	This law regulates: conditions and manner of arranging space, arranging and using construction land and construction of facilities; supervising the application of the provisions of this Law and inspection supervision; other issues of importance for landscaping, landscaping and use of construction land and for the construction of facilities. The provisions of this law do not apply to the planning and arrangement of space, ie construction and removal of facilities that are considered military complexes or military facilities in terms of the law governing defense, as well as the construction of facilities that are considered mining in terms of the law governing mining. facilities, plants and devices.	Ministry of Construction, Transport and Infrastructure
Law	Law on Protection against Noise in the Environment	Official Gazette of RS, No. 36/2009 and 88/2010	This law regulates: subjects of environmental protection from noise; measures and conditions for protection against noise in the environment; environmental noise measurement; access to noise information; supervision and other issues of importance for the protection of the	

			environment and human health. The provisions of this Law do not apply to noise generated at the workplace and in the work environment, noise generated in a vehicle, noise originating from military activities on army training grounds and activities for protection against natural disasters, natural and other accidents, noise from activities in household or noise from a neighboring household, as well as the noise to which those who create it are exposed.	
Law	Law on Protection of the Population from Infectious Diseases	Official Gazette of RS, No. 15/16 and 68/20	This law regulates the protection of the population against infectious diseases and special health issues, determines infectious diseases that endanger the health of the population of the Republic of Serbia and whose prevention and control is of general interest to the Republic of Serbia, the implementation of epidemiological surveillance and measures, the manner of their implementation and the provision of funds for their implementation, exercising supervision over the enforcement of this law, as well as other issues of importance for the protection of the population against infectious diseases.	Ministry of Health
Law	Law on Republic Administrative Fees	Official Gazette of RS, No. 43/2003, …, 98/2020 – adjusted dinar amounts	This law regulates the republic administrative fees (hereinafter: the fee). For files and actions in administrative matters, as well as for other files and actions with bodies, fees shall be paid in accordance with the provisions of this law.	Ministry of Finances
Law	Law on Safety and Health at Work	Official Gazette of RS, No. 101/2005, 91/2015 and 113/2017 - other law	This law regulates the implementation and improvement of safety and health at work of persons who participate in work processes, as well as persons who are found in the work environment, in order to prevent injuries at work, occupational diseases and diseases related to work. The rights, obligations and responsibilities of employers and employees, competencies and measures whose application and implementation ensures safety and health at work are exercised in accordance with this law and regulations adopted on the basis of the law.	Ministry of Labor, Employment, Veterans and Social Affairs
Law	Law on Sanitary Surveillance	Official Gazette of RS, No 125/2004	This law regulates the tasks of sanitary supervision, the manner and procedure of performing sanitary supervision, the areas and facilities that are subject to sanitary control and the sanitary conditions that these facilities must fulfill, as well as the powers, rights and duties of sanitary inspectors in the sanitary supervision procedure are determined.	Ministry of Health
Law	Law on Standardization	Official Gazette of RS, No. 36/09 and 46/15	This law regulates the principles and goals of standardization in the Republic of Serbia, the organization and activities of the national standardization body, as well as the adoption, publication, withdrawal and application of Serbian standards and related documents.	Government

Law	Law on Waters	Official Gazette of RS, No. 30/10, 93/12, 101/16, 95/18 and 95/18 - other law	This law regulates the legal status of waters, integrated water management, management of water facilities and water land, sources and manner of financing water activities, supervision over the implementation of this law, as well as other issues important for water management.	Ministry of Agriculture, Forestry and Water Management - Republic Water Directorate
Law	Law on Waste Management	Official Gazette of RS, No. 36/09, 88/10, 14/16 and 95/18 - other law	This law regulates the types and classification of waste; waste management planning; waste management entities; responsibilities and obligations in waste management; organizing waste management; management of special waste streams; conditions and procedure for issuing permits; cross-border movement of waste; waste reporting and databases; waste management financing; supervision, as well as other issues of importance for waste management.	Ministry of Environmental Protection
Regulations				
Law/item	**Title**	**Date**	**General scope of relevant listed policies and standards**	**Ministry**
Regulation (decree)	Regulation on limit values for emissions of pollutants into water and deadlines for their achievement	Official Gazette of RS, No. 67/2011, 48/2012 and 1/2016	This Regulation determines emission limit values for certain groups or categories of pollutants (hereinafter: pollutants) for: technological wastewater before its discharge into the public sewer; technological and other wastewater that is discharged directly into the recipient; water that is discharged from the public sewerage system into the recipient after treatment and wastewater that is discharged from the septic tank and collection pit into the recipient, as well as deadlines for reaching them.	Ministry of Environmental Protection
Regulation (decree)	Regulation on location condition	Official Gazette of RS, No. 35/2015, 114/2015 and 117/2017	This Regulation, according to the class and purpose of the facility, prescribes: 1) obligatory content, procedure and manner of issuing location conditions by the competent authority; 2) which conditions for design and connection are obligatorily obtained from holders of public authorizations in the procedure of issuing location conditions; 3) obligatory content, procedure and manner of issuing the conditions referred to in item 2) of this Article.	Ministry of Construction, Transport and Infrastructure
Rulebook	Rulebook on categories, testing and classification of waste	Official Gazette of RS, No. 56/10 and 93/19	This Rulebook prescribes: Catalog of waste; list of waste categories (Q list); a list of categories of hazardous waste according to their nature or the activity by which they are generated (Y list); a list of waste components that make it hazardous (C list); list of hazardous waste characteristics (X list); list of procedures and methods of waste disposal and reuse (D and R list); concentration limits of hazardous components in waste on the basis	Ministry of Environmental Protection

			of which waste characteristics are determined; types of parameters for determining the physico-chemical properties of hazardous waste intended for physico-chemical treatment; types of parameters for waste testing for thermal treatment; types of parameters for waste testing and testing of eluate intended for disposal; types, content and form of the waste testing report and the manner and procedure of waste classification. This Rulebook provides minimum criteria for waste disposal in the form of limit values of appropriate quality parameters and, accordingly, the manner of its disposal.	
Rulebook	Rulebook on conditions regarding technical-technological equipment and organizational and personnel qualification for performing activities in the field of water management, as well as on the manner of keeping records of issued and revoked licenses	Official Gazette of RS, No. 23/12 and 57/13	The Rulebook prescribes in more detail the conditions regarding technical - technological equipment and organizational and personnel qualification of public companies, ie other legal entities for performing drinking water supply system by public water supply system, collection, drainage and wastewater treatment by public sewerage system, flood defense and other forms of protection against harmful effects of water, taking care of the functioning of water facilities and systems, maintenance of regulatory and protective facilities and accompanying devices on them, maintenance of reclamation systems for drainage and irrigation, remediation works and emergency interventions on protection and regulation facilities, monitoring water conditions facilities, as well as the manner of keeping records of issued and revoked licenses.	Ministry of Agriculture, Forestry and Water Management - Republic Water Directorate
Rulebook	Rulebook on detailed conditions and standards for the provision of social care services	Official Gazette of RS, No. 42/2013,89/2018 and 73/2019	These correct regulations offer conditions and standards for the provision of all social protection services (hereinafter: minimum standards). All terms in this proper use in the grammatical masculine gender refer to males and females. More detailed information and standards prescribed by these rules are applied by all providers of social protection, in accordance with the law governing social protection.	Ministry of Labor, Employment, Veterans and Social Affairs
Rulebook	Rulebook on detailed conditions for establishing, beginning of work and performing an activity of preschool facilities	Official Gazette of RS – Educational gazette, No. 1/2019	This Rulebook regulates more detailed conditions regarding space, equipment, didactic resources (hereinafter: the norm of space, equipment and didactic resources) and employees that should be met by the preschool institution for starting work and performing activities. The norm of space, equipment and didactic means and conditions regarding employees are printed together with this rulebook and form an integral part of it.	Ministry of Education, Science and Technological Development
Rulebook	Rulebook on detailed conditions for establishing, beginning of work and	Official Gazette of RS – Educational gazette, No. 5/2019	This rulebook regulates more detailed conditions regarding school space, equipment and teaching aids (hereinafter: norms of school space, equipment and teaching aids) that should be met by the primary school for	Ministry of Education, Science and Technological

	performing an activity of primary school facilities		starting work and performing activities. The norms of school space, equipment and teaching aids are printed together with this rulebook and form an integral part of it.	Development
Rulebook	Rulebook on general rules for parceling, regulation and construction	Official Gazette of RS, No. 22/2015	This rulebook prescribes general rules and conditions for parceling, regulation and construction.	Ministry of Construction, Transport and Infrastructure
Rulebook	Rulebook on general sanitary conditions that must be fulfilled in facilities subject to sanitary surveillance	Official Gazette of RS, No. 47/2006	This Rulebook prescribes the general sanitary conditions that must be provided for each facility subject to sanitary control (hereinafter: the facility).	Ministry of Health
Rulebook	Rulebook on methods and conditions for wastewater quantity measurement and quality testing, and the content of the measurement report	Official Gazette of RS, No. 33/2016	This Rulebook prescribes in more detail the manner and conditions for measuring the quantity and testing of wastewater quality and the content of the report on the performed measurements.	Ministry of Environmental Protection
Rulebook	Rulebook on miscellaneous terms and conditions for healthcare activities in health institutions and other forms of the health service	Official Gazette of RS, No. 43/2006, 112/2009, 50/2010, 79/2011, 10/2012 – other rulebook, 119/2012 - other rulebook, 22/2013 and 16/2018	This Rulebook prescribes more detailed conditions in terms of staff, equipment, space and medicines that must be met by health institutions, ie other forms of health service (hereinafter: private practice) in order to establish and perform health care activities, ie certain health care activities.	Ministry of Health
Rulebook	Rulebook on personal protective equipment at work and personal protective equipment	Official Gazette of RS, No. 92/2008 and 101/2018	This Rulebook prescribes the minimum requirements that the employer is obliged to meet in ensuring the application of preventive measures when using means and equipment for personal protection at work.	Ministry of Labor, Employment, Veterans and Social Affairs
Rulebook	Rulebook on special type of facilities and special type of works for which it is not necessary to obtain an act of the competent authority, as well as types of facilities under construction, ie types of works performed, based on the decision on approval	Official Gazette of RS, No. 2/2019	This Rulebook regulates in more detail a special type of facilities and a special type of works for which it is not necessary to obtain an act of the competent authority, as well as the type of facilities under construction, ie the type of works performed, based on the decision on approval of works, as well as scope, content and control of technical documentation that is attached to the request and the procedure carried out by the competent authority.	Ministry of Construction, Transport and Infrastructure

	for performance of works, as well as scope and content documentation that is attached to the request and the procedure carried out by the competent authority			
Rulebook	Rulebook on technical standards of planning, projecting and construction of facilities, which ensure access to persons with disabilities, children and old persons	Official Gazette of RS, No. 22/2015	This Rulebook prescribes closer standards that define mandatory technical measures and conditions for planning, design and construction of facilities, which ensure unhindered movement and access to persons with disabilities, children and the elderly. Accessibility, within the meaning of this Rulebook, refers to public and business buildings, public buildings (streets, squares, parks, etc.), as well as residential and residential business buildings with ten or more flats. Accessibility, in terms of this Rulebook, refers to the planning of new facilities and space, designing and building and upgrading new facilities. Accessibility, in the sense of this Rulebook, refers to the reconstruction and adaptation of existing facilities, when technically possible.	Ministry of Construction, Transport and Infrastructure
Rulebook	Rulebook on the content, manner and procedure of preparation and manner of performing control of technical documentation according to the class and purpose of facilities	Official Gazette of RS, No. 73/2019	This Rulebook prescribes in more detail the content, manner and procedure of preparation and manner of performing control of technical documentation according to the class and purpose of the facilities.	Ministry of Construction, Transport and Infrastructure
Rulebook	Rulebook on general rules for parcelling, regulation and construction	Official Gazette of RS, No. 22/2015	This rulebook prescribes general rules and conditions for parcelling, regulation and construction such as shape and size of plot, general rules for parcelling of certain area, minimum conditions for infrastructure, general rules for construction, type and purpose of construction in certain area, location, height and etc.	Ministry of Construction, Transport and Infrastructure
Rulebook	Rulebook on Conditions and standards for design of residential buildings and apartments	"Official Gazette of RS", no. 58/2012, 74/2015 and 82/2015)	This Rulebook prescribes the conditions and norms for design, ie preparation of technical documentation for the construction of residential buildings and apartments, as well as parts of other facilities intended for housing.	Ministry of Construction, Transport and Infrastructure
Rulebook	Rulebook on the procedure of conducting the unified	Official Gazette of RS, No. 68/2019	This Rulebook prescribes in more detail the subject and procedure of conducting the unified procedure through the Central Information System	Ministry of Construction,

	procedure electronically		for Electronic Proceedings within the unified procedure in procedures for issuing acts in exercising the right to construction and use of facilities (hereinafter: CIS), and especially the manner of exchanging documents and submissions. in the unified procedure electronically, as well as the form in which submissions and documents are submitted or exchanged, including technical documentation and acts issued by the competent authorities and holders of public authorizations in connection with the unified procedure, content and manner of issuing construction and use permits, and the content of the register of consolidated procedures and central records, as well as the powers and obligations of the registrar and the scope of public availability of data and documents contained in the register.	Transport and Infrastructure
Standards				
Law/item	**Title**	**Date**	**General scope of relevant listed policies and standards**	**Legal entity**
Standard	ISO 9001	2015	ISO 9001 – quality management systems – is to increase the efficiency of the organization through the application of a process approach. Its advantage is to provide links between individual processes, sectors and their interaction.	Commission for Standards
Standard	ISO 14001	2015	The ISO 14001 system is an internationally recognized standard that defines the way in which the environmental management system is implemented in every company or an organization. The ISO 14001 system helps to establish: sustainable management of waste and waste streams; and environmental protection plan of the organization.	Commission for Standards
Standard	ISO 45001 (until recently OHSAS 18001)	2018	ISO 45001 (until recently OHSAS 18001) is an internationally recognized standard for health and safety (OHS) at work. This standard covers all regulations, all forms, training, protective equipment and everything that workers must have in order to protect their safety at work.	Commission for Standards
Standard	SRPS EN 12566-1	2017	Small water treatment systems up to 50 US (total population and population equivalents) - Part 1: Prefabricated septic tanks The standard sets out requirements for prefabricated septic tanks and associated equipment for the partial treatment of domestic wastewater for a population of up to 50 US (total population and equivalent population). Pipe dimensions, loads, water permeability, marking and quality control were determined. Excluded are: - septic tanks exclusively for "gray" water; - septic tanks built on site.	Commission for Standards
Standard	SRPS EN 12566-2	2017	Small wastewater treatment systems up to 50 PT - Part 2: Soil infiltration systems	Commission for Standards

			The standard sets out recommended requirements for ground infiltration systems ranging in size from a single house to 50 PT that receive domestic wastewater from septic tanks manufactured in accordance with the requirements given in EN 12566-1 and EN 12566-4.	
Standard	SRPS EN 12566-3	2017	Small wastewater treatment systems up to 50 US (total population and population equivalents) - Part 3: Domestic wastewater treatment plants, packaged and / or installed on site This standard specifies requirements, test methods, marking and conformity assessment for packaged and / or on-site installed wastewater treatment plants (including cottages and business premises) for a population of up to 50 inhabitants. Small plants are used to treat raw household wastewater in accordance with this standard.	Commission for Standards
Standard	SRPS EN 12566-4	2017	Small water treatment systems up to 50 US (total population and population equivalents) - Part 4: Septic tanks with prefabricated units, installed on site This standard specifies requirements for on-site septic tanks made of prefabricated kits and ancillary equipment for the partial treatment of domestic wastewater for a population up to 50 US (total population and equivalent population). Pipe dimensions, loads, water permeability, marking and quality control were determined. This standard does not cover septic tanks exclusively for "gray" water.	Commission for Standards
Standard	SRPS EN 12566-5	2017	Small water purification systems up to 50 PT - Part 5: Filtration systems for pre-effluent purification Wastewater engineering.	Commission for Standards
Standard	SRPS EN 12566-6	2017	Small wastewater treatment systems up to 50 US (total population and population equivalents) - Part 6: Prefabricated effluent treatment units from septic tanks This standard specifies requirements, test methods, conformity assessment and marking of prefabricated units for secondary treatment of effluent from septic tanks in accordance with SRPS EN 12566-1 or SRPS EN 12566-4 for small water treatment systems up to 50 US (total population) and number of equivalent inhabitants).	Commission for Standards
Standard	SRPS EN 12566-7	2017	Small wastewater treatment systems up to 50 US (total population and population equivalents) - Part 7: Prefabricated tertiary treatment units This standard specifies requirements, test methods, marking and evaluation of conformity for a package and / or installed tertiary treatment unit.	Commission for Standards
Standard	SRPS ISO/IEC	2017	General competence requirements for testing laboratories and calibration	Commission for

	17025:2017		laboratories – Standard This International Standard specifies general requirements for competence, impartiality and consistency in laboratory work, as defined in this standard. This International Standard is applicable to all organizations that perform laboratory activities, regardless of the number of staff in the laboratory. This International Standard may also be used by users of laboratory services, legislatures, organizations and schemes used for peer review, accreditation bodies and others, in harmonizing or recognizing the competence of a laboratory.	Standards
[Guidelines and Other type of non-legally binding documents]				
Law/item	**Title**	**Date**	**General scope of relevant listed policies and standards**	**Supervisor**
Decision	Decision of the city of Pančevo on drainage and treatment of wastewater and atmospheric water	Official Gazette of the city of Pančevo, No. 26/2011 - consolidated text, 13/2013 and 6/2014	This decision prescribes the conditions and manner of organizing work in performing communal activities - drainage and purification of waste and atmospheric waters on the territory of the city of Pančevo and determines other issues of importance for the provision and use of this communal service.	Local self-government
Decision	Decision on drainage and treatment of atmospheric and wastewater	Official Gazette of the City of Sremska Mitrovica, No. 9/2011, 5/2014 and 13/2015	This decision regulates the collection of wastewater from the connection of consumers to the street sewerage network, drainage through the sewerage network, treatment and discharge from the sewerage network, maintenance of the sewerage network and fecal pumping stations, collection of wastewater through septic tanks, collection and removal and removal canals, drains and other facilities for water removal on the territory of the City of Sremska Mitrovica, as well as other issues of importance for this communal activity.	Local self-government
Decision	Decision on general house rules in residential and residential-commercial buildings on the territory of the city of Kruševac	Official Gazette of the City of Kruševac, No. 4/2018	This decision prescribes the general rules of house rules in residential and residential-business buildings on the territory of the city of Krusevac. House rules, in terms of paragraph 1 of this Article, means general rules of conduct in residential and residential-commercial buildings, mandatory for all tenants, whose observance will ensure order, peace and security in residential and residential-commercial buildings, all tenants undisturbed use of special and common parts of the building, as well as land for regular use of the building, preservation of common parts in a clean, correct and usable condition, safe for use.	Local self-government
National Strategies and Plans				
Law/item	**Title**	**Date**	**General scope of relevant listed policies and standards**	**Ministry**
National strategy	Strategy on water management on the territory of the Republic of	Official Gazette of RS, No. 3/2017	Analyzes and research for the development of the Water Management Strategy on the territory of the Republic of Serbia until 2034 (hereinafter: the Strategy) were done on the basis of the Law on Waters ("Official	Government

	Serbia until 2034		Gazette of RS", No. 30/10 and 93/12) and bylaws . The Strategy is a planning document which determines the long-term directions of water management on the territory of the Republic of Serbia. Therefore, the adoption of the Strategy ensures continuity in long-term planning of the functioning of the water sector, on the principle of sustainable development, ie, performing water activities in its basic areas (water management and use, water protection from pollution and watercourse management and protection from harmful effects of water), as well as other necessary tasks and activities for functioning and development (financing, monitoring, etc.). The strategy also ensures the satisfaction of the interests of taxpayers - users of water management. The Strategy is a document on the basis of which reforms of the water sector will be implemented, in order to achieve the necessary standards in water management, including organizational adjustment and systemic strengthening of professional and institutional capacities at the national, regional and local levels. The strategic commitments and objectives set out in this document are the basis for the development of the Water Management Plan for the Danube River Basin in the territory of the Republic of Serbia and water management plans in water areas, including the aspect of financing. At the same time, the frameworks set by this strategy must be taken into account when developing strategies and plans for spatial planning, environmental protection and other areas that depend on water or have an impact on water.	
National strategy	Strategy of Public Health in the Republic of Serbia 2018–2026	Official Gazette of RS, No. 61/2018	The Public Health Strategy in the Republic of Serbia (hereinafter: the Strategy) supports the improvement of health, prevention of diseases and prolongation of the quality of life of the population. Good health is essential for sustainable economic and social development and a basic concern in the life of every person, family and society. The strategy is a document that establishes a general framework for actions and identifies further directions, leaving room for solving old and new challenges. The strategy supports the fulfillment of social care for human health and encourages the responsibility of the state and society in ensuring well-being for all citizens by improving health, extending the expected duration of quality life, preserving a healthy living and working environment. The goals are achieved through all forms of partnership for health and emphasizing the importance of a comprehensive approach through interdisciplinary and multi-sector cooperation. The Strategy defines the areas of action in public health, framework, mission, vision and principles of the Strategy, general and specific goals,	Government

			action plan for action, as well as the manner of implementation, monitoring, evaluation and reporting on the implementation of the Strategy.	

Management of non-sewered sanitation systems in Serbia

	Governance and regulation			
	Addressed in the national regulations and standards (make notes: sufficiently addressed -1; partial -0.5; and No -0)	Costing and financing of national and local implementation plans addressing components of sanitation chain(make notes: sufficiently addressed -1; partial -0.5; and No -0)	Service provider/s roles clearly defined (make notes: sufficiently addressed -1; partial -0.5; and No -0)	Monitoring and surveillance (make notes: sufficiently addressed -1; partial -0.5; and No -0)
Planning	0.5	1	1	NA
Sanitation/ excreta disposal/point of use	0.5	1	1	1
Containment	1	1	1	0.5
Emptying	1	1	1	0.5
Transport of excreta and wastewater to treatment	0.5	1	1	0.5
Treatment plants that receive fecal sludge from on-site sanitation	1	1	1	1
Treatment of fecal sludge from on-site facility	0.5	1	0.5	0
End use/disposal	0.5	NA	NA	0