Tajikistan Water Supply & Sanitation Project (Phase III)

Policy Report

Construction Norms and Standards for
Rural Water Supply and Sanitation Systems in Tajikistan:

Barriers and pathways to investment prospects

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Agency for Development and Cooperation SDC
Швейцарское Управление по Развитию и Сотрудничеству SDC
Раёсати Швейтсария оид ба Рушд ва Ҳамкорӣ SDC

OXFAM

UNDP
Empowered lives.
Resilient nations.

Published: May 2022
Author: Shukhrat Igamberdyev

The Tajikistan Water Supply and Sanitation (TajWSS) project is a Swiss government initiative, funded through the Swiss Agency for Development and Cooperation, and implemented by Oxfam in Tajikistan in partnership with UNDP.

Section 1

Executive Summary

Tajikistan's rural water, sanitation and hygiene (WASH) sector is characterised by a set of inadequacies that have resulted from persistent degradation due to lack of investment, financial support and capacity to maintain the systems over the past three decades. As is often reported, one of the root causes is in part linked to the continued application of **outdated and stringent norms and standards** in the design and construction of WASH projects in rural communities. Views from stakeholders have revealed that those norms pose serious negative consequences on **cost-effectiveness, technical efficiencies and due processes (administrative/permit procedures)**. Implementers have therefore sought to use *adapted, flexible and low-cost solutions* applicable for rural WASH systems. The urge to update and revise norms and standards has primarily been driven by the need to 1) stimulate greater investment and financing of the rural WASH sector, 2) reduce the costs of constructing rural WASH systems, and 3) encourage innovative approaches and know-how to improve the technical efficiencies of water supply systems (WSS).

With the Tajikistan Water Supply and Sanitation (TajWSS) project's consistent support since 2009, considerable improvements have been achieved, with the revision of a number of state norms and standards along with development of new ones. Notable improvements addressed a bulk of often-reported issues related to: optimisation of daily consumption norms to local conditions, reduced capacity requirements to meet water demands, relaxed firefighting requirements, reduced areas under sanitation protection zones, relaxed requirement for reserve equipment, adapted norms for fencing materials, use of low-cost materials, products and services, reductions in baseline documents (design), among others. All those improvements are claimed to have reduced (or will potentially reduce) the costs of WSS projects by about 25 to 50%, while UNDP estimates suggest an average 44% reduction in project costs.

However, further analysis has revealed that these recent achievements are characterised at large as **simplifications and relaxations** of requirements, as an 'immediate' response to often-reported issues. For the most part, the new norms and standards **do not address systemic issues** that present some of the greatest challenges the WASH sector has endured. These challenges relate to four problem areas: 1) severe lack of capacity, practical know-how and innovations, 2) unrealistic bill of quantities (BoQ)[1] – linked price estimations enforced for works, products and services, 3) poor cost-effectiveness and technical efficiency, and 4) extremely lengthy administrative procedures for obtaining permits for small-scale rural WASH projects. The analysis has therefore concluded that present norms and standards a) are *insufficiently adaptive and not flexible*, b) are *still inadequate, causing unnecessarily higher investment and operational costs*, c) *lack applicability of innovations, pilot demonstrations, technological know-how and generally openness to new practices and approaches*.

[1] A BoQ is a document used in tendering in the construction industry in which materials, parts and labour (and their costs) are itemised.

On this basis, this policy report suggests **four policy recommendations** that derive from rural experience in Tajikistan. These can be listed as follows:

- Capacities within responsible institutions (primarily the Committee for Architecture and Construction and the Ministry of Health and Social Protection and its Sanitary and Epidemiological Services Agency), along with entities licensed to carry out design and construction require systematic improvements to effectively apply norms and standards and adequately foresee prospects of updates. An **immediate step** would be to develop a **comprehensive capacity strengthening support programme** based on a thorough **performance assessment** of responsible institutions on the subject area. Such support must include a) development of modern curricula and teaching methods at design institutes and engineering schools (i.e. technical universities), and b) regular knowledge sharing and best practice exchange platform for design and construction professionals. Establishment of a community of practice at national level may well be a practical strategy forward.

- Enforced price estimations for works, products and services need to be revisited in the immediate term with methodologies that consider up-to-date local market prices as well as local innovative practices. Corresponding regulations and methodologies need to be developed and/or revised.

- Superfluous and unnecessary requirements still persist in the present norms and standards (detailed in Annex 1 and 3), and most of the applied changes have only partially addressed the issues. The *Gosudarstvennie Normi i Pravila* (state norms and regulations) (GNiP) RT 40-60-2017 Rural Drinking Water Supply (2017) requires further updates, with the upgrade of 'target classification' to a system of above 5,000 people (at least for settlements in the 5,000–10,000 population category).

- Administrative procedures and permit-obtaining processes have remained lengthy with almost no change since 2012. Development partners and implementers must document their experiences and lessons learned must be conveyed systematically to advocate for justified changes in each stage of design and construction. As an immediate step, implementers must a) record duration of each stage of procedure/process in practice, and then b) quantify and monetise time and resources spent as the processes become extensive.

From immediate to long-term perspectives, the policy agenda should promote the following targets towards further change in norms and standards that lead to more efficiencies in investment and operational costs for WASH services in rural Tajikistan.

Immediate targets (up to 2030)

- Performance assessment of responsible institutions on application of norms and standards (including collection of views from implementers and other stakeholders).

- Development of a comprehensive capacity support programme that is based on institutional performance assessments (featuring principles such as: international best practices, innovations, technological know-how, flexible approaches for pilot demonstrations).

- Establishment of a community of practice or a related network for professionals, implementers, development partners and national and local authorities to share knowledge, practices, issues and lessons learned. This will help further advocate update of current GNiPs with consideration of feedback from development partners (detailed in Annex 2).

- Bringing normative price estimations for works, products and services (enforced at design stage for BoQ preparation) in conformity with actual local market prices and rural practices. Present price estimations are extremely low compared with market prices.

- Assessing foreseen impact of expanding GNiP RT 40-60-2017 Rural Drinking Water Supply application for systems serving more than 5,000 people. Adequate justifications must feed into further policy work.

- Thorough documentation of the duration of each stage of administrative/permit procedures for implemented projects to further inform policy makers on the impact of such burden on WASH project costs and efficiencies.

- Identify improved water supply (WS) and sanitation models that have been successfully implemented and/or piloted in rural settings, and define scalability potential for further integration within present norms and standards.
- Documentation of low-cost and cost-efficient practices available in rural Tajikistan, and bring related international best practices.

- Requirements for water quality standards and monitoring must be brought into conformity with WHO standards.

Long-term targets (beyond 2030)

- Provide consistent technical and financial support for the implementation of endorsed *capacity strengthening support programmes* for responsible stakeholders in the application and development of improved norms and standards.

- Update sanitary norms and standards with consideration of new and improved WS and sanitation models introduced by development partners and others.

- Consistent updates advocated for norms and standards beyond GNiP 2017 and Sanitation Norms and Standards (SanPiNs) (2021) on a case-by-case basis, along with redefining targets and objectives within the reform programmes.

- Complete and up-to-date integration of new and improved WS and sanitation models within the present norms and standards, for those defined as replicable across rural Tajikistan.

- Reduction of time frames to a reasonable extent for undergoing administrative and permit-obtaining procedures. Support in that area must be rendered in harmony with strengthening capacities that will help achieve the objective.

- Knowledge about international best practices, technological know-how and innovations must be persistently collected and communicated to responsible institutions (training) to further inform policy change.

Over its 12-years' experience, TajWSS has demonstrated that policy dialogue and consultations supported with sufficient evidence from the field and stakeholders do in fact translate to policy change. Transforming established mindsets and Soviet master documents to more progressive ones is a difficult and lengthy process, as the experience of other countries in the Commonwealth of Independent States shows. On the other hand, the noted weak capacities, knowledge and awareness among responsible authorities and institutions are now seen as barriers for future constructive changes. Unless a comprehensive approach is developed and systematically supported in the immediate to long term, the noted incremental improvements in the norms and standards will have little impact on the overall viability of the WASH sector in rural Tajikistan.

Section 2

Context and purpose

Access to safe drinking WS and sanitation and coverage in rural areas remain a special concern in rural areas of Tajikistan. The proportion of rural households with access to 'improved water on premises' has remained unchanged, at about 36% during 2000–2016, while the share of those with access to 'piped water on premises' and 'piped water in dwelling' has declined, from 24 to 21% and from 7 to 5%, respectively.[2] With new definitions applied, i.e. 'safely managed water', access to water in rural settlements is estimated at 31%. In contrast, for the urban setting figures vary between 57% (safely managed water) and 94% (centralised systems).[3] Trucked water, individual water wells and rivers remain the main source of water for many people in rural areas.[4]

Available infrastructure in smaller secondary towns and rural communities has so far been under persistent degradation due lack of investments, financial support and capacities to maintain. To date, only about 40% of rural WSS are in working condition, while 44% are partially working and 16% are dysfunctional. In addition, only 22% of rural WSS are indeed managed by operators, compared with 100% in urban cities.[5] Many other rural systems have remained unaccounted for since becoming obsolete and ownerless.

Despite major policy reforms and capital investments in WSS in general, public expenditures in drinking water do not reflect the stated sense of priority. Total WSS expenditures have remained under 0.5% of total state expenditures in the past decade,[6] against healthy increases in overall public expenditures in other sectors. In recent decades, donors and development partners have been the major source (at large the only stable source) of investments and financial support to the rural WASH sector in Tajikistan. Unfortunately, the observed growth in major capital investments has benefitted mostly the urban sector (cities and selected towns). The rural WASH sector still heavily relies on external support to at least keep pace with deterioration rates seen today, not to mention the overall development and expansion of infrastructure. Such disparity is in part explained by a set of challenges that are unique to rural systems as opposed to urban systems:[7]

- As the dominant share of operational infrastructure is located in urban cities and towns, available state expenditures are channelled to support mainly urban WASH systems.

[2] World Bank (2017). *Glass Half Full: Poverty Diagnostic of Water Supply, Sanitation, and Hygiene Conditions in Tajikistan*, p.33. WASH Poverty Diagnostic. World Bank, Washington, DC. https://openknowledge.worldbank.org/handle/10986/27830

[3] Ibid.

[4] Ibid.

[5] State Unitary Enterprise Khojagii Manziliyu Kommunali (2011). The status of potable water supply and sanitation sector in the RT.

[6] UNDP and UN Environment Programme (2016). Tajikistan Water Public Environmental Expenditure Review.

[7] Adapted from the policy brief: TajWSS (2021). Tariff policy for drinking water supply in rural Tajikistan: towards a full-cost recovery mechanism and rights-based water governance.

- Investments in urban systems have greater return prospects (economies of scale), which is why major financing institutions have recently been supporting mostly centralised systems in cities and selected towns. Urban systems enjoy greater population density, with lower investments and operational costs per capita.
- Typical geographic terrain across rural settlements, especially in and around mountainous areas, often requires additional costs to infrastructure. Rural systems can be technically more complex with a) multiple water pumping levels, b) extended distribution networks to connect distant households and villages, and c) water sources accessed from distant locations and greater depths below the ground.
- Access to finances is generally negligent in rural communities, with non-existent government subsidies to support rural infrastructure.
- Limited access to qualified technicians and restricted management mobility has a negative impact on operational efficiency for systems located farther from district centres.
- Poverty in Tajikistan is largely a rural phenomenon, subsequently water fees constitute a greater share of rural households compared with those living in cities and towns. This poses a greater challenge on implementation of full-cost recovery tariff schemes for rural WASH systems.

Development partners and implementers of WASH projects in general have long been striving to address those challenges and alleviate noted disparities for rural systems. As is often reported, one of the root causes of the current situation is the continued application of **outdated** and **stringent norms and standards** in the *design, construction and implementation* of WASH projects in rural communities. Implementers have sought to use adapted, flexible and low-cost solutions applicable for rural WASH systems, but those approaches will first need to be integrated within current norms and standards.

In 2017, in part with TajWSS project support, the government endorsed GNiP RT 40-06-2017 Rural Drinking Water Supply,[8] partially replacing the corresponding norms and standards of 2008[9] and 2009[10] (GNiP RT 40.01-2008 and GNiP RT 40.02-2009). Analysis and feedback from development partners suggest that the new GNiP (2017) is incomplete in its purpose to meet the sector's intended needs in the present economic realities. The GNiP is applicable only for systems that serve up to 5,000 rural inhabitants, while for systems that serve above that number, old standards (2008 and 2009) still apply. In addition, recently accumulated experience in the 2017–2021 period indicates that compliance with the present norms and standards continues to result in unnecessary and superfluous costs, over-dimensioning infrastructure and technical inefficiencies. These have implications on the economic viability and overall sustainability of the systems in subject.

In that context, this policy report is designed for two purposes. Firstly, it provides a synthesis of improvements and corresponding impact from the recently endorsed GNiP (2017), elaborates on persisting gaps and provides specific recommendations for improvement. And secondly, it aims to launch a comprehensive discussion at national level on the need to further expand the work on the *update* and *adaptation* of the present norms and standards for *design, construction and implementation* of WASH projects to present economic realities.

[8] Later complemented by a Technical Guideline for designing DWSS within master plans in rural areas approved in 2019.
[9] Committee for Architecture and Construction (2008). GNiP RT 40.01-2008 Water Supply. External Systems and Structures.
[10] Committee for Architecture and Construction (2009). GNiP RT 40.02-2009 Sewerage. External Systems and Structures.

Section 3

Situation analysis: phases of updates to norms and standards

Tajikistan's norms and standards for the design and construction of WSS infrastructure have undergone very few updates in the past three decades. The most recent and relevant master documents designed during the Soviet era are dated from 1986, these are: 1) Water Supply. External Systems and Structures (SNiP 2.04.02-84), and 2) Sewerage. External Systems and Structures (SNiP 2.04.03-85). These standards were uniformly applied across the entire Soviet Union. Then the standards went through a phase of so-called 'nationalisation' of laws and regulations, and the two master documents were re-endorsed as 'national' norms and standards in 2008 and 2009 respectively (40.01-2008 and 40.02-2009). The few updates that were introduced were solely to bring the documents in conformity with other national laws and regulations.[11] Effectively, the norms and standards are still based on Soviet standards, despite the drastic socio-economic changes and relevant reforms in the governance system of the WASH sector.

Standards and norms are not only about mere technical specificities, but encompass the entire process of implementing WS and sanitation projects. They include design, construction, operation and maintenance (O&M), monitoring and supervision, quality assurance (water quality, performance standards, etc.). In that context, the nature of the challenges and proposals communicated here are linked not only to inefficiencies in the present technical standards, but more importantly relate to various phases of project implementation and respective administrative procedures and processes for obtaining permits.

As an initial step, to support project implementers, Oxfam and UNDP within the framework of TajWSS[12] project advocated for **consolidation of all legislative and normative requirements** in an attempt to provide detailed information on all phases and aspects of drinking WS and sanitation project implementation. This work also included a comprehensive summary of all administrative procedures and construction permit requirements applicable to each phase of project design and construction. The outcome of this work has concluded with the development and endorsement of two policy documents: 1) *Guidelines on the implementation of drinking water supply projects in Tajikistan*[13] (2009); and 2)

[11] B. Khabibov (2017). Performance indicators for WS&S service in the RT: Regulatory and Statutory Requirements.

[12] Tajikistan Water Supply and Sanitation Project (TajWSS, Phase I, II and III, 2009-2021), funded by the SDC and implemented by Oxfam GB in partnership with UNDP in Tajikistan.

[13] Guidelines on the implementation of drinking water supply projects in Tajikistan, endorsed by the decree of the Ministry of Land Reclamation and Water Resources of the RT, as of 15 October 2009, #307.

Guidelines for undergoing administrative procedures and obtaining construction permits for drinking water supply and sewerage projects[14] (2012).

These two documents have set the stage for more comprehensive discussions, as they shed light on many issues reported by practitioners in the sector. The project team therefore launched the work in partnership with the Committee for Architecture and Construction to advocate needed changes in the applicable norms and standards. The advocated changes were primarily driven by the need to a) **build cost-effective** and **affordable** WS and sanitation systems and services in rural Tajikistan, and b) encourage **greater investments** and **funding support** in the sector, particularly for systems in rural communities with the highest vulnerabilities in accessing WASH services.

As a result, the following four policy documents were endorsed, representing a significant achievement in all aspects (notably economic, technical, institutional): 1) Construction norms and standards (**GNiP RT 40-06-2017**[15]) Rural Drinking Water Supply; 2) Guiding documents (**40-201-2019**)[16] Technical Guideline for designing DWSS within master plans in rural areas; 3) Sanitation norms and standards (**SanPiN 2.1.5. 035-21**) Requirements for Sewerage Systems in Rural Settlements (2021);[17] 4) Sanitation Norms and Standards (**SanPiN 2.1.1. 036-21**) On placement, structure, operation and maintenance of public toilets (2021).[18]

In particular, the GNiP RT 40-06-2017 effectively addresses some of the often-reported issues, and was developed with special emphasis on rural drinking WS. Its key features are the **simplification** and **relaxation** of a number of requirements that reportedly lead to considerable **cost-savings** and **technical efficiencies** of drinking WSS. The depth of 'simplifications' and 'relaxations' are further disclosed in chapter 4, section: Depth and impact of improvements (2017–2021) of this policy report.

Despite the given positive changes and progress achieved in advocating for updates, the implementers still face a number of challenges. With the endorsement of new standards in 2017, the old-time hefty requirements were only partially suspended, and still apply for systems that serve more than 5,000 people.[19] The WSS design and construction standards reportedly are still inadequate and still cause unnecessarily higher investment and operational costs for WSS infrastructure, which does impact on affordability and access to WS services.[20]

Implementers often report on critically low capacities among licensed entities (design institutions, engineering and construction companies) and relevant authorities, which have not been able to effectively interpret and apply present norms in practice. Present capacities and established approaches and mindsets do not allow for innovative solutions, model experiments and pilots, and the introduction of internationally accepted best practices that lead to more efficiencies in investment and operational costs for WS services.

[14] Guidelines for undergoing administrative procedures and obtaining construction permits for drinking water supply and sewerage projects, endorsed by the Agency for Construction and Architecture under the Government of the RT, as of 23 April 2012.
[15] Construction norms and standards (GNiP RT 40-06-2017), endorsed by the Committee of Construction and Architecture.
[16] Guiding documents of the RT (10-201-2019) to GNiP RT 40-06-2017, endorsed by the Committee of Construction and Architecture, as of 20 December 2019.
[17] SanPiN 2.1.5. 035-21, Sanitary Norms and Standards Requirements for Sewerage Systems in Rural Settlements, Order of the Ministry of Health and Social Protection of the RT, as of 20 September 2021, #124.
[18] SanPiN 2.1.1. 036-21, Sanitary Norms and Standards On placement, structure, operation and maintenance of public toilets, Order of the Ministry of Health and Social Protection of the RT, as of 20 September 2021, #125.
[19] Contributions from SDC-funded projects (implementers: ISW, Oxfam GB, UNDP, AKF/MSDSP).
[20] SDC (2021) Position Paper: Updating WSS standards and norms.

Section 4

Findings and lessons learned: experiences from rural Tajikistan

Often-reported issues from development partners (rural experience)

Accumulated experiences from the field exhibit multiple issues at various stages of project implementation that represent a significant hindrance to cost-effectiveness and investment prospects in the WASH sector. Findings and lessons learned conveyed here have come from Swiss Agency for Development and Cooperation (SDC)-funded projects and development partners, such as Oxfam GB (TajWSS project, Phase I, II and III), International Secretariat for Water (ISW) (RWSSP FV, RRWSSP, CoWaSS projects), and Aga Khan Foundation (AKF)/Mountain Societies Development Support Programme (MSDSP) (SWSMP project). The often-reported issues remain valid at large, despite recent updates (GNiP 2017), and are summarised below for each problem area (see Annex 1 for more details).

Problem Area 1

Applied capacity, knowledge and innovation

Project implementers have highlighted **lack of capacity, knowledge and innovation** as among the most frequently encountered issues related to project design. Design and construction companies (licensed) reportedly *lack qualified staff, technical expertise, skills and required modern tools* to develop effective designs in short time frames. The drain of professionals (high staff turnover) over recent decades have led to severe knowledge gaps at institutional level. Development partners report that advocating for *innovations, state-of-the-art know-how, and general flexibility in pilot demonstrations* has been extremely challenging in the context of the general lack of knowledge about the **existing** norms and standards. Licensed organisations have not been able to effectively apply the existing norms and standards in their work due to lack of knowledge in the first place, which often results in misinterpretations of the requirements.

The design process is considered one of the lengthiest steps, and normally takes between three and six months minimum, depending on the scope and size of systems. However, reportedly, the persistent lack of technical capacities within authorising agencies often overstretches the given time frame to additional months. Modern tools and software applications (modelling software, computing feasibility tests, engineering software), that may reduce the length of the design process considerably are not used, and

regulatory requirements have not adequately addressed this opportunity. The immediate impact of this situation is certainly **costly designs and lengthy processes**.

Problem Area 2

Approved price estimations (works, products and services)

Implementers fully agree that the established **normative price estimations** for works, products and services need to be revisited in the immediate term with methodologies that consider up-to-date local market prices. Price estimations for works and services during BoQ preparation at design stage require application of the a) *Regulation on calculation of construction products (works and services)* (2000), and b) *Guidelines for determining the cost of construction products* (2001). These require that implementers set their calculations according to catalogues of estimated prices (for primary estimates) approved by authorities on a quarterly basis. Regrettably, implementers across all regions report that these requirements are outdated and still follow Soviet standards. The following characteristics are often reported of those pricing approaches:

- Prices estimated based on established norms appear to not correspond to market prices, and have always been lower than those estimated by contractors based on local market realities.
- The price–performance ratio is not comparable to any similar services in other countries and is often extremely low.
- Prices for design are unnecessarily higher than they should be.

The immediate impacts that these conditions have had on projects are that 1) implementers had to go through a recalculation process guided by local market prices, and at times 2) endure amendments after contracting and various budget revision processes. According to UNDP specialists, 'about 90% of the market for construction materials and 100% of the market for equipment for WASH projects depend on exports and prices set by suppliers'. It is therefore evident that present norms and standards dictate cost estimations that are not in regular consistency with local market conditions. It is therefore suggested that cost estimations for certain types of works, materials and services need to be updated to introduce adaptive and flexible methodologies that require consideration of up-to-date local market prices and conditions, as well as locally applied low-cost practices.

Problem Area 3

Cost-effectiveness and technical efficiency

Implementers frequently report on a series of **unnecessary requirements** that result in **oversized and over-costed systems**, and therefore need to be revisited with the introduction of updates that consider viability conditions and cost-efficiency practices in rural settings. Reports commonly indicate that present norms and standards impose **superfluous and unnecessary requirements** that immediately result to over-dimensioning of WASH systems with significant add-ons to project cost and corresponding financial viability prospects. Some of those requirements can be listed as follows:

- Unnecessary studies and works for projects that are not considered new construction (e.g. geological surveys)
- Stricter norms imposed for water quality not necessarily in line with WHO guidelines (hardness versus softness)
- Installation of chlorination units not required for certain WASH components
- Over-dimensions of water production, storage and distribution
- Oversized sanitary zones that are prohibitive in areas of land scarcity (e.g. mountainous areas)
- Duplication of infrastructure components to ensure uninterrupted supply (pumps, reservoirs and transport pipes)
- Placement of 24/7 security guards for WASH assets
- Additional water provision for firefighting purposes and livestock

The additional costs of building WASH systems have a direct impact on viable tariffs, which are yet maintained significantly below full-cost recovery level[21] (e.g. for all systems run by State Unitary Enterprise *Khojagii Manziliyu Kommunali* in cities, towns and districts). Rural experience indicates that implementing full-cost recovery tariff schemes has been incredibly difficult, with sharp contrast in affordability conditions across rural Tajikistan. It is of paramount importance that present norms and standards are redesigned considering the principles of cost-effectiveness and cost-efficiency in the present economic realities and poor investments prospects for rural settlements.

Moreover, in terms of technical efficiency and quality, WASH systems in rural areas have their own peculiarities. Many rural settlements are located in remote areas that are a considerable distance from local markets and the costs of certain products and services therefore (such as transport, delivery and human resources) are higher than expected. In flatter areas, having lower litres-per-capita-per-day requirements may well be justified (as opposed to in cities and towns), however in mountainous areas with longer freezing temperatures, typical litres-per-capita-per-day demands may be higher. Norms and standards are reported to not have considered such nuances.

Problem Area 4

Administrative processes and permit-obtaining procedures

The newly endorsed norms and standards (2017, 2019, 2021) make little impact on these aspects (administrative/permit-obtaining processes) of project implementation, if any. Implementers agree that the **lengthy administrative/permits procedures** (detailed in Annex 2) in completing stages of design and

[21] TajWSS (2011) Tariff policy for drinking water supply in rural Tajikistan: towards a full-cost recovery mechanism and rights-based water governance. Policy brief.

construction lay considerable burden on the costs and timing of constructing WASH systems. While such a burden (of staff time spent) has not been quantified or monetised, it is obvious that figures may well be substantive. Lengthy procedures cause complications that reportedly have dangerous implications on due conduct and transparency throughout the process.

For example, as ISW reports (CoWaSS project), complications around allocation of lands for separate WASH facilities (sanitary zones, safeguarding of water sources and facilities) can also be an issue. If a water source is located on a piece of land which is listed for agricultural purpose it is not possible to build a sanitary zone or a reservoir and therefore to use the water source for drinking purpose (detailed in Annex 1). The AKF/MSDSP (SWSMP) project also highlights that it is obligatory to collect permitting documents from a multiple of governmental institutions, such as the Land Agency, Committee for Environmental Protection and Transport Ministry/Road Department (detailed in Annex 1).

On actual timing, Oxfam GB (TajWSS project) also reports on the lengthy processes for design (four to six months), which could be done in a shorter time. The lengthy processes are mostly caused by poor and expensive construction designs suggested from licensed design companies. This particular aspect delays the actual construction process and causes a rescheduling of the construction works in general (see Annex 1). Subsequently, Oxfam often modified and resubmitted designs to remove unnecessary hardware that increases the overall construction costs.

Implementers of WASH projects also highlight the difficulties in obtaining technical passports for WS systems. The passports must indicate the actual costs of system components, which often do not correspond to price estimations calculated on the basis of present GNiP (UNDP). The need to justify such costs translates to delays in obtaining the passports. This in turn impacts the accurate valuation and inventory of WS systems. Generally, according to Oxfam GB, the procedures for obtaining passports are unnecessarily bureaucratic and time consuming.

Based on consolidated estimates, the duration for undergoing given administrative/permit procedures varies between three and six months for preparation of design and BoQ documents only, depending on the size and complexity of rural systems, but also on the nature of construction (new, reconstruction, rehabilitation). In addition to that duration, there are remaining steps which accumulate to a minimum for rehabilitation – up to 27 days, and a maximum for new construction – up to 338 days (Table 1 below). Until recently, most rural WASH projects were considered new constructions, which means the entire administrative/permit procedures potentially amount to about 12–18 months. The lengthiest duration is for selection of land for construction/system (up to about six months), followed by a few other areas – survey, selection of source and sanitary report (up to one month), and expertise of project design (up to one month).

Table 1: Estimates of duration for undergoing administrative/permitting procedures for WASH projects[22]

[22] Guidelines for undergoing administrative procedures and obtaining construction permits for drinking water supply and sewerage projects, endorsed by the Agency for Construction and Architecture under the Government of the RT, as of 23 April 2012.

Category*	Type of systems	Type of construction	Total duration	
			*Design and BoQ preparation***	*Remaining steps*
Category A	Centralised, non-centralised	New construction	3 to 6 months	up to around 338 days
Category B	Centralised, non-centralised	Reconstruction	3 to 6 months	up to around 267 days
Category C	Centralised, non-centralised, autonomous	Rehabilitation	3 to 6 months	up to around 27 days
Category D	Autonomous	New construction	3 to 6 months	up to around 288 days
Category E	Autonomous	Reconstruction	3 to 6 months	up to around 82 days

*For each category the corresponding procedures are listed in Annex 2. ** This includes preparation of designs/BoQs but not endorsement/expertise/permits.

Evidently, the given estimates are a significant burden on implementation of WSS projects in general, and impact both the timing and costs (in terms of staff timing/wages). The given burden reportedly also impacts on decisions around the choice of design/composition, leading to lower technical efficiency of the system when project duration goes beyond the estimated time frame by investors. Unfortunately, this is not a rare practice, but happens frequently due to the severe lack of capacity among specialised authorities and licensed organisations (design and construction), not to mention the stringent norms and standards.

New norms and standards: improvements and shortcomings (gaps)

The newly endorsed GNiP RT 40-06-2017[23] Rural Drinking Water Supply was designed to address most of the afore-mentioned issues, and was developed with special emphasis on rural drinking WS. The simplifications and relaxation of a number of requirements no doubt have had positive impacts on cost-savings and technical efficiencies. However, further assessments indicate that the depth of changes have generally been low and there is still room for considerable improvements, if more evidence and proof is documented.

Depth and impact of improvements (2017–2021)

Some of the most important improvements that the new GNiP (2017) introduces are related to the following key requirements that had direct and immediate impacts on the costs of a drinking WS system:[24]

[23] Construction norms and standards (GNiP RT 40-06-2017), endorsed by the Committee of Construction and Architecture.
[24] Faiziev R. (2021). Analysis of introduced changes in the norms and standards, gaps and ways forward (GNiP 2017 vs. 2008/1986).

Daily consumption norms

These now range between 50 and 95 litres per person per day for rural households, depending on climatic zone/region. According to old GNiPs, this range had been between 130 and 300 litres/day[25] for corresponding rural households.

Capacity to meet water demands

Water use for irrigation of household plots and gardens, livestock and poultry are now excluded from primary WS systems. To the extent feasible, such demands should be met from alternative sources (such as irrigation water, rivers, streams and canals).

Installation of firefighting facilities

Water use from primary WS systems for firefighting facilities is no longer a mandatory requirement, and therefore additional installations are no longer required. Instead, water for such purposes should come from sources other than drinking water (such as natural and artificial water bodies and rivers). It is also recommended to consider installing reserve tanks at each household for use in extreme events.

Safeguarding sanitation protection zones

a) Boundaries for sanitary protection zones are reduced from 60m to 30m (in radius) depending on the locations of water intake facilities and soil's infiltration characteristics (also relevant to mountainous regions), b) fencing of sanitation protection zones exclude use of concrete panels/walls and suggested alternatives apply – such as metallic wires and/or nets, and other low-cost materials.

Installation of reserve components (WS systems)

Installation of a reserve borehole is no longer a mandatory requirement. Instead, it is suggested that a water intake facility is equipped with a reserve pump for instant replacement during breakdown or primary pump maintenance.

Use of low-cost materials

Requirements for **use of metal** (steel, iron) **pipelines** with isolation materials against corrosion with exploitation terms of 20–25 years is **relaxed**. Instead, the new norms recommend use of polyethylene pipelines with improved durability and capacity to withhold higher pressures that can serve up to 50 years.

Requirements for separate facilities and WS component buildings:

New norms allow for the **construction of low-cost structures and facilities** where and if feasible, and the possibility of merging them where and if feasible. Container-type constructions are now allowed for the installation of pumping equipment, pavilions for boreholes, constructions for water tanks, maintenance buildings, and office buildings for operator/service providers.

[25] Regulation on the use of communal water supply and sewerage systems in the Republic of Tajikistan, endorsed by the decree of the Government of the Republic of Tajikistan, 30 April 2011, #234.

Costs of electricity-powered WS equipment

New norms **no longer require compensators** for reactive capacity for equipment that is powered by electricity.

The new norms have also relaxed some of the requirements for topographic studies towards reducing the work and time involved in the design stage, along with a **reduction in the number of required baseline documents** for the design of drinking WSS. Though, understandably, the new features of the document now include the requirement to provide **technical and economic feasibility studies** for drinking WS schemes and options at the design stage to suggest further efficiency measures. The norms now also require **a master plan approach** in designing village-level systems, as well as **investments in capacity building** of supply organisations. **Annex 3** of this policy report provides more details on the list of improvements and corresponding impact on systems' economic viability, durability and sustainability.

Most importantly, in terms of impact on cost-savings, the estimates from the Committee for Architecture and Construction exhibit expected **reduction of project costs between 25 and 50%**[26] with application of newly endorsed GNiP RT 40-06-2017 requirements ('depending on adopted technical solutions'). The figures for recently implemented WSS projects by **UNDP**[27] (2016–2018) suggest a similar impact on **cost-savings**, **estimated** at **between 32 and 61%** (average 44%) cost reduction (see Table 2).

Table 2: Impact of GNiP RT 40-06-2017 on cost-savings of WSS projects[28]

	WSS system	Consumers	Initial project cost	Final project cost *(after GNiP 2017)*	Total savings (%)
1	Drinking WS system in Taniyol village, Dahana Jamoat, Kulyab district	1,639 people/118 households (765 male, 874 female)	$234,576	$177,709	32
2	Drinking WS system in Fayzabad and Kalot villages, Dahana Jamoat, Kulyab district	2,409 people/261 households (1,261 male, 1,148 female)	$346,898	$251,375	38
3	Drinking WS system in M. Gafforov village, Ziraki Jamoat, Kulyab district	2,512 people/328 households (1,235 male, 1,277 female)	$286,113	$177,710	61*

*Includes community contribution to costs of connection from households to group connection point.

However, these reports must be dealt with carefully, since development partners indicate that the cost-savings impact of given changes in norms and standards (GNiP 2017) do not reflect the above figures. On the contrary, projects implemented by Oxfam GB, for example (i.e. WS system in Rudaki district) had actually seen a cost-increase, and generally report only the slightest difference (if any) in price. Reports

[26] SUE Scientific-Research Institute Construction and Architecture, Committee for Architecture and Construction under the Government of the RT (2020). *Comparative analysis of key sections of the GNiP RT 40-06-2017 and GNiP RT 40.01-2008 for safe drinking water supply in rural settlements*.

[27] In the framework of TajWSS project (Phase III) – three WSS systems in Kulyab district

[28] Faiziev R. (2021). *Comments to SDC Position Paper: Updating WSS standards and norms*.

also indicate that the changes had no impact on the timing of licensing and administrative/permit-obtaining processes. Evidently the above impact is in-conclusive, and more assessments need to be carried out to accurately estimate the impact of the new GNiP on the cost-efficiencies of implemented projects.

Gaps and shortcomings (present)

Despite the mentioned improvements and positive impacts on cost-savings, the implementers have urged for more comprehensive work to address other gaps and shortcomings that will further improve cost and technical efficiencies. The suggestions[29,30] are mostly related to further improvements to the GNiP RT 40-06-2017 Rural Drinking Water Supply and recently endorsed standards on rural sanitation (SanPiN 2.1.5. 035-21 and SanPiN 2.1.1. 036-21), that need foremost to address the following:

- With improved access to WS in households, improved sanitation (kitchen, toilets with decentralised sewage, bath facility) requires that present norms and standards apply up to 120 litres WS capacity per person per day.
- Norms and standards must enforce that rural settlements have public baths (thereby improving sanitation and hygiene).
- Computer modelling software use must be introduced and enforced by norms and standards to expedite the project design processes.
- Norms and standards should allow for the consideration of energy efficient and renewable/alternative energy technologies in the design and implementation of WS and sanitation systems.
- Requirement for on-site 24/7 security personnel must be replaced with video-surveillance technologies, and management of key hydraulic components with the help of modern remote-control technologies.
- Water quality standards need to be revisited in conformity with WHO standards (less stringent norms).
- Norms and standards must allow pilot demonstrations that bring innovations and experimental technical solutions based on international best practices and lessons learned.
- The work on the revision of methodology for pricing of materials, works and services (design/BoQ) has not yet concluded and stakeholders must advocate for this change in a consolidated manner.

[29] Ibid.
[30] SDC (2021) *Updating WSS standards and norms*. Position paper: Annex: Excerpts from TajWSS Project comments.

It must also be highlighted that the newly endorsed standards in 2017 only partially suspend old-time hefty requirements, and cannot be applied to systems that serve more than 5,000 people.[31] As of January 2019, the population of Tajikistan reached 9,126,600 people, including 2,396,800 people living in urban areas (26.3%) and 6,729,800 people in rural areas (73.7%).[32] The rural populations are distributed across 57 urban-type and 4,114 rural settlements across 58 districts/370 *jamoats* in Tajikistan. By definition, the application of the new GNiP (2017) is meant to benefit the smallest communities in the national standard classification of settlements, that is, rural villages/settlements with populations of between 200 and 5,000 people. The next classification in turn is the so-called 'rural communities' with populations of between 5,000 and 10,000 people. Above that comes urban-type settlements, towns and cities. More assessments are required to estimate the number of rural communities with corresponding numbers of WS systems that serve more than 5,000 rural inhabitants, so as to assess the potential benefit of upgrading 'target classification' requirements under GNiP 2017.

[31] Contributions from SDC-funded projects (implementers: ISW, Oxfam GB, UNDP, AKF/MSDSP).

[32] National Statistics Agency under the Government of the RT (January, 2019).

Section 5

Conclusions and policy recommendations

Achievements: progress is there, but partial

The norms and standards for design and construction of WASH projects in Tajikistan have undergone several difficult phases of development. While changes in the earliest phases were solely characterised by 'nationalisation' of norms and standards (in 2008), it was due to the TajWSS project that a more comprehensive approach was suggested.

Then in 2017 a designated construction norms and standards Rural Drinking Water Supply (GNiP 40-06-2017) was endorsed, which effectively addressed many of the often-reported issues from rural Tajikistan. This new GNiP 2017 was also developed with TajWSS project support with active participation and contributions from development partners, and in close collaboration with the National Agency for Architecture and Construction. The outcome is the result of more than four years of policy dialogue and consultations with partners and the agency. On the part of sanitation, UNDP (TajWSS) closely engaged with the Ministry of Health and Social Protection in developing the Sanitation Norms and Standards in rural settlements (SanPiN 2.1.5. 035-21[33] and SanPiN 2.1.1. 036-21[34]), that in part address sanitation issues reported by implementers in rural communities.

The newly endorsed norms and standards have suggested notable improvements on a number of reported issues and requirements, such as: daily consumption norms, capacity requirements to meet water demands, firefighting requirements, areas under sanitation protection zones, need for reserve equipment, fencing materials, use of low-cost materials, products and services, and reductions in baseline documents (design). However, while some sources indicate reduction of costs of WSS projects between 25 and 50%, in general, development partners report only slight changes in cost-efficiency of WS systems when new norms are applied.

Challenges and opportunities: addressing systemic barriers

Most of the recent achievements in updating norms and standards are characterised as **simplifications and relaxations** of the bulk of requirements, as an **'immediate' response to often-reported issues** by implementers in rural Tajikistan. Undoubtedly, these result in notable cost-savings and technical

[33] SanPiN 2.1.5. 035-21, Sanitary Norms and Standards Requirements for Sewerage Systems in Rural Settlements, Order of the Ministry of Health and Social Protection of the RT, as of 20 September 2021, #124.

[34] SanPiN 2.1.1. 036-21, Sanitary Norms and Standards on placement, structure, operation and maintenance of public toilets, Order of the Ministry of Health and Social Protection of the RT, as of 20 September 2021, #125.

efficiencies of drinking WSS. In spite of that, the present norms and standards have not addressed **systemic issues** that present some of the greatest **challenges** reported to date. These issues can be listed by thematic areas as follows:

- **Severe lack of capacity, practical know-how and innovations:** responsible institutions and licensed entities lack qualified staff, technical expertise, skills and required modern tools to develop effective designs and adequately guide construction processes. Advocating for innovations, state-of-the-art know-how and general flexibility in pilot demonstrations has been extremely challenging in the context of severe lack of institutional capacities.

- **Flexible price estimations for works, products and services:** Enforced normative price estimations for BoQ preparation at design stage are not up to date (outdated) and inconsistent with local market prices, and have generally been lower than those estimated by actual contractors. The price–performance ratio is not comparable to its equivalent in other countries. This has posed various complications during project implementation, such as market reassessments/recalculations, budget revisions and recontracting.

- **Cost-effectiveness and technical efficiency:** Present norms and standards still stipulate unnecessary requirements that result in oversized and over-costed systems. Over-dimensioning of WASH systems with significant add-ons to project costs is still observed with negative impacts on corresponding financial viability prospects.

- **Administrative procedures and permit-obtaining processes:** Implementers collectively report about the lengthy administrative procedures and permit-obtaining processes in completing stages of design and construction. While the notable burden on the costs and timing of processes is not comprehensively monetised, it is obvious that figures are expected to be high. Most of rural projects are considered new construction, and therefore the duration of undergoing these procedures may add up to about 12–18 months.

The noted achievements are the result of collaborative work between development partners engaged directly with the National Agency for Architecture and Construction, Ministry of Energy and Water Resources, and Ministry of Health and Social Protection. The following **opportunities**, therefore, suggest that more **progress is achievable** in due time in certain conditions:

- Development partners and implementers must further consolidate their efforts and maintain regular dialogue and consultations with responsible authorities at national level, conveying related experiences in rural settings.

- Given the complex and in-depth normative frameworks (standards), issues must be taken on a case-by-case basis, allowing due absorption within the governance system and practical application on the ground.

- New experiences and approaches (know-how, innovations, international best practices) must be duly documented and presented to adequately advocate a change in mindsets.

- Opportunities are there for more cost-savings and technical efficiencies for rural WASH systems, and implementers must carry out necessary assessments that may justify further changes to norms and standards. At this stage, evidence is limited or none to prove the claims.

- National authorities are open to new changes and approaches, but lack capacity to perform. Any effort directed at building institutional capacities with new knowledge, training, modern tools and international practices will be highly productive and appreciated.

Policy recommendations: evidence-based policy dialogue – a pathway to change

Recent improvements to norms and standards for design and construction of WASH projects in rural Tajikistan have undoubtedly been positive, and the depths of their impact are yet to be seen in the foreseeable future. Demand for changes were primarily driven by the need to stimulate substantial increase in domestic and foreign investments in the rural WASH sector, but the persistent systemic challenges pose serious barriers for investments to materialise. Present norms and standards still at large preserve traces of the Soviet approach and old-fashioned mindset. The implementers collectively characterise the present norms/standards as 1) *insufficiently adaptive and not flexible*, 2) *still inadequate, causing unnecessarily higher investment and investment costs*, 3) *lacking applicability of innovations, pilot demonstrations, technological know-how and generally openness to new practices and approaches*.

This policy report, therefore, brings to the attention of policy makers **the following policy recommendations** that derive from the rural experience:

- Capacities within responsible institutions (**primarily:** the Committee for Architecture and Construction and the Ministry of Health and Social Protection and its Sanitary and Epidemiological Services Agency), along with entities licensed to carry out design and construction, require systematic improvements to effectively apply norms and standards and adequately foresee prospects of updates. An **immediate step** would be to develop a **comprehensive capacity strengthening support programme** based on a thorough **performance assessment** of responsible institutions on the subject area. Such support must include a) development of modern curricula and teaching methods at design institutes and engineering schools (i.e. technical universities), and b) regular knowledge sharing and best practice exchange platform for design and construction professionals. Establishment of a community of practice at national level may well be a practical strategy forward.

- Enforced price estimations for works, products and services need to be revisited in the immediate term with methodologies that consider up-to-date local market prices as well as local innovative practices. Corresponding regulations and methodologies need to be developed and/or revised.

- Superfluous and unnecessary requirements still persist in the present norms and standards (detailed in Annex 2), and most of the applied changes addressed only partially. The GNiP RT 40-60-2017 Rural Drinking Water Supply (2017) requires further updates, with the upgrade of 'target classification' of system above 5,000 people (at least for settlements in the 5,000–10,000 population category).

- Administrative procedures and permit-obtaining processes have remained lengthy with almost no change since 2012. Development partners and implementers must document their experiences and lessons learned must be conveyed systematically to advocate for justified changes in each stage of design and construction. As an immediate step, implementers must a) record duration of each stage of procedure/process in practice, and then b) quantify and monetise time and resources spent as the processes become extensive.

From immediate to long-term perspectives, the policy agenda should promote the following targets towards further changes in norms and standards that lead to more efficiencies in investment and operational costs for WASH services in rural Tajikistan.

Immediate targets (up to 2030)

- Performance assessment of responsible institutions on application of norms and standards (*including collection of views from implementers and other stakeholders*).

- Development of a comprehensive capacity support programme that is based on institutional performance assessments (**featuring principles such as**: *international best practices, innovations, technological know-how, flexible approaches for pilot demonstrations*).

- Establishment of a community of practice or a related network for professionals, implementers, development partners and national and local authorities to share knowledge, practices, issues and lessons learned. This will help further advocate update of current GNiPs with consideration of feedbacks from development partners (detailed in Annex 2).

- Bringing normative price estimations for works, products and services (enforced at design stage for BoQ preparation) in conformity with actual local market prices and rural practices. Present price estimations are extremely low compared with market prices.

- Assessing foreseen impact of expanding GNiP RT 40-60-2017 Rural Drinking Water Supply application for systems serving more than 5,000 people. Adequate justifications must feed into further policy work.

- Thorough documentation of the duration of each stage of administrative/permits procedures for implemented projects to further inform policy makers on the impact of such burden on WASH project costs and efficiencies.

- Identify improved WS and sanitation models that have been successfully implemented and/or piloted in rural settings, and define scalability potential for further integration within present norms and standards.

- Documentation of low-cost and cost-efficient practices available in rural Tajikistan, and bring related international best practices.

- Requirements for water quality standards and monitoring must be brought into conformity with WHO standards.

Long-term targets (beyond 2030)

- Provide consistent technical and financial support for the implementation of an endorsed capacity strengthening support programme for responsible stakeholders in the application and development of improved norms and standards.

- Update sanitary norms and standards with consideration of new and improved WS and sanitation models introduced by development partners and others.

- Consistent updates advocated for norms and standards beyond GNiP 2017 and SanPiNs (2021) on a case-by-case basis, along with redefining targets and objectives within the reform programmes.

- Complete and up-to-date integration of new and improved WS and sanitation models within the present norms and standards, for those defined as replicable across rural Tajikistan.

- Reduction of time frames to a reasonable extent for undergoing administrative and permit-obtaining procedures. Support in that area must be rendered in harmony with strengthening capacities that will help achieve the objective.

- Knowledge about international best practices, technological know-how and innovations must be persistently collected and communicated to responsible institutions (training) to further inform policy change.

References for further reading

Reports and assessments from development partners

- Government of Tajikistan (2015). Water Sector Reforms Program of the Republic of Tajikistan.
- Government of Tajikistan (2009). About concept of reforming housing and communal services sector of the Republic of Tajikistan for the period 2010-2025, as of 1 July 2010, #321.
- Ministry of Energy and Water Resources (2017). Review of the practical application of the Law of the Republic of Tajikistan on drinking water and drinking water supply: Gaps, limitations and recommendations on its Improvement. Prepared with support from TajWSS project.
- SDC (2021). Position Paper: Updating WSS standards and norms (prepared with contributing inputs from SDC-funded projects in WASH sector.
- Swiss Cooperation Office (2016) Workshop on Technical Standards and Norms of water supply and sanitation facilities in rural Tajikistan. Final report by T. Broglie and T. Umbehr, January 2016.
- State Unitary Enterprise Scientific Research Institute Construction and Architecture. Comparative analysis of key norms and standards of GNiP RT 40-06-2017 MKS [Construction Norms and Standards of the RT] .ЧТ 40.01-2008 for the section on provision of safe drinking water for rural settlements.
- TajWSS (2011). Guidelines on undergoing administrative procedures and acquiring construction permits for drinking water supply and sanitation projects in Tajikistan.
- TajWSS (2009). Guidelines on implementation of drinking water supply and sanitation projects.
- TajWSS and UNDP (2017–2020). Review of Construction Norms and Standards in the sphere of drinking water supply and sanitation.

Policy documents, strategies and programmes

- Government of Tajikistan (2009) About concept of reforming housing and communal services sector of the Republic of Tajikistan for the period 2010–2025, as of 1 July 2010, #321.
- The Law of the Republic of Tajikistan (RT) on Drinking Water Supply and Sewerage, 19 July 2019 (#1633); replacing the previous Law on Drinking Water and Water Supply, 29 December 2010 (#670).
- The Law of the RT On Water Users Associations, New Edition, 02 January 2020 (#1668); replacing the previous Law On Water Users Association, 21 November 2006 (#213).
- Programme on improvement of safe DWS for the population of the RT for 2007-2020, as of 2 December 2006 (#514).
- Sector-related laws and regulations, norms and standards, SNiPs, GOSTs,[35] guidelines and manuals.
- Water Code of the Republic of Tajikistan, New Edition. Endorsed by Majlisi Namoyandagon Majlisi Oli, 12 February 2020 (#1596); Approved by the Majlisi Milli Majlisi Oli, 19 March 2020 (#756); President of the RT, 2 April 2020 (#1688).
- Water Sector Reform Programme for the period 2016-2025, approved by the Government of the RT on 30 December 2015 (#791).

[35] SNIPs are technical regulations and standards and GOST is a set of international technical standards maintained by the Euro-Asian Council for Standardization, Metrology and Certification.

Annex 1

Summary of feedback from implementing partners on the application of present construction norms and standards of the WASH sector in rural Tajikistan[36]

This summary includes feedback (comments, issues, challenges and recommendations) from implementing partners (primarily SDC-funded projects) on the experiences of applying present construction norms and standards in the WASH sector, with particular focus on rural Tajikistan. The feedback comes from the following projects and implementing partners:

- Tajikistan Water Supply and Sanitation Project (**TajWSS**, Phases I, II and III, 2009–2022), funded by the Swiss Agency for Development and Cooperation (SDC) and implemented by Oxfam GB in partnership with UNDP.
- Rural Water Supply and Sanitation Project, Ferghana Valley, Tajikistan (**RWSSP** FV, 2014–2019), funded by the SDC and implemented by the ISW.
- Regional Rural Water Supply and Sanitation Project (**RRWSSP**, Phases I, II and III, 2007–2011), funded by the SDC and implemented by the ISW.
- Safe Drinking Water and Sanitation Management Project (**SWSMT**), funded by the SDC and implemented by the consortium of Aga Khan Development Network agencies (AKF as a lead) in Tajikistan.
- Comprehensive Water Supply and Sanitation in Rural Areas of Sughd Region Project (**CoWaSS**), funded by the SDC and implemented by the consortium of ISW, Helvetas and CAICO.

[36] Adapted from SDC (2021). SDC Position Paper: Updating WSS standards and norms.

Problem Area 1

Applied capacity, knowledge and innovation

(Including adaptability, flexibility, innovation, application of know-how, openness to new demonstrations, use of modern tools and applications)

1. Local licensed design companies **lack qualified staff, technical expertise and needed tools** to develop effective designs. This is evident from the very low-quality designs licensed companies have developed for the assigned projects. Local design companies also **require additional time** to improve and complete the designs and incorporate the project team's feedback. The immediate outcome is the poor design and lengthy processes (**AKF/MSDSP**).[37]

2. Design institutes are **not competent**, and often come from the irrigation sector lacking capacities to design rural WSS. They apply the SNiPs bluntly and do not take into account the specificities of the places (villages), with **no room for flexibility and adaptation** to realities in the rural context. Licensed institutions **do not use modern software applications** that can expedite design processes, envisage different scenarios, and analyse in terms of costs and feasibility. The cost of applying old methods of designing is therefore much higher and the process is lengthy (**ISW**).[38]

3. Licences for design and construction should be issued only to those companies that have sufficient theoretical and practical knowledge in WS and sanitation. The process of issuing licences needs to be adequately controlled (**AKF/MSDSP**).

4. The most persistent barrier encountered during the construction period is the inconsistent and faltering construction design crafted by design companies. Due to the lack of skills and capacity, the proposed design becomes subject to budgetary changes and construction adjustment to meet the project requirements and budget constraints. The design process is very lengthy (four to six months), and could be done in a shorter period of time. This particular aspect delays the actual construction period and causes a rescheduling of the construction work (**Oxfam GB**).[39]

5. Local authorities often lack supervision and technical skills, especially in rural areas, and often do not receive support from central authorities. This also affects quality control of the works and the construction materials, tools and equipment used. Control over the progress of construction work should be carried out both by the contractor and the customer. Construction control specialists from both parties (site engineers) must be based on the project site during construction work. Oxfam's practice shows that if the group monitoring the construction is not comprised of contractors, government and community members altogether, the quality and timely completion is at highest stake (**Oxfam and Swiss Cooperation Office (SCO)**).[40]

[37] AKF/MSDSP: feedback provided from the experience of all drinking WS and sanitation projects implemented by the AKF/MSDSP, including that of SWSMP.
[38] ISW: feedbacks provided from the experience of several projects implemented by the ISW, including RWSSP FV, RRWSSP and CoWaSS
[39] Feedback provided from the experience of all projects implemented by Oxfam GB in Tajikistan, including TajWSS (Phase I, II and III, 2009–2021).
[40] SCO (also referred to in this report as the SDC), based on the cumulative experience of WASH projects funded and supported by the SCO in Tajikistan.

6. Development partners face regulatory difficulties in applying innovative and state-of-the-art technologies, as well as internationally accepted best practices. For example, engineers revealed that present standards and norms do not make any references to available renewable energy systems (solar pumps, electricity inverters) that can be referred and used for technical estimations. The assigned design company searched and used the needed information from other sources. This reportedly had an impact on the costs of service provision and therefore the affordability of WSS services in rural areas, as well as on the user-friendliness of WSS infrastructure (**AKF/MSDSP**).

7. Administrative and technical staff (e.g. pump operators, lab technicians responsible for chlorination) often do not get adequate training, especially in rural areas. There is a high turnover of these staff due to low salaries (**AKF/MSDSP**).
8. Local stakeholders (staff) generally lack adequate knowledge about the existing norms and standards, and lack technical, administrative and financial guidelines for WSS infrastructure in rural areas (**SCO**).[41]

9. Local authorities often do not have the technical capacity to supervise construction works, especially in rural areas. It would be appropriate to consider transferring the management of water and sewerage systems to local governing associations such as water users associations. The project evaluation shows that the management of WSS at the local level is more efficient, productive and sustainable than transferring them to the balance of government agencies, especially *Tojikobdehot* or *Vodokanal* (**Oxfam GB**).

Problem Area 2

Applied price estimations for works, products and services (boq)

1. Pricing practices and procedures (for estimation of cost of design and construction materials and services) are outdated and still based on Soviet standards. For example, the pricing of design is linked to the size of the expected system (kilometres of pipes, daily water production, number of people in the served population), instead of the volume of provided work. When projects are tendered to private engineering companies or technical state institutes (licensed entities), the proposed price–performance ratio is not comparable to any similar services in other countries and is often extremely low. Proposed prices for design are spiralling, compared with the construction costs. An adaptive and flexible model to calculate certain types of work should be required based on local practice and market conditions (**Oxfam GB**).

2. The pricing practices (of materials and services) during design and construction stages are outdated. Similar to tenders for the design work, those for constructions are often not based on volume of work to be done, but prices and work positions still follow old-fashioned rules. There is a practice when a contractor wins a tender for prices to be set in accordance with the approved estimated prices in the catalogues, which are indicated in the requirements for primary

[41] SDC (2021). *Updating WSS standards and norms*. SDC position paper.

estimates. And the contractor cannot perform these works at the prices that were indicated in the BoQ, because market prices for materials and services are completely different. It would be appropriate to carry out calculations not only according to elementary estimated standards, but also to take into account the calculation of the contractor for construction materials and types of work based on prices in the local market. Again an adaptive and flexible model to calculate certain types of work should be required based on local practice and market conditions (**Oxfam GB**).

3. The main problems of pricing in construction are caused by the use of prices for services and material costs according to price collections approved on a quarterly basis, which do not correspond to market prices and require recalculation. In addition, 90% of the market for constructions materials, and 100% of the market for equipment depend on exports and prices set by suppliers. Hence UNDP together with the authorised state bodies prepared a proposal for a legislative initiative to the Government of Tajikistan on establishing preferential conditions for materials and equipment imported to the country for drinking WS facilities. Outdated documents (*Regulation on Calculation of Construction Products (Works and Services) of 2000; Guidelines for Determining the Cost of Construction Products of 2001*), and procedures and pricing practices in construction could be changed to more productive solutions with the aim of transitioning the pricing system from the outdated 'resource method' with a large number of correction factors and changes in the rules to more rational and productive approaches. Decisions must be adopted by the authorised state body in the field of construction and the Government of the RT for these changes (**UNDP**).

Problem Area 3

Cost-effectiveness and technical efficiency

1. Application of norms and standards **require unnecessary studies** (at design stage) **and works** (construction and O&M stages) that have significant impacts on the costs of design and construction:

    - Additional studies, such as detailed topography or geological surveying, are made compulsory even through from an engineering point of view, they may be superfluous (e.g. for rehabilitation of existing WSS). Relaxing such requirements definitively will have a positive impact on the total design costs (**SCO/SDC**).
    - An important point is the hardness of water. Standards and norms impose using only extremely soft water, thus leading to absurd investment to soften the water. Hardness of water is not even on the list of WHO to qualify the water as drinkable or not. But the standards and norms in Tajikistan impose a very strict norm and the health services refuse to deliver the authorisation to use water with hardness above the standards as drinking water **(ISW/CoWaSS)**.

- Other superfluous requirements include the installation of chlorination units in WSS that do not require it, e.g. a gravity WS system from spring damming, through a pipeline to a water tank, on which a chlorination room is installed before water is supplied to the village, or eater from the borehole pumping to the water reservoir with the chlorination unit before WS to the village. In both cases, the water quality already complied with GOST. Our experience also shows that these chlorination units are not used in the future on WSS **(Oxfam GB)**.

2. Even though the present norms now differentiate between water provisions for rural and urban settlements, these norms require over-dimensioning for water production, storage and distribution, which in turn increases the prices for construction and O&M, resulting in additional costs. Those norms also require over-dimensioning of the size of the sanitary zones which is prohibitive in areas of land scarcity, especially in mountainous regions (**SCO**).

3. Norms differentiate according to climatic zones, but are not adapted to the specific needs of mountainous areas (which are widespread across Tajikistan). According to the norms, 80 to 100 litres are allocated per person per day for water taps installed in household yards. In practice, with the simultaneous use of water in open systems (open streams), this rate is not sufficient in the autumn-winter period on mountain areas, when the water would freeze at this low flow rate (**AKF/MSDSP**).

4. The present norms and standards require 24/7 security guards for the WASH assets, which is a burden on financial viability of WASH systems during O&M. Non-compliance with this requirement is a widespread practice across most rural WASH systems exactly because of financial burden on service providers. More importantly, rural service providers do not perceive the absence of security guards as a problem at all, because of the demonstrated greater sense of ownership within rural communities (**UNDP/TajWSS**).

5. The norms and standards require water provision for firefighting purposes and/or animal breeding, but when the deliverable volumes of water cannot be met, many projects cannot be implemented because of the additional costs required (**All partners**).

6. The norms and standards require duplication of the hydraulic elements, such as pumps, reservoirs and transport pipes. Such requirements can no longer be justified from an engineering, operational and economic point of view, in particular for smaller rural systems. These duplication requirements provoke unnecessary cost increases (**All partners**).

7. **The current standards impose a staff ratio that is excessively high for water operators**. For instance, staff are required according to the network length, supplied volume or persons and 'strategic' objects, like reservoirs need to be guarded 24/7. This is incompatible with the efficiency and economic viability of the system. Since salaries are a major part of the operators' budget, rational use of staff and clear responsibilities must be clearly set and allowed by the state regulations (**All partners**).

8. Standards needs to be updated with new types of materials available at local markets. In turn, many low-quality materials imported from China should be checked by the State Standard Authority regularly (**AKF/MSDSP**). Only new materials that have received product quality certificates should be added to the SNiPs (**Oxfam GB**).

9. Current SNiPs ignore the specificity of construction norms for mountain areas; SNiPs also do not consider the specifics of construction norms for mountain areas. Most of the SWSMT projects were implemented in remote mountain villages with remote water sources where the transportation of construction materials is handled manually. However, the calculation of this type of works is not provisioned in SNiPs. Engineers used Soviet time guidelines to calculate the manual transportation of materials *(***AKF/MSDSP***).*

10. Continued reliance on water consumption norms envisaged in SNiPs leads to engineering, approval and implementation of oversized supply and sanitation infrastructure. There are no adequate standards for small-scale rural WSS systems: for villages above 5,000 people the new GNiP (2017) does not apply but the old SNiP does. In this respect as soon as the size of the village is above 5,000 people all the former standards apply. It would therefore be necessary to modify the threshold or introduce flexibility in the way to apply the standard (**ISW/CoWaSS***)*. These instructions result in oversized, often poorly performing and overly expensive systems in terms of both capital and operating costs. They also directly contribute to hindering additional investment by donors in the sector. It is necessary to develop the simplest standards for the construction of small WSS and implement them into existing norms and standards (**Oxfam GB**).

Problem Area 4

Institutional viability and administrative procedures

1. No clear definition of legal status and tasks and responsibilities for O&M between regulatory, quality control, O&M functions of state and non-state bodies involved in rural WASH in Tajikistan. The local organisations responsible for management and O&M sometimes have no legal status and are not recognised by authorities. Furthermore, they often need help and support/control and monitoring from local authorities and/or by representatives of the authorised state agencies (**All partners**).

2. The handover of the infrastructure is often neglected, which contributes to failures in O&M. The hand-over process involves the finalisation of all documentation (such as final BoQ, systems designs, acts of accepted works, costs of constructing systems, systems passport) essential to further O&M. It is the observation that such documentation is mostly either missing or incomplete. (**All partners**).

3. Lengthy administrative procedures and processes for obtaining permits and licences lay burden on the costs and timing of constructing WASH systems in rural Tajikistan. Before designing the systems, it is obligatory to collect the permission documents from various governmental structures (from the Land Department for land use under construction of sanitary zones, reservoirs, septic tanks, nature and environmental protection statement; from the Road Department for permission for the pipes going under roads, and so on.). All of these documents

are obtained by project designers in close cooperation with district governments (**AKF/MSDSP**). Land allotment can also be an issue: if a water source is located on a piece of land which is listed for agricultural purpose it is not possible to build up a sanitary zone or reservoir and therefore to use the water source for drinking purposes. The process of obtaining the authorisation can be extraordinarily long, cumbersome and costly. It should be made easier in the case of drinking WS (**ISW/CoWaSS**).

4. Existing norms do not provide economically and environmentally suitable options for (rural) sanitation, beyond the standard sewage-and-treatment technology, which is often inappropriate for rural localities due to cost and operational reasons. For example, norms or technical guidelines for on-site sanitation at household level (septic tanks, urine-diverting toilets) and village level (faecal sludge management, small-scale wastewater treatment technologies such as constructed wetlands) are absent from the normative system altogether, which can make it difficult to obtain the design, construction and operation permits necessary for the introduction of such alternative, cost-effective solutions. The decentralised wastewater treatment system (DEWATS), which is currently being built by Oxfam, should be introduced into the regulatory framework (**Oxfam GB**).

Annex 2

Procedures and order of administrative and permit-obtaining procedures for implementation of drinking water supply and sewerage projects[42]

Table 3: Mandatory procedures by categories of construction works and types of systems

Type of system	Category of procedures by types of construction		
	New construction	Reconstruction	Rehabilitation
Centralised systems	A	B	C
Non-centralised systems	A	B	C
Autonomous systems	D	E	C

Mandatory procedures (depending on the types of systems and constructions):

Category A – procedures: 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.
Category B – procedures: 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 16.
Category C – procedures: 2, 5, 6, 10, 11, 12, 13, 16.
Category D – procedures: 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 15, 16.
Category E – procedures: 1, 2, 4, 5, 6, 9, 10, 11, 12, 13, 16.

[42] Adapted from SDC (2021). *Updating WSS standards and norms*. SDC position paper.

Table 4: List and order of administrative/permitting procedures

	Title of procedure	Responsible state authority/entity	Duration	Legal and regulatory basis *(Reference to laws and regulations)*
1	Survey, selection of WS source and sanitary and epidemiological report	District/City Agency for Sanitary and Epidemiological Supervision	Up to 30 days	Law of RT #670, as of 29 December 2010 on drinking water and drinking WS. The procedure for the preparation, registration and issuance of a sanitary and epidemiological report – approved by the Government of the RT, as of 31 March 2004, #139 (SNiP) MKS RT 40.01-2008.
2	Technical assessment of state of systems (feasibility study)	Commission for Defect Assessment (operating organisation, owner, experts)	Up to 1 week	Regulation on carrying out schedule-preventive repairs at WS and sewerage facilities (departmental normative document).
3	Selection and allotment of land for construction	Local authority/district administration, commission, district land committee	Up to 185 days	Land Code of the RT, Rules on Land Allotment for Legal Entities and Individuals – endorsed by the Decree of the Government of the RT, as of 1 September 2005, #342; Law of RT, #343, as of 14 December 1996; Decree of the Government of the RT, #105, as of 27 February 2010.
4	Collection of initial data, obtaining architectural and planning assignments (АПЗ) and technical specifications (ТУ)	Local district branch of National Agency for Architecture and Construction	Up to 20 working days	The Law of RT about Architectural, Town-Planning and Construction Activity, Order of undergoing administrative procedures connected with implementation of construction activity in the RT – endorsed by the Decree of the Government of the RT, as of May 6, 2009, No. 282; Regulation on connection to engineering networks and providing utilities – endorsed by the Decree of the Government of the RT, as of October 1, 2009, No. 531; Construction Norms and Standards – MKS RT 11-01-2005. Composition and procedure of development, concordance and approval of design documentation for construction of enterprises and structures. Construction Norms and Standards – 11-02-96. Engineering surveys for construction.

5	Preparation of design and BoQ documentation	Design organisations, design engineer	As per contract	Construction Norms and Standards – MKS RT 11-01-2005. Composition and procedure of development, concordance and approval of design documentation for construction of enterprises and structures.
6	Review and approval of project design documentation	Local district branch of National Agency for Architecture and Construction	Up to three working days	Order of undergoing administrative procedures connected with implementation of construction activity in the RT – endorsed by the Decree of the Government of the RT, as of May 6, 2009, No. 282; Construction Norms and Standards – MKS RT 11-01-2005. Composition and procedure of development, concordance and approval of design documentation for construction of enterprises and structures. Construction Norms and Standards – 11-04-2003. Instructions on the order of development, concordance, expertise and approval of town-building documentation.
7	Expertise of project design documentation	Local district branch of National Agency for Architecture and Construction, Department for State Expert Review of Construction Projects	Up to 30 working days depending on the size and complexity of the system	
8	Obtaining permits for special water use	Local authority/district administration	Two weeks	Order of preparation, registration and issuance of permits for special water use – endorsed by the Decree of the Government of the RT, as of 3 December 2002, #485.
		Committee for Environmental Protection	Two weeks	
9	Obtaining permission for construction	Local district branch of National Agency for Architecture and Construction	Up to five working days	Order of undergoing administrative procedures connected with implementation of construction activity in the RT – endorsed by the Decree of the Government of the RT, as of May 6, 2009, No. 282.
10	Architectural supervision	Design organisations, design engineer	As per work schedule	Law of RT, #380, as of 20 March 2008, About architecture, urban planning and construction activities in the RT; Construction norms and standards – MKC RT 11-06-2006. Regulation on copyright supervision over the construction of buildings and structures.
11	Technical supervision	Customer (investor) of the facility	As per work schedule	

12	Construction of system	Sub-contracted organisation/ company	As per work schedule	Law of RT, #380, as of 20 March 2008, About architecture, urban planning and construction activities in the RT; XPC RT 81-203-2008. Regulation on contracts for construction in the RT.
13	Preparation of the system for launch and operation	Working Commission for preparation of the system for launch and operation	Up to 10 working days depending on the designation and costs of construction	Law of RT, #380, as of 20 March 2008, On architectural, urban planning and construction activities in the RT; Order of undergoing administrative procedures connected with implementation of construction activity in the RT – endorsed by the Decree of the Government of the RT, as of May 6, 2009, No. 282; Construction Norms and Standards – MKS RT 12-01-2007. Commissioning of completed construction facilities.
14	State endorsement of the system for operation	State Endorsement Commission, customer (investor)	Up to 20 working days depending on the designation and costs of construction	
15	Assets registration	Assets Registration Authority	Up to 14 working days	Law of RT, #375, as of 20 March 2008, About state registration of immovable properties and property rights
16	Obtaining of technical passport	District Bureau for Technical Inventory	Up to 1 week	Decree of the Government of the RT, as of 30 December 1998, #513, Order of Tajikcommunservice, as of 4 October 1999, #217/11.

Annex 3

Synthesis of key changes introduced by the GNiP RT 40-06-2017: Implied relaxations and simplifications

Table 5: Synthesis of key changes introduced by the GNiP RT 40-06-2017:[43] implied relaxations and simplifications[44]

	Area of concern	Endorsed changes	Implied positive impact
1	**Daily consumption norms**	Daily consumption norms per person (averaged throughout the year) should be estimated on the basis of climate conditions in a target district, i.e. equalling to **50 litres per day** for Climatic Region I and **95 litres per day** for Climate Region IV. In other areas norms of consumption are estimated through interpolation (i.e. **between 50 and 95 litres per day**). *Reference: GNiP Section I (Domestic water use and consumption needs)*	Consumption norms adapted and made flexible to local conditions. Inherently, this also implies much less demand for water production, reduced costs of infrastructure (size, pumping capacity, storage/tank requirements, etc.) and consequently less burden on water tariffs. Previously the range of 50 to 95 litres per person per day was estimated only for **open street standpipes** and **standpipes that served multiple households**.[45] For private and individual households the applied norm for a 'typical' rural household (traditional households in rural settlements) had **previously been estimated at between 130 and 300 litres per person per day:**[46] - households with private piped water and/or sewerage connection (without a bath) – **130 litres/day** - households with private piped water and/or sewerage connection (with a bath and gas connection) – **150 litres/day** - households with private piped water, sewerage, baths and water heaters that use solid fuel – **180 litres/day** - households with private piped water, sewerage, baths and water heaters that use gas and electricity with multiple access points – **300 litres/day**.

[43] Construction norms and standards (GNiP RT 40-06-2017), endorsed by the Committee of Construction and Architecture.

[44] Adapted from R. Faiziev (2021). *Analysis of introduced changes in the norms and standards, gaps and ways forward (GNiP 2017 vs. 2008/1986).*

[45] Regulation on the use of communal water supply and sewerage systems in the Republic of Tajikistan, endorsed by the decree of the Government of the Republic of Tajikistan, 30 April 2011, #234.

[46] Ibid.

2	**Capacity to meet demands**	Water use for irrigation of household plots and gardens are excluded from the estimated daily consumption norms, and must be accessed separately from rural irrigation facilities, since the cost of WS infrastructure is much higher. *Reference: GNiP Section II (Non-consumption household water demands for irrigation, etc.)*	Use of drinking water for human consumption/use is set as priority. Water demands for household plots, gardens, animals, livestock and poultry are to be covered via alternative sources (irrigation water, rivers, canals, streams, etc.). When these requirements are met, access to drinking WS improves throughout the day/night.
		As feasible, water demands of household animals, livestock and poultry must be covered through alternative sources (irrigation water, rivers, streams, canals, etc.) *Reference: GNiP Section III (non-consumption household water demands for animals and livestock)*	
3	**Firefighting facilities**	It is sufficient to use technical water (water from other sources alternative to drinking water), for example loading firefighting vehicles with water from natural and artificial water bodies and rivers with available infrastructure (access roads). It is also **recommended to consider installing reserve tanks in each household** for use in extreme events. *Reference: GNiP Section IV (Water demands for firefighting)*	Use of WS systems' drinking water for firefighting is no longer a mandatory requirement. Inherently, this also implies much less demand for water production, reduced costs of infrastructure (size, pumping capacity, storage/tank requirements, etc.) and consequently less burden on water tariffs. However, the burden is placed on individual households that are **recommended** to install reserve water tanks for firefighting purposes.
4	**Safeguarding sanitary protection zones**	**Boundaries** for sanitary protection zones are **reduced from 60m to 30m** (in radius) depending on locations of water intake facilities and soil's filtration characteristics.	Partial relaxation of requirements for WS systems in land-scarce (mountainous) areas; reduced costs for WS systems construction, consequent reduction of burden on water tariffs. Additionally, this implies less burden on land-allotment permit procedures for reclassification of areas of land from agricultural to water infrastructure.
		Fencing of sanitary protection zones exclude use of concrete panels/walls, instead suggested alternatives may use metallic wires and/or nets and other low-cost materials.	Use of low-cost materials significantly reduces costs of fencing sanitary protection zones, thereby reducing costs of WS systems infrastructure, and consequently poses less burden on water tariffs.
5	**Installation of reserve components**	Installation of **reserve boreholes is no longer a mandatory requirement**. Instead, water intake facilities should be equipped with a reserve pump for urgent replacement during breakdown and during prophylactic works related to primary pump maintenance.	Replacing requirement for reserve borehole with a reserve pump for water intake facility implies reduced costs for WS system construction, simultaneously ensuring water users have uninterrupted access to WS.

6	**Use of low-cost materials**	**Fencing of water-intake facilities** exclude use of concrete panels/walls, instead suggested alternatives may use metallic wires and/or nets and other low-cost materials.	Use of low-cost materials significantly reduces costs of fencing water intake facilities, thereby reducing costs of WS systems infrastructure, and consequently poses less burden on water tariffs.
		Requirements for **use of metal** (steel, iron) **pipelines** with isolation materials against corrosion with exploitation terms of 20–25 years is **relaxed**. Instead, the new norms recommend use of polyethylene pipelines with improved durability and capacity to withhold higher pressures that can serve up to 50 years.	Relaxation of these requirements has had an immediate impact on the costs of infrastructure and WS systems construction, maintenance and durability, with a consequently lower burden on water tariffs for rural population.
7	**Requirements for separate facilities and WS component buildings**	New norms allow **construction of low-cost structures and facilities** where and if feasible, and the possibility for merging them where and if feasible. Container-type constructions are now allowed for installation of pumping equipment, pavilions for boreholes, constructions for water tanks, maintenance buildings, and office buildings for operator/service provider.	New requirements relax the need for construction of buildings from concrete materials and bricks (low-cost container-type structures suggested instead), reduces the duration of the construction phase, reduces costs for maintenance and increases durability of WS systems.
8	**Costs of electricity-powered WS equipment**	New norms **no longer require compensators** for reactive capacity for equipment that is powered by electricity.	Relaxation of this norm is applied for rural WSS only, and the immediate impact is the reduced cost for WS systems construction (on the part of electricity-powered installations), thereby posing less burden on water tariffs.
9	**Installation of water meters**	New norms **recommend installation of water meters** for each household.	While installation of water meters is a burden on the costs of WS systems construction (either service provider or households), it does ensure economic consumption of water (if tariffs are volumetric), and improves transparency and accountability relations with the service provider. The ultimate benefit can translate to systems durability and sustainability.
10	**Documentation for project design**	New norms require **reduced list of baseline data** at the design stage for rural WS systems, compared with the list suggested for urban WS systems.	New requirements reduce amount of work during the design stage, and reduce the duration of design phase, thereby saving costs of investment in project design.
		Requirements for **depth of geodesic and topographic studies** had been **relaxed** for a) rehabilitation and b) reconstruction, and reduced for c) new construction of WS systems.	
11	**Methods of project design**	For rehabilitation and reconstruction of WS systems, implementers are allowed to use **software applications** for preparation of WS system plans with conditional marks on locations and land surfaces for system's hydraulic estimations.	New requirements reduce amount of work during the design stage, and reduce the duration of design phase, thereby saving costs of investment in project design.

Annex 4

Abbreviations

AKF	Aga Khan Foundation
BoQ	Bill of quantities
CoWaSS	Comprehensive Water Supply and Sanitation in Rural Areas of Sughd Region Project funded by the SDC and implemented by the consortium of Helvetas, ISW and CAICO
GNiP	*Gosudarstvennie Normi i Pravila* (state norms and regulations, aka state norms and standards)
ISW	International Secretariat for Water
MSDSP	Mountain Societies Development Support Programme
O&M	Operation and Maintenance
Oxfam GB	Oxfam Great Britain
RRWSSP	Regional Rural Water Supply and Sanitation Project (RRWSSP), funded by the SDC and implemented by the ISW
RT	Republic of Tajikistan
RWSSP FV	Rural Water Supply and Sanitation Project, Ferghana Valley, Tajikistan (RWSSP), funded by the SDC and implemented by the ISW
SanPiN	*Sanitarnie Normi i Pravila* (state sanitary norms and regulations, aka state sanitary norms and standards)
SCO	Swiss Cooperation Office
SDC	Swiss Agency for Development and Cooperation
SNiP	*Sanitarnie Normi i Pravila* (State Sanitary Norms and Regulations, aka State Sanitary Norms and Standards)
SWSMP	Safe Drinking Water and Sanitation Management Project (SDWSMP), funded by the SDC and implemented by the MSDSP in Tajikistan
TajWSS	Tajikistan Water Supply and Sanitation Project (TajWSS) Project, funded by the SDC and implemented by Oxfam GB in Tajikistan in partnership with UNDP `
WASH	Water, sanitation and hygiene
WSS	Water supply system

Tajikistan Water Supply & Sanitation Project (Phase III)

Policy Report

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC
Швейцарское Управление по Развитию и Сотрудничеству SDC
Раёсати Швейтсария оид ба Рушд ва Ҳамкорӣ SDC

OXFAM

UNDP
Empowered lives.
Resilient nations.