

Zhupysheva A. O.

PhD

L.N. Gumilyov Eurasian National University
Astana, Republic of Kazakhstan
e-mail: aktoty_nur@mail.ru
ORCID: 0000-0001-6267-8579

Mashaeva A. Zh.*

2nd-year PhD student

L.N. Gumilyov Eurasian National University
Astana, Republic of Kazakhstan
e-mail: ayagoz_mashaeva@mail.ru
ORCID: 0000-0002-6415-9526

Ignacio Menendez-Pidal De Navascues

Doctor of Technical Sciences, Professor

Polytechnic University of Madrid

Madrid, Spain

e-mail: ignacio.menendezpidal@upm.es
ORCID: 0000-0002-7053-1101

PERFORMANCE AUDIT OF THE USE OF BUDGET FUNDS IN THE RURAL WATER SUPPLY SECTOR: EVIDENCE FROM PAVLODAR AND AKMOLA REGIONS

Abstract. The article presents a performance audit of the use of budget funds allocated for rural water supply in Kazakhstan, focusing on Pavlodar and Akmola regions. The study is based on an analysis of the state programs "Aq Bulaq" and "Nurly Zher", official financing volumes, as well as the authors' own empirical data (household surveys and physicochemical water analysis). A performance audit approach was applied using the 3E criteria – economy, effectiveness, and efficiency. The findings show that despite significant investments, the actual water quality and the level of public satisfaction do not always match the stated objectives. The main reasons identified include project duplication, insufficient monitoring, weak feedback from the population, and the absence of local KPIs. Specific recommendations are proposed: introduction of a permanent performance audit mechanism, increased transparency and accountability of programs, and development of indicators for the socio-economic impact of water infrastructure projects. The presented results will be of interest to government audit bodies, state auditors, and public sector managers.

Keywords: public audit; performance audit; water supply; budget funds; 3E audit; rural areas of Kazakhstan

INTRODUCTION

Providing the population with quality water supply services is one of the priority areas of government policy in the field of sustainable development. In the rural regions of the Republic of Kazakhstan, issues of access to safe drinking water are of particular importance due to the vulnerability of infrastructure, the remoteness of settlements, and limited financial resources. Despite the significant amounts of budget funding allocated for the implementation of government programs in the water supply sector, such as "Aq Bulaq" and "Nurly Zher", there remain serious problems related to water quality, coverage levels, the technical condition of networks, and the population's perception of real improvements.

The formal achievement of indicators reported by the authorized bodies does not always correlate with the actual situation on the ground. The absence of a comprehensive system for assessing the effectiveness and efficiency of budget expenditures leads to project duplication, uneven distribution of resources, and a decline in public trust toward the measures being implemented. In this context, conducting a performance audit of the implementation of water supply programs becomes particularly relevant. Such an audit focuses on analyzing the "cost-result" relationship, identifying institutional and financial barriers, and developing practical recommendations.

The scientific significance of the study lies in its attempt to combine quantitative indicators (budget expenditures, access to water supply, laboratory characteristics of water quality) with qualitative assessments (household survey results, satisfaction levels), which allows for a comprehensive evaluation of the effectiveness of the implemented programs. The practical value stems from the possibility of applying the study's results to improve the methodology of public performance audit and to strengthen the evidence base for managerial decisions in the field of water supply.

RESEARCH OBJECTIVE

The purpose of this study is to assess the efficiency of budget fund utilization in the implementation of rural water supply programs in Pavlodar and Akmola regions from the perspective of public performance audit using the 3E model (economy, effectiveness, and efficiency).

In accordance with this goal, the article addresses the following tasks:

- to conduct a comparative analysis of the objectives and results of the government programs "Aq Bulaq" and "Nurly Zher";
- to evaluate the degree to which the achieved indicators meet the expectations and needs of the rural population;
- to analyze the relationship between the volume of funding and the actual quality of water supply;
- to identify the risks of inefficient planning and implementation of program activities;
- to develop proposals for improving the public performance audit in this field.

LITERATURE REVIEW

The issues of assessing the efficiency of budget expenditures in the field of water supply have become the subject of extensive academic and practical discussion in the context of the implementation of the Sustainable Development Goals (SDGs). According to SDG 6, states commit to ensuring universal and equitable access to safe and affordable drinking water [1]. However, the achievement of this goal in rural areas faces a number of institutional, infrastructural, and financial barriers.

International practices emphasize the importance of a comprehensive approach to auditing water supply programs. According to the guidelines of INTOSAI [2] and the OECD [3], performance is assessed in terms of economy, effectiveness, and impact, while also taking into account the opinions of end-users. Studies by the World Health Organization (WHO) highlight that not only the availability of water supply networks but also water quality, stability of supply, and the level of public trust determine the real effectiveness of the programs [4].

A number of researchers highlight the problem of the gap between the declared indicators of programs and the actual quality of services. For example, in the work of Hutton et al. [5], a model of the economic efficiency of investments in water programs in transition economies is presented. Similar conclusions are drawn in a study on Eastern European countries (Staddon et al., 2020) [6], which emphasizes the need for regular assessment of the impact of programs on the quality of life of the rural population.

A methodologically significant contribution has been made in works on performance audit in the public sector: Kells & Hodge [7], Pollitt [8], and Armah-Attoh [9] propose using indicators of social perception and levels of trust as a supplement to classical quantitative indicators. Studies by Alzua et al. [10] and Chong et al. [11] highlight the role of household feedback in building a sustainable evaluation model.

In Kazakhstani research, the focus is mainly on institutional analysis or technical aspects of water supply. The works of Isabekova A.Sh. [12], Dautbayeva G.S. [13], and Kalibayev A.B. [14] analyze the implementation of state programs; however, the assessment of their actual effectiveness from the perspective of performance audit is limited.

In international publications, the combination of quantitative and qualitative methods is increasingly applied: for example, content analysis of program documents, user surveys, laboratory

water testing, and spatial analysis (Castro et al., 2021; Li & Zhang, 2022) [15,16]. The use of digital analytical tools such as R and Python is becoming more widespread for modeling the impact of programs at the regional level (Silva et al., 2023) [17].

Particular interest is represented by the study of Zhupysheva A.O. et al. [18], published in the journal *Sustainability*, which proposes combining the results of rural household surveys, laboratory water analysis, and analysis of target indicators. This work serves as the foundation for the present study, suggesting its expansion toward evaluating the efficiency of budget expenditures.

Thus, the literature review demonstrates that modern approaches to evaluating water supply programs require the integration of financial, technical, and social aspects. Performance audit in this sector is becoming increasingly important as a tool for ensuring transparency, accountability, and the effectiveness of budget spending.

METHODS AND MATERIALS

The study is based on the principles of public performance audit, grounded in the 3E model (economy, effectiveness, and efficiency) recommended by the international standards of INTO-SAI. This approach makes it possible to assess not only the degree of budget fund utilization but also the actual achievement of the objectives of government programs, taking into account the interests of the end-users – the rural population.

The object of the study is the government regulation measures in the field of rural water supply implemented within the frameworks of the “Aq Bulaq” program (2011–2020) and the “Nurly Zher” program (2020–2025) in the rural districts of Pavlodar and Akmola regions. The subject of the study is the efficiency of budget fund utilization and the quality of implemented water projects in terms of final results and public benefit.

The empirical base includes:

- official statistical data from state and local executive bodies (data on the volume of funding, coverage by water supply networks, accident rates, etc.);
- results of sociological household surveys conducted in the covered regions (level of satisfaction, actual access, behavioral aspects such as purchasing bottled water and filtration practices);
- data from laboratory analyses of water samples on key indicators (turbidity, nitrate content, microbiological deviations, etc.).

For the interpretation of empirical data, methods of descriptive and comparative statistics were applied using the R and Python programming environments. The following techniques were employed:

- analysis of relative and weighted average indicators;
- construction of time-series and structural visualizations (pie charts, line graphs, heat maps);
- correlation analysis to identify relationships between funding volumes and levels of coverage/satisfaction;
- tabular compilation of comparative indicators by district.

Data processing in R and Python improved calculation accuracy, ensured clear visualization of results, and enabled extended modeling based on empirical data.

To assess the “cost–results” ratio, the following indicators were used:

- specific expenditures per household connection;
- percentage increase in coverage compared to the baseline level;
- deviation coefficient between planned and achieved indicators.

The analysis was carried out considering administrative divisions (districts), landscape characteristics, population size, and degree of remoteness.

The use of digital analytical tools ensures the reproducibility of results and allows for the prompt updating of data as new information becomes available.

Thus, the study implements an integrative approach that combines budget–economic analysis, assessment of social returns, and digital analytics technologies, in line with modern requirements for conducting performance audits in the public sector.

Results Funding and Population Coverage with Centralized Water Supply (2011–2024)

The implementation of the state programs “Aq Bulaq” (2011–2020) and “Nurly Zher” (from 2020 to the present) was accompanied by substantial budgetary financing aimed at developing centralized water supply systems in rural regions of the Republic of Kazakhstan. In particular, Pavlodar and Akmola regions were included in the priority list of areas characterized by high infrastructure vulnerability and water scarcity.

According to official data, from 2011 to 2024 the total amount of budget allocations for water supply purposes in these two regions exceeded 120 billion tenge. The funding covered the construction and modernization of water supply networks, major repairs of pumping stations, the development of water intake facilities, and the connection of households to centralized systems.

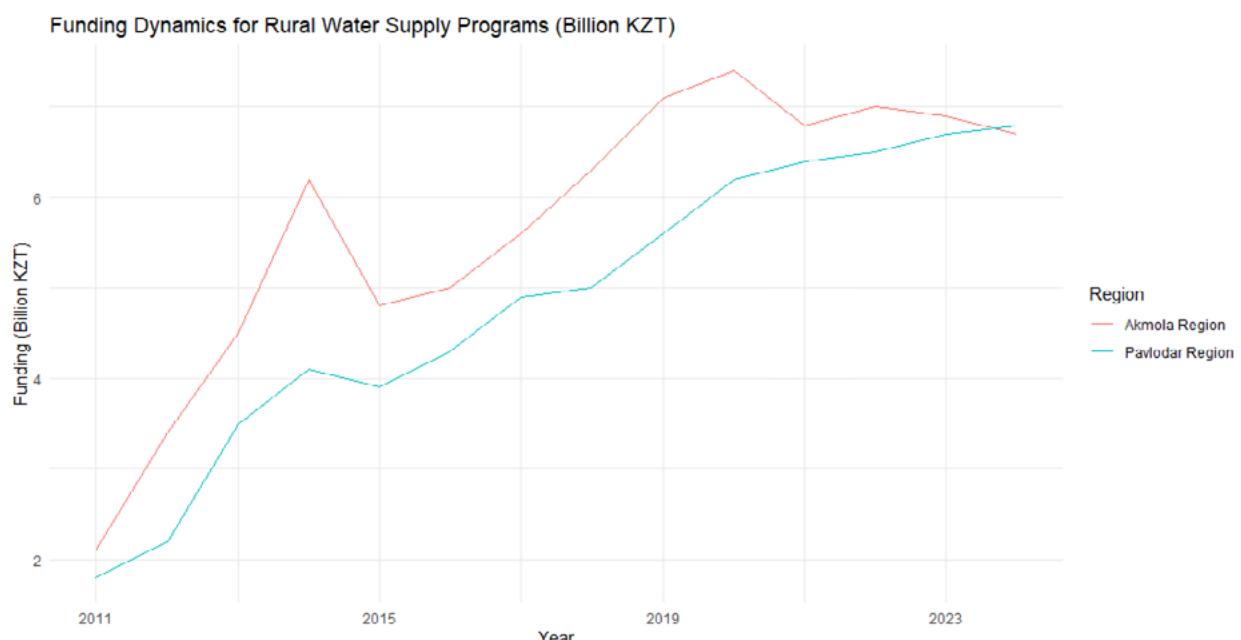
An analysis of the dynamics shows significant fluctuations in annual funding volumes. Peak allocations occurred in 2013, 2018, and 2021, reflecting transitions between programs and adjustments in budgetary policy. At the same time, in a number of districts there were instances where increased spending did not correspond to a significant rise in the population’s access to centralized water supply services.

Thus, in Akmola Region the level of coverage by centralized water supply increased from 38% to 62% during the study period, while in Pavlodar Region it rose from 41% to 67%.

Nevertheless, when compared with the volumes of investment, clear disparities were identified: in several cases, capital expenditures did not result in a significant increase in the number of households connected to the water supply system.

To visualize these trends, data analysis tools in the R environment (RStudio) were used, which made it possible to display the financial dynamics and population coverage in both comparative and time-series perspectives (Figure 1).

Figure 1. Dynamics of Budget Financing and Coverage by Centralized Water Supply in Rural Settlements of Pavlodar and Akmola Regions (2011–2024)



Note – Compiled by the author on the basis of sources [3,4]

The graph presents a comparative trend of budget financing volumes (in billion KZT) and the share of population covered by centralized water supply (in percent) across the two regions.

It can be seen that, despite a steady increase in investment, the growth rate of population coverage remains moderate, particularly during certain periods. This highlights the need for a deeper assessment of the effectiveness of program activities and closer monitoring of the actual results of project implementation.

Drinking Water Quality: Results of Laboratory Tests

One of the key indicators of the effectiveness of government rural water supply programs is the actual quality of water delivered to households. Laboratory studies conducted in 2023 in several villages of Pavlodar and Akmola regions show a mixed picture: in a number of settlements—despite completed infrastructure projects under the "Aq Bulaq" and "Nurly Zher" programs—significant deviations in drinking water quality indicators were recorded.

According to the results published in the journal *Sustainability* [19], the following exceedances of permissible levels were identified:

Sulfates – up to **925 mg/L** (standard: **500 mg/L**);

Total hardness – up to **13.9 mg-eq/L** (MPC: **7 mg-eq/L**);

Iron – up to **0.74 mg/L** (MPC: **0.3 mg/L**);

Turbidity – exceeded hygienic standards in **three out of four** samples;

pH – deviations were recorded in several villages.

The highest number of deviations was recorded in rural settlements such as Novoyamyshevovo (Pavlodar Region), **Saumalkol, Talshyk, and Toktamys** (Akmola Region).

Notably, these are the very areas where major capital projects for water supply infrastructure had previously been implemented.

This situation demonstrates the **lack of effective monitoring** of the quality of implemented measures and the **inefficiency of the utilized funds**. It also highlights a weak system of **post-project monitoring**, the absence of regular **laboratory audits**, and a lack of mechanisms for **public accountability** (Figure 2).

In addition, a significant share of the population still does not use the supplied water as drinking water, resorting instead to additional purification methods or purchasing bottled water, which will be further analyzed in the next subsection.

Thus, the findings confirm the necessity of implementing performance audits not only from the perspective of budget spending but also in terms of achieving final outcomes—in this case, ensuring safe drinking water that meets sanitary standards.

Figure 2. Comparison of Actual Concentrations of Chemical Substances in Water with Maximum Permissible Standards (Average Values for Surveyed Villages, 2023)



Note – Compiled by the author on the basis of sources [3,4]

The chart illustrates exceedances for key water quality indicators—sulfates, total hardness, and iron.

For all three parameters, there is a consistent deviation from sanitary standards, highlighting the need for post-program performance audits and ongoing monitoring of the actual results in rural water supply.

Public Perception of Water Quality and Actual Use of Water Sources

To evaluate the effectiveness of implemented rural water supply programs, it is important to consider not only the technical parameters of water quality but also the level of satisfaction among end users.

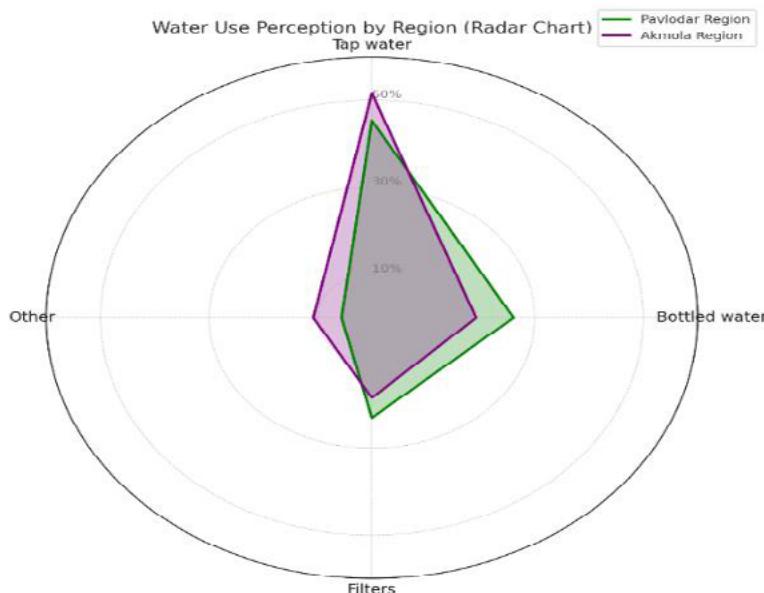
Sociological survey data collected as part of the empirical research [19] provide a comprehensive picture of how rural residents in Pavlodar and Akmola regions perceive the quality of their drinking water.

Analysis of the survey responses shows:

- Only 45.3% of respondents in Pavlodar region and 51.6% in Akmola region use centralized piped water as drinking water;
- More than 26% of respondents in Pavlodar and 19% in Akmola prefer bottled water, despite the availability of a centralized water supply;
- 18–23% of households report using water filters, more often in Pavlodar, which correlates with the recorded exceedances in permissible levels of hardness and sulfates;
- Up to 9% of the population continue to rely on alternative sources—wells, delivered or technical water—even in settlements where infrastructure projects under the Aq Bulaq and Nurly Zher programs have been completed.

These findings indicate that the expected social impact of the state programs has not been fully achieved, despite the allocated funding and completion of construction and installation works. The population continues to doubt the safety and suitability of the supplied water, which leads to additional household expenses for individual filtration systems, bottled water, and transportation (Figure 3).

Figure 3. Comparison of Drinking Water Source Perceptions among Residents of Pavlodar and Akmola Regions (Radar Chart)



Note – Compiled by the author on the basis of sources [3,4,19]

Figure 3 illustrates the differences in perception and actual use of drinking water sources among rural residents of the two regions. The axes show four key categories: centralized water

supply, bottled water, use of household filters, and alternative sources (wells, delivered or technical water). The green line represents the profile of Pavlodar Region, while the purple line represents Akmola Region.

The chart clearly demonstrates that, despite the implementation of government programs, a significant proportion of the population continues to rely on alternative or supplementary water sources, expressing distrust in the quality of the piped water. This trend is particularly evident in Pavlodar Region, where the share of bottled and filtered water use is higher.

These findings confirm the necessity of conducting a performance audit with a focus not only on budgetary and technical aspects, but also on the social dimension – assessing public satisfaction and the actual use of the infrastructure.

Comparison of Costs and Results (Economic Efficiency)

To evaluate the efficiency of budget expenditures under rural water supply programs, the volume of allocated funds was compared with the results achieved in Pavlodar and Akmola Regions.

According to the reports on the "Ak Bulak" and "Nurly Zher" programs, the volume of capital investments in water supply infrastructure for the period 2018–2023 amounted to:

Pavlodar Region – 18.2 billion KZT

Akmola Region – 24.5 billion KZT

One of the approaches to assessing economic efficiency is to calculate the specific (per-capita) cost for each rural resident newly connected to the centralized water supply system:

$$U=P/C \quad (1)$$

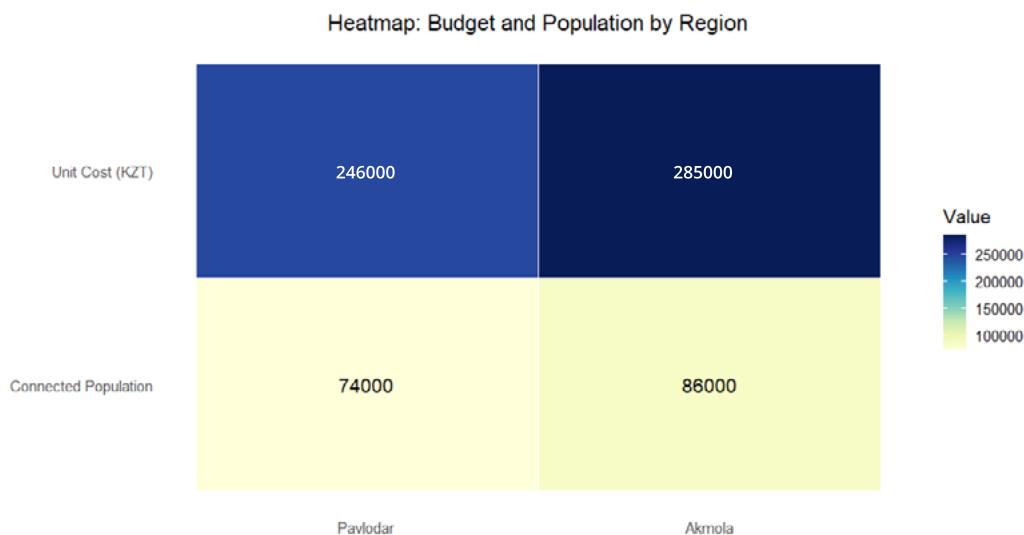
Where C – total budget expenditures in the region (KZT); P – number of rural residents with improved access to centralized water supply; U – unit cost per person (KZT/person).

Based on the analysis and available data: In Pavlodar region, with lower expenditures, about 74 thousand people were connected, which amounts to approximately 246 thousand tenge per resident. In Akmola region, about 86 thousand people were connected, with expenditures of approximately 285 thousand tenge per resident.

Additionally, considering the survey data (Figure 3), Pavlodar region shows a higher share of bottled water use, which may indicate a lower level of public trust in the implemented projects.

Thus, even with formally high performance (in terms of the number of people connected), the real efficiency of investments in Akmola region may be lower due to the mismatch between the infrastructure and the expectations and needs of the population (Figure 4).

Figure 4. Heat Map of Per-Capita Expenditures and Connected Population by Region



Note – Compiled by the author on the basis of sources [4,19]

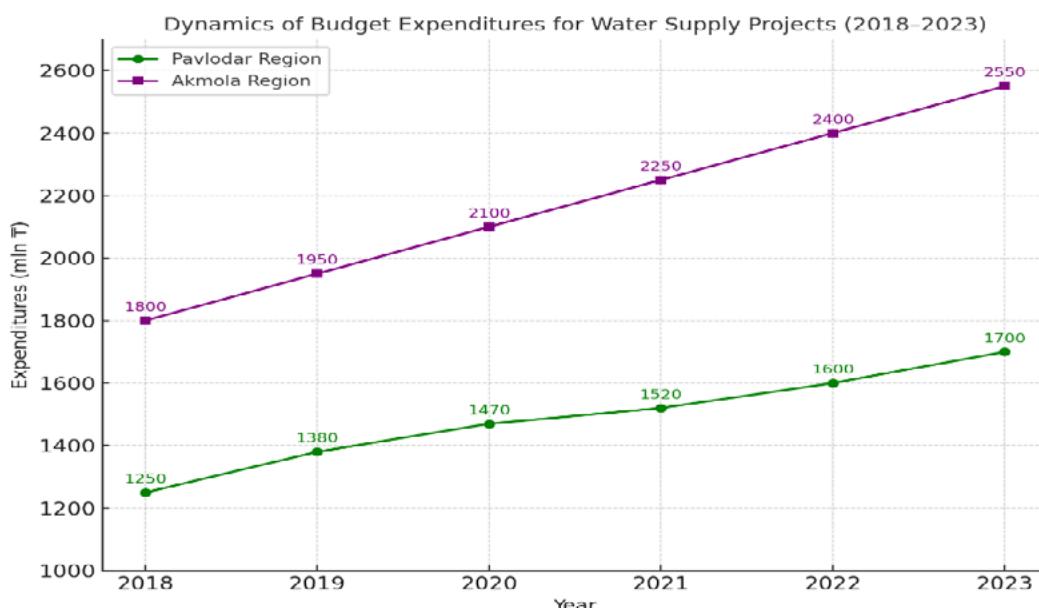
Figure 4 presents a heat map visualizing two key indicators of the efficiency of public investments: per-capita budget expenditures (in tenge per connected resident) and the total number of rural residents who gained access to centralized water supply in the Pavlodar and Akmola regions.

The color scale reflects the relative values of these indicators: the more intense the color, the higher the numerical value. As the chart shows, both per-capita expenditures and population coverage are higher in the Akmola region. However, this does not necessarily indicate greater efficiency: as demonstrated in the previous section (Figure 3), the perception and actual use of piped water remain below expectations.

This highlights the importance of comparing financial data with behavioral and social outcomes, which is particularly relevant for conducting a comprehensive performance audit.

For a more in-depth assessment of the effectiveness of water-supply programs, additional analysis by year (Figure 5) and by territory (Figure 6) was carried out. This approach made it possible to identify the dynamics of budget financing and the degree of population coverage at the regional level, ensuring a more accurate diagnosis of bottlenecks—especially in the context of spatial inequality and cost heterogeneity.

Figure 5. Dynamics of Budget Expenditures on Water Supply Projects in 2018–2023

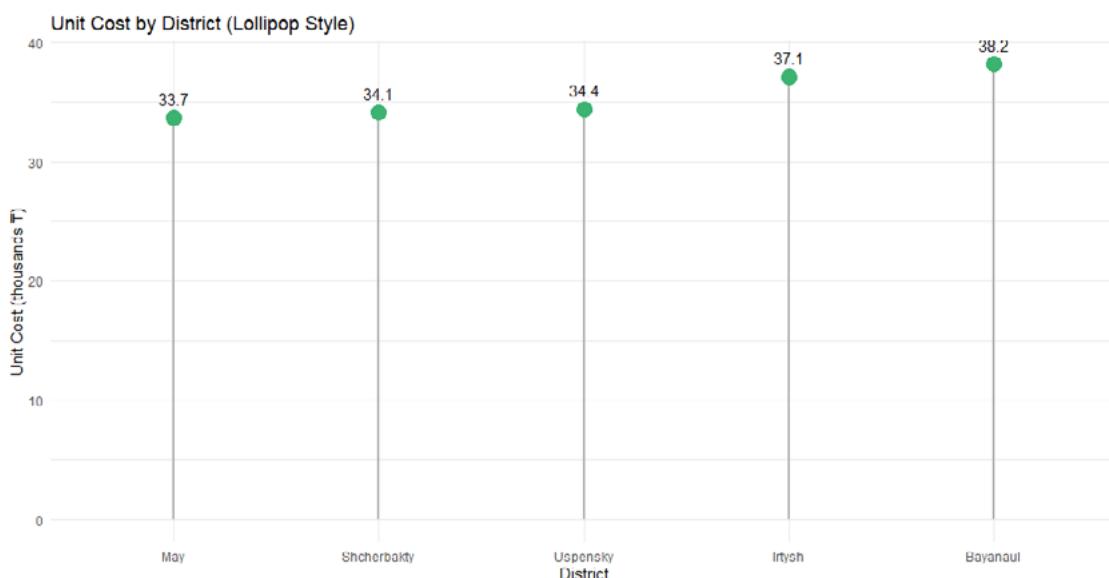


Note – Compiled by the author on the basis of sources [3,4,19]

Figure 5 illustrates the step-by-step growth in funding for water supply projects in the two regions over a six-year period. In the Pavlodar region, expenditures increased by 36%, while in the Akmola region they rose by 42%, which may indicate a more active investment policy.

However, the absolute increase in funding volumes in the Akmola region does not always correlate with actual effectiveness and public satisfaction, as shown in the previous sections. The dynamic analysis makes it possible to identify periods of accelerated financing that require subsequent audits to assess the effectiveness of program implementation.

Figure 6. Per-Capita Budget Expenditures for Water Supply Connection by District of Pavlodar Region



Note – Compiled by the author on the basis of sources [4, 19]

Figure 6 illustrates the per-capita costs of connecting residents to the centralized water supply system across districts of the Pavlodar region. The highest expenditures are observed in the Bayanaul district, where the cost of connecting one person exceeds 38 thousand tenge, while in the Irtysh district this indicator is below 30 thousand tenge.

This visualization makes it easy to identify districts with the highest costs, which can serve as a guide for further audit. Differences in the level of per-capita expenditures highlight the need to analyze project-estimate documentation and the factors that influence the cost of infrastructure solutions in each specific district.

DISCUSSION

The analysis results allow drawing several conclusions significant for evaluating the effectiveness of rural water supply programs. The visualized data reveal considerable differences both between regions (Figures 1–5) and within individual areas (Figure 6).

First, despite comparable volumes of budget financing, the Pavlodar and Akmola regions demonstrate different degrees of social effectiveness. For example, the Akmola region shows a higher level of population connection to the centralized water supply system, yet with a relatively lower level of trust in water quality, as confirmed by the survey results (Figures 3–4). This may indicate a gap between formal performance indicators and the actual effectiveness of investments.

Second, the calculation of per-capita costs by district (Figure 6) highlights areas of potentially inefficient spending. For instance, in the Bayanaul district the cost per connected resident exceeds 38 thousand tenge, whereas in the Irtysh district it is less than 30 thousand tenge. Such disparities require the attention of state auditors, as they may point to inflated project costs, design errors, or the influence of geographic and infrastructural factors.

The analysis also confirms the need to assess effectiveness not only in monetary terms but also in social dimensions. The household survey data show that even with formally high coverage of the population by centralized water supply systems, a significant share of residents continues to rely on alternative sources such as wells, delivered water, and bottled water. This indicates an incomplete achievement of the programs' ultimate goal—improving the quality of life in rural areas.

In international practice, performance auditing, in accordance with INTOSAI standards (IS-SAI 3000), involves not only verifying budget compliance but also assessing the achievement of

final objectives and the level of beneficiary satisfaction. In this context, an analysis based on the integration of quantitative and qualitative data (including household surveys and visualization using R Studio and Python) serves as a valuable tool for management decision-making and for adjusting strategic approaches.

It is also important to note the limitations of the present study. First, there is a lack of detailed district-level data for the Akmola region, which prevents a fully comparable intra-regional analysis. Second, the data on public perceptions were obtained from a limited sample, which may affect the generalizability of the conclusions. Nevertheless, the results presented provide a solid basis for further research and auditing activities.

CONCLUSION

The analysis of the efficiency of budget expenditures for the development of water supply infrastructure in rural areas of the Pavlodar and Akmola regions of the Republic of Kazakhstan has led to the following conclusions.

First, significant differences in the unit cost per connected resident were identified both between the regions and within them. At the district level of the Pavlodar region, this indicator varies from less than 30 thousand tenge to more than 38 thousand tenge. Such heterogeneity may be driven by both objective factors (geographical, infrastructural) and subjective ones (organizational and financial), which requires separate audit examination.

Second, despite officially high rates of population coverage by centralized water supply, the survey results indicate that a significant proportion of the rural population expresses concern about the quality of centralized water. A large share of residents continue to rely on alternative sources of water (bottled, delivered, or well water), which points to insufficient effectiveness of the implemented programs from a social perspective.

Third, a mismatch was revealed between the stated target indicators of government programs and the actual results of their implementation on the ground. In particular, the focus on quantitative indicators (number of connected households) is not accompanied by a systematic assessment of population satisfaction and the sustainability of the solutions.

Based on the above, the following recommendations are proposed:

Integrate performance audit elements into the mechanisms for monitoring government programs in the field of water supply, with an emphasis on achieving social outcomes rather than merely executing the budget.

Develop and implement indicators of water quality and public trust, based on feedback from the population (surveys, complaints, real patterns of water use).

Strengthen transparency and monitoring of project-estimate documentation, particularly in districts with high per-capita costs, to prevent duplicate or misallocated funding.

Integrate digital analytics tools (including data visualization and statistical processing methods using R and Python) into the practice of public auditing and performance evaluation.

The findings can be useful for public financial control authorities as well as for adjusting future programs and budgetary decisions aimed at sustainable water supply in rural areas.

References

1. Byudzhetnyi kodeks Respubliki Kazakhstan ot 2 dekabrya 2013 goda №106-V (s izmeneniyami i dopolneniyami po sostoyaniyu na 01.07.2024 g.).
2. Postanovlenie Pravitel'stva RK ot 31 dekabrya 2020 goda №908 «Ob utverzhdenii gosudarstvennoi programmy razvitiya regionov na 2020–2025 gody».
3. Ministerstvo natsional'noi ekonomiki RK. Statisticheskie dannye po vodosnabzheniyu i sanitarii. [Elektronnyi resurs]. – URL: <https://stat.gov.kz> (accessed: 21.06.25).
4. Schyotnyi komitet po kontrolyu za ispolneniem respublikanskogo byudzheta. Godovoi otchyt za 2023 god. – Astana, 2024.

5. INTOSAI. Performance Audit Principles (ISSAI 3000). – International Organization of Supreme Audit Institutions, 2016.
6. OECD. Water Governance in Cities. – OECD Publishing, Paris, 2016. [Electronic resource]. – <https://doi.org/10.1787/9789264230149-en> (accessed: 23.06.25).
7. World Bank. Kazakhstan: Water Supply and Sanitation Sector Note. – Washington D.C.: World Bank, 2021.
8. Moldaliieva R.N. Audit v gosudarstvennom sektore: teoriya i praktika. – Almaty: Ekonomika, 2022. – 224 s.
9. Nazarbekova A.A., Beisenova A.K. Problemy otsenki rezul'tativnosti gosudarstvennykh programm. // Finansy Kazakhstana. – 2023. – №4. – S. 25–31.
10. Savchenko I., Butorina M. Public Spending Efficiency and Regional Disparities in Infrastructure. // Public Policy Studies. – 2022. – №19(2). – P. 77–91.
11. Van Dooren W., Bouckaert G., Halligan J. Performance Management in the Public Sector. 2nd ed. – Routledge, 2015.
12. Bovaird T., Löffler E. Evaluating the outcomes of public sector reform. Public Money & Management. 2021. – №41(2). – P.122–130.
13. Lee H., Kim J. Efficiency analysis of water infrastructure projects in rural areas using DEA. Water Resources Management. 2020. – №34(5). – P.1593–1609.
14. OECD. Public Investment and Financing Strategies for Rural Infrastructure. – Paris: OECD Publishing, 2022.
15. European Court of Auditors. Special Report: EU support to improve access to water. – Luxembourg, 2020.
16. Elemesov R.R., Tazhibaeva A.Sh. Tsifrovizatsiya i gosudarstvennyi audit: sovremennye podkhody. // Vestnik KazNU. – 2022. – №2(78). – S. 101–108.
17. Zhankeev A.M., Akhmetova Sh.K. Metodologicheskie osnovy otsenki effektivnosti ispol'zovaniya byudzhetnykh sredstv. // Ekonomika i statistika. – 2023. – №3. – S. 42–50.
18. Smagulov D.S. Perspektivnye vnedreniya indikatorov rezul'tativnosti v gosaudite. // Gosudarstvennyi audit. – 2022. – №4(28). – S. 15–23.
19. Beisenova, R.; Tussupova, ... Zhupysheva, A. Perceived and Physical Quality of Drinking Water in Pavlodar and Akmola Rural Regions of Kazakhstan. // Sustainability 2024, 16, 7625. [Electronic resource]. –<https://doi.org/10.3390/su16177625> (accessed: 23.06.25).

Список использованных источников

1. Бюджетный кодекс Республики Казахстан от 2 декабря 2013 года № 106-В (с изменениями и дополнениями по состоянию на 01.07.2024 г.).
2. Постановление Правительства РК от 31.12.2020 № 908 «Об утверждении государственной программы развития регионов на 2020–2025 годы».
3. Министерство национальной экономики РК. Статистические данные по водоснабжению и санитарии. [Электронный ресурс]. – URL: <https://stat.gov.kz> (дата обращения: 21.06.25).
4. Высшая аудиторская палата. Годовой отчёт за 2023 год. – Астана: 2024.
5. INTOSAI. Performance Audit Principles (ISSAI 3000). – International Organization of Supreme Audit Institutions, 2016.
6. OECD. Water Governance in Cities. – OECD Publishing, Paris, 2016. [Электронный ресурс]. – <https://doi.org/10.1787/9789264230149-en> (дата обращения: 23.06.25).
7. World Bank. Kazakhstan: Water Supply and Sanitation Sector Note. – Washington D.C.: World Bank, 2021.
8. Молдалиева Р.Н. Аудит в государственном секторе: теория и практика. – Алматы: Экономика, 2022. – 224 с.
9. Назарбекова А.А., Бейсенова А.К. Проблемы оценки результативности государственных программ. // Финансы Казахстана. – 2023. – №4. – С. 25–31.
10. Savchenko I., Butorina M. Public Spending Efficiency and Regional Disparities in Infrastructure. Public Policy Studies. 2022;19(2):77–91.
11. Van Dooren W., Bouckaert G., Halligan J. Performance Management in the Public Sector. 2nd ed. – Routledge, 2015.
12. Bovaird T., Löffler E. Evaluating the outcomes of public sector reform. Public Money & Management. 2021;41(2):122–130.
13. Lee H., Kim J. Efficiency analysis of water infrastructure projects in rural areas using DEA. Water Resources Management. 2020;34(5):1593–1609.

14. OECD. Public Investment and Financing Strategies for Rural Infrastructure. – Paris: OECD Publishing, 2022.
15. European Court of Auditors. Special Report: EU support to improve access to water. – Luxembourg, 2020.
16. Елемесов Р.Р., Тажибаева А.Ш. Цифровизация и государственный аудит: современные подходы. // Вестник КазНУ. – 2022. – №2(78). – С. 101–108.
17. Жанкеев А.М., Ахметова Ш.К. Методологические основы оценки эффективности использования бюджетных средств. // Экономика и статистика. – 2023. – №3. – С. 42–50.
18. Смагулов Д.С. Перспективы внедрения индикаторов результативности в госаудите. // Государственный аудит. – 2022. – №4(28). – С. 15–23.
19. Beisenova, R.; Tussupova, ... Zhupysheva, A. Perceived and Physical Quality of Drinking Water in Pavlodar and Akmola Rural Regions of Kazakhstan.// Sustainability 2024, 16, 7625. [Электронный ресурс]. – <https://doi.org/10.3390/su16177625> (дата обращения: 23.06.25).

АУДИТ ЭФФЕКТИВНОСТИ ИСПОЛЬЗОВАНИЯ БЮДЖЕТНЫХ СРЕДСТВ В СЕКТОРЕ ВОДОСНАБЖЕНИЯ СЕЛЬСКИХ ТЕРРИТОРИЙ: НА ПРИМЕРЕ ПАВЛОДАРСКОЙ И АКМОЛИНСКОЙ ОБЛАСТЕЙ

Жупышева А. О.

Доктор PhD

Евразийский национальный университет
им.Л.Н.Гумилева
г.Астана, Республика Казахстан,
e-mail: aktoty_nur@mail.ru
ORCID: 0000-0001-6267-8579

Машаева А. Ж.*

Докторант 2 курса

Евразийский национальный университет
им.Л.Н.Гумилева
г.Астана, Республика Казахстан,
e-mail: ayagoz_mashaeva@mail.ru
ORCID: 0000-0002-6415-9526

Ignacio Menendez-Pidal De Navascues

Доктор технических наук, профессор
Политехнический университет Мадрида
Мадрид, Испания,
e-mail: ignacio.menendezpidal@upm.es
ORCID: 0000-0002-7053-1101

Аннотация. В статье представлен аудит эффективности использования бюджетных средств, выделенных на водоснабжение сельских территорий Казахстана, с акцентом на Павлодарскую и Акмолинскую области. Исследование основано на анализе государственных программ «Ақ бұлақ» и «Нұрлы жер», официальных объемов финансирования, а также собственных эмпирических данных авторов (опросы домохозяйств и физико-химический анализ воды). Применён подход аудита эффективности по критериям ЗЕ – экономичность, результативность и эффективность. Результаты показывают, что, несмотря на значительные инвестиции, фактическое качество воды и уровень удовлетворенности населения не всегда соответствуют заявленным целям. Среди основных причин выделены дублирование проектов, недостаточный мониторинг, слабая обратная связь с населением и отсутствие локальных ключевых показателей эффективности (KPI). Предложены конкретные рекомендации: внедрение постоянного механизма аудита эффективности, повышение прозрачности и подотчётности программ, разработка индикаторов социально-экономического эффекта проектов водной инфраструктуры. Представленные результаты будут интересны органам государственного аудита, государственным аудиторам и управленцам государственного сектора.

Ключевые слова: государственный аудит; аудит эффективности; водоснабжение; бюджетные средства; ЗЕ-аудит; сельские территории Казахстана.

АУЫЛДЫҚ АУМАҚТАРДАҒЫ СУМЕН ҚАМТАМАСЫЗ ЕТУ

САЛАСЫНДАҒЫ БЮДЖЕТТІК ҚАРАЖАТТЫ ПАЙДАЛАНУ ТИІМДІЛІГІНІҢ АУДИТІ: ПАВЛОДАР ЖӘНЕ АҚМОЛА ОБЛЫСТАРЫНЫҢ МЫСАЛЫНДА

Жұпышева А. О.

PhD доктор

Л. Н.Гумилев атындағы Еуразия ұлттық
университеті
Астана, Қазақстан
e-mail: aktoty_nur@mail.ru
ORCID: 0000-0001-6267-8579

Машаева А. Ж.*

2-курс докторанты

Л. Н.Гумилев атындағы Еуразия ұлттық
университеті
Астана, Қазақстан
e-mail: ayagoz_mashaeva@mail.ru
ORCID: 0000-0002-6415-9526

Ignacio Menendez-Pidal De Navascues

техникалық ғылымдарының докторы, профессор
Мадрид политехникалық университеті

e-mail: Мадрид, Испания,

ignacio.menendezpidal@upm.es
ORCID: 0000-0002-7053-1101

Анданпа. Мақалада Қазақстанның ауылдық аумақтарындағы сумен қамтамасыз етуге бөлінген бюджеттік қаражатты пайдалану тиімділігінің аудиті ұсынылған, Павлодар және Ақмола облыстарына ерекше назар аударылған. Зерттеу «Ақ бұлақ» және «Нұрлы жер» мемлекеттік бағдарламаларын, ресми қаржыландыру көлемдерін, сондай-ақ авторлардың өздерінің әмпирікалық деректерін (үй шаруашылықтарына жүргізілген саулнама және судың физика-химиялық талдауы) талдауға негізделген. ЗЕ – ұнемділік, нәтижелілік және тиімділік критерийлері бойынша тиімділік аудиті тәсілі қолданылды. Нәтижелер айтарлықтай инвестицияға қарамастан, судың нақты сапасы мен халықтың қанағаттану деңгейі жарияланған мақсаттарға әрдайым сәйкес келе бермейтінін көрсетеді. Негізгі себептер ретінде жобалардың қайталануы, мониторингтің жеткіліксіздігі, халықпен әлсіз кері байланыс және жергілікті негізгі көрсеткіштердің (КРІ) болмасуы анықталды. Нақты ұсыныстар берілді: тиімділік аудитінің тұрақты механизмін енгізу, бағдарламалардың ашықтығы мен есептілігін арттыру, су инфрақұрылымы жобаларының әлеуметтік-экономикалық әсерінің индикаторларын әзірлеу. Ұсынылған нәтижелер мемлекеттік аудит органдарына, мемлекеттік аудиторларға және мемлекеттік сектордағы басқарушыларға пайдалы болады.

Түйін сөздер: мемлекеттік аудит, тиімділік аудиті, сумен қамтамасыз ету, бюджеттік қаражат, ЗЕ-аудит, Қазақстанның ауылдық аумақтары.