

IMPROVEMENTS IN PRIMARY SCHOOL SANITATION AND HYGIENE: A DECADE OF PROGRESS IN THE MAČVA DISTRICT, SERBIA (2014-2023)

Marijana Srečković,^{1,2,3} Branko M. Vujković,¹ Igor Dragičević,¹ Snežana Panić,¹ Bojan Damnjanović,² Jelena Đekić Malbaša,^{3,4}

¹*Institute of Public Health of Šabac, Šabac, Serbia*

²*Academy of Applied Studies Šabac, Šabac, Serbia*

³*University of Novi Sad, Faculty of Medicine, Novi Sad, Serbia*

⁴*Institute for Pulmonary Diseases of Vojvodina, Sremska Kamenica, Serbia*

DOI: 10.5937/BatutPHCO24182S

Background: Schools should ensure a healthy learning environment by providing safe water, adequate toilet and hand-washing facilities, and waste disposal systems while promoting hygiene practices. Without these, illnesses like diarrhea and helminth infections increase, impacting attendance and academic performance.

Methods and Objectives: Based on the report from the Center for Hygiene and Medical Ecology of the Institute of Public Health of Sabac, we analyzed Primary School WASH facilities in the Mačva District from 2014 to 2023. The study aims to assess the condition and quality of sanitary and hygiene facilities in schools, identify key problems, and propose measures to improve these conditions to enhance student health and well-being.

Results: Our analysis reveals several key trends and significant improvements in Primary School WASH facilities in the Mačva District from 2014 to 2023. Reliance on local water supply and private wells consistently decreased, with notable annual decreases in 2018 (-4.98%) and 2019 (-4.90%) ($R^2=0.9052$). Conversely, central water supply steadily increased, particularly in 2018 (+8.22%) and 2019 (+7.11%) ($R^2=0.9052$). The installation of central sewage systems slightly increased, with the highest growth in 2016 (+3.79%) and 2019 (+2.17%) ($R^2=0.873$). The presence of septic tanks consistently increased, especially in 2017 (+5.68%) and 2020 (+7.86%) ($R^2=0.9134$). Primary schools without septic tanks significantly decreased, with notable declines in 2016 (-33.33%) and 2020 (-75.90%) ($R^2=0.9124$). The availability of sanitary facilities consistently improved, with significant increases in 2020 (+8.19%) and 2021 (+1.04%) ($R^2=0.9558$). Conversely, schools lacking sanitary facilities dramatically decreased, especially in 2020 (-66.97%) and 2021 (-27.78%) ($R^2=0.9558$).

Conclusions: These findings indicate substantial progress in improving WASH facilities in primary schools within the Mačva District from 2014 to 2023. Improvements in central water supply and sanitary facilities reflect successful interventions enhancing student health and well-being. The reduction in schools without adequate sanitation underscores the effectiveness of efforts to provide a healthier learning environment.

Keywords: primary school WASH, sanitation, hygiene