



Are schools fit for purpose?

A policy note that explores the extent to which North Macedonia is getting the most out of the country's education resources.

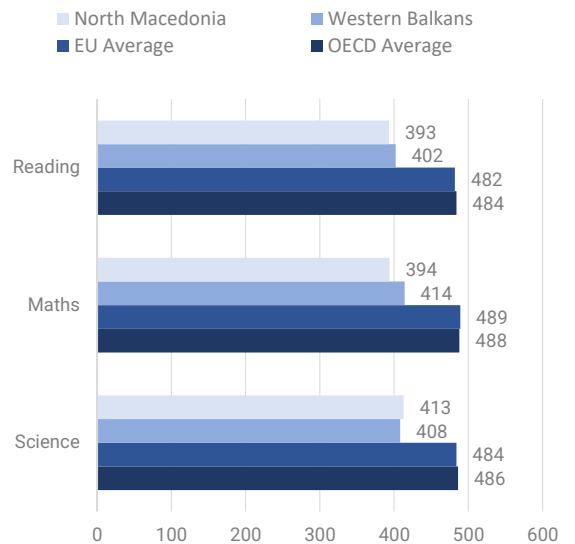
SUMMARY

North Macedonia is facing a learning crisis, with students performing below the Western Balkan, EU and OECD averages. Most Western Balkan countries have been able to achieve better learning outcomes with slightly higher levels of expenditure in education. Sweeping demographic changes, including declining birth rates, migration and increasing urbanisation without major adjustments to the primary school network, have resulted in some schools having underutilized space and staff. In contrast, other schools are overcrowded and lack teachers, thus, having to organize classes in double and triple shifts – likely impacting learning outcomes. Such changes have led to inefficient and inequitable allocation of resources. Currently, 87% of primary education expenditures go to cover the school staff salary costs, leaving insufficient funds for capital expenditures, updating and keeping facilities in good condition and investing in staff professional development. This is happening in a context where the overall budget allocations for education as a share of GDP and total budget expenditure has declined. **This brief provides evidence and policy recommendations to urgently enhance the efficiency and effectiveness of the primary education school network, whereas ensuring equity in school access.**

CONTEXT

North Macedonia's aspirations to improve economic competitiveness and accelerate European Union integration are key to achieve a more secure, resilient, sustainable, and prosperous future for its citizens. Achieving these goals greatly depends on building a healthy, highly skilled workforce and developing human capital. Yet, according to the World Bank's [Human Capital Index \(2020\)](#)ⁱ – which estimates the productivity of the next generation of workers compared to a benchmark of complete education and full health – a child born in North Macedonia today will be 56 percent as productive when she grows up as she could be if she enjoyed complete education and full health. This is the lowest rate in Europe and below the average of Upper middle-income countries. High-quality and equitable education is one of the most important areas to create new opportunities and improve the quality of life for today and future generations. This opens the question as to whether schools are fit for purpose to secure sustainable socio-economic development and improve the well-being of the country's citizens.

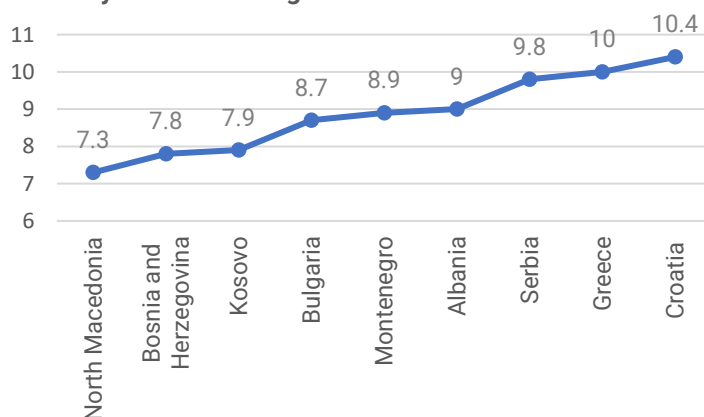
Regional and International Education Performance Scores in PISA 2018



Even before the COVID-19 pandemic, North Macedonia was already facing a learning crisis. The most recent [Programme for International Student Assessment \(PISA\)](#)ⁱⁱ showed the country performing below the Western Balkan, EU and OECD averages. While there were improvements in student's performance compared to previous years, still more than half of all fifteen-year-olds are failing to meet basic proficiency levels in reading and maths. Furthermore, education performance in North Macedonia seems to be reproducing existing inequalities, with socio-economically advantaged students and girls performing better than boys and disadvantaged studentsⁱⁱⁱ.

After 11 years in school the average child in North Macedonia has educational results equivalent to 7.3 years of learning. This is the worst result in Europe. In other words, they attend school for 11 years, but are missing out on 3.7 years of actual learning.^{iv}

Actual years of learning of children



country has initiated reforms in education so that all children are able to reach their full potential. The reform puts children's learning outcomes at its centre and focuses on improving student assessment; supporting teacher capacity development and career development; establishing national standards; improving access to quality learning materials and aids; digitalisation; and investment in school infrastructure including equipment to support practical skills development and vocational training.

While these efforts promise to contribute to improving student learning outcomes, the impact they will have will also depend on the extent to which the education resources (infrastructure, human resources and financial) are efficiently and equitably allocated and utilised so that every child in the country has access to high quality and equitable education.

RESOURCE UTILIZATION SNAPSHOT

Schools are at the heart of education systems. The resources schools have to deliver teaching and learning opportunities largely determine how effective they will be in delivering the promises of the education reforms to improve student learning outcomes.

According to a [Study on Education in the Western Balkans](#)^{vi}, the country is undergoing sweeping demographic changes, including declining birth rates, migration and increasing urbanisation. This results with overcrowding in some schools and underutilization of schools in other areas that can sometimes have more staff than students. Schools that are managed, staffed

Fifty-four weeks of school closures for in-person learning and other disruptions to education during the pandemic further exacerbated this learning crisis. The World Bank estimates that learning losses in the country, due to the pandemic, can be in the order of a 6 to 10 points decline for the mean PISA score for reading (393 in 2018)^v. Now more than ever, the country needs to reinvent schools, revitalize learning, and reignite the compassion of school communities so that every child – no matter where they live or whether rich or poor – receives the same quality of learning.

In recent years, building on the recommendations of a UNICEF supported [OECD Review of Evaluation and Assessment in Education in North Macedonia](#), the

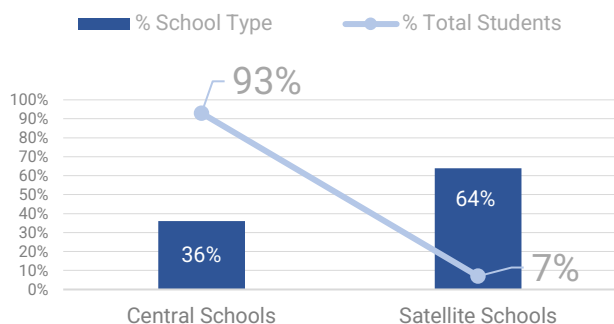
and maintained with very different degrees of services, result in a wide range of learning experiences and outcomes. Thus, there is inefficient and inequitable allocation of resources between schools.

1. Resource utilization snapshot – physical infrastructure

North Macedonia's primary school network has 1,000 schools, of which 363 central schools and 637 satellite schools. Satellite schools, managed by the administration of the central schools, are intended to bring education to more remote urban or rural communities. These make up two thirds of the school network, yet only serve 7% of the students.

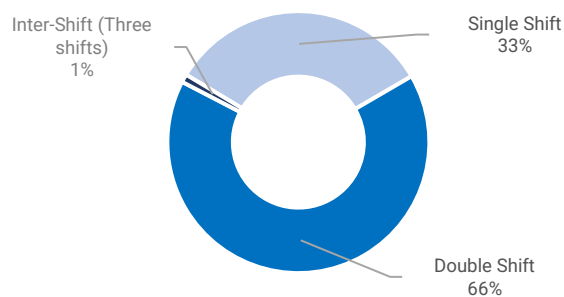
93% of students (171,000) attend classes in 363 central schools and 7% of students (less than 12,800) attend classes in 637 satellite schools.^{vii}

Primary school network



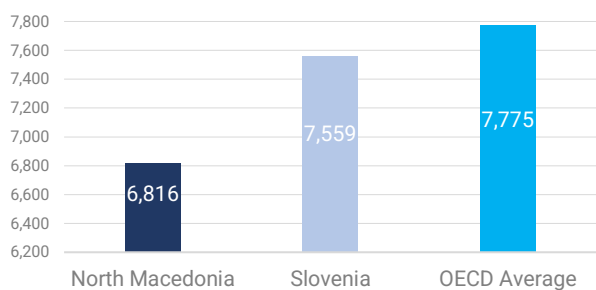
Accommodating a large number of students in the relatively small number of central schools led to overcrowding in some of the central schools. This requires school management to introduce teaching in shifts. **Two thirds of central schools (240) deliver education in two-shifts and four schools must extend to three-shifts (or inter-shift).**^{viii}

How 363 central schools organise learning



The situation where the vast majority of schools deliver education in double shifts is one of the reasons why students have less hours of instruction. This, in turn, limits the breadth and depth of study and the opportunity for students to have additional subjects or extra classes.

Total Hours of Instruction between ages 6 and 14



At the age of 6, grade 1 students in North Macedonia have among the lowest levels of intended instruction time (552 hours) among the 79 PISA-participating countries. By the time students are 14 years-old, they will have had nearly 900 hours less instruction than students on average across OECD countries.^{ix}

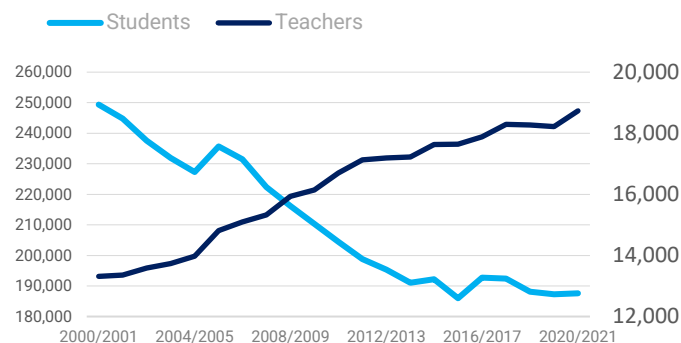
To address this challenge, the primary education reform aims to increase the hours of instruction. However, such increase requires schools to create conditions to operate in a single shift.

The reform also foresees revising and introducing new education standards, including standards for school infrastructure and equipment, as well as accessibility and safety. Meeting standards will require adjusting physical infrastructure – either through additional investments or repurposing of underutilized buildings.

2. Resource utilization snapshot – human resources

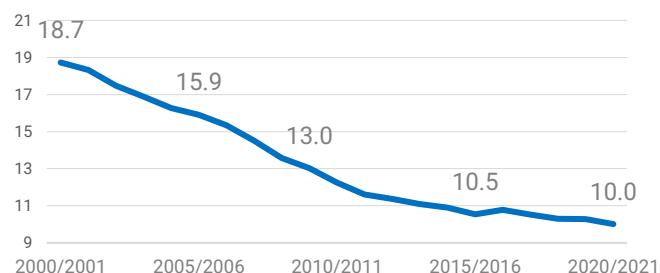
In North Macedonia the number of teachers continues to grow, serving fewer students in shrinking classes.

Number of students vs teachers



Over the past two decades the student to teacher ratio has decreased from over 18 students per teacher to 10 students per teacher. When considering non-teaching staff, some schools have more staff than students. Data from PISA results in the Western Balkan^x, suggest that neither smaller school sizes nor lower student-teacher ratios are related to improvements in learning outcomes. Furthermore, low student-teacher ratios adversely affect the school network efficiency.

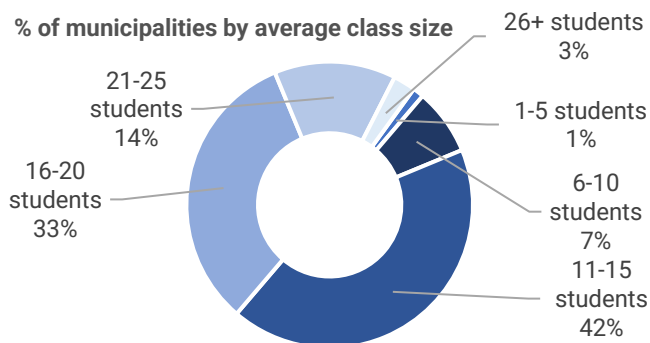
Students per teacher



In the developed countries of the OECD and the EU, the average student-teacher ratio is 15 and 13.5. Even in the neighbouring countries of Serbia^{xi} and Montenegro^{xii}, the ratio is higher – 14.5 and 15. **Yet, in North Macedonia over half of the municipalities have an average number of students per teacher between 5 and 10.** Furthermore, the schools with the lowest student-teacher ratio in the country, have fewer than five students per teacher.^{xiii}

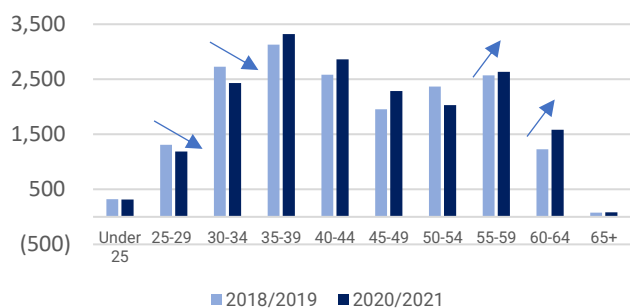
Student-Teacher Ratio (2019/2020)	Number of municipalities
0-5	10
6-10	43
11-15	24
16-20	3

When considering class sizes, the Law on Primary Education prescribes that each class should have at least 20 students. **Yet, only 18 municipalities (23%) meet this requirement and most municipalities have average class size between 11 and 15 students.** In some schools, particularly those in remote areas, it may be justified to have smaller class size, to ensure all children enjoy the right to education within their community. Decision makers need to find the fine balance between efficiency and equity.



Due to demographic shifts, in certain municipalities there is a lack of teachers, while in others human resources are underutilised. Furthermore, some 9% of the teacher workforce are approaching retirement.

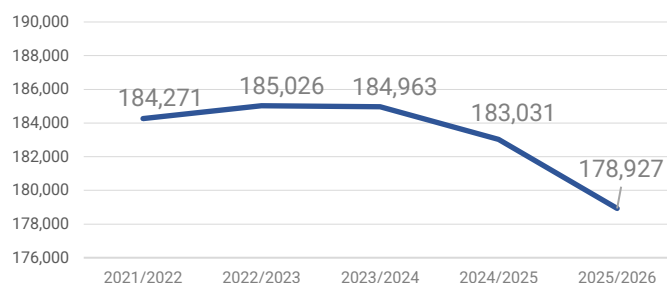
Aging teachers pool



A more detailed municipal level analysis of the structure of the existing teacher workforce also highlights a looming deficit in teachers. For example, there is a shortage of qualified class teachers compared to subject teachers. Even amongst subject teachers, there is a shortage of teachers qualified to deliver maths, physics and chemistry subjects compared to teachers of social science subjects. Schools delivering education in mother tongue other than Macedonian are faced with additional challenges to adjust the teachers' workforce.

Furthermore, projections show that the total number of students will continue to decrease, and while school network efficiencies may balance out with the gradual retiring of teachers, a restructuring of resources will be required to address municipal level disparities.

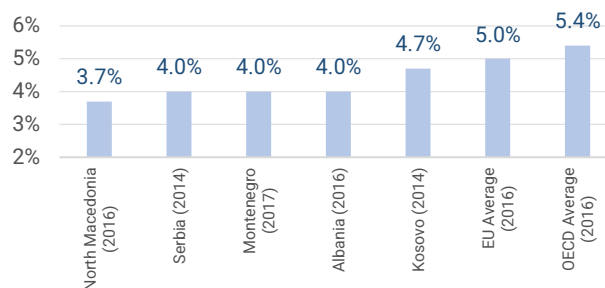
Total projected number of students



3. Resource utilization snapshot – financial resources

The country is spending less on education than international averages and this percent has been declining. At 3.7 per cent of GDP in 2018,^{xiv} public expenditure in education in North Macedonia is the lowest in the Western Balkans^{xv} and much lower than the OECD average at 5.2 per cent of GDP^{xvi} or the EU-27 average of 4.9 per cent.^{xvii} **Between 2011 and 2016, North Macedonia's public spending on education as a percent of GDP fell from 4.6% to 3.7%. The share of total government expenditure allocated to education also declined, from 13.3% to 11.6%.^{xviii}**

Education funding (all levels) as percentage of GDP (year)



According to OECD^{xix}, a comparative analysis of cumulative per student spending vis-à-vis student learning outcomes (PISA reading scores) suggests that while increased funding will be important to improve education outcomes, there is also scope for North Macedonia to achieve better results with the resources it already invests. **Western Balkan countries have been able to achieve higher participation rates and better learning outcomes with slightly higher levels of expenditure in education. This points to opportunities to improve the efficiency of spending in education.**

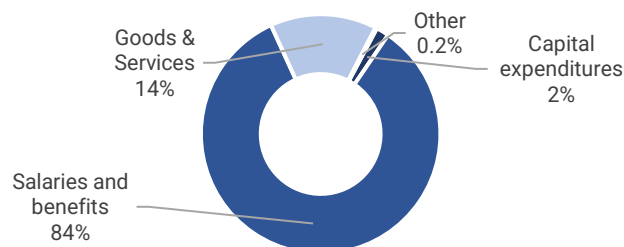
The central government allocates a budget to municipalities to cover school operational expenditures. The current funding formula for these transfers consists of a lump sum for each municipality plus a standard amount per student, with adjustments for population density, number of students in subject classes,^{xx} and number of students with special needs. The formula gives a higher amount per student to small municipalities to compensate for the higher costs arising from their lack of economies of scale. Such structure of the formula does not create incentives to improve spending efficiency or to achieve economies of scale through school consolidation. The formula, in fact, favours small primary schools, possibly due to the fact that about 44 percent of primary schools have fewer than 100 students. However, problems arise when there are insufficient funds to keep the many small schools in good condition, to make them accessible, or to pay the salaries for the staff needed to run each school.

Additionally, the current school funding formula also aims to protect schools in low population density municipalities. Yet, this results in smaller class sizes, which are costlier to maintain. Regardless of the official funding formula – described above – in practice, the actual funding that municipalities receive for primary schools is determined mainly by the previous year's allocation and the agreed increase in salaries.^{xxi} Thus, the number of students and population density play an almost negligible role in determining the funding allocation. Consequently, municipalities with declining demographics lack financial incentives to adequately adjust their school staff, consolidate schools and meet educational and infrastructural standards.

84% of Government's primary education transfers to municipalities go to cover the teacher and education professional's salary costs. The 2021 salary increase

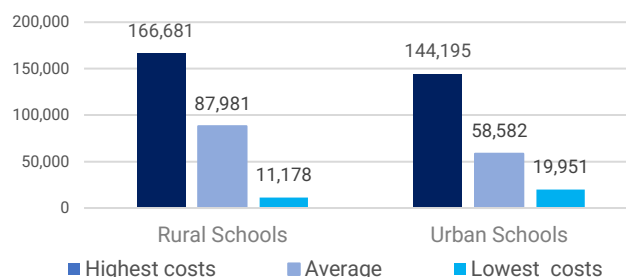
pushed this up to 87% and with the 2022 principled agreement on further increases the share could reach as high as 91%. This will exacerbate the lack of funds for capital investments, recurrent cost of updating and keeping facilities in good condition, investing in staff professional development, and other operating costs – thus creating an unsustainable financial situation.

Primary education expenditures, 2010-2020



An analysis of the expenditures per student by rural and urban schools highlights significant disparities. The differences among rural schools are most striking – the municipalities with highest expenditures per student spend almost 15 times more compared to the municipalities with lowest expenditures per student.

Differences in expenditures per student (MKD)



In conclusion, the current primary school funding formula is unsustainable, and results in highly unequal resource distribution.

The snapshots of the infrastructural, human and financial resources of primary schools point to the urgent need to enhance the effectiveness and efficiency of resource allocation in North Macedonia, and in particular strengthen efforts to optimise the school network and revise funding.

THE COST OF INACTION

Without urgent action to optimize the primary school network and revise the funding formula, the school infrastructure will continue to be inadequate to meet the national educational standards. The inadequate composition and distribution of the school staff will fail to generate the skills and knowledge among students to respond to the labour market needs and to the necessity of raising workforce productivity. In the context of a deepening fiscal crisis there will come a time where sustaining the current primary school network and funding levels will no longer be possible. Therefore, the drive for school network optimization is in fact an attempt to ensure the educational system provides high quality and equitable education. In other words – becomes fit for purpose and is sustainable.

POLICY CONSIDERATIONS

The Government is aware of these challenges and has committed to improving the primary education spending effectiveness and efficiency by exploring options for optimising the primary school network and revising the funding formula. Policy-makers could consider:

- **Improvement in student learning outcomes would benefit from increased primary education funding and its more efficient use.** This would not only enhance the quality of education, but also bring the country's public expenditures on education closer to the EU levels. Primary school optimization will require increasing public investment in education, including adjusting infrastructure and investing in human resources.
- **School optimization needs to ensure the school network fits the local demographic reality, with necessary adjustments for equity.** It should identify optimal ways to improve the allocation of limited resources, so that all primary schools are able to deliver education according to national educational, infrastructural standards and legislation. The optimization should: establish an equitable primary education system, create equal teaching conditions in all schools, enable schools to provide more hours of teaching and ensure efficient resource allocation.
- **The municipal optimization plans need to be based on a unified index that considers three dimensions:** 1) Fiscal – including salaries and other operating expenditures; 2) Infrastructural – including investment needs; and 3) Educational – size and structure of classes, educational performance and teachers' capacities. The plans would provide blueprints for adjusting the infrastructural and educational capacities, including expanding the school network and resources in municipalities where this is needed, reorganizing the school network and the classes, and possibly, in some instances, repurposing underutilized school facilities to meet other local needs. This could also involve retraining and requalification of teaching staff to address inadequacies in the staff structure and allocation. To improve the quality of teaching, opportunities for career advancement should be created through establishing posts for mentors and teaching advisors. Addressing human resources is even more urgent considering the rising school staff and shrinking student pool.
- **Optimization must be coupled with a revision of the primary school funding formula,** to improve efficiency, enhance performance, ensure allocations are based on objective criteria and are equitable. The revision should apply a costs per student approach to meet standards in various contexts (e.g. urban/rural, and also considering economies of scale that benefit larger schools). That will enable teaching in adequate and accessible facilities, which are properly maintained and equipped. It will also allow schools to engage optimal number and composition of teaching, professional and technical staff.
- **A component should be included to support ongoing teacher professional development,** stimulate the application of innovative teaching practices, support the transition of selected teaching staff into new roles of professional associates. The formula should include a top-up for schools whose performance has improved year on year, in order to stimulate and motivate schools to take an active role in improving student learning outcomes.
- **The funding formula should also ensure equity** by introducing adequate allocations for: transport of students that live further from the schools, inclusion of children with special educational needs, teaching in the languages of smaller ethnic communities, subsidized access to online educational resources for students from disadvantaged households, introduction of school feeding programmes that fight poverty and address poor nutrition. Tools should be created to ensure that funding received for targeted purposes, such as ensuring access to students with disabilities or procurement of digital tools for students in need – is actually used to improve the conditions for these vulnerable groups. The authorities should also establish principles to ensure equity for children living in remote regions. This could include, for example, commitment that children under the fourth grade are able to learn in their local community, or a defined maximum travel distance for children to access school.
- **The revision to the formula should factor-in a transitional adjustment component,** that will limit the annual funding changes per municipality and give them time to align the school network with the optimization plans. One option is to set a 5-year transition period, whereby funding will change no more than $\pm 10\%$ annually to avoid major shocks.
- **The process should be participatory to ensure all perspectives have been considered.** Changes need to be planned and implemented in close coordination with the municipal authorities, school staff, parents, students and other local stakeholders.
- **School optimisation and funding formula revision need to go hand in hand with updating the national standards for school infrastructure, equipment and teaching aids.** While the country has a by-law on standards, these are outdated, and need to be aligned with relevant international benchmarks and new trends in education, such as digitalization and inclusive education.
- Evidence-based policy making requires better monitoring and evaluation system. **Capacities and systems for data collection and analysis at national and local level need to be strengthened.** Schools, municipalities and the Ministry of Education and Science should collect, report and analyse financial, educational and other data in a harmonized manner.

UNICEF SUPPORT

In cooperation with the World Bank, UNICEF supported the Ministry of Education and Science to improve the adequacy, efficiency, effectiveness and equity of public spending in primary and secondary education, by helping to overhaul Government transfers to municipalities that fund schools. The 2022 budget, prepared using the revised funding formula, envisages an increase in primary education transfers to municipalities by US\$8 million. Thanks to the universal nature of the change and the per student allocations for the schools to meet educational standards, it will contribute to better access and inclusion of most vulnerable children, including those with disability, ethnic minorities, and children from poorer households. The new funding formula provides sufficient funding to schools for adequate maintenance, suitable investment in equipment and teaching aids, professional training and career development of the school staff, as well as increased number of professional associates. If the Government formally approves the new formula and keeps using it, by 2026 the funds transferred to municipalities for primary education are projected to increase by 35%, thus constituting a major step forward in bringing the country's public expenditures on education closer to EU and OECD levels.

UNICEF also supported the development of an innovative index for optimization of the primary school network and its human and other resources, and the drafting of 80 municipal school optimization plans. The school optimization index measures the gaps for each primary school and municipality to meet the national educational and infrastructural standards, as well as to close the gaps between actual costs per student and costs needed to fulfil the standards. Based on the value of the index, UNICEF supports the preparation of a detailed plan for each municipality for adjusting the infrastructural and educational capacity, while the financial efficiency will be improved with the use of the new school funding formula. The optimization plans identify ways to improve the allocation of the limited resources to ensure all primary schools enable teaching in accordance with national standards, laws and educational concepts. The implementation of these plans will: establish an equitable system for primary education; contribute to equal teaching conditions and ensure efficient allocation of resources. These changes will be instrumental in addressing digital divide and other inequalities including those of gender, ethnicity and disability.



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