

>> June 2022

SCHOOL CONSTRUCTION

GPE Value for Money Guidance Note



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ACRONYMS AND ABBREVIATIONS

GPE	Global Partnership for Education
LG	local government
N&S	norms and standards
PIU	project implementation unit
RC	reinforced concrete
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund

THE GPE VALUE FOR MONEY GUIDANCE NOTES

INVESTING FINANCIAL RESOURCES IN CHOICES TO GET THE BEST RESULTS.

This basic principle underpins the work of the Global Partnership for Education (GPE) on value for money. As a partnership with a strong emphasis on fostering the role of partner countries, one of GPE's roles in improving investment in education is providing guidance for policy makers and other decision makers. These guidance notes provide practical advice on important choices, clear guidance where evidence exists and information about the kinds of consequences stemming from policy choices.

These notes aim to highlight critical, and often overlooked, choices. Whether it is books, classrooms or teachers, choices made today can have long-term consequences. Although all three are linked, GPE is providing notes on these three areas to initiate further discussion and clarity of decision making. Consistent with GPE's goal to improve learning and equity through stronger education systems, each note is a building block toward strong evidence-based education systems.

For each note, utility and selectivity have been guiding principles. Policy makers often can only make a few changes of systemic significance. Each note highlights some key suggestions for change that are, based on GPE's experience and existing evidence, most consequential in enhancing financial choices for greater results. In selecting the areas for guidance, the core value for financial considerations is applied and adopted to GPE's business model: Empowering the local development community and government policymakers to (i) aim for equitable and sustainable education sector plans that (ii) focus on the most effective interventions and (iii) deliver those efficiently by (iv) seeking the lowest cost in procuring necessary inputs.

These notes are intended to support local accountability and oversight. They are written to allow for informed dialogue to take place, evidence to be introduced, and ultimately greater effectiveness, equity and sustainability to be achieved. The notes are conscious of cross-cutting themes, including gender equality, the importance of reaching marginalized groups and the detrimental impact of corruption.

These notes, while attempting to be suitable in their guidance for most country circumstances, do not explicitly cover what value for money means in fragile and conflict-affected situations. There would clearly be a range of additional considerations that may affect the cost of school construction, recruitment, and retention of teachers, or coping with an influx of refugees in those situations. The consequences, including financial, for building resilient education systems that are inclusive and adaptive are significant and necessary. However, they do fall outside of the scope of these guidance notes. ◀



INTRODUCTION TO VALUE FOR MONEY IN SCHOOL CONSTRUCTION

In providing education for all, governments commit themselves to giving all students access to schools as well as to quality learning in those schools. An effective school has the following characteristics: instructional leadership, a clear and focused mission, a safe and orderly environment conducive to teaching and learning, and teachers who have high expectations of students and evaluate their learning progress. School construction provides access,¹ and quality construction addresses the third correlate of an effective school: the provision of a high-quality learning environment—the main topic of this note.

¹ The terms “school construction” and “classroom construction” are synonymous and used interchangeably in this note.



The process of providing schools begins by **1** undertaking analyses of needs, including projections of enrollment growth and identification of shortages in schools where new or additional facilities will be needed. **2** Sites are selected for where the educational structures will be built. **3** Following government-established norms and standards, architectural planning and engineering designs are carried out and, on the basis of those plans, the **4** procurement of construction services takes place. **5** Monitoring is conducted throughout the construction period; then, **6** after the structures are inspected and approved, **7** they are turned over to the responsible education authorities in the capital, region, district, or community.

VALUE FOR MONEY IN CONSTRUCTION

As any other project, school construction follows a logic to transform *inputs*—planning, funds, land, labor, materials—into *outputs*, the school facilities. The transformation happens through a *process* that involves key choices: planning, norms and standards, school location, appropriate technology, implementation arrangements and supervision. The next set of questions to answer is on outcomes: (i) Do schools serve the desired *outcomes*, such as learning achievements and equity considerations? (ii) Do outcomes themselves serve a longer-term *impact*? And (iii) can school construction projects be a model for quality education at an affordable cost? The main terms of this value for money logic are briefly described below, and the logic illustrated in detail on pages 12–13.



Economy. Financing, demographic and human resources, institutions, means of production, including technology—are all these inputs used well to produce the school facilities?



Efficiency. Are the output school buildings produced at the lowest consumption of inputs? Do the different elements in the process (planning, norms and standards, implementation arrangements) contribute to produce the output on time, at cost and of expected quality?



Effectiveness. How well are the outputs producing the intended results? Is learning improving because of the new buildings? Can this construction process go to scale? Is there institutional capacity to monitor the results?



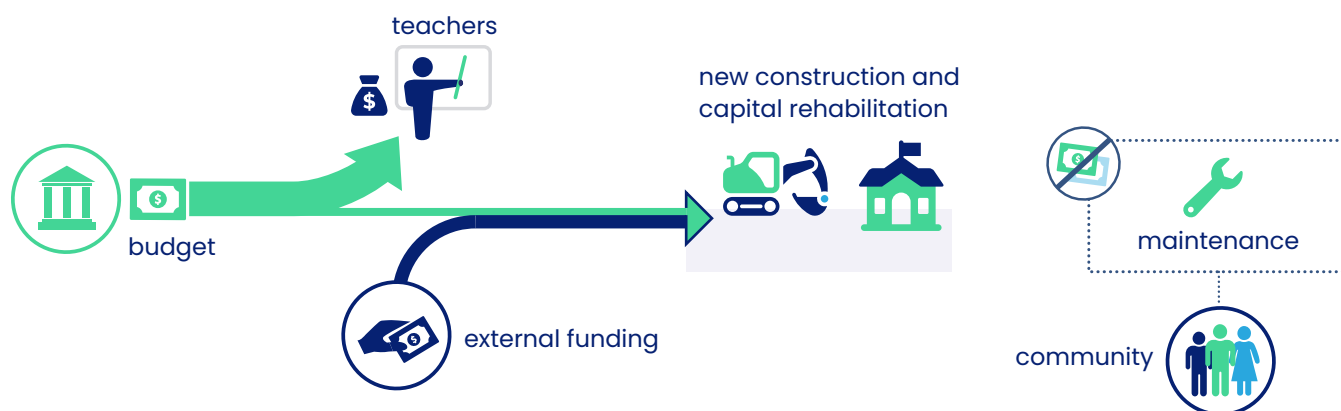
Equity. Are school facilities available to all children in the country? Does this construction program help address geographical imbalances, to reach marginalized children, remote areas, underserved communities?



Cost-effectiveness. Does this construction project help make the school network equitable, providing at an affordable cost a good learning environment to all children?

WHAT IS KNOWN ABOUT SCHOOL CONSTRUCTION

SCHOOL CONSTRUCTION FUNDING IS INSUFFICIENT. With limited budgetary resources, governments direct their allocation to recurrent expenditures, mostly teacher salaries, and are unable to invest in school construction and maintenance in the amounts needed and to ensure a resilient school infrastructure, including disaster risk management. Donors provide funds to jointly support school construction programs. In most countries, a lack of central government support leaves maintenance of school buildings completely to the school or school community.





Consequently, a dual system has developed: construction by the government and by communities. The government builds school facilities, financed from domestic budgets or with donor assistance. But the number of classrooms built is not nearly enough to meet the national demand for school education, leaving large school construction gaps. These gaps are filled by communities, using their limited resources to put up often substandard buildings. In some countries, self-help school construction is government strategy, a form of cooperation for sharing the cost of education: The community builds the classrooms; the government provides the teachers and textbooks.² While self-help construction generates community ownership of the schools, increases enrollment and lowers dropout rates,³ it is also inequitable. Self-help communities are often more marginalized, where classrooms offer a poorer learning environment. Furthermore, uneven construction standards expose these schools to high degrees of vulnerability to recurrent and catastrophic natural events.

² See, for example, Mark Bray and Kevin Lillis, *Community Financing of Education: Issues and Policy Implications in Less Developed Countries*, Comparative and International Education Series (Oxford: Pergamon Press, 1988), and N'Dri Thérèse Assié-Lumumba, *Coûts, financement de l'éducation de base et participation des familles et communautés rurales dans les pays du tiers monde* (Paris: UNESCO, 1993) for the Harambee "let us all pull together" movement in Kenya; and for similar experiences in Nigeria, see S. O. Igwe, "Community Financing of Schools in Eastern Nigeria," in *Community Financing of Education*, ed. M. Bray and K. Lillis (Oxford: Pergamon Press, 1988), 105–16; for Botswana, see J. R. Swartland and D. C. Taylor, "Community Financing of Schools in Botswana," in *Community Financing of Education*, ed. M. Bray and K. Lillis (Oxford: Pergamon Press, 1988), 139–53; and for Congo, Côte d'Ivoire and Madagascar, see Jacques Hallak and Raymond Poignant, *Les aspects financiers de l'enseignement dans les pays africains d'expression française* (Paris: UNESCO, 1966). In Sudan, self-help school construction started in the 18th century; see H. M. El Haggaz and F. T. Garvey-Williams, "Community Participation in the Provision of School Facilities in Sudan" (background paper, "Seminar for National Specialists and UNESCO Experts in Educational Planning on the Mobilization of Domestic Resources for Formal and Non-formal Education," Paris, June 19–28, 1978). In Burundi, the president encouraged the practice of *travaux communautaires*; see Serge Theunynck and Hervé Rabakoson, *Burundi: Constructions scolaires pour l'École Fondamentale dans le contexte du Plan Sectoriel Développement de l'Éducation et la Formation. Contraintes et opportunités – Défis et pistes pour l'avenir* (Washington, DC: World Bank, 2017).

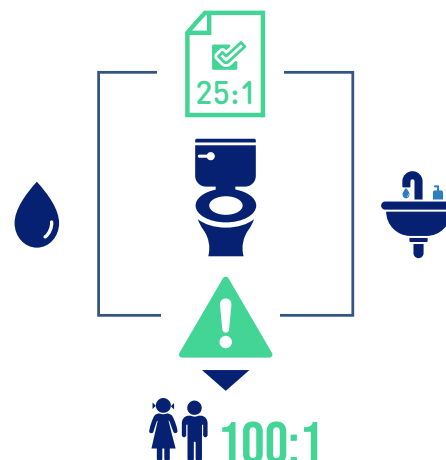
³ See Yolande Miller-Grandvaux and Karla Yoder, *A Literature Review of Community Schools in Africa* (Washington, DC: USAID Office of Sustainable Development, 2002), a 16-country review in Africa, including result examples of the World Learning project in Ethiopia, Community School Alliances project in Ghana, community education committees in Sudan and performance of children in community-based schools in Malawi.

Wider than the gap in the construction of classrooms is the gap in providing water, sanitation and hygiene. Too few schools have them, and those few facilities are overused and in poor condition. In too many countries, as many as 100 primary school children share one latrine, while the adopted standard is 25 children per latrine. Education sector plans focus more on classrooms than on water and sanitation in estimating investment funding for schools, even though studies show that constructing toilets and providing them with water have positive impacts on children's health and their continued attendance in school.⁴

DEMAND FOR CLASSROOMS DIFFERS BY LOCATION.

In areas of low population density, children of two or more grade levels may be gathered in the same classroom for multigrade instruction. This type of classroom supply is appropriate to provide access to schooling where the number of school-age children is low, coming from small and scattered settlements, depopulating rural towns, nomadic tribes, or isolated mountain, island or desert communities.

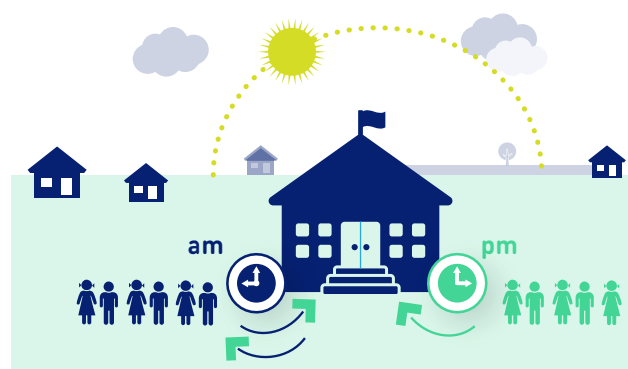
In areas of high population density, two groups of children may use the same classroom in double-shift sessions on a regular school day, usually one group in the morning, the other in the afternoon. The measure is a short-term solution to shortages in classrooms or teachers or to overcrowding in schools in densely populated cities, owing to an inability to build sufficient classrooms or recruit teachers. However, it diminishes the quality of student learning because the overall contact time (when students are in school) is considerably less than in a full-day session. In developing a national school construction strategy, double-shift school instruction should not be considered a substitute for building the classrooms needed to accommodate all schoolchildren in urban areas. Neither should it be encouraged as a substitute for multigrade instruction in low-enrollment rural and remote schools. (Further, measures to adjust to low student numbers or to use limited space effectively have teacher supply and training implications.)



Supply of WASH does not match government standards



Multigrade instruction is a common practice in low enrolment areas.



Double-shift sessions in high-enrollment areas

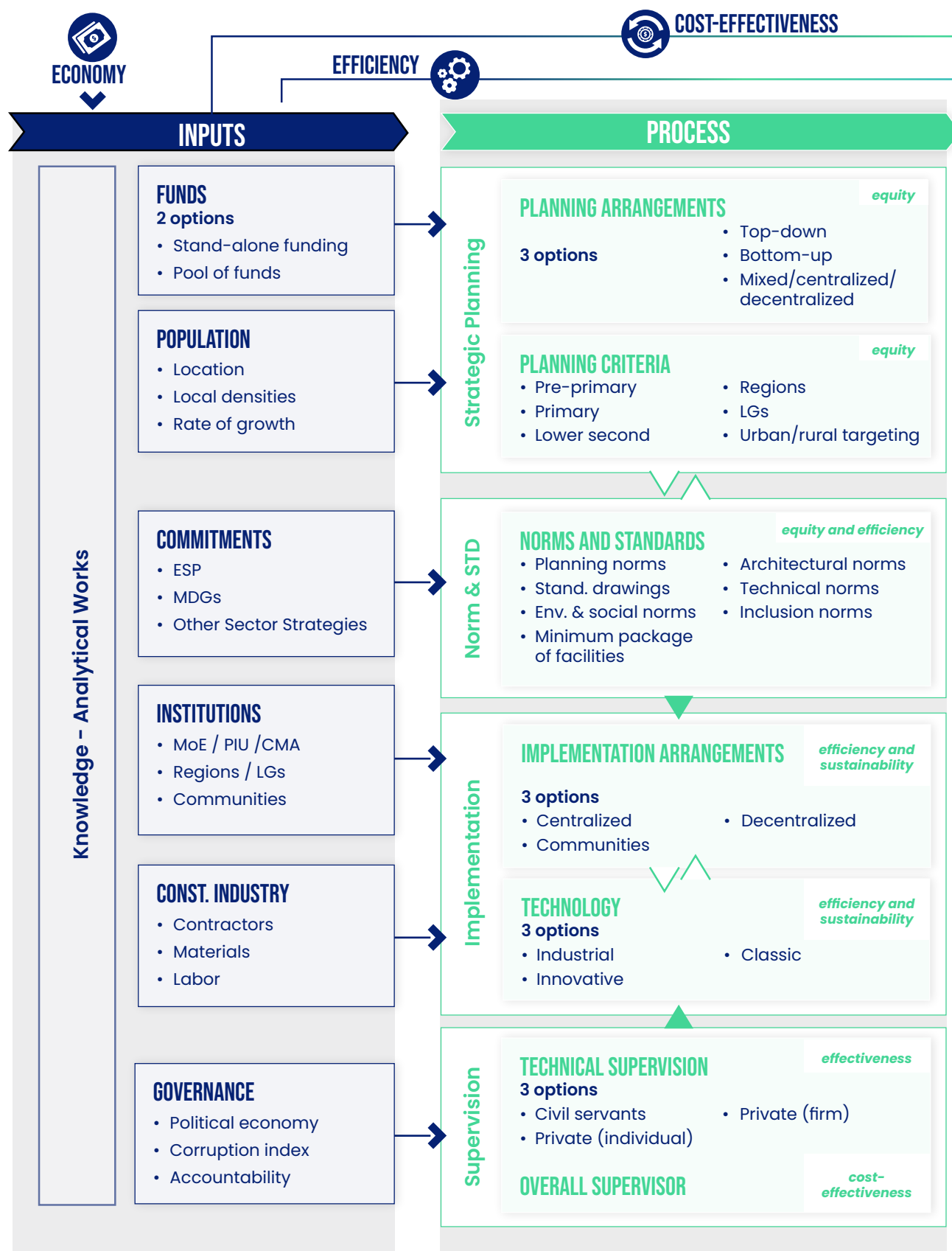
⁴ Higher attendance is associated with reduced incidence of diarrhea and other hygiene-related diseases, particularly for girls. However, toilet construction alone cannot reduce diarrheal diseases. Poorly maintained latrines, especially those without water and soap for handwashing, expose children to fecal contamination. Sanitation is less a problem of knowledge—standard drawings for sanitation are available, with simple, low-cost models of handwashing facilities—and more the underestimation by both government and donors of the resources needed not only for sanitation but also for changing the sociocultural behaviors that impede efforts to improve sanitation. The underestimation further makes retrofitting sanitation in existing schools more challenging.

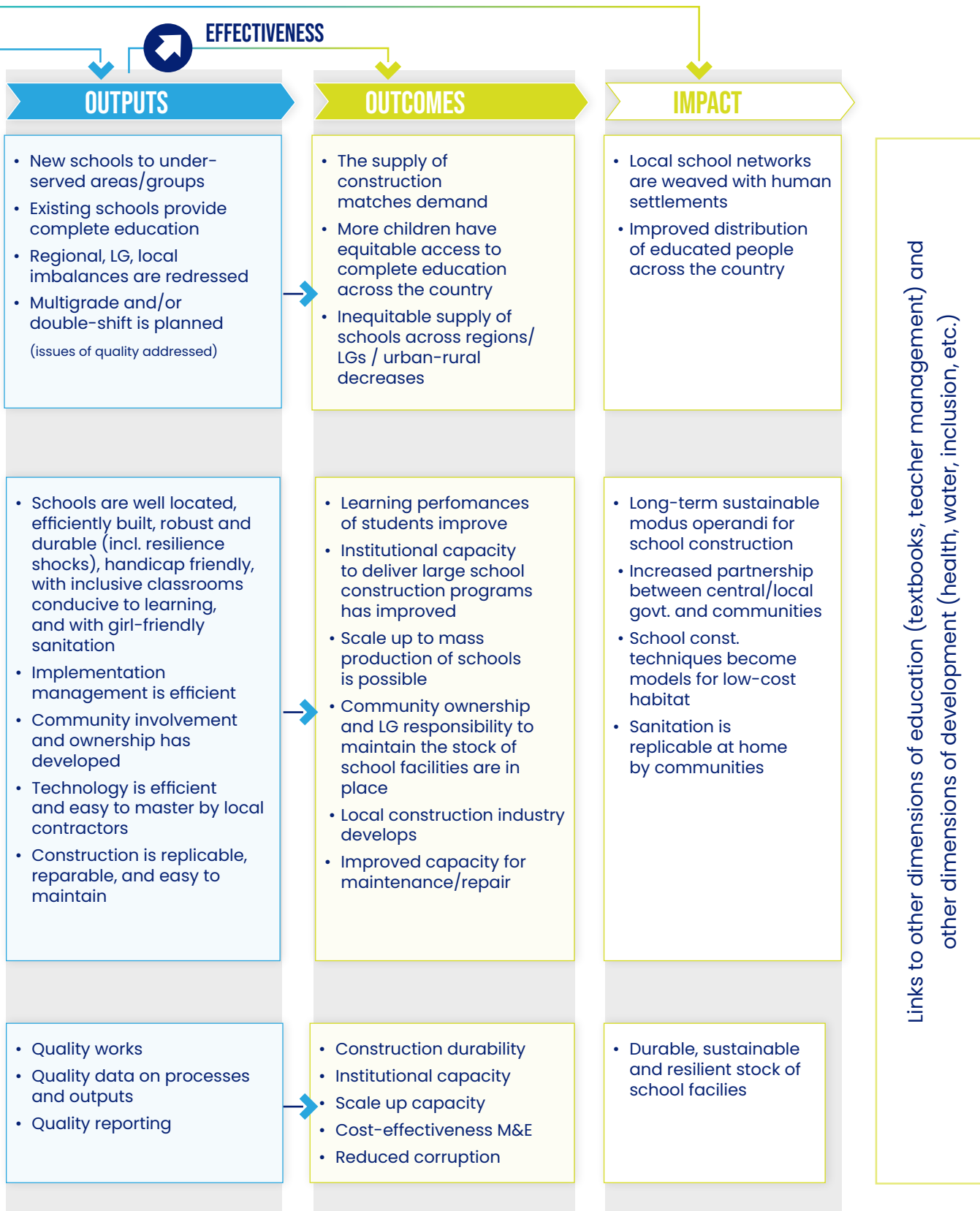
NOT ALL BUILDINGS ARE COST-EFFECTIVE. Investing in educational facilities other than classrooms and sanitary facilities is not always cost-effective, as experience has shown for school libraries, science laboratories and housing for students and for teachers.

- **School libraries are changing.** With education ministries implementing government policies for universal primary education and increased secondary education, libraries designed to develop research skills and leisure reading are most often transformed into classrooms to accommodate ever-growing enrollments. Reading skills development is better achieved by accommodating classroom libraries or reading corners in classrooms where teachers can conduct supervised reading and practice student-centered pedagogy.
- **Laboratories have disappeared from primary schools,** replaced by improved non-laboratory-based teaching strategies in science. Laboratories are required for biology, chemistry and physics in lower secondary schools, but they are costly to build, run and maintain, and may also be replaced by other methods, as curricula change to emphasize basic knowledge of the scientific method in integrated science of middle school curricula, and new promising digital technologies allow the teaching/learning of practical science in ordinary classrooms. Upper secondary schools still require traditional laboratory work in the natural and physical sciences in their mathematics, science and technology streams.
- **Boarding schools are costly to build, manage and maintain.** The cost-effective alternative is to map catchment areas for enrollments and build small day schools that students can walk to. In their respective catchment areas, lower secondary day schools are small, with low enrollments. In the smaller schools of low-density areas, teachers need training to teach several subjects pertaining to the same area (e.g., math and science, language and humanities) of a possibly adjusted curriculum.⁵
- **Teacher housing costs more than double the costs of classrooms in primary schools and higher in secondary schools.** Primary school teachers are more easily found locally, living in their family home in the village. Lower secondary teachers with requisite higher academic skills are not always available locally, however, and may need housing. But building teacher housing has not proven to be an efficient incentive to keep teachers on post. Alternative, non-construction incentives are being tried, including increases in monetary allowances for remote posting.

5 See Adriaan M. Verspoor, *At the Crossroads: Choices for Secondary Education in Sub-Saharan Africa*, African Human Development Series (Washington, DC: World Bank, 2008), 160 and chapter 7. See also GPE, *GPE Value for Money Guidance Note: Textbooks and Learning Materials* (Washington, DC: Global Partnership for Education, 2021).

SCHOOL CONSTRUCTION VALUE FOR MONEY







Phased building can be a cost-effective expansion.

PROGRESSIVE CONSTRUCTION IS A PROMISING, THOUGH NOT UNIVERSALLY APPLICABLE, APPROACH. When expanding a school building program, using this approach can result in many schools being built quickly and cost-effectively, starting with a minimal shelter (floor, columns and roof) and then shifting in-fill works (walls, windows and furniture) to communities, or to a subsequent program. Another version of this approach starts with a basic package of buildings for a central school, later to be incrementally complemented by more classrooms and other buildings. The initial start can also be composed of small satellite schools (feeder schools) linked to a central school, with the potential to become full-fledged schools as enrollment grows. This approach drives down the initial capital unit cost to half or less. When funding is limited, this approach is an efficient way to provide school buildings over time. A longer-term construction process should be put in place so each progressive construction step is made durable and buildable for subsequent steps. The risk with this approach is the lack of subsequent funding, which may leave some communities with schools that do not meet the minimum conditions for effective learning. ◀

MAKING BETTER CHOICES

The following short discussions cover four areas in the construction of classrooms where choices for the government are sometimes difficult to make: costs, processes, corruption and strategy. The areas have been chosen for their importance—to acknowledge what is known and to focus on weaknesses that can be strengthened with the help of local country partners.

As the impact of climate change becomes increasingly apparent and countries focus on adopting stronger mitigation and adaptation strategies, school construction standards are likely to change. The knowledge on effective climate resilience in school construction is still thin. However, in many more developed countries, codes are already adjusted depending on different climates.⁶ Inclusion of the effects on climate change are likely to enter economy considerations in the future.

6 A study of school construction in Cyprus examined the effect of thermal conductivity of different construction materials and characteristics of typical school buildings in different climate zones; see Martha C. Katafygiotou and Despina K. Serghides, "Thermal Comfort of a Typical Secondary School Building in Cyprus," *Sustainable Cities and Society* 13 (October 2014): 303–12.



ECONOMY: THE BEST PLANS FOR LEAST COST

All countries provide public funds for public education, and many middle-income countries generate internal resources sufficient to finance school construction without having to resort to domestic borrowing or foreign assistance. However, in many low-income developing countries, the education budget can cover mostly teacher salaries and only the most urgent of school operating expenses; there is frequently little or no allocation for infrastructure investment or for recurrent maintenance repair of school facilities. Filling this gap has become a priority for multilateral and bilateral development financing and for philanthropic aid.

FINANCING OPTIONS FOR SCHOOL CONSTRUCTION

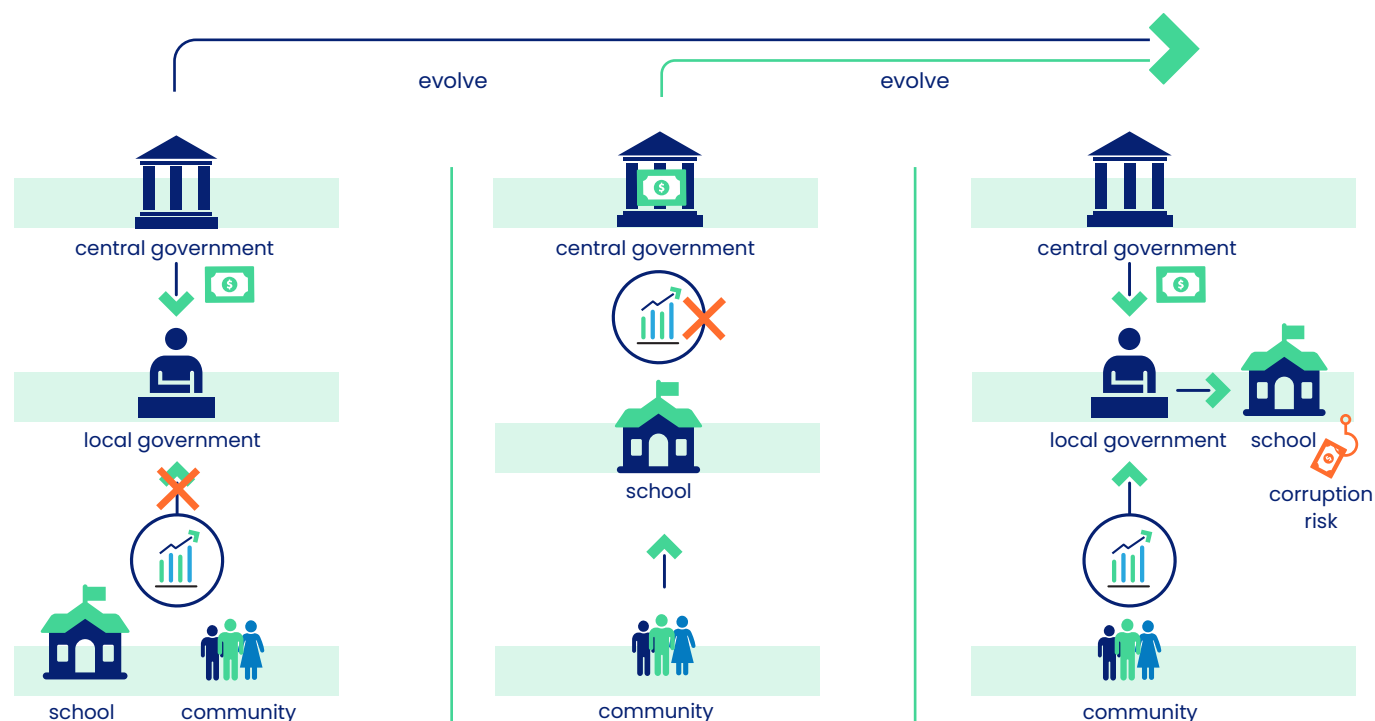
POOL FUNDING. Sector-wide planning, which provides overall views of education for a more transparent allocation of resources for government expenditure, is popular with education ministries and donors. In school construction, this form of consolidated planning for the entire education system, supported by government and donor financing, enables the education ministry to focus technical and financial resources to priority needs for school facilities. Successful implementation of construction from pooled funds requires country-based leadership in the preparation of the following: (i) sector plans that align donors' interests and funding with government and community needs to ensure geographic distribution of facilities, inclusiveness and equity; (ii) cost-effective, standard architectural plans agreeable to donors; and (iii) detailed operational manuals.

HARMONIZED FUNDING ACROSS PROJECTS. Where the government or the same donors support school construction in several specific projects, or where specific education projects operate in locations also covered by national decentralization programs, it makes good economic sense to coordinate the classroom construction activities of civil works components of several education projects or between specific education projects and larger regional or national development or decentralization programs.

STAND-ALONE PROJECT FUNDING. This option is common, but it fragments national programs. Following specific project objectives, projects will provide resources for school construction at project locations that may be of low priority in national plans. Discrete and unrelated project activities usually necessitate the organization of separate units to manage their own accounts and reports and interact with various donor missions, each with different supervision schedules, data requirements and requests to visit the field. As projects start and implement at different points in time, donors and the national government do not always have a clear picture of what in the national construction program is being achieved by the various projects.

COMMUNITY COFINANCING is an established practice. Social mobilization initiatives collect cash or in-kind contributions for school construction. Where demand for classrooms is great but the government is yet unable to provide them, community-driven development programs start the construction, expecting financing to come later from the government, a donor or a nongovernmental organization so the work can be completed. This option is risky in extremely poor communities and can result in unfinished or poorly built and unsafe structures.

SELECTION OF PLANNING METHODOLOGIES



TOP-DOWN PLANNING works well when carried out between the ministry of education's central office and intermediate levels to redress school construction imbalances between the country's regions, provinces, districts and local governments. But planning for construction all the way down to school level can be risky, especially when the central office relies principally on data from its management information system to determine the budget for additional classrooms. The risk is to build schools that do not match effective local demand.

BOTTOM-UP PLANNING for the construction of school facilities arises from social demand and is typically employed in community-driven, multisector development projects. Because education is a high priority for parents, communities build more schools planned bottom-up than any other type of building in those projects, and more schools than built by the education ministry. The risk in building schools as part of community development projects is the disconnect from the education ministry or the local government. This risk does not exist when the bottom-up planning is adopted by the ministry of education. The reward of bottom-up planning is the high ownership of the school by the community, making measures of maintenance and security more likely to be adopted at little or no cost to the central education ministry.

MIXED APPROACH TO PLANNING is a two-phase process. In the first, top-down phase, central authorities use the government's or the education ministry's priority policies (e.g., those for promoting equity in education) to allocate construction funds to underserved lower levels (region or province or district or local government). During the second, bottom-up phase, communities with better knowledge of school-age populations identify the precise locations for school construction. This latter phase obviates possible mismatches in supply and demand that occur in top-down planning based on only enrollment information captured in the government's central management information system. (At each phase, government and community are at risk of and must act against fraud and corruption.)

NORMS AND STANDARDS FOR SCHOOL CONSTRUCTION

Norms and standards (N&S) define the necessary infrastructural conditions for a school to provide the physical environment conducive to quality and equitable education. With regard to value for money, N&S link output (infrastructure) to outcome (quality education) and impact (equity). In developing countries, most national N&S are for primary education, some are for primary and secondary education, and very few are for pre-primary education. N&S apply to the following: (i) physical planning, (ii) architecture, (iii) technical options, and (iv) equity and inclusion.⁷

PHYSICAL PLANNING NORMS. Long distances to school negatively impact access and learning, and cause dropout. As distance to school is an issue more prevalent in rural areas where poorer families live, policies to provide schools closer to schoolchildren benefit the poorest the most. While efforts in construction have reduced the average distance to primary schools, distance remains a serious issue for rural and vulnerable primary school-age children, and a major issue in lower-secondary education, particularly for girls. Furthermore, avoiding hazard-prone or environmentally sensitive areas adds an additional layer for effective planning.

To reduce distance to school, planners look at building new schools in smaller catchment areas (where available land and construction materials may be difficult to find) as an alternative to adding classrooms to existing big schools in large and expanding catchment areas.

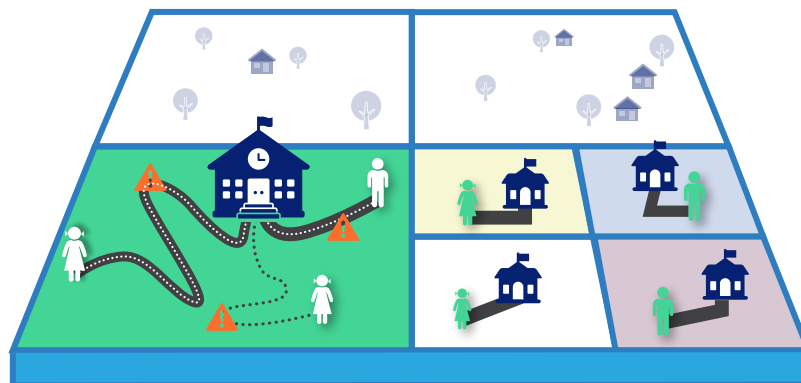
BOX 1. ARCHITECTURAL NORMS

PUPILS PER CLASSROOM (PCR) The standard 40 pupils per classroom has been adopted by developing countries and the international donor community. It is consistent with the pupil-teacher ratio of 40 used by planners and publishers packing textbooks as well as the one-teacher-per-classroom ratio planned for primary education.

AREA PER STUDENT The international standard of 1.0 square meter minimum per pupil is the low-cost norm for a classroom to accommodate children sitting at desks in rows. For interactive instruction, a minimum of 1.2 square meters per pupil (the classroom area, 48–51 square meters) will make group learning possible; 1.4 square meters per pupil (the classroom area, 56 square meters) will, in addition, make room for a classroom/corner library for developing student reading and self-learning.

COLOR AND VISUAL INTEREST Internal classroom walls can be used as learning tools for displaying posters, pictures and children's work, to create the "talking classroom" promoted by UNICEF.

Catchment areas need to balance long distances against small enrollment.



⁷ See also Box 1.

BOX 2. TECHNICAL NORMS

A school building is durable when it is in use for 40–50 years, with minimum maintenance, and undergoes no unforeseen repair. The attributes of durability are (i) foundation strength, (ii) roof strength, and (iii) strength of foundation–roof attachment (the walls).

FOUNDATION Reinforced concrete (RC) footings transfer the building weight to the ground; an RC floor-level ring beam keeps the walls together; a splash apron with water runoff channels prevents rainwater from soaking and weakening the foundation.

ROOF An RC high-level ring beam (also serving as lintel atop windows for cost savings), strong roof trusses well attached to the upper ring beam, and standard-gauge galvanized corrugated iron sheets well fixed on trusses.

WALLS Load-bearing walls or RC columns with in-fill masonry, depending on the type of foundation, the latter being more efficient for wide openings for light and ventilation.

EMERGENCY EXITS International norms prescribe one exit for up to 100 pupils in a classroom, minimum 1.50 meters wide for safe exit; door panels should open outward.

RESILIENCE TO SHOCKS Adopt simple construction standards. *For seismic resilience:* In lieu of load-bearing structures, design RC rectangular box-type structures; the length of the building should not exceed three times its width; no stepped-footing foundations; light roofing is safer than heavy concrete slabs. *For wind resilience:* Heavy masonry walls are better than light walling; light roofs need to be covered with stronger corrugated iron sheets and securely attached to walls; windows should have strong shutters. (Construction guidebooks are available from UNESCO.)

In areas of low population density and therefore with few school-age children, small schools are appropriate. But small schools will need teachers trained in multigrade instruction at the primary level and multiple-subject teaching at the lower secondary level. They will also need textbooks and other instructional materials suitable for this learning environment.

NORMS FOR EQUITY AND INCLUSIVENESS. The government builds public schools to provide equity in education service. But two obstacles limit the inclusion of all children in schools: the lack of standards that make all facilities accessible to students with various forms of disabilities, such as access ramps, braille signage, and adequate door width, and similarly, girl-friendly access to and use of classrooms and sanitary facilities are still insufficient. Specific construction norms are indispensable to address these issues:⁸

- **Ramps for wheelchair access** to classrooms and sanitation. Most new government projects include ramps. However, the standard designs of the ramps and of the disability-friendly latrine box are often poor. The most frequent design deficiencies are in the width and slope of ramps and the size of the disability-friendly latrine box. Available guides from the World Bank, UNICEF, and Handicap International are often not fully incorporated into architectural drawings.
- **Gender-responsive sanitation** requires at a minimum the spatial separation of the girls' block from the boys' block, lockable stall doors, and a washing room and incinerator in the girls' block of lower secondary schools.
- **Waste removal** from pit latrines. Most single-pit latrines in rural schools are not ventilated and cannot be safely emptied manually. Those in urban schools are safely emptied by local government's vacuum trucks, a service not available in rural areas.⁹ The adequate alternative in rural schools is the double-pit composting VIP latrine.

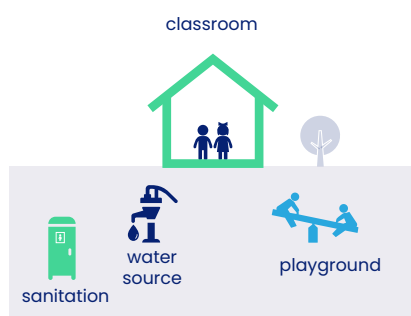
⁸ See also Box 2.

⁹ In some countries, cultural norms prevent handling of human waste or relegate the unsafe waste removal to specific disadvantaged subgroups of society. In other countries, child labor is resorted to by poor families to augment their income; this can be attenuated by keeping children in school but providing school feeding. The latter will mean providing kitchen facilities in schools and safe handwashing to children.

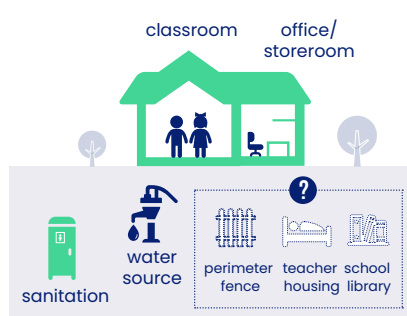
In addition, with the increased frequency of natural disasters, technical norms for school construction standards are constantly being updated. Box 2 provides specific examples of technical norms to protect against a variety of possible climate-induced hazards, including flooding, and seismic activity.¹⁰

THE STANDARD PACKAGE OF FACILITIES. The minimum standard package of facilities must include (i) classrooms, (ii) administrative office and storage spaces, (iii) access to potable water, (iv) sanitation, and (v) access to outdoor and recreational spaces. The following spaces are optional: clinic, library, laboratory, workshop, dining room and housing for teachers and boarders. The standard package of facilities differs for each education subsector:

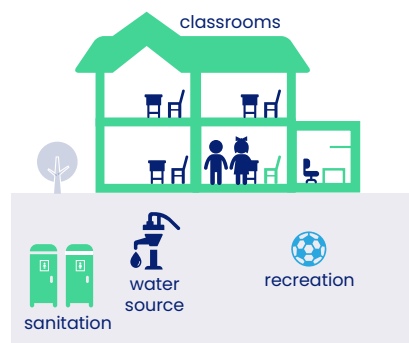
PRE-PRIMARY SCHOOLS



PRIMARY SCHOOLS



LOWER SECONDARY SCHOOLS



The commonly accepted minimum standard package of facilities includes a room, sanitation, potable water and a playground. The main planning decisions: (i) government financing or (ii) community cofinancing.

To achieve the equity objective of universal primary education, most countries have downsized their initial package to the minimum: classrooms, one office for the principal, a storeroom, water and sanitation. Decisions: Whether “minimum” should include access to potable water, a perimeter fence, teacher housing and a school library.

All low- and medium-income countries face a formidable challenge to meet the booming demand generated by the increase of primary leavers. Current standard packages, mostly inherited from a past elite-oriented concept for secondary, are too expensive to build. The expansion of lower secondary education must have a financially sustainable construction package. The *minimum package of facilities* must be smaller than past or current standard packages to admit larger waves of primary leavers generated by Free Primary Education policies. At minimum, for 200 students, the school includes one four-classroom block (or two two-classroom blocks), two sanitation blocks, an administration block, a teachers’ room, a recreation area and a water source.

¹⁰ See, among others, I. Masih et al., “A Review of Droughts on the African Continent: A Geospatial and Long-Term Perspective,” *Hydrology and Earth System Sciences* 18, no. 9 (September 2014): 3635–49.



EFFICIENCY AND EFFECTIVENESS

School construction programs are large and costly. The cost of building one classroom may seem small, but a national program to build 1,000 classrooms will cost many millions of dollars. National construction programs also involve a significant number of small construction sites of low financial amount and complexity, scattered over a very large territory. Further, the construction process has many participants in the public and private sectors at central, local and community levels, with varying degrees of responsibility and empowerment. Finally, it is an idiosyncratic activity.

THE PROCUREMENT PROCESS is at the core of implementation. Procurement can be (i) carried out by a central ministry, usually the education ministry; (ii) devolved to local governments; or (iii) decentralized to school communities. Recent developments include the growing participation of nongovernmental organizations and the local, small-scale construction industry. Countries have tried some or all of the above three options, but no one option fits all countries (and fraud and corruption are risks for each option).

THE CONSTRUCTION PROCESS involves different actors at different levels—central government, local government and local communities—operating in a sequential and coordinated manner. At the top level is the education ministry through its central or deconcentrated offices, usually supported by *project implementation units* (PIUs), or sometimes by outsourced *contract management agencies* (CMAs). At the intermediate level are *local governments* (LGs), if school construction responsibilities have been devolved to them by the decentralization law. At the grassroots level are *local communities*, the ultimate beneficiaries, which are also expected to participate in the management of schools. At each level, the private sector is also present—as architectural and engineering individuals and firms, construction contractors, and suppliers of construction materials and labor.

PROCUREMENT OPTIONS

The education ministry organizes the financial resources for school construction and decides how they will be used. The ministry conceptualizes the school construction implementation strategy and selects the implementation arrangements that work best for the program. In the past, the ministry assumed some or all responsibilities in construction, including even that of contractor, but this has changed. Learning from experience, the ministry currently sets “the rules of the game” for all players, to obtain the greatest efficiency for the lower cost, following the *subsidiarity principle*. Subsidiarity defines the distribution of responsibilities by layer of participating implementers. It is the conceptual basis for devolving responsibilities to LGs as well as the funding rationale for community empowerment.¹¹

¹¹ Subsidiarity: Functions are carried out more efficiently if implemented at the most immediate local or lower levels, consistent with their implementation capacity. Upper levels intervene only when the functions cannot be successfully achieved by the lower levels.

In the above-cited procurement location (central ministry, local government, school community) are implementation arrangements: that is, whether the works are carried out with a contractor and whether the management of construction is carried out at the central, intermediate, or local level.

MANAGEMENT 1: CENTRALIZED AT MINISTRY.

Central contracting yields higher costs and higher risks of implementation bottlenecks because construction items are packaged in large contracts for big contractors, who are believed to be better at delivering higher quality. However, they typically subcontract to smaller local contractors not eligible to bid on their own, risking failure to deliver good quality construction, especially in remote construction sites. They often neglect the most remote sites.

MANAGEMENT 2: DEVOLVED TO LOCAL GOVERNMENT.

Procurement in medium packages (for example, one contract for all schools in the LG's territory). As school construction contracting changes from very large contracts with big firms to medium-size contracts with smaller enterprises, and from foreign to local suppliers, new business opportunities open to the national medium-scale construction industry, reducing cost to the government and creating jobs for the national economy.

MANAGEMENT 3: DECENTRALIZED TO SCHOOL

COMMUNITY. This community-driven development approach empowers the community to directly manage the procurement for constructing their school. The decentralization is carried out directly from the central government or indirectly through the LGs. The process is organized through financing agreements between the delegating authority and the local community represented by its school management committee. The community selects the contractor through local competitive bidding. This procurement yields lower costs (30–40 percent lower compared with Management 2). It also improves local capacity and promotes ownership. Developing local capacity to enable school communities to manage their small school construction projects is also a training investment, estimated to cost only 5–7 percent of the total cost of a school construction program. In addition, the human capital to build their own community schools will sustain their maintenance activities and be useful for other community development projects.

MANAGEMENT 4: SCHOOL COMMUNITY AS

CONTRACTOR. Communities acting as contractors to central government or to LGs, providing materials and labor, cut construction costs by another 20–30 percent compared with Management 3, thanks to community financing and the absence of a professional contractor. However, although this approach is highly economical, and local contributions to the construction are driven by local demand, this type of management has often resulted in lower quality constructions because of lack of supervision.

CAPACITY-BUILDING

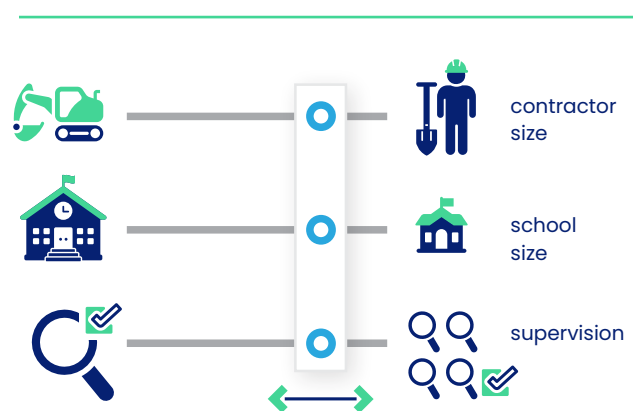
Building or enhancing the capacity of implementers is a regular part of any school construction program. In centrally managed programs, capacity enhancement is typically provided through costly technical assistance resident in PIUs or country management agencies; however, that capacity is temporary and leaves the administration with the same capacity deficit after the project. Capacity enhancement of LGs is also generally necessary. However, LGs are multisector entities, and their technical staff is generally overstretched by the delivery all types of local infrastructure. It is difficult for a ministry of education to support capacity enhancement in LGs specifically for school construction projects delivered by LGs.

At the community level, enhancing communities' management capacity is also necessary when communities are enabled to build their school project. This is done through Grassroots Management Training (GMT) programs that typically cover organization, procurement and financial management, monitoring and evaluation (M&E) and maintenance, with simplified guidelines and an operational manual in national language. Once capacity is built in communities to manage their school construction projects, such capacity is a permanent and durable asset that can be used for managing any other local small infrastructure project.

SUPERVISION OF CONSTRUCTION

Technical supervision is essential for *efficiency* in the construction process. Supervision ensures that inputs (labor, equipment, materials, time) are used following technical specifications and established construction techniques, to achieve the *quality* output as designed: classrooms and other school buildings with a useful structural life of 40–50 years.

Technical site supervision, more than the contractor's professionalism, determines the quality of the works. This construction industry rule is valid for big contractors executing large contracts as well as for small contractors executing small works. Although the construction of single-story classroom buildings and some latrine blocks is lowest in technical complexity—and therefore can be completed by even small contractors with workers skilled at the level of first years of masonry training—these jobs require close supervision. To achieve quality of output in many sites of simple, low-cost construction contracts, supervision must carefully see to the workers' consistent application of even basic building skills. This can only be done by frequent and thorough technical inspection and control of the works.



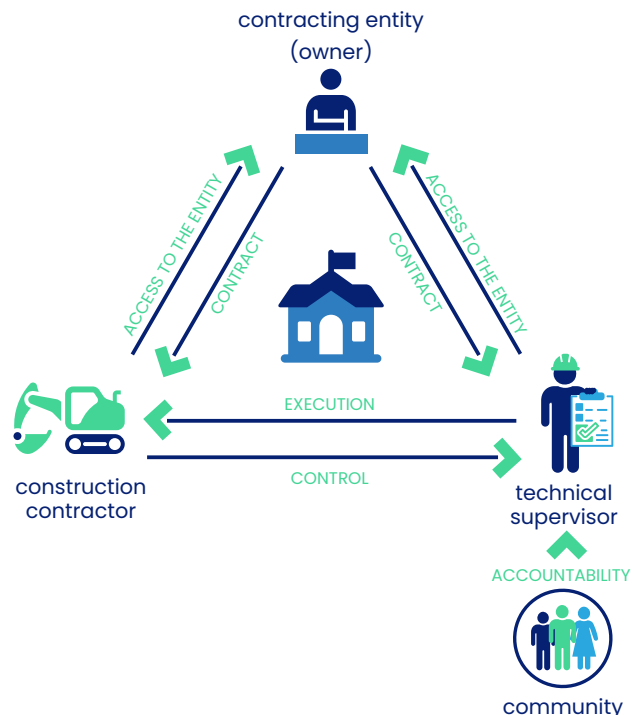
Different school sizes require different approaches to construction and supervision.

STRUCTURE OF TECHNICAL SUPERVISION.

To ensure the quality of works, the construction industry has developed standards for the construction process and its supervision. A fundamental rule is the triangular relationship among three independent actors:

- The contracting entity who owns the works (the central ministry, LG or school community)
- The construction contractor who executes the works
- The technical supervisor who designs, assists in procurement, controls the construction process for the owner and certifies that the works done by the contractor can be paid by the owner

The technical supervisor is accountable and reports to the level that has ordered the construction. The supervisor is not accountable to any other level but can provide information to those levels. Technical supervision is efficient when provided (i) closest to the construction site, to facilitate day-to-day supervision and control and to detect construction errors early and apply cost-effective corrective action sooner; and (ii) by the level responsible for the works contracts. Corrective actions required by the supervisor are more likely to be enforced in a timely manner when the supervisor can easily go to the owner.



Effective contract management requires owner's involvement through the construction process.

OUTSOURCED TECHNICAL SUPERVISION. This mode of supervision, independent of both owner and contractor, is a standard in the construction industry. It has had mixed results when done by central and midlevel governments, but it has been generally successful at the lowest, community level. *School communities* may outsource technical supervision of school construction to an upper level (local government or central ministry) or procure the services at their own level. In all cases, the rule is to keep the supervision of works independent of both owner and contractor. This arrangement is preferable because the communities do not have the necessary technical expertise to properly perform technical site supervision. The communities pay the contractor on the basis of certification by the technical supervisor that the works have been properly executed according to drawings and technical specifications. The technical supervisor is directly accountable to the end beneficiary. He/she is technically supervised by an upper level (local government or central ministry). External technical audits find this supervision arrangement best, leading to good quality construction.

MAKING THE RIGHT CHOICES FOR SUPERVISION

Education ministries have used different implementation arrangements at different times and for different types of construction implementation, making choices on the basis of successes achieved from programs immediately preceding, donor advice or internal political influence at the time of preparation of a new or follow-on program. However, not all arrangements are equally efficient, cost-effective or sustainable. Some lessons learned:

OUTSOURCED TECHNICAL SUPERVISION IS BETTER THAN IN-HOUSE TECHNICAL SUPERVISION.

An independent outside supervisor is better skilled and adequately resourced for the task and therefore can carry it out more effectively. The cost of contracting the service is well worthwhile. The cost saved by resorting to in-house servicing is small compared with the later cost of having to rebuild the educational facility because its useful life has been severely shortened owing to the poor construction allowed by poor site supervision. This is true for all levels: central government, midlevel LG and school community.

LARGE ENGINEERING FIRMS ARE NO BETTER AT SUPERVISION THAN SMALL FIRMS OR INDIVIDUALS.

In their proposals to tenders by government of large school supervision contracts, large firms will list their highly qualified engineers. But after winning the competition, the large firm deals with multiple sites spread all over the country and tends to assign the top engineers listed in the proposal to priority sites, understandably those with more complex construction conditions. That leaves lower priority sites, small schools, many in rural and remote locations, liable to supervisory neglect, with some potentially not visited at all. In contrast, contracted individually, skilled engineers perform better, especially when assigned to supervise only one project or at best a few sites.

TECHNICAL SUPERVISORS SHOULD BE MADE ACCOUNTABLE TO THE BENEFICIARIES.

When the technical supervisor is accountable to the top, that is, to central government, experience has shown that, more often than not, little is done to correct the reported deficiencies on the ground, particularly in remote construction sites. In contrast, when the supervisor is accountable at the bottom, that is, to the beneficiary school community, construction deficiencies are corrected more effectively and in a timely manner. The clear role, then, of the upper level (midlevel LG or central government) should be to ensure quality control of the service provided by the local technical site supervisor.

TECHNICAL SUPERVISION COSTS ABOUT 10 PERCENT OF TOTAL CONSTRUCTION.

In the construction industry, the agreed ratio for the cost of architectural and engineering services in medium-scale constructions is 10–12 percent of the construction cost. This fee rate is sufficient to pay for the design of the buildings, assistance in the procurement process and technical site supervision of the execution of the works. For most school construction programs, the standard drawings are made separately by the education ministry and are not part of the technical supervisor's contract. In such case, the cost of site supervision is reduced to 5–7 percent of the construction cost.

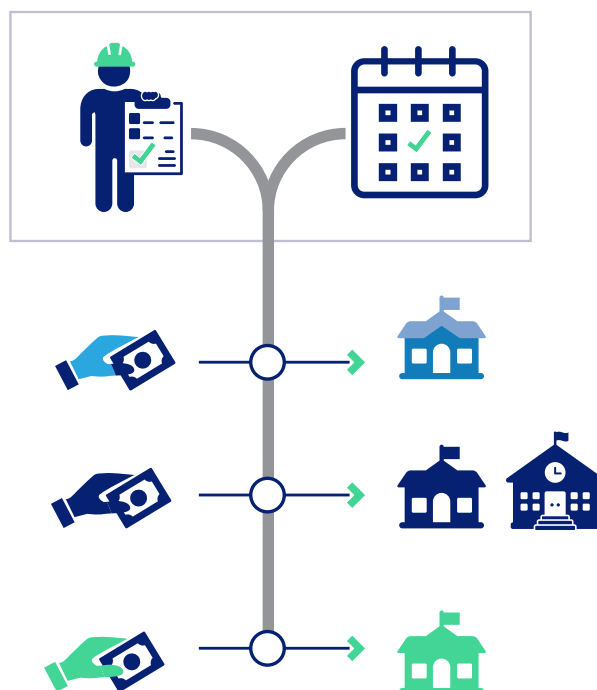
TECHNICAL EVALUATION OF SCHOOL CONSTRUCTION

To assess value for money of the government's options for construction procurement and supervision as well as the effectiveness of measures to mitigate the risks associated with fraud and corruption, the following tools are available: technical audits, beneficiary assessments, community scorecards and grievance redress mechanisms.

TECHNICAL AUDITS are top-down tools that inform the government of value for money of a school construction program. When different donors finance different school construction projects at about the same time, the government should convince the partners to agree on a common set of evaluation criteria for a common technical audit, to cover possibly different implementation arrangements. The technical audits should also follow the same annual cycle as the financial audits.

BENEFICIARY ASSESSMENTS are bottom-up tools for improving the quality of operation by assessing its value as perceived and acted on by its principal users. The concept, methods and implementation of this tool are derived from social science qualitative research and have been used in projects financed by social funds. These assessments give project beneficiaries a voice to be heard by project management, to assess and increase their effective participation in the project. Unfortunately, education ministries constructing schools using decentralized approaches (community-driven development, local and community-driven development) leave out the beneficiary assessments so important in evaluating capacity-building.

COMMUNITY SCORECARDS became popular with decentralization and the provision of services by LGs. The scorecard is also a useful bottom-up tool to improve service delivery and governance by central government. Like the beneficiary assessment, it is a citizen-driven social accountability tool through which citizens demand accountability from service providers, to improve the quality and timeliness of services provided, and consequently to enhance



Technical audits and reporting timelines should be harmonized across different financing sources.

value for money of the operation. It uses the community as the unit of analysis and enables maximum participation and ownership by the local community. It also mitigates the effects of risks to corruption by officials from midlevel LG or central government, contractors and supervisors involved in school construction.

GRIEVANCE REDRESS MECHANISMS have become essential tools in education projects. These bottom-up tools, fundamental during implementation of school construction programs, give participants in the construction process the ability to express complaints about the way the construction process is managed, especially if they feel negatively impacted by it. This mechanism can be used by an individual community member, contractor, supervisor or official in LG or central government. This tool is also useful for detecting and helping curb corruption practices.

GUIDANCE NOTES

KEEP TRACK OF AVERAGE UNIT COST. To inform themselves on the comparative cost-effectiveness of different implementation modalities, education ministries should use the unit cost per gross square meter because this unit of measurement averages the differences in classroom areas of different projects. The use of gross area instead of net area is a common feature of the construction industry and allows for comparison with other types of construction.

COUNT ALL COSTS, NOT JUST CONSTRUCTION. Add direct costs (the price of the contractor's contract) to indirect costs (management cost of central administration, management cost of PIU, training and supervision costs) to arrive at the total cost. Counting all costs is necessary but difficult because several or all indirect costs may be invisible if the related services are provided by the administration rather than outsourced. Financial offices at central governments, PIUs or LGs can provide information on administrative costs (salaries, operating expenses) to impute to specific construction programs.

LEARN FROM EXPERIENCE. Despite considerable country experience in school construction, institutional memory is short. New programs frequently make only a superficial analysis of the previous ones, failing to find valuable lessons learned, sometimes the hard way, over time. To inform on cost-effectiveness of earlier programs, it is necessary to actualize the past unit costs of previous programs into their present value.

Comparing home country costs with those of other countries in the region improves realism in facilities planning and procurement. Unit cost comparisons should be based on unit costs per gross square meter converted into hard currency (U.S. dollars) and actualized to the same year.



Add direct costs to indirect costs to determine total unit cost.

CURBING CORRUPTION: IMPROVING ECONOMY AND EFFICIENCY

The government's acquisition of sites on which to build schools is fraught with governance risks. Politicians and interest groups—including landowners, developers and real estate speculators—exert influence on central or local governments in selecting school location, which may or may not be in accordance with enrollment projections and catchment planning of the education ministry. Land titling may be missing or fraudulent, delaying or jeopardizing school construction. The government's land acquisition and resettlement framework may not be enforceable, and the expropriation of land may proceed illegally, together with the expulsion of traditional or legal resident owners, who lose not only their land but also their farming or commercial livelihood—unbeknownst to or with tacit approval of some government authorities.

The construction industry is the most corrupt industry in the world, according to Transparency International, because large sums of money are involved and its activities are technical and complex. Contracting, billing and payments are not easily understood from the outside, making financial transactions opaque and subject to irregularities. The direct consequence of corruption is increased cost, reduced construction quality and subsequently shortened safe use of the buildings. (In contrast, cost-effective implementation methods of construction indicate low levels of corruption.) In school construction, corrupt practices happen (i) during procurement of the contract for works and of the contract for technical site supervision, and (ii) during the execution of the works and the supervision by the technical site supervisor.

CORRUPTION IN PROCUREMENT AND CONTRACT MANAGEMENT

The following risks, among others, are associated with corruption in procurement: (i) Bidding contractors seeking to influence the procuring entity; (ii) during the evaluation of offers, the misapplication of selection criteria; (iii) a small number of bidders colluding to prearrange the winner of the bidding and even agree on the price of the winning bid; (iv) bidders and government officials overpricing contracts; (v) the community purchasing separately materials and labor (force account); and (vi) sole-source procurement or direct purchase, carried out with no competition.

CORRUPTION DURING SITE SUPERVISION

Cost overruns and delays in completion and turnover of buildings are common in school construction and frequently blamed on contractors. In technical site supervision, corrupt practices are initiated by contractors who bribe technical supervisors to obtain approvals and thereby facilitate the release of progress payments. When construction is *managed at the community level*, corruption is more common when communities themselves supervise the contractors and less common when communities outsource the supervision. In the latter case, the upper LG or central government has effectively distant but good oversight of the local supervisor, reducing the risk of collusion at the community level.

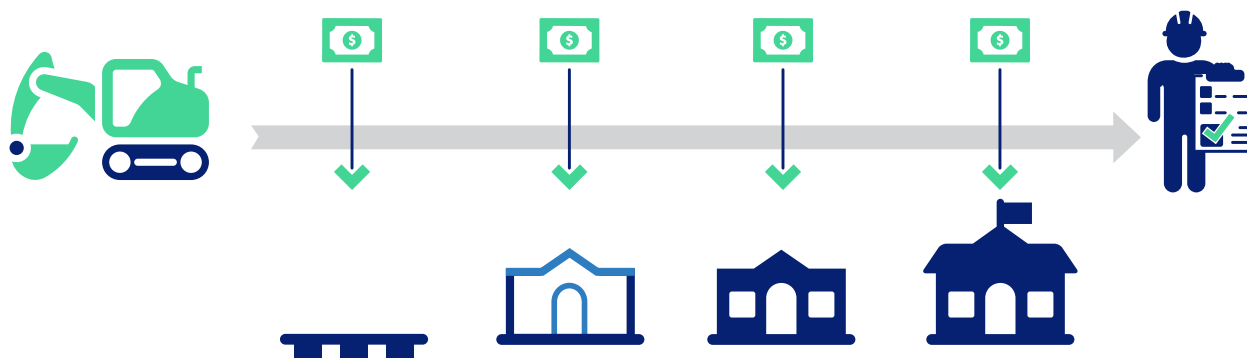
IN-HOUSE SUPERVISION ARRANGEMENTS

are more vulnerable to risk of corruption than outsourced supervision arrangements. At all central government, LG and community levels, risk is likely: (i) Because their government salaries are low, national civil service, LG employees and community supervisors are more susceptible to bribery by contractors or suppliers; and (ii) lowly paid civil servants in charge of supervision are continually exposed to offers of bribes, and in times of compelling need, they may accept them. With in-house supervision by communities, the risk of supervisors being corrupted is high, as the supervisors themselves are poor and needy. (An outsourced supervisor can accept bribes but risks being fired; in contrast, almost no government employee is removed from the service.)

OUTSOURCED SUPERVISION also has risks of corruption. In the course of works supervision, the following can occur: (i) Conflicts of interest in the relationship between supervisor and contractor; (ii) supervisor's approval of advance payment to the contractor or supervisor's acceptance of unjustified extra work; and (iii) certification of works noncompliant with drawings and technical specifications.

MITIGATING THE RISKS ASSOCIATED WITH CORRUPTION

Knowledge about corruption is well established as are the ways of prevention or mitigation of its effects. Occasions for corruption are listed below, followed by guidance for the government.



Reduce corruption by breaking the project and supervision into smaller contracts and payments.

SIZE MATTERS. Large packages of tenders tend to reduce competition. Conversely, small packages tend to generate increased local competition. The amount misappropriated through fraud is larger in big contracts than in small ones for the simple reason that hiding bribes and overbilling is more conveniently done in big and complex construction programs than in small and simple building projects. This holds true in both contracts for works and contracts for supervision of works.

PROCESS MATTERS. During procurement and contract management, transparency matters. During construction supervision, corruption develops more easily where there is no simple and transparent mechanism for controlling payments to contractors, usually when payment authorization is an obscure activity, assigned only to “experts.” To shed light on this opaque process, the construction work can be disaggregated into simple, physical tranches,

making it easier to spot overpayment of contractors’ bills. Unlike technical measures of accomplishment incomprehensible to nonspecialists (e.g., percentage progress expressed as areas of walls in square meters), physical accomplishments are visible to and controllable by laypersons (e.g., completion of foundations wall, roof, finishing).

COMMUNITY MATTERS. Public bid opening is a key element as is public knowledge of price and name of awarded bidder. Payments against visible accomplishments can also be made publicly so the beneficiary community can witness payments and verify their accuracy. Information boards by the school entrance or on the village square that display all financial information (contract amount, progress payment amounts, dates of payments) are useful tools to improve transparency, enhance accountability and possibly eliminate corruption altogether.

TOWARD A SCHOOL CONSTRUCTION STRATEGY

There are no ready-made designs to execute a school construction program successfully. Instead, there are choices for each country, based on national context, previous efforts, vision of policy makers and available resources. Opportunities for strategic choices are numerous along the construction process. While experiences are varied, there are common lessons to be learned.

The main recommendation for decision makers in low- and middle-income countries is to develop a national school construction strategy for the long term, drawing lessons from their own and other country experiences. In the short term, fluctuations in country circumstances are often beyond government control, such as coping with internally displaced people, an influx of refugees, or protection from civil strife. A long-term strategy can be built in five steps, each of which takes the value for money principles into account:

STEP 1:

DETERMINE FUNDING FOR THE PROGRAM. The options are as follows: (i) **Use government's regular budgetary allocation** in stand-alone construction projects. This makes for quick preparation, but scaling up is doubtful. (ii) **Harmonize government and donor funds.** This facilitates access to external financing and can lead to longer-term funding sustainability. (iii) **Put donor resources in a basket fund under government leadership.** This sector-wide approach will reduce transaction costs and achieve large-scale, sustainable impact. (iv) Have the community finance construction. This responsibility is typically left to poor communities. The first three options are increasingly economical; the fourth option can be inequitable.

STEP 2:

PLAN THE PROGRAM. The planning process is in two parts, macroplanning and microplanning. **Macroplanning**, a responsibility of central government, is a top-down approach. Government can (i) **reflect strategic priorities**, (ii) **distribute funds between geographical areas**, and (iii) **distribute funds to specific areas or groups**. **Microplanning** establishes the planning approach with a focus on community-driven approaches, giving voice and power to community demands. However, central management of a countrywide, bottom-up approach is cumbersome. **Mixed approaches** combine top-down macroplanning from center to regions and local governments and bottom-up microplanning from communities to local governments. They offer the advantages of both approaches in terms of **equity and efficiency**.

STEP 3:

ADOPT NORMS AND STANDARDS. Five key norms and standards must guide the government's school construction program. However, it should also be recognized that some of these may change as more is learned about the response to the COVID-19 pandemic.

- **Distance to school.** This is the most strategic choice to impact the design of the school network. Long walking distances are difficult and unsafe for children and make boarding schools necessary. Short walking distances of 30 minutes or less means building day schools. This ensures universal (and therefore equitable) access to education, sustainable over the long term for basic education in low-income countries.
- **Architectural standards for classrooms.** The standards that contribute to improved education outcomes are (i) number of pupils per classroom, about 40; (ii) unit area per student, 1.2–1.4 square meters; (iii) appropriate minimum levels of lighting and ventilation; and (iv) sufficient color and visual interest. Most countries have developed standard classroom drawings that come close to the required standards, needing only small adjustments.
- **Technical standards and technology.** At minimum, the buildings must be durable enough to be in school use for 40 years, withstanding storms and earthquakes. They are built using durable and code-compliant building materials and systems that are locally available and climate appropriate. These options depend on cost, durability, technical feasibility and the feasibility of using local materials and contractors with little or no worker training. Public funds should not be used for testing innovative technologies with insufficient evidence of cost and durability.
- **Norms promoting health, safety and equity.** Plans should comply with national or international standards for safe, sanitary and inclusive access to and use of buildings. They must specify ratios of pupils to latrines and sinks as well as the disability- and girl-friendly sanitation technology essential for equity. These may mean additional costs to make school buildings compliant with the above norms and standards.
- **Minimum package of school facilities.** This is the first cost driver of a school construction program. The minimum package can cost up to five times the cost of one classroom. Land is a cost driver and a problem that needs government and donor attention. Architectural design is also a cost driver, but since good designs have been developed, any more savings will not exceed 15 percent of the design cost per square meter. The cost of labor is 22–25 percent of the total cost of construction. The cost of supervision of construction, if done by in-house supervisors, will cost more than 10 percent of the total cost of construction. Apart from classrooms and sanitation, four other costly items must be carefully considered for need and effectiveness:
 - *School library:* Shifts in pedagogy, such as reading corners, save on precious space that can serve as classrooms for the growing enrollment, shifting investment to quality instructional needs, like textbooks.
 - *Science laboratories:* Primary curricula promote integrated science learning; lower secondary curricula introduce the use of middle-school science kits in classrooms; and multiscience laboratory designs are emerging for possible use in upper secondary schools as an alternative to specialized laboratories originally intended to prepare students for university.
 - *Boarding facilities:* A more economical and sustainable alternative is to establish day schools within walking distance from students' home communities. This may require adjustments in curriculum (number of subjects in lower secondary school) and teacher training (for multigrade teaching in primary grades, multisubject teaching in lower secondary years).
 - *Teacher housing:* There is no evidence that this incentive works. Other measures should be tried, including recruiting teacher trainees from and posting them back to their home communities.

STEP 4:

MAKE IMPLEMENTATION ARRANGEMENTS. Next to the minimum package of school facilities (above), this is the second cost driver of a school construction program. The cost of one classroom is lowest if implementation is done by the community by itself or through a contractor selected by local competitive bidding. The unit cost is more, up to twice more, if implementation is done by national competitive bidding. It is at least three times more if done by international competitive bidding. Transforming funding, planning and norms into actual buildings happens through procurement, carried out in the following ways:

- **Centralized procurement.** Government, with full control and responsibility over school construction, (i) contracts the works in large procurement packages, with high costs and transaction bottlenecks; or (ii) delegates the procurement and financial management of the works to communities. The latter has proven efficient and cost-effective.
- **Decentralized to local governments.** This option has had mixed results in cost-effectiveness and accountability because local governments tend to replicate the defects of centralized procurement. The alternative, further downward delegation to empowered communities, provides the checks and balances for better results.
- **Community-managed school construction.** This approach results in low-cost school construction and contributes to the local economy by providing local business opportunities and employing local labor. The community either (i) procures labor and materials, cutting contractor costs but risking building quality; or (ii) contracts the works through local competitive bidding, which helps develop the small-scale construction industry.

STEP 5:

SUPERVISE AND EVALUATE. Technical site supervision can be either (i) **performed in-house** at central government or at midlevel local government (this usually results in low-quality works) or (ii) **outsourced to a competent third party** to mitigate the risk of collusion between supervisor and contractor. Further transparency can be enhanced with technical audits, beneficiary assessments, community scorecards and mechanisms for grievance redress.

POSTSCRIPT.

The present note misses one important element—that maintenance of school facilities is universally problematic. The upkeep of school buildings is typically left to the school or the community and consequently not implemented well. Governments provide budgets for construction but not for maintenance, which runs 1–2 percent of the construction cost per year. Governments that do provide for maintenance roll the amount into yearly per capita grants and include it with repair. This underfunding of maintenance leads to much costlier rehabilitation of aging buildings later on. A local network of small-scale contractors who build the schools is a promising source of services for maintenance and repair. Countries should develop school maintenance programs and integrate them with the national school construction strategy recommended in this note. ◀

CONCLUSION

This note, the second in a series of three, provides guidance in making money maximize the educational value of constructing the right schools in the right places. It uses the value for money concept broadly, without attempting to cover all elements. Rather, it highlights the areas where significant decisions—those with the greatest consequences for the use of domestic and foreign resources in supporting learning in a high-quality school environment—must be made.



In itself, this note should provide helpful guidance, though some areas overlap with other areas contained in any education sector plan. The guidance notes on textbooks and on teachers form an integral part of the overall guidance. These three areas of focus are certainly liked, yet significant efficiency gains can be made in each one individually. What is yet to be seen are the consequences of the COVID-19 pandemic. While none of the topics discussed in this note lose their relevance, it is entirely possible for construction standards to change in response to overwhelming health concerns.

Throughout this guidance note, which is aimed at policy makers in partner countries, the emphasis is on practicality, and the choices that must be made. A recurrent theme is the link between equity in education and corruption. While both are difficult to address in a definitive way, different choices have different consequences. As such, this note is intended to foster discussion, examination and dialogue concerning these important issues.

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Cover photo: The outline of 7 new classrooms to be built with a GPE grant at St. Matia Malumba Primary School, Uganda.
GPE/Livia Barton