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REOPENING WITH RESILIENCE:

Lessons from remote learning during COVID-19 in West and Central Africa

Learning pre-COVID

Although access to school has substantially increased in sub-Saharan Africa over the past decades, almost a third (31.2 per cent) of children of primary and lower secondary school age in the West and Central Africa (WCA) region[1] are excluded from basic education (UNICEF, 2021a). The interaction of demand-side barriers, mainly poverty and sociocultural norms, and supply-side barriers, including a lack of schools and limited learning gains, is a major hurdle for a child's chances of entering, attending and progressing in school (UNICEF, 2021a). Localized sociopolitical conflict contributed to increasing exclusion rates in the Democratic Republic of the Congo, which reached 57 per cent in conflict-afflicted provinces in 2019 (UNICEF, 2021a). Meanwhile, warring factions in the Central Sahel and the Lake Chad Basin have increasingly targeted schools and children, disrupting education for almost 2 million children in 2019 (UNICEF, 2019). Conflict in neighbouring countries, cross-border tensions and the ensuing large influx of refugees and displaced persons are putting huge pressures on educational systems in countries such as Niger and Chad (UNICEF, 2021a).

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1 The following countries belong to the UNICEF WCA region: Benin, Burkina Faso, Cameroon, Cabo Verde, the Central African Republic, Chad, the Congo, the Democratic Republic of the Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, the Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone and Togo.

Access to schooling varies widely across[2] and within countries in West and Central Africa, with children living in rural areas, girls[3] and especially poorer households being disproportionately more excluded. In Nigeria and Sierra Leone, for instance, exclusion rates among primary school-age children are 3 to 3.5 times higher in rural than in urban areas (UNICEF, 2021a). In Benin and Nigeria, two of the countries with the most marked disparities across wealth quintiles, between 60 per cent and 65 per cent of the poorest children are excluded from primary school, as compared with 3–7 per cent among the richest (UNICEF, 2021a).

Prior to the COVID-19 outbreak, the region was already facing a severe learning crisis. A vast majority of students in school did not achieve grade-level foundational literacy and numeracy (FLN) skills. In the French-speaking countries of the region, the proportion of children who achieved minimum reading skills has risen from 41 per cent to 52 per cent between 2014 and 2019, while the proportion for mathematics largely remained at the same level, going from 36 per cent to 38 per cent (PASEC, 2015; PASEC, 2020). In 2019, across the region, the proportion of children aged 10 who were 'learning poor' – meaning they were either out-of-school or did not achieve minimum reading proficiency – ranged from 30 per cent in Gabon to a staggering 97 per cent in the Democratic Republic of the Congo.

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In WCA, the COVID-19 school closures added further strain on national education systems that were already struggling to provide children with the necessary foundational skills to succeed both in school and in society. Between January and December 2020, children in the region missed an average of 90 instruction days at the pre-primary level, 83 at primary and lower secondary, and 82 at upper secondary level due to full school closures (UNESCO, UNICEF, the World Bank and OECD, 2021).[4] Countries that were already ranking among the bottom performers in terms of learning, including Ghana, the Congo, Liberia, the Democratic Republic of the Congo and Chad, were among those that experienced the longest school closures in the region (see Figure 1). According to analyses from Azevedo et al. (2020), the pandemic is estimated to have resulted in a loss of between 0.3 and 0.9 learning-adjusted years of schooling (LAYS) in sub-Saharan Africa.[5] This learning loss may in turn lead to a reduction in per student annual earnings of 4–10 per cent.[6]

2 Out of the total 41 million children and adolescents who are excluded from basic education, over two thirds are in Nigeria (16.5 million), Niger (3.3 million), the Democratic Republic of the Congo (3.2 million), Burkina Faso (2.8 million) and Mali (2.2 million). Exclusion rates among primary school-age children range from 3 per cent in the Congo to 43 per cent in Mali and Niger. (UNICEF, 2021a.)

3 Senegal, the Gambia and Sierra Leone represent an exception, with girls being less excluded than boys.

4 Note that 15 out of the 24 countries in the WCA region responded to this iteration of the survey.

5 LAYS combine quantity and quality of schooling into a single metric of progress. Specific estimates for the loss of LAYS accrued in WCA are not yet readily available.

6 For details about the yearly average income in sub-Saharan Africa, see World Bank data on gross domestic product per capita (2020), <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD?locations=ZG>.

FIGURE 1. Harmonized Learning Outcomes by number of **days schools were closed (full or partial)** (from February 2020 to August 2021)

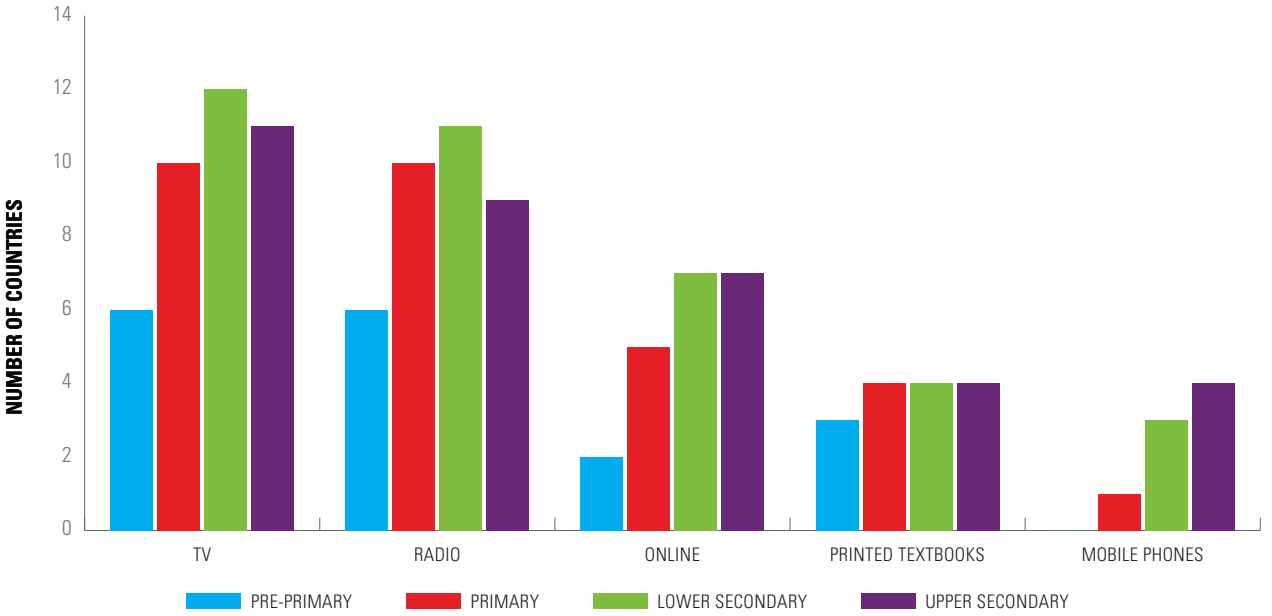
Note: *Data on pre-COVID learning outcomes come from the Harmonized Learning Outcomes (HLO) database of 164 countries, learning outcomes from 2000 to 2017 (Angrist et al., 2021). Data on the duration of education systems being fully closed come from the UNESCO Global monitoring of school closures due to COVID-19. The size of the circle represents the school-age population of a country with data from UNESCO Institute for Statistics.*

Remote learning policies and access to technologies

Continuing education during school closures has been part of the multisectoral national responses to COVID-19 across WCA (UNICEF, 2021b; UNESCO, UNICEF, the World Bank and OECD, 2021). Strategies for continuing education hinged on multimodal remote learning, including digital platforms together with broadcast media and printed materials, in an attempt to expand access to remote instruction for those without internet-connected devices or electricity.

Governments in WCA relied heavily upon radio and TV to broadcast education content during school closures (UNESCO, UNICEF, the World Bank and OECD, 2021). As shown in Figure 2, between 6 and 12 countries (out of the responding 15), depending on the level of instruction, relied on TV, while between 6 and 11 countries promoted radio-broadcast education programmes. In Nigeria, federal and state education authorities have established partnerships with media organizations and mobile networks to broadcast lessons that conform to the national curriculum (Adediran, forthcoming). In Equatorial Guinea, radio classes were held live and enabled interactions with parents and students, allowing space for clarifications and questions on the subjects taught; an estimated 115,000 pre-primary and primary children (70 per cent) were reached weekly through these learning programmes (UNICEF, 2020). Five countries promoted online platforms for children in primary school and seven countries used these platforms for children in secondary school (UNESCO, UNICEF, the World Bank and OECD, 2021).

FIGURE 2. Remote learning modalities promoted by countries in West and Central Africa



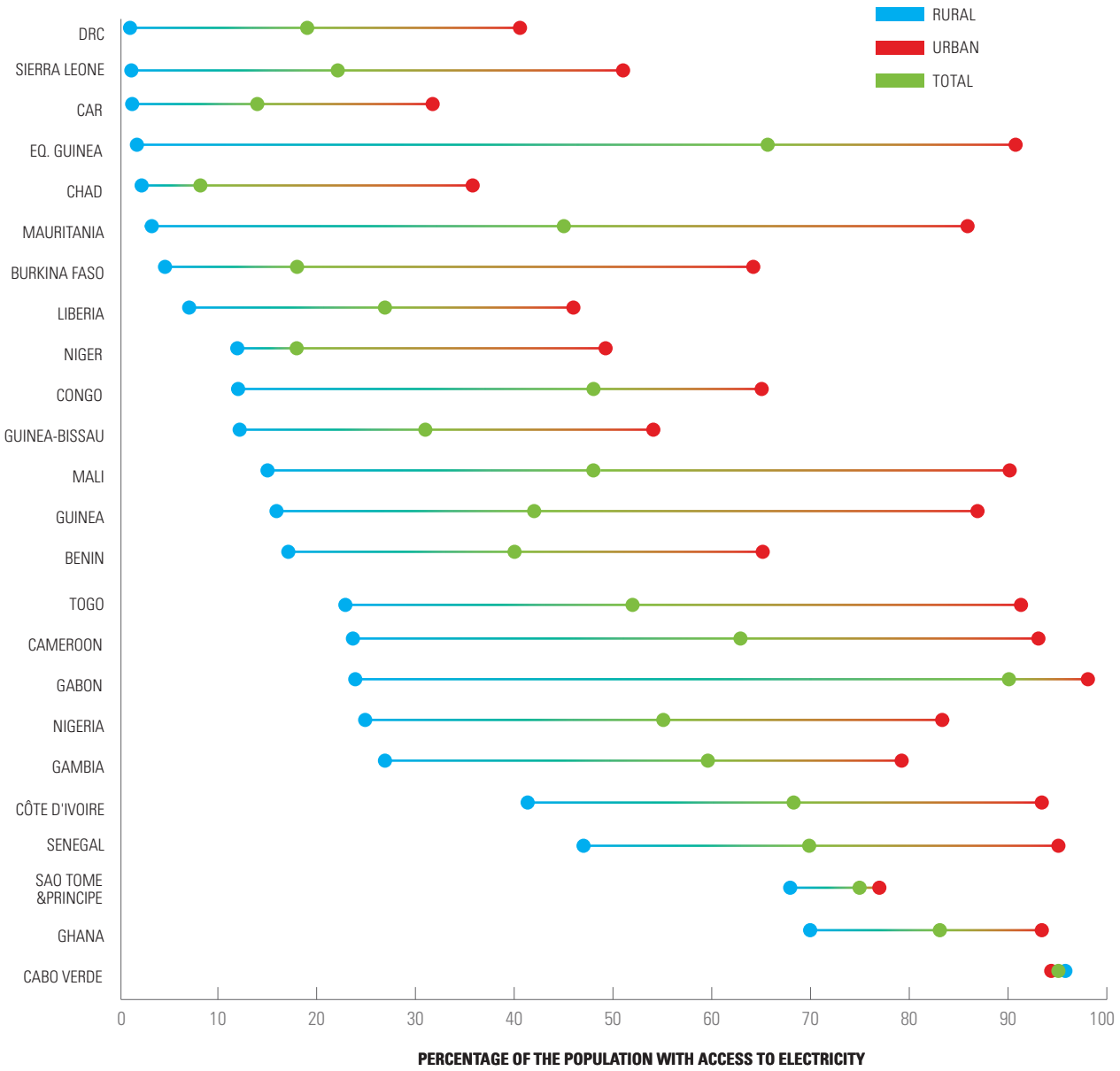
Source: *UNESCO, UNICEF, the World Bank and OECD, 2021. The reporting countries are 15 out of the 24 in the WCA region.*

While digital and broadcast media education modalities have been the centrepiece of national education responses, the technologies required to harness these opportunities are very unevenly distributed in the region. Wide disparities exist across countries, with electrification rates ranging from 8 per cent in

Chad to 14 per cent in the Central African Republic, 19 per cent in Niger and in the Democratic Republic of the Congo, and 23 per cent in Sierra Leone, with the highest coverage rates being found in Senegal (70 per cent), Sao Tome and Principe (75 per cent), Ghana (84 per cent), Gabon (91 per cent) and Cabo Verde (96 per cent) (World Development Indicators data). Within-country access to electricity is highly uneven too and skewed in favour of households living in urban areas, including in those countries where electrification rates are higher (see Figure 3). The share of the rural population having access to electricity does not exceed 5 per cent in several countries, such as Burkina Faso, the Central African Republic, Chad, the Democratic Republic of the Congo, Equatorial Guinea, Mauritania and Sierra Leone (World Development Indicators data).

Ownership of devices required for accessing content on digital and broadcast media platforms is similarly limited, particularly in rural areas (see Figure 4). Mobile phones are by far the most accessible tools. TV is common in urban areas, with over 70 per cent of households owning one, but its ownership drops in rural areas to below 30 per cent, most likely because of the availability of electricity and lower income. Access to the internet and computer equipment remains limited even in urban areas, where less than 20 per cent of households are able to afford it. Access to the internet and computer ownership drops to less than 10 per cent in rural areas. Internet access is not only limited by lacking or intermittent access to electricity but also by the high cost of data (UNICEF and ITU, 2020). Ghana, for instance, despite being one of the countries with the highest electricity coverage, had to suspend an online learning platform rolled out by the Ministry of Education due to high

FIGURE 3. Access to Electricity in West and Central African countries, rural vs. urban



Source: *World Development Indicators 2014-2019 and MICS data 2015.*

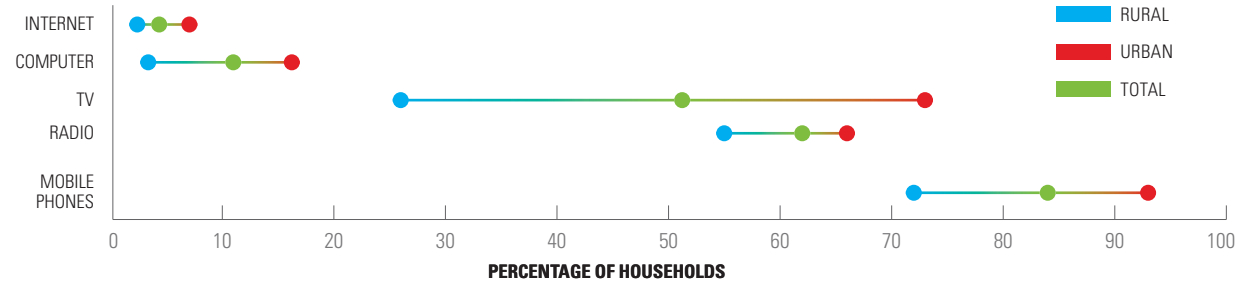
data costs and limited access to the internet (Owusu-Fordjour, 2020). Similarly, the stability of connectivity was cited as a main barrier for remote learning in Nigeria and Côte d'Ivoire, two other countries with some of the highest electrification rates in the region (Adediran, forthcoming; Ministère de l'Education Nationale – République de Côte d'Ivoire, 2020). The limited number of devices was also cited as a barrier, particularly for larger households with children of different ages and proficiency levels having to simultaneously attend TV or radio classes in Sierra Leone (Turay, forthcoming); as a result, lessons prioritized junior and senior secondary levels, with little airtime for pre-primary and primary schools.

Governments in WCA placed less emphasis on printed sets and mobile phones as tools to continue learning at home, despite their comparatively wider accessibility and uptake (see next section). Four out of the 15 countries that reported had adopted take-home printed sets at primary and secondary level (UNESCO, UNICEF, the World Bank and OECD, 2021). Mobile phones were mainly used for upper secondary students (four countries), with reliance falling for lower secondary (three countries) and primary students (only one country) (UNESCO, UNICEF, the World Bank and OECD, 2021).

Pre-primary education received comparatively the least attention for all levels of instruction and across all remote learning delivery modes (see Figure 2). School closures have further limited participation in early learning activities, which even before the pandemic stood at a modest 18 per cent gross enrolment rate in WCA. This is increasingly alarming given the evidence that investments in pre-primary education set a trajectory of learning and well-being for a lifetime, with children who lag behind in learning during the early years more likely to stay behind for the remaining time they spend at school (Nugroho et al., 2021).

Finally, assessing the effectiveness of remote learning remains a limited practice. In 2020, only one country (Senegal) examined the effectiveness of online educational content through student-level assessments. Three countries (Senegal, Sao Tome and Principe, Mali) assessed TV-aired educational programmes, while five (the Democratic Republic of the Congo, Liberia, Mali, Senegal, Sao Tome and Principe) evaluated radio programmes (UNESCO, UNICEF, the World Bank and OECD, 2021).

FIGURE 4. Percentage of households owning technologies enabling remote learning, rural vs. urban, for selected countries with available data in West and Central Africa



Source: *DHS and Multiple Indicator Cluster Surveys (MICS) data. Weighted cross-country averages based on student population.*

BOX 1. POLICIES TO SUPPORT TEACHER TRAINING IN REMOTE INSTRUCTION

Successful remote learning requires much more than just overcoming the uneven access to technologies. It requires effectively preparing teachers to deliver instruction and assess learners' progress remotely, embedding technology within class work. Equipping teachers with adequate skills to deliver remote learning has been identified as a key gap at the global level (Dreesen et al., 2020). WCA countries are no exception.

Cameroon, Ghana, Liberia and Togo are the only countries that offered teachers special training for the transition towards remote learning, nationally (UNESCO, UNICEF, the World Bank and OECD, 2021). Specific teacher training was sometimes offered at the subnational level (Chad) or took place on a school-by-school basis (Ghana, Liberia). Some countries also made adapted teaching content for remote instruction available for teachers. This was implemented as a nationwide measure in Cameroon, Niger and Ghana (in the latter, schools were also delegated some responsibilities), while in other cases it was left to the initiative of decentralized entities (Liberia) (UNESCO, UNICEF, the World Bank and OECD, 2021).

However, even those countries that activated teacher training policies in the aftermath of the outbreak were not fully successful in equipping teachers with the skills and resources that are necessary to effectively engage children through remote modalities (Adediran, forthcoming; Turay, forthcoming; Landim, 2021; Mimche, forthcoming). Teacher–student interactions remained intermittent at best, while ad hoc learning monitoring tools were absent, which also limited the possibilities to identify successful pedagogical and technical solutions for home-based learning.

From remote learning policy to implementation

Overall uptake of remote learning

At primary level, Sierra Leone appears as a top performer with over 95 per cent of households reporting that at least one child engaged in remote learning (IPA, 2020d). In the other countries, the share of households with children engaging in remote learning ranges from about 65 per cent in Ghana (IPA, 2020c) and 70 per cent in Burkina Faso (IPA, 2020a) to approximately 80 per cent in Côte d'Ivoire (IPA, 2020b) and Senegal (Le Nestour et al., 2020). The surveys document that exclusion rates are higher among poorer households, for instance in Burkina Faso (IPA, 2020a), Nigeria (Siwatu et al., 2020) and Senegal (Le Nestour et al., 2020), as well as among households with lower educational attainment and those living outside of capital cities (Senegal, Mali).

Participation in remote learning activities was generally higher in secondary grades than in primary school. While older students may be more autonomous and require less parental support, this has implications in terms of equity, as students who are already accessing higher levels of education are the same ones who take more advantage of remote learning opportunities.

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Among secondary school students, participation of at least one child in the household in remote learning reached about 75 per cent of respondents in Burkina Faso (IPA, 2020a), 85 per cent in Côte d'Ivoire (IPA, 2020b) and over 90 per cent in Senegal (Le Nestour et al., 2020). In Côte d'Ivoire, students from examination classes at primary and secondary level could benefit from an ad hoc remote learning platform (called Mon école à la maison) from the Ministry of Education with support from UNICEF.[7] Actual participation

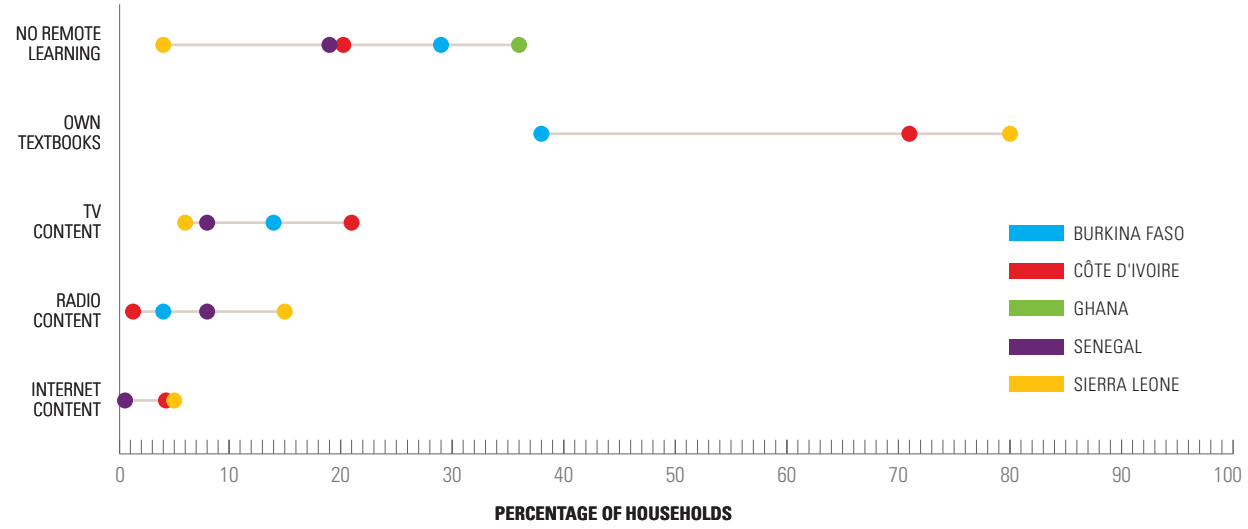
7 The programme made available grade-level educational content for three examination classes nationwide – one at primary level (*CM2*) and two at secondary level (*3ème and Terminale*). The educational content was made available through different channels including broadcast media, digital platforms on social media and SMS-based (accessible via basic phones).

nonetheless was low, with 48 per cent following the module for only one week and only 9 per cent completing the six-week coursework in its entirety (Ministère de l'Education Nationale – République de Côte d'Ivoire, 2020).

The majority of responding households in Côte d'Ivoire (over 50 per cent) and nearly all in Sierra Leone reported that children in primary and secondary school spent on average at least three hours a week on remote learning activities (IPA, 2020b; IPA, 2020d). This pales in comparison with the standard time spent being in school of around 25–30 hours per week in normal circumstances. In Côte d'Ivoire, over 20 per cent spent more than 10 hours per week, while in Sierra Leone the share rises to nearly 60 per cent, in line with the country's above-average uptake of remote instruction. In Ghana, the reported time spent on remote learning tasks amounts to 5.9 hours per week, with no statistically significant difference between poor and richer households (IPA, 2020c). Lack of motivation among children has often been cited as a key barrier for engaging more in learning activities at home (e.g., IPA, 2020a; IPA, 2020b; IPA, 2020c). Motivation in turn can be undermined by limited parental support, non-adapted or non-engaging content, as well as by the absence of effective monitoring tools to assess students' progress during school closure (e.g., Turay, forthcoming) – a gap that is exacerbated by infrequent interactions between learners and teachers. Another constraint on time spent learning at home may derive from a documented increase in the demand for domestic chores and other types of work among children, especially girls, in several WCA countries (Save the Children, 2021; IPA, 2020d; UNICEF, 2021a).

Figure 5 summarizes the use of remote learning modalities for primary school children in the region. The different modes of delivery are explored in turn.

FIGURE 5. Primary school children's engagement in remote learning for different modes of delivery



Note: *Based on authors' compilation of different surveys conducted in 2020/21. For the 'No remote learning' category, the total refers to the full sample of respondents with children in any given survey. For the other categories, i.e., for any given mode of delivery, the total refers to households with children who did engage in remote learning. For instance, around 70 per cent of the households engaging in remote learning in Côte d'Ivoire did so by using their own textbooks.*

Printed materials

During school closures, printed materials were the most relied-upon tools for learning at home. Among households engaging in remote learning, over 40 per cent did so through their own textbooks in Burkina Faso (IPA, 2020a), with more than 70 per cent in Côte d'Ivoire (IPA, 2020b) and 80 per cent in Sierra Leone (IPA, 2020d) doing the same. Yet, the availability of learning materials, including textbooks and books, remains limited at the household level (UNESCO, forthcoming; Save the Children, 2021).

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In Liberia, schools were used as pick-up points for printed sets as part of the national remote learning response; community-based actors were deployed to mobilize and inform parents about the modalities of collection and the role they could play in supporting their children's learning at home (Chávez et al., 2021). School-provided textbooks were comparatively less common for countries with available data, being used by less than one in five households in Burkina Faso and by about two in five households in Sierra Leone (IPA, 2020a; IPA, 2020d).[8]

Broadcast and online content

Despite the policy emphasis placed on radio and TV educational content, uptake remained limited in practice. At the primary level, radio-broadcast content was accessed by a share of households ranging from 2 per cent in Côte d'Ivoire to a maximum of 15 per cent in Sierra Leone, with a slightly higher audience among secondary students. The range for TV went from 5–7 per cent in Sierra Leone to around 20 per cent in Côte d'Ivoire.

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8 The programme was initially designed also for Burkina Faso but, since schools there reopened at the end of May 2020, booklets were eventually not distributed.

BOX 2. LEVERAGING PRINTED MATERIALS AMID SCHOOL CLOSURE: THE PASS+ EXPERIENCE

Before the COVID-19 outbreak, the PASS+ project, which is implemented by Plan International and the Strømme Foundation, delivered in-person speed schools for out-of-school children (OOSC) aged 8–12 in Burkina Faso, Mali and Niger. Its accelerated curriculum had enabled learners to mainstream in the fourth grade of primary school. In the aftermath of the outbreak, the project turned to printed materials to allow an initial target of 10,000 OOSC in Mali and Niger[8] (51 per cent boys, 49 per cent girls) to continue learning at home during school closure.

The printed materials were conceived based on the accelerated curriculum that was followed at the speed schools in pre-COVID times. The content was adapted to learners' competence and knowledge levels as well as age, thanks to a process of feedback and validation that involved local governmental partners, international education actors and project implementers. The materials were specifically conceived for individualized learning, using familiar words and contextualized situations, engaging content such as images and games/quizzes, and a progressive level of difficulty, so as to allow all children to complete at least some tasks regardless of their specific proficiency. Emphasis was placed on FLN skills. The entire set consists of 44 pages, with learners asked to complete a minimum of two pages per day – one for mathematics and one for French – hence covering a month's worth of coursework. These types of printed materials can also be adapted to develop remedial education modules for in-school children who are struggling to keep up with the curriculum, especially after prolonged crises leading to school closure. An orientation guide for caregivers was produced to boost their support in the day-to-day learning activities of their children and to encourage them to regularly follow their progress.

The experience of the PASS+ project shows that take-home printed sets can be an effective solution in settings where most children do not have access to internet-connected devices or broadcast media. Printed sets can be rapidly deployed through community-based networks and can be tailored to the proficiency and needs of learners. Printed materials were distributed to 95 per cent of the target learners. The high rate of distribution was made possible by ensuring strong coordination between the school committees and the implementing partners, with the latter delivering the take-home materials to each village and the former in charge of their door-to-door distribution. A monitoring system to ensure the materials were used in practice has been set up, leveraging teachers and local actors. A learning centre supervisor was tasked to conduct weekly calls to school management committees to monitor progress and identify potential challenges facing learners. When speed schools reopened, students brought their booklets for teachers' assessments. This found that 75 per cent of students finished the full booklet, some of them with the support of school committees who delivered learning activities in smaller groups. This uptake rate is comparatively high vis-à-vis that of educational content delivered through broadcast media or digital platforms. Once teachers completed the assessment of a student's performance, booklets were returned to students to be used as reading materials, since a considerable part of the booklet was made of short texts and image dictionaries.

Secondary school students comparatively relied more on TV than on radio. As expected, given the limited availability of internet-connected devices, the uptake of online content remained limited in all countries with available evidence, ranging from 1 per cent in Nigeria to about 15 per cent in Ghana. Marked variation existed within countries as well. In Mali, for instance, about 21 per cent of households living in Bamako reported using online content as compared with less than 1 per cent in rural areas (INSTAT, 2020).

Learning loss and widening inequalities

Initial evidence suggests that students' learning inequalities are widening in the region and that accessing remote learning tools is no guarantee of learning in practice. Only about 30 per cent of Mon école à la maison users in Côte d'Ivoire who live in rural areas reported understanding the educational content delivered through the platform, as compared with over 70 per cent in urban areas (Ministère de l'Education Nationale – République de Côte d'Ivoire, 2020). This differential may be explained by more frequent interactions between teachers and students and more regular parental support for learning for children in urban areas. As a matter of fact, parents in urban areas were much more likely to support their children's home learning than in rural households (Ministère de l'Education Nationale – République de Côte d'Ivoire, 2020). An assessment following the reopening of schools, found that children in poorer households, children with fewer school supplies and especially children with parents that have a low educational background had acquired lower FLN skills during school closures (Ministère de l'Education Nationale – République de Côte d'Ivoire, 2021). The experiences of other countries in the region echoed the issue of caregivers' limited capacity to support home learning (UNESCO, forthcoming; Save the Children, 2021; IPA, 2020c; Le Nestour et al., 2020). Limited caregiver support is mainly attributed to parents' low understanding of curriculum objectives, as well as to the more binding time constraints at a time of economic distress.

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According to a survey of beneficiaries conducted in the region by Save the Children (2021), two in three children aged 11–17 reported that they had learned very little and 16 per cent learned nothing during the lockdown period; children's caregivers echoed these concerns, with half stating that children only learned "a little" during school closures (Save the Children, 2021). A phone-based learning assessment of basic literacy and numeracy skills conducted with a sample of primary school students in deprived areas of Accra, Ghana, shows that children enrolled in public schools and those from poorer households were

lagging behind vis-à-vis their peers in private schools and better-off households, respectively (IPA, 2021).[9] Private schools offered more individualized forms of remote learning, were more able to engage children in learning activities and could count on higher parental support for home-based instruction (IPA, 2021). Evidence from other countries also highlighted this divide between private and public schools: in Cameroon, for instance, teachers at private institutions were more likely to develop initiatives to interact with their primary and secondary students through social media, providing them with exercises and related answers (Mimche, forthcoming).[10]

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9 Lagging behind in terms of coverage of the curriculum that should have been covered in the period March–July 2020 if schools had remained open.
10 Asynchronous learning occurs through online channels without real-time interaction with other students or teachers, and is self-paced.

BOX 3. FOCUS ON EQUITY: SUPPORTING MARGINALIZED GROUPS IN ACCESSING REMOTE LEARNING

Specific measures to support access to remote learning for marginalized groups remained concentrated in a handful of countries, notably Nigeria, Ghana, the Democratic Republic of the Congo and Senegal.

Nigeria was the only country that subsidized devices for access to remote learning for children with disabilities, girls or refugees (UNESCO, UNICEF, the World Bank and OECD, 2021). Support measures for low-income families were implemented at state level: smartphones were distributed across Lagos state to children from low-income families, while the Oyo state government offered free internet data bundles to support students to join online classes (Adediran, forthcoming). Across the region, support measures for vulnerable groups also included the provision of additional finance to children with disabilities in Nigeria, Senegal and the Gambia (UNESCO, UNICEF, the World Bank and OECD, 2021). Refugees and girls in Nigeria and Senegal also received additional financing (UNESCO, UNICEF, the World Bank and OECD, 2021).

Three countries – Ghana, Nigeria and the Democratic Republic of the Congo – promoted the use of tailored learning materials for children with disabilities, refugees (as did Cameroon) and girls. In Côte d'Ivoire, the remote learning materials developed as part of the Mon école à la maison project were translated in sign language and Braille for about 850 hearing and visually impaired children. Finally, Ghana and the Democratic Republic of the Congo provided self-paced, asynchronous learning platforms[10] for children with disabilities, refugees and girls.

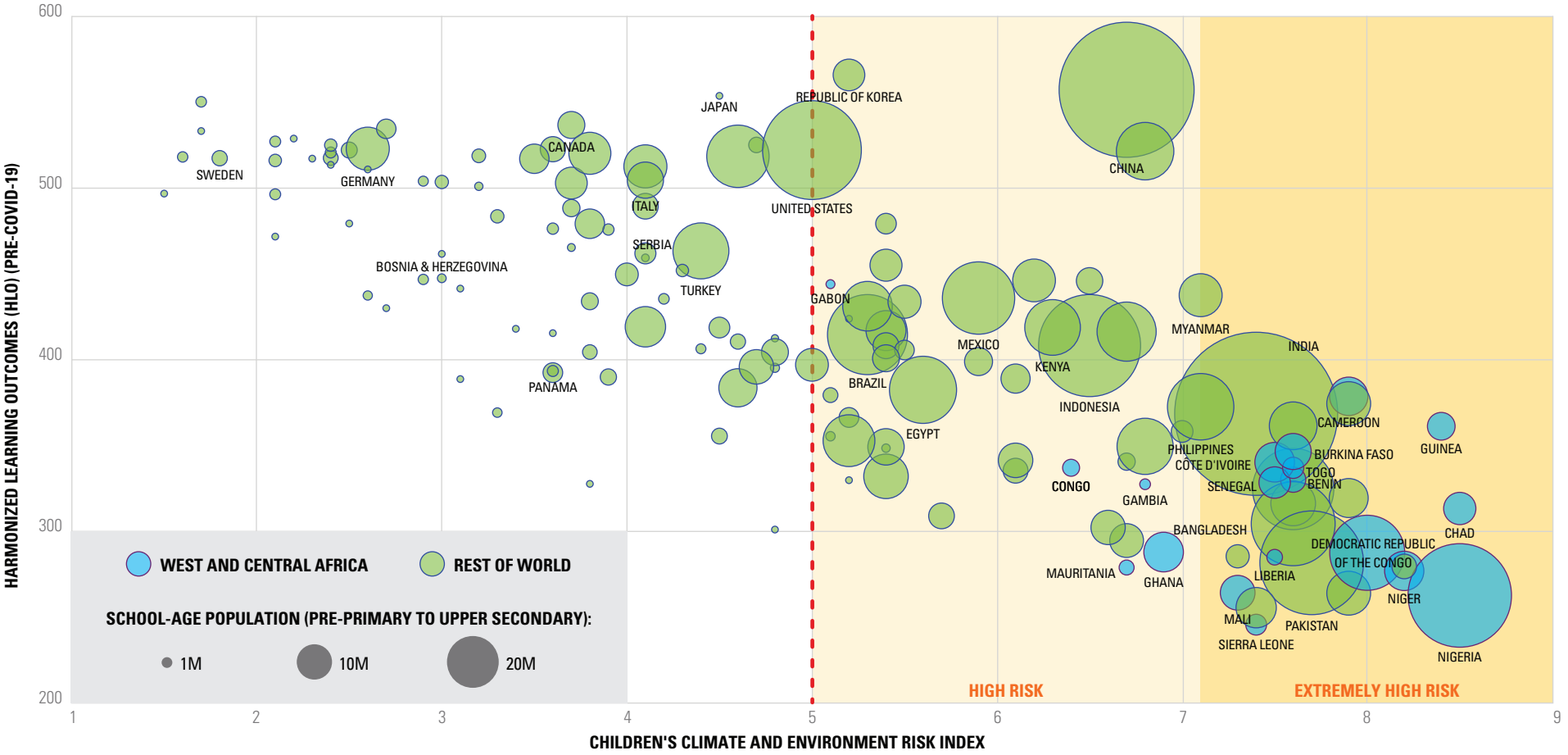
Despite this programmatic emphasis, however, evidence shows that marginalized groups require additional support if they are to effectively access remote learning. Previous sections of this report discussed the barriers facing learners in rural and remote areas and from poorer households. More investments for children with disabilities are particularly urgent, including in those countries that had already activated some forms of support for this vulnerable category. In Nigeria, for instance, parents of children with disabilities were more likely to report a lack of learning materials (Adediran, forthcoming). Teachers in Ghana reported that radio- and TV-aired educational content was inaccessible for children with disabilities, while caregivers similarly indicated that remote learning and learning materials provided by the school were not adapted (IPA, 2021). In Cameroon, educational content delivered through TV and radio was not specifically adapted to children with disabilities and the psychosocial support they need was lacking (Mimche, forthcoming).

Finally, specific measures targeting ethnic minorities and speakers of minority languages were scarce in WCA, with some partial exceptions found in Senegal and the Democratic Republic of the Congo (UNESCO, UNICEF, the World Bank and OECD, 2021).

COVID-19 school closures and beyond – building resilience into education systems

The evidence is clear that school closures due to the COVID-19 will have long lasting impacts on children's education, wellbeing and future livelihoods, and that schools should reopen as soon as possible (UNICEF, 2021d). The experience of school closures has shed a light on the need for remote learning systems that can be relied upon in future times of crisis to build resilience into education systems. In West and Central Africa these resilient education systems will need to be equipped against increasingly frequent climate change-induced disasters, such as severe droughts and floods, particularly in the Sahel, where temperatures are projected to rise 1.5 times more than in the rest of the world. The Children's Climate and Environment Risk Index places 16 out of 24 countries in West and Central Africa among the 30 countries with the highest climate change risk for children (UNICEF, 2021c). Children from 7 WCA countries are in the top 10 of the most climate change affected worldwide, with the Central African Republic, Chad, Nigeria, Guinea and Guinea-Bissau facing the highest risk (UNICEF, 2021c., see figure 6).

FIGURE 6. Harmonized Learning Outcomes by the Children's Climate Risk Index (0–10)



Note: *Shows the pre-COVID-19 learning level of countries using HLO by countries' CCRI score. Countries which appear lower on the graph had lower pre-COVID-19 learning levels. The size of the circle represents the school-age population of a country.*

Conclusions and recommendations

This report highlighted some common challenges that threatened the success of remote learning strategies in WCA countries, and provided examples of promising practices especially for the most marginalized households. Challenges revolve around four main constraints: limited access to electricity and technology; lack of adapted and engaging education content delivered via remote modalities; low teacher and parental support; and gaps in monitoring efforts to inform more targeted policymaking. The following are recommendations to build resilience into education systems in West and Central Africa for current and future crises:

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1 **Invest in electricity and connectivity for marginalized communities and users.** Wide disparities in access to electricity and connectivity persist in WCA and, based on current trends, Sub-Saharan Africa will not reach electricity for all before 2081 (Brossard et al., 2021). Coordinated, large scale investments from governments, developmental actors and the private sector are urgent to reduce this timeframe, support the most marginalized children's education and reduce the risks of widening existing disparities associated with electricity and digital divide.

2 **In the meantime, leverage technologies for remote learning that are adapted to the local context, scaling up low-tech solutions such as printed materials in disadvantaged areas.** Education content aired on broadcast media has been a centrepiece of the remote learning strategies in WCA but has failed to reach vulnerable segments of the population who do not have sufficient devices, or time to engage in learning at the time of airing. Printed materials represent a readily deployed, accessible and scalable practice to continue learning for poorer children, including those living in non-electrified areas or where mobile phone/internet coverage is weak.

3 **Train teachers with adequate capacity to engage students through the different remote learning modalities and monitor their learning performance.** The urgency of the response to COVID-19 left many teachers largely unprepared for delivering instruction remotely. Practical, hands-on training is necessary for teachers to acquire digital literacy skills, effectively embed technology within the classes and familiarize themselves with new modes of instruction such as digital platforms but also take-home printed materials. Capacity-building for teachers should also cover assessing students' progress at a distance. Engaging teacher–student interactions and regular monitoring of progress are key to overcoming the lack of motivation that learners and caregivers often report as a hurdle to home-based education.

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4 **Provide guidance and economic support to caregivers.** Caregiver engagement in a child's learning becomes indispensable at times of school closures. Caregivers should be sensitized and provided with accessible guidance on how they can support and motivate their children's learning at home, even when their educational background is limited. The abilities of the broader community, including peer support groups, should similarly be reinforced and leveraged to assist in providing learning support to children. Evidence-backed policies to sustain household income at a time of economic distress should be activated to avoid drop-out from learning activities and other harmful coping mechanisms such as child labour or child marriage.

5 **Collect more granular data about remote learning uptake and conduct learning assessments to identify best practices for mitigating learning loss.** Remote learning coverage has been widely unequal within and across countries in WCA. A more localized understanding of which remote learning modes worked in different settings could allow policymakers to make more informed decisions on how to provide remote learning for hard-to-reach areas. Monitoring of the progress made by students during school closures will allow the most effective pedagogical practices in remote learning to be identified, including which curated materials, modes of delivery and teacher training formats are more effective across different settings. Finally, monitoring efforts should focus on particularly vulnerable groups that have so far largely been excluded from remote learning, including children with disabilities, ethnic minorities and refugees.

6 **Place more emphasis on remote learning solutions for pre-primary learners.** Early childhood education has a deep influence on a child's learning trajectory. Given the specific needs of this cohort, remote learning needs to be age-appropriate in terms of pedagogical contents, delivery mode and caregiver/teacher support (sensitization, guidance, provision of childcare and learning services, economic support at the household level).

Acknowledgements and contact details

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