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Benin: Selected Issues

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BENIN

SELECTED ISSUES

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BENIN

SELECTED ISSUES

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BENIN—ECONOMIC TRANSFORMATION AND INDUSTRIAL POLICY[1]

While empirical evidence suggests that Benin's reliance on traditional sectors, notably the Port of Cotonou, is moderating, economic diversification remains limited. The government embarked on industrial policy with the transformation of local commodities as main engine, including via the launching of a Special Economic Zone (SEZ) in 2020. This study presents stylized facts on Benin's ongoing economic transformation, analyze the country's new eco-system, and drawing on a recent IMF paper, explores conditions under which the country's industrial policy could meet its intended goals while avoiding unintended economic distortions down the road.

A. Background

1. Industrial policy is taking center stage in policy debate, as governments around the world seek to create growth and employment opportunities amid geoeconomic fragmentation. Countries' renewed interest in industrial policy has been fueled by supply chain disruptions since the COVID-19 pandemic and the war in Ukraine. These disruptive forces have led to surges in food and global oil prices, increasing the cost of living, especially for vulnerable households around the world. In Sub-Saharan Africa (SSA) in particular, the external balances of countries with high dependence on oil imports have deteriorated, with fuel and food subsidies exerting pressure on the budget. With a large youth population, policymakers in SSA are under pressure to stimulate domestic economies to foster job creation.

2. In the case of Benin, while economic growth has been relatively high in recent years, it has remained vulnerable to the country's dependence on transit trade and economic developments in Nigeria. Growth average 6 percent between 2019 and 2023, above the WAEMU median of 4.5 percent and the SSA average of 3 percent. Cotton, the country's traditional export product, remains vulnerable to weather-related shocks as illustrated in the two last agricultural campaigns. Moreover, while informal intra-regional trade has acted as a shock absorber,[2] the limited value-added embedded in transit activities—mainly re-exports, leveraging the strategic position of the Port of Cotonou (PAC)—has limited Benin's export development.

3. Against this backdrop, Benin has undertaken steps to diversify its economy, including through a Special Economic Zone, launched in 2020.

- The National Development Plan (2018-25) anchored on achieving the Sustainable Development Goals (SDGs) aims for sustainable and inclusive growth based on the development of

[1] Prepared by Hicham Bennouna (AFR).

[2] See Selected Issues "Formal and Informal Trade Ties with Nigeria: Evidence from Border Closure" (in IMF Country Report No. 22/246).

agroindustry, services, and tourism, supplementing the synergy between those sectors with the ongoing implementation of institutional reforms.

- The government launched the Glo-Djigbé Industrial Zone "GDIZ" in February 2020 (via a PPP) (Box 1), with the intent to attract foreign private capital to foster economic transformation. The country's strategy is to start with the transformation of local commodities in order to increase value addition in exports and diversify the economy further overtime, including by tapping manufacturing.

4. This paper presents stylized facts on the ongoing economic transformation in Benin, investigates the challenges associated with economic diversification and explores the conditions under which the authorities' industrial policy could meet its intended goals. Section B analyzes nascent shifts in the structure of the economy, using stylized facts and an econometric model. Section C investigates the challenges of economic transformation in a cross-country setting, drawing on a recent IMF paper.[3] Section D is devoted to policy recommendations, exploring conditions under which the new Special Economic Zone could meet its intended goal of diversifying the Beninese economy and generating job opportunities for the large youth, while avoiding unintended economic distortions. Section E concludes.

B. Recent Patterns and Stylized Facts

5. Benin's infrastructure-led development to foster economic transformation under the first-generation National Development Plan (NDP; 2018–25) has yielded some dividends.

- Strong growth averaging 6.6 percent since COVID-19 (2021-23), was partly driven by agriculture, infrastructure, trade and transport, and supported by a strong counter-cyclical policy response by the government.[4]

- Private investment rose from one-sixth to almost one-third of GDP between 2016 and 2023, driven by both domestic and foreign private investment. The latter increased almost threefold between 2016 and 2022, albeit from a very low base.

- This progress was supported by a strong reform drive, continued commitment to fiscal responsibility and enhanced PFM.[5]

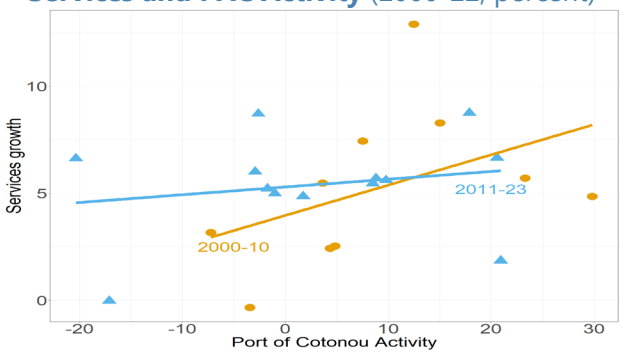
[3] Industrial Policy Coverage in IMF Surveillance— Broad Considerations.

[4] The National Agricultural Investment Plan (*Plan National d'Investissements Agricoles et de Sécurité Alimentaire et Nutritionnelle, PNIASAN 2017-21*) was anchored on promoting territorialization and strengthening investment in agricultural diversification, while reducing food insecurity risks. The *PNIASAN* (2022–25) was approved by the Council of Ministers in April 2024.

[5] IMF Country Report No. 23/367.

6. Empirical evidence suggests that reliance on traditional sectors, notably the Port of Cotonou, is moderating. There is tentative evidence that the correlation between the valued added of services in Benin and the Port of Cotonou activities has declined in the recent period (Text Figure 1). This pattern was likely partly driven by improved infrastructure under PND (2018-25), the emergence of extraction activities (i.e., gravel and sand) and the surge in tourism—the number of air passengers increased twofold from 2020 to 2022 to reach 226,772.

Text Figure 1. Declining Correlation between Services and PAC Activity (2000-22, percent)



Sources: Beninese authorities and IMF staff calculations.

7. We estimate the elasticities of growth drivers' and examine their evolution during the recent period. We estimate the elasticity of non-agriculture value-added growth in Benin with respect to economic growth in Nigeria and cotton production and assess the evolution of their marginal effect using a rolling 5-year window. The importance of these factors on growth dynamics is examined using the following specification: [6]

$$Y_t^{Benin} = c + \alpha_{Benin} * Y_{t-1}^{Benin} + \alpha_{Nigeria} * Y_t^{Nigeria} + \alpha_{Cotton} * Cotton_t + \alpha_{inflation} * \pi_{t-1}^{Benin} + \beta_{dummy} * Dummy_t + \varepsilon_t$$

where subscript Y_t^{Benin} stands for non-agriculture value-added; $Y_t^{Nigeria}$ represents growth in Nigeria; $Cotton_t$ is the cotton production growth rate, π_{t-1}^{Benin} is the core inflation rate in Benin; and $Dummy_t$ is a dummy variable capturing the overlap between the Nigeria border closure and COVID-19. The elasticities of Benin's non-agricultural GDP with respect to growth in Nigeria, cotton, and inflation are captured by the parameters $\alpha_{Nigeria}$, α_{Cotton} and $\alpha_{inflation}$, respectively. The parameter α_{Benin} controls for persistence.

Text Table 1. Estimation Results Assessing Benin's Economic Growth Drivers (2011Q1-2023Q4)

	Non-agricultural GDP
Autoregressive	0.71***
Growth in Nigeria	0.34***
Cotton production	0.02**
Core Inflation	-0.2**
Dummy	3.6***
Sample size	52
DW	1.6

*, ** and *** denote significance at 10%, 5% and 1%, respectively.

8. Estimations results validate the strong dependence of the Beninese economy on Nigeria and cotton, as well as the weakening contribution of traditional growth drivers. The marginal effect of Nigeria growth and cotton on growth in Benin over time are displayed in Text Figure 2.

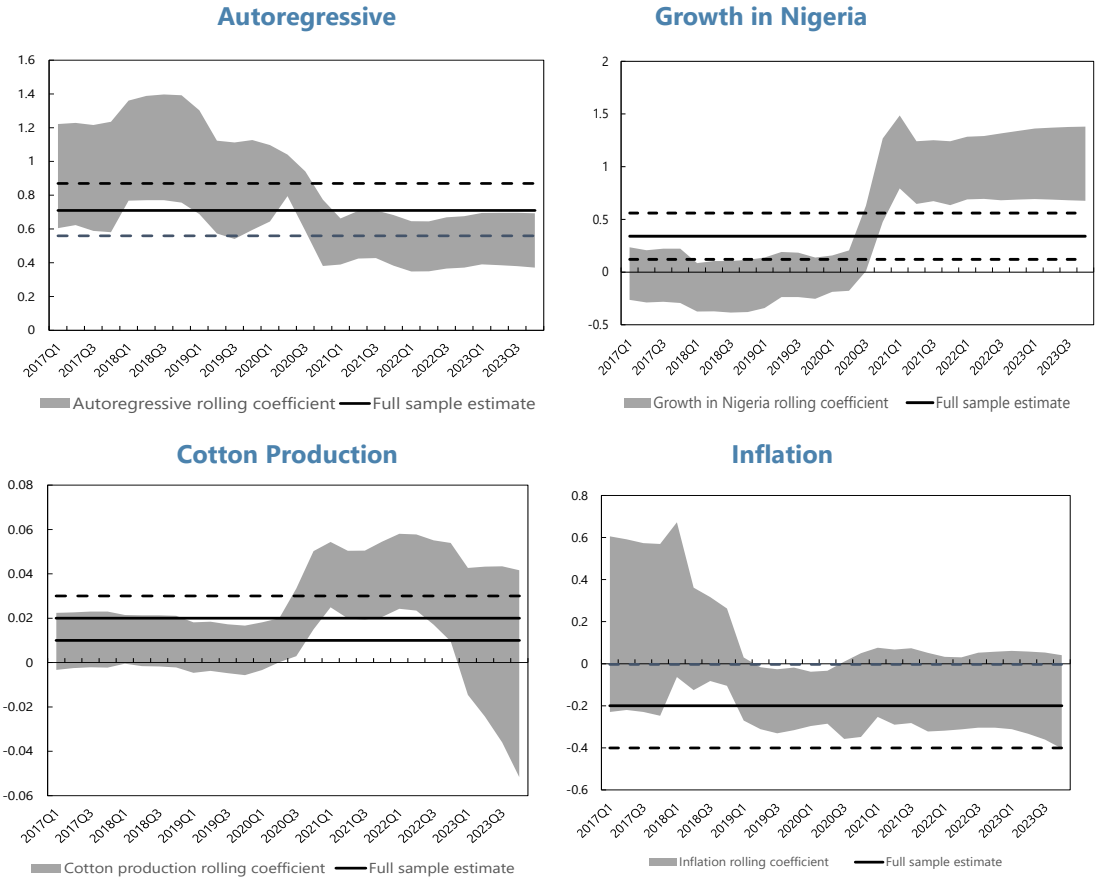
[6] Alternative specifications were estimated. For instance, international prices of cotton (one period ahead to reflect forward contracts and lagged prices to capture farmers adaptation) are not statistically significant, partly reflecting Benin-specific pricing mechanism, where a consensus is reached between farmers and ginning factories at the beginning of the agricultural year. Price differential with Nigeria, the FCFA/naira bilateral exchange rate, and a dummy capturing the sharp naira depreciation during 2016 were deemed not significant, suggesting that growth in Benin is likely inelastic to naira depreciation, providing that Nigeria imports basket is dominated by food products (where the elasticity of volumes to prices is relatively low). Moreover, the lower export activity expected from the FCFA appreciation could be partly offset by higher smuggling activities of imported informal gasoline from Nigeria, as they become more attractive compared to the official prices (with higher margins for smugglers).

- Estimations results confirm that Nigeria and cotton are key drivers of growth in Benin (Text Table 1). There are some signs of export diversification (Text Figures 4, 5).

- While the direct contribution of cotton in term of agriculture growth is still high, there is a weakening of the dependence of non-agricultural growth in recent years on cotton, as suggested by the declining elasticity of non-agricultural GDP to cotton (Text Figure 2). The recently implemented integrated textile unit in the SEZ in Cotonou could foster the impact of cotton production on the industry sector and services.[7]

- Nigeria's growth has continued to play a significant role (Text Figure 2), although Nigeria decided to close its border to Benin, suggesting a shift towards informal trade that has contributed to consolidating growth.

Text Figure 2. Rolling 6-year Window Estimates of Benin Growth Drivers' Elasticities
(95 Percent Confidence Interval)



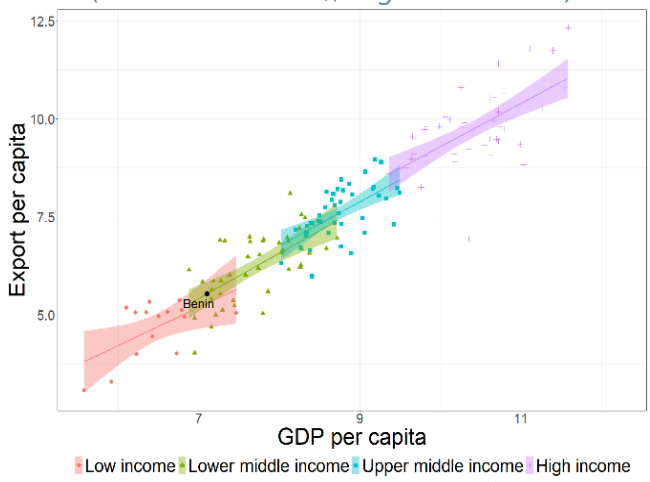
Sources: Beninese authorities and IMF staff calculations.

[7] The unit is expected to cover every step of the transformation process: ginning, spinning, tinting, knitting, and manufacturing.

C. Challenges to Economic Transformation in Benin

9. Benin has a low export per capita ratio, relative to its development level. The economic literature has found that as countries move from low-income to high-income status, they become more diversified, as illustrated by the tight relationship between per capita GDP and per capita export (Text Figure 3). While Benin's export per capita increased almost twofold during the last twenty-year period, it has remained relatively weaker than levels suggested by the trend relationship. As economic diversification is a complex concept, we focus on Benin's most prominent impediments to economic diversification in this paper: low export diversification, prominence of informal economy, slow innovation performance, and low access to finance.

Text Figure 3. Export and GDP
(Constant 2015 US$, Logarithmic Scale)



Source:s World Development Indicators, and IMF staff calculations.

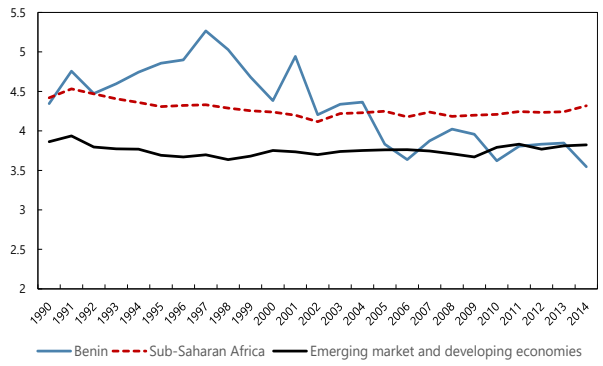
10. Export diversification is underway, supported by investment in infrastructure and leveraging the strategic position of the Port of Cotonou. There is empirical evidence that product and market diversification are closely tied to economic development.[8] Benin outperformed SSA in export diversification during the 1990s, proxied by the Theil index (Text Figure 4).[9] Benin moved from being above the SSA averages, indicating relatively lower diversification, to reach the same level of export diversification of the EMDEs during the 2010s. However, the country has not fully taken advantage of the great potential for further diversification, as evidenced by the limited penetration[10] of its existing products into new markets (Text Figure 5). Moreover, Benin's exports have been mainly concentrated in commodities such as cotton and cashews, accounting for more than one third of total export between 2016 and 2021 according to official trade statistics (before adjusting for informal trade flows).

[8] For instance, see Imbs and Wacziarg (2012), IMF (2014).

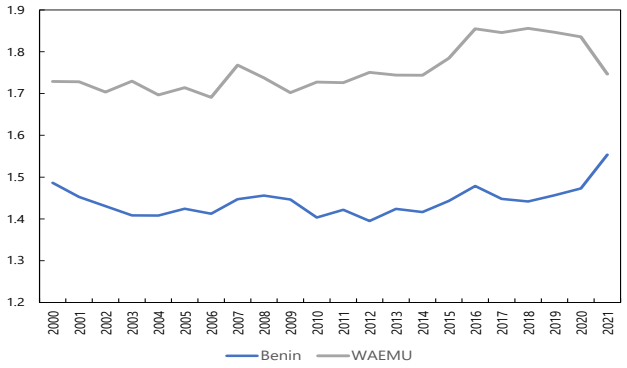
[9] The Theil Index provides an overall measure of export diversification, reflecting the concentration in the number of products as well as the concentration in the export volumes across products. Accordingly, lower values of the Theil index indicate more diversification.

[10] The index of export market penetration measures the extent to which a country is exploiting the market opportunities from its existing set of export products. The index is higher for countries that reach a large proportion of the international markets importing the type of products they export.

Text Figure 4. Export Diversification Index
(Theil Index, Lower Values = More Diversification)



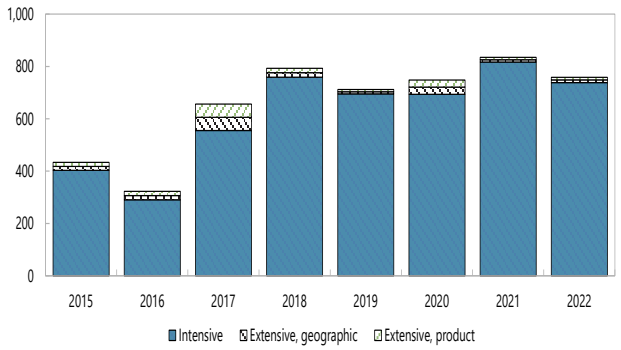
Text Figure 5. Export Market Penetration Index
(High Values = High Penetration, 2000-21)



Sources: WTIS (Word Trade Integrated Statistics), IMF (2014), and IMF staff calculations.

11. The primary source of exports in Benin has been from increases in existing bilateral trade flows rather than increases in new products or in old products to new geographic markets.

Text Figure 6. Export Intensive and Extensive Margins (2015-2022, Million US$)



Sources: WITS, and IMF staff calculations.

- Following Amurgo-Pacheco and Pierola (2007), we investigate geographic and product diversification patterns in Benin.[11] The analysis corroborates the findings of Newfarmer and others (2009) who show, in a sample of 99 developing countries between 1995 and 2004, that the intensive margin (old products to old destinations) contributed more to export growth (80 percent) than did the extensive margin (existing products to new markets and new products) at 20 percent. Text Figure 6 indicates a similar pattern for Benin as the intensive margin was the dominant source of exports. Within the extensive margin, the export of existing products to new geographic markets has accounted for a greater share of Benin' export than the export of new products, although the contribution of both components is negligible.

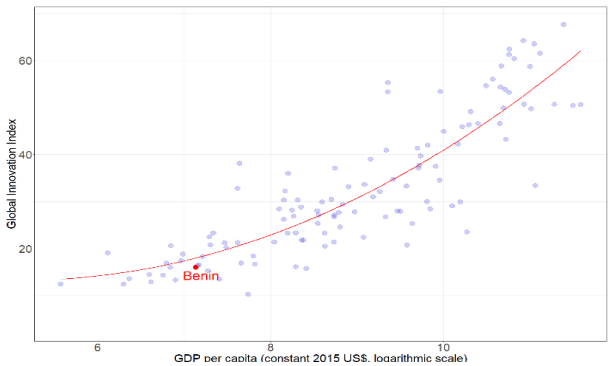
- A comparison between official customs data and informal/unrecorded trade statistics based on surveys suggests an underestimation of trade, particularly with Nigeria, with unrecorded trade

[11] This approach investigates geographic and product diversification patterns to assess whether exports diversification is at the intensive (old products to old markets) or extensive margins (new products to existing markets, existing products to new markets and new products to new markets).

activities, averaging more than 90 percent of Nigeria's total import in 2017-2021.[12] Porous borders and policy interventions in Nigeria are considered the main determinants of the persistence of informal trade.

12. Although Benin has made strides in improving the institutional foundations of sustained private sector-led growth, data suggests that translating innovation investments into innovation outputs has proven challenging. The country ranked 120 among the 132 economies featured in the Global Innovation Index (2023), albeit a progress from 126 position in 2020. Text Figure 7 portrays a positive relationship between innovation and development, where Benin's performance is below expectations compared to peers with the same level of development, proxied by GDP per capital. While Benin ranks highest in terms of government effectiveness (85th), policies for doing business (38th), and logistics performance (65th), it lags in creative outputs (129th), market sophistication (118th) and knowledge and technology outputs (116th), underscoring difficulties in terms of converting innovation investments into explicit results.

Text Figure 7. Global Innovation and Development Positive Relationship



Sources: WIPO (World Intellectual Property Organization), and IMF staff calculations.

13. Access to finance remains a major impediment to private sector development. Credit to GDP ratio remains relatively low in Benin, mainly due to the lack of agricultural sector knowledge by financial institutions, the weak financial education and poor organization of substance and staple crop farmers, and the absence of agricultural insurance scheme.

D. Benin's Approach to Industrial Policies

14. While economic diversification is found to be associated with higher economic growth, evidence on the causal impact of industrial policies is hard to establish. Based on IMF (2014), a one standard deviation increase in LIC's export diversification is estimated to raise the economic growth rate by about 0.8 percentage points. The positive spillover from output diversification is even greater (1.4 percentage points). The causal link between industrial policies and growth and export diversification has been hard to establish due to lack of reliable and comparable cross-country data. There is, however, emerging consensus that successful economic diversification may require a long-term commitment and a mix of broad-based (horizontal) and industrial (vertical) policies. Cherif et al. (2022) argue that pre-requisites for successful industrial policies include robust administrative capacity, along with comprehensive reforms to address sector-specific market failures, while remaining vigilant about other weaknesses, including corruption and rent-seeking.

[12] Re-exports, highly prominent in Benin, and informal exports account for more than 90 percent of Nigeria's total exports in 2017-2021.

15. Benin's industrial policy relies on the SEZs and the newly amended investment code. The investment code was amended in 2020 to set three special regimes under which tax benefits are granted during the investment phase as well as the operating period. Two special regimes apply to investments in strategic sectors, including agroindustry, agriculture, digital technology, health, and technical and vocational training. There are also incentives to encourage start-ups development.[13] This section puts more emphasis on Benin's new SEZ and conditions for its successful and orderly development, given the authorities focus on it.

16. The Glo-Djigbé Industrial Zone "GDIZ" is part of a larger country initiative to attract industries to foster local value chains, expand the port activities and boost exports and trade (see Box 1). The authorities see the SEZ as transformative for Benin with strong prospects for private investment and job creation, supported by the ongoing expansion of the port, programs to foster technical education and vocational training. This drive would help leverage the Port of Cotonou and formal trade opportunities with the giant neighbor Nigeria.

17. Domestic spillovers from SEZs remain uncertain given the early stage of development. The SEZ does not seem to be picking winning industries as it targets many sectors. The zone relies on a single window business service for participants to provides investors with reliable information and facilitate the administrative formalities.

18. The government initially introduced administrative controls to ensure supply of raw commodities to GDIZ but is phasing them out.

- Faced with higher illicit exports to neighboring countries, the authorities decided in June 2021 to ban informal overland exports of cashew nuts and soybeans. The government has continued to tighten informal exports as the GDIZ transformation capacity expands.[14] Warehouses are available to ensure good conservation of residual unprocessed production.

- The authorities shifted from administered to market prices for soybeans as of November 2023 (exporters are allowed to export soybeans provided that they transit via the Port of Cotonou). Seed cotton prices have traditionally reflected consensus between farmers and ginners, leading to a guaranteed price for farmers ahead of the agricultural campaign. Furthermore, the government is promoting efficiency in agriculture and enhancing the organization of farmers. In this regard, it intends to pursue the longstanding practice of consultation with farmers to protect their margins and limit speculation.

[13] Benin: Technical Assistance Report-Governance Diagnostic (imf.org)

[14] The 23 local ginning factories have a ginning capacity of 830,000 tons, exceeding the current overall domestic cotton production.

Box 1. Glo-Djigbé Industrial Zone "GDIZ"

- **GDIZ was established in February 2020, a result of a PPP between Arise Integrated Industrial Platform (AIIP) and the Benin republic.** The establishment of this industrial park is anchored in the National Development Plan (2018-25). The law governing the development of Special Economic Zones (SEZ) provides detailed regulations, including with regard to investment incentives, specific eligibility criteria, and reporting requirements. SIPI-Benin, a joint venture between the Beninese Government (35 percent) and AIIP (65 percent) designs and promote the development of GDIZ. The administrative authority power is assigned to the APIEx (a local agency for investment and industrial promotion). The law designs a special committee (Comité d'agrément) governing all incentives, and the regulatory authority (Autorité de régulation) to ensure conformity and regulations of GDIZ operators.

- **The GDIZ operates under two regimes with incentives tailored to each regime.** The first regime operates as an export processing zone with a minimum export share requirement (at least 80 percent of turnover), where sales (purchases) by its beneficiaries inside Benin and companies in the second regime are treated as imports (exports) for Benin. The second regime is an investment incentive regime oriented mainly toward promoting intra-regional trade (without export requirement). Both regimes offer reduced CIT and exemption from customs duties with duration and scope depending on the size of the investment.

- **The investment incentives were streamlined to incorporate IMF recommendations.** Most notably, salaries of employees in the zone are no longer exempt and tax incentives are no longer granted for an unlimited period. Moreover, the introduction of minimum export share requirement (80 percent of activity) for export-oriented companies under regime 1 while imposing their sales to customers in Benin (at a rate of 3 percent) narrows the scope for customs and VAT exemptions. There is no differentiation between local and foreign investors, however, GDIZ is committed to ensure that at least 80 percent of the workforce is Beninese. In addition, indications are that there are no government subsidies provided for inputs such as electricity or other services, although the zone management entity does guarantee the provision of utilities at prices below domestic market rates; warehouse roofs are expected to be used to generate 100 MW of solar power.

- **Going forward, GDIZ envisages to become a multi-sectorial industrial park to promote new business.** Beside processing cashews, soy, and cotton, GDIZ aims to create new business including wood industry, assembly of phones and computers, manufacturing of electric vehicle and pharmaceutical industry.

Policy Recommendations

19. The authorities should pursue efforts to ensure transparency in the selection of SEZ-related incentives. While the eligibility criteria are determined ex-ante on a project-by-project basis by a special committee (*Comité d'agrément*), an updated, comprehensive list of licenses obtained by SEZ companies must be published on the APIEX website and include the names of the beneficial owners, the regime granted, and the list of equipment and construction goods exempt from indirect duties. A detailed assessment of the 2023 SEZ-related incentives needs to be part of the report on tax expenditure annexed to the 2025 budget and contains the breakdown of various fiscal incentives.

20. It is critical to further strengthen revenue administration and contain tax expenditure. Streamlining tax expenditure continues to be a priority for Benin. [15] It would be important to ensure

[15] Benin's Tax Expenditure Report (2023).

that the benefits of the SEZ in terms of delivering on intended objectives (promoting exports, diversifying production, creating jobs, etc.) outweigh the costs and risks of intervention, especially given that foregone revenue could have been invested in education, infrastructure, thereby strengthening the human capital. This is particularly critical in the case of Benin with relatively low tax-to-GDP, and where the levels of public spending on education, health and social protection remain limited.

21. Reaping benefits from foreign private direct investment hinges on Benin's ability to ensure value creation for the domestic economy. Digital solutions could be leveraged. Spillovers are more likely if the business environment is also attractive for domestic firms, including by involving relatively large domestic export-oriented private firms in high-technology sectors, instead of relying solely on SOEs or multinational corporations. There is great potential for further diversifying the destination of exports and diversifying products, including through policies aimed at improving competitiveness.

22. Ensuring good quality infrastructure at the SEZ should not be a substitute to continue addressing the economy-wide infrastructure bottlenecks. Relying solely on CIT to increase real investment flows may prove insufficient,[16] to ensure the spillover benefits targeted by industrial policies, the proximity to the Port of Cotonou (45 km) could help create value chains ranging from the supply of raw materials and the transformation of resources to the export of finished products.

23. It would be critical for the government to reduce its footprint in the economy over time and ensure continued compliance with WTO rules. The authorities' continued commitment to tackle structural challenges in agriculture is welcome. Notably, there are initiative to foster the dialogue between farmers and operators at the GDIZ. Gradually reducing the government footprint in the economy would level the playing field among market participants and avoid economic distortions. In this regard, a support to the organization of farmers to protect their bargaining power in the provision of commodities to SEZ operators would be warranted.

24. Enhancing human capital development to ensure adequate labor supply to meet the needs of a transforming economy is paramount.

- Increased investment on education and health (**SIP-IV**) would enhance human capital and complement ongoing investment in infrastructure and private investment to promote job-rich long-lasting growth.

- In addition, improving statistical collection, dissemination, and analysis capacity inside and outside the SEZ is important to avoid high fiscal cost. The authorities should ensure that APIEX is properly resourced to support the production and publication of high frequency indicators around the zone development.

[16] See the April 2024 *Fiscal Monitor,* Chapter 2.

E. Conclusions

25. This annex presents the genesis of Benin's industrial policy, with a focus on Special Economic Zones (SEZs) to explore their associated opportunities and challenges. There is scope to leverage the ongoing economic diversification in Benin to further advance broad-based horizontal policies. While there is no magic recipe to promote diversification, a broad array of policies, ranging from getting the incentive structure right, to lowering the costs of trade-related services, to proactive policies, can help upgrade existing products, break into new geographic markets, and consolidate new lines of business abroad.

26. An orderly development of the SEZ could enhance Benin's socio-economic resilience and attract private investor. To be successful, industrial policies need (at least) to be complemented by long-term commitment to broad-based "horizontal" policies. It is important to improve business climate more broadly outside the SEZ and associate domestic firms to the ongoing economic transformation to avoid economic fragmentation and maximize spillovers from foreign private investment onto the domestic economy. Continued sound macroeconomic management would boost investor confidence and attract foreign private capital.

27. Increased investment on education and health is paramount. This will help promote human capital accumulation and generate adequate labor supply to meet the needs of an economy under transformation.

28. Intra-regional trade integration holds significant potential for Benin and could support economic diversification. Ongoing post-electoral policy shifts in Nigeria and formalization underway of economic ties between both nations, if permanent, would curb rent-seeking in Benin. More broadly, strategies involving regional trade integration, such as the African Continental Free Trade Area (AfCFTA), become crucial for enhancing competitiveness and fostering development. Benin could further become a regional hub for high value-added trade, given its geographic position, especially for the land locked countries in the sub-region.

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BENIN—DIGITAL TRANSFORMATION TO FOSTER INCLUSIVE GROWTH[1]

Benin has embarked on a journey of digital transformation in recent years, as part of its development agenda, recognizing the potential of GovTech[2] to improve public services delivery and support economic transformation. Digitalization has become even more important—it could help leverage advances in AI technologies while limiting the potential disruption that AI would bring globally. However, while Benin fares better than regional peers in overall GovTech maturity, micro household survey data suggest a gap in internet access and a digital divide among households along several dimensions, including location, gender and income. Estimates in this paper suggest that infrastructure investments needed to reach universal access to digital services in Benin amount to 2.5 percent of GDP. The paper documents Benin's progress in digitalization, identifies key challenges ahead, and explore policy options to accelerate digital transformation.

A. Benin's Commitment to Advancing the Digitalization Agenda and Outcomes

1. Benin has made significant strides in digitalization since 2016, with a vision to position itself as the digital service platform of West Africa.[3] The digital sector is identified as the main area of growth in the Government's Action Program (PAG; 2016–21).[4] Several reforms were adopted in the PAG, including improvement in the digital infrastructure, establishment of specialized institutions, and creation of regulatory instruments. The creation of a dedicated Ministry of Technology and Digitalization underscores the government's commitment to the digital agenda.

2. Benin has also registered success in *GovTech* initiatives, receiving high ratings in public service delivery. One notable achievement is the launch of a comprehensive national public services portal (PNS), which offers over 560 digitalized public services to citizens covering substantial part of individual and business needs, ranging from business registration and authorization to passport issuance.[5] The portal does not simply bring existing service online, but streamlines and automates the services through an interoperable framework where various government entities share integrated information systems to facilitate effective communication and synchronization. Benin received a high rating in the public service delivery index (PSDI) and scored 68 (in scale of 0 to 100) in the World Bank's 2023 *GovTech* Maturity Index, ranking the top among WAEMU peers

[1] Prepared by Mona Wang (FAD), based on *Digital Infrastructure Costing Estimator (DICE)* tool developed by the IMF.

[2] Government Technology, defined as the application of technology to improve the delivery of government services, enhance government operations, and promote citizen engagement and participation in governance.

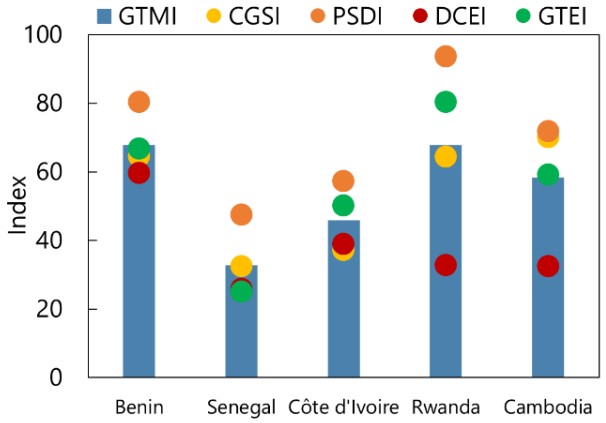
[3] http://www.xinhuanet.com//english/2017-05/18/c_136293525.htm.

[4] https://beninembassy.us/wp-content/uploads/bsk-pdf-manager/summary-revealing-benin_23.pdf.

[5] https://ega.ee/news/the-launch-of-beninese-national-e-service-portal/.

(Figure 1).[6] However, there is room for improvement in digital citizen engagement (the related index DCEI is where Benin scored the lowest), highlighting the need for enhanced platforms for public participation and open data initiatives.

Figure 1. GovTech Maturity Index



Sources: World Bank.

Note: GTMI (GovTech Maturity Index) is the simple average of the following four components: CGSI = Core Government Systems Index, capturing the key aspects of a whole-of-government approach; PSDI = Public Service Delivery Index, presenting the state of online portals, e-filing services, e-payments; DCEI = Digital Citizen Engagement Index, measuring aspects of public participation platforms, citizen feedback, and open gov/data portals; GTEI = GovTech Enablers Index, capturing strategy, institutions, and regulations, as well as digital skills and innovation programs. Each of the component index is calculated as weighted average of scores from relevant questions from Central Government GTMI survey. More info on GTMI survey can be found at: https://www.worldbank.org/en/data/interactive/2022/10/21/govtech-maturity-index-gtmi-data-dashboard.

3. Benin has been proactively exploring AI by partnering with global leaders of digitalization. In 2022, the government contracted Webb Fontaine, a Dubai-based innovative trade and custom services provider, to adopt a new AI-based customs system.[7] In January 2023, Benin adopted the National Strategy for Artificial Intelligence and Big Data (SNIAM)[8] to exploit technological solutions, especially in the fields of education, health, agriculture, and tourism. The government has been in discussion with Canada to collaborate in AI research and commercialization in recent months.[9]

[6] This paper uses country-specific data for benchmarking Benin against comparators. In line with ¶18 of the Guidance Note for the Use of Third Party-Indicators), the use of these data is justified as it significantly improves the analysis of digital transformation in Benin. Indeed, given that Benin is quite advanced in GovTech, comparison to other strong performers in WAEMU and SSA countries is more relevant than using regional averages or median, given that countries in these the regions are at very different levels of digital transformation.

[7] https://customsbridge.ai/benin-accelerate-the-digital-transition/?cn-reloaded=1.

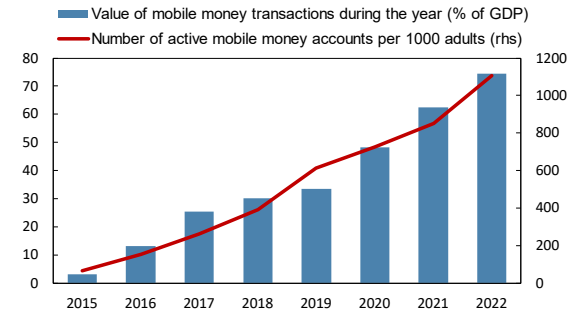
[8] https://numerique.gouv.bj/assets/documents/national-artificial-intelligence-and-big-data-strategy-1682673348.pdf.

[9] https://www.wearetech.africa/en/fils-uk/news/public-management/benin-and-canada-explore-ai-collaboration-to-boost-digital-economy.

4. One of the most significant areas of *GovTech* implementation in Benin has been digital taxation reforms. Since 2017, Benin's Directorate General of Taxes (DGI) launched the e-services tax office, a modern portal for large and medium-sized businesses to declare and pay taxes online.[10] Thereafter, DGI has implemented a phased rollout, adding functionalities such as obtaining certificates of registration and document authenticating, and gradually extending the use of the portal to all taxpayers, both businesses and individuals. Inspired by best practices and equipped with multiple functionalities, the new tax office portal is one of the best integrated tax management systems in the region, which is well captured in the high PSDI score for Benin in Figure 1. The interconnection of tax systems plays a crucial role in enhancing tax compliance and preventing fraud. By integrating various tax-related databases and leveraging advanced data analytics, Benin can streamline tax administration processes and improve the accuracy and efficiency of tax collection. For instance, the implementation of e-filing systems and electronic invoicing allows for real-time tracking of transactions, reducing the scope for tax evasion and underreporting. The digital tax system made it possible to weather the COVID-19 pandemic without a decline in the tax-to-GDP ratio, which only a handful of SSA countries were able to achieve.[11] Additionally, interconnected tax systems facilitate coordination between government agencies, enabling comprehensive monitoring and enforcement of tax laws. These reforms not only increase revenue collection but also promote transparency and accountability in public finance management. Moreover, by simplifying tax procedures and making compliance easier for businesses and individuals, digital taxation reforms can enhance the overall business environment and foster economic growth in Benin.

5. Benin is also implementing strategic digitalization plans in other sectors such as health and education. In 2017, the national eHealth strategy was adopted to improve healthcare services through the use of digital technologies.[12] The strategy aims to i) develop a national health information system, ii) expand the use of telemedicine to improve access to specialist care, and iii) develop e-Learning programs to support the training of healthcare workers. Similarly, the e-Education project was introduced as part of the new Government Action Program (PAG; 2021–26).[13]

Figure 2. Mobile Money Usage



Sources: IMF Financial Access Service.

[10] https://www.financialafrik.com/2022/08/04/benin-les-services-des-impots-se-digitalisent/

[11] https://www.wearetech.africa/en/fils-uk/news/benin-launches-new-online-tax-services-for-businesses-and-property-owners

[12] www.intgovforum.org/en/filedepot_download/278/24571

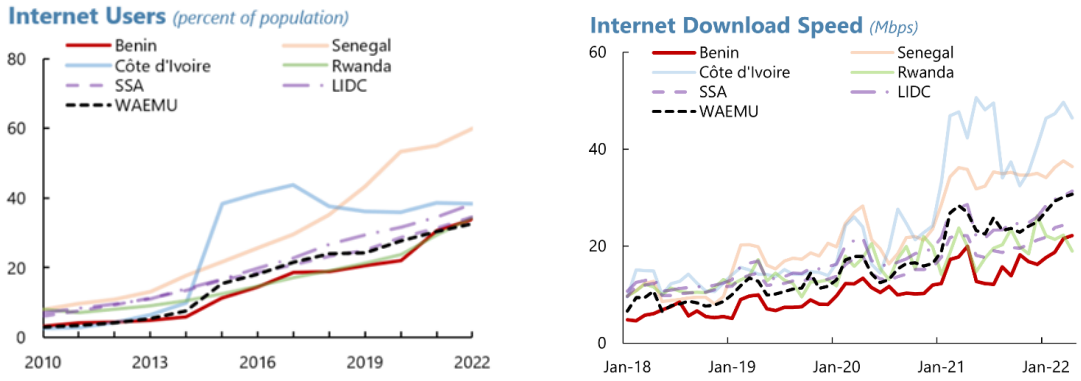
[13] https://www.wearetech.africa/en/fils-uk/news/benin-govt-accelerates-its-digital-education-project#:~:text=The%20government%20of%20Benin%20has%20adopted%20a%20new,framework%20to%20accelerate%20the%20digitalization%20of%20the%20sector.

6. The usage of mobile money in Benin has seen significant growth in recent years. As of 2022, the number of active mobile money accounts per 1000 adults reached 1104, corresponding to an average of over one active account per adult.[14] In contrast, the total number of bank accounts per 1000 adults is as low as 323 (as of 2020). Mobile money plays a pivotal role in Beninese daily life as it is used for all varieties of financial transactions, such as money and remittances transfer, payment of bills and services, business transactions, loan repayment, savings and investments, etc. According to IMF Financial Access Survey, the value of mobile money transactions in 2022 equates CFAF 8,085,694 million, equivalent to 75 percent of Benin's annual GDP. The widespread use of mobile money is bridging the gap for the unbanked population by providing people access to basic financial services, which is particularly important in regions where traditional banking services are costly and or absent.

B. Addressing Internet Accessibility and Quality Challenges

7. Benin's government has made considerable investments in energy and ICT infrastructure since 2016, aiming to expand coverage and enhance internet quality. These investments have included the rehabilitation and development of high-speed internet networks, the extension of 4G/LTE networks with new radio sites, and the restructuring of the mobile telecommunications market. As a result of these efforts, the share of the population with internet access has more than doubled from 14.5 percent in 2016 to 34 percent in 2022 (Figure 2). Additionally, the average internet download speed has seen substantial growth, increasing from 4.15 Mbps to 22.2 Mbps over this period, with a significant surge observed during the COVID-19 pandemic.

Figure 3. Internet Accessibility and Quality



Sources: ITU, Ookla, and IMF staff calculations.

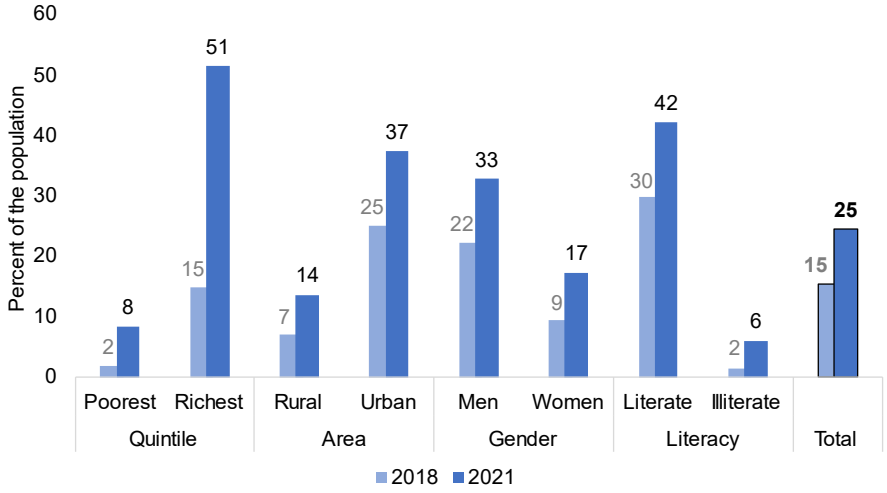
Note: Population-weighted averages are used for regional/group aggregates.

8. Despite this notable progress, Benin still faces challenges in internet accessibility and quality and lags pioneer countries in the WAEMU region like Senegal and Côte d'Ivoire. While 80 percent of the population is being covered by at least 3G mobile networks, internet usage

[14] Number of registered mobile account per 1000 adults is 3159.

remains limited. Moreover, there are significant disparities between population groups, with poorest individuals, women, rural and less educated population exhibiting significantly lower rates in internet access (Figure 4).

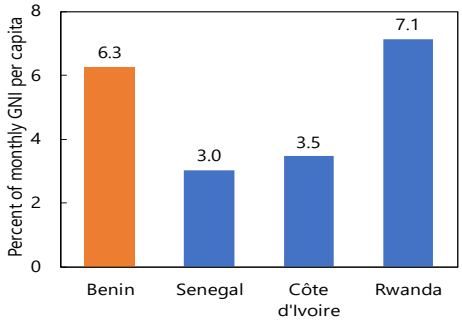
Figure 4. Inequality of Access to Internet, 2018-2021 (Percent of Population in Each Group)



Sources: IMF staff estimates based on Benin's 2021-2022 household survey (EHCVM2).
Note: Welfare quintiles are defined based on households' yearly per capita expenditure (consumption of goods and services as recorded in the EHCVM2).

9. To address the digital divide, Benin must prioritize improving internet affordability and reducing inequality of access. This discrepancy may be attributed, in part, to the high cost of internet services in Benin. The broadband package price is as high as US$72 in PPP constant 2017 US dollars per month, equivalent to 22 percent of the monthly Gross National Income (GNI) per capita (Figure 5). Based on most recent official statistics, a monthly mobile data package of 15 GB costs CFAF 15000 (about US$25), equivalent to almost one quarter of the average monthly salary in Benin.[15]

Figure 5. Package Price for Mobile Data and Voice Low-Consumption Basket
(Percent of Monthly GNI per Capita)



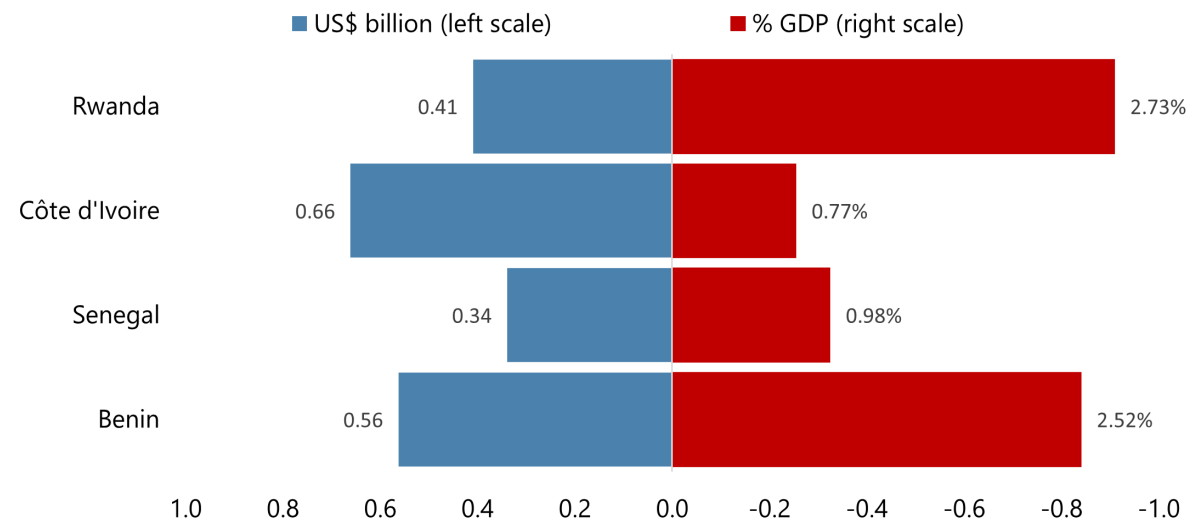
Sources: ITU and IMF staff calculation.
Note: ICT prices as percent as a percent of monthly Gross National Income (GNI) per capita.

10. Significant investments in domestic digital infrastructure are required to achieve universal broadband coverage. The IMF estimates that approximately US$ 560 million, equivalent to 2.5 percent of average GDP between 2021 to 2030

[15] According to official statistics, the average monthly wage in Benin is 63,500 CFAF. The price of data packages can be found here: https://arcep.bj/wp-content/uploads/2024/03/Observatoire_Tarifs-Internet-Mobile_-31-d%C3%A9c.-2023.pdf.

(projected), is needed to meet the goal of full connectivity (Figure 6). The methodology used to produce the estimates is presented in Box 1.

Figure 6. Infrastructure Investment Needs



Sources: Kumar, Amaglobeli, and Moszoro (2023).

Notes: These estimates assume providing universal 4G cellular broadband to 90 percent of the population with approximately 20GB of monthly data. The average cost to connect a user is 58, 36, 38, and 41 US dollars for Benin, Senegal, Côte d'Ivoire, and Rwanda respectively. The Digital Infrastructure Costing Estimator (DICE) project was partially financed by the European Union under the EU-IMF Public Financial Management Partnership Program (PFM-PP).

C. Social Dividends from Digital Transformation

11. Digitalization, particularly through *GovTech* initiatives, empowers governments to harness technological advancements for social development across various sectors, including health, education, and employment opportunities. These sectors play a crucial role in building Benin's human capital and fostering long-term economic growth.

- ***Digital tools such as telemedicine and electronic health records enable healthcare providers to access accurate data and deliver services to underserved areas and population groups.*** During the COVID-19 pandemic, Benin quickly deployed telehealth tools and established pandemic websites to provide accurate information and medical resources to the public. For instance, Kea Medicals, a Benin-based social enterprise, launched a COVID-19 self-diagnosis tool and facilitated remote doctor consultations via its telemedicine platform.

Box 1. Methodology for Costing Digital Infrastructure Investment Towards Universal Broadband Coverage

Estimations of the digital infrastructure cost to achieve universal broadband coverage entails three steps: estimating the future data demand, identifying necessary infrastructure upgrade and construction that can meet the demand, and estimating the cost for the construction and upgrade.

A. Estimation of Data Demand

The estimation of future data demand begins with projecting the smartphone user count across various population density segments. This projection relies on current population figures, anticipated population growth rates, and a targeted internet adoption rate (which is set to 90 percent in Kumar, Amaglobeli and Moszoro 2023). Realistic assumptions, such as the percentage of active smartphone users and their monthly data consumption, are factored in. Additionally, the model considers the proportion of users engaging in data exchange during different hours of the day. Through these parameters, the model computes the hourly mean data rate (in Mbps), culminating in the determination system capacity demand, which is the capacity to meet data demand during hypothetical network's busiest daily hours.

B. Internet Dimensioning

Following the estimated capacity demand from first step, the assesses network dimensioning, determining the necessary infrastructure upgrades to meet the demand. Based on the current distribution of tower sites, cellular coverage, and backhaul technology availability collected from various sources, the model computes the number of new 4G towers/sites that need to be built and number of existing towers/sites that need to be upgraded.

C. Estimation of Cost

Once the number of sites to be built or upgraded is calculated, the last step is to estimate the unit cost of building/upgrading one site. The cost is made of two components: capital expenditure and operating expenses. Capital expenditure includes the material and labor cost of building, installing, and connecting the cite, where material cost is user-defined for each item and labor cost is estimated based the necessary work hours (user-defined) and the hourly cost of ICT labor with data from International Labor Organizations. Operating expenditure includes the cost of maintaining and servicing the cites after construction, which the model estimates to be approximately 15 percent of the initial asset value of the towers annually plus any labor costs.

The above approach produces the necessary metrics for calculating the required future investment based on third-party data and other user-defined parameters. For this work, the anticipated mobile penetration rate is set at 90 percent and the monthly data consumption of an average user is assumed to be 20 GB.

Sources: Kumar, Amaglobeli and Moszoro (2023) "Determinants and Social Dividends of Digital Adoption."

- ***In education, digitalization can address access and quality issues, particularly in remote areas with limited educational resources.*** A study in 32 Sub-Saharan African countries has found that digital infrastructure and usage play a significant role in facilitating school enrollment (Oluwatobi et al., 2016). In Benin, empirical findings also suggest that increasing internet adoption from 30 percent to 90 percent could raise the test scores of secondary school students by 26.7

points[16] (Kumar, Amaglobeli, and Moszoro 2023). A few distance learning programs were hatched during COVID-19 lockdown to curtail the learning loss from school closings. Initiatives like Radio Scolaire Educative's distant education program and the Africa Digital Campus project provide flexible access to learning opportunities. Radio Scolaire Educative, an initiative of the government agencies to broadcast the digital versions of learning content produced by selected teachers on television, radio, and social network, benefited an estimated of 1.7 million children across the country.[17] In Malanville, Gogonou, Kalale and Kaidi, a children's radio program was launched to teach first and second grade students reading through radio during school closing and their parents were also invited to learn and discuss topics on education, nutrition, and health.[18] In October 2022, Benin campus of Africa Digital Campus (ADC) was launched as part of the distance learning platform of West Africa, with the aim to provide flexible access to universities.[19]

- ***Access to internet can also expand employment opportunities, especially for women, and improve productivity.*** A study found that increasing internet usage from the current 34 percent in the Benin to 90 percent could raise the labor force participation by 9.2 percentage points, with more pronounced impact on women than on men (12 percentage points increase for women compared to 5.9 percentage points for men). Moreover, in a sample of 86 countries, the increased internet use significantly reduced the time women spent on unpaid work by 2.8 percent[20] (Kumar, Amaglobeli, and Moszoro 2023). A recent study on Benin's rural grains and legumes supply estimates (using a structural econometric model) that people connected to internet performs 4-5 more business transactions than their unconnected peers (Nguimkeu and Okou, 2024).

- ***GovTech tools enhance government efficiency in revenue collection and public finance management*** *(Amaglobeli et al., 2023)*. For instance, electronic fiscal devices (EFD) and e-invoicing systems reduce monitoring and enforcement costs for tax authorities, leading to increased compliance and revenue generation. Based on a cross-country analysis, mandatory e-filling and e-payment of personal income tax in Benin could lead to an increase in tax revenues of 4 percent of GDP (Nose 2023). A recent study found that firms' reported revenue increased by 34 percent after Uzbekistan introduced EFD (Kobilov, 2024). Data for the WAEMU suggest that tax collection in countries that are more advanced in digital government technologies was more resilient to the COVID-19 pandemic (Text Figure 1). In Benin, the timely introduction, in 2020, of the e-filling and e-payment for personal income taxes, as well as the e-invoice system for all

[16] With the average test score in the sample of 478 and the minimum of 300, the 26.7 points increase yields a 15 percent increase in test scores over the effective baseline average of 178 points.

[17] https://www.unicef.org/benin/recits/b%C3%A9nin-la-radio-scolaire-educative-permet-%C3%A0-des-milliers-denfants-de-continuer-l%C3%A9cole-%C3%A0.

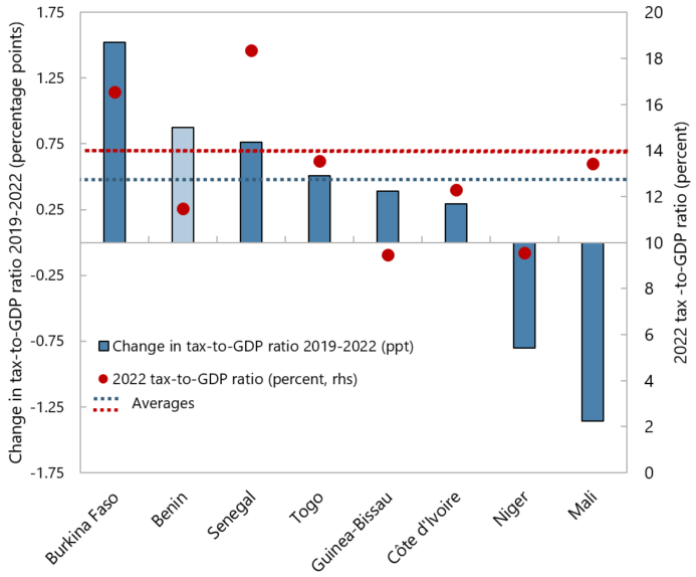
[18] https://worlded.org/childrens-radio-programs-in-benin-keep-students-engaged-at-a-distance/.

[19] https://universityworldnews.com/post.php?story=20221109185032535.

[20] In the study sample, women report on average spend 18 percent of time on unpaid work. Assuming 8 hours work per day and 5 days a week, this impact is equivalent to 40 minutes less per day or 200 minutes per week less time women would spend on unpaid work.

business subject to value-added-tax (VAT), was crucial for protecting domestic revenue mobilization from the COVID-19 shock.

Text Figure 1. Change in the Tax-to-GDP Ratios, 2019-22
(Percent of GDP)



Sources: Beninese authorities' and IMF staff calculation.
Note: The tax-to-GDP ratio for Burkina Faso excludes exceptional VAT reimbursements in 2022 (0.3 ppt of GDP) while the ratio for Benin excludes reclassifications from non-tax to tax revenue in 2022 (0.7 ppt of GDP).

D. Conclusions and Policy Recommendations

12. To accelerate digital transformation and address existing challenges, Benin could prioritize the following policies:

- ***Invest in Digital Infrastructure:*** Internet accessibility and affordability are still the key factor to unlock the potential of the e-government framework that is already in place, as well as many other digital transformations in the private sector. Benin is off to a good start with its investment in metropolitan fiber optic backbone network. The authorities should continue the momentum of investments in digital infrastructure, especially in rural areas, to expand access to digital services across the country. Based on the DICE model estimates for Benin, the infrastructure investments needed to reach universal coverage amount to US$560 million, or 2.5 percent of GDP, suggesting that it would only take 0.5 percent of GDP per year to digitalize Benin in five years.

- ***Ensure Inclusivity and Accessibility:*** Certain groups of the population, such as lower income individuals, women, rural population, and less educated groups are generally less likely to be connected digitally (Figure 4) and tend to have lower digital literacy, making it harder for them to benefit from the digital transformation. The government should develop targeted interventions to

bridge digital divides, provide digital literacy training and create user-friendly interfaces to promote inclusion, particularly among marginalized groups.

- ***Timely Monitor and Evaluate:*** Establishing robust monitoring and evaluation mechanisms is crucial to assess the impact and effectiveness of initiatives that are already in place. Benin already made significant advances in this regard (for instance, the authorities have elaborated a detailed report on GovTech maturity). Moving forward, Benin should focus on defining key performance indicators, conducting regular assessments, and getting feedback from both users and providers to improve the design of future policies and programs.

- ***Identify and Implement Concrete Measures to Improve Governance***. Benin's progress in digitalizing various government processes has helped to gain efficiency and improve results, for instance, in tax and custom duties collection. However, there are still efforts to be made to improve governance, operational efficiency, risk management and decision-making processes. For instance, increased automation has helped identify infringements to payments of taxes and custom duties, but some difficulties remain in enforcing the legal consequences of violations. Moreover, strengthening institutional capacity related to data governance will be crucial, given that the success of the application of advanced digitalization techniques such as AI depends to a large extent on the quality, availability and integrity of the data collected.

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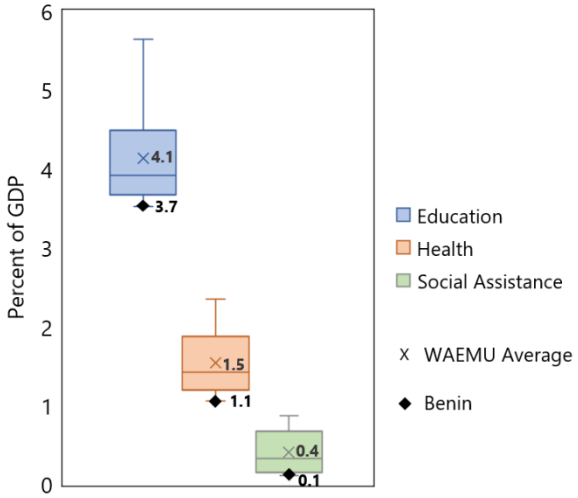
BENIN—SOCIAL POLICIES TO ENHANCE HUMAN CAPITAL DEVELOPMENT: STOCK-TAKE AND REFORM OPTIONS[1]

Despite strong reform drive and robust growth over the past several years, inequality has persisted across regions and income groups in Benin. Budgetary resources required to foster human capital development and protect the vulnerable are large. Using both macro data and two vintages of (micro) household surveys data (pre-and post-COVID-19), this paper takes stock of social policies in Benin and explores reform options.

A. Social Spending in Benin: Recent Trends

1. Although on the rise, the overall level of public spending in core social sectors (education, health and social assistance) remains significantly below peers (Figure 1). Public spending in has been historically low in Benin, ranking consistently in the bottom decile across the world. This has hindered the ability of the government to allocate resources to core social sectors (**IMF 2022**). Public expenditure on education, healthcare and social protection has stagnated under 5 percent of GDP over the last decade, well-below peers' (Figure 1). This is strikingly low considering the country's spending needs in these sectors: IMF (**Prady and Sy 2020**) estimates that it would cost 18 percent of Benin's 2030 GDP to achieve SGDs in health and education (around 9 percent for each sector).

Figure 1. Government Spending on Core Social Sectors in WAEMU Countries (Interquartile Ranges; Percent of GDP)



Sources: World Bank's World Development Indicators (Education and Health), ASPIRE (Social assistance) and Beninese authorities.

Note: Data for Benin are from the budget laws for 2023. For other WAEMU countries, data are compiled from harmonized international datasets (and therefore do not necessarily match the budget data produced by authorities). For these countries, the latest data available are from 2022 for education spending, 2020 for healthcare and various years for social assistance.

2. The Beninese government has followed an infrastructure-led development model, focused on providing basic public services to the population.

[1] Prepared by Carolina Bloch (FAD).

- **The infrastructure push by the current administration** has resulted in significant improvement in access to electricity and drinking water over the past decade (Staff Report Figure 1.K.), with the aim to reach universal coverage by 2025, in line with SDG goals. The road network has also improved significantly, with 670 kms of road built in the first phase of "*Projet Asphaltage*", and another 230 kms planned for the second phase.

- **The government also subsidizes essential services in healthcare and education to enhance human capital.** Policies were adopted to provide free education for all children in primary school and for girls in secondary school. An array of critical healthcare services is also provided for free (e.g., free treatment of tuberculosis, HIV and other selected diseases, hemodialysis, malaria prevention, caesarean delivery, care for children under 5, cases of malaria among pregnant women, etc.).

- **The provision of meals to children through the flagship school feeding program (PNASI) and subsidized healthcare coverage to the poorest are the two largest social programs in Benin.** In 2022, these two programs received a budget of 15 billion CFAF each (equivalent to around 0.1 percent of GDP). Healthcare coverage is provided through the health insurance pillar of ARCH (*Assurance pour le Renforcement du Capital Humain*) (ARCH-AM).

3. Like in many other developing countries, informality is pervasive in Benin. Income in informal employment is precarious, making households more vulnerable to shocks. In this context, a policy priority has been to improve labor market conditions to support productive income generation. Over half of the Beninese population is of working-age (15-64), and this proportion is growing rapidly (**SIP-IV**). The government is investing in initiatives to promote formal employment, support income-generating activities, and provide micro-credit. The national employment agency (ANPE – *Agence Nationale Pour l'Emploi*) coordinates the two flagship employment programs: PRODIJ (*Projet d'Inclusion des Jeunes*), which provides technical training, apprenticeships and/or grants to promote self-employment of the population aged 15-30 with low education levels and PSIE (*Programme Spécial d'Insertion dans l'Emploi*), which subsidizes the employment of recently graduated youth in private sector companies.

4. The governance is focused on providing opportunities to the population, rather than providing support via cash transfers. The combined budget of all programs providing direct income support to the poorest, such as cash transfers and micro-credit, amounted to only 0.02 percent of GDP in 2022 (about US$ 3.3 million). Targeted social assistance programs have been very limited in scale, and water and electricity subsidies have tended to be regressive given consumption patterns.[2] However, there has recently been a promising progress in developing information infrastructure and tools to support the expansion of targeted policies (Section B).

[2] For instance, the electricity social bracket cutoff at 20kWh does not cover subsistence consumption (estimated at 30kWh) and excludes nearly 2/3 of poor and vulnerable households whose consumption is slightly above the cutoff (**World Bank 2023**).

5. Many of the government's efforts in social policies are recent and are still being expanded; their effect may not yet be visible in the data presented in this paper. The effects of government policies on many of the variables analyzed in this paper (especially related to human capital) indeed take a long time to materialize. Specifically, the data used to analyze poverty and distributional aspects of social outcomes in the following sections rely on household surveys conducted in the periods immediately preceding and following the COVID-19 pandemic (2018-19 and 2021-22).

B. Assessing Poverty and Income Vulnerability

Benin's poverty landscape: a comparison of pre- and post-pandemic trends and patterns

6. While poverty declined in aggregate in Benin in recent years, micro data suggests uneven patterns across regions.[3] The national poverty rate experienced a modest decline of 2.3 percentage points (from 38.5 percent in 2018 to 36.2 percent in 2021). This overall downward trend however, masks important regional disparities in both poverty prevalence and trends:

- Notably, poverty rates were as low as 16-18 percent in the Ouémé and Littoral departments to as high as 53-54 percent in Atacora and Couffo (Figure 2).

- Moreover, there are also regional disparities in the evolution of poverty rates between the pre- and post-pandemic periods. While the country-wide estimated poverty rate decreased compared to the pre-pandemic era, this reduction varies widely among departments (Figure 2). For instance, while the proportion of impoverished individuals decreased by over 5 percentage points relative to 2018 in the Plateau, Atacora, Atlantique, and Borgou departments, it increased in Donga (+5ppt), Alibori (+3ppt), Mono, Couffo, and Zou (+2ppt).

7. The transition of households in and out of poverty between the two vintages of surveys reveals some relevant patterns.

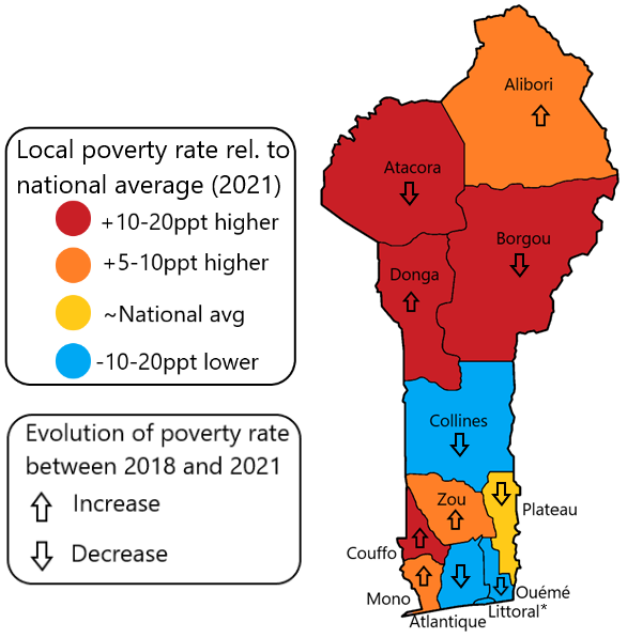
- Approximately 7,000 households (representative of 1.9 million households in Benin) participated in both the 2018 and 2021 iterations of the EHCVM, facilitating the examination of welfare status changes over time.

- Among the households surveyed in both survey years, 30 percent were classified as poor in 2021, compared to 33 percent in 2018 (Figure 3). Within this cohort, 14 percent of households fell into poverty between 2018 and 2021, while 17 percent managed to escape it, resulting in a 3

[3] The (monetary) poverty rate of Benin is calculated as the total number of individuals classified as poor divided by the total population. Using data from Benin's household survey (EHCVM2), households and individuals are classified as poor if the household's annual consumption per capita is lower than the national poverty line of CFAF 287,187. According to INStaD (Benin's Institute of Statistics), "this threshold corresponds to the valuation of a minimum basket of goods essential for the well-being of an individual for a year in accordance with the consumption habits of the population." (**INStaD 2023**).

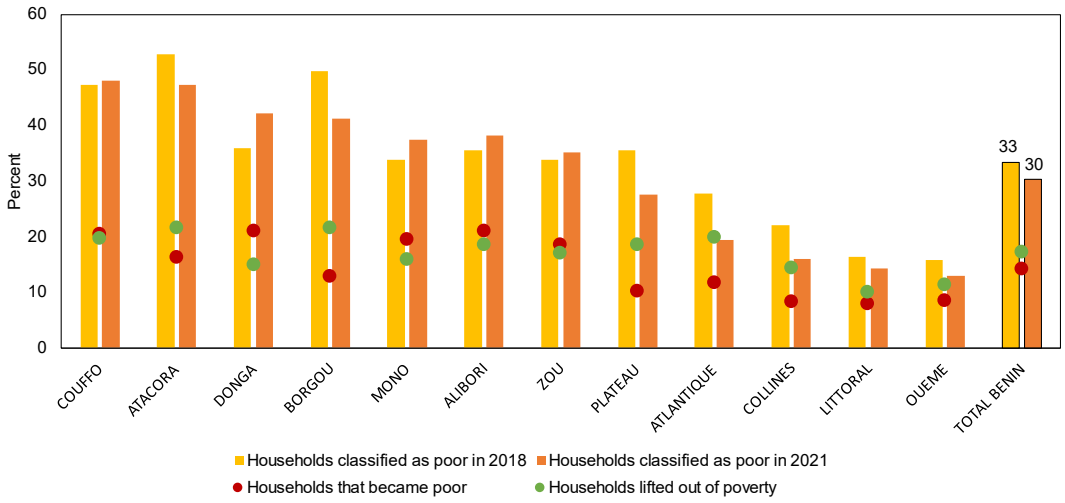
ppts net reduction in poverty rates for this panel of households. Figure 3 illustrates these transitions across various departments in Benin.

Figure 2. Regional Disparities in Poverty Rates Relative to the National Average, 2021
(Percentage Points Difference Relative to the National Poverty Rate)



Sources: IMF staff estimates based on EHCVM data.

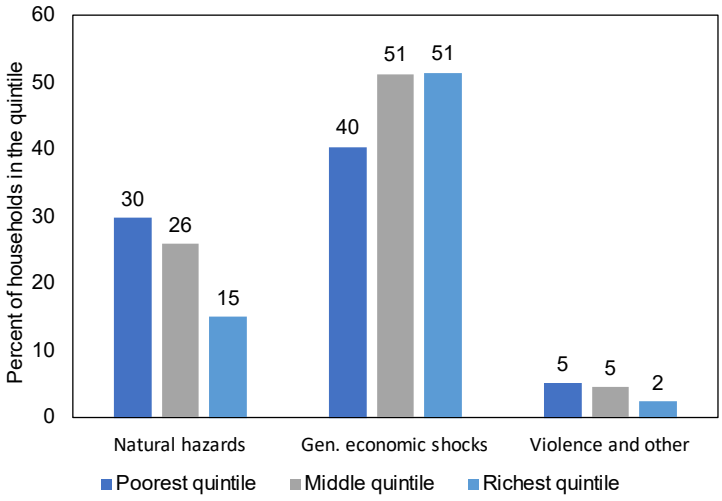
Figure 3. Dynamics of Poverty: Households Transitions in Poverty Status Before and After the Pandemic (Percent of Total Households in Each Department)

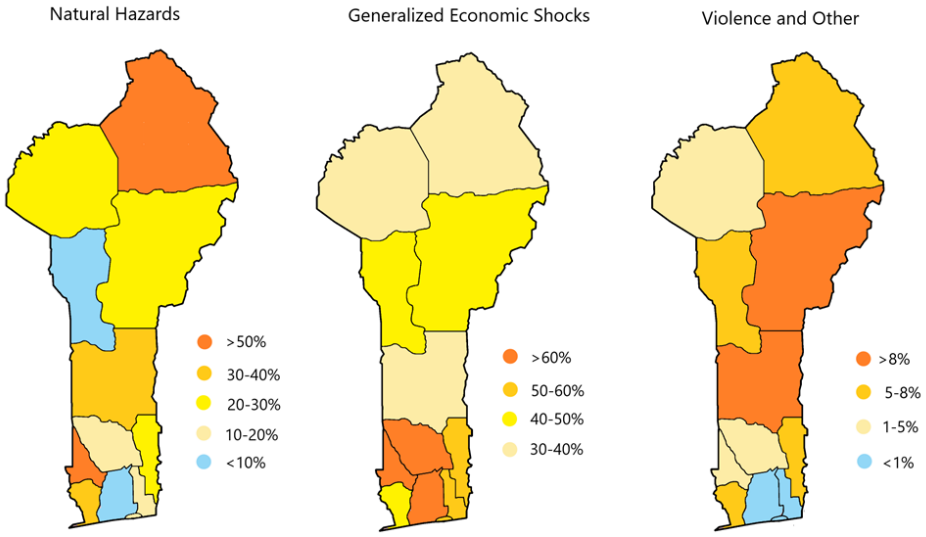


Sources: IMF staff estimates based on EHCVM data.

8. Vulnerability to various types of shocks is also markedly influenced by geographic location and income level. The share of households that report being affected by shocks vary significantly across the country depending on the type of shock and location of the household (Figure 4). While all households are subject to loss in purchasing power due to generalized economic shocks, the poorest tend to be disproportionately impacted by natural hazards.

Figure 4. Share of Households Affected by Different Shocks, by Welfare Quintile and Department 2021 (Percent of Total Households)





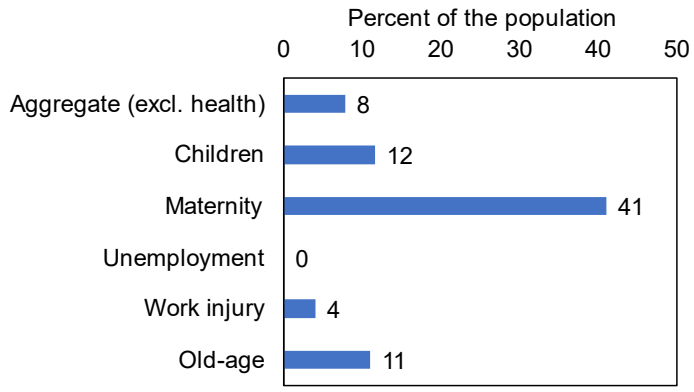
Sources: IMF staff estimates based on EHCVM.

Overview of the Social Protection System and Main Challenges

9. While the government is dedicated to alleviating poverty, fostering a conducive labor market environment, and formalizing the economy, the limited coordination among various

social protection policies poses a challenge to advancing these objectives. Currently, only 8 percent of the population is estimated to be covered by at least one social protection benefit, including social security from formal employment contributions (Figure 5). The absence of a unified social transfer program has resulted in fragmented interventions with limited reach, potentially overlapping and causing inefficiencies. The limited enforcement of Benin's social security laws in the private sector, coupled with low contributions from employers and workers, has hindered the expansion of contributory social safety nets.

Figure 5. SDG 1.3.1: Effective Coverage by Function of Social Protection, 2020
(Percent)



Sources: ILO World Social Protection Data Dashboard.

10. While several social assistance programs aiming at providing direct or indirect income support to the poor have been introduced in recent years, their rollout has been sluggish, reaching only a fraction of the population. Recently, the authorities endorsed the Holistic Social Protection Policy (PHPS 2024-2033), delineating strategic directions and priority initiatives to strengthen social safety nets. Currently, efforts are underway by the Technical Committee on Social Protection (CTPS) to draft an action plan for implementing this policy, which should help enhance coordination among various government agencies and stakeholders involved.

11. Benin remains in the early stages of developing its social safety nets and will rely on the rollout of the social registry (RSU) to enhance coordination and targeting of various programs. Currently, the RSU consists of a static list of households classified as poor by an approximate means test (PMT) conducted in 2021-22 (a new survey is planned for May 2024). Although this list is used by a dozen programs for targeting purposes, it is yet to be developed into a full-fledged social registry. This will require setting up an infrastructure for maintaining and updating information on the poor population, which is still under development. The World Bank is providing technical support in the social protection infrastructure and legal framework, both crucial for operationalizing the RSU.

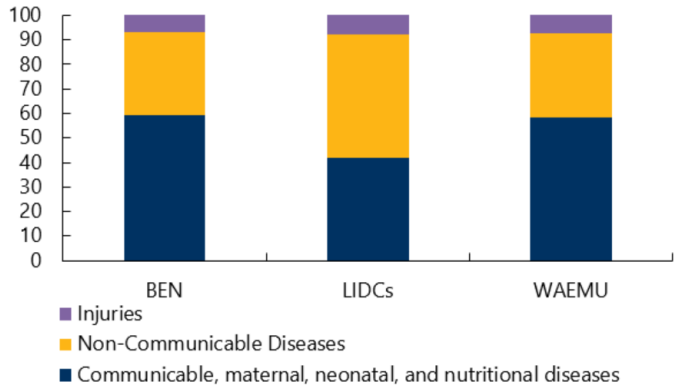
C. Developing Human Capital to Harness the Demographic Dividend

Healthcare

12. Health outcomes remain staggeringly poor in Benin, reflecting the historical underfunding of the sector. The share of deaths attributed to communicable, maternal, neonatal and nutritional diseases is higher than averages for comparators, suggesting that Benin's epidemiological transition is lagging peers (Figure 6). In particular, maternal, neonatal and infant mortality rates are above that of peers, as the quality of basic healthcare provided to women and children needs significant improvements, especially for the poorest quintiles (Figures 7 and 8).

Figure 6. Cause Specific Mortality, 2021

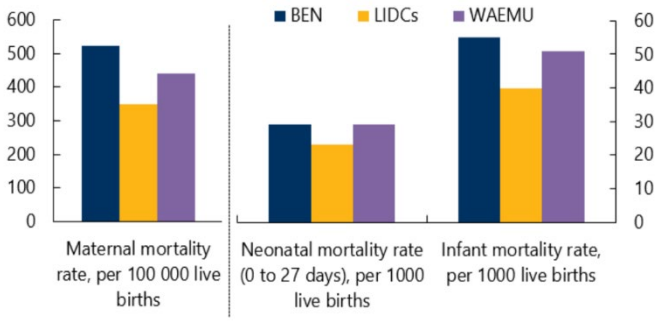
(Percent of Total Deaths)



Sources: WHO GHO and MICS 2021-2022.

Figure 7. Maternal, Neonatal, and Infant Mortality Rates, 2021

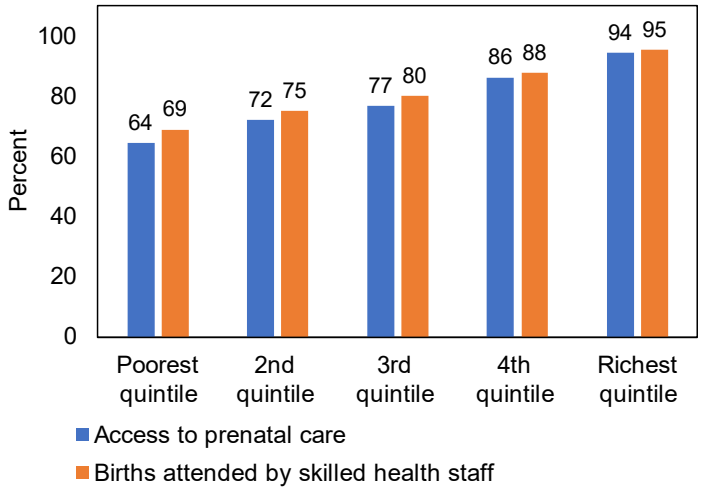
(per 100,000 or 1,000 live births)



Sources: WHO GHO and MICS 2021-2022.

Figure 8. Access To Prenatal Care and Skilled Delivery, 2021-22

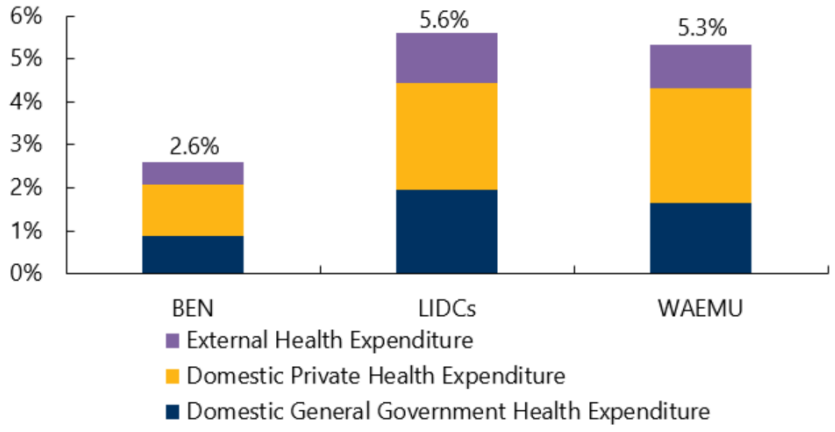
(Percent by Welfare Quintile)



Sources: WHO GHO and MICS 2021-2022.

13. The Beninese government spends only around 1 percent of GDP on healthcare, which is alarmingly low compared to peers (Figure 1). This is particularly striking especially considering the need to have a well-prepared health system to counter pandemics as COVID-19 has shown us. According to IMF estimates, reaching the health SDG in Benin would require 9 percent of its 2030 GDP, more than three times today's level when considering all sources of financing (public and private; Figure 9). As is the case in many LIDCs, out-of-pocket spending is extremely high – an indicator of low financial protection – with nearly half of healthcare funded through direct payments from households to providers (Figure 10). External funds account for around 1/5 of current health expenditure, reflecting a certain dependency on donor financing for specific programs such as vaccinations.

Figure 9. Total Current Health Expenditure Disaggregated by Source (In Percent of GDP)

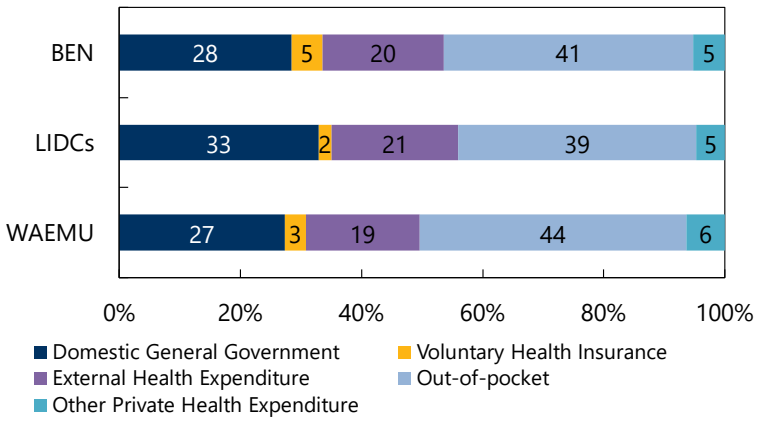


Sources: WHO Global Health Expenditure Database (GHED).

Note: Estimates of current health expenditures include healthcare goods and services consumed during each year and exclude capital health expenditures.

Figure 10. Healthcare Funding Source as a Share of Health Spending

(Percent of Current Health Expenditure)



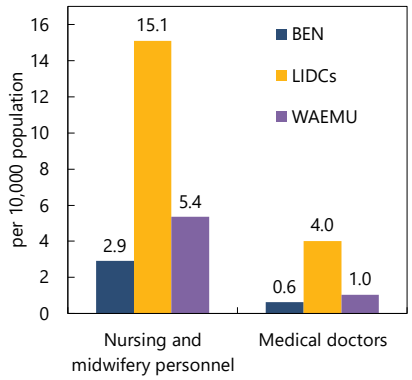
Sources: WHO Global Health Expenditure Database (GHED).

Note: Estimates of current health expenditures include healthcare goods and services consumed during each year and exclude capital health expenditures.

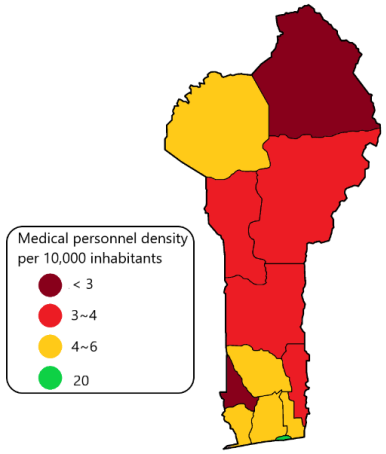
14. Given inadequate staffing and geographical distribution of human resources in medical facilities, achieving the health SDG would require considerable expansion and training of the healthcare workforce. Not only medical staff in Benin are largely insufficient, they are unevenly allocated across the territory—all departments but Littoral have under 6 healthcare professionals per 10,000 inhabitants, well-under the WHO norm of 23 (Figure 11).

Figure 11. Medical Staff Density (Per 10,000 Population)

A. Nurses And Doctors per 10,000 Population in Benin and Comparators, 2021



B. Nurses and Doctors per 10,000 Population by Region, 2021



Sources: WHO GHO, World Bank 2023

15. The implementation of subsidized medical insurance through ARCH-AM[4] has been a crucial step in expanding access to basic health services and helping protect the poor from excessive spending on healthcare. Nearly a million individuals have received a card granting them access to a health benefits package considered by development partners as relatively generous for LIDC standards (designed to subsidize 40 percent of costs of the poor and cover ¾ of the most incident diseases, it was recently expanded to include prenatal care). However, the program seems to suffer from stigma, affecting the take-up in practice (according to development partners, many ARCH-AM cardholders are reluctant to using the card at medical facilities, to avoid being labelled as poor).

Education

16. Budget allocation to education increased significantly in the 2023 and 2024 budget, making it the sector most receiving public resources. The availability of teaching staff has considerably increased, greatly due to the government's policy to constitute a pool of "aspiring teachers" with flexible contracts compared to regular staff. Primary school attendance rates have been continuously improving thanks to free primary schooling and meals provision to students

[4] Although ARCH-AM is funded through the budget of the Ministry of Social Affairs, it was designed jointly with the Ministry of Health, who is primarily responsible for supplying the services included in the health benefits package.

through the school feeding program PNASI (¶18). However, the rate of adolescents out-of-school remains high at 45 percent (**SIP-III**), which the government is trying to partly address by providing scholarships to girls in secondary education. Moreover, given i) demographic pressures of Benin's still-growing share of under-18 population, ii) a still low teacher-to-student ratio and iii) remaining gaps in basic school infrastructure, Benin would have to more than double its current spending to achieve the education SDG by 2030 (**Prady and Sy 2020**).

17. Despite improvements, important disparities in education outcomes across welfare quintiles remain.[5] Adult literacy rates have only slightly increased in the poorest quintiles (Figure 12), and women still have lower rates than men (between 8 and 11ppt across all quintiles). In 2018, nearly 90 percent of school-age population in the richest quintile going to school whereas the share was much lower for the poorest, with only half of 6-15 years-old attending school. The picture remains broadly the same post-pandemic, with only a slight increase of attendance rates for the poorest quintile (from 52 percent in 2018 to 56 percent of the school-age population going to school).

18. PNASI, Benin's flagship school feeding program currently administered by the World Food Programme (WFP) but financed by the Beninese government is a prime tool for containing food insecurity risks while keeping children at school. In line with ECF/EFF program commitments, in 2023, the authorities submitted to Parliament a law to ensure the sustainability of the program and ensure a gradual transfer of the administration of the program to the government. Having increased the share of schools covered by PNASI from just 31 percent in 2017 to 75 percent in 2022, the government is providing daily hot meals to almost 1.2 million students in over 5,300 schools. The authorities plan to expand the program to cover 100 percent of primary schools in the country by 2026; the remaining 25 percent are mostly in urban areas, with full coverage in rural areas short of only 300 schools.

D. Bringing It All Together and Way Forward

19. Benin's National Development Plan puts an emphasis on SDGs. In this context, Benin's IMF-supported ECF/EFF (2022–25) was designed to support development spending, notably by enhancing revenue mobilization, the cornerstone of the authorities' reform agenda. In line with the government's "highly social mandate", Benin's primary development plans focus on achieving the SDGs, as formalized in the National Development Program (PND 2018-2025)[6] and Government Action Program (PAG 2021-2026). While this vision has translated into progress on key social outcomes, Benin still has a long way to go to reach the SDGs (Figure 12; Benin is particularly lagging peers in the summary scores for health, water and sanitation). The cost of very sizeable investments

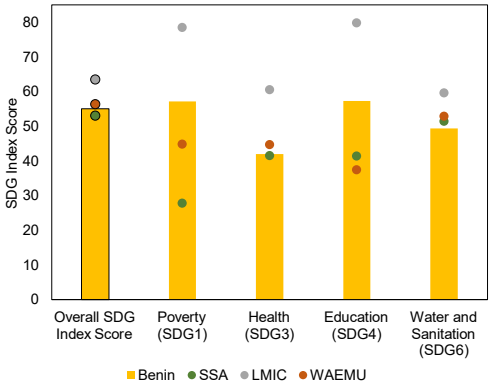
[5] The numbers in this paragraph are based on data from Benin's 2018-19 and 2021-22 household survey (EHCVM1 and EHCVM2).

[6] The PND 2018-2025 provided strategic guidelines for ministries to align their sectoral programs with the SDGs, and identified the following key challenges to be addressed by social policies: i) high school drop-out and illiteracy rates, ii) stubbornly high maternal and infant mortality rates, and prevalence of malaria, tuberculosis and HIV/AIDS as leading causes of hospitalization, iii) chronic malnutrition, iv) limited access to drinking water in some areas, and v) difficulty in creating formal, skilled employment.

needed to achieve the SDGs (¶1) would be partly borne by the private sector, but such investments would also require accelerating efforts to mobilize an adequate level of domestic revenues—the ultimate source of financing for Benin's large development needs.

20. Assessing the welfare and distributional implications of social programs and services would provide valuable insights into whether the current policy mix is reaching those most in need. This would also help understand vulnerability patterns across different population groups (e.g., according to locality, gender, age etc.) and design tailored sectoral approaches to address them. This line of action is already evident in some of the government's strategic investments in geographically targeted measures, for instance, through the "civilian approach" to mitigating security risks in the Northern region, or by increasing recruitment of healthcare workers and granting allowances to doctors working in remote areas.

Figure 12. Performance in Achieving the SDGs



Sources: 2023 Sustainable Development Report data.

21. Investing in infrastructure and subsidizing health and education are crucial to improve lives of the Beninese, but these efforts might need to be complemented with a more direct and streamlined strategy to reduce monetary poverty. With over a third of the population living below the poverty line, 95 percent of the workforce operating in the informal sector and a clear deficiency in mechanisms to aid those confronted by foreseeable or hazardous shocks, it is imperative to bolster social safety nets in Benin. ARCH-AM and PNASI play pivotal roles in facilitating access to crucial healthcare and education services while alleviating financial burdens on households, these initiatives could be usefully supplemented with robust social safety nets to effectively tackle monetary poverty in Benin. The rollout of the new flagship program *Gbessoke*, which includes a monthly transfer of CFAF 10,000 to 150,000 poor households, will be a great step towards this goal.

22. Prioritizing efforts to strengthen fundamental social infrastructure to support formal labor market integration and poverty reduction is essential. This includes fast-tracking the RSU's operationalization to continuously monitor and update data on the poor and other vulnerable groups, ensuring adequate resources to finance and operate social assistance programs, and strengthening the reach of the government through "one-stop social protection centers" (GUPS, which will be the main physical interface for ensuring continuous update of the RSU).

23. Expanding on existing policies to enhance their effectiveness and coordination, especially through the RSU, can offer crucial tools for implementing targeted strategies adaptable to various shocks. Such investments are imperative to ensure sustained coverage for structurally vulnerable groups—such as impoverished families, particularly those with dependents, elderly, persons with disabilities—and swiftly provide assistance to households severely affected by

shocks like widespread price hikes or natural hazards. Additionally, it is vital that program benefit packages are sufficiently substantial to materially improve recipients' living conditions, and that payment systems are structured to ensure timely disbursement of benefits.

24. Conducting a comprehensive mapping of social programs would be an important exercise to understand the extent to which the current policy mix meets the specific needs of different vulnerable groups. This would serve as a basis for identifying gaps in terms of financial, human and physical resources, and reform options to ensure that the different socio-economic risks are accounted for. It would also help addressing bottlenecks and overlaps of responsibilities preventing the effective implementation of programs. For instance, the costs of providing healthcare for the poorest were identified as an area with some funding and coordination gaps. In line with the adoption of the PHPS, the authorities are planning to focus efforts in these areas to carry out a review of public spending on social protection and a detailed mapping of programs by 2025 (MEFP ¶14).

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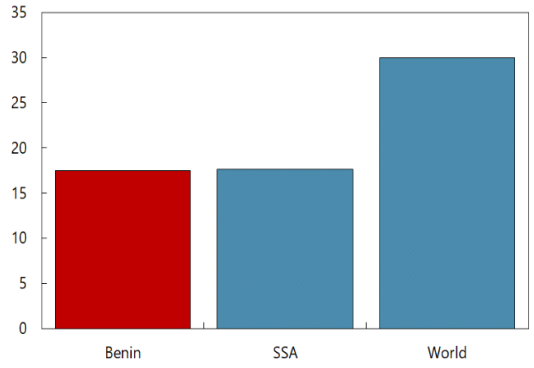
BENIN—INVESTING IN EDUCATION TO REAP THE DEMOGRAPHICS DIVIDEND[1]

As for the rest of Sub-Saharan Africa, and in contrast to the rest of the world, Benin benefits from a young demographic (median age of 18), with projected population growth translating into new labor force entrants in the coming decades. Despite progress in recent years, access to secondary schooling and literacy rates remain below regional peers. To reap the demographic dividend, Benin must continue to step up investment in education—estimations suggest that public spending in education as a share of GDP would need to double by 2030 from the current 3.8 percent for Benin to reach universal primary and secondary enrollment rates.

A. Demographic Trends in Benin

1. Benin's population is significantly young, with population trends suggesting it will remain so in the future. Sub-Saharan Africa (SSA) is home to the youngest population in the world, with around 70 percent of the population below the world median age of 30. Benin is no exception, with a median age of 18 years of age, similar to SSA (Text Figure 1). And while world population growth slows on the back of ageing demographics and declining fertility rates, population growth in Benin (and SSA) will significantly pick up in the coming decades, given the combination of younger demographics, declining child mortality, and higher fertility rates (Text Figure 2) compared to the rest of the world (currently around 5 live births per woman and projected to stay above two at least until 2100). As a result, Benin's population is projected to more than double between 2024 and 2100, reaching 46 million by 2100 from 13 million today (Text Figure 3).

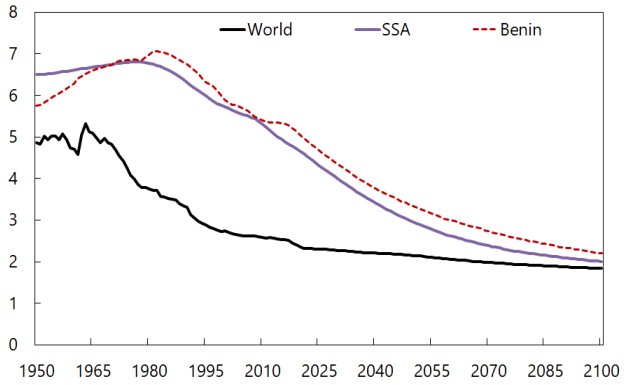
Text Figure 1. Median Age in Benin, 2021
(Years of age)



Sources: UN World Population.

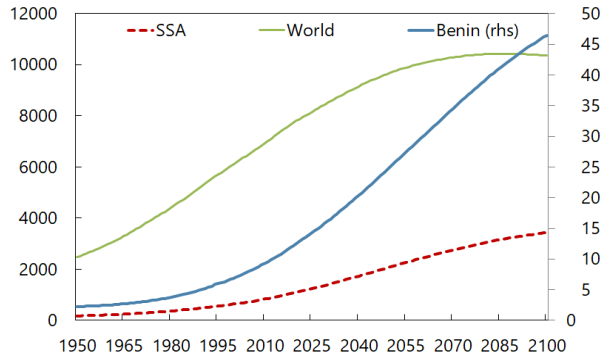
[1] Prepared by Nour Tawk (AFR).

Text Figure 2. Total Fertility Rate
(Live Births per Woman)



Sources : UN World Population

Text Figure 3. Future Population Estimates
(Millions)



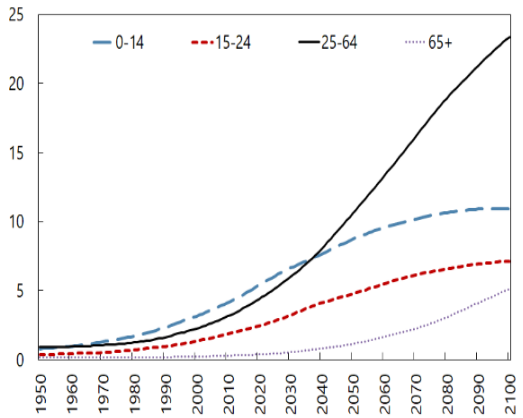
Sources : UN World Population

2. A young population in Benin would translate into a large working-force population. Based on the current demographic trends, Benin's working-age population is anticipated to accelerate rapidly, becoming the largest portion of the country's population: in 2021, the bracket of the population aged between 0 and 14 year-old made up the largest share of the population (42 percent, around 5.5 million), while the working-age population (people with ages between 25 and 64) made 35 percent of the population (around 4.5 million). Projections anticipate that by 2050, the population aged between 25 and 64 will account for 42 percent of Benin's total population (and 51 percent of Benin's population by 2100), reaching about 11 million individuals (Text Figure 4).

3. At the same time, the total dependency ratio in Benin is expected to fall. While the working-age population expands in Benin, the total dependency ratio – defined as the ratio of the population below age 25 and above age 65 to the population between the age 25 and 65 – is projected to further decelerate from its current level of around 190 percent, converging towards the world norm of 110 percent (Text Figure 5). This means that, as time goes by, the number of dependents that working adults would need to care for will decline, therefore alleviating the financial burdens on the working-age population, and potentially allowing for more resources to be invested towards education and health.

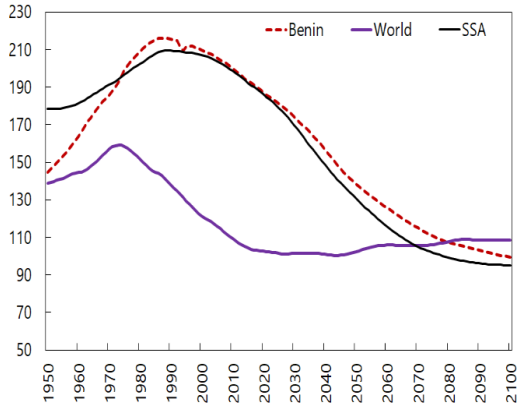
4. The combination of a large working-age population and declining dependency ratios in Benin present an opportune moment for the country. In the global context of an ageing world population, SSA's population will become the youngest and most sizeable proportion of the global workforce (IMF REO 2024). However, its ability to seize this opportunity will depend on its readiness, specifically its education and skill levels. Similarly, Benin's workforce must be equipped to reap the demographic dividend of a younger population with a declining dependency ratio.

Text Figure 4. Age-Group Demographics
(Millions)



Sources: UN World Population.

Text Figure 5. Total Dependency Ratio
(Percent)



Sources: UN World Population.

5. This paper investigates access to education and its outcomes in Benin, comparing it with peers, and discusses the policy actions that would be needed for Benin to reap the dividends of its young and growing population.

- *Data shows that Benin has made significant strides in improving access to education, by improving schools' infrastructures, and increasing the quality and wages of teachers.*
- *Enrollment and completion rates have progressed especially for students in primary education but have lagged for secondary education, suggesting high dropout rates.*
- *Literacy rates of the adult population have significantly improved over the past decade but are lower than the SSA average.*
- *Benin has increased investment in education in recent years, from modest levels, but more needs to be done for it to converge to its SDG goals. Education spending as a share of GDP will need to double by 2030, for Benin to reach universal primary and secondary enrollment rates.*

6. The rest of the paper is structured as follows. Section B presents stylized facts on education in Benin, covering the recent developments in the education infrastructure, as well as the current education outcomes. Section C presents the empirical analysis for estimating the education gaps in Benin, and the potential gains from increasing the education level of the working-age population. Section D concludes.

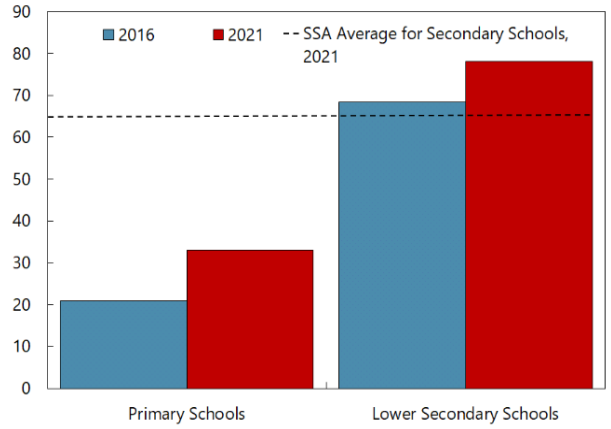
B. Education in Benin: Stylized Facts

Access to Education

7. School infrastructure in Benin has improved. Benin made strides to improve the infrastructure of its academic institutions over the past years: access to electricity in primary schools increased significantly between 2016 and 2021, from 20 percent to almost 35 percent. Meanwhile, 78 percent of lower secondary schools have access to electricity in Benin since 2021, surpassing the SSA average of 64 percent (Text Figure 6). Access to drinking water in primary schools also increased, by ten percentage points since 2016, reaching 55 percent by 2021 (Text Figure 7). While the improvement in infrastructure has reduced the gap in school quality with the regional WAEMU average, more is required to better access to electricity and drinking water, especially for primary schools where electricity access is well below the SSA average of 45 percent.

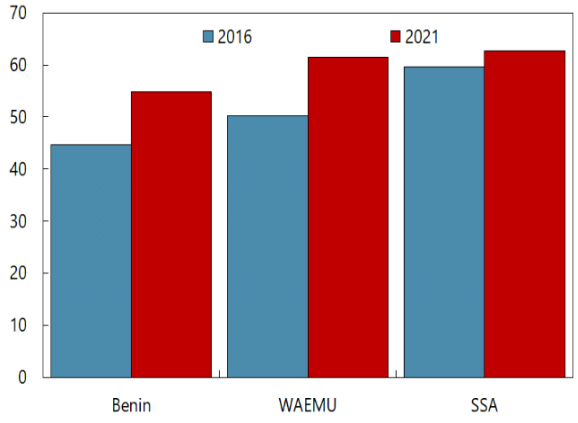
8. However, there could be large spatial disparities. While the share of population with access to electricity significantly improved to 40 percent by 2023 at the national level, it remained at only 12 percent in the rural area (compared to 68 percent in urban areas). The divide is also observed in access to drinking water albeit less stark (60 and 74 percent in rural and urban areas respectively). These regional gaps are likely to be reflected in access to electricity and water in schools.

Text Figure 6. Primary Schools with Access to Electricity
(Percent)



Sources: SDG, IMF staff calculations.

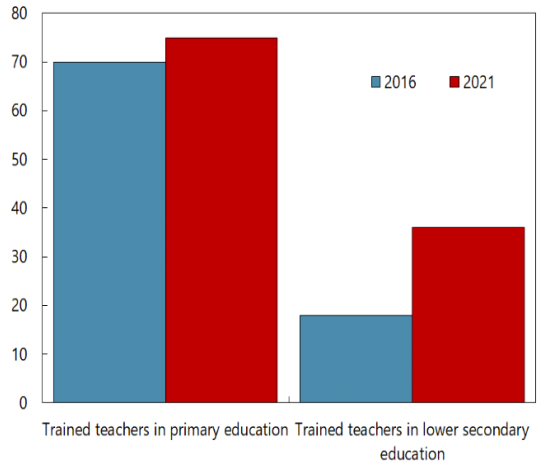
Text Figure 7. Primary Schools with Access to Basic Drinking Water
(Percent)



Sources: SDG, IMF staff calculations.

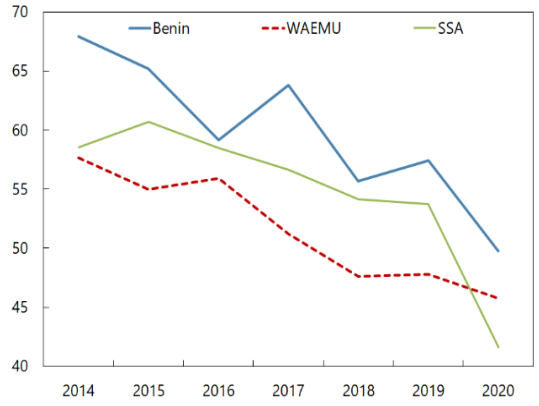
9. The availability and quality of teachers in Beninese schools has also improved. The number of trained[2] teachers in primary schools had increased from 70 percent to 75 percent between 2016 and 2021 and had doubled for teachers in lower secondary education, from 18 percent to 36 percent (Text Figure 8). Meanwhile, the ratio of students to qualified teachers in primary schools declined significantly, from almost 60 students to each trained teacher in 2016, to about 49 students to each trained teacher by 2021. The convergence towards the SSA average (of about 42 students to each trained teacher) is a welcome development, as it allows for more time to be dedicated by trained teachers to young pupils (Text Figure 9). The Beninese government has also made efforts to train and boost the wages of educators: the government spent 0.2 and 0.3 percent of GDP in 2022 and 2023 respectively to improve availability of educators for technical and secondary schools through a recent initiative (formally called "*aspirants au métier d'enseignement du supérieur*") that is improving the supply of teachers, their wages, and their living conditions.

Text Figure 8. Trained Teachers in Education
(Percent of total teachers)



Sources: WDI database.

Text Figure 9. Pupil-Trained Teacher Ratio in Primary Education
(Ratio)



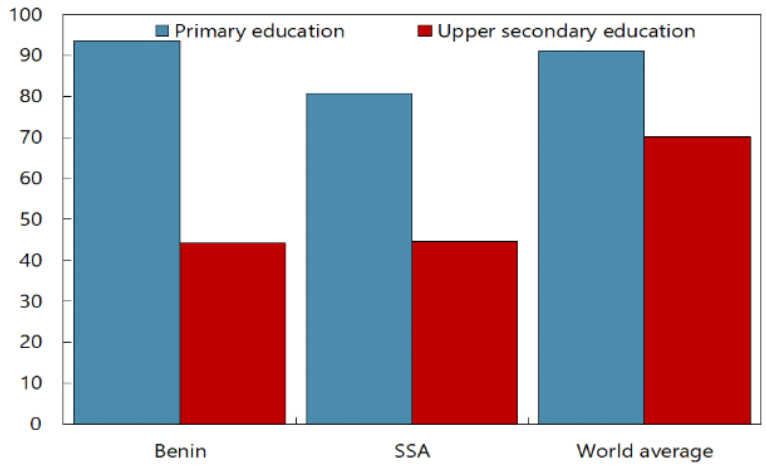
Sources: UNESCO, SDG database.

[2] A trained teacher is defined by the UNESCO Institute for Statistics as a teacher who "Teacher who has fulfilled at least the minimum organized teacher-training requirements (pre-service or in-service) to teach a specific level of education according to the relevant national policy or law. These requirements usually include pedagogical knowledge (broad principles and strategies of classroom management and organization that transcend the subject matter being taught - typically approaches, methods and techniques of teaching), and professional knowledge (knowledge of statutory instruments and other legal frameworks that govern the teaching profession)."

Education Outcomes

10. School enrollment rates are high in Benin. The number of children of the official age group for primary education who are enrolled in school in Benin is 94 percent, higher than both the regional average 81 percent, and the world average of 91.1 percent. However, enrollment in secondary education is much lower than that of primary education: net enrollment rates in upper secondary education are about 45 percent, in line with the SSA average, but much below the world average of 75 percent (Text Figure 10).

Text Figure 10. Net Enrollment Rates in Benin
(Percent)

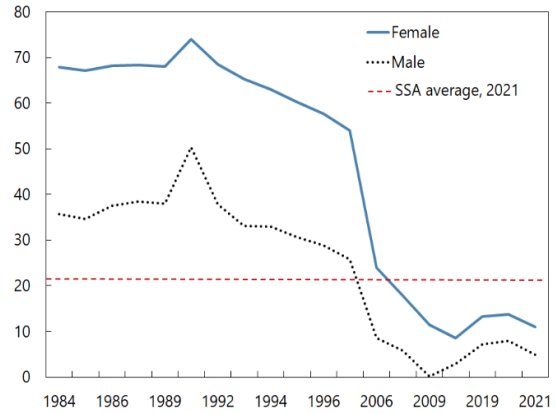


Sources: UNESCO, USAID, SDG Database.
Note: Latest data for net enrollment rates in primary education is available for 2019, while latest data for net enrollment in secondary education is only available for 2015.

11. High out-of-school rates for adolescents corroborates low enrollment rates in secondary school, likely reflecting financing constraints. The number of children of age for primary education and out of school has significantly dropped over past decades and currently averages 5 percent, below the SSA average, though it is slightly higher for girls (Text Figure 11). However, the number of adolescents who are not enrolled in secondary education is high and has worsened over the past decade, currently at 45 percent, higher than the SSA average of 34 percent, and higher for adolescent girls (Text Figure 12). The stark contrast between primary and secondary school attendance could be explained by some factors: a) the abolition of primary tuition fees in 2000 within the framework of the Highly Indebted Poor Countries (HPIC) initiative made access to primary schools almost universal (Senou, 2015), but children are often taken out of school if their parents need them to work, or if they are unaware of the value of education, and b) recent initiatives like the World Food Programme (WFP) school feeding programme covers children of primary school age, providing them a stronger incentive to attend school at that stage (¶12). High dropout and lower completion rates for girls (¶13) are

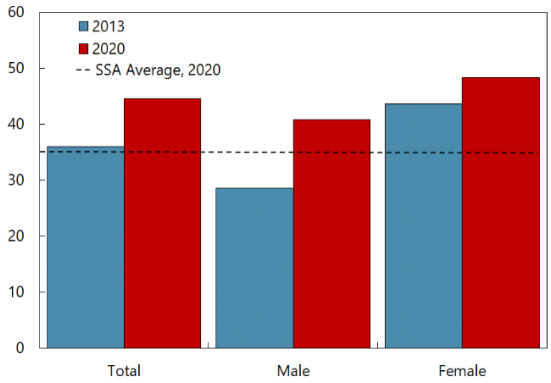
likely to adversely impact female labor participation, especially in the context of child marriage and early pregnancy.

Text Figure 11. Children Out-of-School
(Percent of Primary Education Age)



Sources: UNESCO, USAID, SDG database.

Text Figure 12. Adolescents Out-of-School
(Percent of Secondary Education Age)



Sources: UNESCO, SDG database.

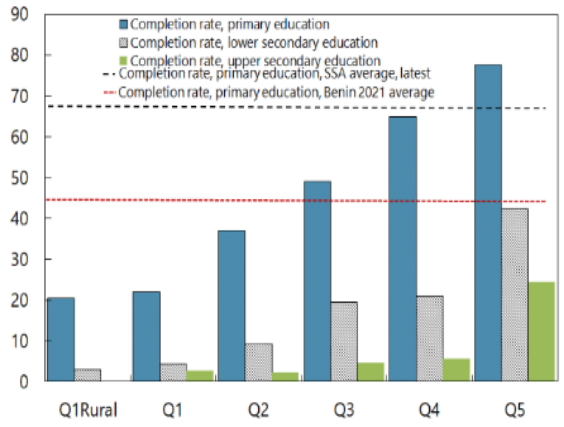
12. The Beninese government, together with the World Food Programme, launched the school feeding programme to reduce food insecurity and improve school attendance. Since 2022, the school feeding programme has supported approximately 5,709 schools (about 75 percent of public primary schools and 152 private schools) and 1.4 million students (46 percent of which are girls), allowing children to eat daily hot meals at school. Despite external challenges in 2023, such as border closures with Niger and rising gas prices from Nigerian reforms, the government's dedication to the national school feeding initiative was instrumental in advancing its Sustainable Development Goals towards eradicating hunger by 2030. The new initiative' success could be linked to the improved attendance rates for primary school, though evidence remains preliminary.

13. School completion rates are relatively high for primary education students but with regional disparities and fall as students move towards secondary education. School completion rates for primary education in Benin is about 50 percent, lower than the regional average of 67 percent (Text Figure 13). Disparities are also evident across income groups, with completion rates vastly differing between income quintiles: those in the highest income quintile boast a 78 percent primary school completion rate, in contrast to the first income quintile, where only 20 percent of children between up to age 11 complete their education. Primary school completion rates are notably lower for girls compared to boys: in 2021, boys' completion rate was 54 percent versus a 49 percent for girls in Benin (and lower than most other peers (86% for Togo and 67% for Senegal), without accounting for regional disparities. In addition, completion rates significantly drop as students move to lower and upper secondary education: the completion rate of students in lower secondary education averages 19 percent, and 8

percent for students in upper secondary education. Completion outcomes fare worse for students in rural areas of poorer background: almost 0 percent of students in rural areas and the first quintile complete their upper secondary education. Benin's completion rates for secondary education are also lower compared to the region, 29 percent versus 41 percent (the regional average) in 2019.

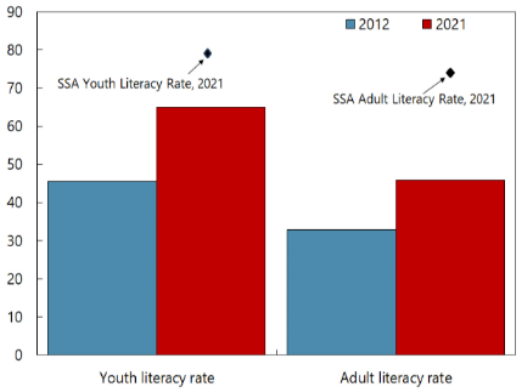
14. With higher enrollment rates and better-equipped schools, literacy rates in Benin have improved. Over the past decade, the youth literacy rate (of the population aged between 15 and 24) has increased from 45 percent to 65 percent, while the adult literacy rate (of the population aged between 15 and 99) has also increased from 33 percent to 46 percent. Despite significant strides - and given Benin's lower school completion rate compared to the region, literacy rates are still below the SSA average- which boasts a youth literacy rate of almost 80 percent (Text Figure 14).

Text Figure 13. School Completion Rate, 2021
(Percent)



Sources: UNESCO, SDG database.

Text Figure 14. Literary Rates
(Percent)

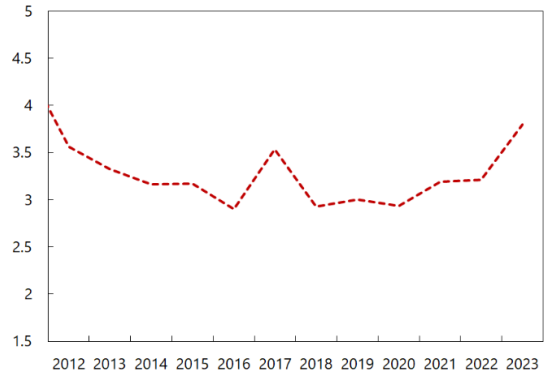


Sources: UNESCO, USAID, SDG database.

C. Bridging the Education Gap

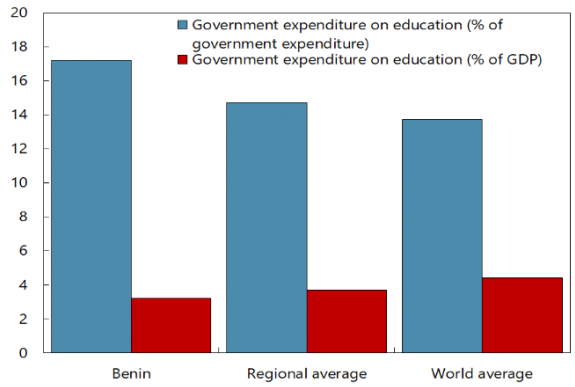
15. Government expenditure on education has increased modestly over past years and makes a larger share of total expenditure compared to peers. It averaged 3.8 percent of GDP in 2023, a modest increase from 3.1 percent since 2016, having recovered from its decline on the onset of Covid-19 in 2020 (Text Figure 15). Though modest in its share of GDP, education expenditure in Benin made 17 percent of total government expenditure in 2022. The share of education spending out of government expenditure was larger than its regional peers and outpaced the world average in 2022, reflecting generally low levels of overall public spending in Benin (amid a narrow tax base) or lower needs in other countries (Text Figure 16).

Text Figure 15. Government Expenditure on Education
(Percent of GDP)



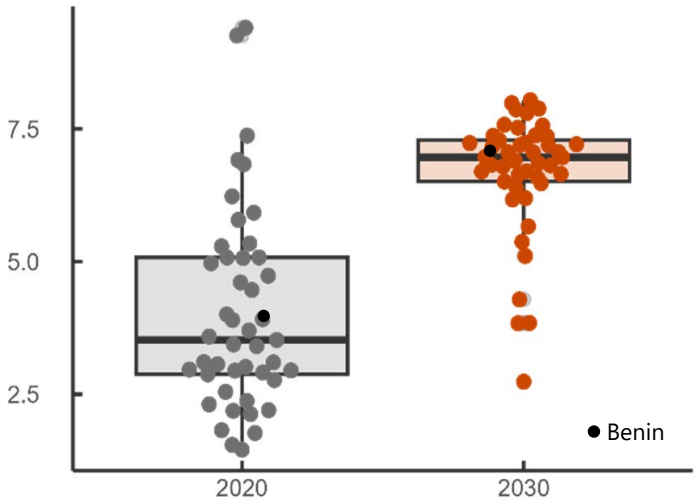
Sources: Beninese authorities.

Text Figure 16. Government Expenditure on Education, 2022
(Percent of Total Government Expenditure)



Sources: USAID.

Text Figure 17. Sub-Saharan Africa: Government Expenditure on Education
(Percent of GDP. SDG4 Convergence Scenario)



Sources: IMF SDG Costing tool (3rd edition, 2022), and IMF staff calculations.

Notes: the grey boxplot portrays the current distribution of spending in SSA countries. The orange boxplot portrays education spending in the benchmark SDG convergence scenario.

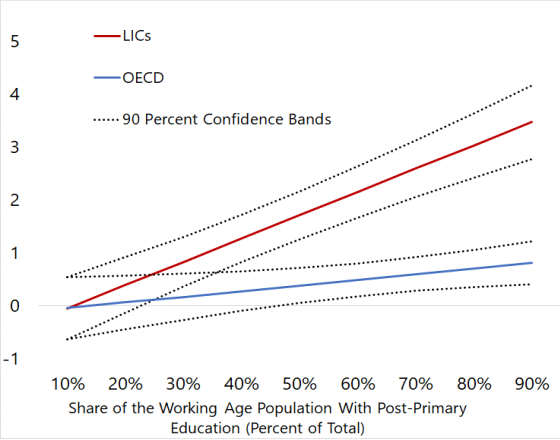
16. Total spending (public and private) on education needs to be scaled up further—by about 5.5 percent of GDP—for Benin to meet its SDG goals by 2030. Drawing on the IMF SDG costing methodology (3rd edition, 2022[3]) developed by Gaspar and others (2019), additional spending on education is required for Benin to achieve the SDG objective of universal primary and secondary enrollment of its young population (Text Figure 17). The results suggest that total education spending would need to almost double by 2030 for Benin to reach its SDG goals. Specifically, public education spending would need to increase by an additional 3.4 percent, from its 3.8 percent average towards 7.2 percent (compared to an increase from 3.5 to 7 percent of GDP for the SSA median). Investment in private education would also need to be catalyzed, so it can increase from its current levels of 4 percent towards 6 percent of GDP, bringing the total additional education spending required for Benin to converge to its SDG goals to about 5.5 percent by 2030.

17. Increasing the secondary education level of Benin's labor force could have amplifying effects on growth. Recent work by Kotschy and others (2020) and the IMF (REO 2024) highlights that the marginal effect on growth of the working-age population is conditional on different levels of post-primary education among the working-age population, especially in low-income countries. Specifically, the results suggest that in low-income countries, gains to GDP growth rise for each additional increase of the share of the working-age population that has achieved post-primary education: moving from having 30 percent of the working age population with post-primary education towards a working-age population where 80 percent of the workers have achieved post-primary education is estimated to yield additional GDP growth of roughly 3 percentage points (Text Figure 18).

18. In Benin, *at least* 42 percent of the labor force has achieved post-primary education, compared to a 72 percent regional average. This, drawing on estimations in IMF (REO 2024), suggests that moving towards a population where 90 percent of the workforce achieved post-primary education—in line with SDG goals—could raise growth by 3.5 percent, already recouping all public spending needs on education (Text Figure 19). Additional gains include: (1) positive spillovers on growth and government spending from reducing of poverty and inequality (Cerra, Lama and Loayza, 2021); (2) productivity gains from an educated workforce that improves the absorption of superior technologies from leading countries (Barro, 2001); and (3) higher resilience from a higher human capital stock: countries with a high ratio of human to physical capital (for example, if physical capital is destroyed by a natural disaster) tend to recover faster by adjusting upward the quantity of physical capital (Barro, 2001).

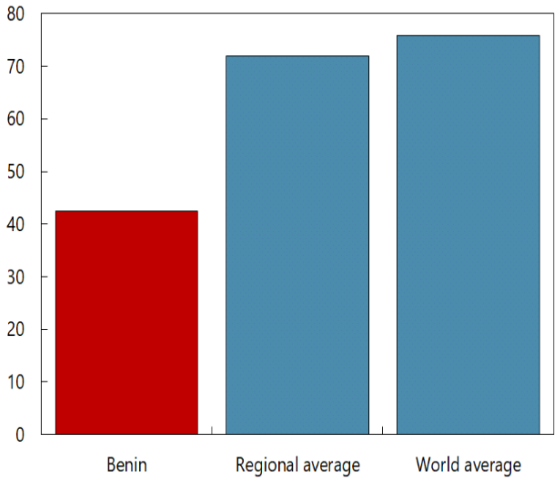
[3] Carapella and others, IMF 2023.

Text Figure 18. Marginal Effect of Post-Primary Education on Growth
(Change in GDP Growth from 1 Unit Change in Education Percent)



Sources: Kotschy and others (2020), and IMF staff calculations.
Note: the plots are derived based on Kotschy and others (2020). Based on a global sample, the results show the marginal effects on growth of the working age population share, conditional on different levels of post-primary education among the working-age population. The dotted bands are 90-percent confidence intervals.

Text Figure 19. Labor Force with Advanced Education, 2018
(Percentage of Total Working-Age Population with Advanced Education)



Sources: USAID, World Bank WDI.
Note: The ratio of the labor force with advanced education to the working-age population with advanced education. Advanced education comprises short-cycle tertiary education, a bachelor's degree or equivalent education level, or higher education level according to the International Standard Classification of Education 2011 (ISCED 2011)

D. Conclusion and Policy Recommendations

19. Benin's young working-age population is set to make over half of the country's total population in the next century. In contrast to the rest of the world, Benin's population will more than double by 2100, leading to a significant expansion in its working-age population that can contribute to overall growth.

20. Reaping the benefits of population growth in Benin will hinge on additional investment for improving education outcomes, especially at the secondary level. Benin has made strides in improving schools' infrastructure and boosting teachers' supply, all the while implementing school feeding programs to reduce food insecurity for children and improve education enrollment and literacy rates. However, spending needs remain large—about 5.5 percent of GDP—and more will be needed for Benin to improve its education outcomes, increase its students' school enrollment rates, and boost the education levels of its working-age population.

21. Increasing the education levels of the working-age population could yield tangible dividends. Based on a global sample, empirical results suggest that increasing the share of the working age population that has achieved post-primary education has an amplifying effect on growth, and consistently leads to higher GDP outcomes. As education outcomes of Benin's labor force are lower than the regional average, this implies that increasing the share of the educated labor force could have positive spillovers on growth, up to about two percent of GDP. This further strengthens the case for increasing investment in education now, to reap the dividends of Benin's demographic trends in the future.

22. Meeting these large education needs—and other Benin's development needs—require sustained efforts in domestic revenue mobilization. Domestic revenue mobilization (DRM) efforts have significantly boosted revenue collection in recent years, helping increase budget allocations to education in 2022 and 2023. DRM, the cornerstone of the authorities' reform program, would ensure a sustainable financing of Benin's large development needs; it should continue to be anchored on the recently developed Medium-Term Revenue Strategy.

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