BENIN SUSTAINABLE DEVELOPMENT REPORT 2025

Green Transition
Agroecology and Renewable Energy

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

BENINREVELE

SDSN Benin

January 2026

The opinions expressed in this report do not necessarily reflect those of the United Nations organizations, agencies, or programs, or the Government of Benin. This report is the product of collaboration between SDSN and the SDSN Benin network and relies on the methodology of the Sustainable Development Report published by SDSN since 2016.

ACKNOWLEDGEMENTS

The report was coordinated by Isabella Massa and Samory Toure from SDSN's SDG Transformation Center. The primary authors are Isabella Massa, Samory Toure, Grayson Fuller, Émile N. Houngbo, Honorat Satoguina, Janvier Egah, Hortensia Acacha, Jude Eggoh, Nadia Fanou Fogny, Achille Assouto, and Marius Guezo. Statistical work for the SDG Index was led by Grayson Fuller and Samory Toure, with contributions from Eduardo Weirich. The website and interactive data platform accompanying this report were developed by Ruben Andino. Guillaume Lafortune (Vice-President of SDSN) worked alongside the Government of Benin on establishing the strategic partnership with SDSN since 2021 and provided comments on the draft versions of the report.

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We thank Adidjatou Hassan Zanouvi, Nadia Fanou Fogny, Mohamed Nasser Baco, Aurélien Ahan, Carel Mousse, Christelle Tokplo, Katsia Paulavets, SDSN's FABLE team, INStaD, DGCS-ODD, and SBPE for their contributions at various stages.

We express our deep gratitude to the Ministry of Economy and Finance and the Ministry of Development and Coordination of Government Action of Benin, thanks to whom the production of this report was made possible.

An interactive dashboard and all data presented in this report are accessible online at https://sdgtransformationcenter.org and https://benin.sdgindex.org.

We welcome any feedback on the report or data that could strengthen future editions of this work. Please inform us of any publication using the data from the SDG Index and Dashboards or the Benin Sustainable Development Report, and send your publication to the following address: info@sdgtransformationcenter.org.

Please cite this report as follows: Massa, I., Toure, S., Fuller, G., Houngbo, E. N., Satoguina, H., Egah, J., Acacha, H., Eggoh, J., Assouto, A., Guezo, M., Lafortune, G. (2026). Benin Sustainable Development Report 2025. Green Transition: Agroecology and Renewable Energies. Paris: SDSN, Cotonou: SDSN Benin.

Phoenix Design Aid prepared the layout and graphic design for this report.

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SDSN Benin

Foreword

Following the launch, in 2021, of an ambitious SDG bond issuance program aimed at mobilizing international investors to finance public expenditures with high impacts on the achievement of the Sustainable Development Goals (SDGs), Benin embarked on an innovative approach combining fiscal discipline, social responsibility, and long-term vision. Within this framework, a technical partnership was established with the Sustainable Development Solutions Network (SDSN) to ensure rigorous monitoring and empirical evaluation of the progress and efforts made by the Government of Benin in implementing the 2030 Agenda. This technical and analytical collaboration framework has provided the country with a key reference tool—the Benin Sustainable Development Report—which serves as a vital barometer of national performance and a science-based instrument to support public decision-making.

This annual report, structured around a central theme, provides a comparative analysis of Benin's performance within the West African subregion and proposes strategic courses of action to strengthen the country's development trajectory. It highlights the progress made, the remaining challenges, and the priority levers needed to accelerate the structural transformation of the nation in line with the principles of sustainability, inclusion, and resilience.

Benin has established itself as a pioneer in Africa in terms of financial innovation in support of the SDGs. In recent years, the country's efforts have intensified particularly in combating climate change, through the implementation of pilot projects in regenerative agriculture and carbon sequestration, as well as the establishment of a Carbon Project Registration Authority. The year 2025 marks a new milestone in this process, with the signing of a Framework Memorandum of Collaboration and Cooperation with several international financial institutions in favor of coordinated climate action, and the launch of the National Green Financing Framework, a key instrument for aligning public and private investments with the objectives of the ecological transition.

It is in this context that the present 2025 edition of the report, developed in partnership with the local network SDSN Benin, focuses on the central theme of "Green Transition: Agroecology and Renewable Energies." This choice is consistent with the framework of the "Six Transformations", in particular Transformation 3 (Energy Decarbonization and Sustainable Industry) and Transformation 4 (Sustainable Food, Land, Water, and Oceans). It also aligns with the priorities of the Government Action Program (PAG 2021–2026), notably Pillar 2—*"Pursue the structural transformation of the economy"—and Pillar 3—"Continue improving the social well-being of the population."*

The investments supported by the SDG Eurobonds have already laid the foundations for an inclusive green transition, with major advances in expanding renewable energy capacity and promoting resilient agroecological practices. These initiatives, backed by strong political will and an integrated vision of development, constitute important levers to address simultaneously the current imperatives of food security, green job creation, and ecosystem preservation.

With the continuation of reforms, the consolidation of technical and financial partnerships, and the strong commitment of all public and private stakeholders, we are confident that Benin is positioning itself as a regional model for green transition, placing agroecology and renewable energy at the heart of its sustainable development strategy.

Romuald WADAGNI
Minister of Economy and Finance, in charge of Cooperation, Minister of State.

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Acronyms and Abbreviations

ABERME	Benin Agency for Rural Electrification and Energy Management
ACED	African Center for Equitable Development
AFD	French Development Agency
AMAP Benin	Association for the Preservation of Smallholder Agriculture in Benin
ARE	Electricity Regulatory Authority
CIRAD	Center for International Cooperation in Agricultural Research for Development
CO_2	Carbon dioxide
DEFIA	Pineapple Value Chain Entrepreneurship Development Project
DEFISSOL	Solar Energy Production and Power Utility Information System Modernization Project
ECOWAS	Economic Community of West African States
Enabel	Belgian agency for international cooperation
ESMAP	Energy Sector Management Assistance Program
FAO	Food and Agriculture Organization
FCFA	West African CFA (African Financial Community) franc
FUPRO	Federation of Producers' Unions
GAP	Government Action Program
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gases
GIZ	German Society for International Cooperation
Helvetas	Swiss development NGO
IEA	International Energy Agency
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
IMF	International Monetary Fund
INRAB	National Agricultural Research Institute of Benin
INStaD	National Institute of Statistics and Demography
IPCC	Intergovernmental Panel on Climate Change
IPES-Food	International Panel of Experts on Sustainable Food Systems
IRENA	International Renewable Energy Agency
ISFM	Integrated Soil Fertility Management
kWc	Kilowatt peak (photovoltaic peak power)
LOASAN	Agricultural and Food and Nutritional Security Orientation Law

MAEP	Ministry of Agriculture, Livestock and Fisheries
MCA	Millennium Challenge Account
MCC	Millennium Challenge Corporation
MEF	Ministry of Economy and Finance
MiJA	"Thousand Gardens in Africa" Project
$MtCO_2$	Megatonnes of carbon dioxide
MWc	Megawatt-peak (solar power peak capacity)
NAP	National Adaptation Programme of Action
NDP	National Development Plan
NGO	Non-Governmental Organization
OBEPAB	Beninese Organization for the Promotion of Organic Agriculture
OCB	Organization for the Promotion of Organic Cotton
OCEF	Off-grid Clean Energy Facility
OECD	Organisation for Economic Co-operation and Development
PANA Énergie	Project to Strengthen the Resilience of the Energy Sector to the Impacts of Climate Change
PANGIRE	National Action Plan for Integrated Water Resources Management
PAPVIRE-ABC	Food Production Support and Resilience Strengthening Project in the Alibori, Borgou, and Collines Departments.
PASDeR	The Rural Development Sector Support Program
PASPEACC	Project to Support the Adaptation of Smallholder Farming Systems in Central Benin to Climate Change
PIRVaTEFoD-Bénin	Integrated Project for the Restoration and Enhancement of Degraded Land and Forest Ecosystem Value for Improved Climate Resilience in Benin
PM2,5	Fine particulate matter ≤ 2.5 micrometers in diameter
PNIA	National Agricultural Investment Plan
PNIASAN	National Agricultural Investment and Food and Nutritional Security Plan
PONADER	National Renewable Energy Development Policy
PPDBEB	Sustainable Promotion Project for Biomass Electricity in Benin
PRODERE	Renewable Energy and Energy Efficiency Development Program
ProSOL	Soil Protection and Rehabilitation Project for Food Security
PSDSA	Agricultural Sector Development Strategic Plan
R&D	Research and Development
RE	Renewable energies
RISE	Regulatory Indicators for Sustainable Energy
SBEE	Benin Electric Power Company
SBPE	Beninese Electricity Production Company
SDG	Sustainable Development Goals

SDR	Sustainable Development Report
SE4ALL	Sustainable Energy for All
SME	Small and Medium Enterprises
SSFM	Sustainable Soil Fertility Management
TFP	Technical and Financial Partner
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs
UNA	National University of Agriculture
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-Habitat	United Nations Human Settlements Programme
UNSD	United Nations Statistics Division
WHO	World Health Organization
WIPO	World Intellectual Property Organization

Executive Summary

The *Benin Sustainable Development Report 2025*, the fourth edition produced under the partnership between the Government of Benin and the UN Sustainable Development Solutions Network (SDSN), offers an updated assessment of the country's progress toward the Sustainable Development Goals (SDGs), with a particular emphasis on the green transition, notably through agroecology and renewable energies. This edition stands out for an expanded use of performance scorecards and a set of detailed case studies, offering policymakers a clearer and more actionable view achievements and critical challenges to be tackled to faster implementation of the 2030 Agenda in Benin.

The 2025 edition of the report highlights **seven key findings**:

- **The green transition—a priority for the Government of Benin:** This commitment is evident in the Action Program 2021–2026 (PAG II) and is also reflected in the allocation of SDG Eurobond resources to promote sustainable agriculture (€18.36 million or 3.8 percent of the total allocation) and improve access to low-carbon energy (€29.3 million or 6.0 percent of the total allocation), as well as in the implementation in 2024 of a pilot mitigation and adaptation program combining renewable energy deployment with sustainable land management (MEF, 2024). The launch of a national green financing framework in September 2025 further consolidates this momentum and underscores the Government of Benin's determination to integrate climate action and environmental preservation into all areas of its development policy.
- **Benin is halfway toward achieving the SDGs:** Drawing on the SDG Index and Dashboard (Section 1.1), the report shows that Benin is halfway toward achieving the 17 SDGs, with a score of 55.5 out of 100, above the West African average (52.6 out of 100). Between 2015 and 2024, Benin has recorded one of the strongest SDG progresses in the region. The analysis of the SDG Index highlights areas of strong performance of Benin compared to the region—poverty reduction (SDG 1), education (SDG 4), decent work (SDG 8), and institutional effectiveness (SDG 16)—while also revealing persistent gaps, particularly in clean energy (SDG 7) and terrestrial ecosystems (SDG 15).
- **Rapid progress on socio-economic SDGs:** At current rates of progress, Benin is likely to meet several key SDGs by 2030. The country is on track to achieve SDGs 1, 8, 10 (Reduced Inequalities), and 13 (Climate Action), and moderate progress is seen on SDGs 5 (Gender Equality), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), and 12 (Responsible Consumption and Production). Overall, nearly 30 percent of the SDG targets measured in this report are on track to be achieved in Benin by 2030, compared to an average of around 18 percent in the West Africa region. However, the declining trend on SDG 4 (Quality Education), driven mainly by the decline in the net primary school enrollment rate and the lower completion rate of the first cycle of secondary education, warrant close attention.
- **Persistent challenges remain regarding the promotion of agriculture that is both sustainable and productive, as well as the reduction of CO_2 emissions and the protection of biodiversity:** The report's expanded focus on SDG indicators related to green transition for agriculture and energy (Section 1.2) reveals important structural challenges. Benin's agricultural productivity lags behind the regional average, underscoring the need to leverage ongoing efforts to boost the agricultural sector, including the increase of fertilizers' use, while prioritizing inputs that comply with principles of agroecology. Meanwhile, Benin performs well in sustainable nitrogen management (SDG 12), although maintaining this lead will require careful oversight as the economy expands. Electricity access (SDG 7) has improved significantly, yet clean cooking solutions and renewable energy development remain insufficient. Moreover, although per capita CO_2 emissions are low (SDG 13), the carbon intensity of electricity production and the persistence of PM2.5 air pollution (SDG 11—Sustainable Cities and Communities) are areas of concern. Biodiversity protection also shows mixed results: while forest conservation (SDG 15) is comparatively strong, marine and freshwater ecosystems (SDGs 14 and 15) remain insufficiently safeguarded. At this stage, the report does not include indicators related to Benin's adaptation to the impacts of

climate change, a major issue for the country and an integral component of SDG 13. The inclusion of such indicators is among the priorities identified for future editions of the report.

- **Areas for improvement to strengthen the investment framework and public action on sustainable development:** This year's edition introduces SDG transformations dashboards for Transformations 3 (Energy Decarbonization and Sustainable Industry) and 4 (Sustainable Food Systems, Land, Water, and Oceans)—aligned with the "Six Transformations" framework (*Sachs et al.*, 2019)—that examine policies, regulations, and investments shaping the green transition (Section 2.2). The dashboards underscore the absence of a carbon-neutrality target, the persistence of fossil-fuel subsidies, and the limited progress in energy efficiency, all of which hinder a more rapid shift to renewable energy. They also highlight the need for substantial investment in agricultural research, integrated water management, and agroecological scaling. Biodiversity protection, particularly in marine and freshwater areas, requires urgent strengthening to match the ambitions of the national transition strategy. Overall, while the existing policies signal a firm commitment to the green transition, additional measures are necessary for Benin to align with leading practices at the regional and international levels in climate, energy, and biodiversity.
- **Notable efforts from all actors to advance agroecological practices:** A distinctive feature of this edition is the inclusion of in-depth case studies on agroecology and renewable energy (Parts 3 and 4), which illustrate how diverse stakeholders—public institutions, private actors, civil society, and international partners—are driving transformative change on the ground. Agroecological practices, long present in Benin, gained institutional traction with the gradual integration of initiatives promoting organic farming and agricultural diversification within the Government Action Programs (PAG). Today, the Government is expanding these efforts, investing in projects aligned with agroecological principles and supporting actors that champion sustainable farming models. In the renewable energy sector, the Government has reinforced institutional frameworks and introduced incentives to stimulate investment, while also implementing numerous programs and projects aimed at expanding electricity access through clean energy solutions.
- **To consolidate Benin's progress, the report emphasizes the importance of continuing to act along three mutually reinforcing pillars:** providing technical, material, and financial support to scale agroecology and renewable energies; strengthening regulatory and institutional frameworks while raising awareness among economic actors and citizens; and investing in human capital, research, and innovation to ensure long-term ownership and sustainability of green transition initiatives.

After the convening of COP30 in November 2025, this year's edition underscores the strong commitment of the Government of Benin to advancing the SDGs and deepening the green transition, despite the persistent challenges that remain to be addressed to reach these objectives. Building on the establishment of its green financing framework, this a key moment for Benin to reaffirm its priorities, set new ambitious targets, and mobilize domestic and international technical and financial partners to accelerate the implementation of its green transition and its progress toward the SDGs. Beyond this statistical report and the case studies presented in it, SDSN is also collaborating with Beninese authorities and the national scientific community to develop quantified pathways for the sustainable management of soils and agricultural systems, based on the FABLE model. The results of this work are expected in the first half of 2026.

1

Index and Dashboard

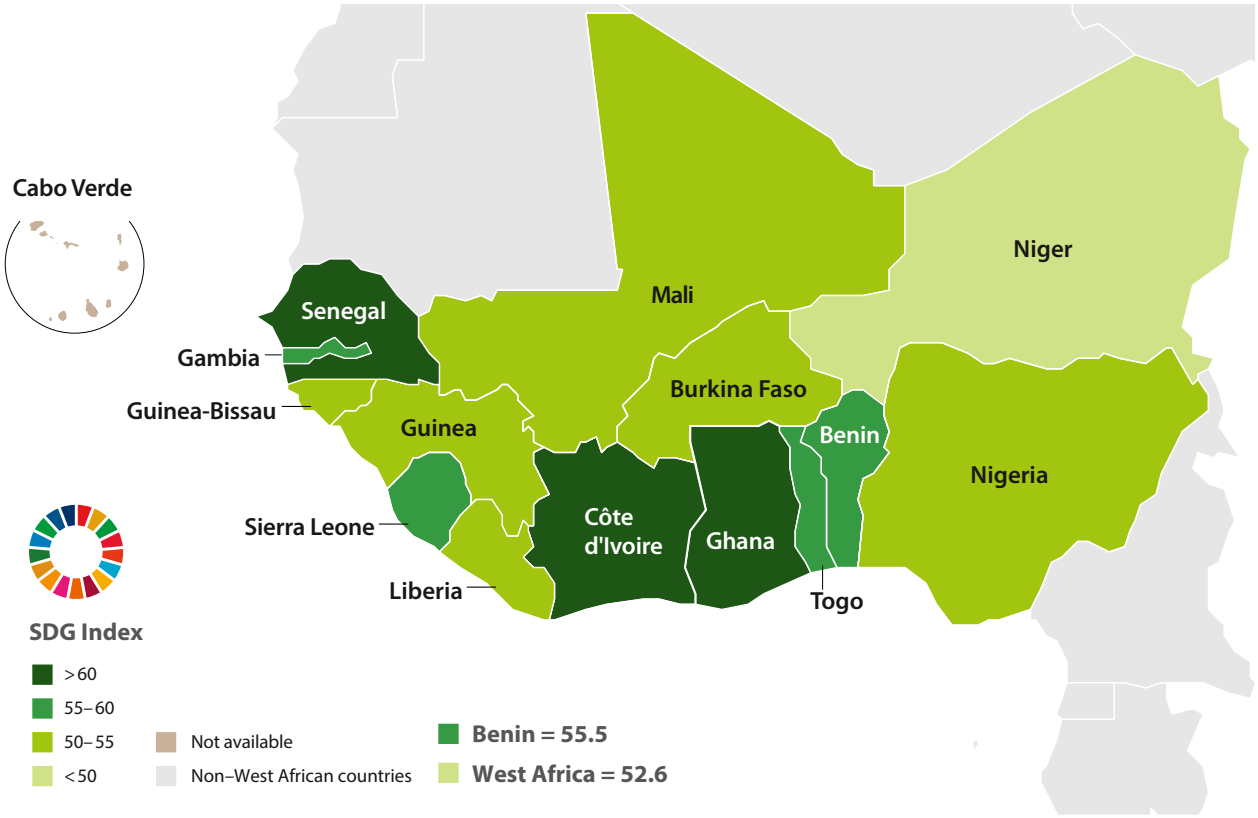
PART 1.
Index and Dashboard

1.1 SDG Index and Dashboard for Benin and West African Countries

The SDG Index and Dashboard are based on a set of international indicators from the global edition of the Sustainable Development Report (SDR) (Sachs et al., 2025) for which corresponding data are available for Benin and the other West African countries. Benin is compared with its neighbors to contextualize its performance and trends in achieving the Sustainable Development Goals (SDGs). To ensure the relevance of the analysis, indicators from the Global SDG Index that were not meaningful for Benin—or for which data coverage was insufficient—have been excluded. This includes indicators primarily relevant to developed countries and to members of the Organisation for Economic Co-operation and Development (OECD), such as certain measures of international externalities ("spillovers").

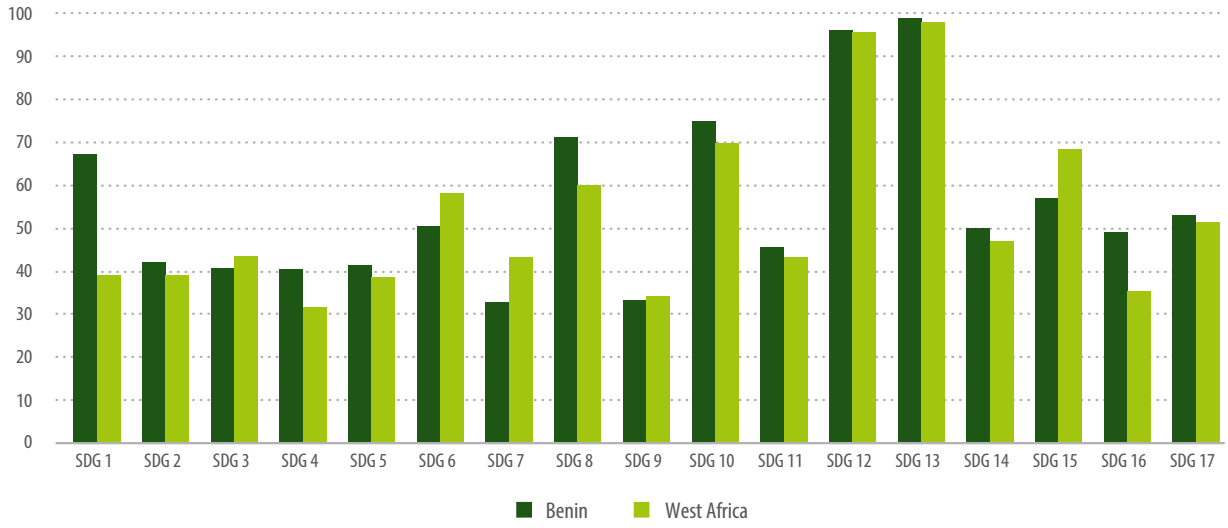
The SDG index for Benin and West African countries reflects the reality of the region. Among the 94 indicators, the index includes 11 additional indicators to reflect priorities specific to the country and the region of interest. It is important to underline that the results of this fourth edition of the Benin SDR are not comparable with those of previous editions, nor with those of the global SDR. A detailed explanation of the methodology, along with the list of indicators used, is provided in Annex A.2.

Figure 1. SDG Index score for West African States, 2024



Note: Cabo Verde was not included in the SDG index score comparison due to insufficient data availability (22.6 percent of data missing across all indicators). West Africa's average score is weighted by population.
Source: Authors' analysis.

Figure 2. **Benin's and West Africa's SDG index performance, score from 0 (worst) to 100 (best), 2024**



Source: Authors' analysis.

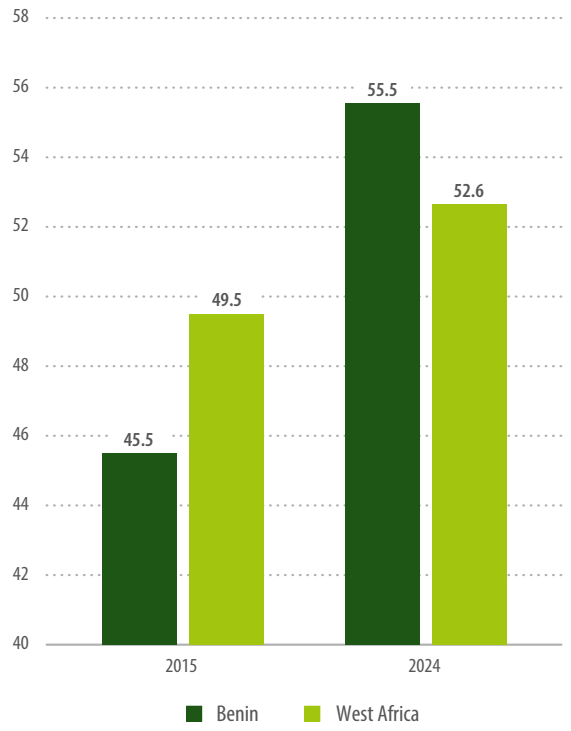
1.1.1 SDG Index Score

Benin scores 55.5 out of 100 on the 17 SDGs (Figure 1). This score places Benin above the average of the West African region (52.6). Benin outperforms seven countries, while only Côte d'Ivoire, Senegal, and Ghana, have SDG Index scores above 60.0.

Overall, Benin was able to outperform West Africa in twelve of the 17 Goals. SDGs 1 (No Poverty), 4 (Quality Education), 8 (Decent Work and Economic Growth), and 16 (Peace, Justice and Strong Institutions) held the largest advantage of Benin compared to West Africa (Figure 2). Yet, the West African region outperformed Benin on SDGs 3 (Good Health and Well-being), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 9 (Industry, Innovation and Infrastructure), and 15 (Life on Land), with major relative gaps remaining on SDGs 7 and 15 (Figure 2).

The evolution of Benin's SDG index score highlights the country's efforts and commitments toward achieving the SDGs since the adoption of the 2030 Agenda. Over the past ten years, Benin's SDG index score has risen by an average of one point per year, against an average increase of only 0.31 points per year in West Africa (Figure 3).

Figure 3. Benin's and West Africa's SDG Index progress, 2015–2024



Source: Authors' analysis.

As a result, Benin has bridged a considerable gap and outpaced the region's average performance. As shown in Table 1, while in 2024 Benin was 2.9 index points ahead of West Africa's average, in 2015 the country was 4.0 index score points behind the regional average and among the worst performers. Over the 2015–2024 period, Benin showed the second-best progress in SDG Index score among West African countries, with a 10.1-point increase, compared to a modest 3.1-point average increase in the subregion (Table 1). Only Guinea-Bissau achieved a higher progress over the past ten years (+10.7 points) (Table 1).

Looking at the reasons behind this remarkable progress, several factors have contributed to Benin's SDG index score evolution (Figure 4).

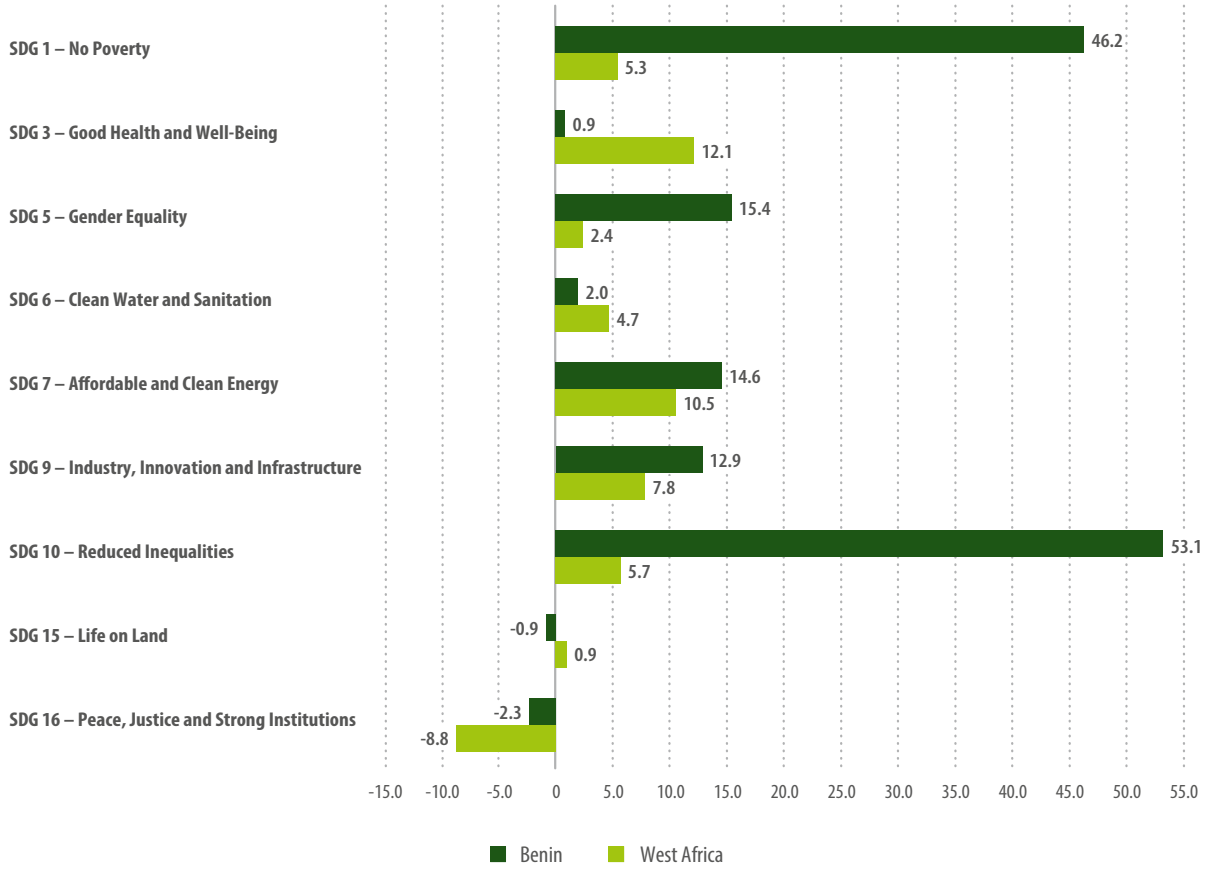
Over the 2015–2024 period, SDGs 1 and 10 showed impressive progress of 46.2 and 53.1 index points, respectively (Figure 4). The evolution of SDG 1 can be explained by a sharp reduction in the proportion of the population living below international poverty thresholds. Between 2015 and 2024, the share of the population living below the $2.15-a-day poverty line declined from 42.3 percent to 9.6 percent[1], while the percentage of

Table 1. SDG Index score progress, 2015–2024

Country	2015	2024	Progress (Index points)
Benin	**45.5**	**55.5**	**10.1**
Burkina Faso	49.1	51.2	2.1
Cote d'Ivoire	54.0	62.3	8.3
Gambia	53.6	55.7	2.1
Ghana	58.2	60.5	2.3
Guinea	47.8	53.7	5.9
Guinea-Bissau	41.8	52.5	10.7
Liberia	48.1	51.0	2.8
Mali	52.4	53.2	0.8
Niger	41.7	47.3	5.6
Nigeria	49.8	50.7	0.9
Senegal	54.2	61.2	6.9
Sierra Leone	49.7	55.8	6.1
Togo	49.6	57.9	8.3
West Africa	**49.5**	**52.6**	**3.1**

Source: Authors' analysis.

Figure 4. Progress in scores for a selected set of SDGs, in Index points: Benin vs. West Africa, 2015–2024



Source: Authors' analysis.
Note: The SDGs included in this graph were selected based on the following criteria: (i) the top 5 Benin best progressing SDGs – SDGs 1, 5, 7, 9 and 10; (ii) the ones Benin is most outperformed in terms of progress – SDGs 3 and 6; (iii) the ones Benin receded –SDGs15 and 16. The progress is calculated by subtracting the score of 2024 by the one of 2015.

people living below the $3.65 threshold decreased from 61.5 percent to 29.5 percent[2] over the same period. For SDG 10, Benin also recorded a significant reduction in socio-economic inequalities, measured by the Gini coefficient and Palma ratio. The Gini coefficient fell by 27.7 percent[3] from 2015 to 2021, and the Palma ratio decreased by 52.1 percent[4] during the same period. Among the key Government initiatives contributing to this progress is the Human Capital Strengthening Insurance Program (ARCH[5]), which focuses on providing access to health insurance, training, microcredit, and pension coverage, especially for informal sector workers and the extremely poor (Toure et al., 2023).

SDGs 7 and 9 showed similar levels of progress, with Benin outperforming the West African average by 4.1 and 5.1 index points, respectively (Figure 4). Most of the performance on SDG 7 is linked to major improvements since 2015 in access to electricity, which increased on average by 9.7 percent per year between 2015 and 2022[6], as well as in consumer affordability of electricity, which rose on average by 6.6 percent per year between 2015 and 2023[7]. Progress on SDG 9 can be attributed to three main indicators that improved sharply between 2015 and 2023: the share of the population using the internet (+14.0 percent on average per year[8]); mobile broadband subscriptions (+36.9 percent on average per year[9]); and total patent applications by applicant's origin (+18.9 percent on average per year[10]).

SDG 5 (Gender Equality) recorded the third-largest advance compared to West Africa over the analysis period (Figure 4). The dynamics of this Goal reflect notable progress toward a more gender-equal society in Benin. Efforts to promote gender equality are visible in many areas, including parliament, where the share of women rose from only 8.4 percent in 2015 to 26.6 percent[11] in 2024. The use of modern family planning methods also increased by 44.1 percent[12] over the same period, reflecting an improvement in women's decision-making power over sexual and reproductive health and rights.

Despite the significant advancements mentioned above, progress on SDGs 3 and 6 has been smaller in Benin than in the subregion (Figure 4). West Africa, with an increase of 12.1 index points in Goal 3 ("Good Health and Well-being"), exceeded Benin's progress on SDG 3 by 11.2 points over 2015–2024 (Figure 4). Countries such as Côte d'Ivoire, Senegal, The Gambia, and Burkina Faso played a key role in raising the regional average for SDG 3, notably by improving their maternal mortality ratio (per 100,000 live births), which fell by 31.2 percent between 2015 and 2023, compared to 14.5 percent[13] in Benin over the same period. The coverage rate of preventive chemotherapy for neglected tropical diseases was also much higher in the subregion in 2023, averaging 60.0 percent[14], compared to 20.6 percent in Benin, which experienced a significant decrease of 73.2 percentage points between 2015 and 2023.

The 2021–2026 Government Action Program[15] (GAP II) in Benin aims to address these gaps by strengthening the health system's infrastructure. The construction of new university hospitals, such as the Abomey-Calavi Referral University Hospital, and the acquisition of ambulances seek to improve emergency services and the quality of care. Moreover, structural reforms—such as the creation of the National Primary Health Care Agency and the Health Sector Regulatory Authority—were designed to strengthen governance and ensure better standards of care (Présidence de la République du Bénin, 2021).

Between 2015 and 2024, progress on SDG 6 in the subregion was 2.7 points higher than in Benin (Figure 4). This gap is largely explained by Benin's limited progress in access to drinking water, which increased by only 2.4 percent between 2015 and 2022, compared to 12.0 percent[16] in the subregion. Although Benin recorded a 47.7 percent[17] decline in scarce water consumption embodied in imports, the subregion experienced an even greater average decline (53.1 percent) between 2015 and 2024. Nevertheless, the water sector remains a Government priority, as Benin seeks to achieve universal access to improved drinking water. Implementing specific policy measures for SDG 6—such as the National Action Plan for Integrated Water Resources Management (PANGIRE[18]), its flagship projects, and the creation of the National Rural Drinking Water Supply Agency (ANAEP-MR[19])—should enable more substantial progress in the coming years (Massa et al., 2024).

Finally, Benin experienced a decline in scores for SDGs 15 and 16 (Figure 4). SDG 15 decreased by 0.9 index points since 2015 (Figure 4) and, in 2024, showed the largest gap with the West African average among all SDGs (Figure 2). The main challenge for this Goal arises from a slight increase in permanent deforestation (as percent of forest area, three-year average), while other indicators remained stable. Although Benin is among the countries with the lowest permanent deforestation area (after Burkina Faso, Niger, and Mali), it rose from 0.19 percent in 2017 to 0.24 percent[20] in 2023. Strategic Priority 7 of GAP II, which aims to *"strengthen the balanced and sustainable development of the national territory,"* includes projects and reforms to manage the environment, climate change, risks, and natural disasters (Présidence de la République du Bénin, 2021), potentially helping preserve natural capital, including forests. One example is the biodiversity conservation and sustainable management of classified and communal forests projects.

Regarding SDG 16, Benin recorded a slightly larger decline of 2.3 points[21] between 2015 and 2024 (Figure 4) but still maintains a significant advantage of +13.7 points over the regional average in 2024 (Figure 2). Achieving SDG 16 requires continued Government attention due to potential structural and functional fragility within national institutions. The Government of Benin continues efforts to strengthen democracy, the rule of law, and good governance—particularly through the first pillar of GAP II[22] (Présidence de la République du Bénin, 2021).

Figure 5. SDG Dashboard for Benin and West African States

Source: Authors' analysis.

1.1.2 Dashboard: SDG Performance and Trends

The SDG Dashboard of the Benin SDR provides a visualization of performance and trends for all 17 SDGs among the West African countries (Figure 5). The performance status (represented by traffic-light dots) offers a snapshot of each Goal's current state, indicating whether it meets the threshold for achievement, while the trends (represented by traffic-light arrows) assess whether the goal can be achieved by 2030 based on past performance. A detailed explanation of the SDG Dashboard methodology can be found in Annex A.2.

Although Benin still faces major challenges in achieving the SDGs (red dots in the dashboard—Figure 5), overall Benin is performing better than the West African average, with fewer challenges than those faced by the rest of the region. Moreover, by maintaining its performance alongside its economic and social development, Benin could achieve SDGs 12 (Responsible Consumption and Production) and 13 (Climate Action).

Examining the trends provides an even better appreciation of the efforts that Benin has made to achieve the SDGs. No other country in the subregion has as many positive trends on the SDGs as Benin (green arrows in the dashboard—Figure 5). Benin's efforts toward the 2030 Agenda could lead to the achievement of SDGs 1, 8, 10, and 13.

Considering the current trend, only Benin and Cabo Verde are likely to achieve SDG 1, while other countries in the subregion are experiencing stagnation. Looking at both performance status and trend, Benin performs better than West Africa on SDG 8, with The Gambia being the only other country of the region on track to achieve the Goal if current progress is sustained until 2030. Key highlights of SDG 8 trend in Benin include the rise in the five-year average gross domestic product (GDP) per capita growth rate from 1.6 percent to 3.4 percent[23] over the 2015–2023 period, and the increase in the number of bank accounts among adults, which reached 48.6percent[24] in 2021, up from 16.6 percent in 2014.

Benin is also on track for SDG 10, alongside Côte d'Ivoire. This Goal has the fewest available trends in the subregion due to limited data for the Gini coefficient and Palma ratio, which underscores Benin's efforts to improve data collection systems. As mentioned in sub-section 1.1.1, both SDG 10 indicators (Gini coefficient and Palma ratio) showed a marked improvement in Benin between 2015 and 2021.

As for SDG 13 (Climate Action), which has maintained an "achieved" status since 2015, carbon dioxide (CO_2) emissions from fossil fuel combustion and cement production decreased by 16.6 percent[25] between 2015 and 2023 in Benin. If the current trend continues, SDG 13 is expected to have the most favorable outlook by 2030. In comparison, half of the subregion is stagnating, as is the case in Ghana and Senegal.

Moderate progress is observed on SDGs 5, 6, 7, and 12 in Benin, which performs slightly better than the subregional average. As previously highlighted, progress on SDG 5 reflects improvements in women's empowerment, while SDG 7 progress has been driven by recent gains in access to and affordability of electricity (see Sections 1.2 and 3.2). Similarly, despite positive trends in scarce water consumption embodied in imports (2015–2024) and in freshwater withdrawal (2015–2022), both access to drinking water and access to sanitation show stagnant trends[26]. Finally, Benin's performance on SDG 12 aligns with the regional pattern. However, despite its current positive performance status and the moderate upward trend, SDG 12 requires continued attention to avoid a potential decline before 2030.

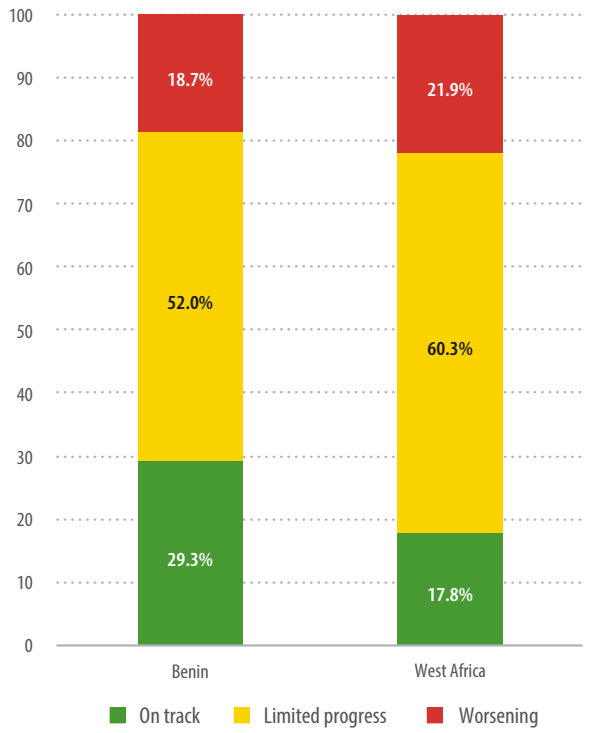
SDGs 2 (Zero Hunger), 3, 9, 11 (Sustainable Cities and Communities), 14 (Life Below Water), 16, and 17 (Partnerships for the Goals) represent Benin's biggest challenges, showing stagnation in performance (Figure 5). Significant efforts are still needed to improve outcomes and trends for these Goals. This is particularly the case for SDG 2, where the only positive outlook is fertilizer consumption, which increased from 0.1 kg per hectare of arable land in 2015 to 36.8 kg[27] in 2022 (Section 1.2). This progress reflects the impact of reforms and projects aimed at strengthening the agricultural sector, such as measures to regulate, manage, and facilitate the access to inputs under GAP I and GAP II (Présidence de la République du Bénin, 2021).

Benin is also lagging behind on SDG 11, for which results remain mixed. While the number of people living in slums decreased slightly (-1.0 percent per year on average[28]) between 2015 and 2022, access to piped water sources also declined by 1.7 percent[29] on average per year over the same period. However, the organization of the National Forum on the SDGs (FNODD)[30] and the preparation of Voluntary Local Reviews (VLRs) demonstrate efforts made to accelerate the implementation of the SDGs at the municipal level, indicating positive prospects for future progress on the 2030 Agenda and particularly on SDG 11. SDG 14 has shown very little evolution since 2015. The only indicator on track is the share of fish caught by trawling or dredging, which decreased by 12.2 percent per year on average[31] between 2015 and 2019. In contrast, the Ocean Health Index has remained stagnant at approximately 13.1 out of 100[32] since 2015, indicating no progress toward the target.

Finally, the trends identify SDG 4 (Quality Education) as Benin's greatest challenge among all 17 SDGs (Figure 5). A similar situation is observed in Ghana, Liberia, Mali, and Niger. The negative trends in indicators requiring the immediate attention of policymakers include the net primary enrolment rate, which declined from 97.0 percent in 2016 to 90.4 percent[33] in 2022, and the lower-secondary completion rate, which fell by 34.0 percent[34] between 2015 and 2022. The latter decline may partly be explained by rising repetition rates leading to school dropouts (CIDE, 2022). Another contributing factor is migration between municipalities and neighboring countries, which artificially inflates drop-out rates, as pupils are not classified as either promoted or repeaters (CIDE, 2022). In the coming years, these trends could be mitigated through the construction of new classrooms and increased teacher training, as planned under the *"Education"* component (Priority 5) of GAP II. Several projects are underway to improve the quality of general, technical, and vocational secondary education through targeted recruitment and training of qualified teachers, as well as the use of the *"EducMaster"* digital teaching platform, which could help reduce drop-out rates and improve completion rates.

The SDG target achievement-status metric shows an encouraging overall performance for Benin (Figure 6). The country stands out in terms of on-track indicators, reaching 29.3 percent of measurable indicators, compared

Figure 6. SDG targets' achievement status (%), Benin vs. West Africa, 2024



Note: West Africa's average is weighted by population. 75 indicators for Benin and 73 indicators for the weighted West Africa's average are included in the analysis.
Source: Authors' analysis.

with an average of 17.8 percent in the subregion (Figure 6). However, limited progress is observed for 52.0 percent of measurable SDG targets, indicating that most challenges persist. Lastly, negative trends account for 18.7 percent of Benin's targets compared with 21.9 percent in the subregion (Figure 6). These negative trends require priority Government action to accelerate progress toward achieving the SDGs in Benin.

1.2 SDG indicators: Progress of the Ecological Transition in the Agricultural and Energy Sectors

Alongside the adoption of the 2030 Agenda, Benin also ratified the Paris Climate Agreement in 2016. Since then, climate action and the green transition have been priorities for the Government of Benin. Achieving the green transition can have direct effects on nearly all SDGs, with synergies between climate action and 80 percent of SDG targets (Sachs et al., 2019; UN DESA and UNFCCC, 2023).

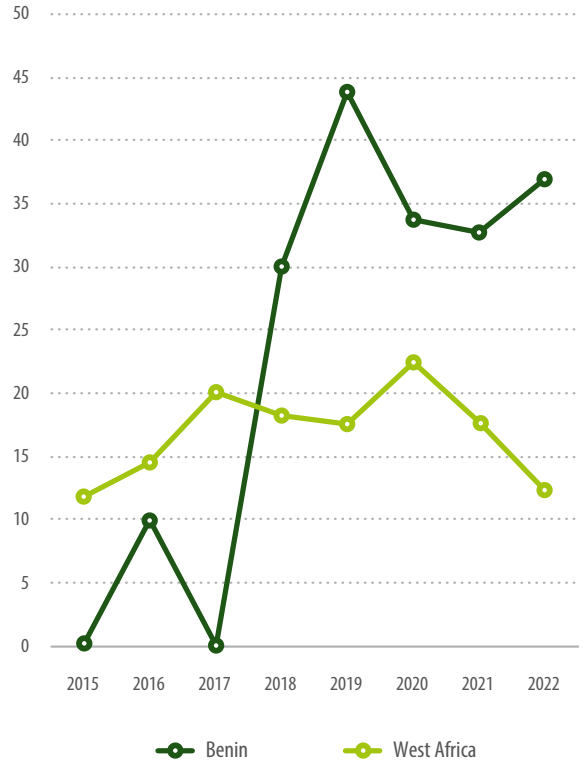
The green transition in the agriculture and energy sectors can have a mutually reinforcing impact on SDGs 2 and 7. Agri-food chains account for around 30.0 percent of global energy consumption, primarily in the form of fossil fuels, with primary agricultural production representing about a quarter of this consumption (IRENA and FAO, 2021). Moreover, energy accounts for approximately 33.0 percent of total greenhouse gas (GHG) emissions generated by food systems (IRENA and FAO, 2021). Consequently, the use of renewable energy (RE) in agriculture can make a substantial contribution to climate action. Similarly, agriculture can also play an active role in the energy transition through modern bioenergy production derived from energy crops or food residues (IRENA and FAO, 2021).

The green transition also generates substantial co-benefits that advance multiple SDGs. For instance, it can foster more sustainable consumption and production systems (SDG 12), which in turn contribute to reducing GHG emissions (SDG 13) (UN DESA and UNFCCC, 2023). A well-documented outcome is improved air quality (SDGs 3 and 11), leading to major public health benefits (SDG 3) (UN DESA and UNFCCC, 2023). Other benefits include enhanced biodiversity protection, improved soil quality, and the prevention of land degradation and deforestation (SDG 15) (UN DESA and UNFCCC, 2023). Finally, the green transition can also strengthen economic performance and job creation (SDG 8) (UN DESA and UNFCCC, 2023).

However, it is essential that the green transition be implemented thoughtfully, with due consideration for potential trade-offs, particularly in relation to socio-economic SDGs. For example, the shift toward a low-carbon and resource-efficient economy may entail both employment gains and losses, underscoring the need for adequate social protection (SDG 1) and education and training policies (SDG 4) (ILO, 2019).

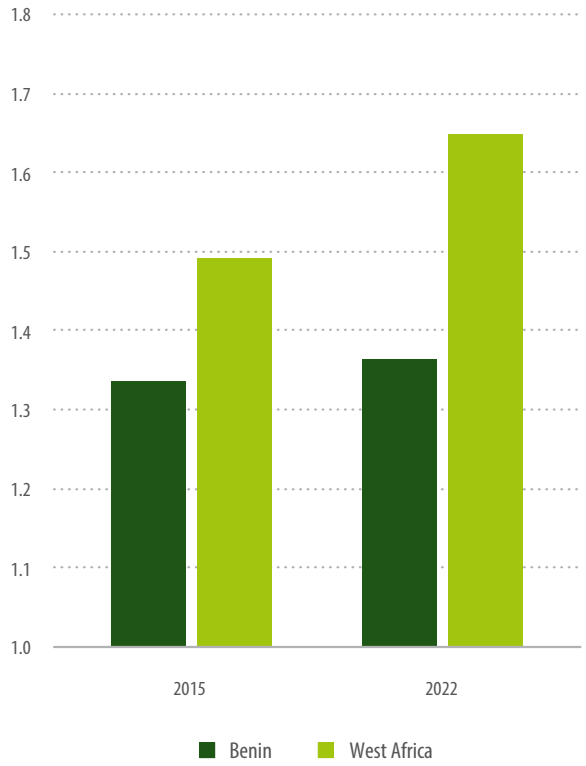
To align its development trajectory with the sustainability goals it has endorsed, Benin faces the challenge of reconciling economic growth with environmental protection and climate action, particularly by advancing its green transition in agriculture and energy.

Figure 7. Fertilizer consumption (kg per hectare of arable land), Benin vs. West Africa 2015–2022



Source: Authors' analysis based on data from the Food and Agriculture Organization (FAO).

Figure 8. Cereal yield (metric tons per hectare of harvested land), Benin vs. West Africa, 2015–2022

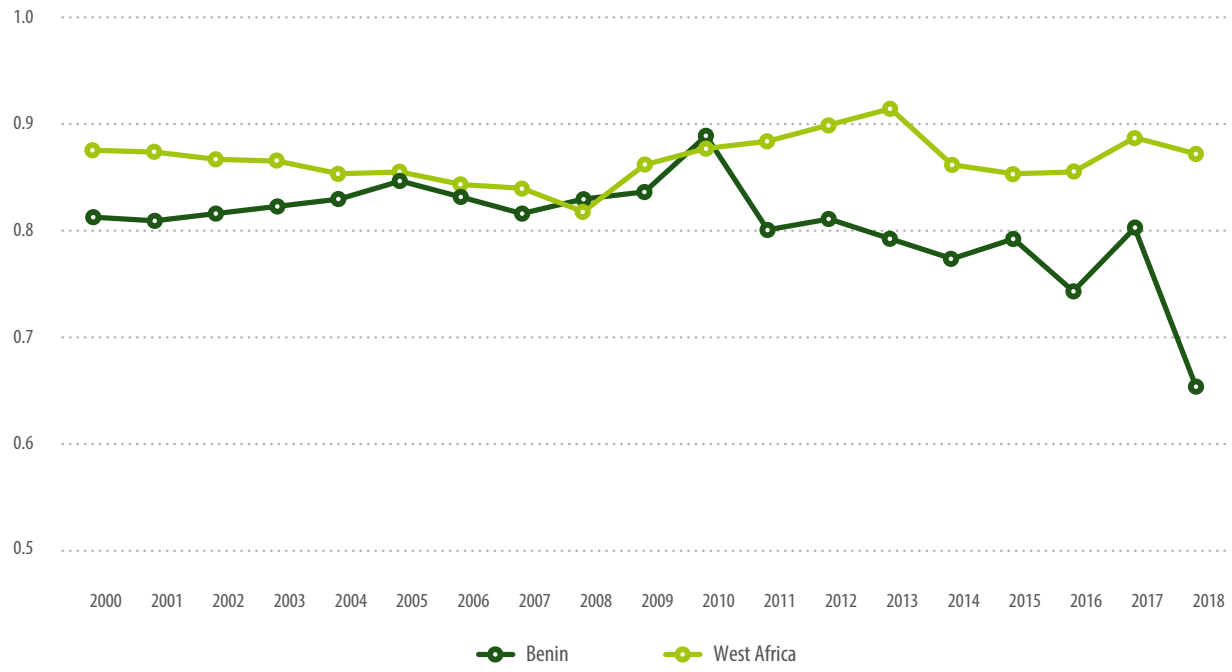


Source: Author's analysis based on data from the FAO.

Between 2015 and 2022, Benin experienced a notable increase in fertilizer use (Figure 7) but did not manage to close the cereal yield gap with the subregion (Figure 8). Indeed, Benin recorded a 1.9 percent increase in cereal yield, compared to a 10.5 percent increase in the subregion (Figure 8). In addition to the other policy levers implemented by the Government to boost agricultural productivity, Benin could further increase fertilizer use, given that it remains below the minimum level set by the Abuja Declaration on Fertilizers[35]. However, rather than merely expanding the use of synthetic fertilizers, Benin has the opportunity to develop and promote the use of organic fertilizers, in line with agroecological principles (Part 3). The Government is already seizing this opportunity by facilitating access to agricultural inputs, including fertilizers, through the projects and reforms set out under GAP II.

On the other hand, Benin is already on a strong trajectory in sustainable nitrogen management. Indeed, between 2010 and 2018, the country improved its score on the Sustainable Nitrogen Management Index compared to the West African average (Figure 9). Benin also remains on a promising path regarding production-based emissions, with only 11.7 kg per capita emitted in 2024[36]. However, it is crucial for the country to maintain this level of performance and avoid a rise in nitrogen emissions, especially as its economy continues to grow, notably in agriculture and more broadly in the primary sector.

Figure 9. Sustainable Nitrogen Management Index, Benin vs. West Africa, 2000–2018

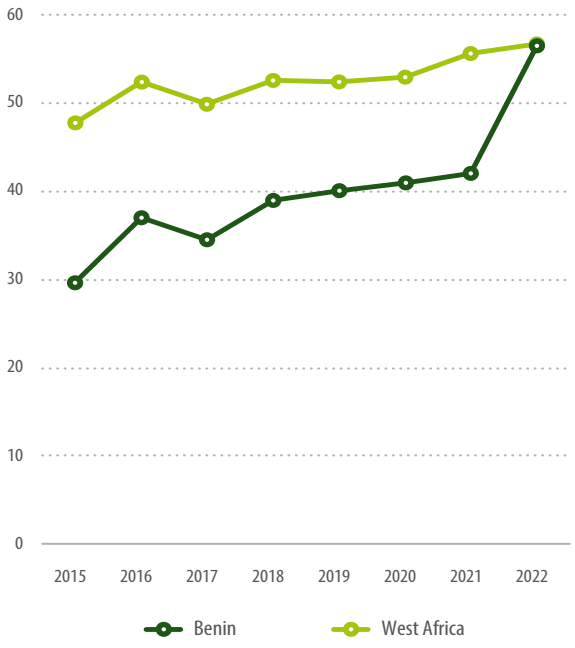


Note: The Sustainable Nitrogen Management Index (SNMI) is a one-dimensional ranking score that combines nitrogen use efficiency and land use efficiency (crop yield) in crop production. The score is scaled from 0 (best) to 1.41 (worst).
Source: Authors' analysis based on data from Zhang, X., & Davidson, E. (2019).

Access to energy remains low in Benin and the subregion. However, since 2015, the share of the population with access to electricity has steadily increased across West Africa, including in Benin (Figure 10). Between 2015 and 2022, Benin made rapid progress and closed the gap with the regional average, with access to electricity rising from 29.06 percent to 56.5 percent of the population, a level equivalent to the West African average of 56.7 percent (Figure 10). This surge is the result of the efforts initiated by the Government of Benin with GAP I (2016–2021) and extended with GAP II (2021–2026), with the objective of making energy access, and more particularly electricity, a national priority.

In 2023, both Benin and the subregion recorded low levels of CO_2 emissions from fossil fuel combustion and cement production, with per capita emissions of 0.41 and 0.48 metric tons of CO_2[37], respectively. These low levels of per capita emissions enabled Benin and most countries in the subregion to almost meet the zero-carbon emission target set for this indicator. Yet this achievement is not reflected in CO_2 emissions from fuel combustion per unit of electricity output (Figure 11). Since 2015, Benin has made notable progress in reducing CO_2 emissions from

Figure 10. Population with access to electricity (%), Benin vs. West Africa, 2015–2022



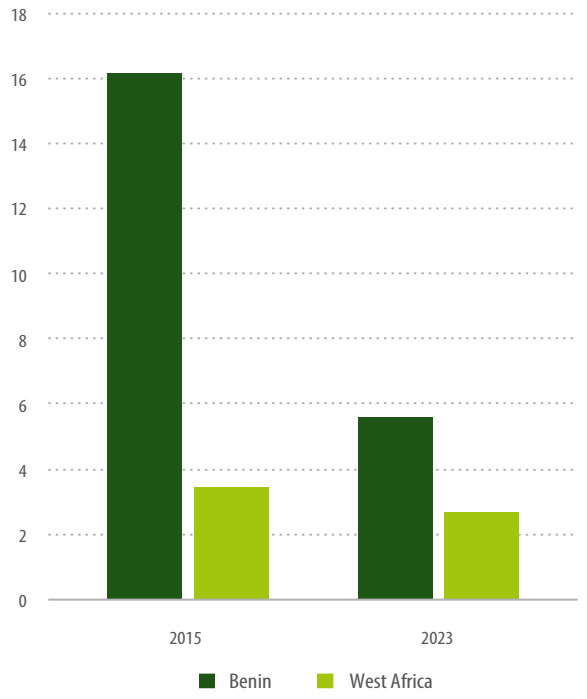
Source: Authors' analysis based on data from International Energy Agency (IEA), International Renewable Energy Agency (IRENA), UNSD, World Bank & WHO.

fuel combustion per unit of electricity output, dropping from 16.2 $MtCO_2$ per terawatt-hour (TWh) to 5.6 $MtCO_2$ in 2023 (Figure 11). Despite this improvement, Benin's emissions remain significantly above the subregional average of 2.7 $MtCO_2$ in 2023 (Figure 12), underscoring the need for further efforts toward carbon neutrality and the importance for the Government of Benin of promoting the decarbonization of electricity generation.

Despite low production-related air pollution[38] and low CO_2 emissions from fossil fuel combustion and cement production in Benin (Figure 11) during 2023, the country recorded PM2.5 concentrations significantly higher than the optimum[39] set by Sachs et al. (2025) in the same year (Figure 12). This contrast suggests that, in addition to environmental conditions, fossil fuel use in transportation and household activities, such as cooking, is also a significant contributor to PM2.5 pollution.

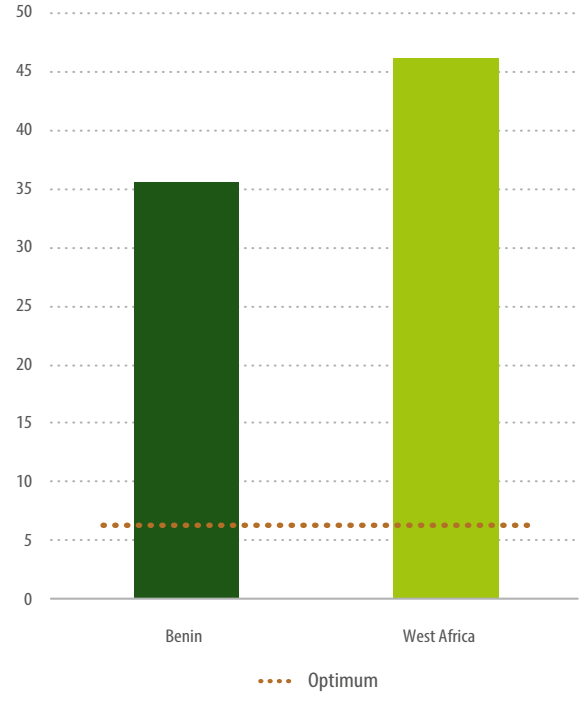
Unfortunately, progress on access to clean fuels and technologies for cooking in Benin has been less promising. Indeed, between 2015 and 2022, Benin experienced minimal progress, with a 0.7 percentage point (p.p.) increase compared to a 13.2 p.p. increase in the subregion over the same period (Figure 13). Nonetheless, the Government is making efforts to improve access to clean cooking fuels and technologies, notably through the implementation of its energy sector-focused project (PANA Énergie[40]) from the National Adaptation Program of Action (NAP) (MEF, 2022). The scientific community is also contributing through research and development (R&D) initiatives, providing local solutions such as the GUEV Cooker[41].

Figure 11. CO_2 emissions from fuel combustion per total electricity output ($MtCO_2$/TWh), Benin vs. West Africa, 2015–2023



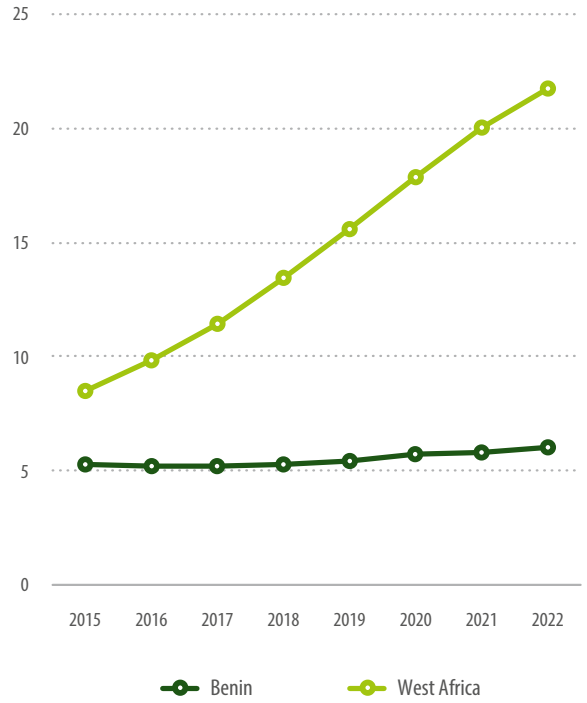
Source: Authors' analysis based on data from the Global Carbon Project & IEA.

Figure 12. Annual mean concentration of PM2.5 (µg/m^3), Benin vs. West Africa, 2023



Source: Shen, S., Li, C., van Donkelaar, A., Jacobs, N., Wang, C., Martin, R. V. (2024).

Figure 13. Population with access to clean fuels and technology for cooking (%), Benin vs. West Africa, 2015–2022

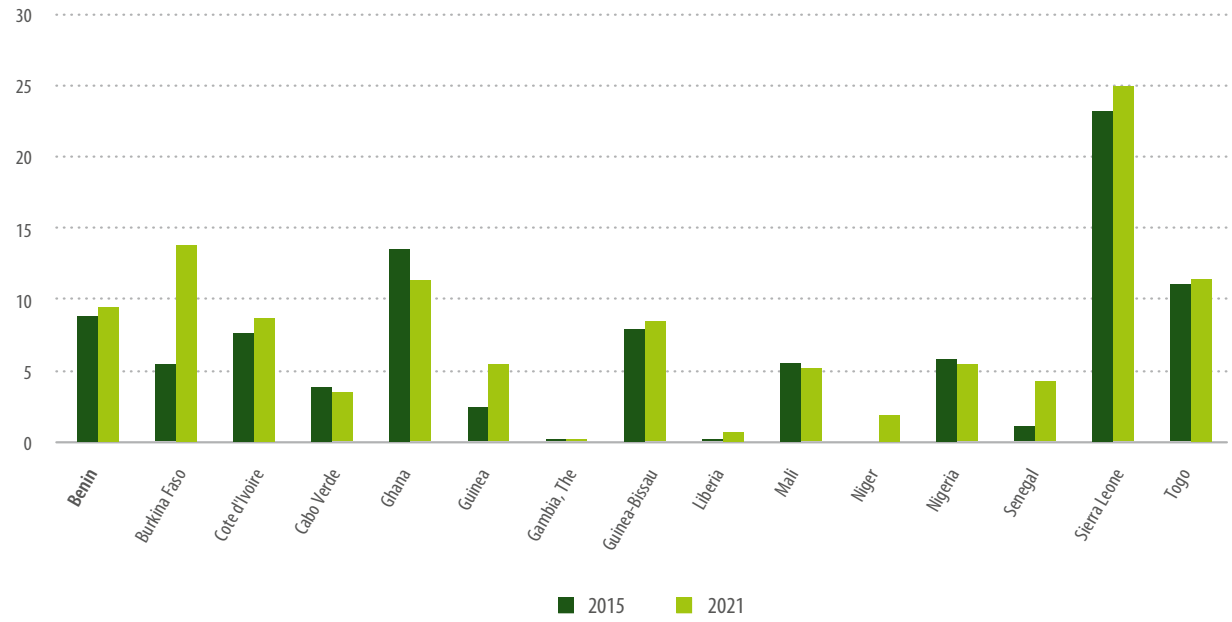


Source: Authors' analysis based on data from IEA, IRENA, UNSD, World Bank & WHO.

Benin needs to accelerate its green transition in the energy sector. Although Benin outperforms many countries in the subregion in terms of renewable energy's share in total energy consumption, it remains far from achieving the levels of the region's best performers (Figure 15). Between 2015 and 2021, Benin made modest progress, with an increase of 0.7 p.p. in the share of renewable energy in total energy consumption. In contrast, countries such as Burkina Faso, which was below Benin's level in 2015, achieved a significantly larger increase of 8.4 p.p., thus surpassing Benin both in terms of progress and share of renewable energy (Figure 15). In 2021, renewables accounted for 9.4 percent of Benin's total energy consumption (Figure 15), far below the global benchmark of 55.0 percent set by the 2025 Sustainable Development Report (Sachs et al., 2025).

Achieving the green transition also requires the protection of key biodiversity areas, including forests, which serve as carbon sinks and contribute to the mitigation of CO_2 emissions (IPCC, 2023). The Government of Benin has already made significant efforts to prevent permanent deforestation and to protect key biodiversity areas. As a result of these efforts, permanent deforestation in Benin accounted for only 0.24 percent of the forest cover from 2021 to 2023, which is below the West African

Figure 14. RE share in total final energy consumption (%), 2015–2021



Source: Authors' analysis based on data from IEA, IRENA, UNSD, World Bank, WHO.

average of 0.6 percent[42]. Nevertheless, in 2023, while 66.7 percent of the terrestrial sites important to biodiversity were protected in Benin, none of the freshwater or marine sites important to biodiversity have yet received protection. This contrasts with the subregional averages of 73.1 percent for terrestrial sites, 70.8 percent for freshwater sites, and 18.2 percent for marine sites important to biodiversity[43]. Therefore, as previously highlighted in section 1.1.1, the Government should continue its efforts to prevent permanent deforestation and, more importantly, to protect biodiversity areas.

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Notes Part 1

1 Estimations from World Data Lab.
2 Ibid.
3 Authors' calculations based on data from World Bank.
4 Authors' calculations based on data from OECD & United Nations Development Programme (UNDP).
5 In French: Programme d'Assurance Renforcement du Capital Humain.
6 Authors' calculations based on data from IEA, IRENA, United Nations Statistics Division (UNSD), World Bank, World Health Organization (WHO).
7 Authors' calculations based on data from ESMAP (World Bank).
8 Authors' calculations based on data from International Telecommunication Union (ITU).
9 Ibid.
10 Authors' calculations based on data from World Intellectual Property Organization (WIPO).
11 Authors' calculations based on data from IPU.
12 Authors' calculations based on data from UN DESA.
13 Authors' calculations based on data from WHO.
14 Ibid.
15 In French: Programme d'Action du Gouvernement (PAG).
16 Authors' calculations based on data from WHO and UNICEF Joint Monitoring Programme.
17 Authors' calculations based on data from UNEP.
18 In French: Plan d'action national pour la gestion intégrée des ressources en eau.
19 In French: Agence nationale d'approvisionnement en eau potable en milieu rural.
20 Authors' calculations based on data from Curtis et al. (2018).
21 Authors' calculations.
22 Strengthen democracy, the rule of law, and good governance.
23 Authors' calculations based on data from World Bank.
24 Authors' calculations based on data from the World Bank Global Findex Database.
25 Authors' calculations based on data from Global Carbon Project.
26 Authors' analysis based on data from WHO and UNICEF.
27 Data from the Food and Agriculture Organization (FAO).
28 Authors' calculations based on data from UN-HABITAT.
29 Authors' calculations based on data from WHO and UNICEF.
30 The first edition of the forum was held from May 30 to June 1, 2023. The second edition is scheduled for early 2026. During this forum, municipalities prepare and submit their VLRs. SDSN Benin supports the municipalities of Aplahoué, Bohicon, Lokossa and Zè in producing their VLRs, which will be published in 2026 under the coordination of the Directorate-General for the Coordination and Monitoring of the Sustainable Development Goals (DGCS-ODD).
31 Authors' calculations based on data from Sea Around Us.
32 Data from the Ocean Health Index.
33 Authors' calculations based on data from UNESCO.
34 Ibid.
35 Resolution 1 of the Declaration sets fertilizer consumption at 50 kg per hectare of arable land (AFAP, 2023).
36 Data from UNEP's SCP-HAT database.
37 Authors' analysis based on data from the Global Carbon Project.
38 Expressed in healthy years of life lost each year due to air pollution from domestic production activities. In Benin, this is estimated at 0.35 years, way below the threshold defined at 2 years which is considered as an achieved target in the global SDR (Sachs et al., 2025).
39 Sachs et al. (2025) set the optimum for annual mean concentration of PM2.5 at 6.3 micrograms per cubic meter, corresponding to the average levels observed in the best-performing countries at the global level.
40 Project to Strengthen the Resilience of the Energy Sector to the Impacts of Climate Change (In French: Projet de "Renforcement de la résilience du secteur de l'énergie aux impacts des changements climatiques").
41 An improved cooking stove developed to reduce the use of firewood and GHG emissions in Beninese households (Université d'Abomey-Calavi, 2024).
42 Authors' analysis based on data from Curtis et al. (2018)—data updated to 2023.
43 Data from Birdlife International and others.

2

“Six Transformations” for the SDGs in Benin

PART 2.
"Six Transformations" for the SDGs in Benin

The 17 SDGs and their 169 targets outline the objectives to be achieved by 2030. However, they do not provide specific guidelines on how governments should organize themselves to accomplish them. To design effective strategies for achieving the SDGs, governments and other stakeholders need to determine how to organize interventions, such as policy improvements, public and private investments, and regulation, and how to deploy them effectively to support the SDGs. Given the interconnected nature of the SDGs and their targets, it is preferable to use an integrated intervention framework rather than pursuing 17 separate strategies. The "Six Transformations" framework developed by Sachs et al. (2019), provides such a structure, enabling the implementation and operationalization of the 2030 Agenda while considering synergies and trade-offs among the SDGs. Building on the "Six Transformations" framework, the present chapter analyzes Benin's performance and Government interventions in relation to Transformation 3 (Energy Decarbonization and Sustainable Industry) and Transformation 4 (Sustainable Food Systems, Land, Water, and Oceans), which respectively focus on the development of clean energies and industries, as well as the development of sustainable food systems and the sustainable use of land, water, and oceans.

Figure 15. "Six Transformations" for SDGs

Source: Sachs et al. (2019).

1. Education, Gender, and Inequality

The first transformation covers investments in education (early childhood development, primary and secondary education, vocational training and higher education), social protection systems and labor standards, and R&D.

It directly targets SDGs 1, 2, 4, 5, 8, 9, and 10, and reinforces other SDG outcomes.

2. Health, Well-being, and Demography

This transformation includes interventions to ensure Universal Health Coverage (UHC), promote healthy behaviors, and addresses social determinants of health and wellbeing.

It directly targets SDGs 2, 3, and 5 with strong synergies into many other goals.

3. Energy Decarbonization and Sustainable Industry

This transformation groups investments in energy access; the decarbonization of electricity, transport, buildings, and industry; and curbing industrial pollution.

It directly targets SDGs 3, 6, 7, 9, 11–15, and reinforces several other goals.

4. Sustainable Food, Land, Water and Oceans

Interventions to make food and other agricultural or forestry production systems more productive and resilient to climate change must be coordinated with efforts to conserve and restore biodiversity and to promote healthy diets while significantly reducing food loss and waste. Important trade-offs exist between these interventions.

This broad transformation directly promotes SDGs 2, 3, 6, and 12–15 and reinforces many other SDGs.

5. Sustainable Cities and Communities

Cities and other communities require integrated investments in infrastructure, urban services, and resilience to climate change.

These interventions naturally target SDG 11 and they also contribute directly to goals 6, 9. Virtually all SDGs are indirectly supported by this transformation.

6. Harnessing the Digital Revolution for Sustainable Development

If managed well, digital technologies, such as artificial intelligence and modern communication technologies can make major contributions to achieving virtually all SDGs.

2.1 Benin's Performance in Achieving the "Six Transformations"

2.1.1 Presentation of the "Six Transformations" Framework

The core of the "Six Transformations" is the recognition that the 17 SDGs can be achieved through six major transformations focused on: (1) education, gender, and inequality; (2) health, well-being, and demographics; (3) clean energy and industry; (4) sustainable food, use of land, water and oceans; (5) sustainable cities; and (6) digital technologies (Figure 15).

The "Six Transformations" are based on two fundamental principles. The first principle is to design, implement, and monitor each transformation in such a way as to "leave no one behind." This principle aims to strengthen justice, equity, and social inclusion. It particularly applies to public services such as health and education, infrastructure services (transport, water, sanitation, energy), and the use of environmental resources. The second principle, "circularity and decoupling," advocates changing consumption and production patterns to separate the use of environmental resources and pollution from growth and human well-being. According to this second principle, each transformation must be designed, implemented, and monitored to reduce its ecological footprint by promoting circular flow, reuse, recycling of more durable materials, and more efficient use of natural resources. Good governance and the absence of conflict are also essential conditions for achieving the "Six Transformations."

The concept of transformation for the SDGs offers an operational and communicable narrative framework bringing together key synergies and trade-offs. It provides a clear action program for ministries, businesses, and civil society, making it easier to coordinate and implement of the actions needed to achieve the SDGs.

2.1.2 Performance on the "Six Transformations"

The indicators presented in the SDG Index and Dashboard (Part 1) for Benin and other West African countries have been reorganized around the "Six Transformations" (Figure 16).

Benin scores above the subregional average for Transformation 1 (education, gender, and inequality) and Transformation 6 (digital revolution for sustainable development). However, Benin falls below the West African average for Transformation 2 (health, well-being, and demography), Transformation 3 (Energy Decarbonization and Sustainable Industry), and Transformation 5 (sustainable cities and communities).

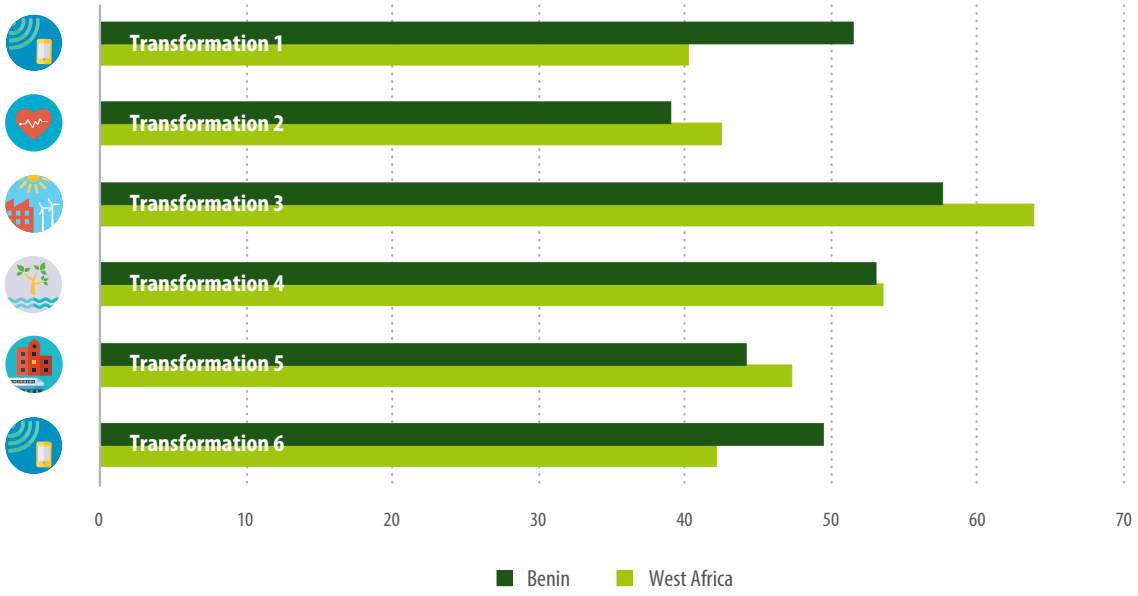
Benin's lead on Transformation 1 is largely explained by higher preschool and primary education participation rates[44], a reduction in the proportion of the population living below the US$2.15 and US$3.65 poverty lines per day[45], as well as greater female representation in parliament[46].

Regarding Transformation 6, Benin's performance is strengthened by a birth registration rate for children under five that exceeds the regional average[47], along with a higher score on the Corruption Perception Index[48].

For Transformation 2, the performance gap is mainly due to lower coverage of preventive chemotherapy for neglected tropical diseases[49] and a lower rate of surviving infants receiving two WHO-recommended vaccines[50].

With respect to Transformation 3, Benin's weaker performance relates to higher CO_2 emissions from fuel combustion for electricity production[51] and a smaller share of the population with access to clean cooking fuels and technologies[52]. These results highlight the importance for the Government of Benin to intensify investments and policy implementation in support of renewable energies development (Section 2.2 and Part 4).

Figure 16. Performances on the "Six Transformations", Benin vs. West Africa, score from 0 (worst) to 100 (best)



Note: See Table A.2 in the appendix for details of the indicators used. West Africa average weighted by population.
Source: Calculations based on data from the authors.

For Transformation 5, Benin's lower results stem from limited access to safe drinking water and sanitation[53], a higher proportion of the urban population living in slums[54], and lower accessibility of all-season rural roads[55].

Finally, for Transformation 4 (Sustainable Food, Land, Water, and Oceans), Benin is slightly below the subregional average. This is mainly due to the insufficient protection of important freshwater and marine sites[56], and a higher prevalence of stunting (i.e. height-for-age) among children under five[57] compared to the West African average. These performances underline the need to strengthen the Government action to improve food systems while protecting the environment and biodiversity (Section 2.2). Progress has already been made, particularly through the preparation of a new Long-Term Low-Emissions Development Strategy (LT-LEDS) (Box 1). The Government's intervention could also include the implementation and support of agroecological initiatives (Part 3).

All indicators and data confirming these performance gaps between Benin and the subregion are available in the online statistical annex of the report.

Box 1. FABLE's long-term food and land-use pathways for a new LT-LEDS in Benin

Since May 2024, Benin has been developing a new LT-LEDS, integrating mitigation and adaptation measures to enhance resilience to climate change. The work has been guided by the NDC[58] Partnership and funded by the International Climate Initiative (IKI), with technical support from Climate Analytics and the SDSN through its *Food, Agriculture, Biodiversity, Land and Energy* (FABLE) program.

FABLE is a global network of researchers whose mission is to build local capacity to model complex food and land-use systems and to support the development of national pathways that are consistent with global objectives, including the SDGs and the Paris Climate Agreement targets, and inform national policy commitments, particularly on climate and biodiversity.

As part of the new LT-LEDS, SDSN adapted the FABLE Calculator, a modelling tool for exploring future food and land-use scenarios for Benin, and used it to design a "Mitigation Options" pathway. This pathway examines how Benin can reduce GHG emissions from the Agriculture, Forestry, and Other Land Uses (AFOLU) sector by 2030 and 2050, while evaluating impacts on food security, biodiversity conservation, land and input use in agriculture, agricultural employment, and trade balance.

SDSN carried out two missions in Cotonou and Bohicon to co-develop the mitigation pathway with local partners, ensuring it reflects Benin's priorities and local realities. The missions also demonstrated, to Government actors and stakeholders, how the FABLE Calculator operates, ensuring transparency in the modeling process and enabling cross-sectoral dialogue on the results and their implications for Benin's development goals.

As one of the fastest-growing countries in West Africa, it is important for Benin to balance economic and demographic expansion with the need to limit emissions from its food and land-use systems. Our results show that achieving this balance requires coordinated action on several fronts: promoting more diversified diets with higher vegetable intake and moderate consumption of meat and animal products; improving agricultural productivity through climate-smart practices and the expansion of irrigated areas; managing land more efficiently by promoting afforestation and limiting agricultural expansion; and protecting biodiversity by expanding protected areas. A significant effort is also needed to advance agroecological practices, which can strengthen biodiversity, boost crop productivity, and increase soils' organic carbon.

Source: FABLE, SDSN. https://fableconsortium.org/

2.2 Dashboards for the SDG Transformations

The statistical analysis of outcome indicators (Part 1 and Section 2.1) alone cannot indicate whether a country is on track to achieve the SDGs. Indeed, data related to indicators measuring SDG performance and trends often exhibit significant time lags and may not reflect the policies and investments implemented by governments, which typically yield medium- to long-term results. Thus, in line with the central theme of this report focused on the green transition through agroecology and renewable energies (Parts 3 and 4), this section examines the policies, as well as the legal, regulatory, and investment conditions, necessary for achieving the SDGs, particularly Goals 2, 7, 12, 13, 14, and 15. The analysis builds on the dashboards for transformations 3 and 4, which facilitates the achievement of these SDGs[59], and respectively focus on the decarbonization of energy and industry, and the development of sustainable food systems and sustainable use of land, water, and oceans. These dashboards complement the SDG index and performance indicator analysis, which rely on outcome data. They also highlight existing policy frameworks, allow international comparisons, and help better assess Government responses in light of the challenges faced by the country.

However, this exercise may have several limitations. First, internationally comparable policy indicators and measures are generally less available than international outcome data. Second, some indicators rely on qualitative rather than quantitative methods; therefore, public efforts must be interpreted considering national challenges and specificities. Third, the effective implementation of Government policies does not necessarily translate into tangible outcomes. Indeed, the existence of a law or budget commitment does not necessarily translate into reality. Fourth, there are fewer objectives or thresholds agreed at the international level. Thresholds identified in the dashboards (Sections 2.2.1 and 2.2.2) were defined using internationally established (continental or global) targets or, where unavailable, based on expert judgment and careful examination of data distributions. Finally, the projects and reforms planned by the Government are as numerous as the challenges they intend to address. Hence, the transformations' dashboards do not claim to provide exhaustive coverage of Government action in energy and industry decarbonization (transformation 3) nor in developing sustainable food systems and the sustainable use of land, water, and oceans (transformation 4). Instead, they aim to highlight efforts and identify priorities for further implementation of the 2030 Agenda in Benin.

2.2.1 Transformation 3: Energy Decarbonization and Sustainable Industry

The energy sector accounts for more than three quarters of GHG emissions (World Resources Institute, 2025). Thus, combating climate change requires the development of clean energy. Transformation 3 underscores the central role of renewable energy sources (RES) and zero-carbon energy in decarbonizing various energy uses, implying the replacement of fossil fuels with renewables.

Net zero emissions are achieved when human-caused GHG emissions are balanced by their absorption through human actions over a given period (IPCC, 2023). Since the adoption of the Paris Agreement aiming to keep global temperature rise to below 1.5°C, several countries have committed to achieving net zero emissions by 2050. Limiting warming to 1.5°C requires reaching global net zero CO_2 emissions by 2050 (IPCC, 2018). Although West African countries account for only 1.3 percent of global GHG emissions (European Commission & IEA, 2024), six countries in the region have committed to achieving net zero by 2050, by embedding this target in national policy or law (Table 2). Among them, Nigeria is the only country in the region to have legislated this target (Lang et al., 2024). Like Côte d'Ivoire and Senegal, Benin has not yet set a net zero target for 2050, placing the country in the least ambitious category of the classification scale for commitments toward carbon neutrality (Lang et al., 2024).

Fossil fuels remain the main source of GHG emissions worldwide, accounting for nearly 73.7 percent of total emissions derived from fossil CO_2 in 2023 (Crippa et al., 2024). Achieving a green transition, therefore requires shifting from fossil fuels toward clean and renewable energies. However, like Nigeria, Ghana, Côte d'Ivoire, and Cabo Verde, fossil fuel subsidies remain high in Benin (Table 2). In 2022, they were estimated at $101.5 per capita[60], well above the subregional average of $89.0 per capita (Black et al., 2023). These figures indicate that efforts are still needed to redirect subsidies toward clean and renewable energies.

Table 2. Transformation 3: Energy Decarbonization and Sustainable Industry

	Commitment to reach net-zero emissions by 2050 (September 2025, Net Zero Tracker)	Fossil fuel subsidies (constant 2021 USD per capita, 2022, IMF)	Governance on Renewable Energy (RISE) (0 worst – 100 best, 2023, ESMAP)	Energy Efficiency (RISE) (0 worst – 100 best, 2023, ESMAP)	Renewable grid integration (RISE) (0 worst – 100 best, 2023, ESMAP)
West African Countries					
Benin	✗	101.5	44.6	18.3	66.7
Burkina Faso	In policy document	40.2	58.3	22.9	16.7
Cote d'Ivoire	✗	95.4	66.7	56.7	66.7
Cabo Verde	In policy document	116.1	NO DATA	NO DATA	NO DATA
Ghana	Declaration / pledge	107.8	83.3	46.3	100.0
Guinea	Proposed / in discussion	35.3	29.8	27.0	33.3
Gambia, The	In policy document	35.5	NO DATA	NO DATA	NO DATA
Guinea-Bissau	Declaration / pledge	19.1	NO DATA	NO DATA	NO DATA
Liberia	In policy document	27.7	31.0	4.8	50.0
Mali	Proposed / in discussion	39.9	35.7	33.0	33.3
Niger	Proposed / in discussion	23.8	37.5	35.0	66.7
Nigeria	In law	117.5	71.4	37.0	66.7
Senegal	✗	43.9	66.7	61.5	66.7
Sierra Leone	In policy document	13.1	25.0	19.7	16.7
Togo	Proposed / in discussion	32.6	44.0	30.1	50.0
Regional Average					
West Africa	6 of 15	89.0	62.8	37.1	62.1

	More ambitious	in law or policy document	0 USD/capita	≥ 67	≥ 67	≥ 67
	Moderately ambitious	pledged or in discussion	≤ 50 USD/capita	≥ 34	≥ 34	≥ 34
	Less ambitious	no commitment	50+ USD/capita	below 34	below 34	below 34

Notes: The West African average is weighted by population. Details on definitions, data sources, and thresholds are available at benin.sdgindex.org.
Source: Authors' elaboration.

Strong governance is essential for a successful transition to RE. It ensures the effective implementation, monitoring, and enforcement of RE policies. It also contributes to establishing transparent, accountable, and inclusive decision-making processes, thereby strengthening trust and stakeholder engagement (ESMAP, 2025). Benin can further enhance its renewable energy governance (Table 2). In 2023, the country scored 44.6 out of 100 on the governance indicator from the Regulatory Indicators for Sustainable Energy (RISE) report[61] (ESMAP, 2025), below the subregional average of 62.8. Benin is far behind countries like Ghana and Nigeria, which show higher governance scores for renewable energy (Table 2).

Improving energy efficiency reduces energy consumption and, consequently, GHG emissions. Therefore, alongside the use of renewables, energy efficiency is a critical mitigation measure. Benin exhibits the lowest

performance among West African countries, whose energy efficiency policies and regulatory frameworks range from the least ambitious to moderate (Table 2). In 2023, Benin scored 18.3 out of 100, compared with a subregional average of 37.1 (ESMAP, 2025).

Finally, regarding the integration of renewable energy into the electricity grid, Benin—like Côte d'Ivoire, Niger, Nigeria, and Senegal— scored 66.7 out of 100 in 2023, above the subregional average of 62.1 (ESMAP, 2025). This reflects the Beninese Government's ongoing efforts to implement electrification projects focused on renewable energies (Part 4). To improve renewable energy grid integration, Benin could draw inspiration from Ghana, which leads the subregion with a perfect score of 100 on this indicator (ESMAP, 2025).

2.2.2 Transformation 4: Sustainable Food, Land, Water, and Oceans

Transformation 4 aims to establish sustainable and resilient food systems, land use, and water and ocean management, while addressing goals related to combating hunger, malnutrition, and environmental pressures. Current systems significantly contribute to GHG emissions, biodiversity loss, water scarcity, and pollution, while remaining highly vulnerable to climate change. Therefore, integrated and cross-ministerial strategies are necessary to balance competing uses of land, water, and oceans, while ensuring long-term environmental sustainability and climate mitigation (Sachs et al., 2019). Among these are agroecological practices that improve agricultural efficiency, protect biodiversity, increase soil carbon sequestration, and strengthen climate resilience, as highlighted in this report[62] (Part 3).

Science and technology, particularly R&D, are essential levers for achieving the SDGs (Messerli et al., 2019), including SDG 2, which seeks to end hunger, ensure food security, improve nutrition, and promote sustainable agriculture. Therefore, investing in agricultural R&D is vital to meet these goals (Ruane and Ramasamy, 2023). Following the Malabo Declaration on accelerated agricultural growth and transformation, the African Union (AU) established a monitoring tool[63], including the indicator *"total agricultural research expenditure as a percentage of agricultural GDP"*, with a benchmark target of 1 percent (Ruane and Ramasamy, 2023). In Benin, public agricultural R&D expenditure was estimated at 0.41 percent of agricultural GDP in 2022 (Dijk et al., 2025), slightly above the West African regional average of 0.32 percent (Table 3). However, Benin could further increase its efforts to reach a more ambitious level of expenditure, following the example of Senegal (0.56 percent) and Cabo Verde (3.74 percent) (Dijk et al., 2025).

Integrated water resources management (IWRM) is the reference approach to reconcile different water uses while preserving essential ecosystems. Its importance was reaffirmed in the 2030 Agenda through SDG target 6.5[64] (UNEP, 2024). Agroecological water conservation techniques (Section 3.2.2) are concrete examples of IWRM implementation in Benin's agricultural sector. Benin's score on SDG indicator 6.5.1, measuring IWRM implementation, stands at 68.0 out of 100, compared to a West African average of 50.1 (UNEP, 2024), placing Benin among the highest performers in the subregion— though at a moderately ambitious level—just behind Burkina Faso in 2023 (Table 3). To further improve, Benin should continue implementing its IWRM in line with its National Integrated Water Resources Management Plan (PANGIRE) 2011–2025 and its operational documents.

The preservation and restoration of the environment and biodiversity are essential to mitigate environmental pressures from human activity and ensure a successful green transition. Biodiversity conservation and restoration help mitigate climate change by reducing emissions and enhancing carbon sequestration (UNEP, 2022).
In Benin, 66.7 percent of important terrestrial biodiversity sites were protected in 2023 (BirdLife International et al., 2025), slightly below the West African average of 73.2 percent (Table 3). However, no marine or freshwater sites important for biodiversity were effectively protected, while regional averages stood at 18.2 percent and 70.8 percent, respectively, in 2023 (Table 3). Benin could take inspiration from countries such as Côte d'Ivoire and Liberia, which protect respectively 97.9 percent and 96.7 percent of their essential marine biodiversity sites, and from The Gambia and Ghana, which respectively protect 99.0 percent and 94.3 percent of their important freshwater biodiversity sites (Table 3). These findings highlight the need to review protection policies for key biodiversity sites. It is also recommended that Benin extend protection to key sites such as Lake Nokoué, Lake Ahémé, and the Aho channel, which are classified as Ramsar wetlands of international importance but remain unprotected in practice (BirdLife International, 2025).

Table 3. Transformation 4: Sustainable Food, Land, Water, and Oceans

	Public Agricultural R&D Expenditures (% Agricultural GDP, 2022, van Dijk et al. 2025)	SDG Indicator 6.5.1: Degree of Implementation of Integrated Water Resources Management (2023, UNEP)	Mean area that is protected in marine sites important to biodiversity (%, 2023, Birdlife International et al.)	Mean area that is protected in terrestrial sites important to biodiversity (%, 2023, Birdlife International et al.)	Mean area that is protected in freshwater sites important to biodiversity (%, 2023, Birdlife International et al.)
West African Countries					
Benin	**0.41**	**68.0**	**0.0**	**66.7**	**0.0**
Burkina Faso	**0.34**	**70.0**	NO DATA	**78.8**	**64.5**
Cote d'Ivoire	**0.46**	**49.0**	**97.9**	**73.8**	**80.9**
Cabo Verde	**3.74**	**62.0**	**14.1**	**12.0**	NO DATA
Ghana	**0.31**	**60.0**	**19.6**	**78.8**	**94.3**
Guinea	**0.06**	**40.0**	**69.3**	**71.7**	**90.4**
Gambia, The	**0.29**	**37.0**	**40.3**	**41.7**	**99.0**
Guinea-Bissau	**0.02**	**23.0**	**50.7**	**59.5**	NO DATA
Liberia	**0.08**	**22.0**	**96.7**	**15.8**	**24.3**
Mali	**0.38**	**53.0**	NO DATA	**61.6**	**89.5**
Niger	**0.16**	**52.0**	NO DATA	**54.7**	**58.2**
Nigeria	**0.31**	**47.0**	**0.0**	**79.9**	**73.7**
Senegal	**0.56**	**55.0**	**36.7**	**45.4**	**23.9**
Sierra Leone	**0.11**	**37.0**	**60.2**	**65.3**	**71.1**
Togo	**0.28**	**46.0**	NO DATA	**79.5**	NO DATA
Regional Average					
West Africa	**0.32**	**50.1**	**18.2**	**73.2**	**70.8**

More ambitious	≥ 1	≥ 71	≥ 85	≥ 85	≥ 85
Moderately ambitious	≥ 0.50	≥ 51	≥ 52	≥ 52	≥ 52
Less ambitious	below 0.50	below 51	below 52	below 52	below 52

Notes: The West African average is weighted by population. Details on definitions, data sources, and thresholds are available at benin.sdgindex.org.
Source: Authors' elaboration.

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Notes Part 2

44 Authors' analysis based on data from UNESCO.
45 Authors' analysis based on data from World Data Lab.
46 Authors' analysis based on data from the Inter-Parliamentary Union (IPU)
47 Authors' analysis based on data from UNICEF.
48 Authors' analysis based on data from Transparency International.
49 Authors' analysis based on data from the World Health Organization (WHO).
50 Authors' analysis based on data from WHO and UNICEF.
51 Authors' analysis based on data from the Global Carbon Project and the International Energy Agency (IEA).
52 Authors' analysis based on data from IEA, International Renewable Energy Agency (IRENA), United Nations Statistics Division (UNSD), World Bank, and WHO.
53 Authors' analysis based on data from the Joint Monitoring Program of WHO and UNICEF.
54 Authors' analysis based on data from UN-Habitat.
55 Authors' analysis based on data produced by the Sustainable Development Solutions Network (SDSN) from work by Workman and McPherson (2019).
56 Authors' analysis based on data from BirdLife International and others.
57 Authors' analysis based on data from UNICEF and others.
58 Nationally Determined Contributions.
59 Although these transformations interact with several other SDGs, the dashboards cover only a selection to maintain the thematic focus of this report. Transformation 3 directly targets SDGs 3, 6, 7, and 9, and 11 to 15 and supports several others; similarly, Transformation 4 directly promotes SDGs 2, 3, 6, and 12 to 15, with positive effects on many other goals (Sachs et al., 2019).
60 Constant 2021 dollars.
61 Produced by the Energy Sector Management Assistance Program (ESMAP) led by the World Bank; Regulatory Indicators for Sustainable Energy (RISE) are a global inventory of policies and regulations supporting the achievement of SDG 7. They assess country progress and identify areas that require policy and regulatory reforms (ESMAP, 2025).
62 Complementary measures include social safety nets, healthier diets, and sustainable management of international supply chains (Sachs et al., 2019).
63 The Africa Agriculture Transformation Scorecard dashboard, within the biennial report on Malabo Declaration implementation.
64 By 2030, ensure integrated water resources management at all levels, including transboundary cooperation as appropriate (UNSD, 2025).

3

Case Study on Agroecology in Benin

PART 3.
Case Study on Agroecology in Benin[65]

Written by Émile N. HOUNGBO[66] and Honorat SATOGUINA[67]

Introduction

The agricultural sector is a pillar of strong potential in the Beninese economy, capable of strengthening economic growth and effectively contributing to poverty reduction. Indeed, it represents about 32.5 percent of GDP, generates 75 percent of export revenues, accounts for 15 percent of state revenues, and provides approximately 70 percent of employment (MAEP, 2015). However, Benin faces the challenge of developing its agricultural potential while preserving its natural resources. In fact, 62 percent of agricultural land is moderately or severely degraded (Stiem-Bhatia et al., 2017). Intensive cotton production, deforestation, and inadequate agricultural practices are the main causes of soil degradation in Benin (Assogba et al., 2017). It is in this context that the Beninese Government, the private sector, and non-governmental organizations (NGOs) increasingly promote agroecology as a sustainable alternative to conventional agriculture, with guidance such as the Agricultural Sector Development Strategic Plan[68] (PSDSA) 2017–2025. Agroecology is both an agricultural practice and a movement. As an agricultural practice, it reduces dependence on energy-consuming inputs while improving soil fertility, productivity, and biodiversity. As a movement, agroecology primarily seeks to increase the autonomy and control of small-scale farmers over agri-food systems by establishing strategic alliances with consumers and other civil society actors (Wezel et al., 2009). In the context of growing consumer demand for products from organic, ecological, or transitional agriculture, agroecology represents a viable alternative for sustainable and resilient agriculture in Benin, as well as an opportunity to better integrate into international trade and global value chains. Nevertheless, its wider adoption requires increased efforts in terms of Government support, training, access to financing, and structuring of sectors. Its implementation is complex, as it requires revising management approaches for farms, value chains, and resources.

This report is presented in four sections. It covers the state of agroecology initiatives in Benin (Section 3.1), existing agroecological practices (Section 3.2), challenges and constraints for developing agroecology development in Benin (Section 3.3), and the perspectives and opportunities for the agroecological transition (Section 3.4).

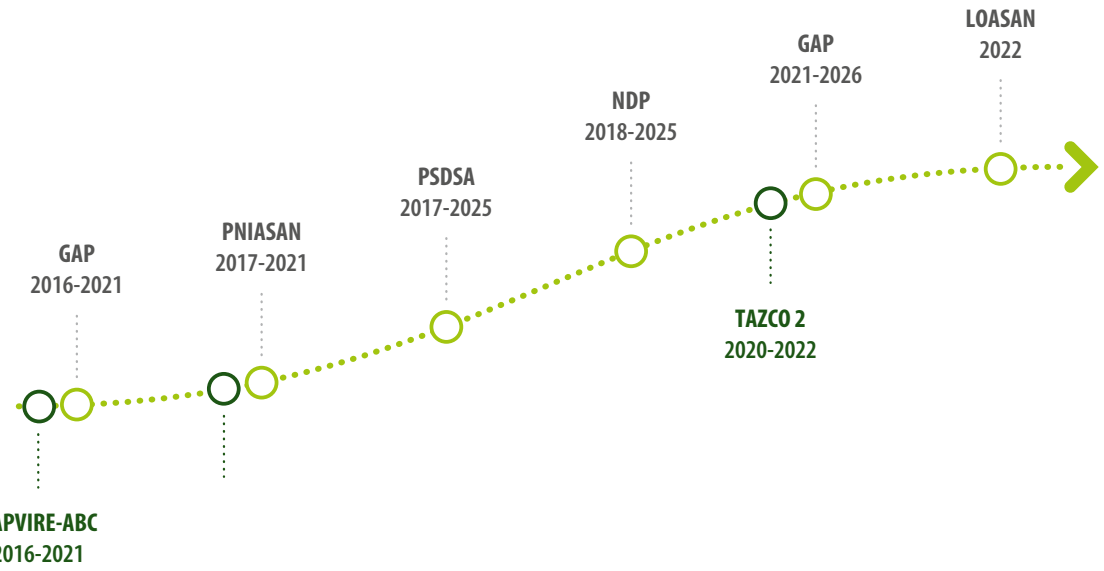
3.1 Initiatives in Favor of Agroecology in Benin

Agroecology initiatives can be classified into two categories: (i) initiatives and projects implemented by the Government; and (ii) initiatives led by the private sector, NGOs, or international organizations.

3.1.1 Institutional Dynamics around Agroecology

Government initiatives in favor of agroecology in Benin began in 2016 (Figure 17) with the integration of actions promoting organic agriculture and agricultural diversification into the GAP 2016–2021, which was then renewed in the GAP 2021–2026. In 2017, this momentum continued with the launch of the Agroecological Transition Project in Cotton-Growing Areas (TAZCO[69]) (AFD, 2023), supported by the French Development Agency (AFD), as well as the adoption of the Agricultural Sector Development Strategic Plan (PSDSA 2017–2025) and the National Agricultural Investment and Food and Nutritional Security Plan (PNIASAN[70] 2017–2021), which emphasize the introduction of agroecological practices in Beninese farms. In 2018, the National Development Plan (NDP 2018–2025) included, under its strategic objective 3, the sustainable management of the living environment and natural ecosystems, the emergence of regional development hubs, and ecologically acceptable modernization of agriculture. Finally, in 2022, the National Assembly adopted, on June 21, the Agricultural and Food and Nutritional Security Orientation Law (LOASAN[71]), which assigns significant importance to agroecology.

Figure 17. Government initiatives in favor of agroecology



Source: Authors.

3.1.2 Agroecological Programs and Projects in Benin

Agroecological programs and projects are mainly led by private sector actors, NGOs, and technical and financial partners (TFPs) (Table 4). The initiatives of NGOs and international organizations primarily focus on promoting agroecological practices, generally in the form of a movement. Examples include the project *"Agroecological Transition and Inclusive Agricultural Entrepreneurial Initiatives in Benin,"* launched in 2022, and the project *"Thousand Gardens in Africa"* (MiJA) of the Slow Food Foundation for Biodiversity based in Bra, Italy. The MiJA-Benin project currently counts about twenty agroecological gardens across Benin.

There have also been private initiatives and local innovations. Among these is the expansion, since 2019, of local biopesticides and biofertilizers, marked by the emergence of several Beninese startups developing natural alternatives to chemical agricultural products, such as Biophyte and Agrobiopesticide, which are monitored by the NGO *"Beninese Organization for the Promotion of Organic Agriculture"* (OBEPAB[72]). The Songhaï Center is also active in agroecological practices in Benin (Box 2). Table 4 provides several examples of agroecological programs and projects in Benin.

Box 2. The practice of agroecology at the Songhaï Center in Benin

The Songhaï Center has been developing since its creation in the 1980s a viable and low-cost agricultural production system based on agrobiology, integrating agriculture, livestock, and fish farming, and valorizing agricultural by-products of animal, plant, and fish origin. The center practices vegetable gardening, food crops (corn, cassava, yam, etc.), and perennial crops (banana, papaya, mango, etc.). The center produces its own compost using plant waste and animal droppings. To reduce costs, about four to six metric tons of maggots (fly larvae) are produced monthly from the intestines of animals slaughtered for sale to feed the fish. Fish farming benefits from both agricultural production and livestock. Cassava chips, rice bran, and Moringa leaves are used in feed formulations and transformed into pellets.

The Songhaï Center has adopted agroecological practices such as:

- The production and use of Azolla in animal feed (fish, pigs, ducks, etc.) and in fertilizing poor soils.
- The valorization of water hyacinth by using it to fertilize poor soils and for biogas production.
- The use of drip and sprinkler irrigation techniques.
- The use of solar energy for lighting, irrigation, and refrigeration.

Source: Sessou (sd).

Table 4. Selection of agroecological programs and projects in Benin

Name	Duration	Type	Funding, Donors and Partners	Location	Objective	Techniques & Activities	Area (ha)	Farmers Trained	Benefits
Songhaï Center	Since 1985	Private / Training	ECOWAS (~2.2 M USD), FAO, USAID, French Cooperation	Porto-Novo (and Parakou, Savalou, Lokossa)	Integrated agriculture, training	Polyculture, livestock, fish farming, agro-processing, renewable energy	22 ha + network ~570 ha	12,000 trained (320/year)	60 farms created, energy self-sufficiency, carbon sequestration
Les Jardins de l'Espoir	Since 2011	Private / Cooperative	Private cooperative	Cotonou	Permaculture and agroecology training	Permaculture, composting, beekeeping, fish farming	N/A	9,000	Farmers' market, dissemination of practices
PASPEA-CC[73]	2018–2023	Public	Government of Benin, various supports (unspecified)	Dassa, Savalou, Agbangnizoun	Climate change adaptation	Boreholes, solar irrigation, resilient seeds, awareness-raising	N/A	2,000	Enhanced climate resilience
BPSysProD[74]	2017–2022	Research / Public	Not documented	Southern Benin	Agroecology of plantain banana	Integrated cropping systems	N/A	N/A	Applied agroecological models
ProCaFood[75]	Since 2019	Private	Private investment	Southern Benin	Sustainable agri-food transformation	Agro-processing, local value chains	N/A	N/A	Value creation for local chains
Ferme Agroécologique Tcharm Fora (ORAD[76])	Since 1996 (training center since 2011)	Private / NGO	ECOWAS, partner NGOs	Djougou	Sustainable rural training	Composting, local seeds, integrated livestock	N/A	N/A	Local dissemination
Ferme-École SAIN	Since 1998	Private	Internal funding, local partners	Adjohoun	Integrated production and training	Polyculture-livestock, processing	N/A	N/A	Diversification of local production
Biosphère et Traditions	Since 2017	Private	Private	Pahou	Organic market gardening production	Market gardening, medicinal plants	N/A	N/A	Local organic supply
ECOLOJAH77 / CEVASTE[78]	Since 1997	Private / NGO	Private, local actors	Pahou, Ouidah	Agroecology, reforestation	Endogenous techniques, reforestation	N/A	N/A	Ecosystem restoration, awareness-raising
ACED	Since 2009	NGO	National and international NGOs	Abomey-Calavi	Urban agriculture, mangrove management	Compost with water hyacinth, sustainable mangrove management	N/A	N/A	Increased urban resilience
Karethic	Since 2005	Private	Fair trade, organic investors	Northern Benin	Fair trade organic shea value addition	Agroforestry, processing	N/A	N/A	Rural employment, fair trade commerce
Fruits Tillou	Since 2010	Private	Private, European Union (EU) organic certification	Southern Benin	Organic pineapple export	Organic production, training	N/A	N/A	Access to the EU organic market

Note: N/C = Not Available.
Source: Authors.

3.2 Agroecological Practices in Benin

Several agroecological techniques and methods are used in Benin. These include agroforestry, soil conservation and water management, Sustainable Soil Fertility Management (SSFM), and Integrated Soil Fertility Management (ISFM).

3.2.1 Agroforestry

There are several forms of agroforestry systems in Benin, including agroforestry parks that bring together useful trees such as shea (karité), African locust bean (néré), or baobab in food crop fields. There are also live hedges, which consist of building vegetative fences made of useful plants (Jatropha, Moringa, etc.) that protect fields, limit erosion, and serve as fodder or firewood.

Agroforestry is increasingly emerging as a strategic response to land degradation, food insecurity, and climate vulnerability (FAO, 2021; Agbavon et al., 2020). Long limited to traditional local practices, it has experienced growth thanks to supportive projects and policies since the 2010s[79], which have helped improving soil fertility, increasing agricultural productivity, diversifying rural incomes, and reducing pressure on natural forests. Some results and effects of this technique in Benin are presented by region in Table 5. While the North favors agroforestry parks with shea and néré, the Center develops agro-silviculture with teak, and the South promotes agroforestry gardens and fruit tree cultivation. This distribution reflects local ecological and socio-economic specificities. The results and impacts include improved food security, increased incomes, improved soil fertility, natural and assisted regeneration of degraded lands, and enhanced resilience to climate change.

Table 5. Main forms of agroforestry in Benin, by region

Type of Agroforestry Park	Region(s)	Dominant Species	Associated Crops	Benefits
Shea Parks	Northern Benin (Atacora, Donga, Borgou, Alibori)	Vitellaria paradoxa	Sorghum, millet, cowpea, maize	Income source for women (shea butter), improvement of soil fertility, assisted natural regeneration
Néré Parks	Central and Northern Benin	Parkia biglobosa	Maize, yam, cassava	Production of afitin, natural soil fertilization (nitrogen fixation), shade provision, wildlife habitat
Baobab Parks	Atacora, Donga	Adansonia digitata	Millet, sorghum, legumes	Food security (leaves, fruits), contribution to traditional medicine, increased carbon storage
Cashew and Ronier Parks	South, Center, North Benin	Anacardium occidentale, Borassus aethiopum	Cassava, maize, cowpea, peanut	Income from cashew nuts, erosion control, wood and handicrafts
Scattered Fruit Tree Parks	Mono	Mango, avocado	Various food crops	Improved incomes, diversified diet, reduced food insecurity
Moringa and Jatropha Parks	Couffo	Moringa oleifera, Jatropha curcas	Maize, cassava	Live fencing, firewood, fodder, erosion control
Small Fruit Tree Parks	Atlantique	Guava, papaya, avocado	Market gardening and food crops	Fruit production for local consumption and markets, nutritional enrichment

Source: Authors, based on: Gutierrez et Juhé-Beaulaton (2002) ; Teteli et al., (2023) ; Clermont-Dauphin et al., (2019) ; Saïdou et al., (2012) ; Nambima et al., (2023) ; Waya et al., (2022) ; MAEP (2025) ; Kombienou et al., (2022) ; MAEP (2016).

3.2.2 Soil Conservation and Water Management

Several techniques are used in Benin for soil conservation, including agroecological practices (mulching, composting, cover crops), water and soil conservation techniques (zaï, half-moons, stone bunds), and community reforestation programs as well as hydro-agricultural developments such as hillside dams and irrigated perimeters (Table 6). These interventions, supported by projects such as the ProSOL[80], PASDeR[81], PAPVIRE-ABC[82], Eco-Benin, and PADIAP[83], have contributed to slowing erosion, improving water retention, increasing agricultural yields, and strengthening farmers' climate resilience (Table 6). They also contribute to restoring agricultural ecosystems and securing food crop production (MAEP et INRAB, 2012 ; FAO, 2019 ; GIZ, 2021 ; PNUD, 2021).

Table 6. Soil conservation techniques in Benin

Technique	Description	Main Regions of Application	Benefits
Anti-erosion Bunds	Small earthen walls built in terraces (bunds) to slow water flow and reduce erosion.	Atacora, Donga, Borgou, Alibori, Collines, Zou, Plateau	Reduces erosion, improves vegetation regeneration, stabilizes soils.
Stone Bunds	Lines of stones arranged along contour lines to slow runoff and retain sediments.	Atacora, Donga, Borgou, Alibori, Collines, Zou, Plateau	Slows runoff, increases infiltration, restores fertility.
Contour Farming	Cultivation following the land's contour lines to limit runoff.	Collines, Zou, Plateau, Borgou, Alibori, Atacora, Donga	Reduces water erosion, improves moisture conservation.
Live Hedges	Planting shrubs (e.g., Jatropha, Leucaena) along borders or lines to stabilize soil, reduce wind, and protect crops.	Atacora, Donga, Borgou, Alibori, Collines, Zou, Plateau	Reduces wind erosion, produces useful biomass, improves microclimate.
Cover Crops	Use of plants (e.g., Mucuna, Stylosanthes, etc.) to cover and protect the soil between two main crops.	Atacora, Donga, Borgou, Alibori, Collines, Zou	Improves soil structure, protects against erosion.
Mulching	Covering soil with plant residues to reduce evaporation, limit erosion, and enrich soil organic matter (humus).	Atacora, Donga, Borgou, Alibori, Collines, Zou, Plateau	Conserves moisture, enriches soil organic matter, reduces erosion.
Crop Rotation and Intercropping	Diversifies crops (e.g., maize + cowpea) to preserve soil and reduce pressure on a single resource.	Atacora, Donga, Borgou, Alibori, Collines, Zou, Plateau	Improves fertility, controls pests, enhances system sustainability.
Reforestation	Planting useful tree species (e.g., Acacia) to stabilize soil.	Atacora, Donga, Borgou, Alibori, Collines, Zou, Plateau	Stabilizes soil, increases infiltration, restores degraded lands.

Source: Authors, based on: FIDA (2022) ; FIDA (2024) ; GIZ (2025) ; MAEP (2018b) ; GIZ (2022) ; Teteli et al., (2022) ; Forsans (2022).

In addition, to ensure water availability for crops, preserve its quality, and reduce losses, several techniques are used within the framework of agroecology. Table 7 presents the most common practices in rural areas of Benin, ranging from rainwater harvesting to traditional methods such as basins, irrigation canals, and half-moons (zaï). Drip irrigation and mulching are also more modern, organic approaches that promote efficient and sustainable water management. Overall, these techniques contribute to increasing agricultural productivity, reducing drought-related risks, and supporting local food sovereignty.

Table 7. Water resource conservation techniques in Benin

Technique	Description	Effects / Impacts (with figures)
Rainwater Harvesting and Storage, and Borehole Drilling	Tanks, cisterns, or basins used to collect and store water during the rainy season. Tubewell drilling, large-diameter well drilling (≥ 1 m), artesian wells, and raised beds.	• Yield increase ranging from about 20 to more than 50 percent; • A financial gain of USD 600 to 1,000 per hectare for rice and USD 800 to more than USD 4,000 for vegetable crops, with the possibility of achieving three production cycles per year. (Agnoun et al., 2014) • Increase in annual income of 11 percent for vegetable production; • Sites equipped with boreholes: producers' income increased by 98 percent; • Sites equipped with tubewells: producers' income increased by 118 percent; • Sites equipped with raised beds: producers' income increased by 400 percent; • During the 2021–2022 season: – tomato yield reached 17.9 t/ha compared to a forecast of 9 t/ha; – pepper yield reached 8.1 t/ha compared to a forecast of 3 t/ha; – okra yield reached 8 t/ha compared to a forecast of 4 t/ha. FIDA (2022)
Traditional Irrigation Canals	Community arrangements in rice-growing areas (e.g., Ouémé Valley, Malanville, Koussin Lélé, Dévé). Market gardening production.	Yield increases of up to 30 percent for vegetable and rice production. (Agnoun et al., 2014)
Small Dams / Water Reservoirs	Earthen dams for water storage and irrigation during the dry season.	• Securing vegetable production on more than 2,500 ha; • Creation of direct jobs; • Improvement of farmers' incomes; • Increase in local taxes. FIDA (2024)
Basin Cultivation	Planting in small depressions to concentrate rainwater.	Not available.
Drip Irrigation	Targeted and water-saving irrigation, highly effective for vegetable crops.	Profitability: Tomato production: • Rainy season: 15,180 – 95,180 FCFA / 400 m^2 in a rainfed system; • Dry season: 109,820 – 229,820 FCFA / 400 m^2 in an irrigated off-season system. Pepper production: • 50,200 FCFA / 400 m^2 in a rainfed system; • 105,970 FCFA / 400 m^2 in an irrigated off-season system. MAEP (2017)
Zaï (Half-Moons)	Pits dug to capture water and concentrate nutrients around plants.	Not available.
Mulching	Covering soil with plant residues to limit evaporation.	Not available.

Source: Authors.

Table 8. Extent of the use of SSFM in Benin and geographic localization

Technique	Description	Project / Program	Area Treated	Producers Trained (Number of people)	Covered Zones	Effects / Impacts (with figures)
Composting and Organic Manure	Transformation of organic residues (animal droppings, plant residues, biodegradable household waste) into compost applied to fields.	PIRVaTEFoD-Benin[84] PNUD (2024)	5,159 ha	4,887	Karimama, Kouandé, Ségbana, Gogounou, Aplahoué, Klouékammè, Za-Kpota, Covè	Not available.
Combination of Organic and Mineral Fertilizers	Combination of compost/ manure and chemical fertilizers (NPK, urea) for organic–mineral synergy.	Biomasse Électricité PNUD (2022)	12,000 ha	1,763	Djougou, Dassa-Zoumé, Savalou, Kalalé	The yields obtained in food crop production are very encouraging and have led to the participation of new farmers beyond the first 1,000 initially involved in the implementation.
Green Manures (legumes: mucuna, stylosanthes, voandzou, forage soybean)	Introduction of nitrogen-fixing leguminous cover crops.	ProSOL GIZ (2023)	199,933 ha	163,689	Alibori, Borgou, Collines, Zou	• Improvement of soil structure and texture for better crop development; • Increased water retention and availability of organic matter in the soil for crops, even during dry spells; • Increase in soil microorganism biodiversity; • Implementation is low-cost for farmers.
Agroforestry (maize + fertilizing trees)	Planting of fertilizing trees associated with crops.	PIRVaTEFoD-Benin PNUD (2024)	5,159 ha	4,887	Karimama, Kouandé, Ségbana, Gogounou, Aplahoué, Klouékammè, Za-Kpota and Covè	Not available.
Crop Rotation and Diversification	Alternating cereals and legumes to improve fertility and break pest cycles.	ProSOL GIZ (2023)	199,933 ha	163,689	Alibori, Borgou, Collines, Zou	Yield increases in 2021: • Maize: 80 percent; • Cassava: 30 percent; • Yam: 30 percent; • Cotton: 40 percent.
Mineral Fertilizer Microdosing	Localized application of fertilizers (2–4 g per planting hill), sometimes combined with organic matter.	Biomasse Électricité PNUD (2022); PNUD (2025)	12,000 ha	1,763	Djougou, Dassa-Zoumé, Savalou, Kalalé	The yields obtained in food crop production are very encouraging and have led to the participation of new farmers beyond the first 1,000 initially involved in the implementation.

Source: Authors.

3.2.3 Sustainable Soil Fertility Management

SSFM is an essential pathway for ensuring productive, resilient, and environmentally sound agriculture in Benin. It encompasses several techniques that contribute simultaneously to fertility management and climate change adaptation. Within this framework, the ProSOL project promotes techniques such as ISFM, conservation agriculture, soil and water conservation, integrated crop-livestock systems, agroforestry, and climate change adaptation.

Table 8 shows the extent of use of SSFM techniques, their geographical distribution, and their effects. These techniques combine organic, mineral, and agroecological approaches, ranging from composting and the application of organic manure to the use of green and mineral fertilizers, as well as agroforestry and crop rotation. The areas covered by these projects range from 5,000 to over 200,000 hectares, reaching thousands of producers across different geographic zones of the country. However, the treated areas and number of trained producers remain limited. The observed effects include significant improvements in crop yields (maize, cassava), increases in soil organic matter and available nitrogen content, as well as better soil resilience to degradation and erosion. These results show that combining agroecological practices with structuring projects contributes to soil sustainability and food security, while promoting producer participation and dissemination of good practices on a large scale.

3.2.4 Integrated Soil Fertility Management

Although very similar in their formulation, SSFM and ISFM are two approaches that differ in their philosophy, technical intensity, and scope of application. SSFM relies on simple, preventive, and accessible agroecological practices aimed at preserving long-term soil fertility by strengthening the soil natural balance, while ISFM focuses on technical efficiency and the complementarity of inputs. These two approaches are complementary and can be integrated within a broader agroecological strategy.

ISFM combines the judicious and complementary use of organic fertilizers, mineral fertilizers, crop residues, and good agricultural practices to nourish the soil and plants while protecting soil health in the long term. This approach not only improves soil fertility in the short, medium, and long term but also strengthens farm resilience to the effects of climate change while reducing dependence on often imported inputs.

Table 9 presents the main ISFM practices implemented in Benin under structuring projects and programs. It provides information on the areas covered, the number of producers trained, intervention zones, and observed effects on soil fertility and agricultural yields. These practices have been deployed on a large scale through initiatives such as PIRVaTEFoD-Bénin, the program *"Biomasse Électricité"*, and the ProSOL project, covering areas between 12,000 to over 200,000 hectares (PNUD, 2022 ; GIZ, 2023) and mobilizing several tens of thousands of producers. The observed impacts are substantial, they include: increased crop yields (notably for maize and cassava), improved soil organic matter and nitrogen content, and strengthened resilience against erosion and water stress. These results demonstrate that the linkage between agroecological techniques and structuring programs constitutes a decisive lever for soil sustainability, food security, and the dissemination of good agricultu ral practices at the national level.

Due to high costs, ISFM is not widely adopted in Benin (Houngnandan et al., 2022; Bossou et al., 2019). According to the FAO (2019), between 2020 and 2022 less than 20 percent of agricultural producers in Benin practice a structured form of ISFM, and about 200,000 hectares representing about 10 percent of cultivated lands incorporated this technique. However, ISFM contributes significantly to food security, with 1.8 Mt production and soybean production reaching 521 thousand metric tons in 2023 (INStaD & MAEP, 2024). It also supports Benin's exports, notably through cotton and cashew, respectively first and second export products, representing 64.7 percent and 14.7 percent of agricultural exports in 2023 (INStaD & MAEP, 2024).

Table 9. Extent of the use of ISFM in Benin and geographic location

Technique / Practice	Description	Project / Program	Area Treated	Producers Trained (Number of people)	Covered Zones	Effects / Impacts (with figures)
Soil fertility maintenance techniques	Combined application of compost/manure and localized mineral fertilizers to optimize plant uptake and reduce losses.	ProSOL GIZ (2023)	199,933 ha	163,689	Borgou, Alibori, Zou, Collines	Yield increases in 2021: • Maize: 80 percent; • Cassava: 30 percent; • Yam: 30 percent; • Cotton: 40 percent.
Fertilizing agroforestry (Faidherbia albida, Tephrosia, Gliricidia)	Integration of fertilizing trees into cultivated plots to improve organic matter and nitrogen fixation.	PIRVaTEFoD-Benin PNUD (2024)	5,159 ha	4,887	Karimama, Kouandé, Ségbana, Gogounou, Aplahoué, Klouékammè, Za-Kpota and Covè	Not available.
Crop rotation and legume–cereal association	Alternation and intercropping of cereal and legume crops to enrich soil and break pest cycles.	ProSOL GIZ (2023)	199,933 ha	163,689	Alibori, Borgou, Collines, Zou	• Improvement of soil structure and texture for better crop development; • Increased water retention and availability of organic matter in the soil for crops, even during dry spells; • Increase in soil microorganism biodiversity; • Implementation is low-cost for farmers.
Micro-doses + compost	Localized application of micro-doses of fertilizers combined with organic matter for more efficient fertilization.	Biomasse Électricité PNUD (2022)	12,000 ha	1,763	Djougou, Dassa-Zoumé, Savalou and Kalalé	The yields obtained in food crop production are very encouraging and have led to the participation of new farmers beyond the first 1,000 initially involved in the implementation.
Green manure / leguminous cover crops	Sowing nitrogen-fixing legumes to enrich soil, protect from erosion, and improve infiltration.	ProSOL GIZ (2023)	199,933 ha	163,689	Alibori, Borgou, Collines, Zou	Yield increases in 2021: • Maize: 80 percent; • Cassava: 30 percent; • Yam: 30 percent; • Cotton: 40 percent.
Mulching and reduced tillage (direct seeding)	Soil coverage with plant residues and reduced tillage to maintain moisture and limit erosion.	PIRVaTEFoD-Benin PNUD (2024)	5,159 ha	4,887	Karimama, Kouandé, Ségbana, Gogounou, Aplahoué, Klouékammè, Za-Kpota and Covè	Not available.

Source: Authors.

3.3 Challenges and Constraints for the Development of Agroecology in Benin

Considering the national context of agroecology, significant progress has been made. However, this progress remains insufficient due to obstacles that prevent its large-scale adoption within the current agricultural production model. For illustration, a study conducted by Abou Chabi and Tovignan (2023) on the characterization of farms transitioning to agroecology in the cotton-growing zone of northern Benin revealed that out of 240 agricultural producers, only 14 percent of farms were in ecological transition.

3.3.1 Constraints

Agroecological products face difficulties in accessing markets and achieving fair price valuation (CIRAD et al., 2021). Agroecological producers often find themselves on the same markets and face the same prices as conventional producers. Incentives for agroecological products are low and producers engaged in the agroecological transition do not see their production efforts rewarded (Houngbo, 2016). Despite their many benefits, agroecological practices are associated with certain constraints that hinder their widespread adoption. According to Scholle (2015), the transition toward agroecological systems is far from easy. Their adoption and implementation by farmers encounter various difficulties related to timing, investment, land tenure security, product differentiation, and risk perception:

- *Timing difficulties:* the transition to agroecology takes time, especially since there is never a "miracle technical solution." The solutions depend on the specific agro-climatic and socio-economic characteristics of each plot, farm, and region. This is why agroecology promotion projects based on a "top-down" approach have generally yielded limited results.
- *Investment difficulties:* for farmers, the agroecological transition represents an investment (monetary and/or in labor) whose profitability may take time to materialize (for example, it may take several years before soil fertility is restored).
- *Land tenure security difficulties:* farmers are not always certain they will benefit from the results of agroecological investments if they do not have secure and lasting access to land.
- *Risk perception difficulties:* like any change process, the agroecological transition involves taking risks, as results are never guaranteed in advance. This risk-taking appears even more significant because abandoning certain conventional practices often initially leads to a decrease in production volumes. When facing economic and social vulnerability and immediate priorities (such as feeding the family), farmers are unlikely to take such risks.
- *Product differentiation difficulties:* market confusion between conventional agricultural products and agroecological products is also an obstacle to the spontaneous adoption of agroecology by producers (Houngbo, 2016). Thus, it is not advantageous for both product categories to be treated the same way in the market, as conventional agricultural products are less demanding to cultivate.

3.3.2 Challenges

Benin faces four main challenges that must be overcome for agroecology to be widely adopted by producers (Jinukun, 2013): i) promoting agroecology in agricultural policies; ii) ensuring producers access to natural inputs; iii) professionalizing agroecology actors; and iv) valuing of agroecology.

Promoting agroecology in agricultural policies as an alternative model to conventional agriculture

Agroecology is little known by many producers. It is also insufficiently recognized by public authorities, even though policies and strategies mention the use of organic fertilizers, fertilizing plants, and sustainable agriculture or development. In practice, there is a predominance of chemical input use, which is a major component of agricultural investment. Every year, large quantities of chemical inputs are released into rural areas, especially in cotton-producing regions. Thus, for the 2025–2026 agricultural campaign, 180,000 metric tons of NPK[85], 115,000 metric tons of urea, and 55,000 metric tons of simple superphosphate are planned, with a subsidy budget of 26 billion FCFA nationally, representing a 6 percent increase from the previous campaign (Agence Ecofin, 2025). Meanwhile, no significant budget support is planned nationally for promoting agroecological agriculture despite declarations in national policy documents. CIRAD et al. (2021) add that policy documents do not explicitly refer to agroecology, although some principles (notably sustainable land management) are

sometimes mentioned. The study shows agroecological transition has started in Benin but at a low level and slow pace. Furthermore, the Government and some professional organizations remain ambivalent, as they simultaneously encourage and increasingly facilitate the use and access to synthetic chemical inputs in agricultural production.

Facilitating producers' access to natural inputs

Although critical for the large-scale adoption of agroecology, the production, availability, and accessibility of quality inputs (seeds, fertilizers, phytosanitary products, etc.) remain very limited. Compost production, for example, needs wider dissemination.

Professionalizing agroecology actors

Like other economic operators, agroecological producers must master their activities and increase their income to meet their families' non-food needs. The contribution of agroecology to food and nutritional sovereignty, environmental preservation, and the national economy must be enhanced. Labor is a component requiring further research to better understand dynamics and enable farmers to access a broad range of adapted practices that can unlock the full potential of agroecology in a specific context. Another obstacle faced by producers is the insufficient mastery of agroecological techniques, first by themselves, then by labor force they hire. This highlights the need for strong public policies supporting family farms that promote agroecological innovations, particularly in terms of training and financing, as well as incentives such as tax reductions, and risk insurance credits.

Valuing agroecology in agricultural performance measures

Experts and decision-makers must go beyond the quantitative notion of productivity and emphasize that agriculture is embedded within natural, economic, social, and cultural ecosystems that must be considered. It is necessary to account for damages to the environment and public health, and other externalities causing expenses to affected populations and the State. Agricultural performance assessments often remain focused on yield per hectare, without emphasizing environmentally respectful agriculture that preserves soil quality and avoids pollution and harm to public health. Environmental and natural resource degradation, particularly of soils and biodiversity, must also be factored into agricultural performance evaluations.

3.4 Perspectives and Opportunities for Agroecology in Benin

In this section, an analysis of the existing opportunities, as well as the key strategies for a successful agroecological transition, are presented.

3.4.1 Economic and Environmental Opportunities

Market Potential: Increasing Demand for Agroecological Products

The market for agroecological products is growing, both locally and internationally. In Benin, a significant share of urban consumers expresses a preference for healthier products, free from pesticides or chemical fertilizers, or containing reduced amounts of chemical inputs. Indeed, in Cotonou, 95 percent of surveyed consumers are willing to pay a price premium of at least 10 percent to 70 percent for cabbage produced with fewer pesticides (Vidigbénan et al., 2015). Similarly, 95 percent of consumers in Benin are willing to pay a premium of more than 50 percent for vegetables without chemicals (Coulibaly et al., 2011). An experiment on agroecological production conducted among market gardeners in Cotonou and surrounding areas from 2015 to 2021 and evaluated in 2022 showed that the proportion of conventional vegetable producers dropped from 95 percent to 51 percent, while agroecological market gardeners increased from 4 percent to 30 percent, and 19 percent of producers began cultivating organic vegetables (Vodouhè et al., 2022; Ahouangninou et al., 2021). Benin potentially captures a significant share of organic outlets to the United States, a high-value market (Zoundji et al., 2024a; Tridge, 2023; Tridge, 2024). This change in food consumption behaviors opens important market opportunities for producers engaged in environmentally friendly practices. Moreover, at the regional and international levels, organic and fair-trade markets offer high export potential (Zoundji et al., 2024b; Willer et al., 2023; Njenga & Karanja, 2022), with growth exceeding 30 percent per year, providing an export window for Benin's organic and fair-trade products, notably cashew nuts, shea butter, and honey (Tridge, 2023). In 2024, West African organic soybean exports

surged, representing 42 percent of organic meal imports to the United States of America and 11 percent of whole organic soybean imports (Agence Ecofin, 2025).

However, two important remarks must be made. First, at the national level, demand for organic and agroecological products in the local market comes from a very small portion of the middle and upper classes, representing less than 5 percent of consumers (Acting for Life, 2019; Snoek et al., 2023). Indeed, these products remain relatively expensive compared to conventional ones (Sessou et al., 2022; Ahoyo & Tokoudagba, 2017). Efforts must be made to better organize supply and demand, which are expected to grow. Some cooperatives are organizing to meet this demand, which remains limited between one percent and two percent of the total fresh vegetable supply on urban markets (Commission de la CEDEAO – ARAA, 2025), with less than 0.5 percent of urban households in Cotonou regularly subscribed to organic baskets (Vodouhè et al., 2022). To meet this growing demand for organic products, it is necessary to organize the supply (Ahoyo & Tokoudagba, 2017). This requires rigorous supervision, certifications, product traceability, and strong cooperative structures (FAO, 2019). On the supply side, there is clear enthusiasm. Better organization, sufficient communication, and comprehensive support for the organic products value chain are essential conditions for the development of this market (Hedokingbe et al., 2025; Commission de la CEDEAO – ARAA, 2025). The most important initiatives in this area are summarized in Table 10.

Table 10. Main achievements in certification, traceability, and marketing of organic/agroecological products in Benin

Domain	Concrete Achievements	Actors / Involved Projects	Current Limitations
Certification	Implementation of the Participatory Guarantee System (PGS) initiated by Association for the Preservation of Smallholder Agriculture in Benin (AMAP Benin).	Acting for Life IFOAM[86]	Limited geographic coverage, absence of an official national organic label.
	Training of producers in participatory certification.	Acting for Life, Helvetas	Difficulty reaching isolated small producers.
Traceability	Pilot initiatives for the traceability of agroecological rice (DEFIA[87] / Enabel – Rikolto).	DEFIA (Enabel, Rikolto, CCR-B[88])	Traceability still partial and experimental.
	Testing of digital tools for plot and batch monitoring (by local startups and projects).	DEFIA, local startups	Not yet generalized to other sectors (market gardening, soy).
Market	Creation of AMAP organic baskets delivered to homes or relay points (Cotonou, Porto-Novo).	Acting for Life	Limited number of households reached (a few hundred).
	Presence of organic stands in some urban markets (e.g., Tokpa, Agla markets).	Acting for Life	Few dedicated organic markets, limited visibility.
	Direct circuits with supermarkets and restaurants (by some cooperatives, e.g., Zinvié).	Organic market gardening cooperatives	Low volume, narrow geographic coverage.
	Awareness-raising through radio, social networks, and organic fairs.	Acting for Life, Helvetas, Enabel, GIZ	Communication still insufficient on a large scale.

Source: Authors.

Moreover, for organic export products, it has been observed that the State has become involved and organized the value chains of products intended for export. Certifications, labeling, and product traceability have ensured a certain growing demand for these products (Commission de la CEDEAO – ARAA, 2025; Kpadonou & Adjovi, 2018). This is the case for exports of organic soy, cotton, and pineapple products (FAO, 2023). Any actor wishing to enter these crops knows in advance the technical itinerary to follow and the controls to carry out for the export of organic cotton from Benin (OBEPAB, 2003; Helvetas, 2008). The relative development of the market for agroecological products intended for export indicates that if the same support were provided to products for the domestic market, it could become better structured and generate growing supply and demand. Table 11 shows the volumes of certified organic products exported.

Box 3 below specifies the products in which Benin should specialize to better position itself on the organic value chain.

Table 11. Estimated volumes and maturity level of organic product value chains exported by Benin

Product	Annual Export Volume	Key Observations	Maturity Level of the Organic Export Sector
Organic cotton	1 373 metric tons Textile Exchange (2021)	Mainly exported to Europe and the United States of America (USA), certified by ECOCERT[89] and GOTS[90]. The sector is the most mature in organic.	Mature, well-organized sector.
Organic pineapple	9 000 metric tons Partenariat RéPAB/Les Jus Tillou (Inter-réseaux, 2020)	Modest but growing volumes, mainly destined for the EU. Supported by Rikolto and local projects.	Emerging, growing.
Organic soy	750 metric tons Espoirs d'enfants (2020)	Exports are still limited but show notable growth linked to European demand.	Developing.
Organic cashew nut	Not available.	Emerging sector, mainly exported to Europe. Certification is currently being expanded.	Structuring.

Source: Authors.

Box 3. Organic agriculture, a lever for green growth in Benin

The organic products market is experiencing strong growth, with attractive opportunities at the local, regional, and international levels. In Benin, despite still limited local demand (less than five percent of consumers), the interest of the urban middle and upper classes in healthy products continues to grow (Coulibaly et al., 2011; Aglinglo et al., 2022). On the supply side, strong momentum is emerging in peri-urban areas (Cotonou, Porto-Novo, Ouidah, Abomey-Calavi, Bohicon, Parakou), where the share of agroecological and organic market gardeners has significantly increased between 2015 and 2021. In practice, farming methods are evolving: the share of agroecological and organic market gardeners around Cotonou increased from less than five percent to nearly 50 percent in six years (Vodouhè et al., 2022). However, organic products still account for only one to two percent of the total supply of fresh vegetables in urban markets. While the global organic market grows by more than 30 percent per year (Willer et al., 2023), Benin already has recognized strengths in several certified crops (ECOCERT, PGS-Bio, GOTS).

At the international level, organic export products benefit from stronger institutional support. In 2024, Benin exported more than 10,000 metric tons of organic cotton, up to 2,000 metric tons of organic cashew nuts, as well as certified soy and pineapple. These sectors have defined technical itineraries, recognized certifications, and established support structures (Helvetas, OBEPAB, OCB, Rikolto).

To strengthen its position in the organic value chains, Benin would benefit from specializing in products with high added value and growing export potential, notably:

- Organic cotton (mature sector, strong demand in the EU/USA),
- Organic cashew nuts (sustained demand, potential for local processing),
- Organic soy (high potential in the North American market),
- Fresh and processed organic pineapple (dynamic European niche),
- Organic honey and hive products (regional and international potential),
- Processed organic products based on cassava, sweet potato, ginger (market diversification),
- And, in the longer term, organic market gardening for urban markets, provided that structured support is implemented (certification, traceability, and short supply chains).

The simultaneous structuring of export-oriented sectors and the domestic market, supported by a proactive public policy, would enable Benin to become a visible and competitive player in West African organic agriculture.

Source: Authors.

Contribution to Climate Resilience

Agroecology strengthens farm resilience to climate hazards, a crucial issue in Benin, where droughts, floods, and soil erosion are becoming increasingly frequent. Between 2012 and 2023, more than 71,000 people were displaced due to floods, and over 60 schools were damaged (UC Berkeley, 2023). Agroecological practices such as agroforestry, crop rotation, the use of local climate-adapted seeds, and integrated water management help maintain productivity while preserving ecosystems (Equilibre d'Afrique, 2023). These systems improve soil health and reduce vulnerability to prolonged droughts (Kpadonou et al., 2017). Table 12 shows the contribution of some projects to climate resilience in Benin.

Table 12. Examples of agroecological contributions to climate resilience in Benin, 2015–2023

Contribution	Measured Indicator	Observed Results / Impacts
Crop diversification	Adoption rate of diversified systems (maize–cowpea, maize–cassava, cereals–legumes).	Out of the 13 operational principles of agroecology, the vegetable, pineapple, soybean, and cattle production value chains have adopted 11 principles at a moderate level (50 percent to 60 percent) and at a very high level (75 percent), as actors in these value chains perceive an almost immediate increase in their yields and incomes. For the cotton–maize system, the level of adoption ranges from "not adopted" to "very weakly adopted," as actors anticipate a drastic short-term decrease in production yields. Idrissou (2021)
	Reduction of yield losses in dry years.	Overall reduction in major crops.
Agricultural yields	Increase in maize, cassava, yam and cotton yields under diversified systems.	Yields for major crops increased by an average of 58 percent, depending on the crop. GIZ (2023)
Economic security	Change in annual agricultural income. Savings on chemical fertilizers.	+USD 19 million in annual income; Savings of USD 4 million on fertilizers (soybean production). UN DESA (2019) Net profit of organic cotton producers: EUR 244 per hectare; Average net profit of conventional cotton producers without subsidies: EUR 77 per hectare. ELD (2017)
	Reduction in dependence on cash crops (cotton, maize).	Total agricultural production, reaching more than 21 percent in 2023 compared to lower levels in previous years, indicates a real shift toward more diversified agricultural systems that are less dependent on cash crops. MAEP (2023)
Soil health	Soil organic matter content.	86 percent of the farmers involved confirmed the restoration of the soil's texture and color.
	Reduction in erosion on supported plots.	Nearly 50 percent of the farmers surveyed reported a reduction in soil erosion and an improvement in water conservation. GIZ (2023)
Food security	Reduction in food purchases during the dry season.	Soybean production increased from 57,000 metric tons in 2009 to 220,000 metric tons in 2019. UN DESA (2019)

Source: Authors.

3.4.2 Strategies for a Successful Agroecological Transition

The success of the agroecological transition in Benin relies on a series of interdependent levers that must be activated in a coordinated manner. It cannot be limited to the dissemination of alternative techniques. It calls for a systemic transformation of agricultural practices, institutions, and economic models. In this regard, several strategic axes emerge as essential to the sustainable anchoring of agroecology in Benin's agricultural landscape.

Strengthening Producer Capacities: Building a New Agricultural Culture

The central actor in the agroecological transition is the farmer, who is the main agent of change (Yegbemey et al., 2017; Equilibre d'Afrique, 2023). Benin possesses partial agroecological expertise, originating from research institutes, universities, NGOs, and the traditional knowledge of producers. However, the integration of these skills into training programs and their large-scale dissemination remains limited. Table 13 presents the main skills necessary for the development of agroecology in

Benin, their current availability status, and the identified gaps. Advisory networks and technical support are insufficiently structured, while the institutional and financial frameworks do not allocate dedicated resources for agroecology. These shortcomings highlight the need for coordinated strengthening of technical, organizational, and financial capacities to ensure the success of the agroecological transition (Table 13).

Therefore, it is necessary to go beyond the mere logic of technology transfer to foster a dynamic of learning, experimentation, and appropriation (Equilibre d'Afrique, 2023). Capacity building involves the generalization of extension mechanisms through specialized training centers, farm schools such as the *"Songhaï Center"*, and networks of farmer trainers rooted in local realities (Idrissou, 2021; Commission de la CEDEAO – ARAA, 2023). Additionally, there could be the institutionalization of agroecology within the curricula of agricultural technical schools and universities to train a new generation of agronomists and technicians (Forsans, 2022; Commission de la CEDEAO – ARAA, 2025); as well as the adaptation of training modules to often marginalized groups—especially women, youth, and low-literacy producers—to ensure an inclusive and equitable transition (Yegbemey et al., 2017; Equilibre d'Afrique, 2023).

Table 13. Skills needed for the development of agroecology in Benin

Key Competency	Current Availability in Benin	Identified Gap
Research and innovation in agroecology	Existing institutes such as the National Agricultural Research Institute of Benin (INRAB[91]) and university initiatives; some pilot projects funded by technical partners.	Insufficient applied research programs, lack of sustainable funding, weak transfer of results to producers.
Training and capacity building	Occasional training initiatives (NGOs, FAO, GIZ projects); some university curricula being integrated.	Weak integration into official agricultural education programs; shortage of extension officers specifically trained in agroecology.
Agricultural advisory and extension	Existing extension agents, but mostly focused on conventional agriculture (chemical inputs, cotton).	Lack of specific expertise in agroecological practices and participatory advisory tools
Sustainable soil management and organic fertility	Existing traditional knowledge (composting, crop associations) but poorly disseminated.	Lack of technical and material support for scaling up; continued dependence on chemical inputs.
Producer organization and local governance	Active agricultural cooperatives and farmers' organizations, but weakly structured around agroecology.	Poor organization into agroecological networks; lack of local leadership and institutional advocacy.
Public policies and green financing	Existence of agricultural policies mentioning agroecology, but no dedicated budget line.	Lack of specific funding and incentive mechanisms (subsidies, green credits).

Source: Authors.

A very important aspect of the success of the transition is the support of action research integrated into the realities of agroecological zones, ensuring the effective transfer of new knowledge adapted to local contexts. Some successful cases are presented in Table 14.

Table 14. Success stories of the agroecological transition in Benin

Success Case	Main Actions	Key Results
Equilibre d'Afrique / PASPEA-CC (2020–2023)	Creation of networks of farmer-trainers; local farmer field schools; action research adapted to local contexts. MCVDD (2022b)	• At least 420 producers trained by their peers; increased adoption of intercropped systems (maize–cowpea, maize–cassava); • Reduction of yield losses in dry years.
Helvetas GIZ/ProSOL	Experiments on the production of organic cotton, soybean, maize, millet, and sorghum; Training and support on agroecological practices; Awareness-raising on the risks associated with the use of pesticides and chemical fertilizers on soil degradation. Helvetas (2008); GIZ (2025)	• Increase in organic cotton production, improvement and maintenance of soil fertility, crop rotation, and diversification; • Ongoing training to improve techniques; • Adoption of integrated soil fertility management practices and reduction in the quantities of seeds required per hectare; • Adoption of an agroforestry system combined with intercropped millet and cowpea, along with the production of alfalfa on irrigated fodder banks.
OBEPAB (depuis 1996)	Participatory training of farmers; dissemination of adapted agroecological techniques; Promotion of organic agriculture; Advisory support to farmers for organic production and for processing shea nuts into organic and eco-friendly cosmetic products. OBEPAB (2010)	• Improved yields of organic cotton and associated cereals; • Better input management; • Empowerment of women's groups; • Valorization of rotation crops: organic soybean, cowpea, maize, pigeon pea, sorghum, shea, organic cashew nuts, and sesame; • Production of organic and eco-friendly cosmetic products.
Songhaï Center (Porto-Novo + branches)	Integrated training (crop production, livestock, processing, bioenergy); On-site experimentation; support for micro-farm establishment. Mil'Ecole (2019) ; Commission de la CEDEAO (2019)	• More than 1,500 young people and women trained and established across the country; • Creation of dozens of autonomous agroecological micro-farms in several municipalities (Zangnanado, Parakou, Djougou).
FUPRO – Farmer networks in Borgou and Collines	Decentralized training; facilitation of farmer field schools. FUPRO (2024)	• Adoption of composting, intercropping, and biological control practices; • Empowerment of farmer groups.
African BioCompost Grower (ABC Grower)	Production, promotion, and sale of organic fertilizers. Idrissou (2021)	• More than 400 farmers have abandoned the use of chemical fertilizers and adopted an organic production system; • More than 500 jobs have been created within three years in organic agriculture; • 8,000 liters of organic fertilizers were supplied in 2020 (equivalent to more than 100 metric tons of chemical fertilizers).

Source: Auteurs.

Institutional Framework and Political Will: Creating a Supportive Environment

The agroecological transition requires adequate political and regulatory support, capable of framing, guiding and sustaining initiatives. In addition, these measures must be accompanied by incentive mechanisms such as targeted subsidies for organic inputs, agroecological equipment, and/or certification costs, as well as by facilitating access to the specific market for agroecological products. Equally important is the legal recognition of farmer seeds and traditional agricultural practices to guarantee seed and cultural sovereignty for rural communities. Table 15 highlights some of these supporting measures.

Table 15. Successful examples of incentive measures promoting agroecology in Benin

Domain	Example / Project	Key Results	Actors Involved
Targeted subsidies (organic inputs, equipment)	PASPEA-CC (2020–2023): Partial subsidies for composters, manual sprayers adapted for organic use, and improved local seeds (e.g., cowpea, organic sorghum). MCVDD (2022a); ProAgri 4[92] (GIZ, 2024)	Adoption by more than 17,500 farms of techniques using organic inputs and adapted equipment; increase in certified organic areas.	MAEP, partners (FAO, IFAD)
Support for agroecological / organic certification costs	Organic Cotton Program (supported by FUPRO, OBEPAB and Helvetas): Support to producer groups for ECOCERT / GOTS certification. PAN-Germany & OBEPAB (2009); Benin's Investment and Industry Promotion Company (SIPI)[93] (GDIZ, 2023); Sodjinou et al., (2015); Enabel (2023); Idrissou (2021)	+824.3 metric tons of organic cotton exported per year; +30 percent income compared to conventional cotton. Three ISO certifications obtained by the Glo-Djigbé Special Economic Zone (GDIZ): • ISO 9001:2015 (quality management); • ISO 14001:2015 (environmental management); • ISO 45001:2018 (occupational health and safety). Organic certification by ECOCERT for the production, processing, and export of soybeans and cashew nuts. EDGE Advanced certification for five factories in the industrial zone. +140,000 farmers from 800 villages in Benin engaged in the agroecological transition.	OCB, Helvetas, ECOCERT
Facilitation of access to specific agroecological markets	Centre Songhaï + local short supply chains (Porto-Novo, Cotonou): Direct sales and specialized organic markets. Idrissou (2021)	Creation of a network of local buyers; better valuation of agroecological products; customer loyalty in urban areas.	Centre Songhaï, local authorities
Recognition of farmer seeds	Participatory Management of Genetic Resources Project (INRAB, 2017–2022): Support for the conservation of local seeds (maize, millet, sorghum) and their integration into communal plans. Idrissou, (2021); FAO, (2007)	Establishment of farmer seed banks in 12 municipalities; local plans integrating traditional seed management.	INRAB, municipalities, FAO
Recognition of traditional agricultural practices / seed sovereignty	Projet Biomasse Electricité (12.000 ha + 6.334 ha), PIRVaTEFoD-Bénin (5.959 ha). PNUD (2022); PNUD (2024); PNUD (2025) Integration of traditional practices (stone lines, live hedges) into land use plans; protection of local knowledge. Idrissou (2021); Teteli (2022)	Dissemination of traditional techniques and integration into land management plans over more than 20,000 ha across several projects. Use of traditional anti-erosion practices for soil conservation. Use of water-retention bunds for the rational use of water.	MAEP, MEEM, TFPs

Source: Authors.

Furthermore, municipalities have a leading role to play, notably by integrating agroecology into their communal development plans. They will help territorialize agricultural policies and adapt interventions to local realities (principle of subsidiarity). They must also financially support this transition by allocating budgets and mobilizing resources to fund it.

Technical, Material, and Financial Support: Overcoming Structural Barriers

One of the main obstacles to the large-scale adoption of agroecology in Benin remains limited access to the resources necessary for its implementation. To overcome this constraint, it is necessary to develop tailored financing mechanisms by facilitating credit access for agroecological producers, notably through agricultural cooperatives or partnerships with microfinance institutions. This involves adapting loans to the production cycle, providing guarantees and risk mitigation, assisting with compliance to technical pathways, and the preparation of specific loan applications, as well as providing appropriate equipment for agroecological production. Examples include credit facilitation through cooperatives and the adaptation of credits schemes to the rice production cycle (MAEP, 2018a). Integrating several research findings on technologies from research centers is also highly valuable (Sessou et al., 2022; Idrissou, 2021). Finally, strengthening and expanding advisory support in agroecology, by training specialized technicians capable of supporting producers through the transition, constitutes a viable solution for developing agroecology (Equilibre d'Afrique, 2023).

Research and Innovation: Building Agroecology on Knowledge

To be credible and effective, agroecology must rely on a robust, contextualized, and evolving scientific foundation. This requires active support for action-research programs led by national institutions such as the Faculty of Agronomic Sciences (FSA/UAC) and the INRAB. This research should be integrated into a national agroecology program implemented across all universities, schools, and institutes linked to the agricultural sector (UNA[94], FA[95], agricultural high schools, NGOs, etc.). Although many relevant research results already exist, their scaling-up remains limited. Therefore, supporting their valorization and field experimentation is of great importance. Additionally, it is essential to promote endogenous knowledge and farmer-led innovations by encouraging local experimentation, participatory approaches, and collaborations between researchers, producers, and businesses. Entrepreneurs will quickly identify opportunities to strengthen supply chains and structure market demand.

Differentiating Agroecological Products: Farm Typology and Pricing Policy

The success of agroecology promotion depends on two key economic determinants: the type of farms targeted and the price ratio between agroecological products and conventional agricultural products (Houngbo, 2016). Indeed, the two main weaknesses in agroecology promotion often stem from approaches assuming a single production model can suit all farming systems (Gravel, 2016). However, each farming system operates under specific objectives and production relationships. To develop agroecology, it is essential to prioritize small family farms and establish a system of positive discrimination in the market between conventional and agroecological products (IPES-Food, 2020; Commission de la CEDEAO – ARAA, 2025).

Structuring the Agroecological Value Chain: Ensuring Economic Sustainability

Agroecological viability goes beyond agricultural production, it must encompass the entire agri-food system from inputs to the plate, including agricultural production, processing, and agro-industrial activities. Therefore, it must be part of a coherent, ethical, and profitable value chain. This entails addressing specific challenges at each stage through technical, organizational, and financial support; organizing agricultural product fairs; implementing sustained marketing and commercial activities; creating recognized quality labels that value agroecological products based on environmental, social, and health criteria; and developing short supply chains that reconnect producers and consumers (Ahouangninou et al., 2021; Hedokingbe et al., 2025), helps reducing post-harvest losses, and ensures fair remuneration for farmers. Strengthening local processing increases added value, generates employment in rural areas and meets the expectations of modern market. Moreover, supporting the export of certified products–particularly to international organic and fair-trade markets–enhances Beninese know-how and strengthens the competitiveness of sustainable value chains. Table 16 summarizes key experiences in

structuring and supporting agroecological value chains and shows that targeted support specifically oriented toward agroecology produces very encouraging results upon which an effective national model can be built.

Table 16. Projects and programs that have implemented value chain structuring in Benin

Suggestion / Domain	Examples / Projects Implemented	Documented Results / Progress
Technical, organizational, and financial support for each link	PASPEA-CC (2020–2023): technical support for producers, networking of actors, subsidies for equipment and organic inputs. MCVDD (2022a); ProAgri 4 (GIZ, 2024)	Over 2,500 farmers supported; adoption of agroecological techniques; creation of farmer trainer networks. 15,000 actors supported in the value chains of primary products such as rice, soybean, and shea.
Agricultural fairs, marketing, and commercial actions	Local and organic product fairs organized by MAEP and partners (e.g., Borgou organic maize fair 2022); specific markets organized by the Songhaï Center. Awokoloito (2021) ; FUPRO (2024)	Improved visibility of agroecological products; development of urban short supply chains.
Creation of quality labels	Organic cotton program (OBEPAB, Helvetas); ECOCERT certification for organic pineapple and soy labeling. PAN-Germany & OBEPAB (2009) ; Sodjinou et al., (2015) ; Inter-réseaux (2022) ; Espoirs d'Enfants (2019) ; DEFIA (Enabel, 2023); Labeling of soybeans and cashew nuts (GDIZ, 2023); Agricultural Development and Market Access Support Project (PADAAM[96]) (Idrissou, 2021); Support Project for the Structuring of a Profitable, Equitable and Sustainable Family Farming System (PASAFRED[97]) (Idrissou, 2021)	824.3 metric tons of organic cotton produced during the 2011–2012 season; structuring of organic value chains; international recognition. The Pineapple Producers Network of Benin (RéPAB[98]) obtained ECOCERT organic certification in 2009 for part of its production. The Bio Sutti Somi cooperative (North Benin) received an "organic soybean" certificate issued by ECOCERT. SIPI-BENIN S.A. obtained certification by implementing a strategy aimed at supporting more than 140,000 farmers from 800 villages in Benin and assisting them in their transition from conventional agricultural methods to sustainable farming practices. Producers and farmers trained in agroecology received peer certification for their products with the support of FUPRO.
Development of short supply chains	Songhaï (Porto-Novo): direct sales to consumers, neighborhood markets; local initiatives in Collines (women processor networks). MAEP (2019); ACED (2018)	Fewer intermediaries; better remuneration for producers; increased urban consumer loyalty.
Strengthening local processing	FNDA[99] (2020–2023): financing of local processing units (organic soy, rice, pineapple); Songhaï: integrated agro-industry. OXFAM (2020)	Creation of rural jobs; increased product added value; compliance with market standards.
Support for the export of certified organic / fair-trade products	OBEPAB and Helvetas: organic cotton; organic pineapple projects to Europe (2020–2023); development of organic soy export channels. Enabel (2025); INSAE, (2020)	Strengthened international competitiveness; increased income for certified producers.

Source: Authors.

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Notes Part 3

65 The content of this chapter is the sole responsibility of the authors and does not necessarily represent the views of SDSN, SDSN Benin or the Government of Benin.
66 Professor, Agroeconomist, Expert in Development Project Design, Monitoring and Evaluation, Director of the School of Agrobusiness and Agricultural Policies (EAPA), National University of Agriculture (UNA).
67 Professor, Environmental Economist, Expert in Carbon Finance and Circular Economy, Member of the Public Economics Laboratory (LEP), Faculty of Economics and Management (FASEG), Department of Economics, University of Abomey-Calavi.
68 In French: Plan stratégique de développement du secteur agricole.
69 In French: Projet de Transition agroécologique dans les zones cotonnières.
70 In French: Plan national d'investissements agricoles et de sécurité alimentaire et nutritionnelle.
71 In French: Loi d'orientation agricole et de sécurité alimentaire et nutritionnelle.
72 In French: Organisation béninoise pour la promotion de l'agriculture biologique.
73 Project to Support the Adaptation of Smallholder Farming Systems in Central Benin to Climate Change (In French: Projet d'appui à l'adaptation des systèmes de production des petits exploitants agricoles du Centre-Bénin aux changements climatiques).
74 "Development of Intensive Agroecology within Banana—and Plantain—Based Cropping Systems for Improved Management of Biophysical Constraints" Project (In French: «Développement de l'agroécologie intensive au sein des systèmes de culture basés sur la banane et le plantain pour une meilleure gestion des contraintes biophysiques»).
75 Project to Strengthen the Technical Capacities of Micro, Small, and Medium Agri-Food Enterprises and Their Support Structures for Improved Competitiveness in Benin (In French: Projet de renforcement des capacités techniques des micros, petites et moyennes entreprises agroalimentaires et de leurs structures d'appui pour une meileure compétitivité au Bénin).
76 Organization of Rural People for Sustainable Agriculture (In French: Organisation des ruraux pour une agriculture durable).
77 A sustainable, environmentally focused school based in Ouidah, Benin.
78 Center for the Promotion of Agroecology and Indigenous Science and Technology (In French: Centre de valorisation de l'agroécologie et des sciences et des techniques endogènes).
79 Initiatives like ProSOL/GIZ, PAPVIRE-ABC, Eco-Benin, and FAO programs have supported the introduction or revitalization of agroforestry systems, notably through assisted natural regeneration, live hedges, and tree parks based on shea, néré, or gliricidia.
80 The Soil Protection and Rehabilitation Project for Food Security supported by the GIZ (In French: Projet de protection et de réhabilitation des sols pour la sécurité alimentaire).
81 The Rural Development Sector Support Program (In French: Programme d'appui au secteur du développement rural).
82 Food Production Support and Resilience Strengthening Project in the Alibori, Borgou, and Collines Departments (In French: Projet d'appui à la production vivrière et de renforcement de la résilience dans les départements de l'Alibori, du Borgou et des Collines).
83 Agricultural Development and Productive Investment Support Project (In French: Projet d'appui au développement et aux investissements agricoles productifs).
84 Integrated Project for the Restoration and Enhancement of Degraded Land and Forest Ecosystem Value for Improved Climate Resilience in Benin (In French: Projet intégré de restauration et d'amélioration de la valeur des terres et des écosystèmes forestiers dégradés pour une meilleure résilience climatique au Bénin).
85 Acronyms for a type of fertilizer containing nitrogen (N), du phosphorus (P) et du potassium (K).
86 International Federation of Organic Agriculture Movements.
87 Pineapple Value Chain Entrepreneurship Development Project (In French: Projet de développement de l'entreprenariat dans la filière ananas).
88 Consultative Council of Rice Producers of Benin (In French: Conseil de concertation des riziculteurs du Bénin).
89 Organic certification body.
90 Global Organic Textile Standard.
91 In French: Institut national des recherches agricoles du Bénin.
92 "Promotion of Agriculture" project (In French: Projet « promotion de l'agriculture »).
93 In French : Société d'Investissement et de promotion de l'Industrie (SIPI) Bénin.
94 National University of Agriculture (In French : Université nationale d'Agriculture).
95 Faculties of Agronomy.
96 In French: Projet d'Appui au Développement de l'Agriculture à l'Accès au Marché.
97 In French: Projet d'Appui à la Structuration d'une Agriculture Familiale Rentable, Equitable, Durable.
98 In French: Réseau des producteurs d'ananas du Bénin.
99 National Development Fund for Agriculture (In French: Fonds national de développement Agricole).

4

Case Study on Renewable Energies in Benin

PART 4.
Case Study on Renewable Energies in Benin[100]

Written by Janvier EGAH[101] and Hortensia ACACHA[102]

Introduction

The energy sector is one of the essential levers for triggering accelerated economic growth and structural transformation (African Development Bank, 2025), with multidimensional advantages that position it at the heart of sustainable development (Climate and Development Network, 2014). In Benin, increasing resilient investments in the energy sector has been a priority of GAP I and II. The Government has made significant efforts in terms of investments as well as administrative, institutional, and regulatory reforms to develop the energy sector. These investments have been implemented through electrification projects such as the Project to Strengthen the Resilience of the Energy Sector to the Impacts of Climate Change (PANA Énergie), the project *"Biomasse Électricité"*, and the Off-Grid Electricity Access Project. Thanks to these initiatives, the proportion of the population with access to electricity increased sharply from 34.5 percent in 2018 to 65 percent in 2022 (MEF, 2024a). Similarly, the electrification rate rose from 29.2 percent in 2018 to 32.8 percent in 2022 (MEF, 2024a). Despite this progress, Benin still faces significant challenges. Domestic energy needs are still largely met through imports from Ghana and Nigeria (Sinsin, 2017; INStaD, 2023). Furthermore, traditional energy sources from firewood, charcoal, and imported petroleum products continue to dominate the country's energy supply and consumption structure. In 2022 natural gas (72 percent) and diesel (12.66 percent) were the most used energy sources (Ministère de l'Energie, de l'Eau et des Mines, 2023). This context underscores the need to rely on energy sources that ensure energy autonomy and stability. In this regard, RE appear as a promising alternative for sustainable and inclusive development. Renewable energy is defined as energy derived from natural sources that regenerate faster than they are consumed, according to the Sustainable Energy Committee of the United Nations Economic Commission for Europe (2016). Such energy can originate from the sun, geothermal heat, wind, hydroelectricity, waterfalls, biomass, watercourses, tides, and waves.

According to the Climate and Development Network[103] (2014), the importance of RE is economic, health-related, social, and environmental. Economically, RE is a better option in a context where fossil fuels are becoming scarce, increasingly expensive, and unstable. It is suitable for the poorest populations and those living in remote and underprivileged areas, easily covering zone that are not served by fossil fuels.

From a health perspective, RE has no harmful effects on human health, unlike fossil fuels such as coal, whose use exposes populations to respiratory diseases, causing high mortality rates.

Socially, RE is adaptable to all geographical contexts, whether it is urban, peri-urban, or rural. It inclusively meets communities' needs, especially in a context where about 60 percent of electricity access is expected to come from mini-grids by 2030 (Réseau Climat et Développement, 2014). RE creates direct and indirect jobs, for instance through the marketing of solar panels and accessories. Thanks to RE, populations—especially youth and women—are developing income-generating activities such as agro-food processing, sales of refrigerated products, and crafts. Moreover, access to RE helps reducing gender inequalities, as women spend less time on domestic tasks and can better engage in economic activities, thereby strengthening their empowerment and that of young people.

Environmentally, RE emits very little CO_2, whereas charcoal emits about 44 percent of global CO_2 emissions (Réseau Climat et Développement, 2014). Using RE reduces forest degradation and contributes to CO_2 sequestration.

In Benin, adopting an energy mix that increasingly integrates RE is a key lever to ensuring energy security, reducing import dependency, and supporting sustainable economic development. Nevertheless, despite efforts to promote solar, biomass, and hydroelectric energy to diversify its energy mix and reduce fuel dependence, in 2018 RE accounted for only 3.4 percent of total consumption (Ministère d'État chargé du Plan et du Développement, 2018). In 2022, photovoltaic solar energy represented only 3.3 percent of the electricity mix (Ministère de l'Energie, de l'Eau et des Mines, 2023), and in 2023, only 1.6 percent of per-capita electricity consumption came from low-carbon sources, mainly solar energy (LowCarbonPower, 2025). These figures show that the renewable energy transition is not yet a reality in Benin, and that further investments and sustained Government commitment are required.

Despite Government efforts to promote RE mechanisms in recent years, the subsector faces several challenges hindering its development. Regulations are sometimes poorly enforced, and incentive measures to stimulate individual investment in RE remain little known. Equipment costs for RE technologies remain expensive, hence prohibitive for many, especially in rural areas. Additionally, some population groups remain unaware of the importance of RE, fostering skepticism. Compounding these issues is the lack of reliable data due to the small number of studies conducted in Benin, which complicates effective planning.

To promote sustainable development in a context where energy access remains limited, the use of RE is indispensable in Benin. This chapter documents the initiatives of the Government of Benin and its TFPs in the RE sector. It presents the current state of RE access, reviews achievements and reforms, and highlights direct and indirect effects on sustainable development in Benin. The chapter concludes with a series of opportunities and prospects.

4.1 Reforms on Renewable Energies

The RE subsector has undergone institutional, regulatory, strategic, economic, and fiscal reforms led by the State to improve the population access to energy in general and to RE in particular.

4.1.1 Institutional and Regulatory Reforms

Institutional and regulatory reforms in the RE subsector since 2007 mainly consist of establishing structures dedicated to its promotion, regulation, and oversight. To this end, the Government has established entities such as the Directorate of New and Renewable Energies (DENR), the Benin Agency for Rural Electrification and Energy Management (ABERME[104]), the Unit in Charge of the Renewable Energy Development Policy (UC/PDER), the Renewable Energy Agency (ARE), and the Benin Electricity Production Company (SBPE[105]). These structures, governed by laws, decrees[106], and ratified international agreements[107], aim to create a favorable institutional environment for the emergence of RE in Benin and to strengthen international cooperation around renewable energy.

4.1.2 Strategic Reforms

The Government's strategic reforms in renewable energies (RE) are reflected in the integration of RE into the National Development Plan (NDP), operational documents such as the GAP, and sectoral electrification policy documents.

The 2018–2025 NDP planned the implementation of projects and programs for the development of RE in Benin. To this end, the Government planned to: i) increase supply; ii) diversify production sources through RE; iii) modernize the distribution network; and iv) implement reforms to strengthen the ARE capacities, enforce tariff policy, and attract private investors in production.

In line with the 2018–2025 NDP, the GAP II (2021–2026) has provided mechanisms to facilitate the private investments through the establishment of channels, instruments, and specific procedures for RE financing and promotion. Its objective is to create an institutional and regulatory governance environment conducive to RE development. Within this framework, RE development is structured around two main orientations. The first aims to strengthen electricity production capacity from renewable sources to ensure the country's energy autonomy. It includes actions to improve the knowledge and valorization of resources, strengthen human and institutional capacities, promote research and innovation, and support large-scale electricity production connected to the grid and autonomous off-grid systems. The second direction concerns access to modern energy in rural areas through the promotion of decentralized

technologies, the sustainable valorization of biomass for domestic uses and biofuels, and the establishment of an institutional, legal, and incentive framework favorable to RE development.

Furthermore, the Government has developed and adopted policies and strategies aimed at guaranteeing universal access to reliable, sustainable, and modern energy services at an affordable cost, alongside urgent measures to combat climate change and its impacts. The National Renewable Energy Development Policy (PONADER[108]) and the National Energy Management Policy (PONAME[109]) aim to contribute to the country's sustainable energy development by providing RE-based energy services accessible to the broadest population at the lowest cost. Like GAP II, they define two main strategic orientations: strengthening RE production capacities for electricity generation and developing and providing modern energy to rural areas. The 2022–2026 Electric Grid Connection Strategy (SRRE[110]) aims for free secured electricity grid connection for all populations in conventional grid coverage areas by 2026.

4.1.3 Economic and Fiscal Reforms

The Government has undertaken economic and fiscal reforms in the RE subsector to facilitate the imports, financing, and energy supply to the population. To this end, it has exempted from Value Added Tax (VAT) the imports of materials, equipment, and installation accessories for the deployment of photovoltaic and solar thermal systems[111] (Box 4). The Government has also defined the conditions and rules for the sale or purchase of energy[112], placing the Electricity Regulatory Authority (ARE[113]) at the center of approving energy purchase or sales contracts and tariff setting. Thus, since December 2024, any independent producer is authorized to sell their production to the State, resellers, or customers. Finally, the Government introduced Power Purchase Agreements (PPAs) to facilitate the financing of solar projects, attract private investments, develop solar energy through the construction of large-scale solar power plants, facilitate the energy transition, and stabilize energy prices.

Box 4. VAT exemption on solar energy production equipment in Benin

The Government of Benin has undertaken reforms that have allowed the exemption of energy production equipment from Value-Added Tax (VAT) in the Republic of Benin. This permanent exemption includes the import and sale of photosensitive devices, covering photovoltaic cells even when assembled into modules or made into light-emitting diode panels. This equipment is among the ten goods and services on the community list of products subject to VAT exemption, which represent 18 percent of the amounts, values to be received or in exchange for delivery. This exemption aims to promote household access to electricity. It has enabled beneficiaries to save a significant amount, increasing from 288,195,116 FCFA in 2021 to 1,365,440,749 FCFA in 2023.

Source: MEF, 2024b.

4.2 Status of Renewable Energies in Benin

4.2.1 Institutional Dynamics around Renewable Energies in Benin

The RE subsector has experienced strong growth driven by state policies and incentive measures to facilitate the populations' access to electricity. From 2000 to 2025, several transformations were carried out in the RE subsector in Benin (Figure 16).

Before the 2000s, energy used in Benin came from conventional sources (fossil fuels) mainly imported from Nigeria and Ghana. At that time, RE was very limited and mainly derived from biomass. There were no Government projects or guidelines promoting RE. However, in some rural areas, a few isolated solar photovoltaic systems powered certain health centers for vaccines refrigeration and some telecommunication stations.

The period from 2000 to 2010, was marked by the enactment of Law No. 2006-16 of March 27, 2007, establishing the electricity code in Benin; the creation of the ABERME by Decree No. 2009-150 of April 30, 2009; and the establishment of the ARE by Decree No. 2009-182 of May 13, 2009. During the same period, the Government also launched several pilot solar energy projects in rural areas with support from NGOs and TFPs such as the German Society for International Cooperation (GIZ), the United Nations Development Programme (UNDP), and the EU.

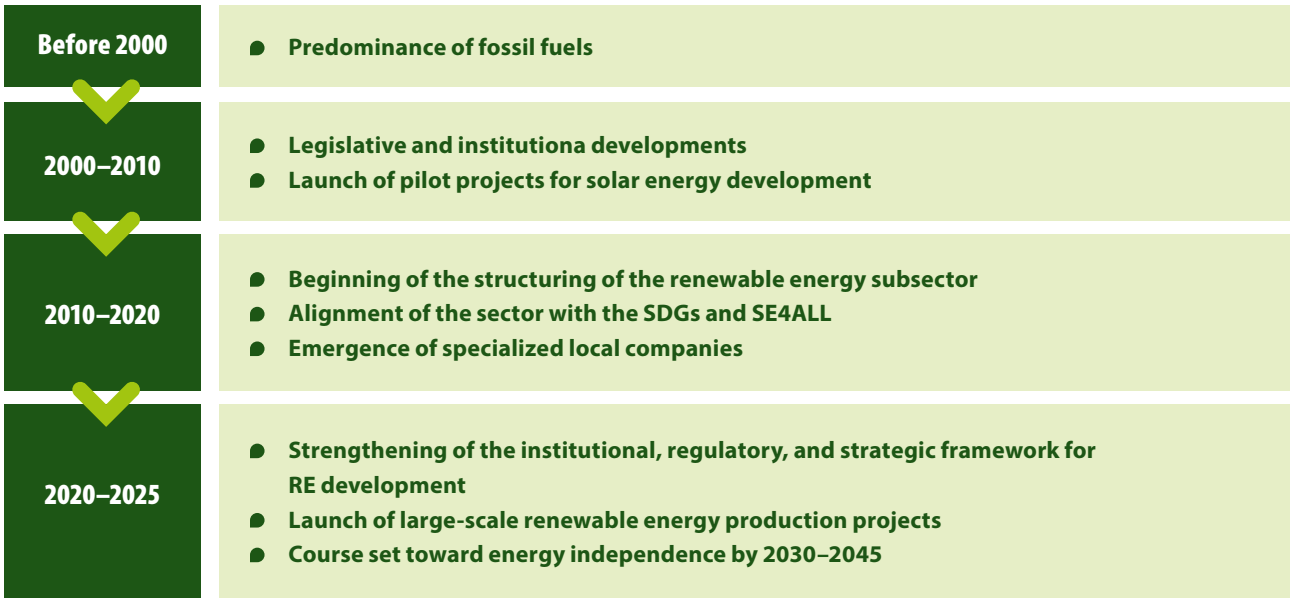
Between 2010 and 2020, the Government began structuring the RE subsector by creating a regulatory framework to stimulate and attract private investments in RE development. It therefore developed national policies linked to the Sustainable Development Goals (SDGs) and the Sustainable Energy for All (SE4ALL) strategy. Mini solar grids and individual kits were installed through rural electrification projects, hence creating a growing demand for solar energy. This period was also marked by the professionalization of the RE subsector with the emergence of local companies specializing in the distribution and installation of solar kits. This period also saw the launch of the African Renewable Energy System Solution (ARESS[114]), in 2012, to provide responsible electrification solutions in Benin.

Since 2020, the RE subsector has taken a decisive turn with the development of the PONADER and the adoption of the Law No. 2020-05 of April 1, 2020, establishing the electricity code in the Republic of Benin to strengthen the ARE as the national electricity regulator. In addition, the Decree No. 2020-565 of December 2, 2020, created the SBPE to operationalize reforms in the production, transport, and distribution. These strategic documents served as levers to accelerate the energy transition toward independence and climate change mitigation. The first industrial-scale solar project, financed with support from the EU, the French Development Agency (AFD), and the WAEMU[115], was implemented through the construction of a 25 MW solar plant at Illoulofin (Pobè) in 2022, extended to 50 MW in 2023 and planned to reach 75 MW with FORSUN and TTC[116] projects expected to be completed in December 2025. Several mini hybrid solar grid projects through the Millennium Challenge Account – Benin II (MCA-Benin II) program have emerged to develop the RE subsector, particularly solar energy. The development of the RE subsector has been a key priority for the Government in the NDP and sector budgets to sustainably reduce electricity imports and improve energy coverage by 2030–2045. Incentive measures have been adopted by the Government to exempt solar equipment from import taxes.

In light of all the above, the RE subsector has undergone a revolution characterized by state policies and incentive measures to facilitate population access to electricity and the implementation of electrification projects through RE (Figure 18). At this pace, promising prospects are opening for the subsector, which could reduce the country's dependence on imported energy.

This institutional dynamic has fostered the emergence and involvement of national, sub-regional, and international actors from both the public and private sectors. The RE subsector is therefore characterized by a plurality of actors who play complementary roles (Figure 19).

Figure 18. Institutional dynamics of renewable energy in Benin



Source: Authors.

Figure 19. Actors in the renewable energy subsector and their roles in Benin

	State Actors	Energy Producers and Distributors	Technical and Financial Partners
Actors	Ministry of Energy and its decentralized agencies, ARE, Directorate of New and Renewable Energies, Unit in Charge of Renewable Energy Development Policy, and Ministry of Living Environment and Sustainable Development.	SBEE, SBPE SA, Independent Power Producers, Private Companies and Operators, Training and Research Centers, Organization of Women for Energy, Environment Management and Integrated Development Promotion, Songhaï Center, Interprofessional Association of Renewable Energy Specialists in Benin.	ECOWAS, African Union, WAEMU, CEB, IRENA, WAPP, International Atomic Energy Agency (IAEA), World Bank, UNDP, EU, ECREEE, NEPAD, UNFCCC, NDC–COP21, GEF, International Solar Alliance, GIZ, SNV.
Roles & responsibilities	• Elaboration of investment regulatory policies • Monitoring compliance with legislative and regulatory frameworks • Protection of the public interest and assurance of service continuity • Ensuring service quality, financial balance of the sub-sector, and its harmonious development • Ratification of international agreements	• Selling and distribution of energy • Promotion of improved cookstoves • Advocacy for stakeholders in the energy sector • Support to the government in implementing its energy policy in Benin	• Project financing • Creation of an enabling environment for renewable energy development • Support for government policies • Creation of inter-State exchange platforms • Project implementation

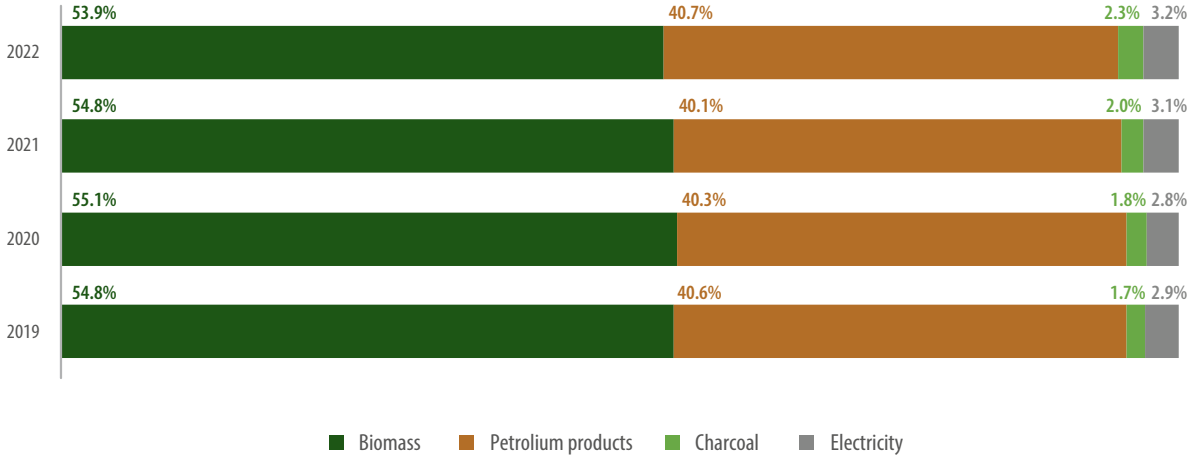
Source: Authors.

4.2.2 Structure of Energy Use in Benin

The structure of energy consumption remained almost unchanged between 2019 and 2022. Indeed, biomass remained the most consumed form of energy in Benin, although the trend slightly declined from 54.8 percent to 53.9 percent (Figure 20). It was followed by petroleum products, whose consumption remained stable between 2019 and 2022 (Figure 20).

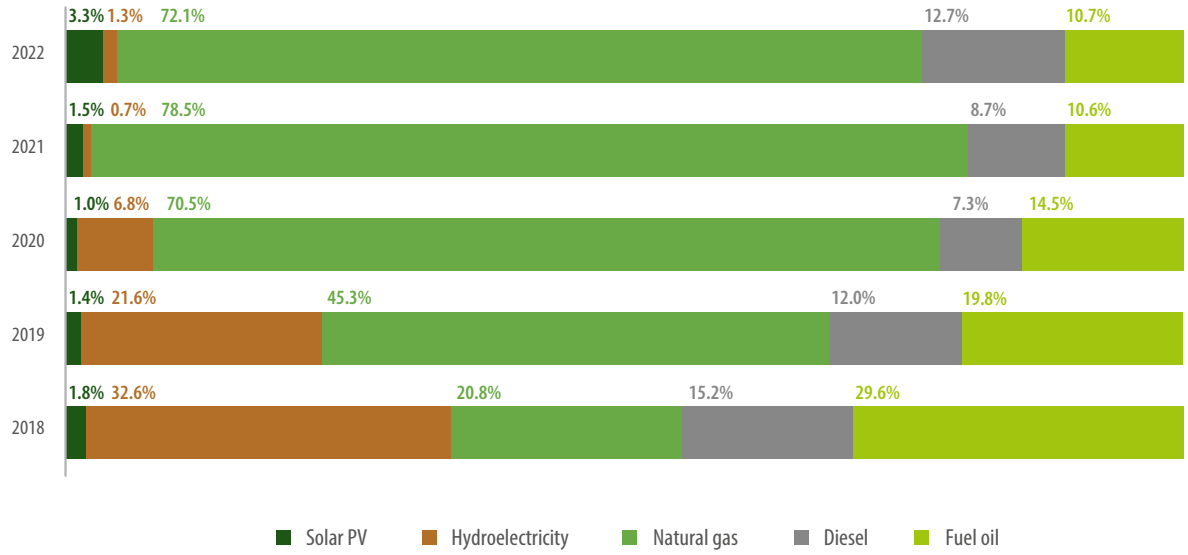
While the structure of energy consumption remained focused on biomass between 2019 and 2022, the sources of electricity production underwent a transition from hydroelectricity to natural gas from 2018 to 2022. Indeed, the distribution of different energy sources used for electricity production changed significantly between 2018 and 2022. In 2018, hydroelectricity was the most used source, accounting for 32.6 percent of electricity production (Figure 21). However, from 2019 to 2022, natural gas became the main source, reaching 72.1 percent of the total production in 2022 (Figure 21). Photovoltaic solar energy remained the least used source from 2018 to 2022, but its use still increased, rising from 1.8 percent in 2018 to 3.3 percent in 2022 (Figure 21). Thus, from 2018 to 2022, the energy mix remained mainly oriented toward the use of fossil energies, representing about 95.5 percent of total electricity production in 2022 (Figure 21). Based on the information collected, it appears that geothermal and wind energies were not used to produce electricity in Benin from 2018 to 2022.

Figure 20. Evolution of energies consumption in Benin, 2019–2022



Source: Data extracted from the report of the Directorate of Energy Planning, Rural Electrification, and Regulation of the Ministry of Energy, Water, and Mines (2023).

Figure 21. Evolution of the electrical mix by energy source, 2018–2022



Source: Data extracted from the report of the Directorate of Energy Planning, Rural Electrification, and Regulation of the Ministry of Energy, Water, and Mines (2023).

4.3 Synthesis of Recent Initiatives and Analysis Energy Sector Impacts

4.3.1 Review of Renewable Energy Projects Funded by the Government, Including the SDG Eurobond and TFPs

The RE subsector has experienced rapid growth with the emergence of initiatives implemented by the Government through resources mobilized by the "Eurobond SDG" issuance and supported by TFPs.

In terms of projects and programs supported by the TFP, about 18 off-grid energy plant installation and renovation projects have been identified. The table in Annex A.1 provides information on these projects and programs. They have contributed to promoting, supplying, and developing the RE subsector through financing from international, regional donors and the Government (Annex A.1). These projects enabled, in both urban and rural areas, the electrification of thousands of off-grid households, while reducing dependence on diesel. They have also promoted the installation of photovoltaic solar power plants, as well as the design and provision of prototypes of clean and modern cooking energy equipment. Additionally, solar streetlights have been installed in public facilities, and improved carbonization technologies have been introduced within communities. Finally, these initiatives have contributed to the valorization of agricultural waste (Annex A.1).

Among the most significant support programs, the agreement between the Government and the Millennium Challenge Corporation (MCC) stands out as a major lever for the energy sector. This agreement, implemented by the MCA – Benin II, aimed to strengthen business production and productivity, while generating economic opportunities for households through improved electricity supply quality and quantity. It financed four key projects focused on policy reform and institutional strengthening, electricity distribution, electricity production, and off-grid electricity access. The latter was concretized through the deployment of the "*Off-grid Clean Energy Facility* (OCEF)" (Box 5).

As for Government-funded initiatives, the SDG bonds called *"Eurobonds SDG"* have resulted in financing other projects in favor if RE (Table 17). These projects aim to improve "*access to low-carbon, reliable, and affordable energy*," with an allocated amount of 29.29 million euros (about 19.2 billion FCFA), representing nearly 6.0 percent of the total allocation (MEF, 2024a).

Table 17. Projects funded by the SDG Eurobond in Benin

No.	Project (Eurobond SDG funding amount)	Main Achievements	Results Obtained
1	**Sustainable Biomass Electricity Promotion Project in Benin (PPDBEB)** [Project Closed]	• 30,000 ha of forests restored; • 1,803 ha under conservation agriculture practices; • Two gasification plants installed.	• 84 villages and hamlets covered in four municipalities (Savalou, Dassa-Zoumé, Djougou, and Kalalé); • 44,440 beneficiaries impacted, including 11.4 percent women; • 358 new jobs created.
2	**Project to Strengthen the Resilience of the Energy Sector to the Impacts of Climate Change in Benin (PANA Énergie[117])** [Project Closed]	• 13 climate-resilient solar photovoltaic mini power plants and 84 resilient solar streetlights installed; • 34,650 ha of forests restored; • 325 kilowatt-peak (kWp) of photovoltaic energy introduced in vulnerable off-grid localities, contributing to the national energy mix; • 3,027 stakeholders trained on climate risk management in the energy sector; • 245 improved stoves and 123 improved pressure cookers distributed; • Two smart electrical distribution transformers (800 kilovolt-ampere (kVA) – 15–20 kilovolt (kV) / 400 volt) commissioned at SBEE[118] substations in Sainte Rita and Cadjèhoun (Cotonou); • Seven community fuelwood production parks installed.	• 732,000 inhabitants served with electricity across 25 municipalities (Djougou, Savè, Ouèssè, Savalou, Dassa-Zoumé, Toucoutouna, Natitingou, Zagnanado, Covè, Pèrèrè, N'Dali, Djidja, Tanguiéta, Kandi, Cotonou, Porto-Novo, Malanville, Bohicon, Abomey, Bantè, Parakou, Lokossa, Bassila, Toffo, Abomey-Calavi), including more than 150,000 with permanent access to clean energy; • 33,252 program beneficiaries using climate-adapted agricultural technologies, including 25 percent women.
3	**Emergency Electrification Works for 17 Rural Localities Connected to SBEE's Conventional Grid** [Project Closed]	• 11 km of medium-voltage (MV) networks built; • Nine km of low-voltage (LV) networks built; • 50 km of high-voltage (HV) networks built; • Five transformers installed and connected.	21 municipalities covered (Cobly, Kouandé, Matéri, Ouidah, Kalalé, N'dali, Sakété, Dunkassa, Marégourou, Bori, Gbegourou, Dabogohoun, Yoriyori, Nambouli, Tihoun, Mihoun, Dassari, Koundri, Marégourou, Kotari, Itadjebou).
4	**Electricity Network Strengthening and Extension Project** [Project Closed]	• 1,460 luminaires installed; • 72 km of MV networks built; • 155 km of LV networks built; • 64 transformers installed and connected.	32 municipalities covered (Abomey, Abomey-Calavi, Adjarra, Adjohoun, Allada, Avrankou, Bembèrèkè, Comè, Dangbo, Djidja, Gogounou, Grand-Popo, Kalalé, Kandi, Kpomassè, Malanville, Matéri, Missérété, N'dali, Nikki, Ouidah, Ouinhi, Pèrèrè, Porto-Novo, Savalou, Sèmè-Podji, Sinendé, Tanguiéta, Tchaourou, Toribossito, Zakpota).
5	**Energy Efficiency and Sustainable Biomass Energy Management Project** [Ongoing Project]	• 326 solar streetlights installed in 14 municipalities and three health centers in 2024; • Photovoltaic systems installed in key health centers (CM Cotonou 1, CHUD Abomey-Calavi, CHUD Porto-Novo, HZ Natitingou, CS Magoumi, Koronkore, and Yarikou); • 3,625 energy-intensive lamps replaced with efficient LED lamps.	• Average 38 percent reduction in electricity bills for affected public administrations in 2024; • 44 percent reduction in electricity bills for affected health establishments in 2024; • 47 percent reduction in public lighting energy costs for municipalities.

Source: Eurobonds & SDG Loan Impact Report, 2024 (MEF, 2024c).

4.3.2 Direct Impacts of Renewable Energy Initiatives Funded by the Government, the SDG Eurobond and TFPs

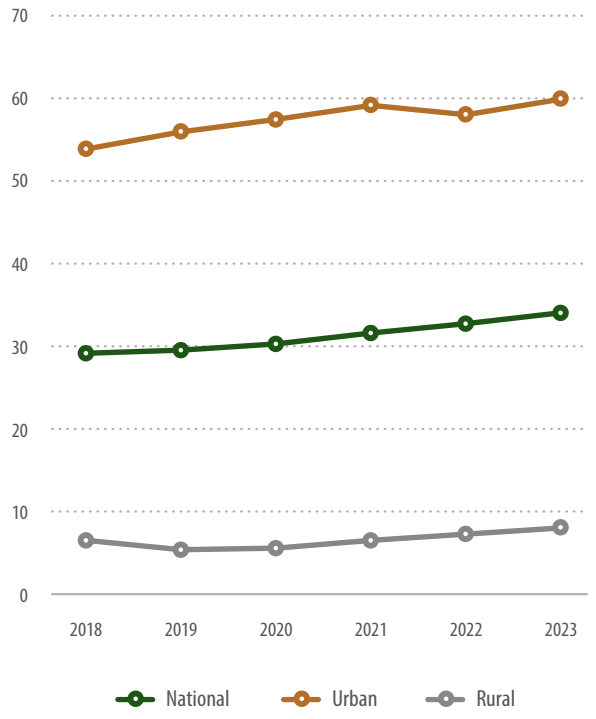
The implementation of the previously mentioned projects and programs has produced direct effects on Beninese communities. In particular, they have made it possible to: (i) improve access to electricity; (ii) create jobs and strengthen the capacities of entrepreneurs; and (iii) improve access to basic social services (Table 18).

The efforts made have resulted in improvement in the electrification rate and in the population's access to electricity[119]. From 2018 to 2023, the electrification rate increased from 29.2 percent in 2018 to 34.1 percent in 2023 (Figure 22). This rate electrification is significantly higher in urban compared to rural areas. Indeed, it rose from 53.9 percent to 59.9 percent in urban areas between 2018 and 2023, compared with an increase from 6.5 percent to 8.2 percent in rural areas over the same period (Figure 22).

Regarding the access rate to electricity, it increased from 33.2 percent to 39.9 percent between 2018 and 2023. The share of the urban population with access to electricity rose from 59.6 percent to 67.8 percent between 2018 and 2023, while the share of the rural population with access to electricity increased from 8.7 percent to 12.0 percent over the same period (Figure 23).

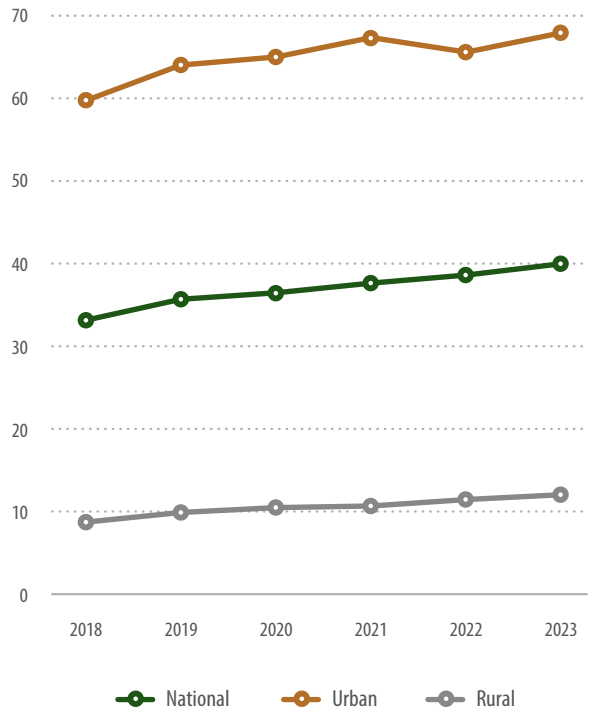
These observations reveal that Benin's electrification policy mainly benefits urban areas. This could be explained by the concentration of most of the economic activity and potential, as well as by a higher population density in urban areas. It is also noteworthy that the low purchasing power of rural populations limits their access to energy even when infrastructure exists.

Figure 22. Electrification rate in Benin (%), 2018–2023



Source: Data extracted from the report of the Directorate of Energy Planning, Rural Electrification, and Regulation of the Ministry of Energy, Water, and Mines (2023).

Figure 23. Electricity access rate in Benin (%), 2018–2023



Source: Data extracted from the report of the Directorate of Energy Planning, Rural Electrification, and Regulation of the Ministry of Energy, Water, and Mines (2023).

Table 18. Direct impacts of Government initiatives funded by TFPs and the SDG Eurobond

Main Effects	Descriptions
Access to Electrification	• Improvement in lighting coverage in rural households thanks to installed solar kits and climate-resilient solar plants with a total capacity of 15 MW. • Reliable access to lighting and charging of small electronic devices. • Reduction of climate risks due to the construction of five critical energy infrastructures against flood risks. • Valorization of agricultural waste (20,000 metric tons of cotton and palm residues) through the installation and commissioning of ten electricity production units with a total capacity of five MW. • Reduction in the recurrence of power outages thanks to off-grid access in five localities to eight solar photovoltaic mini-power plants supplying renewable energy (solar PV); • Access for more than 150,000 inhabitants to clean energy services, covering the consumption needs of approximately 180,000 people. • Reduction in insecurity thanks to public lighting. • Production of biogas and biofertilizers through the recovery of 5,000 metric tons of organic waste annually. • 40 percent reduction in energy expenses for households benefiting from the DEFISSOL[120] Project. • National standardization of solar technologies leading to a 35 percent reduction in public lighting bills in municipalities through the PRODERE[121] 2 Project. • **Eurobond Projects:** – 44,440 beneficiaries impacted, including 11.4 percent women, thanks to the PPDBEB. – Average 38 percent reduction in electricity bills in affected public administrations, 44 percent reduction in health facility bills, and 47 percent reduction in municipal public lighting energy costs in 2024 thanks to the Energy Efficiency and Sustainable Biomass Energy Management Project. – 732,000 inhabitants provided with electricity through the PANA Énergie Project.
Job Creation and Capacity Building for Entrepreneurs	• Strengthening the capacities of 200 entrepreneurs and 300 Beninese engineers in solar system installation and maintenance techniques, thereby creating a sustainable local economic sector through the DEFISSOL Project. • Creation of more than 200 direct jobs in waste collection and processing through the *"Biomasse Électricité"* Project. • Strengthening women's capacities in energy entrepreneurship through the Women & Energy Project and Initiative. • Capacity building for 500 technicians on new climate resilience standards through the PANA Énergie Project. • Creation of solar-related jobs for 1,000 women, establishment of 50 women's energy cooperatives, and installation of 200 solar systems by women entrepreneurs. • Improvement in education conditions for schoolchildren and students. • **Eurobond Projects:** – 358 new jobs created through the PPDBEB; – 3,252 program beneficiaries using climate-adapted agricultural technologies, including 25 percent women, through the PANA Énergie Project.
Access to Basic Social Services	• Improvement of education conditions for schoolchildren and students through the installation of 500 autonomous solar streetlights and equipping of 200 schools with autonomous solar systems thanks to the PRODERE 2 and commissioning of the Illoulofin power plant (25 MW) under the DEFISSOL Project. • Improved access to drinking water through renewable energy projects and programs such as the Off-Grid Access Program with the installation of around fifty solar pumping systems; • Improved access to healthcare through a 40–60 percent reduction in electricity costs in public services. Improved access to basic healthcare by equipping 30 health centers with autonomous solar systems thanks to the DEFISSOL and Post-COVID Projects.

Source: Authors.
Note: The comprehensive information is listed in Table 17 and Annex A.1.

4.3.3 Indirect Impacts of Renewable Energy Initiatives

The Government's initiatives and RE promotion projects have had multidimensional indirect effects. These include:

- *Access to an entrepreneurial environment and investments:* these Government projects and initiatives have prepared the ground for larger future investments in RE. The projects have attracted new international investors and enabled the development of local expertise in the management of renewable power plants.
- *Improvement in lighting, security, and reduction of climate risks:* a 25 percent reduction in electricity expenses during the rainy season and the systematic integration of climate considerations into national energy planning (Annex A.1). A 60 percent drop in kerosene lamp use has also been recorded in covered areas, along with a reduction in nighttime insecurity. These advances have revitalized nighttime economic activities in markets and artisan workshops.
- *Improvement of access to basic social services and reduction in waterborne diseases* thanks to the installation of water pumping systems and better lighting in schools.
- *Promotion of gender equality, equity, and social inclusion* through the economic empowerment of rural women, notable progress in social perceptions of gender roles, and increased energy access in women's households.

Box 5. The Off-grid Clean Energy Facility in Benin, an example of a program with multiple benefits

The OCEF aimed to increase electricity access by removing initial costs and investment barriers in the off-grid electricity sector. The project targeted four areas: i) electrical energy for essential public infrastructure, ii) mini-grids ensuring electricity production and distribution for domestic, commercial, agricultural, and industrial purposes, iii) production, storage, and productive use by households, such as renewable energy source devices for individual families, iv) energy efficiency measures for buildings, equipment, and installations.

OCEF supported 17 projects by subsidizing 38 percent of their costs. These efforts improved electricity access for many households in areas not covered by the conventional SBEE grid. Project achievements include:

- Sale of over 42,113 solar kits, portable lighting systems, and domestic solar systems totaling 1.52 Megawatt-peak (MWp) of installed capacity through a distribution network to final beneficiaries, thereby reducing household dependence on more expensive sources (diesel generators, kerosene, batteries).
- Improved quality of life and creation of new income sources for vulnerable populations through eight commissioned solar mini-grids with an installed capacity of 334.4 kWp, and more than 50 mini-grids planned nationwide (amounting to a total expected capacity of 2.08 MWp).
- Strengthening of 84 small and medium-sized enterprises (SMEs) involved in solar kit distribution and mini-grid development.
- Improved access to drinking and agricultural water and new income opportunities through the installation of 77 solar pumps (44 for community-use and 33 for private farms use).
- Installation of 15 solar streetlights in five localities of Kalalé to enhance public lighting, including at rural health centers, which received five WHO-compliant solar refrigerators for vaccine storage.
- Commissioning of at least ten solar mini grids.
- Capacity building through training and technical assistance.

Source: MCA-Benin Regional, 2023

These initiatives demonstrate that RE projects in Benin generate both immediate benefits such as energy savings and better electricity access, and long-term impacts, particularly in local economic development and environmental protection. Between 2018 and 2022, these initiatives increased the share of RE, particularly solar energy, in the national electricity mix from 1.79 percent to 3.27 percent (Figure 18), and created a complete ecosystem of local companies specialized in RE. Finally, thanks to RE, communities have become more resilient to climate change, and territorial inequalities in energy access have significantly decreased.

It is widely documented in the literature that RE consumption generates significant economic and social effects. Indeed, numerous studies have shown that improving access to RE has substantial effects on per capita income and makes economic growth more inclusive in sub-Saharan Africa. For example, Kouton (2021) suggests that increasing the share of renewable energy significantly promotes income growth, particularly in less developed countries, highlighting the central role of the energy transition in poverty alleviation. Similarly, Konyeaso et al. (2023) find that renewable energy production sustainably stimulates economic growth. Similar results were found by Jinapor et al. (2025) and Piyinchu (2025).

4.3.4 Economic and Social Benefits of Advances in the Renewable Energy Sector

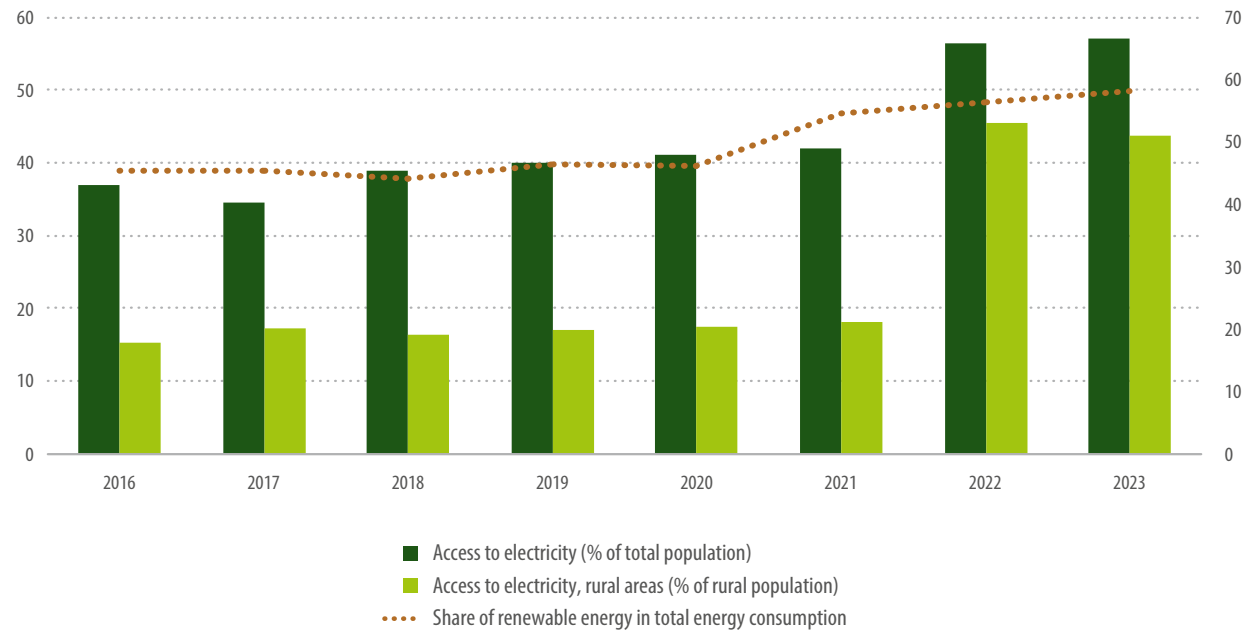
Beyond its effects on growth, renewable energy consumption is a driver of job creation and improved social equity. Developing the renewable sector generates "green jobs" directly linked to the production, installation, and maintenance of infrastructures (IRENA & ILO, 2024). Prospective estimates indicate between 1.5 and 3.3 million new jobs in Africa by 2030, with a strong concentration in solar photovoltaics, but also significant impacts in hydropower, wind, battery storage, and geothermal (FSD Africa et al., 2024). However, many of these jobs are low-skilled, emphasizing the need for training and retraining policies to maximize the benefits of the energy transition. In this perspective, Mazorodze (2025) suggests that the expansion of RE generally stimulates employment, with particularly marked effects in agriculture, although the industry and services sectors experience certain adjustments.

Finally, on the social level, Kunawotor (2025) shows that the rise of RE contributes to reducing income inequalities, confirming that the energy transition is not only a lever for growth but also an instrument for inclusion and social justice.

Estimation results presented in Box 6 suggest that renewable energy consumption has a positive and significant effect on employment in sub-Saharan Africa. Indeed, a one percent increase in renewable energy consumption leads to a 0.1 percent growth in employment, all else being equal. In Benin, where renewable energy consumption increased from 45.4 percent to 58.1 percent between 2016 and 2023 (Figure 24), this dynamic corresponds to an approximate 2.8 percent relative increase in employment. This finding highlights the potential of RE to generate "green jobs" throughout the entire value chain—from production to installation, maintenance, and infrastructure management—and to contribute to professional integration, especially among youth and rural populations. The ability of the energy sector to go beyond its traditional role as a simple factor to become a driver of socio-economic transformation illustrates the strategic importance of the energy transition in stimulating inclusive and sustainable growth.

In terms of income redistribution, RE consumption also appears beneficial, with a coefficient of –0.01 indicating that a 1 percent increase in consumption reduces income inequality by 0.01 percent. For example, in Benin, the progress observed between 2016 and 2023 in access to renewable energy could lead to a reduction in income inequality of about 0.28 percent. These results suggest that the expansion of RE contributes to a fairer distribution of economic opportunities, particularly by facilitating access to electricity for vulnerable populations and to the new productive activities it enables.

Figure 24. Access to electricity and share of renewable energy in total energy consumption in Benin (%)[122]



Source: DRES/DGE, based on World Bank WDI data (2025).

Box 6. Effect of renewable energies consumption on employment and income inequality in Benin

The assessment of the effect of RE consumption on employment and income inequality in Benin is based on an econometric analysis covering 43 sub-Saharan African countries between 2002 and 2022 and relying on a random effects model. In addition to the variable of interest, which is RE consumption, we use control variables such as the inflation rate (consumer price index), Official Development Assistance (ODA-to-GDP ratio), investment (gross fixed capital formation as a share of GDP) and the literacy rate (percentage of people aged 15 and over). The results obtained are presented in Table 19.

Table 19. Estimation results of the relationship between renewable energies consumption, employment and income inequality in sub-Saharan Africa

Variables	Employment	Income inequality
RE consumption	0.100*** (0.014)	-0.010*** (0.009)
Inflation rate	0.004** (0.002)	-0.002 (0.002)
Official Development Assistance	0.081 (0.07)	-0.21*** (0.05)
Investment	-0.001 (0.001)	-0.002*** (0.001)
Literacy rate	-0.04*** (0.10)	-0.010 (0.007)
Constant	3.83*** (0.166)	-0.057** (0.110)
R^2	0.44	0.44
Number of observations	857	857
Number of countries	43	43

Source: Authors' calculations, based on World Development Indicators (WDI) data from the World Bank (2025).
Note: *, ** and *** indicate coefficients significant at the 10 percent, 5 percent, and 1 percent error thresholds, respectively.

4.4 Opportunities and Prospects for Renewable Energies in Benin

4.4.1 Economic and Environmental Opportunities

The Government of Benin's commitment to ensure energy self-sufficiency and sovereignty constitutes an opportunity for the development of RE. This orientation is reflected in the multiplication of projects for the production and consumption of electricity from RE, as well as in reforms aimed at reducing the country's dependence on conventional energies. Indeed, the country's dependence on fossil energies, generally polluting and costly, can expose Benin to exogenous shocks of a commercial, political, and economic nature that could affect access to these energies. Thus, the adoption of laws, decrees, and orders, combined with the creation of agencies and public enterprises such as ABERME, ARE, and SBPE illustrates the Government's commitment to making RE a priority energy source.

Furthermore, the issuance of SDG Eurobonds, support from TFPs such as the MCC, the WADB[123], and the World Bank, as well as the energy autonomy initiatives led by the private sector and households, constitute favorable levers for the emergence of RE in Benin. The adoption of the 2030 Agenda for the SDGs, the Paris Agreement, and the SE4ALL strategy also reinforce this momentum.

The promotion of entrepreneurship, particularly for youth and women, represents an additional opportunity for RE development. Indeed, the RE subsector can not only stimulate training and innovation, but also address challenges of underemployment, job insecurity, and unemployment, while boosting the local economy.

In addition, the reduction of agricultural land due to extensive farming and population growth forces populations to seek alternatives sources of energy production. Indeed, the expansion of agricultural areas reduces the availability of forests and, consequently, fuelwood, charcoal, and biomass. Moreover, the implementation of policies to combat deforestation and promote carbon sequestration reduces forest exploitation and the use of charcoal and biomass, which produce GHG emissions. Thus, RE offers new perspectives to complement other energy sources.

Finally, the fight against climate change constitutes an opportunity for the development of RE. Indeed, RE emits very little GHG, reduces forest exploitation, and consequently increases CO_2 sequestration, making RE a pillar of efforts to combat climate change.

4.4.2 Lessons Learned and Prospects

Benin has enormous and strategic potential for a transition toward RE, which constitutes strategic assets for electricity. In light of the context, initiatives, and opportunities highlighted in this case study, the prospects for the RE subsector concern: i) the mobilization of technical, material, and financial support, ii) the strengthening of the institutional and regulatory framework, and iii) the reinforcement of human capital, research, and innovation.

Technical, Material, and Financial Support

The development of the RE subsector requires better coordination among the different stakeholders, as well as technical, material, and financial support from the State and TFPs. The State must mobilize domestic and external resources for the expansion of the electricity grid based on RE. To this end, a strategy can be developed jointly with TFPs to define the roles and responsibilities of each partner in promoting RE in Benin.

Furthermore, the State's support could consist of establishing an innovative mechanism to assist populations in acquiring, installing, and maintaining RE equipment. For example, a co-financing strategy with the populations seems relevant to stimulate the adoption of RE, particularly for the acquisition of household appliances and domestic lighting systems.

Strengthening the Institutional and Regulatory Framework

The implementation of incentive measures through laws and decrees has created a favorable environment that encourages private investors and households to promote, supply, and use RE. However, RE and the advantages offered by the institutional and regulatory framework remain little known. Thus, it would be relevant to raise awareness among the population and the private sector about the institutional and political environment of RE. Supporting investors, economic operators, and specialists in the installation and maintenance of equipment requires collective reflection with the State. In this regard,

establishing a consultation framework would make it possible to define strategies to develop the RE subsector.

Finally, the revision of import conditions for RE equipment, by defining the application conditions of the seven percent exemption for equipment imported in parts (MCA-Benin Regional, 2023) and the VAT rates applied to rural populations, could also better encourage stakeholders in the sector to engage in its development. Indeed, RE equipment remains very expensive and economically inaccessible for many users.

Strengthening Human Capital and Promoting Research and Innovation

In terms of human capital, capacity building has enabled job creation and the emergence of skills at the local and national levels to support populations in the use of RE. However, capacity building in infrastructure and skills remains essential for the emergence of the subsector.

Locally available human resources must be strengthened for the installation and maintenance of renewable energy equipment.

The development of the RE subsector requires in-depth studies and the professionalization of occupations. Thus, educational programs focused on RE should be developed within high schools and universities, and awareness and promotion efforts for RE still need to be undertaken to encourage students to pursue careers related to RE. The State should also encourage the creation of RE teaching programs.

Research should be encouraged and funded to understand the overall RE environment in Benin and to develop local solutions likely to facilitate the use and production of RE. Local manufacturing of equipment will help reduce their high costs and make them more accessible to populations, including vulnerable groups.

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Notes Part 4

100 The content of this chapter is the sole responsibility of the authors and does not necessarily represent the views of SDSN, SDSN Benin or the Government of Benin.
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103 Réseau Climat et Développement (2014).
104 In French: Agence béninoise d'électrification rurale et de maîtrise d'énergie.
105 In French: Société béninoise de production d'électricité. Created in December 2020, its role is to guarantee an optimal national energy mix; ensure electric power production; guarantee electric supply through national production and electricity imports.
106 Illustratively, recent laws and decrees on RE include the Electricity Code Law of the Republic of Benin (No. 2020-05, April 1, 2020), the decree setting conditions and modalities for the sale of electricity by an independent producer or self-producer (No. 2024-1395, December 11, 2024), and the interministerial order on the import procedure of lamps, individual air conditioners, and refrigerators in Benin (No. 013/MPD/MEF/ME/DC/SGM/DGRE/ABERME/SA/010SGG20, October 15, 2020).
107 For example, under Article 6 of the Paris Agreement and Benin's adherence to the International Energy Charter, adopted in The Hague (Netherlands) on May 20, 2015, a bilateral agreement was signed between the Republic of Benin and the Kingdom of Norway for the development of energy trade, cooperation in energy, energy efficiency, and environmental protection.
108 In French: Politique Nationale de Développement des Energies Renouvelables.
109 In French: Politique nationale de maitrise d'énergie 2020–2030.
110 In French: Stratégie de raccordement au réseau électrique au Bénin 2022–2026.
111 Finance Law 2020.
112 By decree No. 2024-1395 of December 11, 2024, setting conditions and modalities for the sale of electricity by an independent producer or self-producer.
113 In French: Autorité de régulation de l'électricité.
114 Company based in Benin specializing in renewable energies.
115 West African Economic and Monetary Union.
116 FORSUN and Toyota Tsusho Corporation (TTC) are solar PV power plant projects intended to increase the production capacity of the Illoulofin site.
117 This project benefited from co-financing from the UNDP.
118 Benin Electric Power Company (In French: Société béninoise d'énergie électrique).
119 The electrification rate refers to the proportion of households with electricity access via direct connection (network, mini-grid, or state policy). The access to electricity rate refers to the proportion of households with access via either direct or indirect connection (including subcontracted lines) as well as through self-generation (solar, generators) (General Directorate of Energy Resources, Ministry of Energy, 2021: Key Figures 2021: Energy Balances and Indicators 2016–2020).
120 Solar Energy Production and Power Utility Information System Modernization Project.
121 Renewable Energy and Energy Efficiency Development Program (In French: Programme de développement des énergies renouvelables et de l'efficacité énergétique).
122 In the absence of official data for 2022 and 2023, the share of renewable energy in final energy consumption was estimated by linear extrapolation, based on the average annual growth observed between 2016 and 2021 (1.82 percentage points per year). This method yields estimated values of 56.3 percent for 2022 and 58.1percent for 2023, confirming the positive trend of the energy transition in Benin.
123 West African Development Bank.

5

Ways Forward for Achieving the SDGs and Advancing the Green Transition in Benin

PART 5.
Ways Forward for Achieving the SDGs and Advancing the Green Transition in Benin

5.1 Achieving the SDGs

The in-depth analysis of indices and dashboards provides a detailed diagnosis of Benin's performance compared to the West African subregion, as well as the trends observed over the 2015–2024 period. The assessment shows that Benin has made remarkable progress on several SDGs, notably poverty reduction (SDG 1), gender equality (SDG 5), reduction of socio-economic inequalities (SDG 10), access to electricity (SDG 7), and industrial and digital development (SDG 9). These results reflect the relative effectiveness of programs and policies such as the ARCH Program, GBESSOKE Program[124], women's empowerment initiatives, and investments in energy and digital infrastructure. However, performance remains limited or stagnant in other key areas, including health (SDG 3), education (SDG 4), access to water and sanitation (SDG 6), environmental sustainability on land and at sea (SDGs 14 and 15), as well as partnerships and governance (SDGs 16 and 17).

The matrix presented in Table 20 translates this analysis into targeted and differentiated action perspectives, aimed at strengthening existing programs, deploying new innovative and inclusive interventions, and promoting integrated and coherent public policy planning. This approach directly links achieved results to concrete and measurable actions, providing a strategic and operational tool to guide policymakers, development partners, and national actors in accelerating the achievement of the 2030 Agenda in Benin, while consolidating gains and addressing identified gaps.

Table 20. Matrix of action pathways to accelerate progress toward the SDGs

Relevant SDG	Results	Actions Perspectives
SDG 1 – No Poverty	Strong progress on SDG 1 score (+46.2 points) compared to the region (+5.2) between 2015 and 2024. Significant reduction in the population living below the poverty line: –32.7 p.p. (< $2.15/day) and –32.0 p.p. (< $3.65/day) between 2015 and 2024.	• Strengthen social protection and insurance programs such as ARCH and GBESSOKE. • Develop inclusive financial instruments to consolidate progress.
SDG 2 – Zero Hunger	Moderate progress: fertilizer use rose from 0.1 kg/ha in 2015 to 36.8 kg/ha in 2022; stagnant performance in food and nutrition security.	• Scale up sustainable agricultural programs. • Improve access to inputs and technologies. • Strengthen local agri-food value chains.
SDG 3 – Good Health and Well-Being	Lagging behind the subregion: limited reduction in maternal mortality (–14.5 percent vs –18.5 percent in West Africa); low coverage for preventive chemotherapy against neglected tropical diseases (20.6 percent in 2023 vs 60.0 percent subregional average).	• Reinforce health infrastructure and expand preventive programs. • Improve training and retention of health workers; conduct targeted awareness campaigns.
SDG 4 – Quality Education	Negative trend: net primary enrollment fell from 96.9 percent to 90.4 percent (2016–2022); lower-secondary completion rate declined 34.0 percent (2015–2022).	• Build more classrooms and recruit/train additional qualified teachers. • Strengthen technical and vocational education. • Expand digital learning platforms (e.g., EducMaster).

Table 20. Continued

Relevant SDG	Results	Actions Perspectives
SDG 5 – Gender Equality	Significant progress: women's parliamentary representation rose from 8.4 percent (2015) to 26.6 percent (2024); modern contraceptive use +44.1 percent (2015–2024).	• Continue women's economic empowerment initiatives. • Promote equality in education, employment, and political decision-making.
SDG 6 – Clean Water and Sanitation	Limited progress: access to safe water +2.4 percent (2015–2022) vs +12.0 percent in West Africa; low reduction in water scarcity through imports.	• Increase investment in water and sanitation infrastructure (via PANGIRE and ANAEP-MR projects). • Promote education on sustainable water management and introduce pro-poor pricing mechanisms for rural areas.
SDG 7 – Affordable and Clean Energy	Major progress: electricity access +9.7 percent per year; affordability +6.6 percent in average per year; score gain (+14.6) exceeds regional average (+10.5) between 2015–2024.	• Further develop RE sources. • Expand rural coverage. • Subsidize access to energy services and equipment.
SDG 8 – Decent Work and Economic Growth	On track: per-capita GDP growth increased from 1.6 percent to 3.4 percent (2015–2023); bank-account ownership reached 48.6 percent (2021) vs 16.6 percent (2014).	• Promote financial inclusion and entrepreneurship by improving the business climate. • Boost formal employment through sustainable industrial development (e.g., Glo-Djigbé Industrial Zone—GDIZ).
SDG 9 – Industry, Innovation and Infrastructure	Significant gains (2015–2023): Internet users +14.0 percent in average per year; mobile broadband +36.9 percent in average per year; patent filings +18.9 percent in average per year.	• Continue investment in digital infrastructure. • Further support start-ups and high-value-added industries.
SDG 10 – Reduced Inequalities	Strong score improvement (+53.1) vs regional (+5.7); decline in Gini and Palma ratios (–27.7 percent and –52.1 percent) (2015–2021).	• Reinforce redistribution programs and expand access to social services. • Promote progressive taxation to sustainably support vulnerable groups.
SDG 11 – Sustainable Cities and Communities	Stagnation: population in slums –1.0 percent in average per year (2015–2022); piped-water access down 1.7 percent in average per year.	• Expand social-housing programs. • Strengthen sustainable urban planning and waste management.
SDG 12 – Responsible Consumption and Production	Moderate progress with positive trend requiring vigilance.	• Promote the circular economy, strengthen environmental regulation, and encourage sustainable innovation in local industries.
SDG 13 – Climate Action	Positive trend: CO_2 emissions from fossil fuels and cement improved 16.6 percent (2015–2023).	• Strengthen the energy transition, enhance climate-resilient infrastructure, and support sectoral emission-reduction policies.
SDG 14 – Life Below Water	Minimal progress: Ocean Health Index stagnant at 13.1/100 since 2015.	• Enhance fisheries regulation, protect marine ecosystems, promote sustainable fishing, and strengthen ocean monitoring.
SDG 15 – Life on Land	Major challenges: deforestation increased from 0.19 percent (2017) to 0.24 percent (2023).	• Expand reforestation, protect forests and biodiversity, and enforce sustainable land-management policies.
SDG 16 – Peace, Justice and Strong Institutions	Slight decline (–2.3 points 2015–2024) but still +13.7 points above regional average.	• Strengthen the rule of law. • Continue modernization of public administration. • Consolidate democratic governance.
SDG 17 – Partnerships for the Goals	Stagnation despite ad hoc cooperation initiatives.	• Strengthen multi-stakeholder partnerships. • Improve data collection. • Increase financing mobilization to accelerate SDG achievement.

Source: Authors.

5.2 Accelerating Transformations 3 and 4

Achieving the SDGs in Benin requires an integrated and strategic approach grounded in an analysis of current performance and available levers of action. The "Six Transformations" framework provides a robust conceptual structure for organizing and prioritizing governmental and sectoral interventions. Within this framework, Transformation 3 (Energy Decarbonization and Sustainable Industry) and Transformation 4 (Sustainable Food, Land, Water, and Oceans) are essential to ensure a resilient, low-carbon, and socially inclusive development trajectory. Benin's current performance on these two transformations highlights relative progress in areas such as the partial integration of RE into the electricity grid and the implementation of Integrated Water Resources Management (IWRM). However, persistent gaps remain in energy efficiency, protection of marine and freshwater ecosystems, and the governance and strategic planning of green transition policies. These findings indicate that, despite promising initiatives, more systematic and coordinated efforts are required to transform isolated achievements into sustainable, large-scale impacts.

A deeper analysis of sectoral indicators and existing public policies shows that Benin possesses valuable institutional and technical capacity that can serve as a foundation for accelerating these transformations. Nevertheless, targeted adjustments are needed to maximize synergies and minimize trade-offs between economic, social, and environmental goals. For Transformation 3, GHG emissions continue to be driven largely by fossil fuel use, while incentive mechanisms for RE and energy efficiency remain underdeveloped. The governance of the RE sector, though improving, still falls short of regional standards, slowing the implementation of structural projects and the mobilization of private and public financing. For Transformation 4, while significant progress has been made in implementing IWRM and agricultural R&D spending, the effective protection of freshwater and marine sites remains nearly absent, and the resilience of food systems to environmental and climatic pressures is still limited. These observations call for integrated policies and coherent economic and regulatory instruments to foster a conducive environment for investment, innovation, and ecosystem sustainability. In this context, the action perspective matrix presented in Table 21 serves as a key analytical and operational tool for guiding strategic interventions by the Government and stakeholders. Its dual objective is to i) strengthen the effectiveness and coherence of existing policies and programs; and ii) catalyze new ambitious initiatives that accelerate the transition toward clean energy, sustainable industry, and resilient food systems—while ensuring natural resource preservation and biodiversity protection. This matrix thus offers an integrated strategic vision, reconciling economic, social, and environmental imperatives, and positioning Benin on a credible and sustainable path toward achieving the SDGs by 2030.

Table 21. Matrix of actions pathways to accelerate Transformations 3 and 4

Transformation	Related SDGs	Results	Actions Perspectives
Transformation 3 – Energy Decarbonization and Sustainable Industry	SDG 7 – Affordable and Clean Energy SDG 9 – Industry, Innovation and Infrastructure SDG 15 – Life on Land	Benin records significant CO_2 emissions from fossil-fuel electricity generation and a low share of the population with access to clean cooking fuels and technologies. Fossil-fuel subsidies remain high (USD 101.5 per capita in 2022), above the subregional average. Renewable-energy governance is weak (score 44.6/100); energy efficiency remains limited (score 18.3/100); integration of RE into the grid is relatively advanced (score 66.7/100).	• Gradually redirect fossil-fuel subsidies toward renewable energy and clean technologies. • Update the low-carbon development strategy with a defined 2050 carbon-neutrality target. • Strengthen renewable-energy governance through transparency, rigorous monitoring, and inclusive stakeholder participation. • Improve energy efficiency across all sectors through standards, incentives, and targeted investment programs. • Accelerate grid integration of RE and foster innovation in energy storage and distribution.
Transformation 4 – Sustainable Food Systems, Land, Water and Oceans	SDG 2 – Zero Hunger SDG 6 – Clean Water and Sanitation SDG 12 – Responsible Consumption and Production	Benin ranks slightly below the subregional average in protecting freshwater and marine sites (terrestrial protection 66.7 percent, no effective freshwater/marine protection). Food systems remain vulnerable to environmental and climate pressures. Public spending on agricultural R&D (0.41 percent of agricultural GDP in 2022) is slightly above the regional average (0.32 percent). IWRM score 68/100 reflects moderate ambition.	• Strengthen and restore marine, freshwater, and terrestrial sites following international standards (e.g., Ramsar sites such as Lake Nokoué, Lake Ahémé, Aho Channel). • Scale up agroecological and sustainable food-system practices enhancing carbon sequestration, biodiversity, and climate resilience. • Increase investment in agricultural R&D to boost productivity, food security, and sustainability. • Expand the implementation of IWRM through PANGIRE and other integrated programs. • Develop coherent policies reconciling competing land, water, and ocean uses through spatial planning, regulation, and community participation.

Source: Authors.

5.3 Strengthening the Transition toward Agroecology and Renewable Energies

Strengthening the transition toward RE and agroecology represents a major lever to guide Benin toward a sustainable, resilient, and inclusive growth model. This section proposes a set of coordinated actions to accelerate this dual transition and firmly anchor Benin in a sustainable development trajectory.

5.3.1 Strengthening the Transition toward Agroecology

The development of agroecology in Benin has become a strategic and indispensable pathway to reconcile food security, environmental sustainability, and structural transformation of the agricultural sector. In a context of accelerating soil degradation, continued dependence on imported chemical inputs, and high vulnerability to climate shocks, the agroecological transition offers a resilient alternative based on local resource valorization and restoration of productive ecosystems. However, the diagnostic analysis reveals that this transition remains embryonic, hindered by multiple obstacles—fragmented institutions, weak economic incentives, limited financing mechanisms, and absence of value recognition for sustainably produced goods. The action matrix presented in Table 22 operationalizes the national agroecological transition by identifying, based on empirical and institutional evidence, key levers for overcoming structural constraints, scaling up sustainable land management practices, stimulating green investment, and building competitive value chains for local and export markets. It aims to advance Benin's progress on SDGs 2, 12, and 13.

Table 22. Matrix of actions pathways to develop agroecology in Benin

Diagnostic Results	Actions Perspectives
i. **Strong dependence on chemical inputs:** notably in the cotton sector (64.7 percent of agricultural exports).	• Integrate agroecology into public policies by revising PSDSA and PNIASAN to include incentives (selective subsidies, tax credits, green insurance). • Create a dedicated budgetary framework for the agroecological transition aligned with LOASAN (2022).
ii. **Soil degradation and fertility loss:** 62 percent of farmland moderately or severely degraded.	• Expand dissemination of Sustainable and Integrated Soil Fertility Management (SSFM/ISFM) techniques through major programs (ProSOL, PASDeR, PIRVaTEFoD). • Promote use of locally produced organic fertilizers and bio-inputs from national start-ups.
iii. **Low adoption of agroecological practices**	• Accelerate farmer training and professionalization via regional agroecology training centers (North, Center, South) and curriculum integration (INRAB, CeRPA[125], agricultural schools). • Develop a national participatory extension system based on Farmer Field Schools. • Establish a "Benin Agroecological Product" national label granting tax benefits, preferential public-procurement quotas, and commercial visibility.
iv. **Investment and financing challenges:** high transition costs and delayed productivity gains.	• Create a Green Financing Mechanism and a National Fund for Agroecological Transition (FNTA), leveraging international climate funds (GCF, GEF). • Encourage PPP schemes to support farmers' initial investments.
v. **Land insecurity and uncertain returns on investment:** farmers without land titles are reluctant to adopt long-term practices.	• Accelerate rural land-tenure security via operational local land offices and long-term agricultural leases incorporating ecological-sustainability clauses.
vi. **Difficulty in differentiating and valorizing agroecological products**	• Establish a national participatory certification and labeling system with technical support from ABSSA and producer organizations. • Promote short-supply chains and organic baskets (AMAP Benin), as well as regional organic fairs.
vii. **Weak institutional coordination and sector visibility**	• Create a National Council for Agroecological Transition (CNTA) to coordinate ministries, NGOs, private sector, and producers; lead national strategy and monitor agroecological indicators.
viii. **Growing opportunities in organic and fair-trade markets:** 95 percent of urban consumers ready to pay 10–70 percent more for pesticide-free products.	• Structure agroecological value chains around high-potential exports (organic soy, cashew, shea, honey). • Promote international certification (Fairtrade, Bio Suisse, USDA Organic) and digital traceability to access niche markets.
ix. **Lack of scientific and technical monitoring of performance:** few systematic evaluations of the economic and environmental effects.	• Establish a National Agroecology Observatory to collect, analyze, and disseminate data on practices, yields, and socio-environmental impacts. • Encourage applied research on productivity, biodiversity, and carbon storage.
x. **Persistent climate vulnerability:** droughts and floods undermine productivity gains.	• Promote integrated climate-adaptation practices (agroforestry, living hedges, hill dams, drip irrigation). • Target a defined number of family farms for resilient practices by 2030.

Source: Authors.

5.3.2 Strengthening the Transition toward Renewable Energies

Benin's energy transition is at a decisive turning point, where consolidating institutional and technological achievements must now be coupled with a coherent rollout of integrated structural policies. Despite substantial progress over the past decade, external energy dependence remains high, the share of RE in the national mix is still marginal (3.3 percent in 2022), and private initiatives continue to face high entry costs and a limited incentive framework. Within this context, the action matrix in Table 23 outlines a roadmap for a systemic transformation of the RE subsector, built on three complementary pillars: i) consolidation of technical, material, and financial support; ii) strengthening of the institutional and regulatory framework; and ii) development of human capital, research, and innovation capacities. This framework seeks to structure public and private interventions around energy sovereignty, productive sustainability, and climate resilience, in alignment with SDGs 7, 12, and 13.

Table 23. Matrix of actions pathways to strengthen the renewable energy transition in Benin

Diagnostic Results	Actions Perspectives
i. Persistent dependence on external energy sources	Strengthen energy sovereignty by creating hybrid mini-grids (solar, biomass, biogas) for rural and agricultural autonomy, supported by a national co-financing program (State-population-development partners).
ii. Low share of RE in total consumption	Integrate a binding RE target in the national electricity mix by 2030, linking energy policy to agricultural, industrial, and climate strategies.
iii. High equipment costs and weak private-investment incentives	Establish a National Fund for Energy Transition (FNTE) with targeted subsidies, loan guarantees, and preferential microcredit for households, SMEs, and agricultural cooperatives.
iv. Limited awareness and ownership of green technologies	Launch a National Energy and Agroecology Extension Program through farmers' organizations, training centers, and community radio to disseminate good practices and promote green jobs.
v. Multiple actors and weak institutional coordination	Create an Inter-ministerial Coordination Framework uniting the Ministries of Energy, Agriculture, Environment, and Local Authorities to harmonize actions and avoid institutional overlap.
vi. Underutilized solar and biomass potential	Promote productive use of agricultural waste through rural energy-innovation hubs generating biogas, biochar, and compost for sustainable agriculture.
vii. Limited integration of climate considerations into energy projects	Integrate climate-resilience criteria and environmental standards into the planning and evaluation of energy and agricultural projects, aligned with SDGs 7, 12 and 13.
viii. Tax and regulatory framework not yet fully operational	Revise incentive schemes by simplifying import procedures and adopting green-friendly taxation to attract investors.
ix. Insufficient qualified human capital	Develop technical and university programs dedicated to RE; encourage certification of local installers and technicians; strengthen partnerships among universities, research centers, and industry.
x. Weak national capacity for research and innovation	Fund applied research on local production of low-cost solar and biodigester equipment, and foster local industrial initiatives for RE equipment manufacturing and maintenance.

Source: Authors.

Notes Part 5

124 The GBESSOKE Program is an initiative of the Government of Benin funded with USD 100 million to improve living conditions for about three million vulnerable people. It focuses on modernizing social service centers, promoting income-generating activities, and strengthening the economic resilience of poor households.

125 Regional centers for agricultural promotion (In French: Centres régionaux pour la promotion agricole).

Annexes

A.1
Characteristics of Selected Projects and Programs by Type of Renewable Energy Supported by TFPs

No.	Project / Program Title	Target Groups and Intervention Sites	Objectives	Sectors	Intervention Period	Project Amount and Donors	Project Financing Mechanism	Project Results Obtained
1	**DEFISSOL Project**	Local population; intervention site: Pobè	Ensure a regular, secure, and less costly energy supply, notably by diversifying electricity production sources	Photovoltaic energy	2021–2026	40 billion FCFA (60 million euros); EU, AFD, and Benin	Grant and loan	Construction of a 25 MW photovoltaic plant in Illoulofin with a supply capacity of 35 GWh/year of electricity; Coverage of electricity consumption for approximately 180,000 people; Modernization of SBEE's IT system; Reduction of greenhouse gas emissions by 23,000 metric tons of CO_2 per year over 25 years.
2	**Project to Strengthen the Resilience of the Energy Sector to the Impacts of Climate Change in Benin (PANA Énergie)**	Rural population; intervention sites: Atacora, Donga, Borgou, Littoral, Atlantique, Mono, Couffo	Contribute to removing the main institutional, policy, financial, and capacity-related barriers that hinder effective climate risk management in the sector; Introduce sustainable land and forest management practices to strengthen the resilience of wood-energy production areas; Introduce adaptation measures to strengthen the resilience of the national energy sector	Solar photovoltaic energy, Biomass/ Biogasand Hybrid energies	2016–2021	7.2 billion FCFA (US$39,570,000); Global Environment Facility (GEF), Government of Benin, UNDP (TRAC), NGO Good Planet, CEB	Grant and loan	8 solar photovoltaic mini-plants supplying renewable energy (solar PV) to five localities; More than 150,000 inhabitants with access to clean energy services; 84 resilient solar streetlights supplying solar PV energy in these 5 localities; 750 hectares reforested during the 2017–2018 campaigns with fast-growing tree species; 100 prototypes of clean and modern cooking-energy equipment fueled by agricultural residues/biomass briquettes installed; 3 types of improved carbonization technologies introduced among charcoal-producer communities in PANA Énergie intervention zones.
3	**Biomasse Électricité Project**	Local population and farmers; intervention sites: Dassa-Zoumè, Savalou, Djougou, and Kalalé	Reduce GHG emissions by creating a favorable legal, regulatory, and commercial environment and by strengthening institutional, administrative, and technical capacities to promote electricity production	Dry biomass gasification	2017–2026	15 billion FCFA (US$29,622,602); GEF, UNDP, CEB, Government of Benin	Grant and occasional loan	20,000 metric tons of agricultural waste recovered per year; 200 direct jobs created (collection, processing); 5,000 households electrified through biomass mini-grids; Installation of 38 solar photovoltaic streetlights in Savalou, Kalalé, and Djougou to support access of the poorest households to clean and sustainable energy; Start of construction works for the biomass gasification plant in Parakou with a 0.5 MW capacity.
4	**Off-Grid Electricity Access Project, MCA Benin II**	Alibori, Atacora, Atlantique, Borgou, Collines, Couffo, Donga, Littoral, Mono, Ouémé, Plateau, Collines	Improve off-grid electricity access in Benin by stimulating the market and increasing the use of energy-efficient products	Solar energy	2017–2023	18,056,609,000 FCFA (US$32 million); Off-Grid Clean Energy Facility (Millennium Challenge Corporation – MCC)	Grant and loan	42,113 solar kits installed; 8 solar mini-grids commissioned; 84 small businesses supported; 77 solar pumps (44 for community use and 33 for private farms); 15 solar streetlights installed; 5 solar refrigerators installed in health centers.

No.	Project / Program Title	Target Groups and Intervention Sites	Objectives	Sectors	Intervention Period	Project Amount and Donors	Project Financing Mechanism	Project Results Obtained
5	**Introduction of the Guev Cooker**	Local population; intervention sites: Adjarra, Avrankou, Dangbo, Ifangni, and Sakété	Promote large-scale adoption of higher-efficiency clean cooking technologies in Benin to reduce time spent on unpaid domestic work while reducing households' carbon footprint	Improved cookstoves	2021–2023 (36 months)	249,898,678 FCFA; International Development Research Centre (IDRC)	Grant and loan	266 improved *"Guev Cooker"* stoves manufactured and distributed to 266 beneficiaries in the five intervention communes.
6	**Biogas Production from Household Organic Waste and Water Hyacinths for Domestic Use in Sô-Ava, Benin**	Local population of Sô-Ava	Convert water hyacinths and household organic waste into biogas and use this renewable energy source as a substitute for firewood	Biogas	2017–2019	85 million FCFA; Swiss REPIC Platform (Renewable Energy & Energy Efficiency Promotion in International Cooperation)	Grant	17 vegetable growers (collective) (about 98 people) selected as beneficiaries for the pilot installation; Commissioning of digestate reused as compost for market gardening.
7	**Transforming Lives Through Access to Modern Energy in Benin (EnDev)**	Rural households and small enterprises	Promote sustainable access to modern energy services for households, SMEs, and social institutions to foster economic and social development as well as environmental protection	Solar systems and improved cookstoves	2009–2025	17,323,824,000 FCFA (€26,401,000); German Cooperation, Ministry of Foreign Affairs of the Netherlands, NORAD, GIZ	Grant (co-financing from several donors)	Grid extension (2009–2014): 17,745 people; Off-grid solar systems: 93,265 people; 250 social institutions; 259 productive units; Clean cooking: 997,071 people; 18 social institutions; 1,149 productive units.
8	**Regional Program for the Development of Renewable Energy and Energy Efficiency (PRODERE 2)**	Local population; intervention sites: Borgou, Collines, Donga, Ouémé, Plateau, Zou	Improve energy efficiency and promote sustainable public lighting in towns and border areas of Benin, while preparing the ground for decentralized renewable energy projects	Solar energy	2021–2023	2.43 billion FCFA; UEMOA	Full financing	4,500 public streetlights replaced by low-consumption LED streetlights; Installation of 500 "All-in-One" streetlights in rural border areas and toll-station surroundings; Construction and operation of solar photovoltaic micro-plants in 22 localities.
9	**"Piloting Biogas in Benin Towards National Scaling" Program**	Farmers; intervention sites: Borgou and Alibori	Demonstrate the existence of a viable market for biodigesters and the compost they produce	Biomass	2020	3 billion FCFA; GIZ, EU, Swedish Postcode Foundation	International grant	30 percent increase in beneficiaries' income.
10	**Forsun Project**	71 urban, peri-urban, and rural localities in Benin	Improve qualitative and quantitative access to electricity for populations and economic activities, and increase national electricity production from renewable energies, while contributing to the financial recovery of SBEE by reducing technical and commercial losses	Solar energy	2021–2026	€35,000,000; AFD	Loan	25 MW of additional solar PV capacity and 50,000 new grid connections, including 23,000 residential (representing 115,000 connected people), as well as businesses and community facilities.

Source: Authors' elaboration.

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A.2
Methods Summary and Data Tables

Interpreting the SDG Index and Dashboards Results

The *"Benin Sustainable Development Report 2025"* is the fourth edition in a series of publications developed through the partnership between the Government of Benin and SDSN. This report provides an assessment of the progress made toward the SDGs for Benin.

The SDG Index score is presented on a scale of 0 to 100 and can be interpreted as a percentage toward optimal performance on the SDGs. Therefore, the difference between 100 and a country's SDG Index score is the distance, in percentage points, that must be overcome to reach optimum SDG performance. To minimize missing data bias, we do not calculate an overall SDG Index score and rank for countries missing data on more than 20 percent of the indicators. The same basket of indicators and similar performance thresholds are used for all West African countries, to generate comparable scores and dashboards.

Important variations in rankings can result from small differences in aggregated SDG Index scores. Therefore, caution should be exercised when interpreting ranking differences between countries. Differences of two or three positions should not be considered "significant," while gaps of ten places may be attributed to real performance differences.

The SDG Dashboards provide a visual representation of countries' performance on the 17 SDGs. The "traffic light" color scheme (green, yellow, orange, and red) illustrates how far a country is from achieving a particular goal. The SDG Dashboards are presented for all West African countries.

The SDG Trend Dashboards indicate whether a country is on track to achieve each individual goal by 2030 based on past performance. They build on past annual growth rates, since 2015, which are extrapolated to 2030. Indicator trends are aggregated at the goal level to give an indication of how the country is progressing toward that SDG.

This section provides a summary of the methods used to compute the SDG Index and Dashboards. A detailed methodology paper is accessible online (Lafortune et al., 2018). Papadimitriou et al. (2019), for the European Commission Joint Research Centre (JRC), conducted an independent statistical audit of the report's methodology and results in 2019, reviewing the conceptual and statistical coherence of the index structure. The detailed statistical audit report and additional data tables are available on our website: www.sdgtransformationcenter.org

Due to time lags in international statistics, this year's edition may not fully capture the severe consequences on the SDGs of the various geopolitical and security crises of the past three years.

Changes and limitations

Due to changes in the indicators and refinements in the methodology, SDG Index rankings and scores from one edition cannot be compared with the results from previous editions. However, Part 1 provides time series for the SDG Index calculated retroactively using this year's indicators and methods, providing results that are comparable across time. The full time series for the SDG Index are available for download online.

Table A.1 summarizes the additions and identifies the indicators that were replaced or modified due to changes in the methodology and estimates produced by data providers.

Table A.1. New indicators and modifications

SDG	Indicator	Modification	Source
2	Minimum dietary diversity among children aged 6–23 months (percent)	New indicator	UNICEF et al.
3	Proportion of children under five with fever who are treated with appropriate anti-malarial drugs (percent)	Removed: there is no longer consistency across years or between surveys, which could lead to misleading results. Moreover, we already have an indicator of malaria (mortality rate).	USAID
5	Demand for family planning satisfied by modern methods (percent of females aged 15 to 49)	Modification: the data now comes from modeled series produced by the United Nations Department of Economic and Social Affairs (UN DESA).	UN DESA
9	Total patent applications by applicant's origin (per million population)	New indicator in the edition for Benin, usually used in the SDR. In addition, the data now has global coverage and is sourced from the World Intellectual Property Organization (WIPO), whereas it was previously limited to OECD countries.	WIPO
12	Electronic waste that is not recollected (kg/capita)	Modification: the indicator now measures the amount of electronic waste per capita that is not recollected (previously it measured all electronic waste generated).	UNU-IAS
12	Exports of plastic waste (kg/capita)	Removed: all West African countries are above the green threshold for this international spillover indicator, so it was deemed of limited relevance to include it.	UN Comtrade
14	Marine biodiversity threats embodied in imports (per million population)	Removed: all West African countries are above the green threshold for this international spillover indicator. Moreover, it is not sufficiently timely. Therefore, it was deemed of limited relevance to include it.	Lenzen et al. (2012) updated with the latest data available

Source: Authors.

To ensure the comparability of results across countries, we do not incorporate estimates received directly from national statistical offices. Data providers may adjust national data to ensure international comparability. As a result, some data points presented in this report may differ from data available from national statistical institutes or other national sources.

Moreover, the length of validation processes by international organizations can lead to significant delays in publishing certain data. National statistical institutes may therefore have more recent data for some indicators than those presented in this report.

Methodology

This edition of the "Benin Sustainable Development Report" provides a comprehensive assessment of the distance to be covered to reach the targets, based on the most recent available data covering all 15 West African countries. This year's report includes 94 indicators, of which 83 are from the *"Sustainable Development Report 2025,"* with an additional 11 indicators relevant to the context of Benin and the rest of West Africa.

The following sections provide an overview of the methodology for selection, normalization, aggregation, and generation of trend indications. Additional information, including raw data, supplementary data tables, and sensitivity tests, is available online.

Data selection

Where possible, we use official SDG indicators endorsed by the UN Statistical Commission. Where there are data gaps or insufficient data available for an official indicator, we include other metrics from official and unofficial providers. We used five criteria in selecting indicators suitable for inclusion in the report:

1. Their global relevance and applicability to a broad range of country settings.
2. Statistical adequacy: The indicators represent valid and reliable measures.
3. Timeliness: The indicators are current and published on a timely schedule.
4. Coverage: Data is available for at least 80 percent of UN member states with a population > one million[126].
5. Distance to targets must be measurable (optimal performance can be defined).

Data sources

The data included in this report comes from a mix of official and non-official data sources. Most of the data (around two-thirds) come from international organizations—including the World Bank, OECD, World Health Organization (WHO), Food and Agriculture Organization (FAO), International Labour Organization (ILO), United Nations Children's Fund (UNICEF), and others—which have extensive and rigorous data validation processes. Other data sources (around one-third) come from less traditional statistics, including household surveys (such as the Gallup World Poll), civil society organizations and networks (Oxfam, Tax Justice Network, World Justice Project, Reporters Without Borders, and others), peer-reviewed journals (e.g., for assessing international spillovers), and geographic information systems (GIS). These non-official data sources complement other datasets and help increase data availability and timeliness for key SDG indicators and targets. The complete list of indicators and data sources is presented below (Table A.2). The data for this year's edition were extracted between March and April 2025.

Missing data and imputations

The objective of this report is to assist the country in monitoring and evaluating its progress and efforts toward implementing the 2030 Agenda, based on available and robust data. To minimize bias due to missing data, the SDG Index includes only countries with data for at least 80 percent of the indicators included in the report. Cabo Verde was not included in the SDG Index comparison due to insufficient data availability, with the share of missing data exceeding the 20 percent threshold across all indicators. Nevertheless, the country was retained in the dashboards (Part 1). Given that many SDG priorities do not have widely accepted statistical models for imputing country-level data, we generally have not imputed or modeled missing data, except in a few exceptional circumstances. The list of indicators where imputations were made is available in the online codebook.

Method for constructing the SDG Index and Dashboards

The procedure for calculating the SDG Index comprises three steps: (i) establishing performance thresholds and censoring extreme values from the distribution of each indicator; (ii) rescaling the data to ensure comparability across indicators (normalization); (iii) aggregating the indicators within and across SDGs.

Establishing Performance thresholds

To make the data comparable across indicators, each variable was rescaled from zero to 100, with zero denoting the worst performance and 100 representing the optimum. Rescaling is sensitive to the choice of limits and extreme values (outliers). The latter may become unintended thresholds and introduce spurious variability into the data. Consequently, the choice of upper and lower bounds can affect the relative ranking of countries

in the index. The upper bound for each indicator was determined using the following decision tree:

1. Use absolute quantitative thresholds set out in SDGs and targets: e.g., zero poverty, universal school completion, universal access to water and sanitation, and full gender equality.
2. Where no explicit SDG target is available, apply the principle of "Leave-No-One-Behind" to set upper bound to universal access or zero deprivation.
3. Where science-based targets exist that must be achieved by 2030 or later, use these to set the 100 percent upper bound (e.g., zero GHG emissions from CO_2 by no later than 2050 to stay within 1.5°C, 100 percent sustainable management of fisheries).
4. For all other indicators, use the average of the top five performers.

These principles interpret the SDGs as "stretch targets" and focus attention on the indicators where a country is lagging behind. The lower bound was defined at the 2.5th percentile of the distribution. Each indicator distribution was censored, so that all values exceeding the upper bound scored 100, and values below the lower bound scored 0.

Normalization

After establishing the upper and lower bounds, variables were transformed linearly to a scale between 0 and 100 using the following rescaling formula for the range [0; 100]:

$$x' = \left(\frac{x - min(x)}{max(x) - min(x)}\right) \times 100$$

where x is the raw data value; max/min denote the upper and lower bounds, respectively; and x' is the normalized value after rescaling. The rescaling equation ensured that all rescaled variables were expressed as ascending variables (i.e., higher values denoted better performance). In this way, the rescaled data became easy to interpret and compare across all indicators: a country that scores 50 on a variable is half-way toward achieving the optimum value; a country with a score of 75 has covered three quarters of the distance from worst to best.

Weighting and Aggregation

The results of several rounds of expert consultations on earlier drafts of the SDG Index made it clear that there was no consensus across different epistemic communities on assigning higher weights to some SDGs over others. As a normative assumption, we therefore opted for a fixed, equal weight for every SDG to reflect policymakers' commitment to treat all SDGs equally and as an integrated and indivisible set of goals. This implies that to improve their SDG Index score countries need to focus their attention on all goals with a particular focus on goals where they are furthest from achieving the SDGs and where incremental progress might therefore be expected to be fastest.

To compute the SDG Index, we first estimate scores for each goal using the arithmetic mean of indicators for that goal. These goal scores are then averaged across all 17 SDGs to obtain the SDG Index score. The results of various sensitivity tests are available online including comparisons between arithmetic mean and geometric mean and Monte-Carlo simulations at the Index and Goal level. Monte-Carlo simulations call for prudence in interpreting small differences in the Index scores and rankings between countries as those may be sensitive to the weighting scheme.

Dashboards

We introduced additional quantitative thresholds for each indicator to group countries in a "traffic light" table. These thresholds were established based on statistical techniques and through multiple rounds of expert consultations conducted since 2016.

Averaging across all indicators for a given SDG may hide areas of policy concern if a country performs well on most indicators but faces serious shortfalls on one or two metrics within the same goal—an issue often referred to as "substitutability" or "compensation." This applies particularly to high-income and upper-middle-income countries that have made significant progress on many SDG dimensions but may still face substantial gaps in certain individual variables.

As a result, the SDG Dashboards focus exclusively on the two variables on which a country performs the worst. An additional rule was applied: a red rating was assigned only if both worst-performing indicators were red. Similarly, to score green, both indicators had to be green.

The quantitative thresholds used for generating the dashboards are available in the online codebook. The methodological section of the Sustainable Development Report (SDR) also provides further details and justifications for the choice of optimal threshold values.

SDG Trends

Using historical data, we estimate how fast a country has been progressing toward an SDG and determine whether—if extrapolated into the future—this pace will be sufficient to achieve the SDG by 2030. For each indicator, SDG achievement is defined by the green threshold set for the SDG Dashboards. The difference in percentage points between the green threshold and the normalized country score denotes the gap that must be closed to meet that goal. To estimate trends at the indicator level, we calculate the linear annual growth rates (i.e., annual percentage improvements) needed to achieve the target by 2030 (i.e., 2015–2030) which we then compare to the average annual growth rate over the most recent period since the adoption of the SDGs in 2015 (e.g. 2015–2023). Progress toward achievement on a particular indicator is described using a four-arrow system (Figure A.1). Figure A.2 illustrates the methodology graphically. Because time series data is required for these calculations, indicators with only one or very few data points across time could not be used for these analyses. The list of indicators used to generate the trend indications is available in the online code book.

Because projections are based on the growth rate over the last several years, a country might have observed a decline in performance in the past year (for instance due to the impact of COVID-19) but still be considered as being on track. This methodology emphasizes long-term structural changes over time since the adoption of the SDGs in 2015, rather than annual changes which may be cyclical or temporary. Countries that currently exceed an indicator target but have decreased since 2015, are assigned an orange arrow, because if the decreasing trend continues, the country may no longer meet the SDG target in the future.

Figure A.1. The four-arrow system for indicating SDG trends

Decreasing

Decreasing score, i.e., country moves in the wrong direction

Stagnating

Score remains stagnant or increases at a rate below 50 percent of the growth rate needed to achieve the SDG by 2030. Also shows the scores that currently exceed the target but have fallen since 2015

Moderately improving

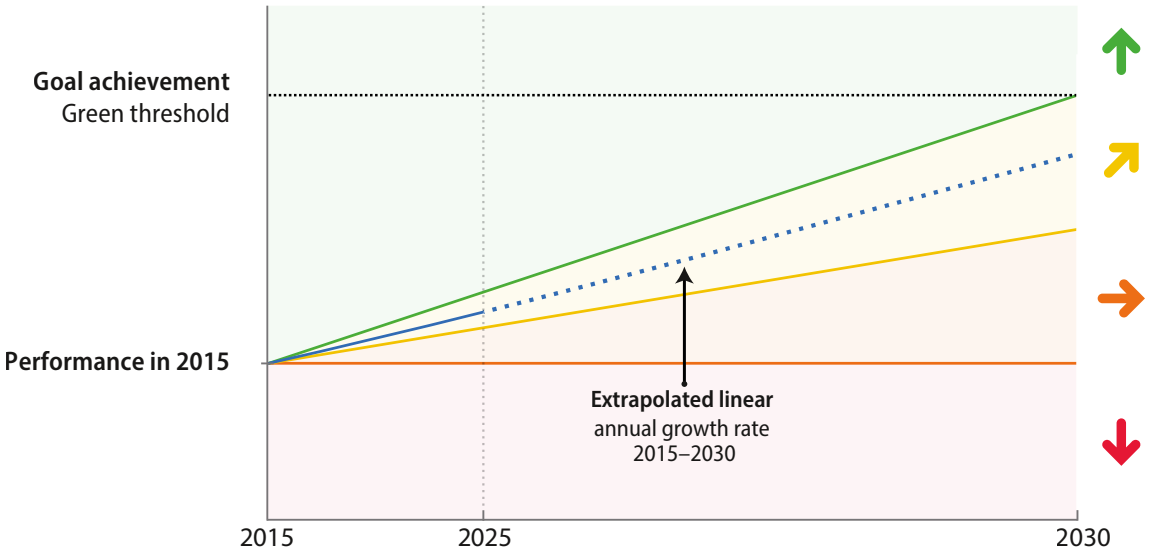
Score increases at a rate above 50 percent of the required growth rate but below the rate needed to achieve the SDG by 2030

on track or Maintaining SDG achievement

Score increases at the rate needed to achieve the SDG by 2030 or performance has already exceeded SDG achievement threshold

Source: Authors.

Figure A.2. Graphical representation of the methodology for SDG trends



Source: Authors.

Status of SDG targets

In addition to the SDG Index, Dashboards and Trends, we present an assessment of the status of SDG targets for Benin and for the ECOWAS population-weighted average. (Figure 5). To make this assessment, we only use trend indicators since time series data was needed to calculate rates of progress.

In the case where the past rate of progress is sufficient to meet the target by 2030 – corresponding to the green arrow "On track or maintaining SDG achievement"—the indicator is counted as a target on track. Indicators where past rates of progress are insufficient to meet the SDG target—corresponding to the orange "stagnating" or yellow "moderately improving" arrows—are counted as limited progress. Finally, indicators that are going in the wrong direction—the red arrow "decreasing"—were counted as worsening. Indicators for which a country has already met the target but have decreased in score since 2015 were also considered worsening.

Table A.2. Indicators included in the report for the SDG index and dashboards

SDG	Trans-formation	Notes	Indicator	Source	Description
1	1	[b] [c]	Poverty headcount ratio at $2.15/day (percent)	World Data Lab	Estimated percentage of the population that is living under the poverty threshold of US$2.15 a day. Estimated using historical income distribution, projections of population changes by age, educational attainment, and GDP projections.
1	1	[b] [c]	Poverty headcount ratio at $3.65/day (percent)	World Data Lab	Estimated percentage of the population living under the poverty threshold of US$3.65 a day. Estimated using historical income distribution, projections of population changes by age, educational attainment, and GDP projections.
2	4		Prevalence of undernourishment (percent)	FAO	The percentage of the population whose food intake is insufficient to meet dietary energy requirements for a minimum of one year. Dietary energy requirements are defined as the amount of dietary energy required by an individual to maintain bodily functions, health and normal activity.
2	4	[a] [c]	Prevalence of stunting in children under five years of age (percent)	UNICEF et al.	The percentage of children under five years who are stunted, measured as the percentage falling below minus two standard deviations from the median-height-for-age, according to the WHO Child Growth Standards.
2	4		Prevalence of wasting in children under five years of age (percent)	UNICEF et al.	The percentage of children up to the age of five years whose weight falls below minus two standard deviations from the median weight for their age, according to the WHO Child Growth Standards.
2	4		Minimum dietary diversity among children aged 6–23 months (percent)	UNICEF et al.	The minimum Dietary Diversity (MDD) is measured as a percentage of children aged 6–23 months who consumed foods and beverages from at least five out of eight defined food groups during the previous day. The MDD is used to monitor the dietary quality of infants and young children
2	4		Prevalence of obesity, BMI ≥ 30 (percent of adult population)	WHO	The percentage of the adult population that has a body mass index (BMI) of 30kg/m^2 or higher, based on measured height and weight.
2	4	[b]	Cereal yield (metric tons per hectare of harvested land)	FAO	Cereal yield, measured as metric tons per hectare of harvested land. Production data on cereals relate to crops harvested for dry grain only and excludes crops harvested for hay or green for food, feed, or silage and those used for grazing.
2	4	[a] [b]	Fertilizer consumption (kg per hectare of arable land)	FAO	The amount of nutrients used per unit of arable land. Fertilizers cover nitrogen, potassium and phosphate fertilizers (including ground rock phosphate). Traditional nutrients—animal and plant manures—are not included. For data dissemination purposes, FAO has adopted the concept of a calendar year (January to December). Some countries compile fertilizer data on a calendar year basis, while others are compiled on a semi-annual basis. Arable land includes land defined by FAO as land under temporary crops (double-cropped areas are counted once), temporary grassland for mowing or grazing, land under market or kitchen gardens, and land temporarily fallow. Land abandoned as a result of shifting cultivation is excluded.
2	4	[b]	Sustainable Nitrogen Management Index (best 0–1.41 worst)	Zhang and Davidson (2019)	The Sustainable Nitrogen Management Index (SNMI) is a one-dimensional ranking score that combines two efficiency measures in crop production: Nitrogen use efficiency (NUE) and land use efficiency (crop yield).
3	2	[b]	Maternal mortality ratio (per 100,000 live births)	WHO et al.	The estimated number of women, between the age of 15 and 49, who die from pregnancy-related causes while pregnant or within 42 days of termination of pregnancy, per 100,000 live births.

SDG	Trans-formation	Notes	Indicator	Source	Description
3	2		Neonatal mortality rate (per 1,000 live births)	UN Inter-agency Group for Child Mortality Estimation	The number of newborn infants (neonates) who die before reaching 28 days of age, per 1,000 live births.
3	2		Mortality rate, under-five (per 1,000 live births)	UN Inter-agency Group for Child Mortality Estimation	The probability that a newborn baby will die before reaching age five, if subject to age-specific mortality rates of the specified year, per 1,000 live births.
3	2		Incidence of tuberculosis (per 100,000 population)	WHO	The estimated rate of new and relapse cases of tuberculosis each year, expressed per 100,000 people. All forms of tuberculosis are included, including cases of people living with HIV.
3	2		New HIV infections (per 1,000 uninfected population, all ages)	UNAIDS	Number of people newly infected with HIV per 1,000 uninfected population.
3	2	[a]	People living with HIV receiving antiretroviral therapy (percent)	UNAIDS	Percentage of people undergoing antiretroviral treatment among all the people living with HIV.
3	2	[a]	Malaria mortality rate (per 100 000 population)	WHO	Number of adults and children who have died due to malaria in a specific year, expressed as a rate per 100 000 population.
3	2	[a] [b]	Coverage of Preventive Chemotherapy for Neglected Tropical Diseases (percent)	WHO	Coverage is calculated as the number of people in need of PC and treated out of population requiring PC.
3	2		Age-standardized death rate due to cardiovascular disease, cancer, diabetes, or chronic respiratory disease in adults aged 30 to 70 years (percent)	WHO	The probability of dying between the ages of 30 and 70 years from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases, defined as the percent of 30-year-old-people who would die before their 70th birthday from these diseases, assuming current mortality rates at every age and that individuals would not die from any other cause of death (e.g. injuries or HIV/AIDS).
3	2		Age-standardized death rate attributable to household air pollution and ambient air pollution (per 100,000 population)	WHO	Mortality rate that is attributable to the joint effects of fuels used for cooking indoors and ambient outdoor air pollution.
3	2		Traffic deaths (per 100,000 population)	WHO	Estimated number of fatal road traffic injuries per 100,000 people.
3	2		Life expectancy at birth (years)	UN DESA	The average number of years that a newborn could expect to live, if he or she were to pass through life exposed to the sex- and age-specific death rates prevailing at the time of his or her birth.
3	2		Adolescent fertility rate (births per 1,000 females aged 15 to 19)	WHO	The number of births per 1,000 females between the age of 15 and 19.
3	2		Births attended by skilled health personnel (percent)	UNICEF	The percentage of births attended by personnel trained to give the necessary supervision, care, and advice to women during pregnancy, labor, and the postpartum period, to conduct deliveries on their own, and to care for newborns.

SDG	Trans-formation	Notes	Indicator	Source	Description
3	2	[c]	Surviving infants who received two WHO-recommended vaccines (percent)	WHO and UNICEF	Estimated national routine immunization coverage of infants, expressed as the percentage of surviving infants, children under the age of 12 months, who received two WHO-recommended vaccines (3rd dose of DTP and 1st dose of measles). Calculated as the minimum value between the percentage of infants who have received the 3rd dose of DTP and the percentage who have received the 1st dose of measles.
3	2		Universal health coverage (UHC) index of service coverage (worst 0–100 best)	WHO	Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population). The indicator is an index reported on a unitless scale of 0 to 100, which is computed as the geometric mean of 14 tracer indicators of health service coverage.
3	2		Subjective well-being (average ladder score, worst 0–10 best)	Gallup	Subjective self-evaluation of life, where respondents are asked to evaluate where they feel they stand on a ladder where zero represents the worst possible life and ten the best possible life.
4	1	[c]	Participation rate in pre-primary organized learning (percent of children aged four to six)	UNESCO	Participation rate in organized learning one year before the official primary entry age measured by the adjusted net enrollment rate in organized learning.
4	1	[b] [c]	Net primary enrollment rate (percent)	UNESCO	The percentage of children of the official school age population who are enrolled in primary education.
4	1	[b]	Lower secondary completion rate (percent)	UNESCO	Lower secondary education completion rate measured as the gross intake ratio to the last grade of lower secondary education (general and pre-vocational). It is calculated as the number of new entrants in the last grade of lower secondary education, regardless of age, divided by the population at the entrance age for the last grade of lower secondary education.
4	1	[a]	Mean years of schooling (years)	UNDP	Average number of completed years of education of a country's population, excluding years spent repeating individual grades.
4	1		Literacy rate (percent of population aged 15 to 24)	UNESCO	The percentage of youth, aged 15 to 24, who can both read and write a short simple statement on everyday life with understanding.
5	2	[b]	Demand for family planning satisfied by modern methods (percent of females aged 15 to 49)	UN DESA	The percentage of women of reproductive age whose demand for family planning has been met using modern methods of contraception.
5	1		Ratio of female-to-male mean years of education received (percent)	UNDP	The mean years of education received by women aged 25 and older divided by the mean years of education received by men aged 25 and older.
5	1		Ratio of female-to-male labor force participation rate (percent)	ILO	Modeled estimate of the proportion of the female population aged 15 years and older that is economically active, divided by the same proportion for men.
5	1	[b] [c]	Seats held by women in national parliament (percent)	IPU	The number of seats held by women in single or lower chambers of national parliaments, expressed as a percentage of all occupied seats. Seats refer to the number of parliamentary mandates, or the number of members of parliament.
5	1	[a]	Women in ministerial positions (percent)	IPU and UN Women	Percentage of women in ministerial positions, reflecting appointments up to 1 January 2017.

SDG	Trans-formation	Notes	Indicator	Source	Description
6	5	[b] [c]	Population using at least basic drinking water services (percent)	JMP	The percentage of the population using at least a basic drinking water service, such as drinking water from an improved source, provided that the collection time is not more than 30 minutes for a round trip, including queuing.
6	5	[b] [c]	Population using at least basic sanitation services (percent)	JMP	The percentage of the population using at least a basic sanitation service, such as an improved sanitation facility that is not shared with other households.
6	4	[b]	Freshwater withdrawal (percent of available freshwater resources)	FAO	The ratio between total freshwater withdrawn by all major sectors and total renewable freshwater resources, after taking into account environmental water requirements. The main sectors include agriculture, forestry and fishing, manufacturing, electricity industry, and services. This indicator is also known as the level of water stress.
6	5	[b]	Anthropogenic wastewater that receives treatment (percent)	EPI	The proportion of wastewater that undergoes at least primary treatment in each country, multiplied by the proportion of the population connected to a wastewater collection system.
6		[b]	Scarce water consumption embodied in imports (m^3 H_2Oeq/capita)	UNEP	Water scarcity is measured as water consumption weighted by scarcity indices. In order to incorporate water scarcity into the virtual water flow calculus, water use entries are weighted so that they reflect the scarcity of the water being used. The weight used is a measure of water withdrawals as a percentage of the existing local renewable freshwater resources.
7	3	[b]	Population with access to electricity (percent)	IEA, IRENA, UNSD, WB, WHO	The percentage of the population who has access to electricity.
7	3	[b] [c]	Population with access to clean fuels and technology for cooking (percent)	IEA, IRENA, UNSD, WB, WHO	The percentage of the population primarily using clean cooking fuels and technologies for cooking. Under WHO guidelines, kerosene is excluded from clean cooking fuels.
7	3	[b] [c]	CO_2 emissions from fuel combustion per total electricity output ($MtCO_2$/TWh)	Global Carbon Project & AIE	A measure of the carbon intensity of energy production, calculated by dividing CO_2 emissions from the combustion of fuel by electricity output. The data are reported in megametric tons per billion kilowatt hours.
7	3	[b]	Renewable energy share in total final energy consumption (percent)	IEA, IRENA, UNSD, WB, WHO	The share of renewable energy in the total final energy consumption. Renewable energy includes hydro, solid biofuels, liquid biofuels, biogases, modern biomass, wind, solar, geothermal, tide/wave/oceans and renewable municipal waste. It does not include traditional biomass—local solid biomass resources (e.g. wood, charcoal, dung, agricultural residues) used in low-income households that do not have access to modern cooking fuels or technologies.
7	3	[a] [b]	Consumer affordability of electricity (scale 0 to 100)	ESMAP (World Bank et al.)	In RISE, electricity is considered affordable if annual expenditure on 30 kWh per month is at most five percent of GNI per household of the bottom 20 percent of the population.
8		[a] [b]	5-year average GDP Growth per capita (percent)	World Bank	Five-year moving average (e.g., in 2020: average of 2020–2016) of the annual percentage growth rate of GDP per capita based on constant local currency. GDP per capita is gross domestic product divided by mid-year population. GDP at acquisition price is the sum of the gross value added of all resident producers in the economy, plus taxes on products and minus subsidies not included in the value of products. It is calculated without deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

SDG	Trans-formation	Notes	Indicator	Source	Description
8			Unemployment rate (percent of total labor force, ages 15+)	ILO	Modeled estimate of the share of the labor force that is without work but is available and actively seeking employment. The indicator reflects the inability of an economy to generate employment for people who want to work but are not doing so.
8	1		Victims of modern slavery (per 1,000 population)	Walk Free Foundation	Estimation of the number of people in modern slavery. Modern slavery is defined as people in forced labor or forced marriage. It is calculated based on standardized surveys and Multiple Systems Estimation (MSE).
8	6	[b]	Adults with an account at a bank or other financial institution or with a mobile-money-service provider (percent of population aged 15 or over)	Global Findex Database	The percentage of adults, 15 years and older, who report having an account (by themselves or with someone else) at a bank or another type of financial institution, or who have personally used a mobile money service within the past 12 months.
8	1		Fundamental labor rights are effectively guaranteed (worst 0–1 best)	World Justice Project	Measures the effective enforcement of fundamental labor rights, including freedom of association and the right to collective bargaining, the absence of discrimination with respect to employment, and freedom from forced labor and child labor.
9	6	[b]	Population using the internet (percent)	ITU	The percentage of the population who used the Internet from any location in the last three months. Access could be via a fixed or mobile network.
9	6	[b]	Mobile broadband subscriptions (per 100 population)	ITU	The number of mobile broadband subscriptions per 100 population. Mobile broadband subscriptions refer to subscriptions to mobile cellular networks with access to data communications (e.g. the Internet) at broadband speeds, irrespective of the device used to access the internet.
9	5	[c]	Rural population with access to all-season roads (percent)	SDSN (2023), based on Workman, R. & McPherson, K., TRL (2019)	Proportion of the rural population that lives within two km of an all-season road. An all-season road is one that is motorable throughout the year but may be temporarily unavailable during inclement weather.
9	5		Logistics Performance Index: Infrastructure Score (worst 1–5 best)	World Bank	Survey-based average assessment of the quality of trade and transport related infrastructure, e.g. ports, roads, railroads and information technology, on a scale from one (worst) to five (best).
9			Articles published in academic journals (per 1,000 population)	SCImago Journal Rank	Number of citable documents published by a journal in the three previous years (selected year documents are excluded). Only articles, reviews, and conference papers are considered.
9	1	[b]	Total patent applications by applicant's origin (per million population)	WIPO	Total patent applications filed according to the origin of the applicant and standardised by population.
10	1	[b]	Gini coefficient	World Bank	The Gini coefficient measures the extent to which the distribution of income among individuals or households within an economy deviates from a perfectly equal distribution.
10	5	[b]	Palma ratio	OECD & UNDP	The share of all income received by the 10 percent people with highest disposable income divided by the share of all income received by the 40 percent people with the lowest disposable income.

SDG	Trans-formation	Notes	Indicator	Source	Description
11	5	[b] [c]	Proportion of urban population living in slums (percent)	UN Habitat	Population living in slums is the proportion of the urban population living in slum households. A slum household is defined as a group of individuals living under the same roof lacking one or more of the following conditions: access to improved water, access to improved sanitation, sufficient living area, housing durability, and security of tenure.
11	5	[b]	Annual mean concentration of PM2.5 ($\mu g/m^3$)	Washington University in St Louis	Air pollution measured as the population-weighted mean annual concentration of PM2.5 for the urban population in a country. PM2.5 is suspended particles measuring less than 2.5 microns in aerodynamic diameter, which are capable of penetrating deep into the respiratory tract and can cause severe health damage.
11	5	[b]	Access to improved water source, piped (percent of urban population)	WHO and UNICEF	The percentage of the urban population with access to improved drinking water piped on premises. An "improved" drinking-water source is one that, by the nature of its construction and when properly used, adequately protects the source from outside contamination, particularly faecal matter.
12	3		Electronic waste that is not recollected (kg/capita)	UNU-IAS	Waste from electrical and electronic equipment, estimated based on figures for domestic production, imports and exports of electronic products, as well as product lifespan data. The indicator excludes waste that is recollected or recycled and is standardized by population.
12		[b]	Production-based air pollution (DALYs per 1,000 population)	UNEP	Emissions of air pollution embodied from the production of goods and services. Air pollutants are converted into disability-adjusted life years lost (DALYs) to aggregate across types of pollution.
12	4		Air pollution associated with imports (DALYs per 1,000 population)	UNEP	Emissions of air pollution embodied in imported goods and services. Air pollutants are converted into disability-adjusted life years lost (DALYs) to aggregate across types of pollution.
12		[b]	Production-based nitrogen emissions (kg/capita)	UNEP	Reactive nitrogen emitted during the production of commodities that are either exported or consumed domestically. Reactive nitrogen corresponds to emissions of ammonia, nitrogen oxides and nitrous oxide into the atmosphere, as well as reactive nitrogen potentially exported to water bodies, all of which can be harmful to human health and the environment.
12	5		Nitrogen emissions associated with imports (kg/capita)	UNEP	Emissions of reactive nitrogen embodied in imported goods and services. Reactive nitrogen corresponds here to emissions of ammonia, nitrogen oxides and nitrous oxide into the atmosphere, as well as of reactive nitrogen potentially exported to water bodies, all of which can be harmful to human health and the environment.
13	3	[b]	CO_2 emissions from fossil fuel combustion and cement production (tCO_2/capita)	Global Carbon Project	Emissions from the combustion and oxidation of fossil fuels and from cement production. The indicator excludes emissions from fuels used for international aviation and maritime transport.
13	3		CO_2 emissions embodied in fossil fuel exports (metric tons/capita)	UN Comtrade	CO_2 emissions embodied in the exports of coal, gas, and oil. Calculated using average fossil fuel exports and converting exports into their equivalent CO_2 emissions. Exports of each fossil fuel are capped at the country's level of production.
14	4	[b] [c]	Mean area that is protected in marine sites important to biodiversity (percent)	Birdlife International et al.	The mean percentage area of marine Key Biodiversity Areas (sites that are important for the global persistence of marine biodiversity) that are protected.

SDG	Trans-formation	Notes	Indicator	Source	Description
14	4	[b]	Ocean Health Index: Clean Waters score (worst 0–100 best)	Ocean Health Index	The clean waters subgoal of the Ocean Health Index measures to what degree marine waters under national jurisdictions have been contaminated by chemicals, excessive nutrients (eutrophication), human pathogens, and trash.
14	4	[b]	Fish caught by trawling or dredging (percent)	Sea Around Us	The percentage of fish caught by bottom trawling, a method of fishing in which industrial fishing vessels drag large nets (trawls) along the seabed. This indicator is the sum of the series for bottom trawling, shrimp trawling, and dredging.
14	4		Fish caught that are then discarded (percent)	Sea around Us	The percentage of fish that are caught only to be later discarded.
15		[b]	Mean area that is protected in terrestrial sites important to biodiversity (percent)	Birdlife International et al.	The mean percentage area of terrestrial Key Biodiversity Areas (sites that are important for the global persistence of biodiversity) that are protected.
15	4	[b] [c]	Mean area that is protected in freshwater sites important to biodiversity (percent)	Birdlife International et al.	The mean percentage area of freshwater Key Biodiversity Areas (sites that are important for the global persistence of biodiversity) that are protected.
15	4		Red List Index of species survival (worst 0–1 best)	IUCN and Birdlife International	The change in aggregate extinction risk across groups of species. The index is based on genuine changes in the number of species in each category of extinction risk on The IUCN Red List of Threatened Species.
15	4	[b]	Permanent deforestation (percent of forest area, 3-year average)	Curtis et al. (2018) data updated to 2021	The mean annual percentage of permanent deforestation over the last 3-year period. Permanent deforestation refers to tree cover removal for urbanization, commodity production and certain types of small-scale agriculture whereby the previous tree cover does not return. It does not include temporary forest loss due to cuttings within the forestry sector or wildfires. Since data on tree cover gains are not available, the annual net loss cannot be calculated, thus the indicator is an estimate for gross permanent deforestation.
16	4	[a]	Absence of Armed Conflict (worst 0–100 best)	Ibrahim Index of African Governance	This indicator measures the number of violent events in both state-based and non-state-based conflicts as well as instances of non-state-based conflict within a country's territory.
16			Unsentenced detainees (percent of prison population)	UNODC	Unsentenced prisoners as a percentage of overall prison population. Persons held unsentenced or pre-trial refers to persons held in prisons, penal institutions or correctional institutions who are untried, pre-trial or awaiting a first instance decision on their case from a competent authority regarding their conviction or acquittal.
16			Timeliness of administrative proceedings (worst 0–1 best)	World Justice Project	Measures whether administrative proceedings at the national and local levels are conducted without unreasonable delay.
16			Expropriations are lawful and adequately compensated (worst 0–1 best)	World Justice Project	Measures whether the government respects the property rights of people and corporations, refrains from the illegal seizure of private property, and provides adequate compensation when property is legally expropriated.
16		[c]	Birth registrations with civil authority (percent of children under age 5)	UNICEF	The percentage of children under the age of five whose births are reported as being registered with the relevant national civil authorities.

SDG	Trans-formation	Notes	Indicator	Source	Description
16	6	[c]	Corruption Perceptions Index (worst 0–100 best)	Transparency International	The perceived levels of public sector corruption, on a scale from 0 (highest level of perceived corruption) to 100 (lowest level of perceived corruption). The CPI aggregates data from a number of different sources that provide perceptions of business people and country experts.
16	6	[a]	Accountability & Transparency (worst 0–100 best)	Ibrahim Index of African Governance	Assesses institutional and civic checks and balances, absence of undue influence on government, disclosure of financial and judicial information, as well as the accessibility of this information.
16			Children involved in child labor (percent)	UNICEF	The percentage of children, between the age of five and 17 years old, involved in child labor at the time of the survey.
16	1		Press Freedom Index (worst 0–100 best)	Reporters sans frontières	Degree of freedom available to journalists in 180 countries and regions, determined by pooling the responses of experts to a questionnaire devised by RSF.
16	6		Access to and affordability of justice (worst 0–1 best)	World Justice Project	Measures the accessibility and affordability of civil courts, including whether people are aware of available remedies; can access and afford legal advice and representation; and can access the court system without incurring unreasonable fees, encountering unreasonable procedural hurdles, or experiencing physical or linguistic barriers.
16			Crime is effectively controlled (worst 0–1 best)	World Justice Project	Measures whether perpetrators of crimes are effectively apprehended and charged. It also measures whether police, investigators, and prosecutors have adequate resources, are free of corruption, and perform their duties competently.
17			Government spending on health and education (percent of GDP)	UNESCO	The sum of public expenditure on health from domestic sources and general government expenditure on education (current, capital, and transfers) expressed as a percentage of GDP. This indicator is based on the World Bank health and education spending datasets, sourced from WHO & UNESCO respectively. Values are carried forward for both health and education, but a value in a given year is only reported if at least one data point is a real observation (not carried forward).
17			Corporate Tax Haven Score (best 0–100 worst)	Tax Justice Network	The Corporate Tax Haven Score measures a jurisdiction's potential to poach the tax base of others, as enshrined in its laws, regulations and documented administrative practices. For countries with multiple jurisdictions, the average value across the jurisdictions was assigned to the country.
17			Statistical Performance Index (worst 0–100 best)	World Bank	The Statistical Performance Index is a weighted average of the statistical performance indicators that evaluate the performance of national statistical systems. It aggregates five pillars of statistical performance: data use, data services, data products, data sources, and data infrastructure.
17	6	[a]	Tax revenue (percent GDP)	IMF	Tax revenues are compulsory transfers to the central government for public purposes. Certain compulsory transfers, such as fines, penalties, and most social security contributions, are excluded. Refunds and corrections of erroneously collected tax revenues are treated as negative revenue. It is reported as a percentage of GDP.
17			Index of countries' support to UN-based multilateralism (worst 0–100 best)	SDSN	Measures countries' support to UN-based multilateralism via six indicators: (1) Ratification of major UN treaties; (2) UNGA votes with the international majority; (3) Membership in selected UN organizations; (4) Participation in conflicts and militarization; (5) Use of unilateral coercive measures and (6) Contributions to the UN budget & International solidarity

Source: Authors.
Note: [a] Indicators not taken from the Sustainable Development Report; added for their relevance in the context of Benin and ECOWAS. [b] Indicators used for the analyses in Part 1. [c] Indicators used for the analyses in Section 2.1.

Notes Annexes

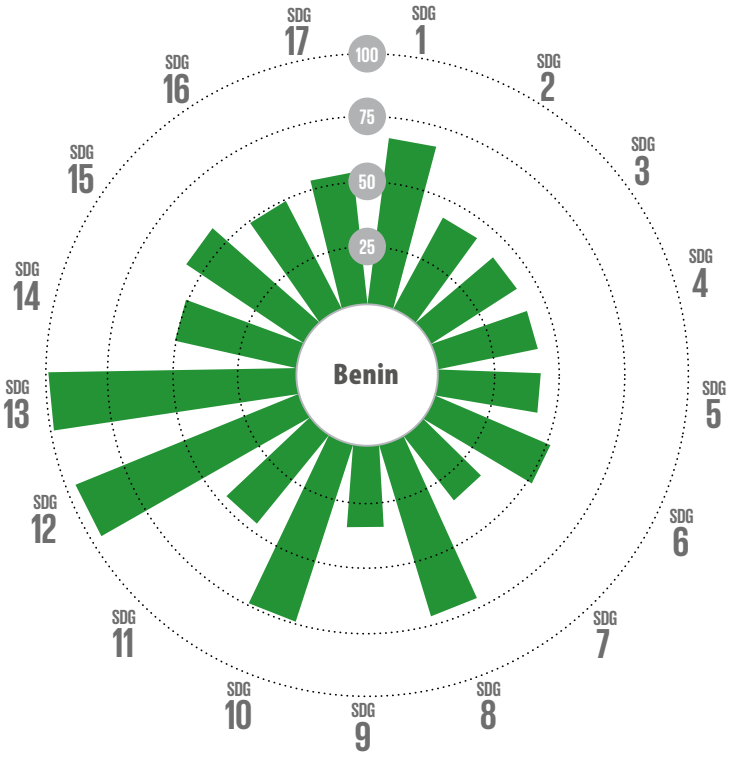
126 There are two exceptions to this rule: (i) New HIV infections and (ii) Children involved in child labor.

Country profiles

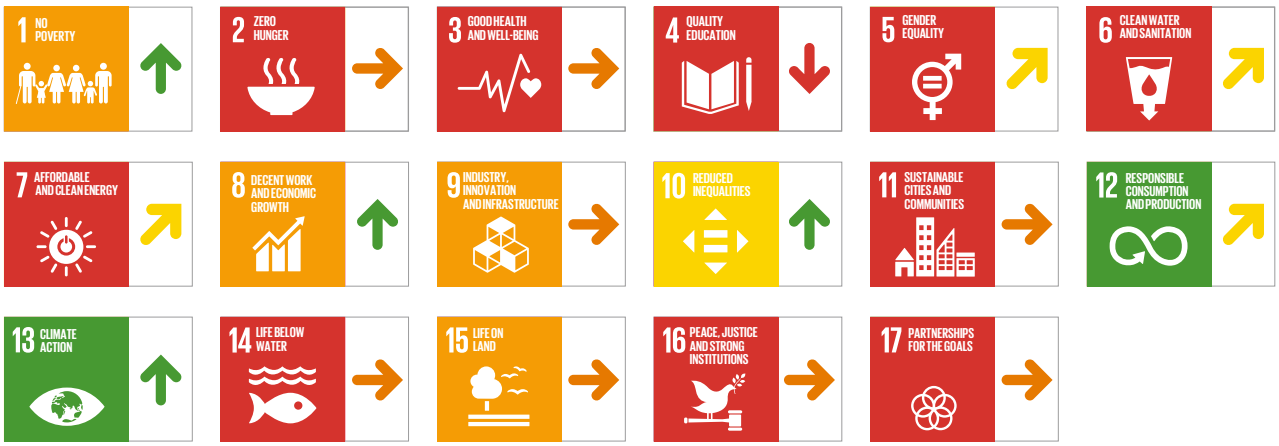
Benin

Overall Performance

Performance by SDG



SDG Dashboards and Trends



- Major challenges remain
- Significant challenges remain
- Chalenges remain
- SDG achieved
- Information unavailable
- Decreasing
- Stagnating
- Moderately improving
- On track or maintaining SDG achievement
- Data not available

Benin

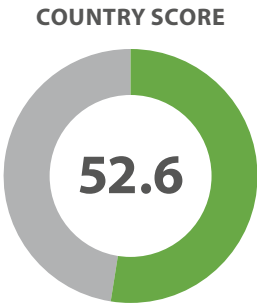
Performance by Indicator

	Value	Year	Rating	Trend
SDG 1 – No Poverty				
Poverty headcount ratio at $2.15/day (%)	8.8	2025		
Poverty headcount ratio at $3.65/day (%)	27.7	2025		
SDG 2 – Zero Hunger				
Prevalence of undernourishment (%)	10.3	2022		
Prevalence of stunting in children under 5 years of age (%)	34.1	2021		
Prevalence of wasting in children under 5 years of age (%)	8.3	2021		
Minimum dietary diversity among children aged 6–23 months (%)	22.0	2021		
Prevalence of obesity, BMI ≥ 30 (% of adult population)	11.2	2022		
Cereal yield (tonnes per hectare of harvested land)	1.4	2022		
Fertilizer consumption (kg per hectare of arable land)	36.9	2022		
Sustainable Nitrogen Management Index (best 0–1.41 worst)	0.65	2018		
SDG 3 – Good Health and Well-Being				
Maternal mortality ratio (per 100,000 live births)	518.2	2023		
Neonatal mortality rate (per 1,000 live births)	28.0	2023		
Mortality rate, under-5 (per 1,000 live births)	77.9	2023		
Incidence of tuberculosis (per 100,000 population)	51.0	2023		
New HIV infections (per 1,000 uninfected population, all ages)	0.1	2023		
People living with HIV receiving antiretroviral therapy (%)	NA	NA		
Malaria mortality rate (per 100 000 population)	70.4	2023		
Coverage of Preventive Chemotherapy for Neglected Tropical Diseases (%)	20.6	2023		
Age-standardized death rate due to cardiovascular disease, cancer, diabetes, or chronic respiratory disease in adults aged 30 to 70 years (%)	20.8	2021		
Age-standardized death rate attributable to household air pollution and ambient air pollution (per 100,000 population)	202.0	2019		
Traffic deaths (per 100,000 population)	24.8	2021		
Life expectancy at birth (years)	60.8	2023		
Adolescent fertility rate (births per 1,000 females aged 15 to 19)	83.9	2019		
Births attended by skilled health personnel (%)	80.8	2022		
Surviving infants who received 2 WHO-recommended vaccines (%)	52.0	2023		
Universal health coverage (UHC) index of service coverage (worst 0–100 best)	37.9	2021		
Subjective well-being (average ladder score, worst 0–10 best)	4.4	2024		
SDG 4 – Quality Education				
Participation rate in pre-primary organized learning (% of children aged 4 to 6)	76.5	2018		
Net primary enrollment rate (%)	90.4	2022		
Lower secondary completion rate (%)	29.1	2022		
Mean years of schooling (years)	3.1	2022		
Literacy rate (% of population aged 15 to 24)	66.4	2022		
SDG 5 – Gender Equality				
Demand for family planning satisfied by modern methods (% of females aged 15 to 49)	37.9	2024		
Ratio of female-to-male mean years of education received (%)	46.8	2022		
Ratio of female-to-male labor force participation rate (%)	96.5	2024		
Seats held by women in national parliament (%)	26.6	2025		
Women in ministerial positions (%)	23.8	2025		
SDG 6 – Clean Water and Sanitation				
Population using at least basic drinking water services (%)	67.4	2022		
Population using at least basic sanitation services (%)	19.5	2022		
Freshwater withdrawal (% of available freshwater resources)	1.0	2022		
Anthropogenic wastewater that receives treatment (%)	0.0	2015		
Scarce water consumption embodied in imports (m^3 H_2Oeq/capita)	310.5	2024		
SDG 7 – Affordable and Clean Energy				
Population with access to electricity (%)	56.5	2022		
Population with access to clean fuels and technology for cooking (%)	6.0	2022		
CO_2 emissions from fuel combustion per total electricity output ($MtCO_2$/TWh)	5.6	2023		
Renewable energy share in total final energy consumption (%)	9.4	2021		
Consumer affordability of electricity (scale 0 to 100)	89.9	2023		

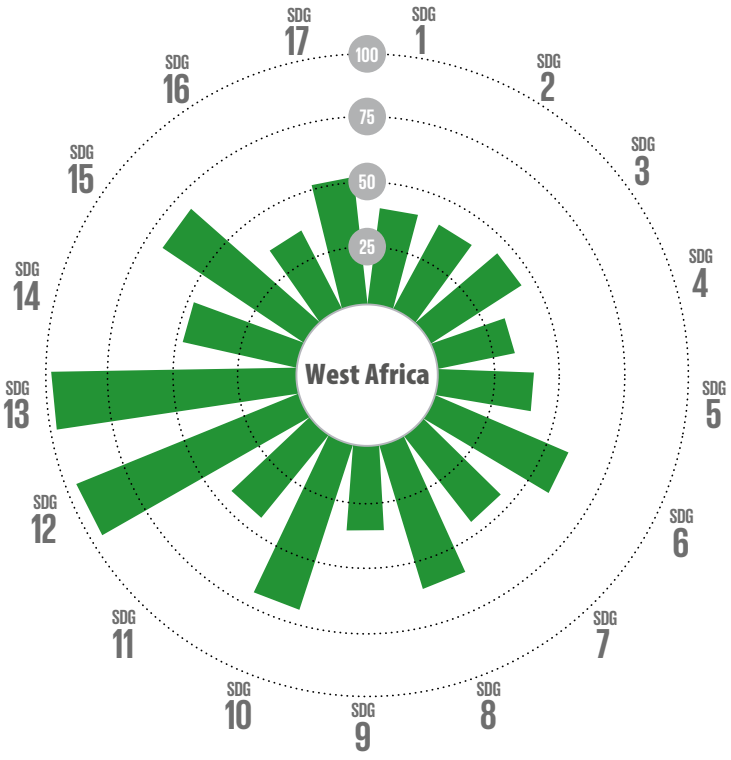
	Value	Year	Rating	Trend
SDG 8 – Decent Work and Economic Growth				
5-year average GDP Growth per capita (%)	3.4	2023		
Unemployment rate (% of total labor force, ages 15+)	1.8	2025		
Victims of modern slavery (per 1,000 population)	3.0	2022		
Adults with an account at a bank or other financial institution or with a mobile-money-service provider (% of population aged 15 or over)	48.6	2021		
Fundamental labor rights are effectively guaranteed (worst 0–1 best)	0.59	2023		
SDG 9 – Industry, Innovation and Infrastructure				
Population using the internet (%)	32.2	2023		
Mobile broadband subscriptions (per 100 population)	50.1	2023		
Rural population with access to all-season roads (%)	78.0	2025		
Logistics Performance Index: Infrastructure Score (worst 1–5 best)	2.5	2023		
Articles published in academic journals (per 1,000 population)	0.1	2023		
Total patent applications by applicant's origin (per million population)	31.6	2023		
SDG 10 – Reduced Inequalities				
Gini coefficient	34.4	2021		
Palma ratio	1.4	2021		
SDG 11 – Sustainable Cities and Communities				
Proportion of urban population living in slums (%)	64.0	2022		
Annual mean concentration of PM2.5 ($\mu g/m^3$)	35.5	2023		
Access to improved water source, piped (% of urban population)	47.8	2022		
SDG 12 – Responsible Consumption and Production				
Electronic waste that is not recollected (kg/capita)	1.1	2022		
Production-based air pollution (DALYs per 1,000 population)	0.4	2024		
Air pollution associated with imports (DALYs per 1,000 population)	0.6	2024		
Production-based nitrogen emissions (kg/capita)	11.7	2024		
Nitrogen emissions associated with imports (kg/capita)	2.3	2024		
SDG 13 – Climate Action				
CO_2 emissions from fossil fuel combustion and cement production (tCO_2/capita)	0.4	2023		
CO_2 emissions embodied in fossil fuel exports (tonnes/capita)	0.0	2023		
SDG 14 – Life Below Water				
Mean area that is protected in marine sites important to biodiversity (%)	0.0	2023		
Ocean Health Index: Clean Waters score (worst 0–100 best)	13.1	2024		
Fish caught by trawling or dredging (%)	0.5	2019		
Fish caught that are then discarded (%)	0.0	2019		
SDG 15 – Life on Land				
Mean area that is protected in terrestrial sites important to biodiversity (%)	66.7	2023		
Mean area that is protected in freshwater sites important to biodiversity (%)	0.0	2023		
Red List Index of species survival (worst 0–1 best)	0.91	2023		
Permanent deforestation (% of forest area, 3-year average)	0.2	2023		
SDG 16 – Peace, Justice and Strong Institutions				
Absence of Armed Conflict (worst 0–100 best)	94.1	2023		
Unsentenced detainees (% of prison population)	59.9	2021		
Timeliness of administrative proceedings (worst 0 – 1 best)	0.39	2023		
Expropriations are lawful and adequately compensated (worst 0 – 1 best)	0.46	2023		
Birth registrations with civil authority (% of children under age 5)	92.6	2022		
Corruption Perceptions Index (worst 0–100 best)	45.0	2024		
Accountability & Transparency (worst 0–100 best)	47.6	2023		
Children involved in child labor (%)	19.9	2022		
Press Freedom Index (worst 0–100 best)	54.6	2025		
Access to and affordability of justice (worst 0–1 best)	0.51	2023		
Crime is effectively controlled (worst 0 – 1 best)	0.72	2023		
SDG 17 – Partnerships for the Goals				
Government spending on health and education (% of GDP)	3.9	2022		
Corporate Tax Haven Score (best 0–100 worst)	0.0	2024		
Statistical Performance Index (worst 0–100 best)	68.0	2023		
Tax revenue (% GDP)	11.5	2022		
Index of countries' support to UN-based multilateralism (worst 0–100 best)	64.4	2025		

West Africa

Overall Performance



Performance by SDG



SDG Dashboards and Trends

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West Africa

Performance by Indicator

	Value	Year	Rating	Trend
SDG 1 – No Poverty				
Poverty headcount ratio at $2.15/day (%)	25.0	2025		
Poverty headcount ratio at $3.65/day (%)	45.1	2025		
SDG 2 – Zero Hunger				
Prevalence of undernourishment (%)	15.0	2022		
Prevalence of stunting in children under 5 years of age (%)	28.8	2022		
Prevalence of wasting in children under 5 years of age (%)	7.3	2022		
Minimum dietary diversity among children aged 6–23 months (%)	27.2	2022		
Prevalence of obesity, BMI ≥ 30 (% of adult population)	11.3	2022		
Cereal yield (tonnes per hectare of harvested land)	1.6	2022		
Fertilizer consumption (kg per hectare of arable land)	12.2	2022		
Sustainable Nitrogen Management Index (best 0–1.41 worst)	0.87	2018		
SDG 3 – Good Health and Well-Being				
Maternal mortality ratio (per 100,000 live births)	676.5	2023		
Neonatal mortality rate (per 1,000 live births)	30.6	2023		
Mortality rate, under-5 (per 1,000 live births)	89.3	2023		
Incidence of tuberculosis (per 100,000 population)	164.9	2023		
New HIV infections (per 1,000 uninfected population, all ages)	0.3	2023		
People living with HIV receiving antiretroviral therapy (%)	76.7	2023		
Malaria mortality rate (per 100 000 population)	70.8	2023		
Coverage of Preventive Chemotherapy for Neglected Tropical Diseases (%)	60.0	2023		
Age-standardized death rate due to cardiovascular disease, cancer, diabetes, or chronic respiratory disease in adults aged 30 to 70 years (%)	20.0	2021		
Age-standardized death rate attributable to household air pollution and ambient air pollution (per 100,000 population)	179.7	2019		
Traffic deaths (per 100,000 population)	20.5	2021		
Life expectancy at birth (years)	58.5	2023		
Adolescent fertility rate (births per 1,000 females aged 15 to 19)	87.6	2021		
Births attended by skilled health personnel (%)	62.6	2022		
Surviving infants who received 2 WHO-recommended vaccines (%)	68.1	2023		
Universal health coverage (UHC) index of service coverage (worst 0–100 best)	40.3	2021		
Subjective well-being (average ladder score, worst 0–10 best)	4.7	2024		
SDG 4 – Quality Education				
Participation rate in pre-primary organized learning (% of children aged 4 to 6)	44.6	2023		
Net primary enrollment rate (%)	69.5	2023		
Lower secondary completion rate (%)	45.9	2023		
Mean years of schooling (years)	5.6	2022		
Literacy rate (% of population aged 15 to 24)	69.9	2022		
SDG 5 – Gender Equality				
Demand for family planning satisfied by modern methods (% of females aged 15 to 49)	47.7	2024		
Ratio of female-to-male mean years of education received (%)	66.3	2022		
Ratio of female-to-male labor force participation rate (%)	87.9	2024		
Seats held by women in national parliament (%)	13.3	2025		
Women in ministerial positions (%)	14.3	2025		
SDG 6 – Clean Water and Sanitation				
Population using at least basic drinking water services (%)	75.6	2022		
Population using at least basic sanitation services (%)	39.5	2022		
Freshwater withdrawal (% of available freshwater resources)	8.3	2022		
Anthropogenic wastewater that receives treatment (%)	2.7	2015		
Scarce water consumption embodied in imports (m^3 H_2Oeq/capita)	186.0	2024		
SDG 7 – Affordable and Clean Energy				
Population with access to electricity (%)	56.6	2022		
Population with access to clean fuels and technology for cooking (%)	21.7	2022		
CO_2 emissions from fuel combustion per total electricity output ($MtCO_2$/TWh)	2.7	2023		
Renewable energy share in total final energy consumption (%)	6.7	2021		
Consumer affordability of electricity (scale 0 to 100)	81.5	2023		

	Value	Year	Rating	Trend
SDG 8 – Decent Work and Economic Growth				
5-year average GDP Growth per capita (%)	0.8	2023		
Unemployment rate (% of total labor force, ages 15+)	2.9	2025		
Victims of modern slavery (per 1,000 population)	6.1	2022		
Adults with an account at a bank or other financial institution or with a mobile-money-service provider (% of population aged 15 or over)	44.6	2022		
Fundamental labor rights are effectively guaranteed (worst 0–1 best)	0.51	2023		
SDG 9 – Industry, Innovation and Infrastructure				
Population using the internet (%)	39.0	2023		
Mobile broadband subscriptions (per 100 population)	51.4	2023		
Rural population with access to all-season roads (%)	83.9	2025		
Logistics Performance Index: Infrastructure Score (worst 1–5 best)	2.4	2023		
Articles published in academic journals (per 1,000 population)	0.1	2023		
Total patent applications by applicant's origin (per million population)	5.5	2023		
SDG 10 – Reduced Inequalities				
Gini coefficient	35.7	2021		
Palma ratio	1.5	2021		
SDG 11 – Sustainable Cities and Communities				
Proportion of urban population living in slums (%)	53.3	2022		
Annual mean concentration of PM2.5 ($\mu g/m^3$)	46.2	2023		
Access to improved water source, piped (% of urban population)	41.8	2022		
SDG 12 – Responsible Consumption and Production				
Electronic waste that is not recollected (kg/capita)	1.8	2022		
Production-based air pollution (DALYs per 1,000 population)	0.3	2024		
Air pollution associated with imports (DALYs per 1,000 population)	0.6	2024		
Production-based nitrogen emissions (kg/capita)	11.7	2024		
Nitrogen emissions associated with imports (kg/capita)	2.9	2024		
SDG 13 – Climate Action				
CO_2 emissions from fossil fuel combustion and cement production (tCO_2/capita)	0.5	2023		
CO_2 emissions embodied in fossil fuel exports (tonnes/capita)	0.8	2023		
SDG 14 – Life Below Water				
Mean area that is protected in marine sites important to biodiversity (%)	18.2	2023		
Ocean Health Index: Clean Waters score (worst 0–100 best)	31.7	2024		
Fish caught by trawling or dredging (%)	13.6	2019		
Fish caught that are then discarded (%)	4.1	2019		
SDG 15 – Life on Land				
Mean area that is protected in terrestrial sites important to biodiversity (%)	73.1	2023		
Mean area that is protected in freshwater sites important to biodiversity (%)	70.8	2023		
Red List Index of species survival (worst 0–1 best)	0.89	2023		
Permanent deforestation (% of forest area, 3-year average)	0.6	2023		
SDG 16 – Peace, Justice and Strong Institutions				
Absence of Armed Conflict (worst 0–100 best)	40.8	2023		
Unsentenced detainees (% of prison population)	58.6	2022		
Timeliness of administrative proceedings (worst 0–1 best)	0.38	2023		
Expropriations are lawful and adequately compensated (worst 0–1 best)	0.50	2023		
Birth registrations with civil authority (% of children under age 5)	68.2	2022		
Corruption Perceptions Index (worst 0–100 best)	31.7	2024		
Accountability & Transparency (worst 0–100 best)	45.5	2023		
Children involved in child labor (%)	28.6	2021		
Press Freedom Index (worst 0–100 best)	52.3	2025		
Access to and affordability of justice (worst 0–1 best)	0.53	2023		
Crime is effectively controlled (worst 0–1 best)	0.60	2023		
SDG 17 – Partnerships for the Goals				
Government spending on health and education (% of GDP)	3.1	2023		
Corporate Tax Haven Score (best 0–100 worst)	5.3	2024		
Statistical Performance Index (worst 0–100 best)	64.0	2023		
Tax revenue (% GDP)	8.2	2022		
Index of countries' support to UN-based multilateralism (worst 0–100 best)	71.2	2025		

BENIN SUSTAINABLE DEVELOPMENT REPORT 2025

Green Transition
Agroecology and Renewable Energy

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

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January 2026

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