

Policy Silos: The Disconnect Between Climate and Development Agendas in African Countries

ABSTRACT

The 2015 Paris Agreement aims to keep global temperature rise well below 2°C above pre-industrial levels while pursuing efforts to limit it to 1.5°C. As part of this agreement, countries develop the Nationally Determined Contributions (NDCs) to curb greenhouse gas emissions and build resilient and adaptive systems to address the impacts of climate change. On the other hand, African countries have developed National Development Plans (NDPs) to serve as strategic blueprints for promoting economic development, reducing poverty, and ensuring broad-based social transformation. The NDPs and NDCs should complement each other with NDCs aligning with development priorities and NDPs integrating climate goals, making their alignment vital for efficient resource use and investment. Through systematic quantitative content analysis of 52 NDCs and 98 NDPs from 52 African countries, this study evaluates the degree of alignment between development priorities and climate policies and the processes for the creation of the plans. We find substantial misalignment between the two policy frameworks: the NDCs emphasize climate-related sectors while topics such as poverty, employment and governance receive less coverage. Conversely, NDPs prioritize development-related themes with limited focus on climate issues. These findings suggest that most African countries operate within parallel policy frameworks rather than integrated climate-development strategies. The paper discusses several practical policy recommendations, including the urgent need for stronger coordination between institutions, synchronized policy-making processes, and financing infrastructure that integrate both climate and development priorities.

Keywords: *climate commitments, national development agenda, systematic content analysis, policy misalignment.*

JEL classification: C88; E61; Q56

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1.0 Introduction

The relationship between climate action and socioeconomic development represents one of the most pressing policy challenges of the 21st century. This relationship is particularly critical for developing countries that must simultaneously address urgent development needs while also contributing to global climate goals (Blimpo et al., 2024). Africa illustrates this paradox sharply: the continent contributes less than 4 percent of historical emissions yet faces disproportionate risks, with 17 of the 20 most climate-vulnerable countries located on the continent, and incurring annual GDP losses of 2 to 5 percent from climate events (Notre Dame, 2024; Ritchie and Roser, 2020).

Simultaneously, African countries continue to grapple with severe socio-economic challenges. GDP per capita in Sub-Saharan Africa averages just \$1,516, far below the global average (\$13,673), and other regions (for instance, East Asia and the Pacific average of \$13,349, and Latin America and the Caribbean average of \$11,044). Real incomes are projected to be around 2 percent below the 2015 peak, with an estimated 90 million more people in the region expected to live in poverty by 2027 (World Bank, 2025a, 2025b). Moreover, over 300 million Africans face chronic hunger, 600 million lack electricity and about 160 million urban residents are expected to experience acute water shortages by 2050 (IEA, 2024; OECD, 2021; WHO, 2025). Rapid population growth will likely further intensify these pressures; as Sub-Saharan Africa is projected to add 740 million people to its working-age population by 2050 (AfDB, 2016). Formal job creation is not keeping pace with this rapid population growth; for instance, high-skilled employment represents only 6% of the total employment in Sub-Sahara Africa, way lower than the 24% global average (UNECA, 2023). Consequently, successfully expanding infrastructure, securing food and energy, and reducing poverty depends on governments' capacity to tackle urgent development imperatives. To address these pressing development needs, African countries have adopted National Development Plans (NDPs) to guide resource allocation, set medium-to-long-term priorities, attract investment, and outline strategies to improve socio-economic conditions.

It is against this backdrop that African countries are striving to reduce emissions and build climate resilience by developing and implementing their Nationally Determined Contributions (NDCs) under the Paris Agreement. In principle, NDPs and NDCs should be mutually reinforcing. NDCs should reflect socio-economic development priorities in the creation of climate goals, while NDPs should integrate climate change considerations into sectoral strategies for development. In practice, however, despite overlapping objectives, such as resilience building, job creation, and clean energy access, misalignments persist. For instance, emissions reduction targets may constrain viable economically productive activities like mining, while development plans that neglect climate risks may lead to

wasted resources or reduced financial flows. Since both NDCs and NDPs guide how resources are allocated and investment made, aligning the two is essential for achieving sustainable growth.

To date, very few studies have attempted to systematically examine the synergies and potential conflicts between climate action and development priorities in Africa. Other provisions within the Paris agreement have sought to address this gap with limited success. For example, each Party to the Paris Agreement is encouraged to periodically submit an Adaptation Communication outlining its priorities, actions, and support needs. The goal is to elevate adaptation alongside mitigation and inform the global stocktake. Many African countries are now submitting these communications to better integrate adaptation into national climate and development planning. Also, the Paris Agreement encouraged parties to develop non-mandatory long-term low-emission development strategies (LT-LEDS) to complement NDCs. The LT-LEDS were to complement NDCs by placing them within the context of larger development priorities, laying out the long-term structural reforms, and investment pathways needed for sustained decarbonization. However, adoption in Africa has been limited, with only 10 of 53 countries submitting LT-LEDS. Where they exist, they often emphasize energy, transport, and land-use reforms but remain weakly connected to NDPs (UNFCCC, 2022). This limited uptake and poor integration reinforce the fragmentation between climate and development planning on the continent.

This paper attempts to characterize the alignment of climate and development policies in Africa through a systematic content analysis of 52 NDCs and 98 NDPs, across 52 African countries. The analysis examines where climate and development priorities converge or diverge, identifies the institutional and sectoral factors that either facilitate or hinder alignment, and evaluates the structural processes behind the policy formulation such as sources of financial and technical support, analytical tools used, and references to regional frameworks. Based on these findings, the paper proposes strategies for enhancing policy coherence in the development of future NDCs and NDPs.

While several studies have analyzed NDC content globally or examined development planning processes separately, few have systematically compared these policy instruments within the same countries to assess degrees of alignment. Even fewer have focused specifically on Africa as highlighted in the paragraphs below. Understanding patterns of alignment across African NDCs and NDPs thus represents both a critical analytical challenge and an urgent policy imperative. The existing body of literature on the sectoral and quantitative aspects of NDCs highlights their limitations and diverse focus (see Literature Review section in Appendix 6.9). A central theme in this research is the inadequacy of current climate targets to prevent global warming from exceeding 2°C,

with studies underscoring the overall ambition gap in national commitments (Den Elzen et al., 2022; Höhne et al., 2024; Matthews and Wynes, 2022; Rogelj et al., 2017; Van Soest et al., 2017). In addition to assessing ambition levels, research has increasingly examined the sectoral coverage of NDCs. Contributions have explored various dimensions, including technology pathways (UNDP, 2024a; UNFCCC, 2023), health implications (Dasandi et al., 2021), gender equality and women's empowerment (WEDO, 2020), e-mobility transitions (GGGI, 2021), forestry and land use (Petersen and Varela, 2015), water management (Cran and Durand, 2015a), and agricultural adaptation and mitigation strategies (Strohmaier et al., 2016). Furthermore, some studies have moved beyond sectoral assessments to examine broader political and normative dimensions, such as the credibility of NDC commitments (Averchenkova and Bassi, 2016), considerations of fairness and equity in burden-sharing (Carraro, 2018; Winkler et al., 2018), and issues of transparency, comparability, and measurability (Pauw et al., 2018). Collectively, these studies provide a foundation for evaluating the scope, depth, and reliability of NDCs while also highlighting significant gaps in their alignment with development strategies, such as National Development Plans (NDPs).

However, much of the literature is predominantly focused on developed countries, which means it often overlooks the development challenges faced by African nations and other low- and middle-income contexts. Only a limited number of studies explicitly examine how climate commitments (NDCs) align or intersect with national development plans in these regions. Some research investigates the connections between NDCs and the Sustainable Development Goals (SDGs) (Bouyé and Harmeling, 2018; Iyer et al., 2015; Northrop et al., 2016), while others analyze the integration of climate action into national development agendas. Examples include Atteridge et al. (2021), who considers seven small island developing states, and Hasan et al. (2020) who addresses similar questions within different geographical contexts. More recent work on energy transition modeling under a significant gap in literature on the intersection of NDCs and NDPs in Africa, where the challenges of climate ambition and development priorities are most closely intertwined. Efforts are underway to close this gap. The United Nations Development Program (UNDP) NDC x SDG Insights initiative links climate ambition with development goals, using data and systems analysis to enhance policy coherence and investment alignment between NDCs, SDGs, and national development plans and is piloted in countries such as Liberia, Cambodia, and Tunisia (UNDP, 2025a). More recently, Luo et al. (2025) show that pairing clear renewable energy targets with inclusive policies can simultaneously cut emissions, boost economic growth, and enhance social well-being.

This study makes four contributions to existing literature. First, it provides the most comprehensive African-focused analysis of the relationship between climate-related

ambitions (NDCs) and development plans (NDPs) beyond assessment of Sustainable Development Goals (SDGs). Second, it utilizes systematic content analysis to measure the thematic emphasis of both NDCs and NDPs and compares sectoral coverage across both types of policy proposals. Using the frequency-per-page measurements, the analysis shows patterns and the synergies and trade-offs between NDCs and NDPs across African countries, regions, fragility contexts, and income groups. Third, it investigates the processes behind the creation of NDCs and NDPs, revealing that fragmented institutional responsibilities often weaken the implementation capacity of these plans and hinder the effective integration of NDCs into national planning and budgeting systems. Fourth, it informs policy design by identifying the common misalignments in policy across the continent. Ultimately, the analysis improves African policymakers' capacity to develop economic development plans and climate action strategies that are mutually reinforcing.

The rest of the paper is organized as follows: Section 2 discusses the methodology, including the data sources, coding strategy, and measures used to compare thematic emphases across NDCs and NDPs. Section 3 presents the results, focusing on sectoral coverage, country-level profiles, and subgroup patterns. Section 4 discusses the implications of the findings and presents policy recommendations. Finally, in Appendix Section 6.9, we discuss existing literature on NDCs, sustainable development, and NDPs, highlighting both the conceptual rationale for integration and the empirical evidence of misalignment.

2.0 Methodology

2.1 Study Design

We conducted a systematic content analysis to examine the thematic treatment of energy, climate, and development issues in the NDCs and NDPs of African countries, to better understand the degrees of alignment and/or misalignment. Content analysis is a widely used method in the social sciences for replicable systematic examination of documents, which involves categorizing them into themes for further analysis (Krippendorff, 2019; Neuendorf, 2017). This method combines both quantitative techniques, such as counting the frequency of words, phrases, or references, and qualitative approaches that focus on interpreting meaning, context, and framing. This dual approach makes content analysis particularly suitable for policy-oriented research. As also argued by Zavyalova et al., (2017), this technique serves as a methodological tool for identifying the presence and frequency of specific terms within texts, thereby offering insights into the underlying messages and priorities.

Three additional arguments reinforce the use of systematic content analysis to investigate potential misalignments between NDPs and NDCs, even though these two instruments

are, in principle, designed to serve distinct yet interrelated purposes. First, the application of content analysis to examine sectoral coverage in policy documents is well established in the literature, particularly in studies focusing on NDCs (e.g., Stephenson et al., 2019, on convergence and divergence in national positions; Becken and Loehr, 2025, on tourism; Núñez Collado et al., 2019, on urban informality; Arthur et al., 2024, on the social determinants of planetary health equity; Mohan, 2024 and Dasandi et al., 2021, on health), NDPs (e.g., Chimhowu et al., 2019, on global development goals; Alghamdi et al., 2022, on women and children), and other policy domains (e.g., Haque, 2022, on clean technology diffusion in Technology Action Plans; Badruddin, 2023, on sustainable low-carbon recovery pathways during the COVID-19 crisis). Second, the use of content analysis to compare policy documents with seemingly different objectives is not uncommon. Previous research has examined the linkages between NDCs and the Sustainable Development Goals (e.g. Antwi-Agyei et al., 2018; Cho and Ackom, 2025; Hasan et al., 2020; Janetschek et al., 2021), explored alignment between NDCs and tourism policy (Becken and Loehr, 2025), and analyzed the compatibility of national sectoral policies (such as water, agriculture, forestry, and energy) with Climate-Compatible Development (CCD) frameworks (England et al., 2018). Third, in the specific context of comparing NDCs and NDPs, the study by Atteridge et al. (2021) offers the closest methodological precedent. However, that study relied primarily on qualitative techniques to extract sectoral priorities, an approach potentially subject to interpretive bias. To address this limitation, the present study employs a quantitative and systematic content analysis, thereby enhancing replicability and reducing subjectivity in the identification of sectoral priorities.

It is therefore unsurprising that this approach is widely applied in climate policy research (Aubertin et al., 2024; Cann, 2021) and has demonstrated tangible policy impacts in practice (Boykoff and Boykoff, 2004; Dasandi et al., 2021c; Lamb et al., 2020; Thistlethwaite et al., 2019). For instance, Lamb et al. (2020) conducted a content analysis of policy and corporate reports, revealing that “discourses of delay” such as arguments for relying on technological solutions or emphasizing individual responsibility are strategically employed to postpone climate action. Their study was used by EU policymakers to counter corporate lobbying, inform UNFCCC guidelines on greenwashing accountability, and was cited in climate litigation cases such as against Shell in the Netherlands. Similarly, Boykoff and Boykoff (2004) conducted a content analysis of prestigious U.S. newspapers from 1988 to 2002 and found evidence of “false balance,” where journalists gave equal weight to climate scientists and skeptics, which distorted public perception of the scientific consensus on climate change. The impact of this study on policy is significant; it influenced media guidelines such as the IPCC communication strategies, was cited during U.S. Senate hearings on climate misinformation, and

prompted major outlets like the BBC and Reuters to revise their climate reporting standards. Moreover, content analysis has proven particularly valuable for diagnosing alignment gaps across policy domains and for linking discourse patterns to subsequent policy outcomes, especially when combined with complementary methods such as process-tracing (Henstra et al., 2019).

In this study, content analysis serves several important functions. First, it reveals policy priorities by identifying which themes are emphasized and which are relatively neglected in two official types of policy documents - NDCs and NDPs. Second, it allows for comparative analysis across African countries and policy instruments, for example, contrasting NDCs with NDPs, highlighting alignments, divergences, and potential synergies. Third, content analysis provides a means to track changes over time, particularly for countries with multiple NDPs at different periods, demonstrating how narratives, emphasis, and framing evolve in response to shifting political, economic, or international contexts. Additionally, it is useful for exposing framing and bias, illuminating how certain issues are emphasized, minimized, or omitted altogether, which reveals the rhetorical and political dimensions of policymaking. Ultimately, the systematic nature of content analysis can enhance the evidence base for decision-making, leading to more transparent planning, increased accountability, and improved integration of climate and development agendas.

2.2 Data

The study draws on two principal categories of policy documents: NDCs and NDPs. The NDCs were sourced from the official UNFCCC NDC Registry¹. In Africa, 53 out of 54 countries have submitted at least one NDC, demonstrating the region's widespread involvement in the global climate framework. For each African country, this study used the most recent submission, except for the NDC 3.0 versions, which had only four submissions from African countries as of July 2025.

For this study, NDPs were sourced from a combination of official government websites, ministry web pages, and established public repositories (NDPs are not systematically indexed in conventional international databases). NDPs are widely adopted across the African continent, with all countries except Eritrea having produced at least one in recent decades. For the purposes of this study, NDPs were collected from several repositories, resulting in a corpus of 98 NDPs, spanning the years 2000–2023.² These include texts in

¹ <https://unfccc.int/NDCREG>

² Note that countries may have different NDPs at different levels: short, medium and long term. The oldest NDPs are often long-term vision document.

English (54), French (34), Portuguese (9), and Spanish (1), reflecting both the linguistic diversity of the continent and the international circulation of policy documents.

The sample provides a near-comprehensive basis for assessing national development priorities and their potential alignment with climate commitments under the Paris Agreement. However, while the coverage of these documents is comprehensive, they are not exhaustive. For instance, Libya and Eritrea had no accessible NDC and NDP respectively, and hence the analytic sample was made up of 52 African countries. Again, a key caveat concerns the temporal rather than sectoral scope of the documents. Thus, the duration of NDPs varies significantly, with some plans spanning over a decade and others reflecting shorter-term frameworks. There is also likely a temporal misalignment between the publication and revision cycles of NDCs and NDPs in many African countries. Nonetheless, both NDPs and NDCs are expected to address all core development and climate sectors. Despite these limitations, to the best of our knowledge, the dataset constitutes the most comprehensive cross-country collection of African NDCs and NDPs to date.

2.3 Coding Strategy

The coding scheme was built around a list of predefined themes or subjects, with 28 subjects for the NDCs and 31 subjects for the NDPs, thereby providing a comprehensive thematic base for comparison. These themes are informed by previous studies (Atteridge et al. 2021; Chimhowu et al. 2019) that examined similar issues in other regions and cover sectors that include agriculture, energy, transport, health, finance, governance, private sector development, blue economy, spatial planning, vulnerable groups, and waste management (see Table 1). Additional themes, including human capital, trade, and climate change, were added to the NDPs to extend the scope beyond prior research and to better reflect their broader development orientation. For cross-country comparison purposes, however, a common list of 28 themes was maintained across both NDCs and NDPs, allowing for systematic examination of alignment and misalignment between the two policy instruments.

Table 1: NDC/NDP sectoral coverage

NDC/NDP subjects	References
1 - SDGs	
2 - NDP/NDC	
3 - Poverty	
4- Economy size	
5-Job growth/Employment	
6 - Economic growth	
7 - Energy	
8 - Transport	

9 - Waste	Atteridge et al. (2021), and Chimhowu et al. (2019)
10 - Coastal Zone Management	
11 - Forestry	
12 - Spatial Planning	
13 - Health	
14 - Agriculture and Food Security	
15 - Water	
16 - Climate Data, Research, and Awareness	
17 - Tourism	
18 - Ecosystems & Biodiversity	
19 - Disaster Risk Reduction	
20 - Fisheries	
21 - Aquaculture & Blue Economy	
22 - Private Sector	
23 - Governance and Institutions for Climate Change	
24 - Access to Finance	
25 - Eco-Efficiency	
26 - Culture	
27 - Sovereignty & Identity	
28 - Participation of Vulnerable Groups	
NDP specific subjects	
29- Human Capital	
30- Trade	
31- Climate Change	

To identify themes or subjects, we used an automated baseline coding method implemented in Python (See Appendix 6 for the coding). A script was developed to search for different variants of keywords associated with the predefined topics and report their frequency and frequency per page for each NDC and NDP document (See Appendix 7 for the list of keywords). The selection of these variants was informed by Google search analytics and expert judgment to enhance the robustness of the keyword database. For the sake of analytical tractability, the study assessed the frequency per page to ensure consistency, as the NDC and NDP documents greatly differ in size. The complexity arises from scanned documents that require specific treatment included in the script. To ensure cross-language comparability, the keyword dictionaries were first constructed in English before being translated into French, Portuguese, and Spanish. Each translated version was subjected to a thorough cleaning process to ensure consistency and eliminate duplicates. As a further robustness test, coders fluent in English, French, Portuguese, and Spanish visually inspected the location of each keyword in the document to verify the Python output. Additionally, extensive quality control was undertaken through a cross-checking process in which each author reviewed the coding results of another co-author for extracted data not related to thematic coverage (such as information concerning plan formulation) across a randomly selected subset of countries.

Like most dictionary-based content analyses, this method has limitations, including the potential omission of relevant synonyms, variation in phrasing across documents and countries, and inconsistencies in document length and format. While we measure frequency per page in order to counteract differences in document length, variation in coverage depth and style across nations could still affect relative salience of coded themes.

2.4 Measures

For each subject within each policy document, the baseline measure is the frequency per page, used to control for differences in document length. To further address potential layout and formatting variations and enhance comparability across documents, we computed normalized indices scaled between 0 and 1 as follows: $Index = \frac{x - x_{\min}}{x_{\max} - x_{\min}}$,

where x is the observed frequency per page for a particular theme and document, $x_{\min}$ is the minimum value observed within the pertinent comparison group, and $x_{\max}$ is the corresponding maximum. The transformation rescales observed frequencies in relation to their minimum and maximum values, thus enhancing comparability between units. We apply three versions of this index: (i) a Global Index, derived from the overall minimum and maximum values of the entire dataset; (ii) a Subject Index, calculated within each subject across countries; and (iii) a Country Index, calculated within each country across subjects. For descriptive purposes, the frequency-per-page measure (or its normalized index) is cut into quintiles. Values within the highest quintile (above Q4) are graded Very High (i.e., High to maximum emphasis or priority topic), between Q3 and Q4 as High (i.e., Clear and above-average emphasis), between Q2 and Q3 as Moderate (i.e., Medium or average level of emphasis), between Q1 and Q2 as Low (i.e., Low emphasis or minor presence), and those in the lowest quintile (below Q1) are Very Low (i.e., almost no emphasis or presence of the topic).

Finally, to compare emphasis across instruments, we define a synergy measure: $synergy_s = Counts\ per\ page_{sNDC} - Counts\ per\ page_{sNDP}$ where $Counts\ per\ page_{sNDC}$ and $Counts\ per\ page_{sNDP}$ are the counts per page for subject “ s ” in the NDC and NDP documents, respectively. The same formula was applied for the normalized index. The classification of the synergy normalized index is grouped based on a quantile distribution, similar to the counts per page. Positive values of $synergy_s$ denote stronger emphasis in the NDC while negative values denote stronger emphasis in the NDP.

It should be noted that the primary statistics are reported at the country and subject levels. However, to explore structural patterns we aggregate results by different categories of

subjects (i.e., Climate vs development), subregion and by pre-specified country characteristics: landlocked vs coastal, World Bank income groups, and fragility, conflict, and violence (FCV) status. These groupings are used only for secondary analyses.

The data extraction not only covered specific sectors but also included a series of complementary questions aimed at capturing the broader policy and institutional context of NDCs and NDPs. Special emphasis was placed on the formulation process, which looked at the roles of both domestic and international institutions in providing technical and financial support. The analysis examined the extent to which the plans provided information on the use of models, the types of modeling tools referenced, and how well NDPs and NDCs aligned with regional strategies and plans.

The subsequent section implements these methods by presenting analysis on subject emphasis with the frequency-per-page metric and normalized indices, comparing NDCs and NDPs across subjects, countries, and regions using the synergy measure, and an analysis on the planning process employed in drafting the documents (NDCs and NDPs).

3.0 Results

3.1 Sectoral Coverage of African NDCs

This section examines the distribution of climate and development -related themes within African NDCs, identifying which themes receive the greatest emphasis and how attention to specific themes varies across sectors, countries, and individual policy domains.

3.1.1 Distribution of Subjects

Analysis of the frequency per page measure reveals that Energy is by far the most emphasized theme in the NDCs of most African countries, averaging nearly three mentions per page (Figure 1a). Even though energy features most prominently in African NDCs, the largest sources of emissions in African countries are agriculture and land-use change—unlike the energy-dominated profiles of Europe and the US—suggesting that African NDCs may have overlooked their primary emissions drivers in favor of mitigation strategies modeled after Western contexts. In contrast to Europe and North America, where energy dominates national inventories (about 3,593 Mt CO₂ in Europe and 5,511 Mt CO₂ in North America in 2022), Africa’s energy-related emissions are much lower at roughly 1,262 Mt CO₂ for the same year (IEA, 2023b). Interestingly, Africa’s emissions are instead concentrated in agrifood systems, about 2.9 Gt CO₂e (FAO, 2024), far exceeding energy emissions and underscoring the tendency of African NDCs to adopt strategies modeled on Western, energy-centric contexts. Additionally, the priorities of international donors may drive this focus as some countries tailor their NDCs to match external realities which disproportionately direct the flow of external funding toward

energy projects (Iacobuță et al., 2022; Trabacchi et al., 2017). However, this focus on energy may also be forward-looking, as energy demand and associated emissions are expected to increase sharply under business-as-usual growth scenarios. Other sectors receiving substantial attention in the NDCs include Agriculture, Water, Transport, and Forestry, each exceeding 1.5 mentions per page on average. Although these sectors are integral to both mitigation and adaptation outcomes, their relatively lower frequency compared to energy can also be explained by the Western-framed perspective in which agriculture is not viewed as a major source of CO₂ reductions, resulting in a more fragmented donor landscape and weaker project pipelines. While agriculture and forestry attract adaptation funding (Khatri-Chhetri et al., 2021), the technical support is less concentrated than in energy (Iacobuță et al., 2022). In terms of relative distribution, these subjects fall within the “Very High” quintiles.

By contrast, themes such as Sovereignty, Economic Growth, and Blue Economy appear less than 0.5 times per page, while Poverty, Employment, Vulnerable Groups, and Governance also receive relatively limited coverage, typically falling into the “Low” or “Very Low” quintiles. Their limited coverage illustrates how international reporting standards guide countries to focus mainly on sectors such as energy, forestry, agriculture linked to global climate finance and emissions accounting (Averchenkova and Matikainen, 2017; Höhne et al., 2024). When the data are normalized to control for document length variation (i.e., the normalized index), the same ranking of subjects is observed (Figure 1b). The consistency between raw frequencies and normalized scores suggests that differences are not an artifact of NDC length variation across African countries.

Figure 1a. Average frequency per page of major themes in African NDCs

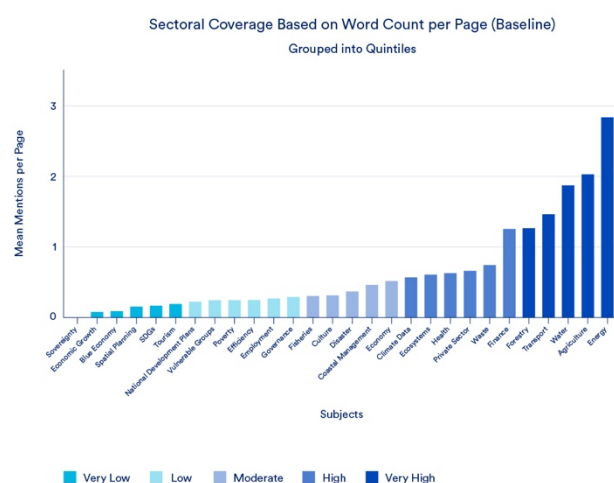
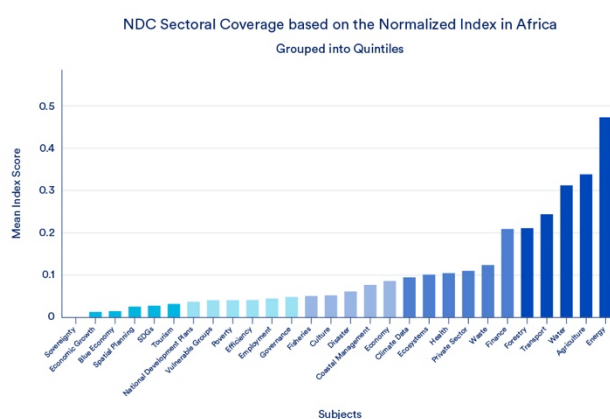


Figure 1b. Normalized Average frequency per page of major themes in African NDCs



3.1.2 Distribution by Subject Across African Countries

Although the overall continental pattern is dominated by energy, there exist some of variation among individual subjects by country (Figures 2–3). This variation is not random as it depicts distinct climate and development priorities, national economic structures and vulnerability profiles. For themes like energy, the strong emphasis from countries such as Lesotho, Egypt, Cabo Verde, Eswatini, and Seychelles reflects national goals that have been shaped by global priorities. Lesotho, Cabo Verde, and Egypt, for instance, record more than five mentions of energy per page, placing them among the highest in Africa. For example, Egypt, a major emitter, is prioritizing a power-sector transition that includes industrial fuel switching and utility-scale renewables, with plans for regional electricity exports (Elkelawy et al., 2024). This focus could explain the prominence of energy in its NDC. As island states, Cabo Verde and Seychelles rely heavily on imported fossil fuels, so shifting to domestic clean energy is a priority for both energy security and economic stability. On the other hand, the three lowest-ranked countries on energy, Burkina Faso, Mali, and Niger are all in the Sahel, and register less than 1 mention per page. They have less developed energy sectors with fewer near-term opportunities for detailed mitigation actions within their NDCs (Gatete and Dikko, 2024) and hence tend not to prioritize energy.

Meanwhile, countries like Seychelles, Nigeria, Eswatini, and Malawi emphasize the economy-related themes in their NDCs. Seychelles and Eswatini, for instance, record close to 2 mentions per page on economy, far above the continental average. For Nigeria, one of the largest economies on the continent, the inclusion of economy-related subjects in its NDC aligns with the country's broader objective of economic diversification. Once more, Seychelles links climate action to its whole economic model by showcasing its innovative debt-for-nature frameworks in its NDC (Benzaken et al., 2024) and hence the reason for placing a lot of emphasis on the economy-related themes. Conversely, the lower emphasis on economy in countries like Botswana, Equatorial Guinea, and Republic of the Congo reflects the dominance of extractive industries (oil and minerals) in their economies (Siakwah, 2024), with mentions of economy barely rising above 0.2 per page. In these cases, NDCs may prioritize mitigation policies aimed at reducing emissions from the extractive sector such as industry decarbonization, signal a cautious stance toward economic transformation or indicate that strategies for diversification are being pursued outside the climate policy arena.

Similar stark disparities are evident for agriculture and employment themes. Countries where agriculture is the primary livelihood and is highly climate-exposed (e.g., Malawi and Mozambique) would be expected to devote substantial attention to it, and indeed these countries record over 5 mentions per page. The minimal allocation in other African countries, such as Seychelles and Djibouti, where references remain below 1 per page,

could indicate a lower relative economic share of agriculture, or a focus on other pressing themes. Employment, by contrast, remains marginal across most NDCs, averaging less than 1 mention per page, with only outliers like São Tomé and Príncipe surpassing this threshold.

Figure 2a. Energy theme emphasis in African NDCs

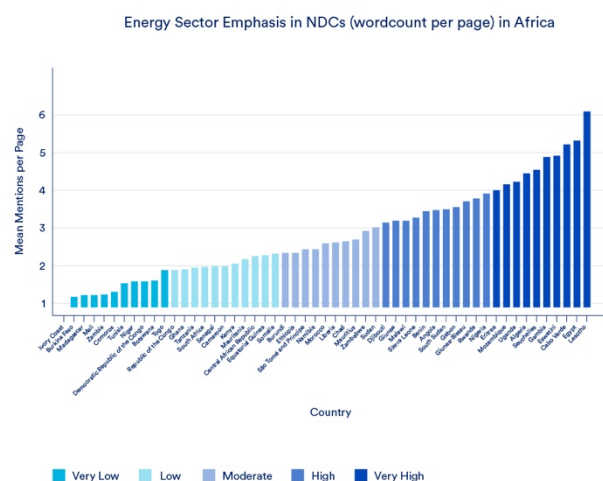


Figure 2b. Economy theme emphasis in African NDCs

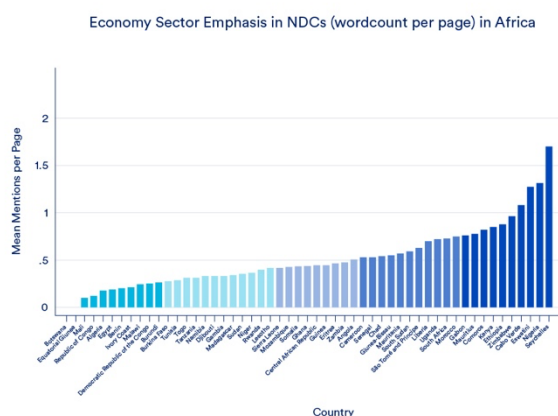


Figure 3a. Agriculture theme emphasis in African NDCs

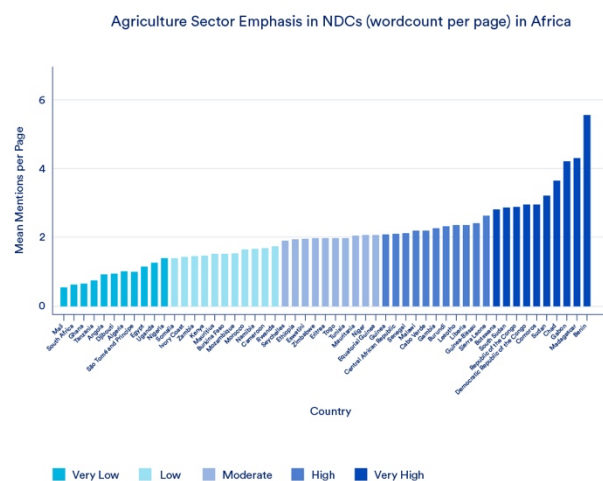
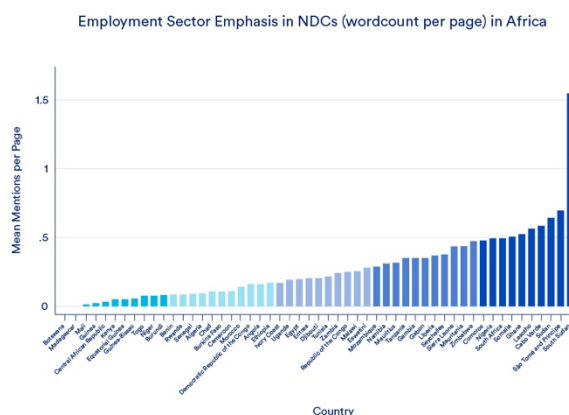


Figure 3b. Employment theme emphasis in African NDCs



3.1.3 Distribution Across Africa

This section looks at the comprehensiveness of the various themes in the NDCs across the continent. The analysis shows a significant heterogeneity in the thematic comprehensiveness or overall breadth of coverage, across all themes within each country's NDC in Africa (Figure 4). Such divergence is illustrated by comparing the top and bottom performing countries. The cluster with the highest thematic coverage per page,

representing NDCs with relatively high level of detail across most themes, is dominated by small or fragile states, such as Seychelles, Cabo Verde, South Sudan, and Sierra Leone. For nations like Seychelles and Cabo Verde, their increased existential vulnerability to climate change especially through rising sea levels that threaten their habitable landmass, freshwater resources, and critical infrastructure (Boshoff and Surbun, 2024; Etongo et al., 2025) mandates an integrative approach to adaptation across subjects or themes in great detail. Moreover, their economies are overwhelmingly based on climate-sensitive sectors, notably tourism and fisheries (Etongo et al., 2025). Consequently, the protection of these critical resources is inherently tied to assuring economic viability, thereby rendering a detailed NDC an imperative strategic tool for national resilience planning. Conversely, the group with the lowest thematic coverage encompasses some of the larger and more industrialized economies, including Côte d'Ivoire, Ghana, Kenya, and Botswana. The application of the normalized thematic index robustly supports this geographic disparity (Figure 4b).

Figure 4a. Cross-country variation in average frequency per page of NDCs

NDC Subject Coverage (Count per page) for Africa

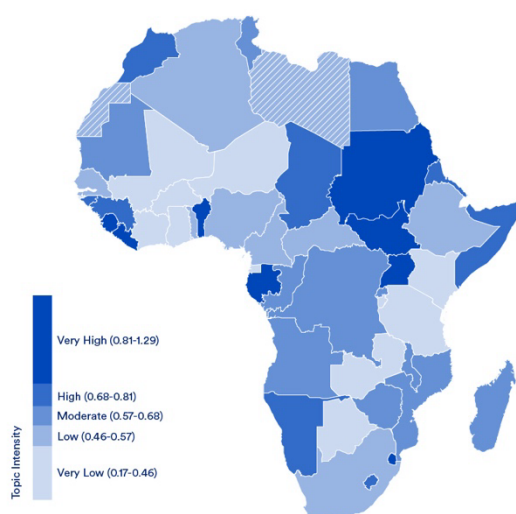
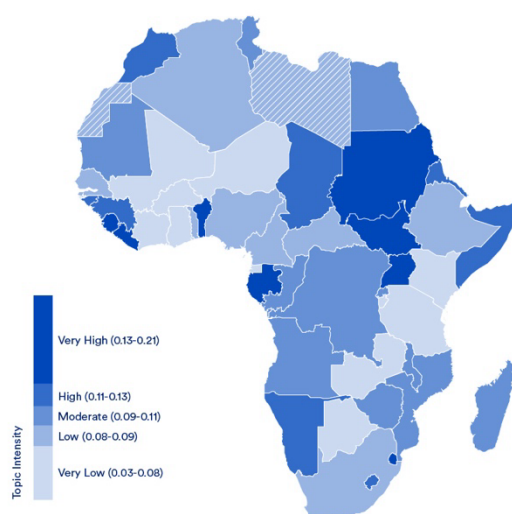


Figure 4b. Normalized Cross-country variation in average frequency per page of NDCs

NDC Normalized Subject Coverage Index for Africa



3.1.4 Country Case Comparisons

Due to the variations in the comprehensiveness of the various themes, this section takes a dive into the subjects within countries with high and low thematic coverage per page (Figures 5–6). In Seychelles, for instance, its NDC places heavy emphasis on energy (5 mentions per page), transport (4.8 mentions per page), coastal management (3.2 mentions per page), finance (2.5 mentions per page), and private sector development (2 mentions per page), while devoting little attention to poverty and employment (both below

1 mention per page). This profile is characteristic of a high-income SIDS whose climate strategy is inextricably linked to securing its economic pillars (Boshoff and Surbun, 2024; Etongo et al., 2025). The focus on finance and the private sector highlights its need to attract international investment for its coastal development and energy transition, while the emphasis on transport and energy targets the decarbonization of its vital tourism sector.

However, Ghana's NDC assigns relatively greater weight to poverty and employment (0.8 mentions per page each) and governance (0.6 mentions per page) alongside energy (1.9 mentions per page) and transport (1.8 mentions per page). This indicates a development-centered approach where climate action is explicitly framed as a tool for achieving broader socio-economic goals. As a rapidly developing economy with a large youth population, addressing poverty and employment is a core government imperative (Jumpah et al., 2020), and the NDC is used to articulate how climate projects in energy and transport can contribute to job creation and equitable growth. The emphasis on governance also reflects the importance of transparent institutions for managing climate finance and ensuring effective implementation.

Similarly, Kenya and South Africa emphasize climate-related themes but also give significant attention to development-oriented themes such as economy, finance, employment, and governance. For Kenya, agriculture (2 mentions per page) and energy (1.5 mentions per page) dominate, while economy and employment remain modest (both below 1 mention per page), reflecting a balanced approach that ties climate action to adaptation in the agrarian sector as well as renewable energy leadership. South Africa, on the other hand, demonstrates strong emphasis on energy and transport (2 mentions per page each), while finance and employment remain around 0.7–0.8 mentions per page, highlighting a mitigation agenda strongly linked to decarbonizing its coal-heavy power system and vehicle sector, but still engaging with economic and institutional dimensions.

Figure 5a. Sectoral mentions in Seychelles' NDCs

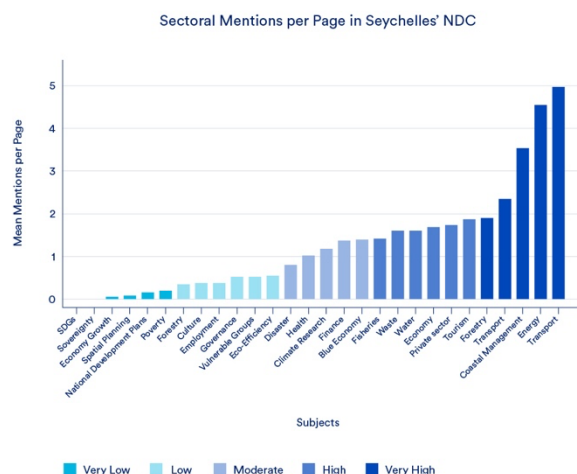


Figure 5b. Sectoral mentions in Ghana's NDCs

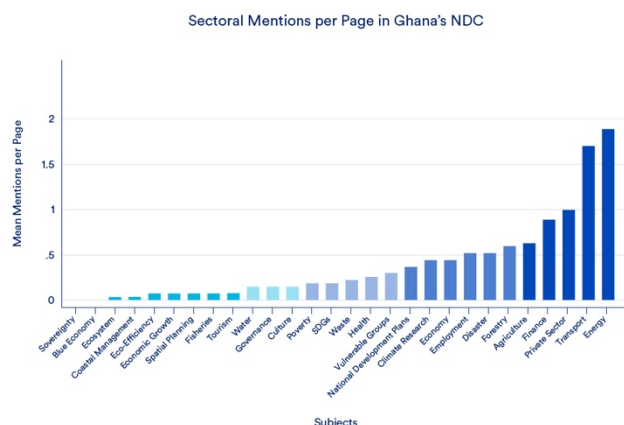


Figure 6a. Sectoral mentions in Kenya's NDCs

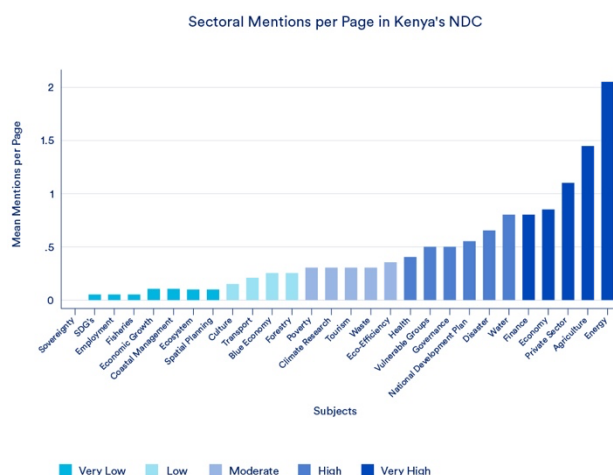
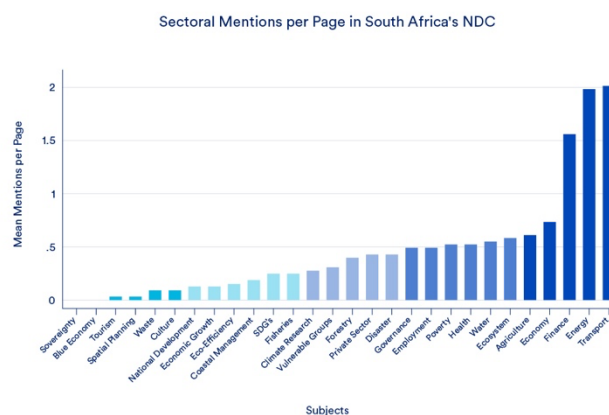


Figure 6b. Sectoral mentions in South Africa's NDCs



3.2 Sectoral Coverage of African NDPs

This section analyzes the thematic coverage of African NDPs, identifying the themes that receive the most emphasis and tracing how attention differs across sectors, countries, and development priorities.

3.2.1 Distribution of Subjects

Analysis of the frequency per page measure indicates that Finance, Private Sector, and Transport are the most emphasized themes in African NDPs, each averaging more than 1.5 mentions per page (Figures 7). This triad forms the core of conventional national development agendas, reflecting an overwhelming prioritization of enabling investment, fostering market-led economic growth, and building critical infrastructure. Other strongly

emphasized themes - including Water, Agriculture, and Economy- further highlight a focus on foundational development drivers. The consistent placement of these themes in the Very High quintile confirms that NDPs are primarily oriented towards achieving broad socio-economic objectives. By contrast, themes central to the climate agenda, specifically NDC references, Blue Economy, and Climate Change appear least frequently, averaging below 0.2 mentions per page. The overall ranking remains consistent with the application of normalized indices (Figure 7b), confirming that these patterns reveal a genuine prioritization gap rather than a statistical artifact.

Figure 7a. Average frequency per page of major themes in African NDPs

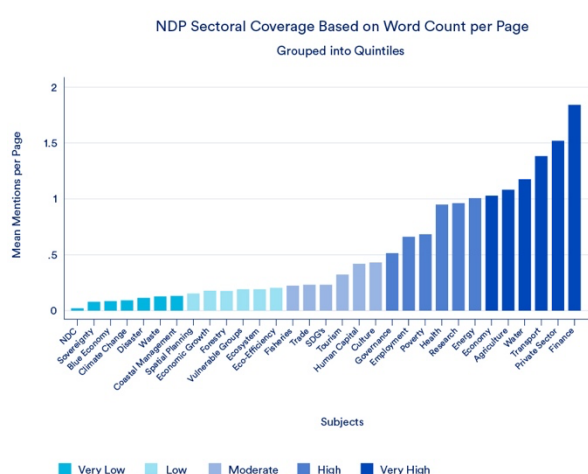
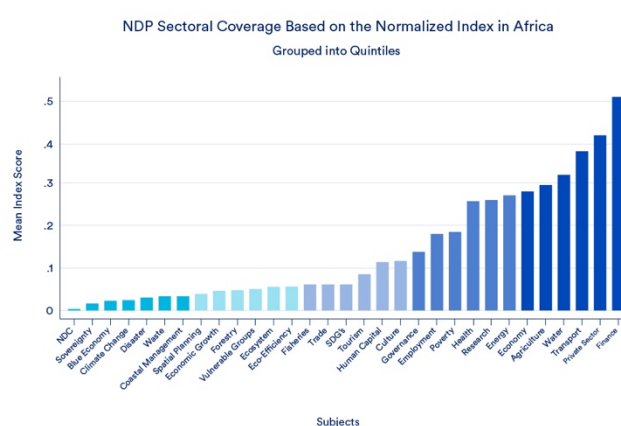


Figure 7b. Normalized Average frequency per page of major themes in African NDPs



3.2.3 Distribution by Subject Across African Countries

As with NDCs, subject-level emphasis in NDPs varies substantially by country, a pattern that reflects divergent national economic structures, resource endowments, and core development strategies (Figures 8–9).

The high concentration on the energy theme in Nigeria, South Africa, Uganda, Mauritania, and Gambia signals its strategic role in each country's development model. In these cases, energy mentions range from 2 to 3.5 per page, for countries like Nigeria and South Africa, reflecting ambitions to expand energy access, overcome chronic power shortages, and carefully manage complex energy transitions. On the other hand, the lowest coverage in countries like Mali, Benin, and the Central African Republic registers below 0.5 mentions per page, which may indicate more fundamental developmental hurdles, where immediate poverty reduction and food security may overshadow longer-term energy infrastructure planning.

In the economy theme, the strong emphasis from Zambia, Burkina Faso, Seychelles, Algeria, and Cabo Verde reveals a priority to centrally position macroeconomic stability,

fiscal policy, and economic diversification within their development agendas. Mentions in these cases are consistently high, averaging 1.8–2.5 per page. Seychelles and Cabo Verde, as SIDS, are explicitly building their NDPs around sustainable economy models, directly aligning economic growth. The lower ranking for Somalia, Sudan, and Burundi falls below 0.3 mentions per page, likely mirroring economies grappling with instability and fragility, where formal economic planning is inherently challenged.

The pronounced disparities in agriculture and employment are particularly revealing for assessing climate-development synergy. High emphasis on agriculture in Côte d'Ivoire and Nigeria (both agricultural “powerhouses”) exceeds 2 mentions per page, demonstrating a strategy to modernize a core economic sector, which is highly vulnerable to climate change. The minimal coverage in Benin, Somalia, and Sudan remains below 0.5 mentions per page, which could indicate a lack of capacity for detailed agricultural planning or a strategic focus on other sectors, despite the sector's importance for livelihoods, representing a potential vulnerability.

Similarly, the high priority given to employment in the NDPs of Zambia and Nigeria highlights a direct focus on job creation, with both countries recording 1.2–1.5 mentions per page, often linking it to industrialization and youth demographics. The minimal emphasis in South Sudan, Equatorial Guinea, and Zimbabwe (below 0.3 mentions per page) suggests their economies are facing more immediate crises such as protracted political instability, armed conflict, weak governance, humanitarian emergencies, food insecurity, and economic collapse, which dominate policy agendas and limit the capacity to address long-term labor market reform, thus crowding out the unemployment challenge. Alternatively, it may indicate that their economic policies assign a low priority to this specific goal.

Figure 8a. Energy theme emphasis in African NDPs

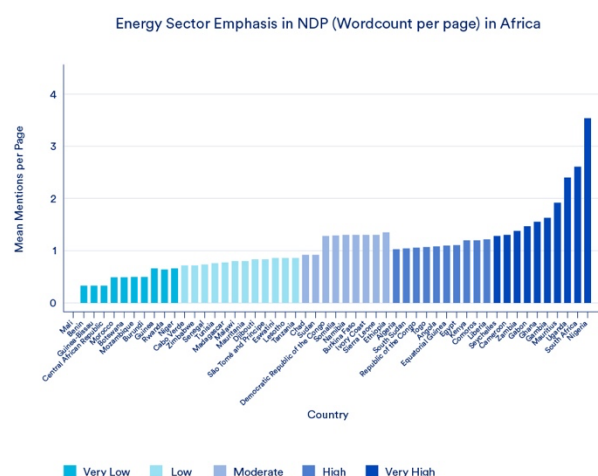


Figure 8b. Economy theme emphasis in African NDPs

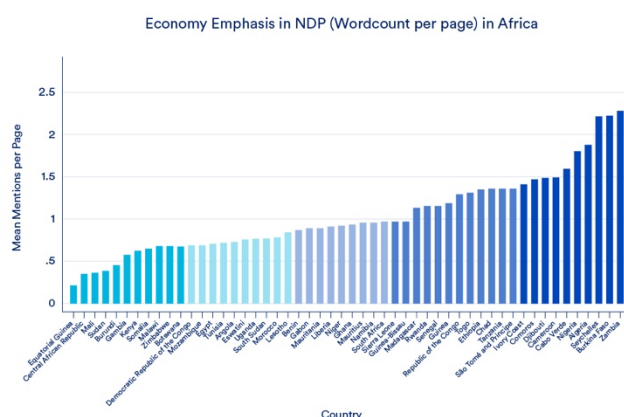


Figure 9a. Agriculture theme emphasis in African NDCs

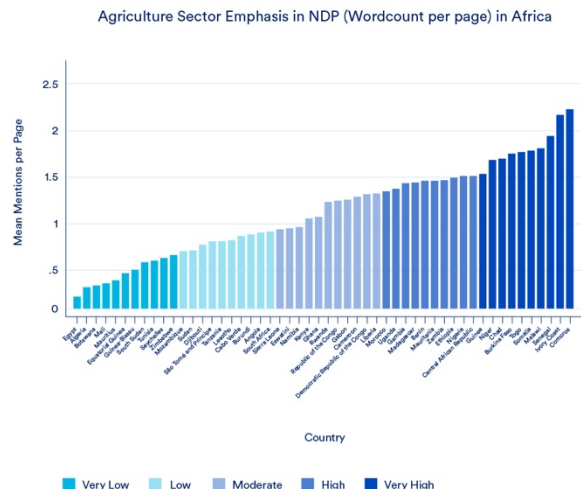
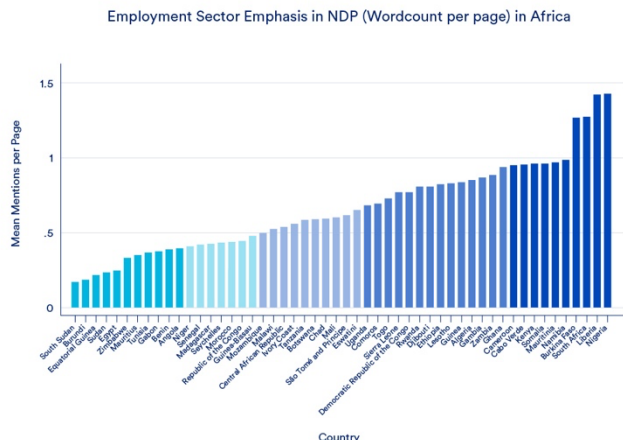


Figure 9b. Employment theme emphasis in African NDCs



3.2.2 Distribution Across Africa

Coverage intensity also varies widely across countries, a disparity that serves as a proxy for the breadth and granularity of national development planning (Figure 10). The high subject density per page observed in the Top 10 African countries including Comoros, Nigeria, South Africa, Zambia, Liberia, Burkina Faso, Somalia, Uganda, Seychelles, and Ghana suggests the existence of comprehensive, multi-sectoral development agendas. This can be driven by several factors: greater technical capacity to draft detailed plans (e.g., South Africa, Nigeria), the use of the NDP as an investment prospectus to attract foreign financing (e.g., Seychelles, Ghana), or a need to address a wide spectrum of acute developmental challenges simultaneously (e.g., Liberia, Somalia, Burkina Faso).

Conversely, the far lower values exhibited by the Bottom 10 countries like Burundi, Equatorial Guinea, Sudan, Botswana, South Sudan, Zimbabwe, Mozambique, Benin, Mali, and Guinea-Bissau reflect narrower or less detailed documents. This may indicate several scenarios: 1) a strategic focus on a limited set of priority sectors, resulting in a more focused but less comprehensive plan; or 2) contexts of acute fragility or instability (e.g., Sudan, South Sudan) where long-term planning is profoundly challenging. The normalized index confirms a broadly similar geographic distribution (Figure 10b).

Figure 10a. Cross-country variation in average frequency per page of NDPs

NDP Subject Coverage (Count per page) for Africa

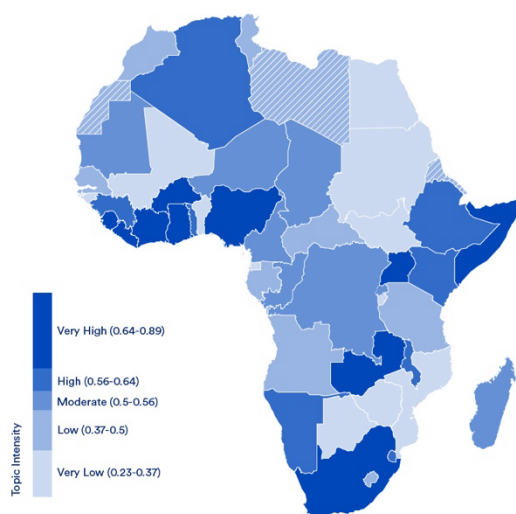
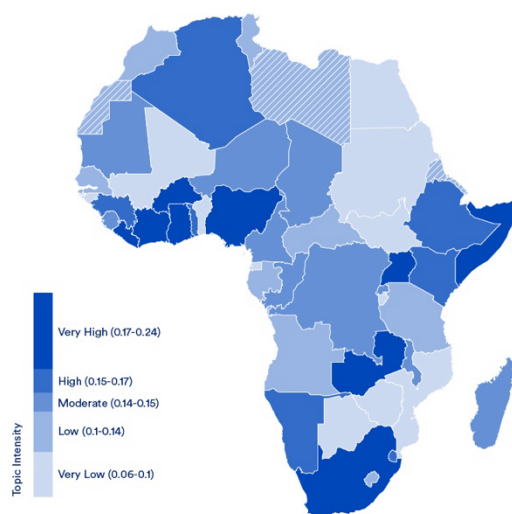


Figure 10b. Normalized Cross-country variation in average frequency per page of NDPs

NDP Normalized Subject Coverage Index for Africa



3.2.4 Country Case Comparisons

Country-level profiles highlight distinctive development priorities, which are shaped by each nation's unique challenges, economic structure, and governance context (Figures 11–12). These profiles reveal how the fundamental purpose of an NDP can vary, from addressing acute basic needs to building institutional governance.

The NDPs of Comoros and Burundi reveal a development vision shaped less by broad economic diversification and more by immediate climate-related vulnerabilities. Their emphasis on water (3.2 mentions per page in Comoros; 1.2 in Burundi), agriculture (3.7 in Comoros; 1.5 in Burundi), and transport (3.5 in Comoros; ~1.0 in Burundi) highlights how climate stressors directly intersect with daily livelihoods and basic infrastructure. Rather than dispersing attention across many sectors, both countries concentrate their planning on the foundations of survival and resilience, ensuring access to water, securing food systems, and maintaining mobility. This profile suggests that for highly vulnerable states like Comoros and Burundi, climate adaptation and human security are not peripheral concerns but the central axis around which national development priorities are organized.

In contrast, the profiles of Somalia and Benin reveal a different strategic focus. Their comparatively lower emphasis on energy (<0.5 mentions per page in both countries) and higher allocation to poverty (1.8 in Somalia; 1.2 in Benin), governance (0.7 in Somalia; 0.6 in Benin), human capital (0.8 in Somalia; 0.5 in Benin), and employment (2.0 in Somalia; 1.3 in Benin) suggests that their NDPs are functioning as instruments for

building state capacity, social cohesion, and institutional legitimacy. This is a logical priority for nations working to consolidate stability and strengthen social contracts.

Figure 11a. Sectoral mentions in Comoros' NDCs

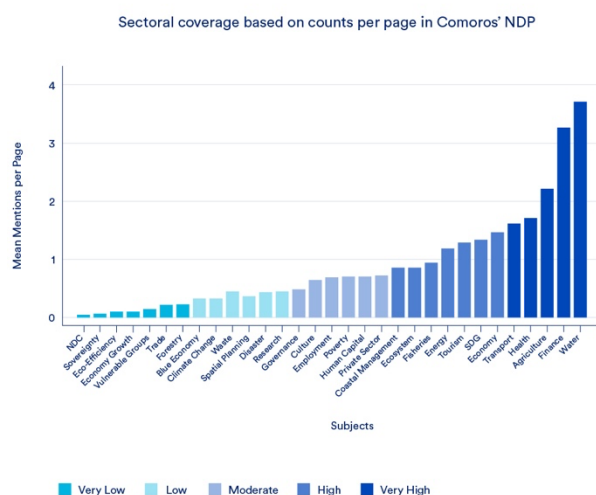


Figure 11b. Sectoral mentions in Burundi's NDCs

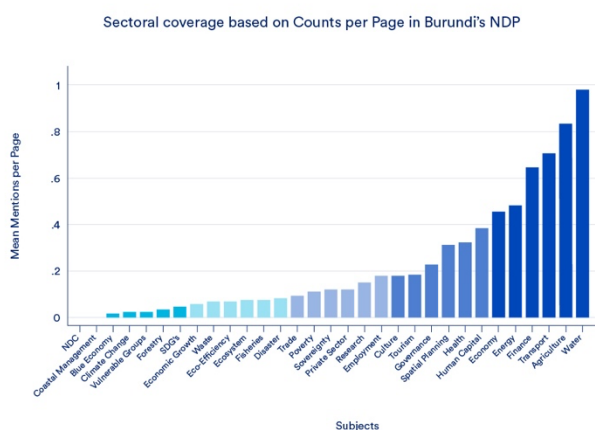


Figure 12a. Sectoral mentions in Somalia's NDCs

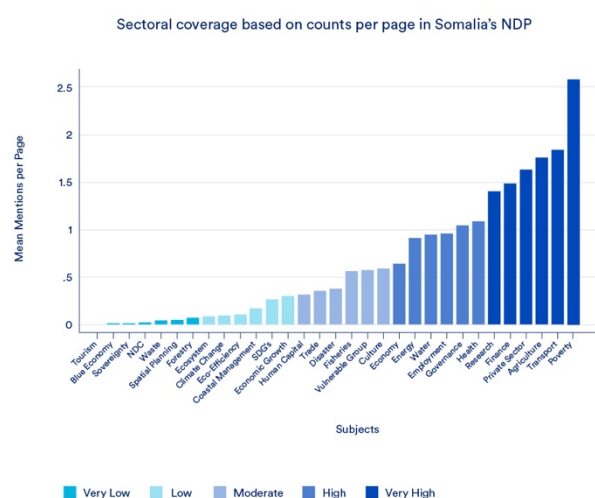
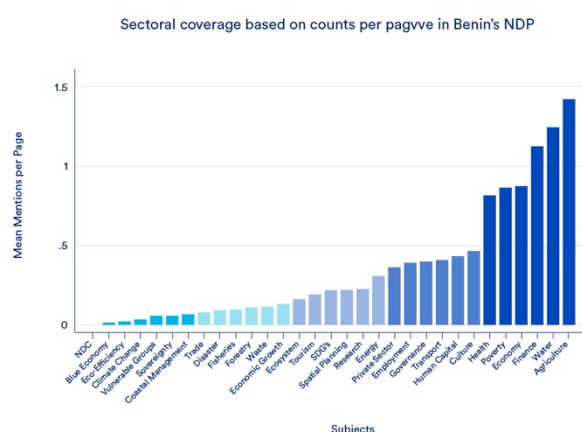


Figure 12b. Sectoral mentions in Benin's NDCs



3.3 NDC–NDP Synergy

This section examines the degree of alignment or misalignment between NDPs and NDCs by comparing their word frequencies per page across relevant subject areas, and explores the implications, particularly in cases where a high level of misalignment reflects a substantive disconnect between climate and development planning. The section does not seek to assess the extent of perfect alignment between NDPs and NDCs, nor to determine a specific synergy index that would signify full alignment.

3.3.1 Distribution of Subjects

Comparing of word frequency per page between NDCs and NDPs reveals distinct areas of divergence (Figure 13). First, themes central to climate response show strong positive synergy scores, denoting a clear prioritization within NDCs. Energy shows the largest gap, averaging nearly +2 mentions per page, followed by Forestry (+1.5) and Agriculture (+1). This indicates that sectors with significant mitigation and adaptation co-benefits are predominantly framed as climate policy domains within African nations' international commitments. Other climate-vulnerable themes like Water, Waste, Ecosystems, and Coastal Management issues each record positive gaps of around +0.5 and +0.8 mentions per page, further underscoring that comprehensive climate risk management is primarily articulated within the NDC framework rather than equally being deeply embedded within core economic strategies.

Conversely, a second cluster of themes exhibits strong negative synergy scores, reflecting a prioritization within NDPs. Private Sector records the largest deficit, nearly – 2 mentions per page, while Economy and Employment average –1 to –1.5 per page, with Finance and Governance also consistently negative (–0.5 to –0.8 per page). This divergence is important as it suggests that the primary engines of market-led growth, investment, and macroeconomic strategy are being pursued largely outside the formal climate policy framework. The notably low frequency of NDC references themselves (– 0.3 per page) within NDPs is a specific and telling finding that confirms this strategic disconnect. It demonstrates that the ambitious climate commitments made to the international community have not yet been systematically mainstreamed into the primary national blueprints that guide domestic economic development and public investment. This sectoral misalignment presents a significant policy challenge. It creates a risk where climate projects outlined in NDCs may struggle to attract sufficient private capital and may not be fully aligned with the core economic reforms and investment priorities driving national development, potentially hampering their implementation and effectiveness. For example, if energy is treated mostly as a climate policy issue, it risks becoming disconnected from industrial planning. This separation poses a significant challenge, especially as many African countries seek to develop energy-intensive industries such as mineral processing and data centers, where integrated planning is essential for sustainable growth. Ensuring a stronger connection between climate action and development is essential not only to improve coherence but also to maximize the developmental co-benefits of climate initiatives. In a situation where both domestic and international funding is limited, it is vital to design financing strategies that align climate funds with national development priorities. This approach should avoid overlooking opportunities for promoting inclusive growth and structural transformation.

Furthermore, the lowest-difference quintiles again point to subjects where NDCs and NDPs most closely align. These include cross-cutting themes, such as blue economy, spatial planning, eco-efficiency and vulnerable groups, where both climate and development plans give roughly equal weight. Such themes represent points for building coherence across policy frameworks, even though the overall pattern shows substantial misalignment, with NDCs placing much greater emphasis on energy, forestry, and agriculture, and NDPs prioritizing the private sector, finance and economy. Taken together, the Africa-wide results highlight that while pockets of synergy exist in certain social and cross-sectoral themes, the dominant trend remains a divergence between climate ambition and development priorities, which are consistent with prior studies (Hasan et al., 2020 and Atteridge et al., 2020). These misalignments not only weaken policy coherence but also lead to poor coordination of public investment and challenges in integrating climate priorities into national budgeting processes.

Figure 13a. Average frequency per page between NDCs and NDPs using the synergy measure

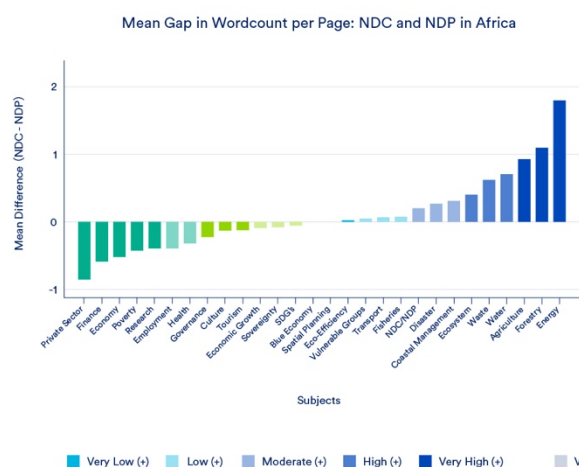
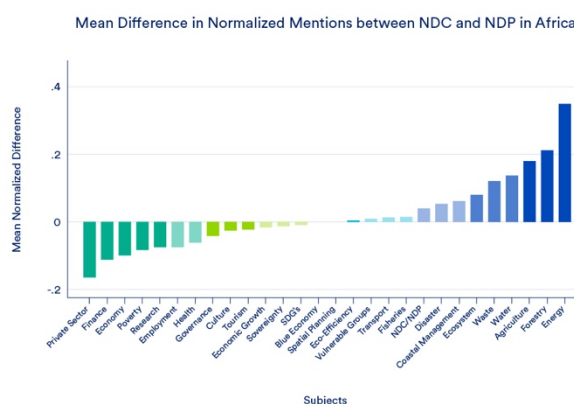


Figure 13b. Normalized average frequency per page between NDCs and NDPs using the synergy measure



3.3.2 Subject-Level Differences Across African Countries

Differences in thematic emphases between NDCs and NDPs reveal systematic divergences in the way African countries approach national planning of climate and development (Figures 14-15). Energy is mentioned far more frequently in NDCs, averaging +2 mentions per page compared to NDPs, highlighting its centrality to climate mitigation strategies. Except for South Africa, where the gap is slightly negative (−0.3 mentions per page), this indicates that energy transitions are primarily framed as climate objectives without substantial considerations of development imperatives for most African countries. In contrast, economic issues are referenced more heavily in NDPs, with many countries recording −1 to −1.5 mentions per page relative to NDCs, reflecting their design as instruments of macroeconomic planning and growth. This divergence signals a

disjunction between climate policy and development agendas, where economic transformation is often pursued outside the climate framework and vice-versa.

Agriculture shows a similar misalignment. It features more prominently in NDCs, with leading cases such as Malawi and Mozambique registering +3.5 to +4 mentions per page above their NDPs, where it is framed as both a mitigation and adaptation priority, highlighting its dual role in food security and climate resilience (Figure 15). This prioritization imbalance in agriculture is surprising given its significant role in most African economies.³ Employment, by contrast, receives greater weight in NDPs, with countries such as Burundi and the Democratic Republic of Congo recording –1 to –1.5 mentions per page compared to their NDCs, aligning with their broader developmental orientation toward labor markets, livelihoods, and inclusive growth. Overall, these contrasts illustrate how NDCs prioritize sectors directly tied to climate-environmental linkages, while NDPs devote greater attention to economic and social domains that are less explicitly integrated into climate policy.

Figure 14a. NDC-NDP Gap in Energy Mentions per Page across African Countries

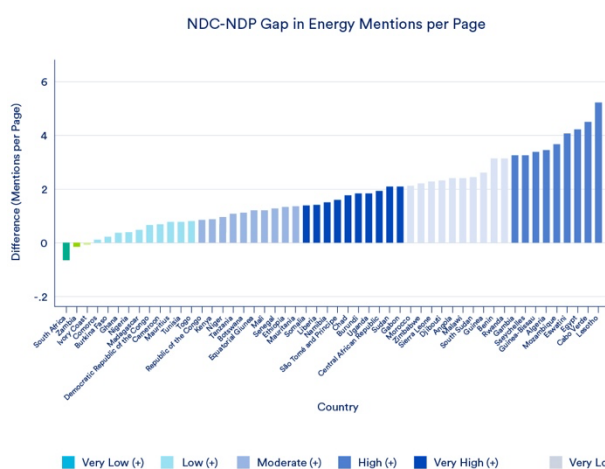
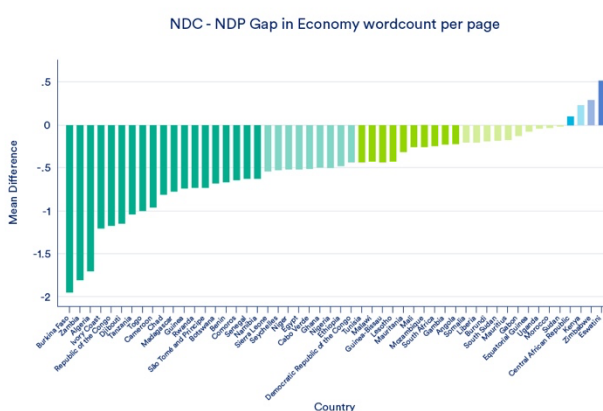


Figure 14b. NDC-NDP Gap in Economy Mentions per Page across African Countries



³ <https://www.weforum.org/stories/2023/03/how-africa-s-free-trade-area-will-turbocharge-the-continent-s-agriculture-industry/>

Figure 15a. NDC-NDP Gap in Agriculture Mentions per Page across African Countries

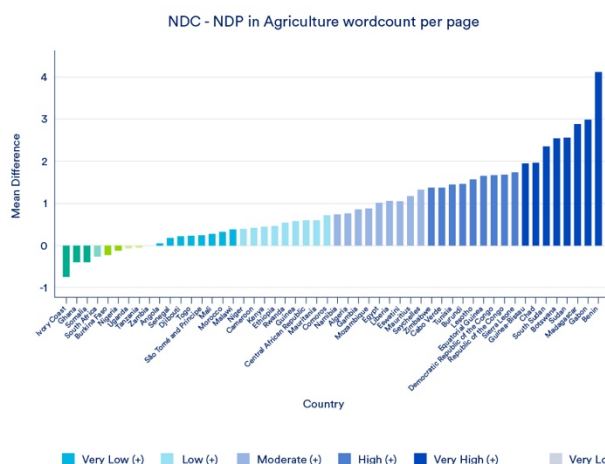
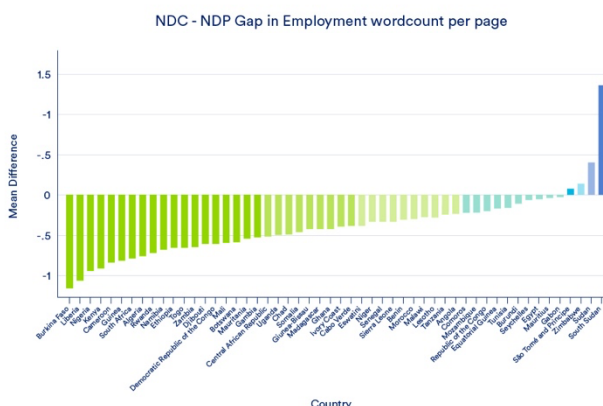


Figure 15b. NDC-NDP Gap in Employment Mentions per Page across African Countries



3.3.3 Distribution Across Africa

Cross-country analysis of the synergy measure reveals a significant continental divide in how nations align or fail to align their climate and development aspirations (Figure 16a). This bifurcation is not random but reflects profound differences in national capacity, vulnerability, and economic structure.

This first cluster, which includes South Sudan, Seychelles, Sudan, Cabo Verde, Benin, Gabon, Guinea-Bissau, Sierra Leone, Zimbabwe, and Burundi, is characterized by strongly positive average synergy scores. This indicates that climate-themed subjects are significantly more prominent in their NDCs than in their NDPs. This profile is typical of nations facing acute climate vulnerability (e.g., SIDS like Seychelles and Cabo Verde), significant fragility (e.g., South Sudan, Sudan), or severe economic constraints. For these countries, the NDC often serves as a strategic prospectus to articulate urgent climate needs and attract international finance, while their NDPs may be less comprehensive or focused on immediate stabilization and basic needs, leading to a pronounced policy gap.

The second cluster, featuring Comoros, Côte d'Ivoire, Zambia, Burkina Faso, South Africa, Nigeria, Ghana, Kenya, Mali, and Algeria, exhibits negative average synergy scores. This signifies that traditional economic and development themes hold greater weight in their national development blueprints than in their climate plans. This group often includes continental economic powerhouses (e.g., South Africa, Nigeria, Kenya, Ghana) and rapidly developing economies with more diversified and institutionalized planning processes. Their negative score suggests that climate policy (i.e., the NDC) is not yet fully integrated into their core economic development model; instead, it operates as a parallel, and potentially peripheral, stream of policy. The robustness of this bifurcation is confirmed by the normalized synergy index (Figure 16b), which controls for document length and

scoring extremes, showing consistent clustering. This clear divide underscores that the challenge of policy integration is not uniform across Africa.

Interestingly, the third group including countries like Senegal, Central Africa Republic, Angola, Namibia represent cases where there is relatively low divergence between NDCs and NDPs. In Angola and Namibia, for example, expanding electricity access and diversifying away from fossil fuels are central to their development and climate agendas. This, therefore, implies that clean energy expansion or rural electrification serves as both a growth driver and an emissions strategy. In these contexts, climate and development agendas show a higher degree of synergy, with similar priorities emphasized across both instruments. This alignment reduces the likelihood of policy trade-offs and enhances the credibility of national strategies, since climate commitments are directly embedded within broader socio-economic priorities. In practical terms, these countries are better positioned to leverage domestic institutions and budgets to implement climate and development actions, while also presenting coherent frameworks to attract external financing (Kaura, 2025; Republic of Angola, 2025). Their experience highlights the value of integrated planning, where climate and development reinforce each other rather than compete with one another.

Figure 16a. Map of Africa Showing NDC-NDP Difference in Subject Coverage (Counts per Page)

NDC NDP Difference Subject Coverage (Count per page) for Africa

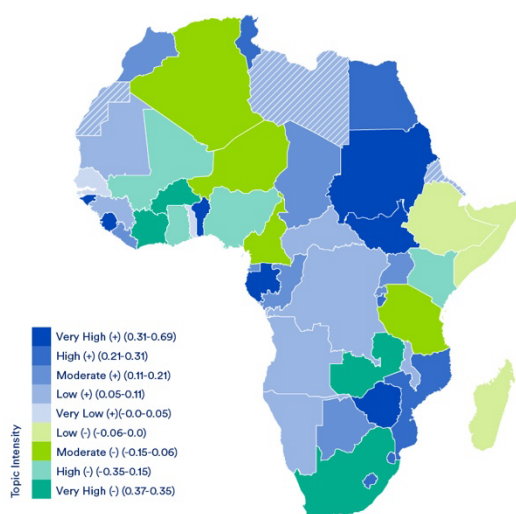
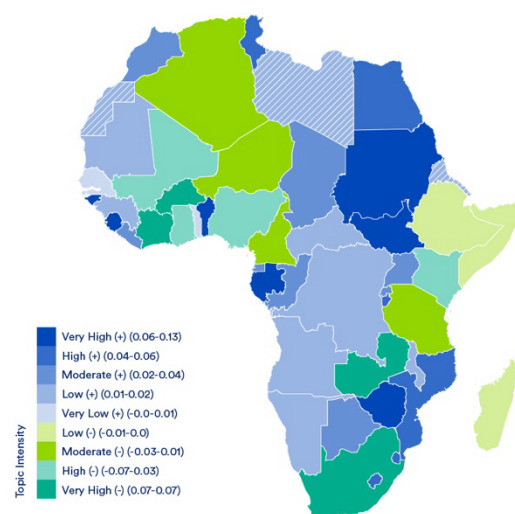


Figure 16b. Map of Africa Showing NDC-NDP Difference in Normalized Subject Coverage Index

NDC NDP Difference Normalized Subject Coverage Index for Africa



3.3.4 Country Case Comparisons

In South Sudan, policy emphasis has historically been shaped by vulnerability to conflict and climate shocks, with a heavy focus on resilience in sectors such as energy, forestry, and agriculture. In Comoros, economic and development priorities dominate. Ivory Coast

has placed strong weight on finance, infrastructure, and economic transformation through its NDP, whereas Sudan has relied more on its climate framework, with NDCs foregrounding water, agriculture, and energy as central policy domains (Republic of the Sudan, 2021). Country-level profiles highlight notable variation in the balance of priorities between NDCs and NDPs (Figures 17-18). In South Sudan, emphasis is concentrated in climate-related sectors such as energy (+2.5 mentions per page), forestry (+2.3), and agriculture (+2.1), indicating that the NDC functions as the main repository of climate policy detail. This pattern reflects both the country's acute vulnerability to climate shocks and the limited elaboration of development-related themes in their NDPs. Comoros, by contrast, places greater weight on its NDP, particularly in forestry (+1.0 mentions per page relative to the NDC), agriculture (+0.8), and water (+0.6). Here, climate objectives are integrated selectively into sectoral agendas embedded in the NDP, suggesting that development planning provides the overarching framework into which climate themes are incorporated.

A similar divergence is visible in Ivory Coast and Sudan. In Ivory Coast, the NDP dominates, with extensive coverage of finance (−2.8 mentions per page), economy (−2.5), and infrastructure/transport (−2.1), pointing to a development strategy centered on economic transformation and investment mobilization (Figure 17). Sudan displays the reverse configuration: its NDC is more expansive, especially in water (+3.0 mentions per page), agriculture (+2.7), and energy (+2.5). This asymmetry highlights differing institutional pathways. While Sudan relies on its climate framework to articulate cross-sectoral priorities, Ivory Coast positions the NDP as the anchor of its national planning architecture.

Across the country profiles (Figs. 17-18), the subjects appearing in the lowest-difference quintiles signal areas of synergy, where NDCs and NDPs give comparable emphasis. In South Sudan, these include vulnerable groups, finance and economic growth, reflecting alignment on broad climate and development plans. Comoros shows balance around social and cross-sectoral themes such as research, coastal management and disaster. In Côte d'Ivoire, the SDGs and explicit NDC/NDP linkages emerge as points of convergence, while in Sudan, poverty, blue economy, and spatial planning highlight shared priorities. Taken together, these cases suggest that although most thematic areas across countries exhibit varying degrees of misalignment, certain themes nonetheless emerge as potential entry points for fostering more coherent climate–development planning across diverse national contexts. However, this convergence may also reflect the relatively low frequency of these themes in both documents, implying that they are not central to national priorities in either the development or climate agendas.

Figure 17a. Wordcount per Page Difference between NDC and NDP for South Sudan

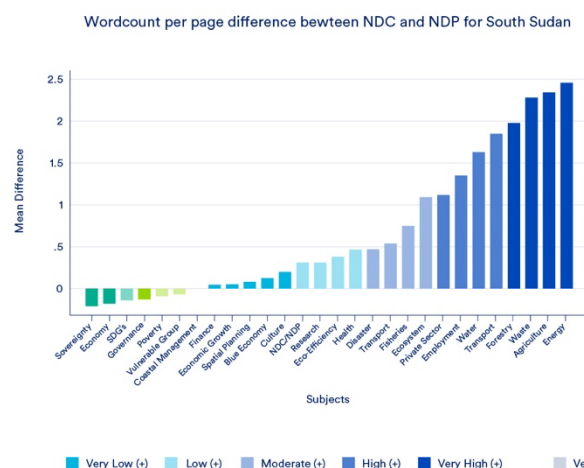


Figure 17b. Wordcount per Page Difference between NDC and NDP for Comoros

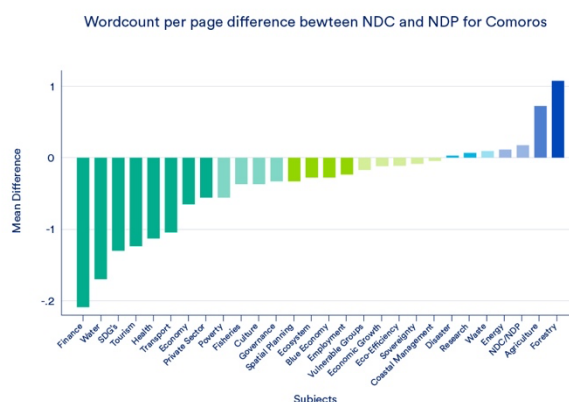


Figure 18a. Wordcount per Page Difference between NDC and NDP for Ivory Coast

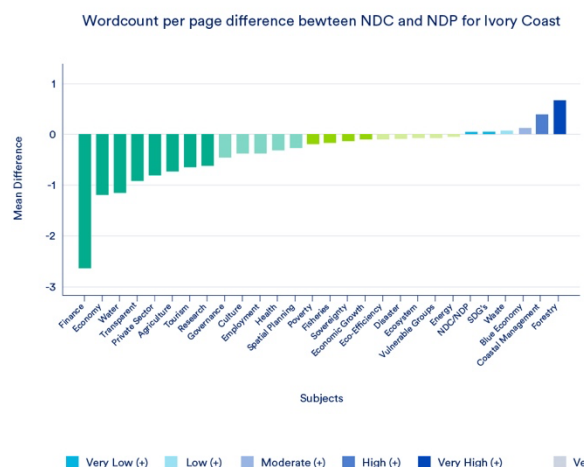
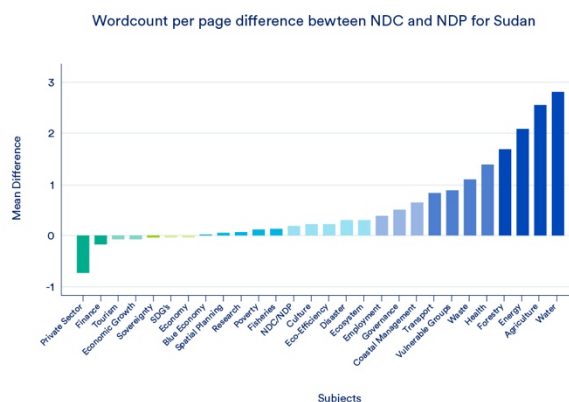


Figure 18b. Wordcount per Page Difference between NDC and NDP for Sudan



3.4 Sensitivity Analysis and Subgroup Patterns

To further test the robustness of the observed divergences between NDCs and NDPs, we conducted subgroup analyses disaggregated by region, landlocked status, and income group, fragility status, and thematic clusters (Figures 19–23). The results show that while the broad continental patterns remain consistent, important nuances emerge.

3.4.1 Regional Differences

Across Western, Eastern, Central, Southern, and Northern Africa (See Appendix 1 for the regional classification), the divergence between NDCs and NDPs follows a similar structure: energy, forestry, and agriculture record positive gaps (i.e., greater emphasis in

NDCs), while private sector, finance, employment, poverty, and economy remain negative (i.e., greater emphasis in NDPs). Notably, the strength of these gaps varies. Northern Africa shows the sharpest positive divergence on energy (+2.5 mentions per page), reflecting how countries in the subregion explicitly frame energy sector strategies as climate mitigation priorities within their NDCs. Western Africa registers the strongest negative divergence on private sector and finance (–1 to –1.2 mentions per page), indicating that, NDCs in the subregion have been less effective in integrating economic imperatives. Eastern and Central Africa reveal somewhat narrower gaps across most themes, but with a persistent tilt toward climate salience in NDCs and economic planning in NDPs. Central Africa reveal somewhat narrower gaps across most themes, but with a persistent tilt toward climate salience in NDCs and economic planning in NDPs.

Figure 19a. Wordcount per Page Difference between NDCs and NDPs in West Africa

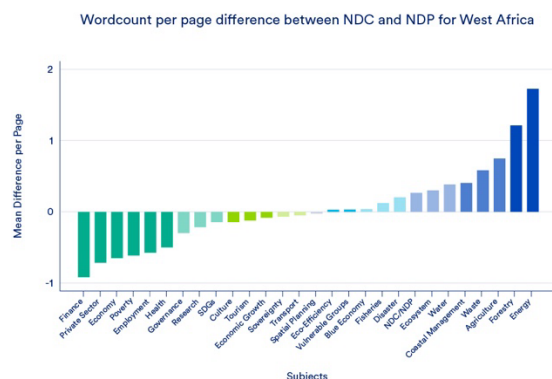


Figure 19b. Wordcount per Page Difference between NDCs and NDPs in East Africa

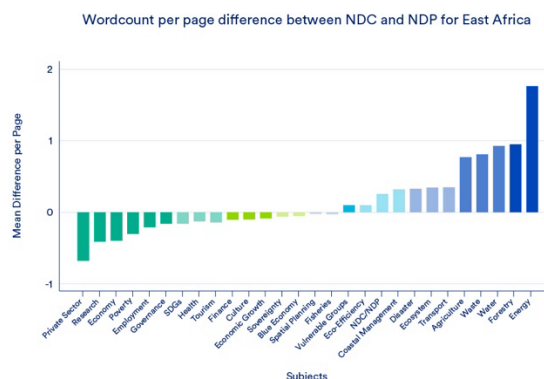


Figure 19c. Wordcount per Page Difference between NDCs and NDPs in Southern Africa

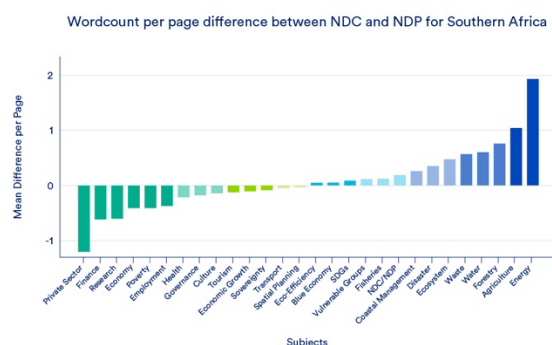


Figure 19d. Wordcount per Page Difference between NDCs and NDPs in North Africa

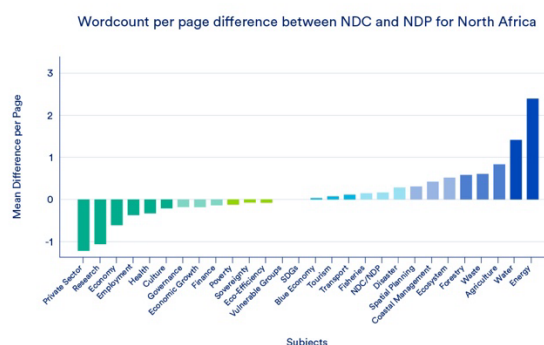
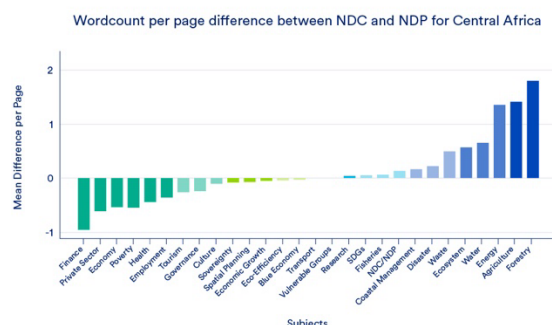


Figure 19e. Wordcount per Page Difference between NDCs and NDPs in Central Africa



Very Low (+) Low (+) Moderate (+) High (+) Very High (+)
Very Low (-) Low (-) Moderate (-) High (-) Very High (-)

3.4.2 Landlocked vs Coastal Countries

The landlocked/non-landlocked comparison highlights how geography shapes planning emphases (See Appendix 2 for the classification). Both groups show Energy, Agriculture, and Forestry as the most climate-centric sectors, but landlocked states display stronger positive gaps in energy (+2 mentions per page) and agriculture (+1.5). This could reflect the centrality of food security and energy access challenges. Non-landlocked states show

higher negative gaps in the private sector and finance (−1), consistent with stronger market integration and dependence on global investment flows articulated in their NDPs. Coastal zone management is understandably absent in landlocked countries. In contrast, non-landlocked countries show a moderate positive focus on coastal zone management in their NDCs compared to their NDPs. On the other hand, transportation issues are addressed more evenly in non-landlocked countries than in landlocked countries. It also demonstrates a moderate positive emphasis on transportation in their NDCs compared to their NDPs, highlighting its dual role for trade competitiveness and climate adaptation in coastal and international port contexts. These patterns indicate geography-driven differences: landlocked states focus on survival and access, while non-landlocked states prioritize integration and risk management (UNDP, 2024a, 2024b).

Figure 20a. NDC-NDP Difference in Wordcount per Page for Non-Landlocked Countries

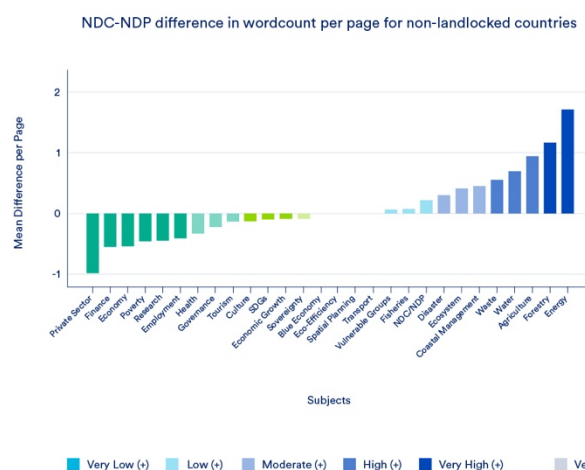
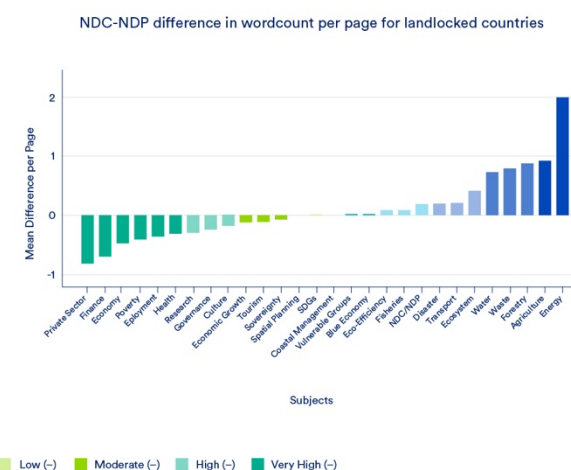


Figure 20b. NDC-NDP Difference in Wordcount per Page for Landlocked Countries

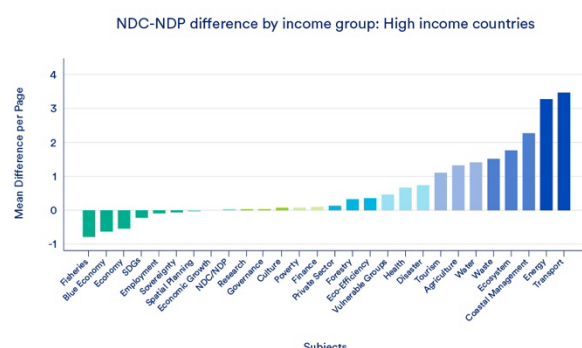


3.4.3 Income Groups

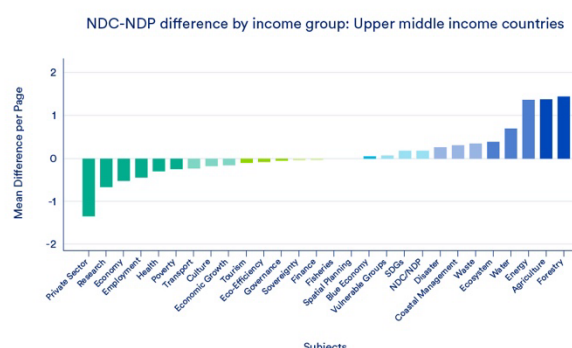
When disaggregated by income (See Appendix 3 for the income classification), a sharper gradient emerges: High-income African states, predominantly SIDS, exhibit the largest positive divergences in climate-related sectors, with energy and transport both exceeding +3 mentions per page relative to NDPs. Although classified as high-income, many of these states remain highly exposed to climate risks. They therefore use their NDCs strategically to strategically access external climate finance and investment support (Benzaken et al., 2024). Upper-middle-income countries (e.g., South Africa, Algeria) maintain the same overall pattern but with smaller positive gaps in climate sectors and stronger negative gaps in economy and private sector (−1.5 per page), indicating a heavier reliance on NDPs as the locus of macroeconomic planning. Lower-middle-income countries fall in between, with energy gaps around +2 per page but also consistently negative finance and employment scores (−0.8 to −1), suggesting that climate priorities

are elevated but remain insufficiently integrated into broader development strategies. Low-income countries, meanwhile, reproduce the same imbalance, but with narrower margins (energy around +2, economy and finance around -0.8), suggesting both climate and development agendas remain shallowly elaborated, limiting their capacity to drive structural transformation.

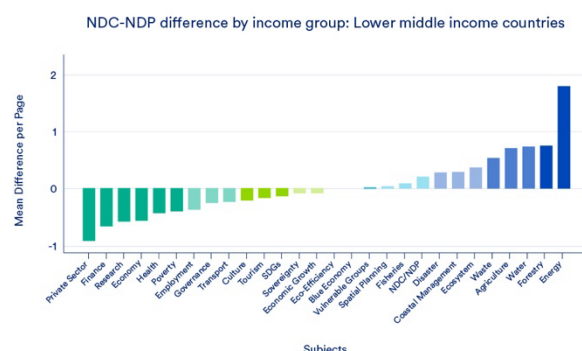
**Figure 21a. NDC-NDP Difference in Wordcount per Page:
High-Income Countries**



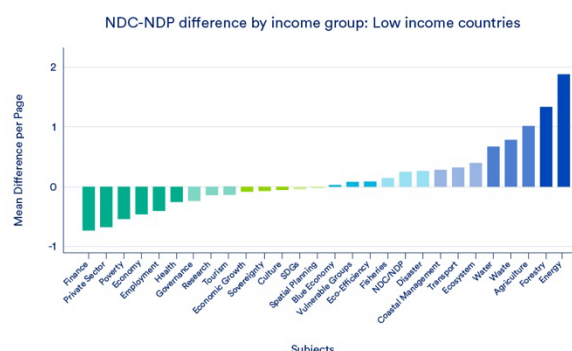
**Figure 21b. NDC-NDP Difference in Wordcount per Page:
Upper-Middle-Income Countries**



**Figure 21c. NDC-NDP Difference in Wordcount per Page:
Lower-Middle-Income Countries**



**Figure 21d. NDC-NDP Difference in Wordcount per Page:
Low-Income Countries**



Very Low (+) Low (+) Moderate (+) High (+) Very High (+) Very Low (-) Low (-) Moderate (-) High (-) Very High (-)

3.4.4 Fragility status

Countries characterized by fragility, conflict, and violence (FCV) display distinct patterns (See Appendix 4 for the FCV classification). In FCV countries, energy, forestry, and water dominate the NDC agenda (+1.0 to +1.5 mentions per page), while economy, finance, and governance consistently score negative (-0.5 to -1.0). This implies that in fragile contexts, NDCs are mobilized primarily as international instruments to secure adaptation and resilience funding, while development planning struggles to articulate comprehensive macroeconomic strategies. By comparison, non-FCV countries display more polarized gaps: climate sectors, especially energy, show stronger positive scores (energy near +2

per page), while development-oriented sectors such as private sector and finance remain sharply negative, often below -1.0 per page. These patterns demonstrate how fragility alters the role of NDCs, shifting their focus towards mobilizing external resources for resilience instead of ensuring a balanced integration with long-term development planning.

Figure 22a. NDC-NDP Difference in Wordcount per Page: FCV Countries

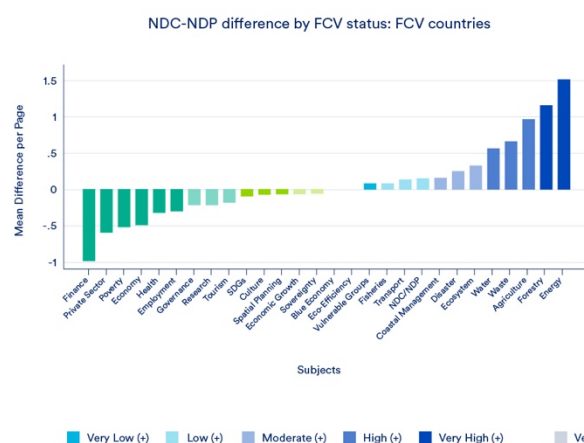
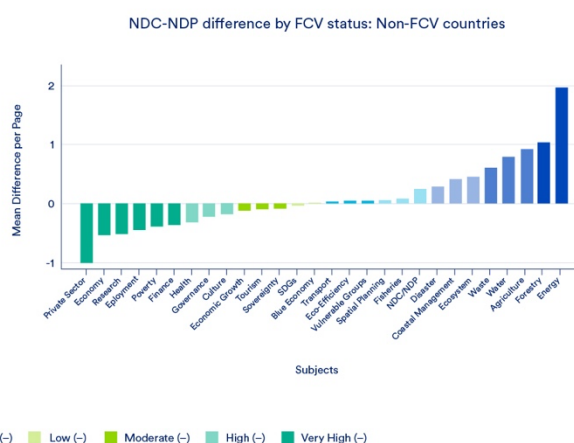


Figure 22b. NDC-NDP Difference in Wordcount per Page: Non-FCV Countries



3.4.5 Climate vs development clusters

When aggregated into climate-related versus development-related themes (See Appendix 5 for the classification), the divergence becomes even clearer. For climate subjects (energy, water, agriculture, forestry, ecosystems, waste), most countries fall above zero, with strong outliers such as Seychelles, Cabo Verde, and South Sudan recording differences exceeding +1 mention per page. In contrast, development-related subjects (economy, finance, private sector, employment, infrastructure) lean consistently negative, with some large economies such as Nigeria, South Africa, and Kenya registering gaps of -3 to -6 mentions per page. This clustering underscores the structural asymmetry: climate themes are systematically concentrated in NDCs, while development themes are firmly rooted in NDPs.

Together, these subgroup analyses demonstrate that the observed misalignment is not driven by isolated country cases but a continental pattern that varies in intensity according to income level, fragility, and sectoral clustering. The results reinforce the core finding: African countries are operating with two partially parallel policy frameworks. Thus, NDCs as climate-focused external commitments, and NDPs as development-centered domestic strategies with limited integration between them.

Figure 23a. NDC-NDP Difference by Country for Climate-Related Subjects

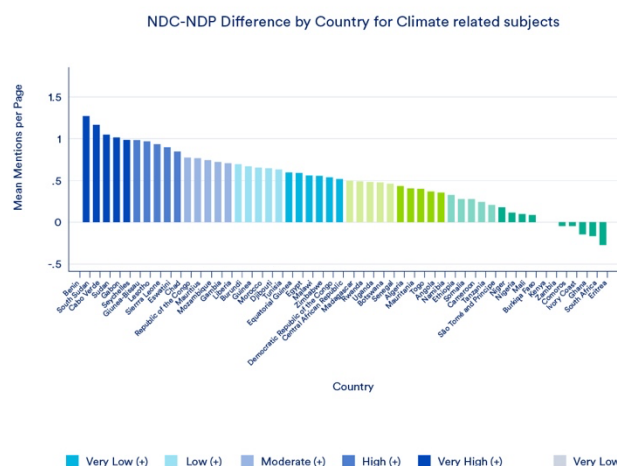
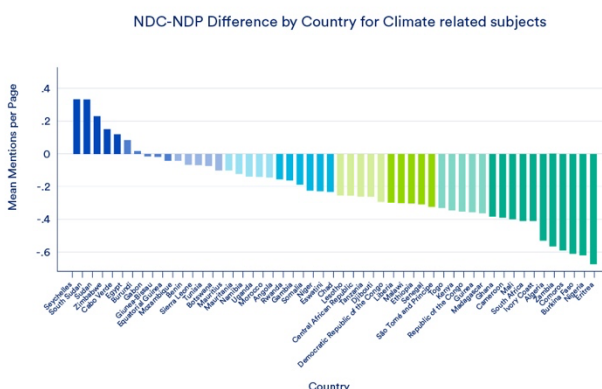


Figure 23a. NDC-NDP Difference by Country for Climate-Related Subjects



3.5 Plan formulation process

Based on the observed differences in thematic emphasis between African NDCs and NDPs, the study further examined the planning processes underpinning these documents to explore potential reasons justifying these significant gaps. Specifically, the analysis considered four dimensions: the sources of financial support, the providers of technical assistance, the degree of regional referencing, and the types of analytical models underpinning the development of the NDC or NDP. These factors could help to explain why NDCs and NDPs diverge in scope and emphasis, and why certain themes are more strongly embedded in one policy instrument than the other.

4.5.1 NDC formulation process

International financial and technical assistance largely shape the formulation of African NDCs. Over half of the NDCs reviewed (58%) explicitly cite funding from international institutions (e.g., World Bank, UNDP, etc.) or regional institutions (African Development Bank (AfDB) and Economic Community of West African States (ECOWAS)), while 42% do not specify their funding source, as depicted in Figure 24a. From Figure 24b, UNDP is observed as the most prominent financier, supporting 19 NDCs directly or through its Climate Promise Initiative, followed by the NDC Partnership and German institutions (the Federal Ministry for the Environment, Climate Action, Nature Conservation (BMU), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)). In sharp contrast, contributions from local institutions remain minimal, underscoring the strong external orientation of NDC funding flows and highlighting the dependency of African climate planning on international assistance.

Figure 24a. Sources of financial support for NDCs

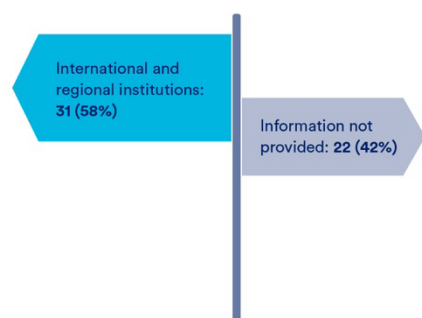
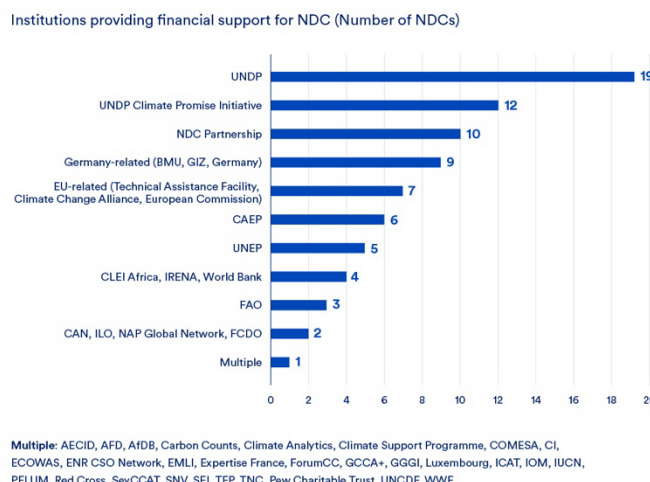


Figure 24b. Institutions providing technical support for NDCs (number of NDCs citing each source)



Technical support follows a similar pattern. In Figure 25a, the majority of NDCs (56%) report technical contributions from both international and domestic actors, while only 21% including countries such as Zambia and Algeria rely solely on domestic institutions. Here again, UNDP and the NDC Partnership play central roles, alongside United Nations Environment Program (UNEP), Climate Action Enhancement Package (CAEP), and German agencies (Figure 25b). On the national side, governments' part in providing technical support for the development of NDCs is uneven: of the 35 institutions identified, 29% are ministries of environment or climate change, 11% are ministries of energy or natural resources, and 9% are ministries of economic planning and social development, while the remaining 51% represent other ministries not directly related to development, environment, or energy (Figure 25c). It is worth noting that many African countries have established National Committees on Climate Change (NCCCs), which bring together representatives from multiple sectors under the coordination of the minister responsible for the environment. This distribution underscores how environmental and climate institutions dominate technical inputs, with economic planning ministries playing more limited roles. This reflects the broader tendency for national actors to act as co-implementers rather than primary drivers of climate action planning. This dependence helps explain why climate-related themes, such as energy, feature more prominently in NDCs than in NDPs, and why NDCs are often framed as externally oriented climate commitments rather than domestically embedded development strategies. A distinction that, as shown in the subsequent sections, extend to the use of models in their preparations.

Figure 25a. Sources of technical support for NDCs

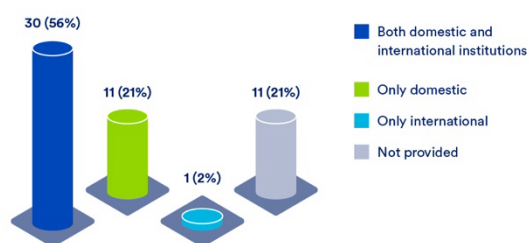


Figure 25b. Institutions providing technical support for NDCs (number of NDCs citing each source)

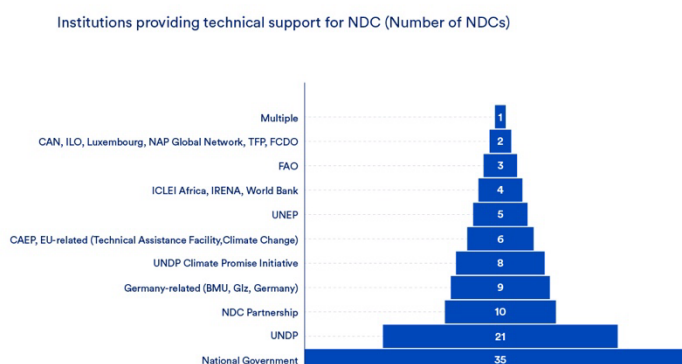
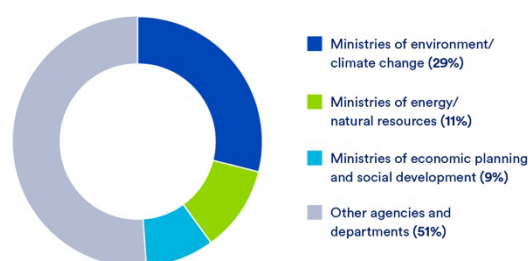


Figure 25c. Sectoral distribution of the Government institutions providing technical support for NDCs



Multiple: AECID, AFD, AfDB, Camoes Institute, Carbon Counts, Climate Analytics, Climate Support Programme, COMESA, CI, ENR CSO Network, EMLJ, ForumCC, GCCA+, GGGI, ICAT, IOM, IUCN, PELUM, CILSS, Red Cross, SeyCCAT, SNV, SEI, TNC, Pew Charitable Trust, UNCDF, WWF.

In Figure 26-a, regional integration is observed to be weak within the NDC process. Only 17% of countries refer to regional frameworks, with most of these citing the Africa Union (AU) Agenda 2063. Mentions of subregional bodies such as ECOWAS or SADC are almost absent. The limited engagement of regional institutions and the lack of strong coordination mechanisms restrict the translation of continental or subregional priorities into climate pledges. This weak regional anchoring further explains the difficulty of integrating climate goals into broader development agendas. A notable example of emerging regional coordination is the East African Community (EAC) Climate Finance Access and Mobilization Strategy (2022), which aims to strengthen joint climate action and financing among member states. The strategy outlines mechanisms for collective resource mobilization, capacity building, and integration of climate finance into national planning processes. However, its limited visibility in national NDCs underscores the weak translation of such regional initiatives into country-level climate commitments. This gap reflects both institutional fragmentation and the absence of harmonized implementation frameworks within the EAC region.

Beyond reliance on UNFCCC guidelines, more than half of the African NDCs have declared the use of a specific modeling tool to inform their preparation, reflecting an effort to ground targets in analytical tools and evidence-based scenarios (Figure 26-b). The most prevalent models cited are GACMO (Greenhouse Gas Abatement Cost Model) and

Figure 26a.

A pyramid chart showing the distribution of responses for the question 'What is the most important challenge facing Africa?'. The chart is divided into five horizontal layers, each representing a different challenge. The layers are labeled with their respective counts and names:

- Other:** 2 (top layer, green)
- African union:** 3 (second layer from top, teal)
- Agenda 2063:** 7 (third layer from top, blue)
- No reference:** 41 (bottom layer, grey)

The total number of responses is 53. The chart is a pyramid shape, with the 'No reference' category at the base and 'Other' at the top.

Others: SADC regional climate change programme plan, AU geopolitical and development goals

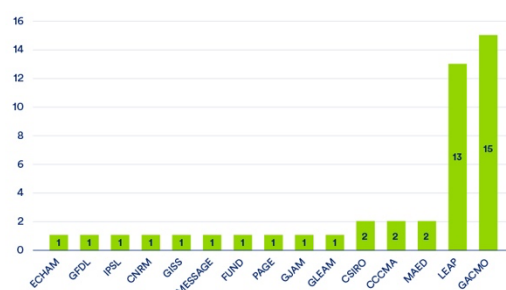
Figure 26b.



■ Yes: 28 (53%)

■ No: 25 (47%)

Model used in the NDC (Number of NDCs)



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Figure 27a. Sources of financial support for NDPs

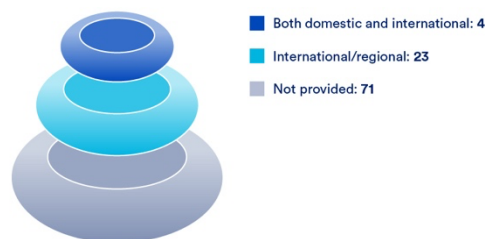
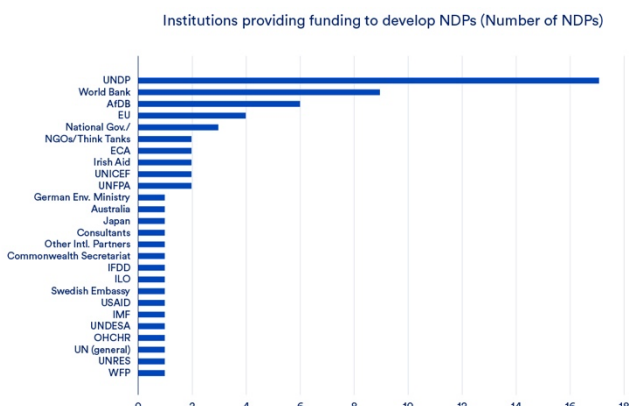


Figure 27b. Institutions providing financial support for NDPs (number of NDPs citing each source)



Technical support for NDPs is more evenly split between domestic and international institutions. Roughly one-third of NDPs are developed by domestic institutions, another third are developed by both domestic and international institutions, while the remaining third do not provide information, as shown in Figure 28a. In Figure 28b, national governments and ministries are noted to be the most frequently mentioned providers of technical support, followed by UNDP, the World Bank, AfDB, NGOs, think tanks, and universities. Within governments and ministries, the distribution highlights a strong dominance of ministries of economic planning and social development, which account for 29 of the 35 institutions (Figure 28c). By contrast, representation from environment or climate ministries is minimal (1), and energy or natural resource ministries are entirely absent. This indicates that domestic institutions, mainly ministries of economic planning and social development, play a somewhat stronger role in shaping NDPs than in NDCs, though international partners remain highly influential. It is therefore unsurprising that development-oriented themes such as finance, the private sector, and transport dominate NDPs, as these subjects align closely with the priorities of ministries of economic planning and social development.

Figure 28a. Sources of technical support for NDPs

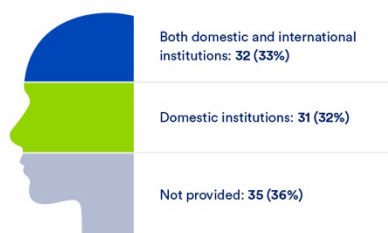


Figure 28c. Sectoral distribution of the Government institutions providing technical support for NDPs

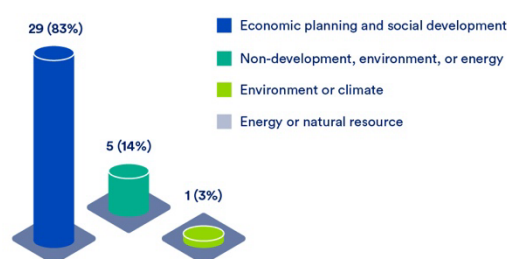
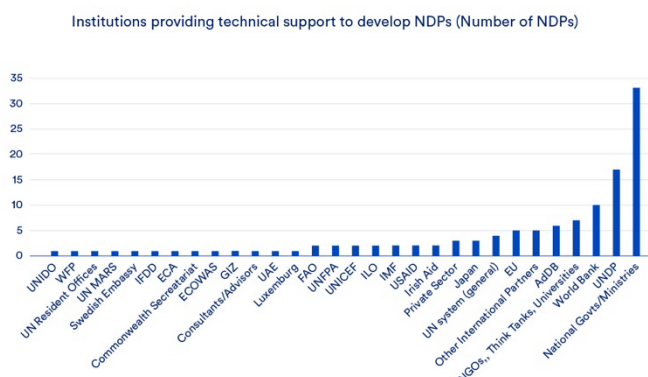


Figure 28b. Institutions providing technical support for NDPs (number of NDPs citing each source)



Unlike NDCs, most NDPs (63%) explicitly reference regional plans. AU Agenda 2063 is the most common, while subregional economic communities such as ECOWAS, Southern African Development Community (SADC), and EAC are only sporadically mentioned. This stronger regional anchoring helps explain why development themes are more consistently embedded in NDPs than climate themes, and the prominent role of regional institutions. Development planning is explicitly tied to continental visions of economic transformation, whereas climate commitments remain less integrated.

Figure 29a. Regional references for NDPs



Figure 29b. Distribution of specific regional plan references in African NDPs

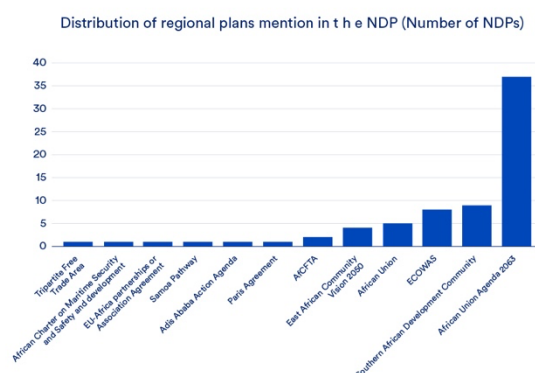
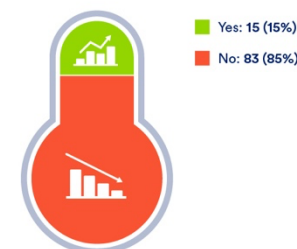


Figure 29c. Model use to develop NDPs



In contrast to NDCs, very few African NDPs articulate the modeling frameworks employed in their development, with only 15% explicitly referencing the use of such tools (Figure

29c). Among the limited instances where modeling is used, the most frequently applied methods are SWOT analyses⁴, MACMOD, and general equilibrium models (Figure 29b). These models are typically employed to structure macroeconomic forecasts or define strategic sectoral priorities. Countries that have adopted model-based approaches include Algeria, Benin, Cameroon, Mozambique, and Nigeria, among others. The infrequent use—or explicit non-mention—of modeling in NDP preparation underscores methodological diversity, partial disclosure of preparation methods, and a continued reliance on qualitative or consultative approaches, contrasting with the more standardized, model-driven processes that shape many NDCs.

NDC development is primarily financed by international sources, technical expertise, and designed with modeling tools, while NDPs are mostly developed by domestic institutions and tend to align with continental development visions. This institutional divide reinforces the parallelism observed in sectoral emphases, with climate commitments externally driven and development strategies domestically and regionally anchored. In many African countries, climate action is predominantly perceived as an initiative to be financed through international climate funds rather than through domestic resources. As a result, it tends to receive limited prioritization within national budgetary allocations. This financing perspective has contributed to a deliberate institutional and policy separation between NDPs and NDCs. In practice, the development priorities articulated in NDPs are generally expected to be supported by domestic fiscal resources, whereas the climate commitments set out in NDCs are framed as externally funded undertakings. Consequently, climate action often emerges as an additional, externally driven agenda rather than an integrated component of national development planning and implementation.

3.6 Further insights into the causes of misalignment between plans

To further elucidate the misalignment between NDCs and NDPs, this section analyzes additional underlying factors, specifically the extent to which these plans consider specific employment generation, economic growth, climate objectives, and national legal frameworks, that collectively underpin the persistent incoherence between climate and development planning agendas. The findings in Figure 30 show that the alignment between NDCs and NDPs has significant consequences for coherence and ease of implementation of national strategies. Regarding NDCs, the limited attention to jobs, economic growth, and national legal frameworks illustrates why they often remain disconnected from the central priorities of national development. Only a small minority specify job implications (10), economic impacts (7), or GDP-related factors (2), and fewer

⁴ We acknowledge that SWOT analysis is not a quantitative model, though some countries described it as a model or framework used in their NDPs.

than a quarter reference a national legal framework (Figure 29a). This narrow framing reinforces their role as externally oriented commitments rather than integrated strategies that respond directly to domestic socio-economic and institutional challenges. Without explicit links to national priorities, NDCs struggle to secure broad ownership, leaving their implementation vulnerable to shifting political agendas and resource constraints.

By contrast, NDPs articulate socio-economic implications more clearly. The majority address job creation and economic transformation, with 87 including economic implications and 65 referencing employment. However, climate-related implications remain peripheral: only 21% of NDPs include explicit CO₂ or GHG reduction targets, and many of these draw directly from NDCs rather than being embedded within the development plan itself (Figure 29b). As a result, while NDPs strongly shape budgets, investments, and institutions, they risk overlooking climate risks and failing to mobilize resources for mitigation and adaptation.

This divergence creates a structural implementation gap. NDCs lack specificity on development outcomes, which weakens their domestic traction and limits their ability to demonstrate socio-economic benefits from climate action. Meanwhile, NDPs, usually fail to capture their interconnection with climate priorities, constraining efforts to mainstream resilience and low-carbon pathways into core development strategies. The result of the divergence between NDCs and NDPs is a two-track planning apparatus that limits policy coherence, fragments financing, and undermines the capacity of African governments to design and deliver integrated strategies that advance both climate and development imperatives in ways which do not prioritize climate imperatives over development imperatives or advance development imperatives that fail to leverage opportunities for climate action. Comparable misalignments between climate and development planning are evident in other developing regions such as SIDS and South Asia, where NDCs often prioritize narrow climate sectors over broader national goals (Atteridge et al., 2021; Hasan et al., 2020). These parallels suggest that Africa's challenge is part of a wider structural issue requiring stronger institutional coordination and integration of climate action into development planning.

Figure 30a. Implications of NDCs



Figure 30b. Implications of NDPs



4.0 Conclusion and Policy Recommendations

This study presents a comprehensive assessment of the alignment between climate and development policies in Africa. Through systematic content analysis of 52 NDCs and 98 NDPs covering 52 African countries from 2000 to 2023, the research reveals significant misalignments between climate and development policy frameworks that may undermine the effectiveness of both agendas.

As African countries grapple with escalating climate-related pressures while simultaneously pursuing rapid economic development, it is crucial for countries to identify the trade-offs between climate action and development priorities and incorporate these trade-offs into their NDCs and NDPs. Enhanced policy coherence will improve co-financing capabilities, minimize trade-offs between the climate and development objectives, and ensure climate actions enable socio-economic development, and vice versa. Aligning these frameworks is not merely beneficial but a strategic necessity for fostering resilience and long-term prosperity for all on the continent.

The findings indicate a significant misalignment: NDCs focus on climate-related sectors like energy and agriculture, while NDPs prioritize development themes, such as finance and the economy, with limited climate content. This divergence is concerning; for example, energy systems which are viewed as critical factors for effective climate action are also fundamental inputs in the structural transformation of African economies. By failing to capture this sector adequately in NDPs, the trade-offs between energy transition targets articulated in NDCs and the energy requirements for Africa's economic transformation can be neglected, leading to energy transition strategies that lack pragmatism and work

against, rather than for economic development. For example, if energy is relegated primarily to climate policy, the main indicators of sectoral “success” will likely focus on emissions reduction rather than on metrics more critical to economic performance, such as reliability, affordability, and access. This divergence persists across various regional, income, and fragility groups, suggesting that most African countries operate with parallel rather than integrated policy frameworks.

Based on these findings, we offer seven policy recommendations. **First, African policymakers should prioritize closer alignment between development priorities and climate planning, especially across key sectors that serve as foundational inputs for economic growth, poverty reduction, and resilience.** NDC commitments should be embedded within national budgetary processes and the NDPs; the feasibility of NDCs should be assessed within the context of those broader developmental and financial frameworks. NDCs should clearly articulate links to development outcomes such as job creation, poverty alleviation, public health improvements, among others, while also acknowledging potential trade-offs. The NDC update process is inherently meant to be a whole-of-government approach. As such, it provides an opportunity to reinforce and align with existing NDP processes and priorities. Moreover, these frameworks should not be developed in isolation; rather, in developing or updating NDCs and NDPs, countries should adopt a whole-of-society approach bringing together stakeholders from a wide range of ministries and departments; civil society organizations; private sector actors; international development partners; and other relevant constituents. Within the government, developing inter-ministerial committees would enhance sectoral coherence while reducing contradictory commitments between goals. For instance, in planning an initiative to expand electric mobility adoption aimed at reducing emissions, the ministry of environment should seek coordination with the ministries of finance, transportation, petroleum and energy, planning, and trade to prevent undermining a competing priority (for example high import levies on foreign-made electric vehicles). Nevertheless, it is worth noting that greater coordination to create an integrated approach might have several challenges. First, the cost and logistical challenge of including more stakeholders in the formulation process for these plans may be prohibitive. Second, the inherent tradeoffs and conflicts between socio-economic development and emissions reduction may prove cumbersome to reconcile. Third, integrated approaches often entail deep governance challenges, including issues of institutional coordination, policy coherence, and accountability across multiple sectors and levels of government.

Second, closer integration between development and climate planning should enable governments to identify and pursue co-financing opportunities while addressing the financing gaps in both domains. Successfully implementing African NDCs and NDPs will require trillions of dollars in investments. Despite declining traditional

aid flows, significant opportunities still exist to leverage funding for climate action that can drive sustainable and inclusive socio-economic development, and vice versa. Countries must mobilize a diversified pool of resources, including domestic capital markets, foreign direct investments, and international bond markets etc., to close these gaps. African countries can unlock domestic capital by expanding and digitizing fair taxation systems; enforcing strong transparency and governance practices (such as open contracting, beneficial ownership disclosure, improving liquidity through competitive and well-regulated banking and brokerage sectors, and e-procurement); exploring multi-country collaborative methods for managing foreign exchange risk; and addressing illicit financial flows through effective transfer pricing enforcement, anti-money laundering and counter-terrorism financing measures, and asset recovery initiatives. More African governments should also utilize the Integrated National Financing Frameworks to mobilize resources to enable sustainable development. Once these steps are taken, saved funds can be channeled through pensions, local capital markets, and capable development finance institutions into viable integrated climate-development projects. Blended finance strategies can help allocate resources to projects that provide both climate benefits and socio-economic advantages.

Third, African governments should prioritize socio-economic development and poverty alleviation because this offers the surest path to successfully advancing the structural transformation of their economies and addressing climate impacts and vulnerability. For African countries, climate change must be viewed within the overarching framework of development and poverty alleviation imperatives. They face a complex policy calculus, as they must address pressing development priorities while managing limited resources that must be allocated between those needs and climate-related imperatives. African countries current and historical emissions have been much lower than other regions and the African states have greater need for more energy and other resources to lift millions of people out of poverty. While clean energy technologies and corresponding emissions reductions should be pursued when they are cost-effective, African countries' climate frameworks should advocate for more pragmatic solutions that prioritize affordable energy to attain their development goals. This should not be construed as abandoning or ignoring climate realities; rather, stakeholders should contextualize NDC commitments within African countries' unique reality, where the immediate imperative is lifting populations out of poverty. Therefore, the scale and ambition of emissions reductions and climate adaptation in NDCs should be designed to reflect the critical importance of sustained economic development as a key driver of these ambitions.

Fourth, countries should develop long-term low-emission development strategies (LT-LEDS) that comprehensively incorporate NDP priorities, while establishing

institutional agency and mobilizing the resources necessary for their effective implementation. Although LT-LEDs have emerged as policy instruments that complement NDCs, only ten countries in Africa have established these strategies and the majority of these lack strong links to the development agendas. However, for the countries with well-developed LT-LEDs, they serve as essential mechanisms of aligning industrial policy, energy access, and job creation objectives with climate goals. Scaling these LT-LEDs across the continent could potentially help countries in contextualizing their climate goals within larger development objectives. Furthermore, while there might be divergences between the priorities in the NDCs and NDPs, LT-LEDs might be helpful in aligning the implementation of the plans through the design and implementation of projects that seek to reduce poverty while simultaneously enabling emissions reductions. Equally important is the need to strengthen institutional capacity and establish effective resource mobilization mechanisms to ensure the sustained implementation of these long-term strategies.

Fifth, countries should collaborate on opportunities that accelerate growth while reducing emissions. Regional economic organizations (such as the East Africa Community, South African Development Community etc.) alongside continent-wide initiatives, such as the African Union's African Continental Free Trade Area, offer platforms for developing and sharing technical capabilities in the highest impact sectors, promoting cross-border integrated planning, reducing redundancies, and increasing access to development financing that could enable economic growth and emissions reductions. Meanwhile, regional financing institutions, such as the African Development Bank, should incentivize policy coherence between NDCs and NDPs as a key criterion for funding of projects.

Sixth, international development organizations must reform how they set priorities to better integrate climate and development policies, especially in sectors critical for economic growth and resilience. The Paris Agreement's NDCs framework should be structured to align with, rather than operate separately from, national development strategies. Since most NDCs and NDPs receive technical and financial assistance from international institutions, these institutions bear significant responsibility for ensuring coherence. International institutions should provide unified support that simultaneously advances climate and development goals, replacing the current fragmentary approach that often leads to misalignments. International actors should coordinate more closely with national governments to ensure country-specific priorities are emphasized in program design. Furthermore, initiatives to finance climate actions in Africa from these international stakeholders should explicitly include assessments of their impact on development priorities, transparently listing the trade-offs and enabling informed decision making. Importantly, wealthy developed countries must recognize their historical

responsibility for majority of current and historical global emissions and provide greater finances for less developed countries to enable them to pursue both development and climate goals.

Seventh, African governments, the private sector, and international partners should invest significant resources in building human resources on the continent that is vital for bridging the climate-development divide. Many African governments still face significant gaps in technical and institutional capacities related to policy modeling, data integration, and monitoring. Investments in training programs, regional knowledge hubs, and partnerships with universities and research institutions can help address these deficiencies. Institutionalizing systematic monitoring of the thematic balance between climate and development across national policies would also facilitate evidence-based adjustments over time. Ultimately, international support should catalyze the development of local technical and financing capacity within African countries, enabling long-term locally driven development and climate planning that is rooted in local contexts.

While this study makes noteworthy contributions to existing research literature and the policy space, it has several limitations that warrant attention in future research. First, policy processes can be complex and opaque, and this systematic content analysis method may not provide a complete picture of why certain NDC or NDP subjects emerge, or why specific choices are made. Second, although context-aware and advanced large language models are capable of addressing the complexities involved in this analysis, they remain outside the scope of this study. Employing such sophisticated models could potentially reduce explainability and increase methodological complexity, with only a contested marginal improvement in result quality. Third, comparative analyses of the relationship between development and climate policies in other developing regions would prove helpful in putting these Africa-specific findings within a broader global context. Additionally, it would be helpful to understand why and how some African nations developed NDCs and NDPs with greater alignment than majority of the countries. Fourth, given that the NDCs undergo five-year update cycles and countries continue releasing new NDPs, longitudinal assessments of tracking the NDC-NDP alignment would deepen understanding of these frameworks' dynamic interactions. Particularly, there is a growing recognition of the need to align NDCs with development priorities and promote nexus approaches that enhance co-benefits. The new NDC submissions across the continent are expected to reflect awareness of this evolving context. However, analyzing these emerging trends is beyond the scope of the current study; this topic can be explored in future research when NDC 3.0 is available for most African countries. Additionally, the research may be expanded to include other national climate plans. Lastly, a closer evaluation of existing integrated planning frameworks, especially the LT-LEDs, would

provide greater evidence of the effectiveness of the plans that seek to bridge the gaps between development and climate policies.

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6.0 Appendix

6.1 Appendix 1: Regional classification

Regions	Countries
Western Africa	Benin, Burkina Faso, Cabo Verde, Ivory Coast, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo
Eastern Africa	Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Seychelles, Somalia, Sudan, Tanzania, Uganda, South Sudan
Central Africa	Cameroon, Central African Republic, Chad, Republic of the Congo, Democratic Republic of the Congo, Equatorial Guinea, Gabon, São Tomé and Príncipe
Northern Africa	Algeria, Egypt, Mauritania, Morocco, Tunisia
Southern Africa	Angola, Botswana, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Zambia, Zimbabwe

6.2 Appendix 2: Classification of landlocked and non-landlocked countries

Countries	Countries
Landlocked	Botswana, Burkina Faso, Burundi, Central African Republic, Chad, Eswatini, Ethiopia, Lesotho, Malawi, Mali, Niger, Rwanda, South Sudan, Uganda, Zambia, Zimbabwe
Non-landlocked	Algeria, Angola, Benin, Cabo Verde, Cameroon, Comoros, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Kenya, Liberia, Madagascar, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Republic of the Congo, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, São Tomé and Príncipe, Tanzania, Togo, Tunisia

6.3 Appendix 3: Income classification follows the World Bank (as of July 1, 2023), based on GNI per capita using the Atlas method

Countries	Countries
High income	Seychelles
Upper middle income	Algeria, Botswana, Equatorial Guinea, Gabon, Mauritius, Namibia, South Africa
Lower middle income	Angola, Benin, Cabo Verde, Cameroon, Comoros, Djibouti, Egypt, Eswatini, Ghana, Ivory Coast, Kenya, Lesotho, Mauritania, Morocco, Nigeria, Republic of the Congo, São Tomé and Príncipe, Senegal, Tanzania, Tunisia, Zambia, Zimbabwe
Low income	Burkina Faso, Burundi, Central African Republic, Chad, Democratic Republic of the Congo, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Sierra Leone, Somalia, South Sudan, Sudan, Togo, Uganda

6.4 Appendix 4: FCV Countries based on the World Bank FY25 List

Countries	Countries
FCV	Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Eritrea, Ethiopia, Guinea-Bissau, Mali, Mozambique, Niger, Nigeria, Republic of the Congo, São Tomé and Príncipe, Somalia, South Sudan, Sudan, Zimbabwe
Non-FCV	Algeria, Angola, Benin, Botswana, Cabo Verde, Egypt, Equatorial Guinea, Eswatini, Gabon, Gambia, Ghana, Guinea, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mauritania, Mauritius, Morocco, Namibia, Rwanda, Senegal, Seychelles, Sierra Leone, South Africa, Tanzania, Togo, Tunisia, Uganda, Zambia

6.5 Appendix 5: Development and Climate themes

Themes/Subjects	Themes
Development	SDGs, NDP/NDC, Poverty, Economy Size, Job Growth / Employment, Economic Growth, Transport, Spatial Planning, Health, Tourism, Private Sector, Governance and Institutions for Climate Change, Access to Finance, Culture, Sovereignty & Identity, Participation of Vulnerable Groups
Climate	Energy, Waste, Coastal Zone Management, Forestry, Agriculture and Food Security, Water, Climate Data Research and Awareness, Ecosystems & Biodiversity, Disaster Risk Reduction, Fisheries, Aquaculture & Blue Economy, Eco-Efficiency

6.6 Appendix 6: The script of the data coding in Python

https://colab.research.google.com/drive/1K2X01DBpt6C9jbjxzZBr9nUnz9dztIM4?usp=drive_link

6.7 Appendix 7: The Keywords dictionaries

https://colab.research.google.com/drive/1K2X01DBpt6C9jbjxzZBr9nUnz9dztIM4?usp=drive_link

6.8 Appendix 8: Plans and their respective document for each country

Country	NDP Document Name	Year of NDP elaboration	NDC Document Name	Year of submission to UNFCCC
Algeria	Establishment of Algeria's National Vision 2030	2013	Contribution Prévue Déterminée au niveau National CPDN – ALGERIE	2016
Angola	Long-Term Development Strategy for Angola 2025	2007	Nationally Determined Contribution of Angola	2021
Angola	National Development Plan 2018-2022	2018		
Benin	Benin 2000 Planification Externe Plan National	2000	Contribution Déterminée au Niveau National Actualisée du Bénin au Titre de L'Accord de Paris	2021
Benin	Plan National de Développement 2018-2025	2018		
Benin	Programme d'Actions du Gouvernement (PAG 2021 – 2026)	2021		
Botswana	National Development Plan	2017	Botswana Intended Nationally Determined Contribution	2016
Botswana	Vision 2036	2016		
Burkina Faso	Plan National de Développement Économique et Social (PNDES) 2016-2020	2016	Contribution Déterminée au Niveau National (CDN) du Burkina Faso 2021-2025	2021
Burkina Faso	Plan National de Développement Économique et Social 2021-2025 (PNDES-II)	2021		
Burundi	Vision Burundi 2025	2011	Contribution Déterminée au Niveau National 2020	2021
Burundi	Plan National de Development du Burundi PND Burundi 2018-2027	2018		
Cabo Verde	Voluntary National Review on the Implementation of the 2030 Agenda for Sustainable Development	2021	Cabo Verde 2020 Update to the First Nationally Determined Contribution (NDC)	2021
Cabo Verde	Plano Estratégico de Desenvolvimento Sustentável 2017/2021	2017		
Cameroon	Cameroon Vision 2035	2009	Contribution Déterminée Au Niveau National - Actualisée (CDN) Nationally Determined Contribution - Updated (NDC)	2021
Cameroon	SND 30 Stratégie Nationale de Développement 2020-2030	2020		

Central African Republic	Plan National de Relèvement et de Consolidation de la Paix (RCPCA)	2016	Contribution Déterminée Au Niveau Nationale (CDN) Version révisée	2022
Chad	Plan National de Developpement 2013-2015	2013	Contribution Déterminée Au Niveau Nationale	2021
Chad	PND 2017-2021	2017		
Comoros	Rapport National Volontaire de L'Union des Comores	2020	Contribution Déterminée au Niveau National (CDN actualisée) – Rapport de Synthèse	2021
Comoros	Plan Comores Emergeant 2030	2019		
DRC	Plan National Strategic de Development 2019-2023	2019	Contribution Déterminée à l'Échelle Nationale Révisée	2021
Djibouti	Plan National de développement 2020-2024	2020	Contribution Prévue Déterminée au Niveau National de la République de Djibouti	2016
Egypt	Vision 2030	2016	Egypt's First Updated Nationally Determined Contributions	2022
Equatorial Guinea	Agenda2035	2021	Contribuciones Determinadas a Nivel Nacional (CDN)	2022
Eswatini	Programme Of Action 2013-2018	2014	Kingdom of Eswatini Update of the Nationally Determined Contributions	2021
Eswatini	National Development Plan 2019/20 – 2021/22	2019		
Ethiopia	Growth and Transformation plan 2-Volume 1	2016	Updated Nationally Determined Contributions	2021
Ethiopia	Ten Years Development Plan: A Pathway to Prosperity	2021		
Gabon	Plan Stratégique Gabon Emergent Vision 2025 et Orientations Stratégiques 2011-2016	2012	Seconde Contribution Déterminée au Niveau National (2nde CDN)	2022
Gabon	Plan de Relance de l'Economie 2017 - 2019	2016		
Gambia	Recovery focused national development plan 2023-2027	2023	Second Nationally Determined Contribution of The Gambia	2021
Gambia	The Gambia National Development Plan 2018-2021	2017		
Ghana	National Medium-Term Development Policy Framework 2022-2025	2021	Updated Nationally Determined Contribution Under the Paris Agreement (2020-2030)	2021
Ghana	Long-term National Development Plan of Ghana (2018-2057)	2017		
Ghana	The Coordinated Programme of Economic and Social Development Policies (2017-2024)	2017		

Ghana	Ghana @ 100	2019		
Guinea	Plan National de Developpement Économique et Social 2016-2020	2017	Contribution Déterminée au Niveau National (CDN) de la République de Guinée 2021	2021
Guinea	Vision 2040 pour une Guinée émergente et prospère	2021		
Guinea-Bissau	National Development Plan 2020-2023	2020	Updated Nationally Determined Contribution in the Framework of the Paris Climate Agreement	2021
Guinea-Bissau	Guinea-Bissau 2015-2020	2017		
Ivory Coast	Plan National de Development PND 2016-2020	2015	Contributions Déterminées au Niveau National (CDN) – Côte d'Ivoire	2022
Ivory Coast	Plan National de Development PND 2021-2025 TOME 2	2022		
Kenya	Kenya Vision 2030 (Popular Version)	2007	Nationally Determined Contribution	2020
Kenya	Second Medium Term Plan, 2013-2017	2013		
Kenya	Third Medium Term Plan 2018–2022	2018		
Lesotho	National Strategic Development Plan 2012/13–2016/17 Growth and Development Strategic Framework	2012	Lesotho's Nationally Determined Contribution	2017
Lesotho	National Strategic Development Plan II Strategic Focus 2023/24–2027/28	2022		
Lesotho	National Vision 2020	2004		
Liberia	Agenda for Transformation Steps Toward Liberia RISING 2030	2010	Liberia's Revised Nationally Determined Contribution (NDC)	2021
Liberia	Pro Poor Agenda for Prosperity and Development (PAPD)	2018		
Madagascar	Plan National de Développement (PND) 2015-2019	2015	Contribution Prévue Déterminée au Niveau National (CPDN) de la République de Madagascar	2015
Malawi	Vision 2063	2020	Updated Nationally Determined Contribution	2021
Malawi	Malawi Growth and Development Strategy (MGDS) III	2017		

Mali	Stratégie Nationale d'Orientation du Développement Economique Régional au Mali	2016	Contributions Déterminées au Niveau National Révisée	2021
Mauritania	Stratégie Nationale de Croissance Accélérée et de Prospérité Partagée SCAPP 2016-2030	2017	Contribution Déterminée au Niveau National	2021
Mauritius	Three Year Strategic Plan	2018	Update of the Nationally Determined Contribution of the Republic of Mauritius	2021
Mauritius	Vision 2030	2017		
Morocco	Le Nouveau Modèle de Développement	2021	Contribution Déterminée au Niveau National - Actualisée	2021
Mozambique	Estrategia 2015-2035	2014	Update of the First Nationally Determined Contribution to the United Nations Framework Convention on Climate Change	2021
Mozambique	Programa 2020-2024	2020		
Namibia	Namibia's 5th National Development Plan (NDP 5)	2017	Updated Nationally Determined Contribution	2021
Namibia	Vision 2030	2004		
Niger	Plan de Développement Economique et Social 2017-2021	2017	Contribution Déterminée au Niveau National	2021
Niger	Plan de Development Economic et Social (PDES) 2022-2026, volume 2	2022		
Nigeria	Agenda 2050	2023	Nigeria's Nationally Determined Contribution	2021
Nigeria	National Development Plan (NDP) 2021-2025 Vol 1	2021		
Republic of the Congo	Plan National de Développement PND 2018-2022	2018	Contribution Déterminée au Niveau National (CDN) de la République du Congo	2021
Republic of the Congo	Plan National de Développement 2022-2026	2022		
Rwanda	7 Years National Strategy for Transformation (NST1)	2017	Updated Nationally Determined Contribution	2020
Rwanda	Vision 2050	2020		
Senegal	Plan Senegal Emergent 2014	2014	Contribution Déterminée au Niveau National du Sénégal	2020
Senegal	Plan d'Actions Prioritaires 2 Ajuste et Accelere (PAP 2) Pour La Relance De L'Economie	2020		

Seychelles	Seychelles Blue Economy: Strategic Policy Framework and Roadmap Charting the Future (2018-2030)	2018	Seychelles' Updated Nationally Determined Contribution	2021
Seychelles	Seychelles National Development Strategy 2019-2023	2019		
Sierra Leone	Mid National Development Plan 2019-2023	2019	Updated Nationally Determined Contribution	2021
Somalia	National Development Plan 2020-2024	2019	Updated Nationally Determined Contribution	2021
South Africa	National Development Plan 2030	2011	South Africa – First Nationally Determined Contribution Under the Paris Agreement	2021
South Africa	National Framework for Sustainable Development	2008		
South Sudan	Vision 2040	2011	South Sudan's Second Nationally Determined Contribution	2021
South Sudan	National Development Strategy 2018	2018		
Sudan	Five Year Programme 2015-2019	2015	Republic of the Sudan – First Nationally Determined Contribution Under the Paris Agreement	2022
São Tomé and Príncipe	Estratégia Nacional de Redução da Pobreza II 2012-2016	2012	Updated Nationally Determined Contribution	2021
São Tomé and Príncipe	Plano Nacional de Desenvolvimento Sustentável de São Tomé e Príncipe 2020-2024	2019		
Tanzania	Tanzania Development Vision 2025	2000	Nationally Determined Contribution	2021
Tanzania	National Five-Year Development 2021-2026	2021		
Tanzania	Zanzibar Development Vision 2050	2020		
Togo	Plan National de Development (PND) 2018-2022	2018	Contributions Déterminées au Niveau National (CDN) Révisées	2021
Togo	Feuille de Route Gouvernement a le Togo 2025	2020		
Tunisia	Tunisia's Vision 2035	2022	Contributions Déterminée au Niveau National (CDN) Actualisée	2021
Uganda	Uganda Green Growth Development Strategy	2017	Updated Nationally Determined Contribution	2022
Uganda	Third National Development Plan (NDPIII) 2020/21–2024/25	2020		
Uganda	Second National Development Plan (NDPII) 2015/16–2019/20	2015		

Uganda	Vision 2040	2013		
Zambia	Vision 2030	2006	Nationally Determined Contribution (NDC) of Zambia for the Timeframe 2015-2030	2021
Zambia	7th National Development Plan	2017		
Zimbabwe	Vision 2030	2018	Zimbabwe Revised Nationally Determined Contribution	2021
Zimbabwe	National Development Strategy	2020		

6.9 Literature: Review Appendix 9

Climate change mitigation pledges under the Paris Agreement have been widely analyzed for their ambition and scope. A consistent finding is that current NDC targets are collectively insufficient to keep global temperature rise to 1.5 °C. For example, an analysis of updated NDCs concluded that their projected emissions reductions by 2030 would need to be about seven times greater to align with a 1.5 °C pathway (Den Elzen et al., 2022). Recent evaluations of progress under the Paris agreement confirm that the narrow window to keep warming to 1.5 °C is closing rapidly, emphasizing that only immediate, large-scale action will preserve that target (United Nations Environment Programme, 2024; UNFCCC, 2025). These assessments highlight the need for deeper, more integrated climate commitments that go beyond incremental mitigation, linking emissions reduction to national development trajectories.

For African nations, this challenge is particularly acute. The continent faces the dual imperative of achieving socioeconomic transformation while contributing to global climate goals (Blimpo et al., 2024; Dioha et al., 2025; Mulugetta et al., 2022). Hence, the critical question is not only how much Africa pledges to reduce emissions, but also how effectively these climate commitments align with its development priorities. In this section, we provide a brief review of existing studies that examine this alignment between NDCs and NDPs, focusing on their sectoral scope and coherence. Understanding how these agendas intersect is essential, as misalignment across policy domains can undermine both climate ambition and development effectiveness.

6.9.1 Sectoral coverage of NDCs and their link with Sustainable Development Goals

Early analyses of NDCs focused primarily on their sectoral components and quantitative elements. Researchers parsed how NDCs addressed specific sectors or issues, usually at a global scale. For example, forestry, water, and agriculture were the subject of dedicated studies of the initial Intended Nationally Determined Contributions (INDCs) (Cran and Durand, 2015b; Pauw et al., 2018; Petersen and Varela, 2015; Strohmaier et al., 2016). These sector-specific assessments revealed that many NDCs include measures in traditional climate-related sectors (energy, land-use, etc.), but they often omit or under-emphasize sectors central to development such as education, health, or economic diversification and transformation, especially in Africa and other developing countries.

There has been growing attention to social and cross-cutting sectors in successive NDC rounds, particularly in areas such as health, technology, and finance. For instance, the World Health Organization (WHO, 2023) reported that health was referenced in about 70% of first-round NDCs and in over 90% of updated submissions by 2022, indicating increased recognition of climate, health linkages. However, while references to health have become more common, they often remain superficial, lacking measurable targets or sector-specific strategies. A UNDP (2024a) assessment found that only 32% of NDCs include explicit, actionable measures for the health sector, suggesting that integration remains limited in practice. Similarly, a cross-country analysis by Dasandi et al. (2021b) shows that although poorer, climate-vulnerable countries tend to mention health more frequently than wealthier ones, human development sectors, such as education, social welfare, and governance—still receive comparatively little attention, underscoring persistent asymmetry in how development priorities are embedded in climate planning.

Recognizing that climate action does not happen in a vacuum, some studies have attempted to connect NDCs with the Sustainable Development Goals (SDGs) and broader development outcomes. Northrop et al. (2016) conducted a comprehensive mapping of (I)NDC⁵ actions against the SDG targets. Their key finding was that the climate measures outlined in countries' INDCs collectively touched on an overwhelming majority of the SDG targets. Specifically, climate actions in the INDCs were aligned with 154 of the 169 SDG targets. In other words, on paper there is significant potential synergy between countries' climate pledges and the global sustainable development agenda. This convergence is not

⁵ The term (I)NDC refer to *Intended Nationally Determined Contribution* (INDC) that countries initially submitted under the UNFCCC ahead of the Paris Agreement (2015), and their subsequent updates as *Nationally Determined Contribution* (NDC) once the Agreement entered into force.

entirely surprising: many mitigation or adaptation measures (e.g. renewable energy, sustainable agriculture, water conservation) inherently support SDGs like food security and sustainable communities. Indeed, as of early 2018, only a subset of NDCs formally mentioned the SDGs or attempted to align with them: one analysis found 103 NDCs connected to the general theme of sustainable development, with 39 NDCs explicitly citing benefits for specific SDGs, and just 11 NDCs discussing concrete efforts to align climate actions with the SDGs (Bouyé and Harmeling, 2018). This suggests that while climate and sustainable development agendas overlap in content, they have frequently been pursued on separate policy tracks. In many countries, the processes for NDC development and for SDG implementation were siloed, often led by different ministries with limited coordination. The lack of cross-reference between the two agendas was a common reality in the first generation of NDCs.

6.9.2 Alignment of African NDCs with National Development Plans

Despite the clear conceptual links between climate action and development, relatively few studies have empirically analyzed how NDCs align with countries' own NDPs. Two notable exceptions come from developing country contexts outside Africa. First, Atteridge et al. (2021), analyzing seven Small Island Developing States (SIDS), found that while NDCs broadly corresponded with national development themes, their sectoral scope was far narrower. Key priorities, such as governance, education, health, and economic management, were largely absent from NDCs, as climate pledges concentrated mainly on traditional sectors like energy, agriculture, and disaster management. The study described this as a missed opportunity, since omitting other critical development sectors limited the ability of NDCs to reinforce national development agendas. Although focused on SIDS, this analysis offers one of the closest analogues to African contexts, where similar alignment gaps are likely.

Secondly, Hasan et al. (2020) used Bangladesh as a case study to show the difficulties of aligning climate pledges with national development priorities. They find that some NDC measures, such as renewable energy, energy efficiency, agricultural extension, and afforestation contribute modestly to development goals. Other measures, including fuel switching, increased biomass use, and carbon-neutral coal plants, undermine environmental sustainability and conflict with core development objectives. Bangladesh's first NDC reflected only partial alignment with the country's development priorities, showcasing policies that both complemented and contradicted national priorities; this points to a fragmented rather than integrated climate–development strategy. Taken together with evidence from SIDS, this illustrates a broader pattern in which

NDCs are not consistently integrated into development planning, despite the Paris Agreement framework explicitly recognizing the reality that countries will pursue climate action “in the context of sustainable development and efforts to eradicate poverty” (UN, 2015).

African countries arguably have significant stakes in attempting to pursue both climate and development objectives such as energy access, food security, poverty reduction, and job creation (Dioha et al., 2025; Fonjong et al., 2024; IEA, 2023a; Mulugetta et al., 2022; Odarno, 2023). One might therefore expect African NDCs to be well coordinated with national development agendas, yet evidence shows persistent misalignment. Recent continental assessments suggest the misalignment is systemic, not anecdotal. Nowak et al. (2024) show that only about 8% of African NDCs include all the elements needed for robust adaptation tracking such as baselines, indicators, and clear links from risk assessment to planning, implementation, and monitoring; signaling that most NDCs are not yet designed to plug into national planning and evaluation systems. Similarly, an analysis by the African Development Bank noted that most African NDCs lack clearly quantified targets or detailed investment plans, especially on the adaptation components (AfDB, 2021). Out of 54 African countries, only about 31 NDCs contained any quantitative data on mitigation goals and just 27 provided quantitative information on adaptation goals (AfDB, 2021). In many cases, the NDCs were high-level wish-lists of climate measures with few concrete benchmarks.

Three drivers potentially explain this gap. First, structural trade-offs mean that near-term economic growth often relies on resource extraction or agricultural expansion, which can raise emissions and complicate alignment (Sanou et al., 2020). The second driver is institutional fragmentation. NDCs were typically drafted by environment ministries under time pressure and with external consultants, while development plans were shaped over longer horizons by planning or finance ministries, leading to parallel processes with little coordination (Okereke, 2021). While this institutional divide is not unique to Africa, the degree of donor involvement in shaping both climate and development strategies is particularly pronounced on the continent.

Third, financing gaps reinforce the disconnect. Implementing African NDCs is estimated to cost \$2.7 trillion between 2020 and 2030 (AfDB, 2023), with domestic financing commitments covering only about 10% (Climate Policy Initiative, 2022; Kone, 2023). This leaves many countries framing NDCs as donor-funded project lists rather than projects to be supported

by domestic budgets. However, this narrative is gradually shifting with the growing emphasis on producing “investment-ready” NDCs; an approach promoted under initiatives such as the UNDP Climate Promise 2025 (UNDP, 2025b).

At the same time, recent policy studies highlight some practical mechanisms to bridge climate and development. The Organization for Economic Co-operation and Development (OECD) spotlights Integrated National Financing Frameworks (INFFs) as tools to embed NDC priorities in development strategies, public investment plans, and annual budgets. The Gambia’s INFF is cited as explicitly supporting both its Recovery-Focused NDP (2023–2027) and its 2021 NDC (OECD/UNDP, 2025). The NDC 3.0 Regional Forum for Africa likewise stresses synchronizing NDC with development imperatives and NDC cycles with national financial frameworks to move from pledges to investable, budget-anchored programs (Climate and Clean Air Coalition, 2024). Complementing these finance-governance fixes, there are few African countries (i.e. 10) such as Togo and Zimbabwe; where LT-LEDS are being used to tie climate ambition to industrial policy, energy access, and jobs, reframing climate planning as a development strategy rather than a parallel exercise⁶. Meanwhile, content-focused analyses suggest that many low-income African countries already emphasize basic-needs sectors like the water–energy–food–land nexus in their NDCs (Larosa et al., 2025), implying implicit development orientation. Yet without clear alignment to NDPs and integration into institutional and budgetary systems, this overlap with basic-needs sectors does not translate into implementation coherence.

The literature review highlights some key insights: most NDCs lack procedural, framing, and technical adequacies to connect climate strategies with local development planning; alignment is largely a governance and financing challenge requiring more appropriate tools; and sectoral emphasis alone is insufficient without institutional and budgetary integration. Despite growing policy interest, systematic Africa-wide studies comparing NDCs and NDPs remain scarce, leaving critical gaps on sectoral mapping, institutional processes, financing alignment, and disparities across subregions. Addressing these gaps is essential to design next-generation NDCs as genuine development-anchored strategies that advance Africa’s growth and resilience.

⁶ <https://unfccc.int/process/the-paris-agreement/long-term-strategies>