



ARE THE NATIONALLY DETERMINED CONTRIBUTIONS OF AFRICAN COUNTRIES JUST NEGOTIATION DOCUMENTS?

Acknowledgements

Working Papers make DIIS researchers' and partners' work in progress available to readers prior to formal publication. They may include documentation which is not necessarily published elsewhere. DIIS Working Papers are published under the responsibility of the author alone.

The study has received financial support from the Danish Ministry of Foreign Affairs (MFA). The research results are independent, and the views and opinions expressed do not necessarily reflect those of the MFA. Rasmus Hundsbaek Pedersen is part of a research project, Energy struggles – renewable energy in Africa, which is funded by a grant from the MFA and administered by the Danida Fellowship Centre (DFC).

The authors would like to thank Lars Engberg-Pedersen, DIIS, Mikkel Funder, DIIS, and Henning Nøhr, MFA, who commented on a draft version of the paper, as well as David Lyndorff Paris and Emilie Marie Falk Due for providing research assistance to the paper.

Ole Winckler Andersen

Senior Analyst

olew@diis.dk

Rasmus Hundsbaek Pedersen

Senior Researcher

rhp@diis.dk

DIIS WORKING PAPER 2024: 05

DIIS · Danish Institute for International Studies

Gl. Kalkbrænderi Vej 51A, DK-2100 Copenhagen, Denmark

Tel: +45 32 69 87 87

E-mail: diis@diis.dk

www.diis.dk

ISBN 978-87-7236-172-7 (pdf)

DIIS publications can be downloaded free of charge from www.diis.dk

© Copenhagen 2024, the authors and DIIS

ARE THE NATIONALLY DETERMINED CONTRIBUTIONS OF AFRICAN COUNTRIES JUST NEGOTIATION DOCUMENTS?

Ole Winckler Andersen and Rasmus Hundsbaek Pedersen

TABLE OF CONTENTS

Abstract	2
Introduction	2
Literature and document review	4
Approach and data	6
Brief comparison of updated Sub-Saharan African NDCs with first NDCs	7
Analysing the differences of the NDCs	8
Overall level of ambition in emission reduction	9
Unconditional and conditional contributions to levels of ambition in emissions reductions	12
Adaptation shares of NDC budgets	14
Conclusions	16
References	19

ABSTRACT

All countries in Sub-Saharan Africa have submitted Nationally Determined Contributions (NDCs) as part of their respective commitments to climate action, and they will start to share updated versions of their NDCs in 2025. While various analyses have documented and analysed the significant differences in countries' NDCs, there has only been a limited focus on this aspect of African countries' NDCs or on the role NDCs play in these countries. This paper addresses this issue by exploring common trends and differences in the NDCs of countries in Sub-Saharan Africa and discusses some potential explanations. The paper argues that the contents of these NDCs are not only influenced by climate-change considerations but also by a complex set of national and international factors. A better understanding of the differences between them in Sub-Saharan Africa is needed, including the extent to which the NDCs constitute commitment or negotiation positions of the countries.

INTRODUCTION

The Paris Agreement's introduction of Nationally Determined Contributions (NDCs), which made them key documents in future climate negotiations,¹ reflected a significant shift away from previous climate agreements. First, all countries should develop and submit NDCs and update them every five years. This implies that NDCs are to be submitted by both developed and developing countries. Second, the NDC commitments are determined nationally based on the individual country context and capacity, which constitutes not only a shift to a bottom-up approach but – also, due to the international character of the agreement, to a “two-level game”, where one level is that of international negotiations and the other level the coalition-building in domestic politics (Keohane and Oppenheimer, 2016, 148). Thus, “Paris turns what would otherwise be a decentralized, bottom-up policy-making approach into a hybrid system that combines bottom-up with top-down elements” (Falkner, 2016, 1120).

The Paris Agreement provides some guidance on NDCs while at the same time emphasizing the importance of flexibility, it is mostly left to individual countries how they will present their commitments to climate action. This applies equally to the NDCs' adaptation components, which are voluntary and lack an explicit agreement on how countries' adaptation ambitions are to be measured (Dixit et al., 2022).

¹ Article 4 of the Paris Agreement (UNFCCC, 2015).

Due to the central role of the NDCs in countries' plans for climate action, an assessment of their content and differences can provide a better understanding of the various strategies involved in international climate negotiations. Such an understanding could also encompass the specific positions of different groups of countries, including developing countries or groups of developing countries. This is related to discussions on whether the NDCs constitute a commitment versus a negotiation position (Leinaweaver and Thomson, 2021) and to what extent developing countries use the NDC instrument merely to attract international finance.²

Several papers have compared and tried to understand the differences between national NDCs, and some have also compared the updated NDCs, which were submitted from 2020 onwards, with the first round of NDCs from 2015. A brief literature and document review (see next section) shows that the potential influences of a range of factors on the content of the NDCs have been assessed, but the review also shows that very few analyses focus specifically on the NDCs of countries in Sub-Saharan Africa and the differences between them.

The following will explore to what extent common trends and differences can be found in the NDCs of countries in Sub-Saharan Africa. A better understanding of such common trends and differences has potential implications not only for the countries themselves, but also for international negotiations. The analysis will comprise a comparison of the most recent NDCs of Sub-Saharan African countries with the first round of submissions to identify what changes have taken place, as well as analyse several potential factors that may influence their content. In most cases, the NDCs of countries in Sub-Saharan Africa contain an overall emissions reductions target, which again in the majority of countries is divided between an unconditional contribution, which is the countries' own ambition, irrespective of donor funding, and a conditional contribution, which is dependent on donor funding. In addition, an increasing number of NDCs include adaptation components. The second part of the analysis will therefore focus on the extent to which various factors, including countries' own resource endowments, vulnerabilities and emissions, are related to both the overall level of reduction ambitions in the NDCs and key components, including unconditional, conditional and adaptation components.

Following this introduction, the remainder of this paper consists of four sections. In section 2 the applied approach and methodology, including use of data sources, are outlined in more detail. Section 3 contains a brief comparison of the updated NDCs with the first round of submissions by countries in Sub-Saharan Africa, while section 4 assesses the extent to which various factors are related to the content of the NDCs and their key components. Section 5 provides some policy

² This distinction between the NDCs' role as negotiation and commitment documents is further discussed in Jernnäs (2023) and Leiter (2024), where various potential NDC functions are highlighted, as well as the importance of seeing the NDCs in the context of other mechanisms. On the credibility of the pledges made at Paris, see also Nowak et al. (2024).

perspectives on the role of the NDCs and their implications for developing countries as well as donors, and also offers some suggestions for further research.

LITERATURE AND DOCUMENT REVIEW

As mentioned above, several papers have compared the most recent NDCs with the first round of submissions. Fransen et al. (2023) concludes that NDCs have made significant progress on at least three fronts since the first round: (i) deeper emissions reductions; (ii) closer relations to planning and implementation processes; and (iii) better documentation of financial needs. Peterson et al. (2023) analyse the degree of enhancement in 111 updated NDCs (with case studies of Brazil and South Africa) and finds that countries with more democratic institutions, where civil-society organizations are more likely to have been consulted, are more likely to enhance their NDCs. On the other hand, the analysis did not find any statistically significant relationships between the enhancement of NDCs and various other factors, including GDP per capita, resource endowments and vulnerability.

Other papers have compared the differences between national NDCs. Cunliffe et al. (2019) compare the NDCs of Canada, the European Union, Kenya and South Africa from an equity perspective. Their study suggests that there are significant differences between the NDCs of developed and developing countries, and that the perspectives of a variety of domestic actors influence their development. It also concludes that balancing NDC ambitions with other priorities and needs in the countries is a challenge.

Stephenson et al. (2019) cover 165 NDCs and suggests that there are significant differences in how the costs of climate change are allocated between countries, which has direct implications for the content of the NDCs and for negotiating positions. It is also argued that significant differences exist between developing countries, which have led to fragmentation between these countries in climate negotiations.

Tørstad et al. (2020) analyse NDCs from 170 countries and find positive associations between reduction ambitions and levels of democracy and vulnerability, while coal rent³ and GDP per capita showed negative effects. The study also found that these factors are more important than subjective factors, such as public support for an ambitious climate policy in specific countries. Stepanov et al. (2021) conclude, based on a sample of 55 primarily developed countries, that vulnerability is not a determining factor for climate policies and reduction ambitions, but that energy dependence and dependence on fossil-fuel exports are.

³ For references to the World Bank's definition and data on coal rent as a percentage of GDP, see Tørstad et al. (2020).

Although these analyses include a number of countries to varying degrees, they only assess the differences between developed and developing countries, and between the NDCs of developing countries, to a limited extent. There are, however, some exceptions. In addition to several non-African countries, Dash and Gim (2019) cover the following African countries: Gambia, Malawi, Mali and Senegal, but they do not make explicit comparisons between African countries or try to identify specific characteristics in African NDCs. Dash and Gim (2019) conclude that NDCs are influenced by a mixture of international and domestic factors. The domestic factors include the economy, the energy mix and various political perspectives, including on ethics and vulnerability, while the role of international negotiations and image-management are mentioned as important international factors.

Some papers focus on the individual components of NDCs. This applies, for example, to Pauw et al. (2020), who focus on the conditional parts of NDCs and find that the implementation of a large number of them is made conditional on international financial support. The study concludes, not surprisingly, that it is in particular developing countries that request international support the implementation of the NDCs, and therefore consider the NDCs as an instrument to attract funding. Another conclusion in the paper is that mitigation finance is more requested than adaptation finance. Pardoe et al. (2020) analyse and compare climate policies in Malawi, Tanzania and Zambia and find that, in spite of similarities between the three countries and their contexts, there are also significant differences. The paper assesses which factors influence these countries' climate policies, placing a particular focus on adaptation. Based on a survey and a number of interviews, the paper concludes that access to donor funding is an important factor shaping national climate policies, in particular related to adaptation; but also that these countries' political economies are critical for understanding climate policies. These two factors are obviously related.

Fransen et al. (2023, 40) found that there was a marginal move away from conditional NDCs. This trend is not disaggregated into groups of countries, so whether it also applies to developing countries is not analysed. Dixit et al. (2022) focus on the NDC's adaptation components of 86 countries. They conclude that, although the adaptation components have been clearly strengthened, more guidance is needed and more detailed investment and implementation plans must be developed.

The overall picture from this literature and document review is that, although a number of analyses have been conducted, they cover different groups of countries and use different indicators, which may contribute to the rather ambiguous results.

APPROACH AND DATA

Our comparison of the updated NDCs with the first NDCs of the Sub-Saharan African countries dealt with in section 4 explores the ambition in the Paris Agreement (UNFCCC, 2015, Article 4) that successive NDCs would be increasingly ambitious. In addition, the brief comparison comprises other dimensions of the NDCs, including the degree to which adaptation, sector targets and policies have been strengthened in the updated versions. The criteria and data used in the comparison come from Climate Watch Data.⁴ Table 1 in section 3 comprises 45 of the 49 countries in Sub-Saharan Africa for which a comparison was possible.

Our assessment of the relationship between various factors and the content of the NDCs and their components will be addressed in section 4 by a combination of simple quantitative comparisons and qualitative assessments based on the literature and document review summarized in section 2. The quantitative comparisons are conducted using simple, multiple and regression analyses.

First, the relationship between the overall level of ambition in the NDCs and four potential explanatory factors is assessed. The assessment explores whether levels of ambition are associated with renewable shares of electricity generation with and without hydro, vulnerability and emissions levels.⁵ These are all factors which have been addressed from various perspectives in the literature and document review of the NDCs in section 2. As an indicator for the level of ambition, we use the reduction of emissions as a percentage of the total of conditional and unconditional contributions of the NDCs by 2030, compared to the business-as-usual -scenarios (BAU) in the most recent NDCs.⁶ The share of electricity generation from renewables with and without hydro is given as a percentage for 2021.⁷ As an indicator of vulnerability, the vulnerability score in Climate Watch Data has been chosen,⁸ and the indicator for emission levels is emissions per capita.⁹ In five countries in Sub-Saharan Africa data were only provided at the sector level and not at the national level or were not compared to a BAU scenario. Figures 1-3 below are therefore based on 44 Sub-Saharan countries. Figure 4

⁴ See <https://www.climatewatchdata.org>, which provide an overview as well as more information on the NDCs from individual countries. Accessed September 2024.

⁵ In order to capture the role of international factors (see Dash and Gim, 2019; Pauw et al., 2020; Pardoe et al., 2020), it was also considered to assess the role of aid dependence (net ODA in percent of GNI), which was found (not surprisingly) to be strongly correlated with vulnerability and was therefore excluded from the analysis.

⁶ The used source is the UNFCCC NDC registry (UNFCCC, 2021), where all NDCs can be accessed. Accessed September 2024.

⁷ The used source is Irena's country statistical profiles (<https://www.irena.org/Data/Energy-Profiles>). Accessed September 2024.

⁸ Accessed September 2024. The vulnerability scores come from Notre Dame Global Adaptation Initiative (ND-GAIN) Country Index, Vulnerability. The methodology behind the vulnerability scores is explained at <https://gain.nd.edu/our-work/country-index/>. Other vulnerability datasets are available from the German Watch Global Climate Risk Index (<https://germanwatch.org/en/12978>) and the Index for Risk Management (<http://inform-index.org>).

⁹ The source is again Climate Watch Data. Accessed September 2024.

covers only 43 countries because data on emissions per capita was not available for one country.

Second, an assessment is made of the relationship between how unconditional (and as a consequence conditional) the NDCs are and the four potential explanatory factors mentioned above. Data on how unconditional the NDCs are has been found in the most recent NDCs. Only 36 NDCs make a distinction between the unconditional and conditional shares of the level of ambition in emissions reductions. Unconditional and conditional contributions are in most cases calculated as contributions to emissions reductions, but in a few cases they are based on financial need of the unconditional and conditional share of the NDC budget.

Third, an assessment is made of the relationship between the adaptation share of the NDC budgets and the four factors. The adaptation share of each NDC's budget has been found or calculated on the basis of budget data provided in the NDC. The adaptation components are only budgeted for in 29 NDCs.

BRIEF COMPARISON OF UPDATED SUB-SAHARAN AFRICAN NDCS WITH FIRST NDCS

The number of countries in Sub-Saharan Africa is 49. They have all submitted NDCs, but as mentioned above, their submissions vary a lot in approach, coverage, structure and detail. As also mentioned above, information which could be used in comparing NDCs was only available for 45 of the 49 countries.

A comparison of the first NDCs and the updated NDCs (see Table 1) shows that, out of the 45 NDCs, 20 countries have enhanced their NDCs, understood as setting more ambitious emissions reduction targets; 8 have retained the same targets as in the first NDCs; while it was unclear in 17 NDCs whether they had adopted more ambitious reduction targets. In most cases the updated NDCs were not comparable to the first NDCs, and it is therefore unclear whether the updated NDCs contain more ambitious emissions reductions.

The number of NDCs which contain both mitigation and adaptation components increased, and 38 countries had strengthened their adaptation components. Several of the adaptation components are described in very general terms without much detail, but improvements have clearly been made in a number of countries, as documented by Dixit et al. (2022), Dixit and O'Connor (2022) and Fransen et al. (2023).¹⁰ National Adaptation Plans (NAPs) provide more detail in some cases (Nowak et al., 2024),¹¹ but a better understanding of the relations between the NDCs and NAPs is needed.

¹⁰ See in particular Dixit et al. (2022) for a detailed assessment of adaptation components in the NDCs.

¹¹ At the end of September 2022, 15 countries in Africa had elaborated NAPs (Nowak et al., 2024).

Table 1. Comparison of Updated versions of NDCs with previous versions (45 countries). Number of NDCs

	Yes	No	Unclear
Mitigation: reduced total GHG emissions in 2030	20	8	17
Adaptation: strengthened adaptation	38	7	0
Sectoral: strengthened or added sectoral target	36	8	1
Policies: strengthened or added policies and actions	43	2	0

Source: Number of countries calculated based on information from Climate Watch Data (<https://www.climatewatchdata.org/>).

The comparison in Table 1 also shows that the updated NDCs are coordinated with national policies to a greater extent, including at sectoral level. Thus, a large majority of countries have strengthened these elements in their NDCs.

The simple comparison above does not cover the quality of the NDCs, including their degree of enhancement, nor their feasibility in terms of the availability of finance and implementation. Nonetheless some clear overall trends in the NDCs in Sub-Saharan Africa are notable, including a significantly increased focus on adaptation and closer integration with national policies as well as at the sectoral level, while the picture regarding mitigation is less clear. Further analyses are needed in order to assess to what extent other factors, including some of those referred to by Peterson et al. (2023), namely democratic institutions and consultations with civil-society organizations, GDP per capita, resource endowments and vulnerability – have influenced NDC enhancement in Sub-Saharan African countries.

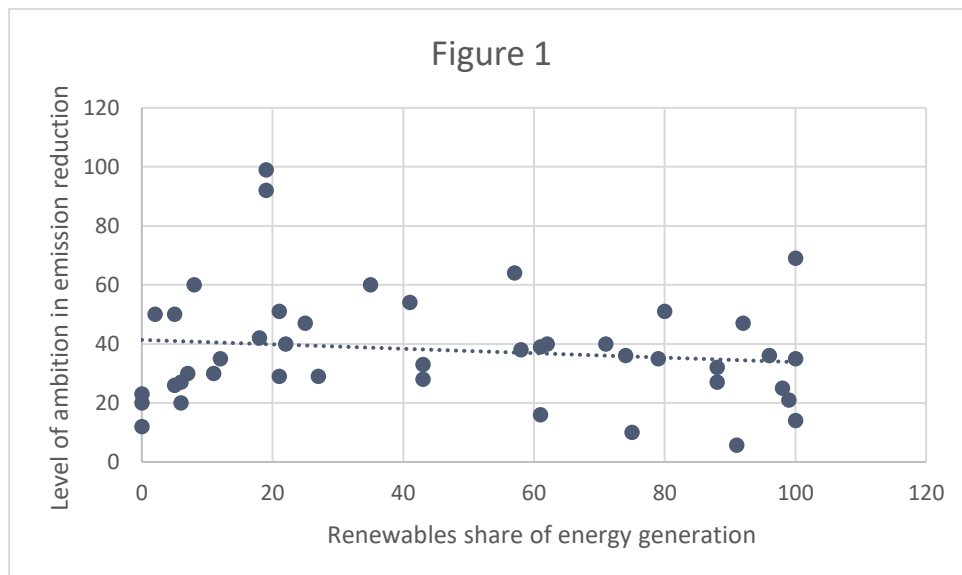
ANALYSING THE DIFFERENCES OF THE NDCS

The following analyses assess factors which may have contributed to (or can be used to explain) the overall levels of ambition in emissions reductions, as well as different dimensions of levels of ambition in the NDCs of countries in Sub-Saharan Africa.

Overall level of ambition in emission reduction

The overall level of ambition in emissions reductions is compared with the share of electricity generation from renewables, with and without hydro, as well as vulnerability and emissions per capita. The following figures show the relationships between these various factors. In Figure 1, the renewable share of energy generation is compared with the overall level of ambition, while Figure 2 compares the renewable share of energy generation, though without hydro, with the level of ambition. As already mentioned, several analyses (see Dash and Gim (2019); Tørsted et al., (2020); Stepanov et al. (2021)) have found a relationship between energy use or energy resources and the level of ambition.

Figure 1. Renewables share of energy generation and level of ambition in emissions reductions (44 countries)

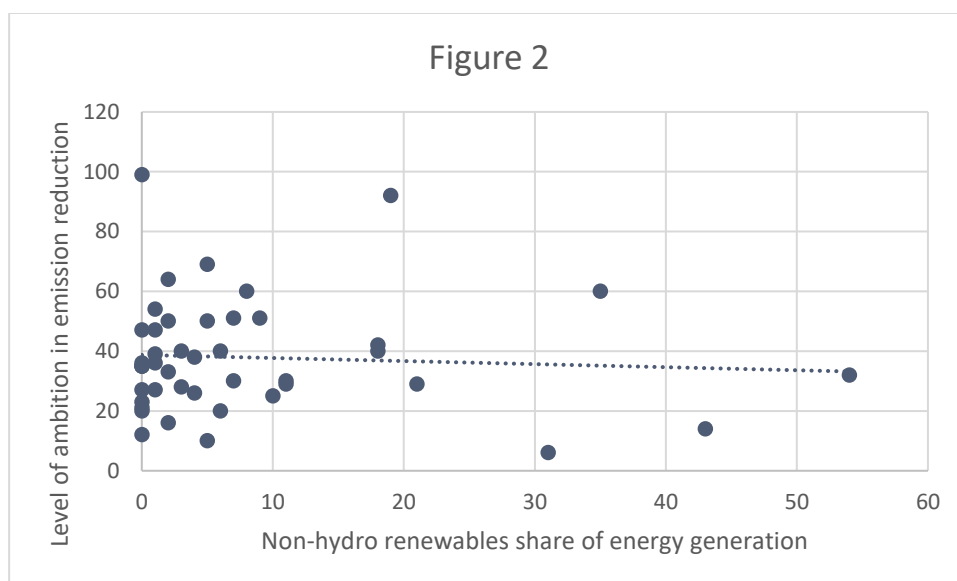


Source: UNFCCC (2021) and <https://www.irena.org/Data/Energy-Profiles>.

Figure 1. does not show any correlation between renewables' share of energy generation and level of ambition, but both the share of renewables in energy generation and the level of ambition varies a lot.¹² In Figure 2, this relationship is also assessed, but for renewables without hydro energy generation.

¹² Statistical analyses have been made of all the following assessed relationships, but p-values are only shown in cases where relationships are statistically significant (or close to being statistically significant).

Figure 2. Non-hydro renewables share of energy generation and level of ambition (44 countries)

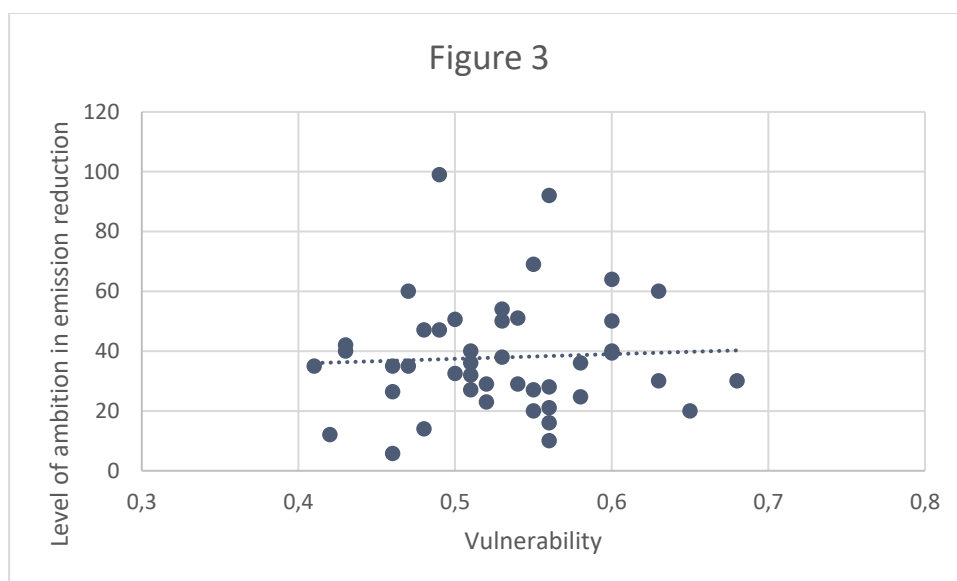


Source: UNFCC (2021) and <https://www.irena.org/Data/Energy-Profiles>.

The relationship between non-hydro renewables' share of energy generation and levels of ambition is again not statistically significant. It should be noted that the non-hydro renewables' share of energy generation is low in most Sub-Saharan African countries. Thus, Figures 1 and 2 do not indicate a correlation between renewable energy generation and level of ambition in the NDCs of Sub-Saharan African countries, as expected in the literature and document review. It could be assumed that countries which have embarked on a green transition would wish to continue this process, but also that countries which have already invested in renewable energy will have limited opportunities for being equally ambitious in the future.

Figure 3 shows the relationship between vulnerability and level of ambition. Several analyses in the literature and document review in section 2 addressed vulnerability. It would be expected that more vulnerable countries would be more ambitious, but the review found different results. Dash and Gim (2019) and Tørsted et al. (2020) found that the degree of vulnerability influenced the NDCs, while Stepanov et al. (2021) did not find such an effect. This is also the case for the group of Sub-Saharan African NDCs: no such effect was found, and the overall level of ambition in emissions reductions in the NDCs for this group of countries seems not to have been influenced by vulnerability.

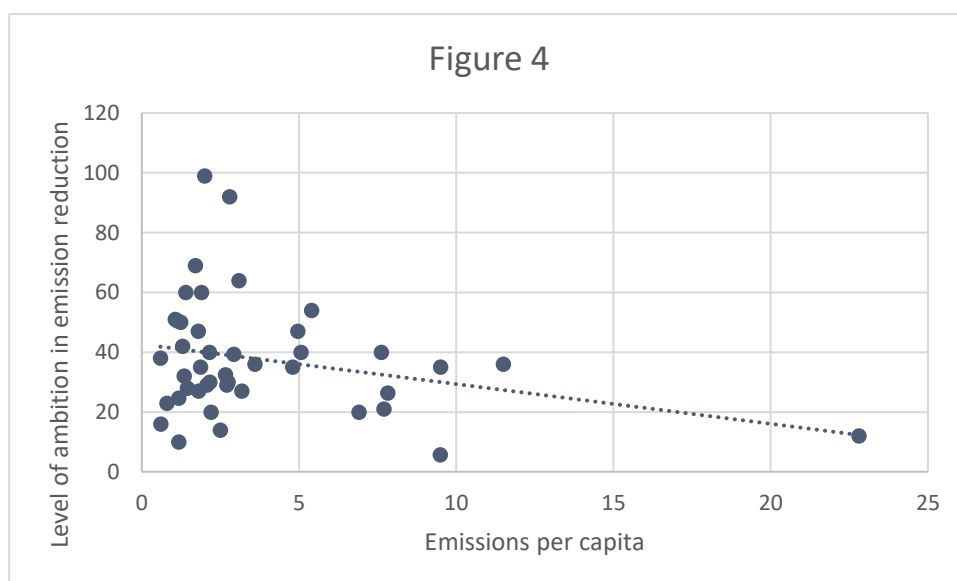
Figure 3. Vulnerability and level of ambition in emissions reductions (44 countries)



Source: UNFCC (2021).

Several analyses in the literature and document review found an effect from economic factors (Dash and Gim, 2019; Tørstad et al. 2020). Below, emissions per capita are used as a proxy for economic development and are compared with levels of ambition in the NDCs of countries in Sub-Saharan Africa.

Figure 4. Emissions per capita and level of ambition in emissions reductions (43 countries)



Source: UNFCC (2021).

The reverse relationship was found in Figure 4. The relationship is statistically significant at the 10% level, but not at the 5% level,¹³ which implies that the level of ambition in emissions reductions tend to be less in countries with higher emissions. One explanation could be that countries with higher emissions will use more fossil fuels, and that in these countries there will be opposition to ambitious reduction targets.

The conclusion based on these first analyses is that the overall levels of ambition in emissions reductions in the NDCs of Sub-Saharan African countries do not show clear patterns. Although the potential roles of several factors were assessed, only one factor showed a statistically significant relationship with level of ambition, and that was the relationship between emissions per capita and levels of ambition in emissions reductions (and at only the 10 percent level).¹⁴ Below assessments are made of various dimensions of the overall level of ambition in emissions reductions.

Unconditional and conditional contributions to levels of ambition in emissions reductions

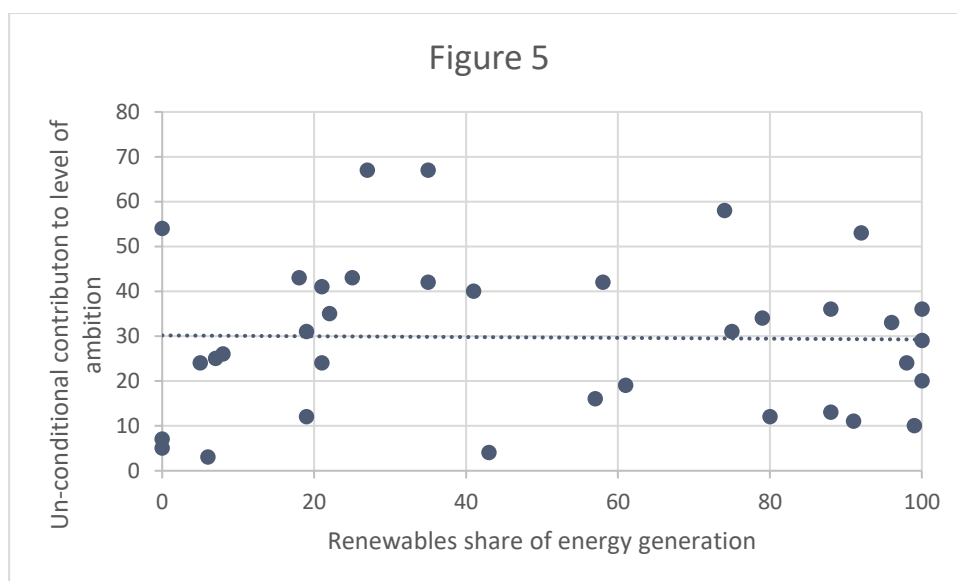
In Figures 5 and 6 below, the relationship between the unconditional share of the NDCs and renewable energy generation, both total renewables (Figure 5) and non-hydro renewables (Figure 6), are shown.

As mentioned above in connection with Figures 1 and 2, some analyses have concluded that the use of energy and energy resources may influence the NDCs. It could be expected that the effect would differ between the unconditional and conditional contributions to emissions reductions, reflecting the commitment versus negotiating positions of these countries.

¹³ P-value= 0.08.

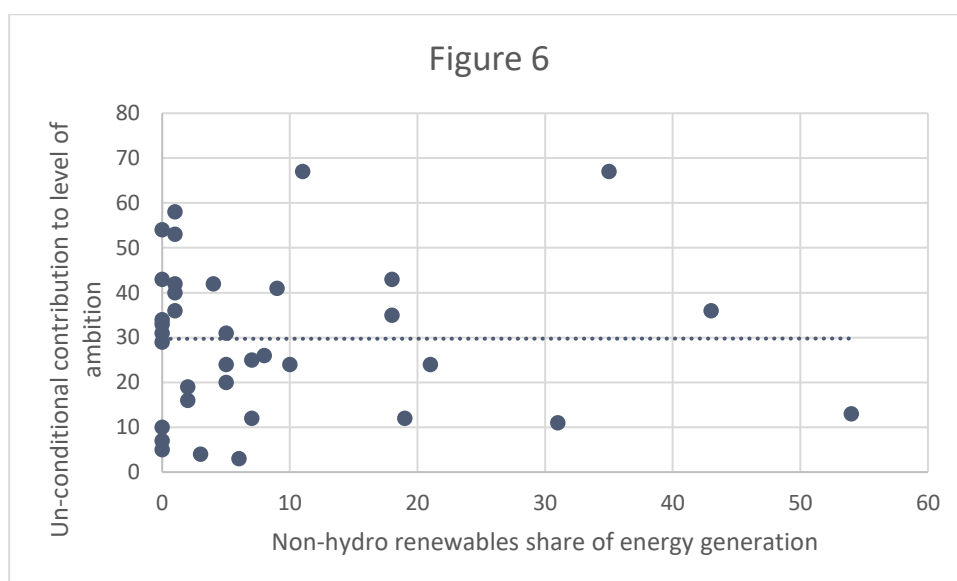
¹⁴ Multiple regression analysis, which controlled for non-hydro renewables' share of energy generation and vulnerability, confirmed this finding.

Figure 5. Renewable share of energy generation and unconditional share of level of ambition (36 countries)



Source: UNFCC (2021) and <https://www.irena.org/Data/Energy-Profiles>.

Figure 6. Non-hydro share of energy generation and level of ambition (36 countries)

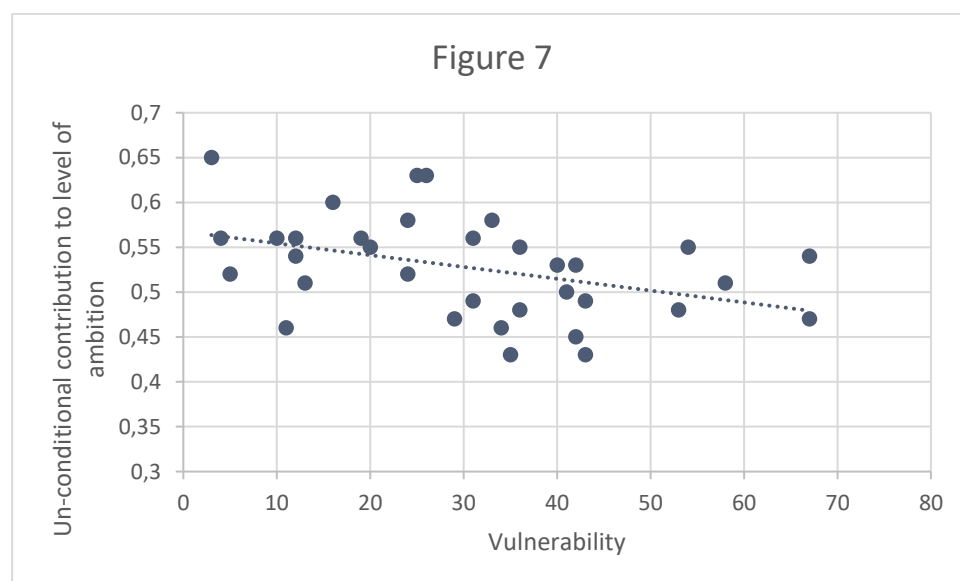


Source: UNFCC (2021) and <https://www.irena.org/Data/Energy-Profiles>.

Figures 5 and 6 do not show an effect of renewable energy in energy generation on the unconditional level of ambition, which is surprising in view of the findings in the literature and document review. This may reflect the fact that the NDCs of countries in Sub-Saharan Africa are at least to some extent negotiating documents.

Figure 7 shows the relationship between vulnerability and the unconditional share of level of ambition in emissions reductions. The relationship is statistically significant,¹⁵ and there is a tendency for more vulnerable countries to have a lower unconditional share of their level of ambition in emissions reductions. This is perhaps not a surprise and may indicate that vulnerable countries have a lower capacity to address climate change. This also implies that more vulnerable countries tend to have a higher conditional contribution in their level of ambition.

Figure 7. Vulnerability and un-conditional contribution to level of ambition (36 countries)



Source: UNFCCC (2021).

An analysis was also made of the relationship between emissions per capita and unconditional levels of ambition in emissions reductions, but no effect was found.

Of the analysed factors, only vulnerability had an effect on the unconditional share (and as a consequence the conditional share) of levels of ambition in emissions reductions.¹⁶ Further analyses are required to improve understanding of the differences in the unconditional and conditional contributions to the level of ambition in emissions reductions in the individual countries.

Adaptation shares of NDC budgets

As mentioned above, the number of Sub-Saharan countries that have included an adaptation component in their NDCs has increased. In 29 of the 49 NDCs from countries in Sub-Saharan Africa, the adaptation component of the NDCs was budgeted. In several cases, however, it was mentioned that these budgets were preliminary estimates, which could indicate that the adaptation components in the

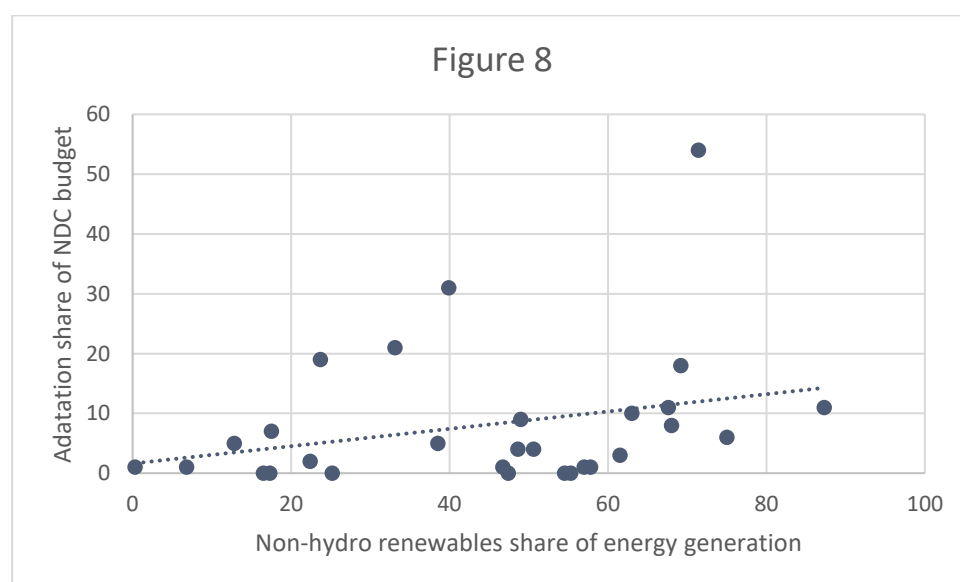
¹⁵ $P=0.02$.

¹⁶ Multiple regression analysis, which controlled for non-hydro renewables' share of energy generation and emissions per capita, confirmed this finding.

NDCs were negotiating documents. In addition, several countries have developed, or are in the process of developing, national adaptation plans, which to varying degrees are budgeted. These plans have not been consulted in the present analysis, where the focus has been on the NDCs, but as Leiter argues (2024), they are important documents in understanding the adaptation ambitions of the NDCs.

Analyses of the relationship between renewable energy generation (with and without hydro) and the adaptation share of NDC budgets, as well as between the latter and emissions, do not show any statistically significant relationships. However, as seen in Figure 8, there is a tendency for countries with higher non-hydro renewables' shares of energy generation to have a higher adaptation share in their NDC budgets. This may reflect the fact that there is a limit to their mitigation efforts, as well as domestic policy considerations at work.

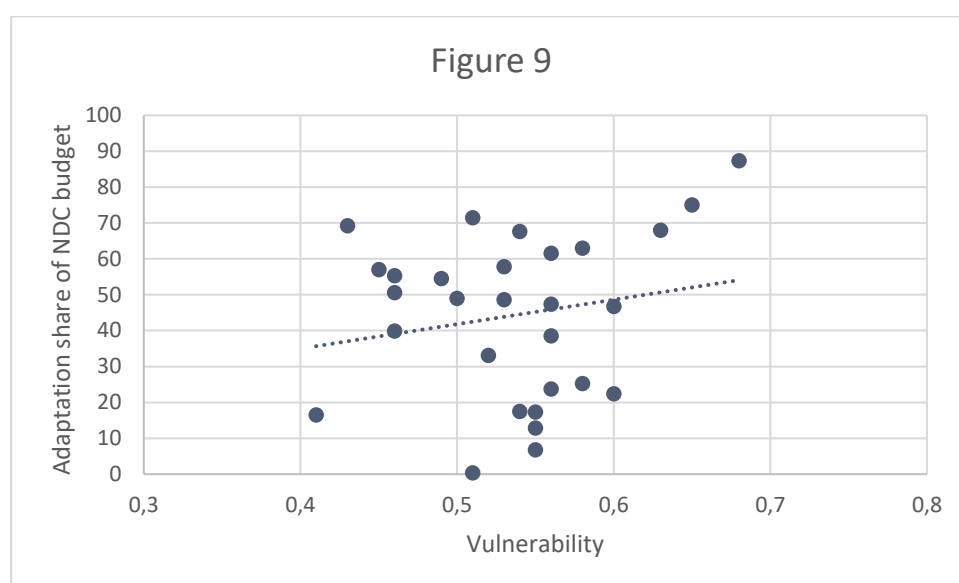
Figure 8. Non-hydro renewables share of energy generation and adaptation share of NDC budgets (29 countries)



Source: UNFCCC (2021) and <https://www.irena.org/Data/Energy-Profiles>.

In Figure 3 above, no significant relationship was found between vulnerability and level of ambition in emissions reductions, while Figure 7 showed that vulnerable countries tend to have a higher conditional contribution in their NDCs. An assumption could be that the degree of vulnerability to climate change would provide an incentive not only to include an adaptation component, but also to have a larger adaptation budget share in NDCs from these countries.

Figure 9. Vulnerability and the adaptation share of NDC budgets (29 countries)



Source: UNFCC (2021).

Figure 9 shows the expected positive trend in the relationship between vulnerability and the adaptation share of NDC budgets, but also large variations, and statistical analyses show that the relationship is not statically significant.

As adaptation components are gradually being integrated into NDCs, and as there may be a positive relationship between vulnerability and low capacity, this may partly explain why some vulnerable countries have not fully developed or budgeted their adaptation components. If adaptation finance is increasingly made available, it will obviously provide an incentive to develop adaptation components further.

The analyses of the adaptation components in the NDCs did not find any statistically significant relations, but both non-hydro renewables' share of energy generation and vulnerability were positively related to the adaptation share of NDC budgets.

CONCLUSIONS

The overall purpose of this paper has been to assess to what extent common trends and differences could be found in the NDCs of countries in Sub-Saharan Africa, and to contribute to further analyses and discussions of their role in these countries. Some brief conclusions can be made, but the analyses also raised a number of questions, which require further studies and research.

First, although the NDCs of these countries show significant variation, there are also some common trends, as was shown in the comparison of the first round of

the NDCs with the updated NDCs. This showed a growing focus on adaptation and a better integration of national and sectoral policies into the NDCs. This can be seen as an indication of the important role adaptation will play in future climate negotiations, and that NDCs are increasingly influenced by domestic perspectives and interests. Apparently, the role of the NDCs is changing, which may reflect that more adaptation finance may become available and that domestic policy considerations are increasingly influencing the content of the NDCs, but no clear convergence between the NDCs from countries in Sub-Saharan Africa was found. In view of the differences between countries in terms of history, political systems, priorities and economic development, this is perhaps not surprising.

Second, the analysis of a selected number of factors with potential influence on the NDCs identified in a literature and document review did only in a few cases show some apparent relationships. These cases comprised the relationship between emissions per capita and the level of ambition in levels of emissions reductions (Figure 4), the relationship between vulnerability and the unconditional share of NDC budgets (Figure 7), the relationship between the share of non-hydro renewables in energy generation and the adaptation share of NDC budgets (Figure 8), and finally the relationship between vulnerability and the share of adaptation in NDC budgets (Figure 9). Of these, only the relationship between vulnerability and unconditional or conditional contributions to emissions reductions (Figure 7) was statistically significant. This questions the role of the NDCs in countries in Sub-Saharan Africa, as well as the extent to which the NDCs reflect local contexts as envisaged in the Paris agreement, or rather being primarily documents meant for international negotiations. Factors which were shown in the literature and document review to influence the NDCs in other countries did not do so to the same extent in countries in Sub-Saharan Africa.

Third, there is a clear need for further analyses to improve the understanding of the role of NDCs in Sub-Saharan Africa. Examples of these analyses could be further statistical analyses, including of sub-groups of countries; analysis of other factors and indicators than those covered above; and analysis of the increasing role of adaptation components, including their relation to NAPs. In order to improve the understanding of the national processes leading to the development of the NDCs and the roles they play, case studies of individual countries are needed. This could comprise not only political processes leading to the development of NDCs in each country, but also how well integrated the NDCs are in country planning, including budgets and financing, and at the sectoral level. For instance, some of the above-mentioned factors may have specific effects on individual sectors, such as the energy sector.

Fourth, a better understanding of the role of NDCs in the countries of Sub-Saharan Africa in international climate negotiations is necessary. This includes the discussion mentioned above of NDCs as commitment versus negotiation documents, and the extent to which the NDCs are implementable and can be used to attract financing. Obviously, developing countries are considering the availability of finance when they design their NDCs, and many NDCs still only contain brief estimates of the financing needed to implement the NDCs, which

indicates the character of the documents as negotiation documents. At present, donors and investors only seem to use the NDCs to guide their investments to a limited extent. A key question is thus to what extent not only domestic investments, but also foreign investments and donor support should reflect conditional priorities and targets in NDCs in the future. More in-depth studies are needed to address these issues.

In 2025, countries will start to submit new and updated versions of their NDCs. It will be interesting to see whether the updated versions to a higher degree reflect the needs and policy priorities of the countries, and whether they increasingly will be used to guide international climate finance.

REFERENCES

- Cunliffe, G., Holz, C. Mbewa, K., Pauw, P. and Winckler, H. (2019). Comparative Analysis of the NDCs of Canada, the European Union, Kenya and South Africa from an Equity Perspective. ERC, University of Cape Town. Research Report Series.
- Dash, R. and Gim, T.-H. T. (2019). Drivers of Nationally Determined Contributions. International review for spatial planning and sustainable development, Vol. 7 No. 2 (2019), 4-20.
- Dixit, A., M. Kim, R. O'Connor, M. Dyck, and G. Ferrarin (2022). "State of the Nationally Determined Contributions: Enhancing Adaptation Ambition." Working Paper. Washington, DC: World Resources Institute. Available online at <https://doi.org/10.46830/wriwp.21.00099>.
- Dixit, A. and O'Connor, R. (2022). Stories Behind the Adaption Commitments in the Nationally Determined Contributions of Cambodia, Rwanda, Colombia, and Fiji. World Resources Institute. Working Paper, April 2022.
- Falkner, R. (2016). The Paris Agreement and the new logic of international climate politics. International Affairs 92: (2016) 1107-1125. IEA (2023).
- Fransen, T., et al. (2023). The State of Nationally Determined Contributions: 2022. Report. World Resources Institute: World Resources Institute.
- Jernnäs, M. (2023). Governing through the nationally determined contribution (NDC): five functions to steer states' climate conduct. Environmental Politics. 33:3, 530-551.
- Keohane; R. O. and Oppenheimer, M. (2016). Paris: Beyond the Climate Dead End through Pledge and Review? Politics and Governance, 2016, Volume 4, Issues 3, Pages 142-151.
- Leinaweaver, J. and Thomson, R. (2021). The Elusive Governance of Climate Change: Nationally Determined Contributions as Commitments and Negotiating Positions. Global Environmental Politics (2021) 21(2): 73-98.
- Leiter, T. (2024). Nationally determined contributions (NDCs) as a governance instrument – accounting for politics, negotiation progress, and related mechanisms under the Paris Agreement. Environmental Politics, 2024, vol. 33, no. 3, 552-557.
- Nowak, A. C. et al. (2024). Opportunities to strengthen Africa's efforts to track national-level climate adaptation. Nature Climate Change. Volume 14. August 2024. 876-882.
- Pardoe, J., Vincent, K., Conway, D., Archer, E., Dougill, A., Mkwambisi, D. and Tembo-Nhlema, D. (2020). Evolution of national climate adaptation agendas in Malawi, Tanzania and Zambia: the role of national leadership and international donors. Regional Environmental Change (2020) 20:118.

- Pauw, W. P., Castro, P. Pickering, J. and Bhasin, S. (2020). Conditional nationally determined contributions in the Paris agreement: foothold for equity or Achilles heel? *Climate Policy*, Volume 20:4, 468-484.
- Peterson, L., van Asselt, H., Hermwille, L. and Oberthür, S. (2023). What determines climate ambition? Analysing NDC enhancement with a mixed-method design. *Climate Action* (2023)2:21.
- Stepanov, I., Agikyan, N. and Muzychenko (2021). What Determines the Ambitiousness of Climate Policy in Different countries? *International Organisations Research Journal*, 2021, vol. 16, no. 4, pp. 57-79.
- Stephenson, S. R., Oculi, N., Bauer, A. and Carhuayno, S. (2019). Convergence and Divergence of UNFCCC Nationally Determined Contributions. *Annals of the American Association of Geographers*, 109:4, 1240-1261.
- Tørstad, E., Sælen, H. and Bøyum, L. S. (2020). The domestic politics of international climate commitments: which factors explain cross-country variation in NDC ambition. *Environmental Research Letters* 15, 2020.
- UNFCCC (2015). Paris Agreement.
- UNFCCC (2021). NDC Registry.