## Climate Change: Policy Support for National Adaptation Plans in Sub-Saharan Africa

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Abstract: - The global climate has experienced tremendous change, notably since the industrial revolution. Beginning from 1880 all through to 2012, the average global temperature increased by 0.85°C. This subtle increase primarily from anthropogenic contribution has had devastating effects on crop (grains) yields. Specifically, between 1981 and 2002, major crops like wheat, and maize, among others, have suffered substantial yield declines of about forty megatons annually, due to a hotter atmosphere. With the oceans equally warming faster and snow and ice sheets on a dramatic decrease, global average sea levels climbed by 19 cm from 1901 to 2010.

While climate change is a global phenomenon with varying degrees of consequential implications for different world regions, Africa South of the Sahara with a negligible contribution to global warming has seen a few of the worst impacts of climate change in recent years. Temperatures in Africa have risen by at least 0.5°C in the last 50 to 100 years. As IPPC 5th Assessment concluded, Africa is particularly vulnerable to climate change (Lisa 2020). Of about 2.1 billion people in the world that require access to drinking and safe water services that are well-managed, more than eleven million of this population live in Madagascar (World Health Organisation (WHO) 2017/Liberty supports WaterAid 2015). However, the precarious state of the global climate calls for serious and well-coordinated action from state and multilateral actors with the capacity to help the world's poorest, specifically in Africa, to either mitigate or develop credible adaptation measures.

This paper, therefore, provides a comprehensive literature review on UNDP Climate Change Adaptation policies for "Supporting Developing Countries to Advance National Adaptation Plans (NAPs)", using Sub-Saharan Africa as a case study. The findings of the review suggest the adoption of an evidence-based policymaking approach as a way of influencing the adoption of NAPs by developing countries.

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## 1 Introduction

In this report, the objectives and policy thrust of UNDP Climate Change Adaptation were reviewed and the impacts of the National Adaptation Plan policies on Sub-Sahara African Countries were studied. Also, issues affecting the region as a result of the policies and operations of the organizations were identified, and the organisation's policies were subjected to tests in a bid to determine success or failure. Fundamentally, there is no paucity of literature on the National Adaptation Plan in Sub-Saharan Africa. However, it was rather scarce to find enough literature that review the weaknesses of UNDP and its departments.

Nevertheless, considerable Policy Analysis and Practice concepts like multilevel governance and policy, policy measurement, public value and evidence-based policymaking; among others came to the fore while reviewing the literature. This paper, therefore, aims to offer recommendations for the onward improvement of the UNDP Climate Change Adaptation policies. It also reviewed the involvement of policymakers and actors, institutions and international actors like UNFCC (United Nations Framework Convention on Climate Change), Bureau for Policy and Programme Support of UNDP and Conference of Parties (COP), among others. Finally, the article closed with the probable policy window and research works yet to be done to salvage Sub-Saharan Africa from imminent climatic cataclysm.

According to UNDP Climate Change Adaptation (2021), UNDP assists countries in developing and implementing integrated climate change plans, gaining access to climate finance instruments, and developing and consolidating the policies, institutions, capacities, knowledge, and transformative change required to achieve a climateresilient, zero-carbon future. Between 2008 and the

current time, the organization has achieved the following (some still ongoing):

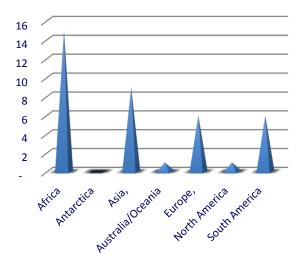
- 75 countries supported with their NAPs processes
- More than 820 development plans and policies created: mainstreaming adaptation and/or climate risks
- In 64 nations more than 200 institutional mechanisms established
- In 32 LDCs 58,653 people trained

Portfolios under implementation (as of October 2020):

- \$935million from VF
- \$2.2billion co-financing
- 108 Projects

There are eight programmes under the Mainstreaming Adaptation (Thematic Area 1), out of which Supporting Developing Countries to Advance National Adaptation Plans (NAPs) was chosen as the subject focus of this paper. Fig.1 below shows the number of nations per continent which had benefited from the programme (NAPs):

Fig. 1: Graphical representation of Numbers of nations (per continent) supported by UNDP Climate Change Adaptation



Source: UNDP-CCA (2021)

Continents	Numbers of nations
	supported
Africa	15
Antarctica	-
Asia,	9
Australia/Oceania	1
Europe	6
North America	1
South America	6
	38

Based on the information provided by UNDP Climate Change Adaptation (2021), the objectives and the main areas of work are entrenched in the following policies of the organisation as detailed below:

- Assisting countries to put into perspective key factors necessary in integrating climate change into planning and financial estimates, as well as developing a course of action that outlines resources required and desired goals.
- Establishing entry points for NAP support by providing in-country and virtual help for capability gaps and needs assessments, along with continuous adaptation plan activities. UNDP provides training on the NAPs process, adaptation economics, and comprehending climate data in the context of development planning to multistakeholder groups.
- Assisting with sectoral and cross-sectoral evaluation, assessments, and implementation of applicable tools and advice along with recommendations on how to incorporate sensitive sectors, subnational approaches, thematic areas, and legal challenges into adaptation planning, key forecasting and budgeting for developing nations.

The attainment of these objectives is shown in the impact of the support of the organisation for Sub-Sahara African nations to facilitate NAPs which are significant and cannot be over-emphasized as the Impact would be resounding and globally significant.

# 2 Impacts of UNDP Support and Policies-NAP

The impacts of UNDP support (in collaboration with UN Environment) to provide global assistance to developing countries in a bid to actualize the National Adaptation Plan (NAP), speak to insight and policy of UNDP on public value. As elucidated by Mark Moore (2019), public value is a concept that focuses on responsiveness to situations in the world, which require interest to ameliorate. Such responsiveness to situations might look individuals in the state in which they are living and concerned about their economic welfare concerned about aggregate conditions in the society. Some of which could be the physical conditions of the society, including the natural and the man-made environment. UNDP has demonstrated these public value concerns as detailed below:

## a. Regional Training

An all-encompassing training succession and workshop was organized in the region(of Sub-Saharan Africa) through the joint efforts of UNDP and UN-Environment to foster the NAP-Global Support Programme (NAP-GSP) and to enhance capability and capacity building and to share experiences or exchange knowledge on NAPs. The training programme cum workshop (hosted in Abidjan, Cote d'Ivoire, in October 2017) for developing nations in Africa, brought together thirty-two participants, consisting of twenty-five government officials from twelve Sub-Saharan African states, plus delegates of the NAP-GSP international and actors institutions who are partners (e.g. GCF. UNFCCC, WHO). The essence of the training programme was to enhance nations' awareness of the series of actions and steps involved in implementing developing and National Adaptation Plans as a way of accelerating adaption planning and execution, as well as evaluating how nations are doing with their National Action Plans. Moreover, the workshop also gave the county delegates the chance to share lessons learned and experiences, as well as recognize areas where the NAP needs more help. The workshop followed an engaging style, with brief presentations, panel discussions, and community activities (NAP-GSP 2017).

## **b.** Supports to African Nations

S/N	Nations 12	Types of	Details
3/1 <b>\</b>	1 vations	Supports	Details
1	Burkina Faso	Offered aid in Preparation of the initial NAP	Burkina Faso received the first evaluation and assessment of the final draft of the NAP document from NAP-GSP in May 2015. In September of that year, Burkina Faso presented the NAP paper to the UNFCCC.
2	Chad	Assisted in building capacity for accessing climate funding for the unveiling of NAP	Chad's National Action Plan (NAP) was launched towards the end of 2019. The Ministry of the Environment and Fisheries of Chad oversees implementing the NAP project, which was supported by the Global Environment Facility (GEF) and UNDP among others, to raise the sum of US\$27.9 million.
3	Tanzania	Identification entry for the NAP procedures, with the help provided to generate a stocktaking report.	All 185 Tanzanian local council environment officers took part in a complete inventory of climate data gathering, susceptibilities (of the environment), capabilities, and inadequacies with gaps at the national and subnational stages in the year 2017, through to 2018. Tanzania's National Adaptation Plan, National Climate Change Strategy, and Zanzibar Adaptation

			Strategy have all served as strategic and critical entry points for the government's National Adoption Plan. Thanks to the aid from UNDP!
4	Niger	Climate Finance and implementatio n Partners	The Green Climate Fund contributed \$2,997,282. The United Nations Development Programme (UNDP), national governments, non- governmental organisations, and private sector partners are among the primary implementers.
5	Madagasc	Climate Finance and implementatio n Partners	After years of talks with governmental, civil and commercial sector partners which began in 2012. Eventually, Madagascar presented the NAP at the COP25 in December 2019. The document will be used as a reference for national adaptation planning for the next 10 years by the project's primary implementers, who are United Nations Development Programme (UNDP), partners from the private sector, Governments at the national level, and nongovernmental organisations. Also, provisions were made by Green Climate Fund (GCF)

			to the tune of
			US\$1,463,624.38.
6	Kenya	Resource mobilization	The NAP-Ag Programmes' funding were incorporated into investment proposals for the Green Climate Fund's (GCF) NAP Readiness window, which authorised a US\$3 million NAP Readiness project to be implemented between 2018 and 2020.
7	Mali	Backing and assistance for the National Adaptation Strategy to Climate Change	The UNDP oversees the weather station network, which is being expanded, and capacities for analysing and utilising meteorological data are being created. UNDP also supports the climate fund's operationalization so that it may be integrated into Mali's structures. Also, the organisation promotes adaption strategies in selected towns in close collaboration with the GIZ project team.
8	Senegal	Resource mobilization	The project's entire cost was \$9 million, which was cofinanced as follows: US\$6.5 million from the Ministry of Finance and Planning, US\$200,000 from the Ministry of the Environment, and US\$2.3 million from the UNDP.
9	Gambia	Climate	In Gambia, the large-

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Change project	scale Ecosystem-
support and	based Adaptation
financing	(EbA) project, which
	is sponsored by the
	Green Climate Fund
	(GCF) and
	supported by UN
	Environment, was
	launched in 2018,
	pioneering
	considerable efforts
	at conservation,
	sustainable resource
	use, and rural
	enterprise
	development.

Source: UNDP Climate Change Adaptation (2021)

## c. Integrating Adaptation into Planning:

With UNDP aid, most Sub-Saharan African countries have made substantial progress in integrating adaptation into the planning processes for national development adaptation. These progressive strides have already begun in the landlocked nation of Zimbabwe, the Republic of Côte d'Ivoire, Kenya (the world's 48th largest country), the Federal Republic of Nigeria, Gabon (a country located on the Atlantic coast of central Africa), Republic of Cameroon, Republic of Ghana, and the island nation of Seychelles, among other countries (2017 NAP-GSP).

However, there are still observable gaps. For instance, in the United Republic of Tanzania, (a country in East Africa) due to institutional problems such as power imbalances, financial constraints, and an established sectoral approach. Cross-sectoral collaboration is still insufficient for implementing adaptation solutions (Pardoe et al 2018). Kalame, Kudejira and Nkem (2011) also, believe that Burkina Faso lacks the financial resources to finance and implement its NAPA priority projects. And generally, in Africa, significant implementation problems exist, owing in part to the fact that government ministries and departments frequently work in relative isolation from one another, with a lack of knowledge coordination. sharing, collaboration (Abson et al 2012).

## 3 Challenges of UNDP Climate Change Adaptation and Support to Advance NAP

Adesola Adebowale

## a. African land use planning

Planning for land usage in African nations is becoming a more important and difficult problem for development and Climate Change Adaptation (CCA). Land use programmes in many Sub-Sahara African countries have largely focused on fostering and encouraging social and economic growth (Hazell, Poulton, Wiggins & Dorward, 2010). These systems have not been instituted to consider CCA and mitigation or disaster risk reduction (DRR). Although numerous governments have passed legislation to guide sustainable land use, but implementation remains a difficulty. Frequently, procedures for enforcing regulations are ineffective (NAP-GSP 2017). This made UNDP adaptation strategic support and quest to integrate DRR and adaptation, a daunting task.

## b. Integration of CCA

According to the Regional briefing on National Adaptation Plans of NAP-GSP (2017), the incorporation of CCA into budgeting as well as developing fiscal planning, spanning sectors and scales continues to be a challenge in this area. Different agencies and departments government are still exempt from procedures of developing NAP and this is complicating the process of adaptation and integration. This situation currently demands consolidated directives, to make sure that participation and involvement of national institutions, sub-national tiers, ministries are achieved as soon as possible.

#### c. Climate Financing

Some of the Nations in the region are still grappling with how to mobilize adequate climate finance, especially at the local level. This is due in part to a lack of coordinated evaluations, cross-sector planning, and low national fiscal allocations which may aid in the improved management of internal and external climate finances. Project-based, bilateral and/or multilateral funding sources have been the primary drivers of climate finance (NAP-GSP 2017). This is parochial and a constraint to the organisation's policy of allocating limited financial resources.

## d. Institutional Capacity Challenges

The dearth of reliable and sufficient data in the sub-Sahara nations makes it difficult to

guarantee that weather and environmental facts and figures are efficiently recorded, stored, analysed, and exchanged. In the region, there is a shortage of climate details and IT infrastructure, together with the ability to produce reliable climate data (NAP-GSP 2017) due to a lack of reliable sources of data. These challenges have made the adoption of NAPs in Sub-Saharan Africa arduous and herculean.

## e. Climate Change National Adaptation Plans – One Global Agenda, Different Levels of Implementation

Most Sub-Saharan African nations do not only endeavour to implement NAP policy, and/or adopt the UNDP Climate Change Adaptation policy of global climate change adaptation, but they also make efforts to execute local-level and sectoral plans, as well as evaluation and/or assessment mechanisms for the NAPs, which are crucial to its effective implementation. Almost all the countries in the region have local-level plans, and most of the States have sectoral programmes. This factor poses a lot of challenges to the actualization of the UNDP Climate Change Adaptation policy (Alves et al 2020)

Moreover, another major bane, according to (Alves et al 2020) is the homogeneity of adaptation plans versus heterogeneity of contexts and vulnerabilities as it relates to climate change sectoral programmes.

The above-mentioned challenges are no doubt responsible or partly to blame for the following issues that have caught the attention of the Corporate Management Team (CMT) - (Bureau for Policy and Programme Support of UNDP), as well as put them under pressure as a result of stakeholder demand for accountability and stewardship.

## 4 Climate Change Adaptation-NAP: Challenging Issues in Sub-Sahara Africa

The NAP's goals are to lessen susceptibility to climate change's effects as well as to incorporate changes and adaptations at all stages of development programmes and planning (NAP-GSP 2017). However, there are concerns about the effect of action as well as the inaction of UNDP climate variability adaptation on Sub-Saharan nations.

First and foremost, *interventions focusing* on institutional capacity building, access to capital, knowledge creation/management, and awareness-

raising were prioritized by African countries. While infrastructure, natural endowments, food production, technology and social security were rarely given the adequate attention they deserved (Kumamoto and Mills 2012). This orientation is risky and may not be beneficial to nations in the region in the long run.

Unbalanced Interventions: Kumamoto and Mills 2012, analysed in accordance with research carried out, thus: "of the 949 interventions prioritized by the 20 African countries in the Africa Adaptation Programme (AAP), 98.1% were classified as soft interventions whereas 1.9% were classified as hard interventions". And despite not changing the larger structure of the AAP programme (without counterpart support), the UNDP's competitive edge together with its comparative advantage (e.g. support for strategy/policy/legal frameworks and institutional capacity building) is mostly tilted toward soft intervention (i.e. Changing crop rotation patterns, offering insurance schemes, putting in place setback zones, or providing information and expertise), while, it could rather have convinced participant nations to consider some interventions as well (i.e. structural adaptations or modifications such as establishing irrigation technology and coastal zone safety and protection).

This implies that the UNDP policy is skewed and not balanced. There should be a threshold for hard and soft intervention.

Furthermore, to date, the vast majority adaptation research has been done in response to the mitigation issue. The focus of policymakers' attention and the requirements of the negotiations has largely been on mitigation rather than adaptation. Adaptation as a solution to climate variability concerns has received relatively little consideration, and where it has been considered to some extent, it has been in the form of mitigation deliberations and questioning. However, one crucial justification for this is that it is broadly acknowledged that adaptation will not suffice in the long run. At some stage, greenhouse gas concentrations in the atmosphere would have to be stabilised. (Burton et al 2002). Nevertheless, if this persists, the phenomenon may probably make the nations in this region be vulnerable.

Monitoring and Evaluation: Owning to the complexity and size of NAP projects in Sub-Saharan Africa, systems, and mechanisms for reporting, scrutinising, and reviewing, as well as monitoring of NAPs and adaptation progress, are inadequate and somewhat ineffective. As posited by Mutimba et al (2019), the National Adaption Plan

(NAP) process requires monitoring and evaluation mechanisms to track adaptation outcomes.

Lastly, according to Regional Briefing on National Adaptation Plans of NAP-GSP (2017), several nations have emphasized the vulnerabilities and limitations of institutional management mechanisms for adaptation. This is a symptom of a lack of accountability on the issues linked to climate variation through sectors and climate finance. This issue and other concerns enumerated above are of concern to UNDP Climate Change Adaptation stakeholders and Sub-Saharan African states.

#### **Policy Measurement and Recommendations**

As postulated by McConnell (2010), measuring a policy's success or otherwise is a function of process, programmatic and politics. Therefore, it can be presumed that the UNDP Climate Change Adaptation policy of Supporting **Developing** Countries to Advance National Adaptation Plans (NAPs). be deemed could somewhat successful. Firstly, the policy-making process could be regarded as valid, comprehensive, and founded on best practices. Empirically, outcomes and various reports on NAPs globally, showed that objectives have been attained, efficiently and effectively. Likewise, it is also evident that the policies have gained the support of political actors, governments, as well as new policy actors (private sectors).

However, there are noticeable policy gaps and weaknesses in the monitoring and evaluation of NAPs. This was evident in the conference that draws attention to numerous key challenges that nations in Sub-Sahara Africa faced in their monitoring and evaluation systems, which comprised a deficiency of management among climate change actors, the absence of relevant details and the challenges to set pointers by sector that are affected by climate change (NAP-GSP webinar 2020)

The UNDP Climate Change Adaptation policy efficiency and effectiveness are very crucial for the region and to salvage our world from of impending tragedy due to climate change. Thus, the following advocacy:

## a) Inclusive Integration.

The Inclusiveness of all key stakeholders and involvement of ownership of the NAP is strategic to adopting climate change integration as a cross-cutting process. This will increase mutual understanding and provide coherence across all sectors and scales. Climate change strategies have frequently been delegated to a single sectoral ministry (principally the Ministry of Environment in most of the nations). Peradventure the ministry directive is

insufficient to exercise effective control and authority over other government departments, agencies and ministries. Obtaining top-level political backing to boost policy-making procedures at all stages of government and decentralised adaptation planning, even though challenging, cannot be overemphasized for inclusive integrations (NAP-GSP 2017).

b) UNDP Climate Change Adaptation should set up governance and coordination mechanisms for adaptation Monitoring and Evaluation systems across the levels and nations where NAP is being implemented.

## c) The Integration of Adaptation.

The high-level governmental backing, and institutional management, coupled with the successful participation of a broad spectrum of key parties and interest groups, comprising the business sector and vulnerable populations, would all help to integrate adaptation into development planning in whatever stages and scales (NAP-GSP 2017).

#### d) Multilevel Governance.

The UNDP programmes used in supporting developing nations to progress on NAPs is a comprehensive multilevel governance and policy model that seeks to make things work, by involving all levels of stakeholders. As opined by Meuleman (2019), the standard requisite and bold decisions necessary to accomplish the SDGs can only be implemented if people who rule feel included and understood by those who govern.

#### e) Climate Finance.

According to McCarthy (2021), developing countries currently need \$70 billion per year to adapt to climate change, with the need rising to billion by 2030. This places a responsibility on UNDP Climate Change Adaptation to consider a wide range of finance postulated in options and policies, as the Financing Solutions for SDG 13. For instance, carbon markets, climate credit mechanisms, crowdfunding, debt for nature swaps, disaster risk insurance, environmental trust funds, green bonds, among others (UNDP 2021).

## **5 Conclusion**

This synthesis paper expounds partly on the UNDP Climate Change Adaptation policies. It narrows down to NAPs as focus subject matter, issues affecting Sub-Saharan African nations, which presumptuously raise questions from nations and stakeholders, and that may negate the purposes of NAPs, to lessen the vulnerability of the effects of climate change.

However, NAPs are a formidable policy tool for countries due to their wide-ranging approach to the climate change challenges and support to central climate policies, compared with other sectoral and/or national isolated instruments. Simultaneously, NAPs are a powerful analytical tool that allows for systematic comparison and study of environmental policies and issues across various countries and the UNDP's support strategy for this initiative has also been positive. (Alves et al., 2020) Nonetheless adopting an evidence-based policymaking approach will enhance and make UNDP Climate Change Adaptation and its policies more effective. This will consequently lead to the elimination of adaptation challenges such as the issue of monitoring and evaluation mechanisms and awareness of climate finance options confronting most sub-Sahara African countries. Furthermore, the use of evidence in policymaking has several advantages which include a strong evidence base, persuasion and framing, straightforward storytelling, coalition building, knowing the rules of the game in variety of systems, the employment of complementary influencing methods, and a constant process of review and monitoring (Mayne et al., 2018). These advantages can aid the successful adaptation of NAPs in Sub-Sahara Africa.

## Reference:

- [1] Abson, D.J., Dougill, A.J. and Stringer, L.C., Using principal component analysis for information-rich socio-ecological vulnerability mapping in Southern Africa. *Applied Geography*, *35*(1-2), 2012, pp.515-524.
- [2] Alves, F., Leal Filho, W., Casaleiro, P., Nagy, G.J., Diaz, H., Al-Amin, A.Q., de Andrade, J.B.S.O., Hurlbert, M., Farooq, H., Klavins, M. and Saroar, M. Climate change policies and agendas: Facing implementation challenges and guiding responses. Environmental Science & Policy, 104, 2020, pp.190-198.

- [3] Burton, I., Huq, S., Lim, B., Pilifosova, O. and Schipper, E.L., From impacts assessment to adaptation priorities: the shaping of adaptation policy. Climate policy, 2(2-3), 2002, pp.145-159.
- [4] Hazell, P., Poulton, C., Wiggins, S. and Dorward, A. *The future of small farms: Trajectories and policy priorities.* World Development. Vol.14(2), 2010, pp235-264, 13p.
- [5] Kalame, F.B., Kudejira, D. and Nkem, J., Assessing the process and options for implementing National Adaptation Programmes of Action (NAPA): a case study from Burkina Faso. Mitigation and Adaptation Strategies for Global Change, 16(5), 2011, pp.535-553.
- [6] Kumamoto, M. and Mills, A., What African countries perceive to be adaptation priorities: results from 20 countries in the Africa adaptation programme. *Climate and Development*, *4*(4), 2012, pp.265-274.
- [7] Lisa, Elemental Water Foundation, 2020.
- [8] Liberty supports WaterAid 2015. *Madagascar*, 2015.
- [9] Mark Moore, *Mark Moore Discusses the Concept and History of Public Value*. Harvard Kennedy School Executive Education, 2019.
- [10] Mayne, R., Green, D., Guijt, I., Walsh, M., English, R. and Cairney, P., Using evidence to influence policy: Oxfam's experience. *Palgrave Communications*, 4(1), 2018, pp.1-10.
- [11] McCarthy, "What is Climate Adaptation and Why is it Key to Our Survival." Global Citizen, 2021.
- [12] McConnell, A., Understanding policy success: Rethinking public policy. Macmillan International Higher Education, 2010.
- [13] Meuleman L., Why We Need 'Real-time' Multi-level Governance for the SDGs. *SDG Knowledge Hub*, 2019.
- [14] Mutimba, S., Simiyu, S.W., Lelekoiten, T.L. and Ospina, A.V., NAP, 2019.
- [15] NAP-GSP, Report on Regional Briefing on National Adaptation Plans: Africa in Focus by UNDP/UN Environment, 2017.
- [16] NAP-GSP webinar. African LDCs Discuss Measuring, Monitoring and Evaluating Their Progress on Adaptation in Their NAP. UNDRRPreventionWeb, 2020.
- [17] Pardoe, J., Conway, D., Namaganda, E., Vincent, K., Dougill, A.J. and Kashaigili, J.J., Climate change and the water–energy–food nexus: insights from policy and practice in

- Tanzania. Climate Policy, 18(7), 2018, pp.863-877.
- [18] Sustainable Development Goals (SDG). Goal 13: Take urgent action to combat climate change and its impacts: Facts & Figures, 2021.
- [19] UNDP Climate Change Adaptation, Supporting Developing Countries to Advance National Adaptation Plans (NAPs), 2021.
- [20] UNDP, Financing Solutions for Sustainable Development- Goal 13: Climate Action, 2021.
- [21] World Health Organisation (WHO) 2017

# Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

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