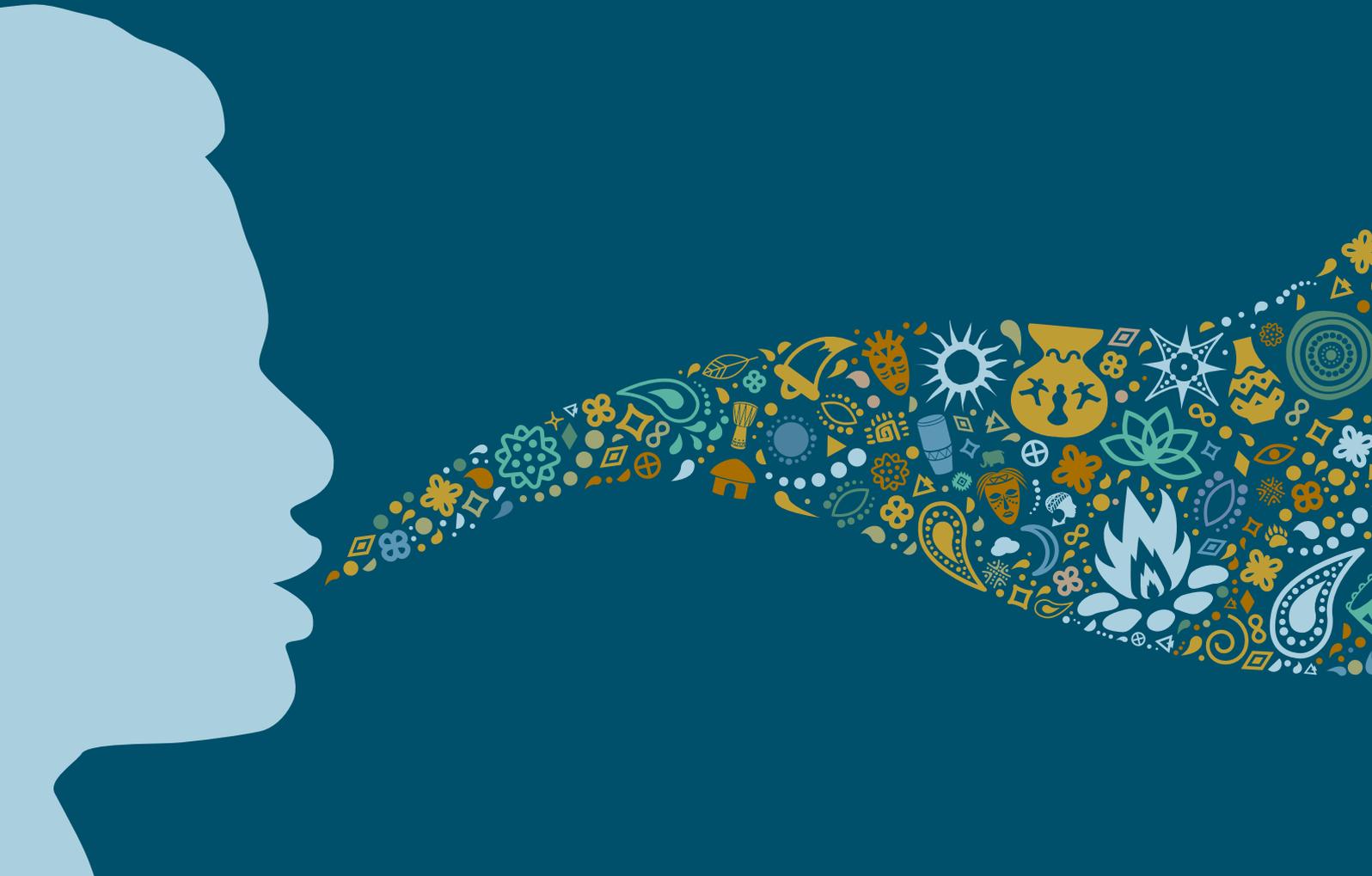


Can

Local and Indigenous Knowledge

strengthen adaptation and mitigation actions in ACP countries?

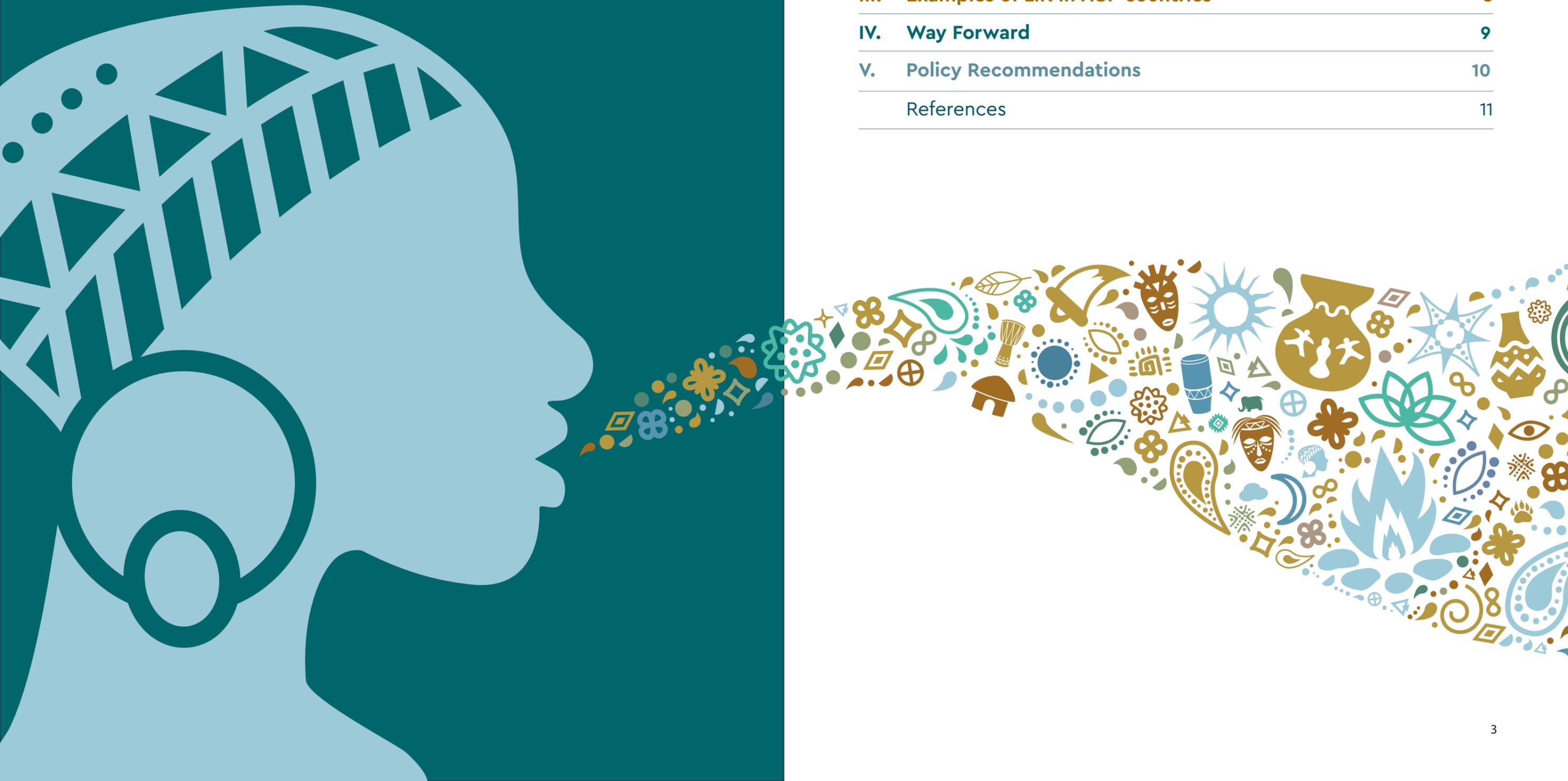
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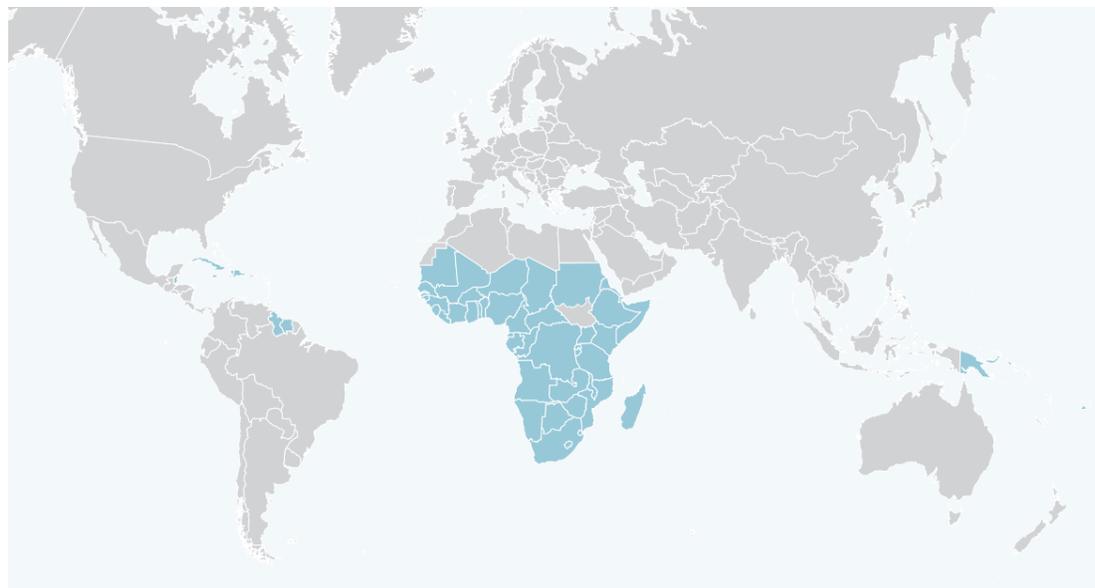
Local and Indigenous Knowledge (LIK)
contributes to the management of natural resources
and to tackling the impacts of climate change

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I. Introduction and context



Climate change is a major challenge to sustainable development. The Inter-governmental Panel on Climate Change (IPCC) Special Report (2018) warns of a projected increase in climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth, with an increase in global warming of 1.5°C and a further increase to 2°C¹.

For the 79 Member States of **the African, Caribbean and Pacific (ACP) Group** with **47 Least Developed Countries (LDCs)**, **37 Small Island Developing States (SIDS)** and **15 Land-locked Developing Countries (LLDCs)**, the adverse impacts of climate change pose a significant existential threat to their survival. Although contributing little to greenhouse gas emissions, **ACP countries are the most vulnerable, and are most impacted by the effects of climate change.** This is evident in the recent droughts, floods and hurricanes in Africa, the Caribbean and the Pacific that caused loss of lives and extensive damage to property, infrastructure, food systems and livelihoods.

Local and Indigenous Knowledge (LIK) contributes to the management of natural resources and to tackling the impacts of climate change. The Intergovernmental Platform on Biodiversity and Eco-system Services (IPBES) established in 2012, is committed to "recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems" (in Hill et al. 2020). The United Nations Educational, Scientific and Cultural Organisation (UNESCO) defines Local and indigenous knowledge as "*the understandings, skills and philosophies developed by societies with long*

histories of interaction with their natural surroundings." It is important to mention that this knowledge is not static, but evolves over time, to some degree being influenced by and influencing external factors. Local and indigenous knowledge vary from community to community and is specific to the social and economic contexts. **A distinction is made between indigenous or local knowledge holders and experts in indigenous or local knowledge.** Whereas indigenous knowledge holders are "*Persons from indigenous peoples and local communities with knowledge from their own indigenous peoples and local communities*", experts on indigenous and local knowledge are referred to as "*people who have knowledge about the issues and contexts of indigenous and local knowledge across their region and/or globally, who are not from indigenous peoples and local communities*" (Hill et al., 2020:11).

Literature is abounding on Local and Indigenous Knowledge, including studies on, inter alia, land use and climate change (Acharya and Prakash, 2019; Audefroy and Sanchez, 2017; Asmiwyatia et al., 2015; Buergelt et al., 2017; Ford et al., 2018; Hayes et al., 2018; Hill et al., 2020; Hiwasaki et al., 2014; Kettle et al., 2014; Sereenonchai and Arunrat, 2018; Wilson and Forsyth, 2018), natural resources, biodiversity management and conservation (Gartaulaa, et al., 2020; Herran et al., 2015; Smith et al., 2017; Tengo et al., 2017), disaster risk management and vulnerability (Ahmeda, et al., 2019; Amaratunga et al., 2018; Bacud, 2018; Diver, 2017; Galarza-Villamara, et al., 2018; Sangha

et al., 2019; Syafwina, 2014) and sustainable livelihoods (Soh and Omar, 2012).

Yet very often this knowledge is still overlooked and ignored (Audefroy and Sanches, 2017) in ACP countries as elsewhere. Lack of recognition of LIK sovereignty and its potential contribution to climate change solutions; as well as limited capacity for participation of LIK holders in national and international discourses, planning and decision-making, are some probable contributing factors (Raymond-Yakoubian and Daniel, 2018). Furthermore, "*Inter-organisational information exchange may be inhibited by a lack of incentives to engage ...*" "*and suboptimal channels of communication between various knowledge holders...*" (Mansson, 2018: 740).

In order to address this lack of recognition, **the Paris Agreement** prescribes that when taking action to address climate change, the respective obligations on, inter alia, **the rights of indigenous peoples and local communities should be respected, promoted and considered.** The Local Communities and Indigenous Peoples Platform (LCIPP) was thus established "*to strengthen the knowledge, technologies, practices, and efforts of local communities and indigenous peoples related to addressing and responding to climate change, to facilitate the exchange of experience and the sharing of best practices and lessons learned on mitigation and adaptation in a holistic and integrated manner and to enhance the engagement of local communities and indigenous peoples in the UNFCCC process*" .

¹ United Nations Inter-governmental Panel on Climate Change (IPCC) Special Report: Global Warming of 1.5°C
² <http://www.unesco.org/new/en/natural-sciences/priority-areas/links/related-information/what-is-local-and-indigenous-knowledge/>
³ https://unfccc.int/sites/default/files/resource/SBSTA2019_04E.pdf

II. Key Challenges

Local and indigenous knowledge is accepted as a socially constructed process that is recognised and shared within a community, focusing on the spatial relationship with nature.

As such, *"indigenous sovereignty is not respected when knowledge is treated as mere data for collective decision-making"* (Latulippe and Klenk, 2019: 7). **Accordingly, local and indigenous knowledge is place and people based, so that it cannot be separated from its "socio-cultural, political, legal and other grounded, largely place-based relations and obligations"** (Latulippe, 2020).

This makes integrating data from LIK and other sources, scales and metrics rather difficult due to potentially non-common metrics, relationships and understanding (Cains and Henshel, 2019). Herein lie the first challenge. Studies elsewhere have shown the difficulty with trying to integrate indigenous and local knowledge into scientific knowledge or institutional risk reduction strategies (Audefroy and Sanches, 2017). For example, in a study of climate change adaptation responses to floodplain management, two contrasting views were observed between local farmers and catchment engineers. Whereas local farmers were in favour of restoring the natural flow and connectivity of rivers with surrounding floodplain, for catchment engineers *"... letting water flow out-of-bank would infringe on other interests and require pumping operations"* (Pasquier et al., 2020: 55).

A second issue is that of **power relations between local people and the state and institutions, the imbalance mostly resulting in the isolation of indigenous and local people farther or the creation of products**

that do not serve indigenous knowledge holders. For example, according to Hill et al., 2020:17, *"Power asymmetries remain a formidable barrier to working across knowledge systems in IPBES and other environmental assessments."*

A third issue is **the general scarcity or unavailability of documented local, indigenous, knowledge and information,** as well as scientific, statistical, socio-economic or other relevant data in relation to climate change in some local communities in ACP countries as elsewhere. For example, geospatial technologies of data collection for spatial planning are not readily available nor used in the Global South. This is for a number of reasons, not least the difficulties with basic requirements for their use, such as electricity, internet connectivity, digital geospatial tools, little exposure to the tools, financial and institutional constraints hindering collection of the data, to name a few (Eilola et al., 2019).

Recent works have identified challenges and gaps in the use of the IPBES Approach (Hill et al., 2020). These are similar to those identified in this paper and include challenges such as scale, participation and representation, formats, methods and tools. Among the gaps that are yet to be considered in the approach are shared governance with indigenous people and local communities, equity between LIK and science, innovation, protection of intellectual property rights associated with LIK and power imbalances.

Studies elsewhere have shown the difficulty with trying to integrate indigenous and local knowledge into scientific knowledge or institutional risk reduction strategies.

⁴ <https://unfccc.int/LCIPP#eq-1>

III. Examples of LIK in ACP countries

Despite the challenges raised in the previous section, studies in ACP countries, as elsewhere, confirm that LIK contributes to promoting adaptation and mitigation actions to climate change. Some examples of studies in ACP countries are given below:

TANZANIA

In the Southern Highlands of Tanzania, the use of participatory mapping with a georeferenced image, whereby georeferenced image was used to enable a collective visual awareness among local participants and external experts, allowed for the capturing of local knowledge and other expert knowledge, increasing the quality of and confidence of the mapped information for planning and decision-making purposes (Eilola et al., 2019).

ZIMBABWE

In Mazvihwa, Zimbabwe, work with indigenous knowledge and traditional practices yielded an understanding of nutritious and drought-resistant indigenous small grains using arts-based methodologies, such as drawings (Ogura, 2019). Such knowledge contributes to maintaining agricultural biodiversity and adaptation to climate change, as well as community health.

CAMEROON/SOUTH AFRICA

In semi-arid Cameroon, using participatory methods to assess traditional soil restoration practices, found the use of traditional adaptation measures for climate change adaptation to improve millet production in times of drought (Issoufou et al., 2020). A combined qualitative and quantitative research in Thathe Vondo in Limpopo Province in South Africa confirmed the use of traditional ecological knowledge and indigenous practices for forest conservation and protection (Sinthumule and Mashau, 2020).

KENYA

A Kenyan study on the adaptive capacity of local smallholder African indigenous vegetable farmers to climate change showed that although many farmers had some form of adaptive capacity, there were disparities in adaptive capacity. Female farmers were found to have lower capacities in financial, human and natural resources, while male farmers had low access to some human and social capitals. (Chepkoech et al., 2020). This gendered perspective is particularly important in understanding and planning for resilience, adaptation and climate change interventions.

NAMIBIA

The case study analysing indigenous knowledge and Innovation Systems (IS) in Namibia, found that "for developing countries, the doing-using-interacting mode of innovation fits better when the aim is to integrate indigenous knowledge (IK) into an IS. An IK-included IS can facilitate participatory development processes, foster socioeconomic resilience of local communities and enhance the comparative advantage of a developing country" (Jauhainen and Hooli, 2017: 89). This shows the potential for LIK to improve IS in environment, climate change, biodiversity and similar land and natural resources-based purposes.

GHANA/ZIMBABWE

A case study of local people, nature and culture in Tanoboase Sacred Natural Site in the Brong Ahafo Region, Ghana, found that local people were actively involved in the conservation of natural resources if their culture and traditions are properly considered in ecotourism planning and development (Adom, 2019). Another case study, of Nharira community in Chikomba district, Zimbabwe, found that the community was using indigenous knowledge to conserve forest and wildlife resources (Mavhura, and Mushure, 2019), without intervention from outside.

BELIZE/GUYANA

At a side event on "Incorporating Indigenous and Local Knowledge into Climate Change Adaptation policies and practices in ACP regions" on the margins of COP 25 (Intra-ACP GCCA+, 2019), it was noted that Belize had carried out the first mitigation project in the world working with indigenous people as guardians of the forests, using an earlier model whereby indigenous people were in charge of ensuring sustainable use of rubber trees producing rubber for export for making chewing gum. It was also reported that in Guyana the Lands and Survey Division was involved in efforts of transferring land rights to indigenous people.

COTE D'IVOIRE

An initiative carried out by the Intra-ACP GCCA+ Programme in Côte d'Ivoire supported the integration of local actors and knowledge in the decision-making process for the development of a National Legal & Regulatory climate framework (i.e. National Climate Bill, National Climate Agency and National Climate Fund).

NAMIBIA (2)

Experience from the Intra-ACP GCCA+ shows that local knowledge can sometimes be lacking when focused on addressing immediate local needs and driven by limited resources. In Northern Namibia, local actors used to feed catfish with boiled eggs for aquaculture farming. The tests carried out under an Intra-ACP GCCA+ initiative showed that the rate of survival of catfish was of 1%. After the initiative helped identify an alternative for local catfish feeding (i.e., Artemia), the survival rate for catfish increased to 95%. In this case empirical science worked alongside local knowledge to enhancing food security.



⁵ <https://intraacpgccaplus.org/event/cop25-side-event-incorporating-indigenous-and-local-knowledge-into-climate-change-adaptation-policies-and-practices-in-ACP-regions/>

⁶ <https://www.gcca.eu/stories/implementing-cote-divoires-nationally-determined-contribution>

The Paris Agreement prescribes that when taking action to address climate change, the respective obligations on, inter alia, the rights of indigenous peoples and local communities should be respected.



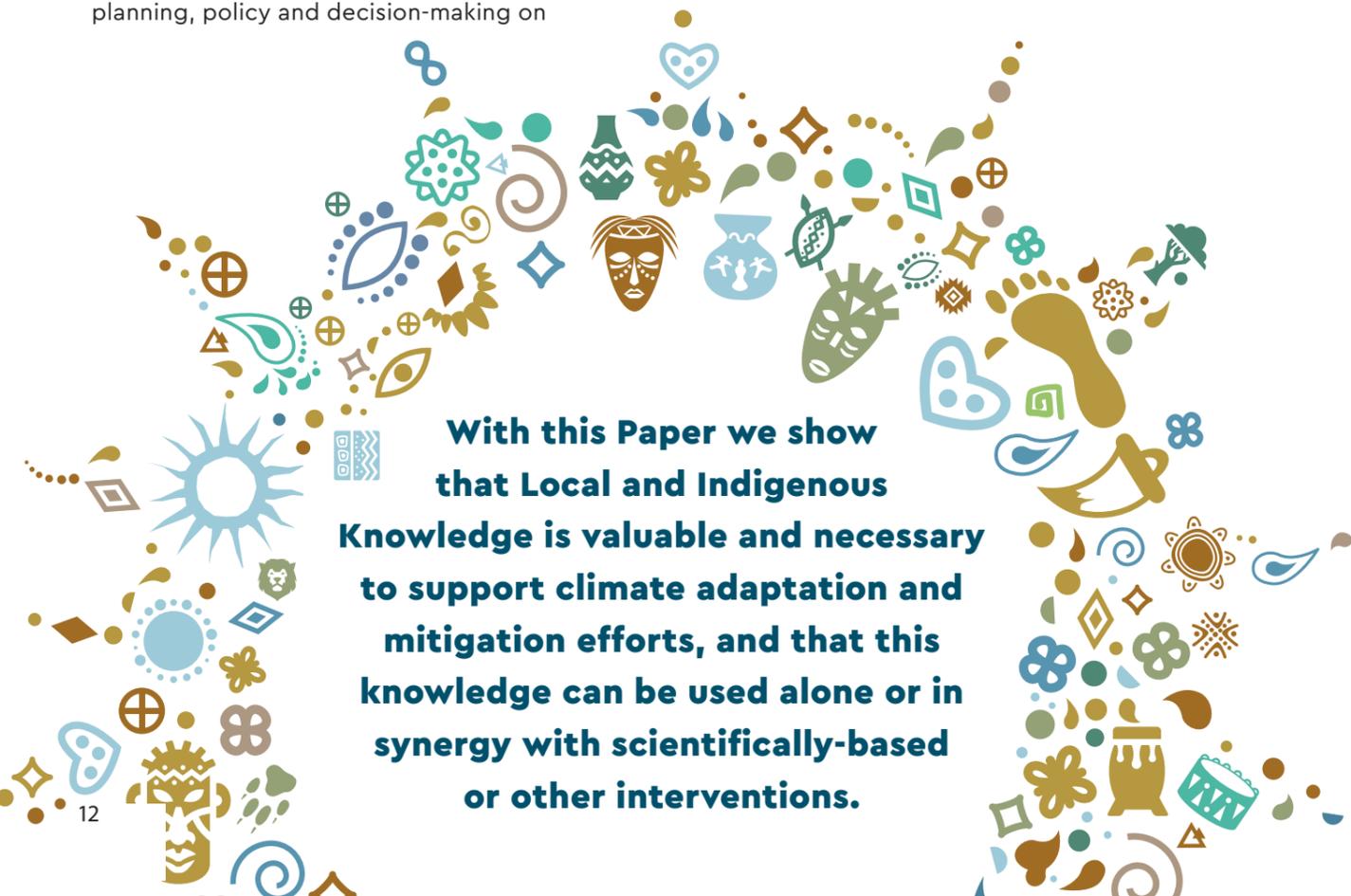
IV. Way Forward

Can LIK contribute to adaptation and mitigation action in ACP countries? The answer is yes, however, there is need to enhance this contribution. This is linked to the type of methodology and tools used to gather, assess and use LIK data.

There are three essential points to consider when addressing LIK and scientific knowledge for climate change in ACP countries. These are, participation, knowledge co-production and inclusiveness (Eiloli et al., 2019; Pasquier et al, 2020), together with scale and addressing power asymmetries. Although these would not totally remove barriers such as institutional, capacity, financial or similar more 'structural' constrains (e.g. Azibo and Kimengsi, 2015), the proposed approach would serve to best promote the consideration of LIK in national, regional, and international debates, planning, policy and decision-making on

climate change, alongside scientific and other forms of knowledge. Moreover, it is not always necessary, nor is it easy to "integrate" LIK with scientific or other knowledge, sometimes being best to use either, or both alongside, depending on the scale and the issues addressed.

Language, effective communication, safety and patience are other key factors to take into account in the formulation of research, interventions or policies to address the impacts of climate change using LIK and scientific knowledge.



With this Paper we show that Local and Indigenous Knowledge is valuable and necessary to support climate adaptation and mitigation efforts, and that this knowledge can be used alone or in synergy with scientifically-based or other interventions.

IV. Policy Recommendations

The following policy recommendations seek to contribute to existing research and efforts to promote the understanding and use of LIK for climate change adaptation and mitigation action in ACP regions and countries:

- i. **Promote dialogue, debate and research** findings that raise awareness of the challenges, efforts and successes, at different fora, on the use of LIK for climate change adaptation and mitigation in ACP countries and regions;
- ii. **Share knowledge of and encourage appropriate participation and representation** of LIK holders and/or experts from ACP countries/regions in the various international Platforms and debates, specifically those under the United Nations Framework Convention on Climate Change (UNFCCC);
- iii. **Encourage, promote and technically support efforts towards the formulation of regional LIK Knowledge Platforms** that would identify the various LIK holders/experts and stimulate a better understanding and exchanges on best approaches to ensure that LIK is taken into account in climate change debates, planning and policies at the community, national, regional and international levels;
- iv. **Disseminate and communicate on the different aspects of LIK** such as best research approaches or adaptation and mitigation actions by local individuals or communities;
- v. Other?

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