Adapting to the Heights: How African Mountain Farmers Perceive and Respond to Climate Change

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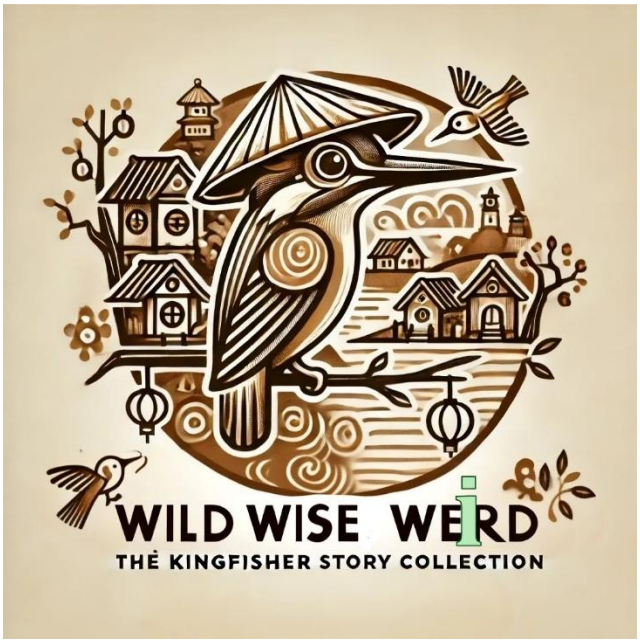

"As time passes, news about the now hotter Earth buzzes through the bird village. Those kingfishers residing along the banks of the Red River often report drying riverbeds and skinny fish. As Kingfisher casts his gaze upon the events that have unfolded, he can't help but feel a sense of unease creeping up within him."

In "GHG Emissions"; *Wild Wise Weird* [1]

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As climate change accelerates, its impacts are hitting mountain regions especially hard [2-4]. In a study spanning ten mountain regions in Central and East Africa, researchers documented how 1,500 smallholder farmers perceive and respond to climatic shifts that threaten their livelihoods and ecosystems [5].

Mountain communities reported a wide array of climate-related impacts, including reduced streamflow, declining crop and livestock yields, increased soil erosion, and a rise in diseases affecting both humans and animals. These were associated with observable climatic changes like rising temperatures, altered rainfall patterns, more intense droughts and floods, and notably, reduced fog—an underreported but vital water source in highland ecosystems [5].

Farmers responded primarily through on-farm intensification: adjusting planting dates, using improved crop varieties, increasing chemical input use, and applying soil conservation techniques. Off-farm strategies included seeking wage labor and, in specific contexts, diversifying into timber trade or mining. Despite widespread awareness of climate change, most farmers still relied on Indigenous and Local Knowledge (ILK) to time agricultural activities—knowledge that may prove less effective as traditional weather patterns break down.

However, the study found that most of these responses remain incremental, seeking to preserve existing systems rather than transform them. Only three sites—Mount Kenya, Mount Kilimanjaro, and the Bale Mountains—showed partial signs of transformational adaptation, enabled by strong social capital, government extension services, and support from well-connected individuals or diaspora communities. Household wealth was a key determinant: poorer households implemented fewer adaptation actions, underscoring economic barriers to change [5].

The researchers emphasize that a one-size-fits-all approach to climate adaptation is inadequate. Conflict, restrictive agricultural policies, and place-based factors like market access or government support shaped both constraints and opportunities differently across sites. Recognizing the cultural and ecological complexity of mountains, the study advocates for participatory, locally grounded strategies and calls for deeper engagement with mountain communities in co-producing adaptation pathways [6].

Ultimately, this research illustrates the fragile but adaptive interface between people and nature in mountain environments. It underscores that resilience is not just ecological—it is social, economic, and deeply rooted in local knowledge and connection to place [7,8].

References

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