

TABLE OF CONTENTS

<i>Editorial: Why Diamond Open Access in the Global South?</i> Jama Musse Jama	13
<i>If Buildings Could Talk: The Ottoman and British Architectural Legacies in Berbera and the Hidden Stories They Tell.</i> Nasra Dahir	21
<i>Diaspora Media and Resistance: Somali Horizon and the Struggle Against Siad Barre's Regime.</i> Marwaad Kayse	39
<i>Why I chose to rewrite Somali lullabies.</i> Halgan Daahir Axmed	61
<i>The Inner World in Cilmi Boodhari's Love Poetry.</i> Kidist Dorigatti	79
<i>Somali Women's Religious Poetry Through the Figure of Eve: Representing the Sacred and Engaging with Tradition.</i> Mirea Gabry Del Bianco	93
<i>Documenting The Climate Change Terminologies for Somali Language Speakers.</i> Tirsit Yetbarek	115
<i>Sheikh Mahmud Suleiman and His Reflections on the Tijaniyya Sufi Order: A Study Based on His Manuscripts.</i> Fatuma Hussein Abdulkarim and Nuraddin Aman	129
<i>Textual and Contextual Study of the Ḥulāṣah Manuscript Authored by Ṣayḥ Badruddīn ibn Ubbiyy on Ethiopian Indigenous Muslim Scholars.</i> Rameta Muzeyen and Nuraddin Aman	149

Climate Justice through Development of Climate Terminology: The Case of the Somali Language

Tirsit Yetbarek Semeⁱ

Somaliland Centre for African Studies

Abstract

Effective climate mitigation and adaptation require not only scientific knowledge but also precise, accessible language that enables communities to understand risks, participate in planning, and adopt protective measures. In the Somali language context, growing institutional attention to climate risks has not yet been matched by systematic, standardised development of Somali-language climate terminology. This paper synthesises the literature on linguistic justice, environmental justice, and indigenous/local knowledge (ILK) to argue that the development of Somali climate terminology is a critical enabler of equitable climate action. Drawing on recent policy documents, NGO reports, and emerging Somali-language initiatives, the paper assesses existing gaps. It proposes a detailed empirical design to validate and operationalise a standardised Somali climate lexicon through participatory fieldwork, iterative piloting, and institutional adoption. The methodological protocol includes lexical elicitation, comprehension testing, early-warning message trials, and co-production workshops with pastoralist knowledge-holders, educators, and meteorological services.

Keywords: Climate justice, linguistic inclusion, Somali language, climate terminology, sustainable development, Horn of Africa.

1. Introduction

Climate change is fundamentally communicative: the effectiveness of early-warning systems, adaptation planning, and community-led mitigation hinges on whether information is understood, trusted, and actionable at the local level (Fine, 2022).

Cite as Tirsit Yetbarek Seme, 2025. Climate Justice through Development of Climate Terminology: The Case of the Somali Language. *Dhaxalreeb*, 21 (2), pp. 115-127. DOI: 10.13169/Dhaxalreeb.21.2.0115



In multilingual contexts, the language of climate communication is an axis of inequality: when scientific and policy vocabularies exist primarily in global languages (e.g., English, Arabic, French, etc), speakers of national or indigenous languages are at increased risk of exclusion from knowledge, decision-making, and adaptation funding. This paper examines this problem through the case of Somali-language climate terminology. Somali-speaking communities in the Horn of Africa face acute climate vulnerability, including severe droughts, erratic rainfall, rising temperatures, and climate-driven displacement (Ahmad, 2025). Yet Somali-language climate terminology remains fragmented and largely project-driven rather than standardised and institutionalised. Recent initiatives, such as the ICE Institute's Climate Dictionary (2025), represent promising first steps as an organised attempt. Still, they must be embedded in a rigorous, participatory program of lexical development, testing, and institutional uptake to realise their potential for climate justice.

This research has two parts. First, it places the development of Somali climate terminology within the broader contexts of linguistic justice, environmental justice, and the role of indigenous and local knowledge (ILK) in climate communication. Second, it offers a detailed empirical framework for validating and operationalising Somali climate terminology through participatory research and piloting with key stakeholders: pastoralist communities, meteorological services, educators, radio broadcasters, NGOs, and national agencies. The methodological protocol is designed for researchers and practitioners aiming to create a reliable, practical Somali climate lexicon that supports early warning, adaptation, and public participation.

2. Literature Review

2.1 Language, communication, and climate justice

An increasing body of research shows that language is both a practical and ethical part of climate justice. Sociolinguistic exclusion, when climate information is unavailable or unclear in a community's primary language, reduces understanding, weakens trust in messages, and limits agency of local communities (Fine, 2022). Similar work on environmental justice

has highlighted three key aspects, distributive, procedural, and recognition justice, that are directly affected by language access: who bears the climate burden, who takes part in decision-making, and whose knowledge is acknowledged (OECD, 2024). When climate vocabularies are concentrated in dominant languages, marginalised groups often face procedural exclusion and recognition gaps that restrict their ability to access adaptation resources or influence policy.

Recent research commentaries on multilingualism and climate also point to similar dynamics: conservation and climate projects operating in linguistically diverse landscapes must account for language in program design to avoid exacerbating existing inequalities (Edmonds, 2021). UNESCO and related agencies have increasingly argued for integrating mother tongues into education and public information as a cornerstone for equitable development and social justice (UNESCO, 2024; 2025). These international calls provide normative support for national-level investments in language-sensitive climate communication.

2.2 Indigenous and local knowledge (ILK) and vocabulary

Pastoralist and indigenous vocabularies often contain highly valuable, context-specific terms for weather patterns, seasonal markers, and ecological indicators that are crucial for local decision-making. Somali pastoral traditions, for instance, have rich lexicons for seasons, wind regimes, vegetation states, and cosmic indicators that historically guided mobility, grazing decisions, and drought forecasting (Galaal, 1970). Similarly, the settlers' community also depends on local vegetation, soil patterns, and rainfall for their farming practices. Despite their richness, ILK vocabularies are rarely mapped systematically onto scientific terms, resulting in missed opportunities for hybrid communication that could enhance both the cultural legitimacy and technical precision of climate messages.

Co-production approaches that respect epistemic sovereignty and integrate ILK into scientific lexicons are increasingly recommended in the scholarship on climate education and adaptation (Herring & Hussein, 2024).

2.3 Somali-language initiatives and national policies

Several national and project-level documents in the region reflect an emerging institutional awareness of the need for inclusive climate communication. Somalia's National Climate Change Policy (NCCP) (2024) and its First Adaptation Communication to the UNFCCC (2023); Somaliland — National Climate Change Policy (NCCP) (2023) set out priorities for adaptation planning and stakeholder engagement, but these documents are primarily produced in English for international reporting and lack widely distributed Somali-language counterparts targeted at community action (MoECC, 2024; UNFCCC AdCom, 2023). At a program level, universities and NGOs have initiated curriculum projects and pilot lexicons. For example, Hargeysa University's Institute for Peace and Conflict Study designed a modular curriculum for Climate change mobility and Gender in collaboration with Rift Valley Institute (RVI) in 2024, Redsea Cultural Foundation (RCF) created an interactive climate change curriculum procedures in partnership with University College London (UCL) in 2025, SIMAD University's ICE Climate Dictionary was produced in 2025 and co-produced Somali-language climate courses in Puntland state of Somalia, but these outputs remain fragmented and under-institutionalised. The uneven availability of Somali-language climate materials highlights a gap between policy commitments and on-the-ground communication engagement.

To illustrate the research context, the following tables present the selected word lists from the two existing terminologies accessible to the researcher. Table one presents a selected terminology from the ICE Climate terminology by SIMAD University, while the second table is a list of selected terminologies from a study by the current researcher in 2025 that compiled a list of 100 words by interviewing environmentalist, linguists, community elders, and women from the language-speaking community in Hargeysa, Somaliland, Jigjiga, and Godey in the Ethiopian Somali Regional State, using qualitative research methods such as elicitation, key informant interviews, and document analysis.

Word (English)	Word (Somali) ¹
1. Resilience	<i>Adkeysiga</i>
2. Indigenous knowledge	<i>Aqoonta Dadka asliga ah</i>
3. Climate Security	<i>Ammaanka Cimilada</i>
4. Weather	<i>Jawiga</i>
5. Climate Crisis	<i>Xasaraha ka dhasha cimilada</i>
6. Loss and Damage	<i>Khasaaraha iyo waxyeellada</i>
7. Carbon capture	<i>Soo qabashada Kaarboonka</i>
8. Decarbonization	<i>Dhimista Karboonka</i>
9. Adaptation	<i>La qabsiga</i>
10. Mitigation	<i>Yaraynta waxyeellada</i>
11. Renewable Energy	<i>Tamarta la cusboonaysiin karo</i>
12. Nature-based solutions	<i>Xalal ku salaysan dabeecadda</i>
13. Transparency	<i>Daah-furnaan</i>
14. Regenerative Agriculture	<i>Beeraha/Beerashada is cusbooneysiisa</i>
15. Climate Justice	<i>Cadaaladda cimilada</i>

Table 1. Selected word list from the ICE list

English	Somali
1. Deforestation	<i>Xaalufinta dhirta or dhir-xaalufin</i>
2. Carbon emission	<i>Qaac</i>
3. Adverse effect	<i>Waxyeellayn</i>
4. Atmosphere	<i>Gibil</i>
5. The four seasons	<i>Afarta xilli</i>
6. Climate shift	<i>Isbedelka cimilada (geddisnaanta cimilada) or (guurguurka cimilada)</i>
7. Biodiversity	<i>Kala duwanaanta (kala geddisnaanta) noolaha</i>

¹ Despite recognizing literal translations that may negatively affect the understanding of scientific terminology the list is presented here exactly as it appears in the publication (ICE Institute, 2025).

8. Carbon footprint	<i>Raadreebka Kaarboonka</i>
9. Carbon offset	<i>Dheellitir kaarboon</i>
10. Climate change impacts	<i>Saamaynaha isbeddelka cimilo</i>
11. Climate prediction	<i>Saadaalinta cimilada</i>
12. Climate sensitivity	<i>Xasaasiyadda cimilada</i>
13. Climate trend	<i>Habsocodka cimilada</i>
14. Conservation	<i>Ilaalin or dhowris</i>
15. Coping	<i>La tacaalid</i>
16. Customary	<i>Caado</i>
17. Degradation	<i>Hoosudhac or Tayodhac</i>
18. Desertification	<i>Saxarow</i>
19. Disaster	<i>Masiibo</i>
20. Early warning system	<i>Hababka Digniin Horraadka</i>
21. Endangered	<i>Khatar ku jira</i>
22. Flood	<i>Daadad</i>
23. Global warming	<i>Kuleylka cimilada or Diirranaanta arlada</i>
24. Globalization	<i>Caalamiyeynta</i>
25. Livelihood	<i>Qaab nololeed</i>
26. Local communities	<i>Bulshooyinka degaanka</i>
27. Opportunity cost	<i>Qiimaha fursadaha lumay</i>
28. Preparedness	<i>Diyaargarow</i>
29. Recovery	<i>Kasookabasho</i>
30. Rehabilitation	<i>Sookabasho</i>
31. Response	<i>Ka falcelin</i>
32. Restoration	<i>Dib u hagaajin</i>
33. Sensitivity	<i>Xasaasiyad</i>
34. Social capital	<i>Raasamaalka bulshada</i>
35. Sustainability	<i>Joogtayn</i>
36. Uncertainty	<i>Hubanti la'aan</i>

Table 2. Selected word list from Tirsit (2025)

3. Gaps in the literature

While the literature clearly establishes the importance of language for equitable climate action, there is little published empirical work on the development of Somali climate terminology and standardised lexicography. Existing studies are mainly descriptive, project-based, or pilot-oriented. There remains a need for systematic, replicable methodologies for lexicon development, comprehension testing, and institutional adoption in contexts like Somali society, where community engagement systems and low literacy compound communicative challenges.

As publicly available documents, the Climate Dictionary of SIMAD University, which includes a 40-word list with explanations of key terms from leading experts, is one of them. While its structure is sound, its practical use, especially for the wider community, might need revisiting, as it is focused on technical terms translated and aligned from the global experts' terminology list. To make it more practical and contextually useful for the wider community, it would have been essential to include terms related to the everyday climate and environmental experiences of the general public. The other pilot study by the author is a 101-word list of the most frequently used climate terminology, with translations, in the Maay and Mahatiri languages/dialects of Somali (Tirsit, 2025). Apart from these two, there is no other compiled list of climate terminology. As a space of inquiry, the second research looked into documents such as the Qaamuuska eray-bixinta general word list created by the Xarunta Horumarinta Manaahijta for various subjects, published in 1987, which included some terminologies used in national mass education and teaching materials development for the Somali Republic, covering subjects like Physics, Geography, Chemistry, and Biology. Additionally, there is a minimal list of words compiled by Ahmed Ibrahim Awale in his book titled 'Environment in Crisis: Selected Essays on Somali Environment' (Awale, 2016: 50). It also includes first-hand interviews with local community members and environment experts in Hargeysa, Jigjiga and Godey.

Although the two documents have practical relevance as initial initiatives, they are created using a top-down approach, which remains relevant technically but necessitates a methodologically

suitable, community and indigenous-knowledge-based stakeholder approach to develop a more comprehensive word list, as this article advocates.

4. Theoretical framework

This study draws on a triadic theoretical synthesis: linguistic justice, environmental justice, and co-production of knowledge (ILK-science interface). Each contributes conceptual leverage for understanding both why Somali climate terminology matters and how it should be developed.

- A. **Linguistic justice** (Fine, 2022) frames language access as a social right: communities should have equitable access to public information in languages they speak and understand. Linguistic justice emphasises procedural fairness (access to information and participation) and recognition (respect for linguistic identities). In climate contexts, it foregrounds who controls terminology, who receives messages, and whose voices are represented.
- B. **Environmental justice** situates the problem in a distributive and institutional setting: those most vulnerable to climate impacts, often rural and marginalised communities, also tend to have the least access to the institutional levers for adaptation (funds, technical support), making language access a mechanism of either exclusion or empowerment. Recognising language access as a justice concern aligns with calls to operationalise equity in adaptation funding and governance.
- C. **Co-production and ILK integration** argue that effective terminologies should not be one-way translations but dialogic products co-created with local knowledge holders. This approach ensures that scientific precision is retained while terms remain culturally resonant and actionable among local users. Co-production helps bridge epistemic divides and supports mutual validation of terms for both technical use (e.g., meteorological forecasting) and on-the-ground decision-making (e.g., pastoral mobility).

Together, these frames guide both the analytical diagnosis (identifying gaps that matter for justice) and the methodological prescriptions (participatory, iterative lexicon development).

5. Proposed empirical design for field validation and lexicon operationalisation

This section outlines a comprehensive, mixed-methods research protocol to develop, validate and operationalise a standardised Somali climate lexicon. The design is modular and intended to be carried out in partnership with all stakeholders.

The mission for such a lexicon development must focus on community practical utilisation. To assure this, a clear definition of the objectives is important. The followings should be the guiding path for the development:

- a) To compile, refine, and validate a standardised Somali climate lexicon that maps scientific terms to Somali equivalents and ILK concepts.
- b) To test comprehension and actionable understanding of translated climate messages among target user groups (pastoralists, agro-pastoralists, urban residents, extension agents, and broadcasters).
- c) To pilot the use of standardised terms in early-warning messages, radio broadcasts, and extension materials and evaluate impacts on comprehension and intended behaviours.
- d) To develop institutional pathways for adoption and iterative updating of the lexicon (e.g., through a national working group and digital “living” glossary).

Selection of study sites should reflect Somali societies’ livelihood, agro-ecological, and sociolinguistic diversity. Sampling should utilise purposive selection for depth (targeting key stakeholder types) and cluster sampling for community-level surveys. Participant groups include pastoralists (both elders and women), agro-pastoralists, youth, teachers, radio broadcasters, meteorological staff, NGO extension workers, and government officers.

The initiative should involve a structured four-phase approach to developing and institutionalising a Somali climate lexicon. The

first phase focuses on compiling existing resources, conducting interviews with traditional knowledge holders to map indigenous terms for weather and climate indicators, and creating initial bilingual entries with definitions, examples, and usage notes, which will deliver a draft Somali–English lexicon containing approximately 150 to 300 headwords, published as a working PDF and database.

The second phase should be comprehension testing and validation through cognitive interviews, surveys, and field radio message trials to assess understanding and behavioural responses to the terminology. Findings inform iterative refinement of the lexicon. The third phase involves regional workshops and the formation of a national working group to review and endorse the terms, followed by pilot programs integrating the lexicon into education and extension services. The final phase aims to embed the standardised terminology into policy, media, and ongoing monitoring efforts, ensuring sustained adoption and accessibility through online platforms.

Anticipated challenges include low literacy levels and a preference for oral communication among users who rely on radio, community meetings, and audio-visual materials. To address this, priority will be given to radio trials, oral cognition techniques, and audiovisual content, while avoiding exclusive reliance on written surveys. Variations in Somali language and dialects, such as Northern, Central, and Southern registers, will be managed by including dialect diversity in sampling, providing register notes in glossaries, and offering multiple approved language variants when necessary. Institutional support is essential for adoption, requiring ongoing engagement from organisations like MoECC and meteorological services. Mitigation strategies involve involving these institutions from the outset, presenting robust empirical evidence from trials, and proposing a detailed plan with associated costs for scaling up the project.

6. Conclusion

Creating a validated Somali climate lexicon is not just a linguistic task; it also promotes linguistic justice in climate governance.

Standardised terms that are both technically accurate and culturally meaningful can:

- Improve early-warning effectiveness, reducing delays in protective action and thereby saving lives and livelihoods.
- Enhance procedural justice by enabling broader participation in policy consultations, planning meetings, and funding proposals.
- Enable recognition justice by valuing and integrating ILK into official messaging and opening pathways for hybrid knowledge systems.
- Strengthen education and capacity-building by embedding validated terminology into teacher training and extension curricula, producing long-term gains in climate literacy.

International frameworks (UNFCCC, UNESCO) increasingly recognise the importance of linguistic inclusion for sustainable development and social justice. Existing policy documents show policy readiness to mainstream climate adaptation, but implementing these commitments requires investments in communication capacity — a gap that the lexicon project directly addresses.

References

Ahmad, M. (2025). ‘We have not seen something like this before’: Cyclone Sagar and its impact on livelihoods in northwestern Somaliland. *Dhaxalreeb: An Academic Journal of Somaliland Centre for African Studies*, 21(1), pp. 121-146.

Awale, A. I. (2016). *Environment in crisis: Selected essays on Somali environment (2nd ed.)*. Liibaan Publishers.

Edmonds, R. (2021). *Multilingualism and climate justice: The role of linguistic diversity in conservation and climate work. Journal of Social Linguistics*, —. [Commentary].

Fine, J. C. (2022). *Language and social justice in US climate movements. Frontiers in Communication*, 7, Article 920568. <https://doi.org/10.3389/fcomm.2022.920568>

Galaal, M. H. I. (1970). *Stars, seasons and weather in Somali pastoral traditions*. [Monograph]. (Available online).

Herring, E., & Hussein, H. (2024). *Co-producing a Somali language course on climate change*. Transparency Solutions (report). Retrieved from <https://transparencysolutions.com/research/428031067-herring-hussein-2024-ilk-and-climate-education-somalia>.

ICE Institute — SIMAD University. (2025, June 25). *Climate Dictionary: Speak climate fluently*. ICE Institute. Retrieved from <https://ice.simad.edu.so/2025/06/25/climate-dictionary-speak-climate-fluently/> ice.simad.edu.so

Ministry of Environment and Climate Change (MoECC). (2024). *Somalia National Climate Change Policy (NCCP)*. Mogadishu: MoECC. Retrieved from <https://moecc.gov.so/wp-content/uploads/2024/10/Somalia-National-Climate-Change-Policy-EN.pdf>. moecc.gov.so

OECD. (2024). *Environmental justice. Organisation for Economic Co-operation and Development*. (Report).

Tirsit Yetbarek (2025). Documenting the climate change terminologies among Maay Somali language speakers: Pilot research report. *Unpublished manuscript, Local Histories of Climate Change in the Horn of Africa Project*, University of Pennsylvania.

UNESCO. (2025). *Make languages count for sustainable development* (IMLD 2025 materials). UNESCO. Retrieved from <https://articles.unesco.org>.

UNFCCC. (2023). *Somalia's First Adaptation Communication to the UNFCCC*. Federal Government of Somalia. Retrieved from <https://unfccc.int/sites/default/files/ACR/2023-07/Somalia%20Adaptation%20Communication.pdf>.

World Climate/Climate Centre. (2024). *Somalia: Country profile* (RCCC Country profiles). Retrieved from https://www.climatecentre.org/wp-content/uploads/RCCC-Country-profiles-Somalia_2024_final.pdf. Climate Centre.

ⁱ Tirsit Yetbarek is a PhD candidate scholar working on dialects and variations of the Somali language. She is a lead researcher and the head of the Somaliland Centre for African Studies (SCAS). She can be reached at tirsit.yetbarek@redsea-online.org.