



UTS
ePRESS

Gateways:
International Journal
of Community
Research and
Engagement

Vol. 13, No. 1
May 2020



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Citation: Nkatha, M 2020. Centring knowledge democracy within policy-making for sustainability and resilience: A discussion of the Kenyan drylands. *Gateways: International Journal of Community Research and Engagement*, 13:1, Article ID 7107. <http://dx.doi.org/10.5130/ijcre.v13i1.7107>

ISSN 1836-3393 | Published by UTS ePRESS | <http://ijcre.epress.lib.uts.edu.au>

RESEARCH ARTICLE

Centring knowledge democracy within policy-making for sustainability and resilience: A discussion of the Kenyan drylands

Nkatha Mercy

MS Training Centre for Development Cooperation – ActionAid Denmark, P.O. Box 254, Usa River, Arusha, Tanzania.

Corresponding author: Nkatha Mercy; nkatham@gmail.com

DOI: <http://dx.doi.org/10.5130/ijcre.v13i1.7107>

Article history: Received 02/02/2019; Revised 23/04/2019; Accepted 06/05/2020; Published XX/05/2020.

Abstract

Culture, environment and, therefore, knowledge of socioeconomic constructs are intricately interwoven. Over the past decade or two, pastoralists without formal education in Kenyan drylands have increasingly found themselves on the receiving end of community empowerment trainings that lean towards human–wildlife conflict and environmental conservation. Why would research entities set aside mega budgets to teach the pastoralist about human–wildlife conflict? A pastoralist who has long roamed drylands with his livestock grazing alongside elephants and lions, and whose major life transition ceremonies, celebrations, songs, riddles, proverbs, sayings, poetry and jokes fundamentally feature wildlife. What makes these trainings in ‘imparting knowledge’ superior to the ‘indigenous knowledge’ already in the custody of the Borana or the Turkana or the Rendile?

This article explores the relevance of community-based knowledges in addressing sustainable development and climate resilience, as articulated by the Sustainable Development Goals (SDGs). The specific setting for this discussion is the Kenyan drylands, which are central to the achievement of the SDG agenda given that they constitute 84 percent of Kenya’s total land surface. They also host up to 75 percent of Kenya’s wildlife population, account for more than 80 percent of the country’s eco-tourism interests and support about 9.9 million Kenyans, or approximately 34 percent of the Kenyan population.

DECLARATION OF CONFLICTING INTEREST The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. **FUNDING** The author(s) received no financial support for the research, authorship, and/or publication of this article.

Today, the drylands are impoverished, deficient for both humans and nature. Their vulnerability to disasters is amplified, while their resilience to shocks is greatly weakened, a situation made worse by climate change. To understand the importance of community-based knowledges within policy making for sustainability and resilience, this article examines in detail epistemological, social, historical, political and environmental factors converging on the Kenyan drylands, as well as the opportunity to address this complexity that the SDGs represent.

Keywords:

Drylands, policy, knowledge democracy, resilience, Sustainable Development Goals

Introduction

This article focuses on the need for community-based knowledge to be truly situated at the heart of any attempt to achieve equitable and sustainable development. It discusses the Sustainable Development Goals (SDGs) and how they envision integration of indigenous knowledge within policy and institutional frameworks rooted in EuroAmerican ways of knowing that are tasked with guiding environmental governance in drylands. By demonstrating, in part, how community knowledge in drylands is organised towards environmental resilience, the article proposes making room for knowledge democracy as a potential means towards building climate change resilience for a people situated within a complex, variable environmental and ecological setting. It also briefly looks at what social responsibility for the SDGs could look like for higher education in Kenya. The specific setting of this discussion is the Kenyan drylands, which have been plagued by a history of social, political and epistemological neglect and wilful ignorance.

The thoughts in this article are the author's own, based on living in Kenya and implementing human development interventions there. The author coordinates UNESCO's Knowledge for Change (K4C) Hub based in Arusha, Tanzania, known as Nyerere K4C Hub. This is part of a global consortium that seeks to build community-based participatory research capacity to address locally pressing societal challenges, including the UN SDGs, while providing a unique interface between higher education, science and policy-making institutions.

The first section of this article takes a general look at drylands as part of a global natural ecosystem and then focuses on drylands as they exist in Kenya and the ecological and human development challenges within them. The second part looks at the SDGs and interrogates their call to 'Leave no one behind' against the capacity and capability of traditionally marginalised dryland communities to meaningfully engage with them, specifically with regard to data, relevant knowledge for research production, and dissemination and application of research findings to dryland community development challenges. The third part is an examination of where we are at present with regard to contestations in knowledge production that shapes local development policy vis-a-vis the futuristic endeavour to leave no one behind by the year 2030. It is also an attempt to bring into focus and to showcase how community knowledges can be used to inform sustainable development. The final section of this article is a reflection on how the academy in Kenya can move forward and begin to reorient their teaching and learning towards pedagogies that inculcate the country's intangible heritage as part of their social responsibility in higher education for sustainable development.

Drylands

Drylands occur in every continent. They are some of the world's most diverse biomes by way of plant and animal diversity and microbial and soil communities, and they exhibit high levels of genetic differentiation among populations, making them of paramount importance to ecological multifunctionality, ecosystem goods and services, and human development (Maestre et al. 2012; Maestre et al. 2016; Safriel et al. 2005; White, Tunstall & Henninger 2002). Characterised by high variability in rainfall over space and time, drylands are considered arid when they have a ratio of annual precipitation to potential evapotranspiration that ranges between 0.05 and 0.065 (aridity index). They are classified into four categories based on rainfall: dry sub-humid, semi-arid, arid and hyperarid (see Figure 1). Almost 100 percent of all hyperarid lands are in the developing world. They comprise about 40 percent of the earth's land area, including North, Eastern and Southern Africa, Western North America, Australia, Middle East and Central Asia. They are home to about 2.7 billion people and they sequester more than one-third of the global carbon stock (Mcsweeney 2019; UNEP 2011).

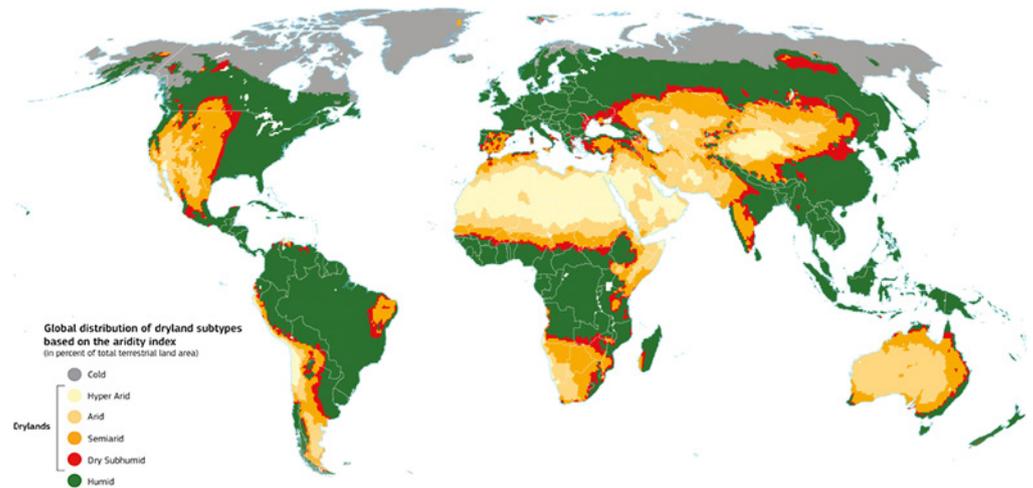


Figure 1 Global patterns of aridity 1981–2010 (EU 2019)

Given these environmental and climatic realities, the primary economic function of drylands is rangeland. The Society for Range Management defines rangelands as lands that produce a kind of vegetation that only animals can consume and that can be converted into products beneficial to humans; lands that are not suitable for sustained cultivation; and lands incapable of supporting arborescent forests (Squires 2010). The human adaptation of rangeland management is pastoralism. Pastoralism is the opportunistic response to the spatial and temporal variations of the drylands' resource base (Wit & Verheye 2009) and it is this that necessitates the characteristic pastoral–nomadic movement. It is an extensive land use system that often facilitates cohabitation with wildlife, including large mammals, and one that hinges upon a sophisticated understanding of interactions between man, land and animals. Because it is an extensive land use system, the pastoralist land tenure bedrock has historically been communal: open pasture and open access to water points encompassed within a very robust rangeland governance system. This is the first important inflection point in this discussion. As mentioned earlier, pastoralism contributes to ecosystem services such as biodiversity

conservation, soil fertility and water regulation (McGahey et al. 2018). For these reasons, drylands ought to be a significant part of multi-level conversations and research focus on human-centred development. This also makes them significant to conversations on the SDGs and knowledge democracy.

Consistently, drought is the highest disaster risk in drylands across Africa by way of those affected, those killed and economic damage (PreventionWeb 2020). While droughts are endemic to drylands, global climate change has exacerbated their frequency, intensity and geospatial coverage in recent years. The images in Figure 2 show a comparative analysis of precipitation/drought data in the African continent.

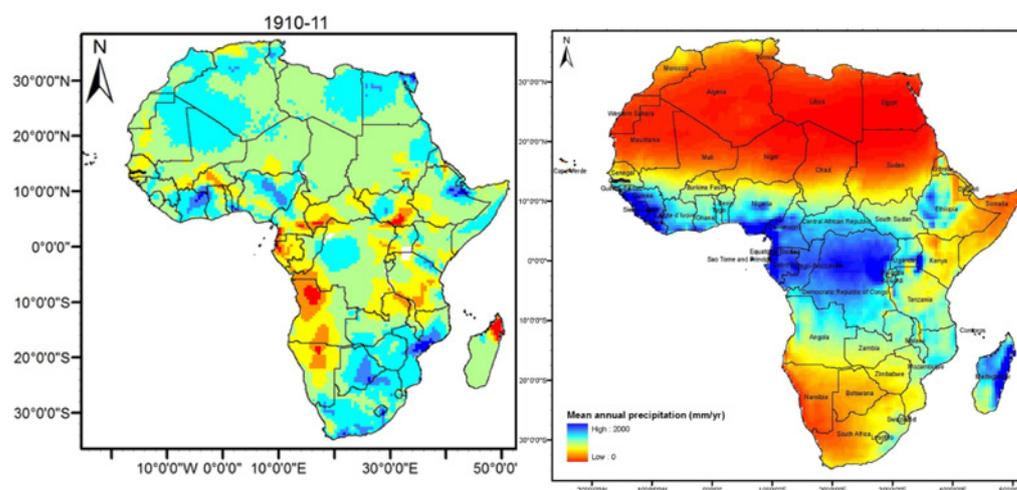


Figure 2 Maps of the African continent comparing drought/rainfall patterns between 1910–11 and 1979–2010 (Masih et al. 2014).

Drylands and the pastoralists within them are among the most marginalised areas and people in society. Their endowments and entitlements greatly hamper their capabilities.

ABOUT KENYAN DRYLANDS

According to the latest World Bank figures (2018), in Sub-Saharan Africa where Kenya is situated, 60 percent of the population is rural, as opposed to urban or modern (as defined by the World Bank). Given some of the characteristics of an indigenous community, as identified by the UN, we can say that most of what drives everyday life in rural Africa is indigenous: distinct languages, distinct culture, distinct beliefs, exclusion of most indigenous inhabitants from dominant groups of society, historical continuity of pre-colonial and/or pre-settler societies etc. (UN, n.d.) In Kenya, 84 percent of the total land surface is drylands. So not only is the country rural, it is also characterised by drylands (see Figure 3). They account for more than 80 percent of the country's eco-tourism interests, up to 75 percent of its wildlife population and over 75 percent of the country's meat and milk production, and they support about 9.9 million Kenyans, or approximately 34 percent of the country's population (Gok 2012b; Mortimore et al. 2009).

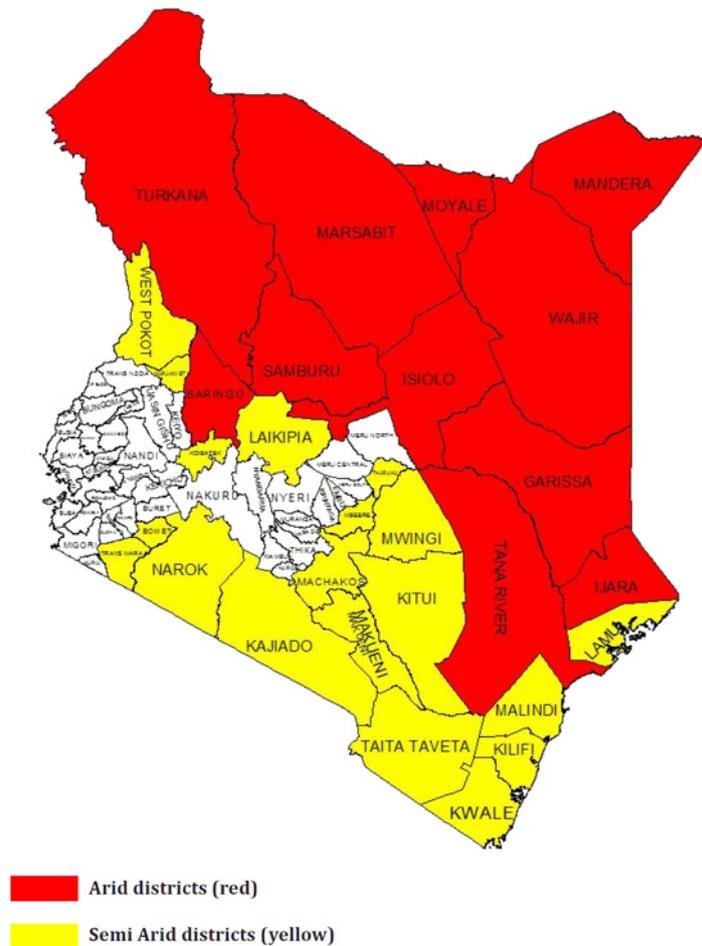


Figure 3 Kenyan drylands (GoK 2012a)

Kenyan drylands register the highest incidence of poverty, the lowest indicators of development and the deepest regional inequalities with regard to access to basic public services (GoK 2012a). This is a function of an ironic perception of and attitude towards drylands as unproductive wastelands and pastoralism as an outdated mode of economic production, as well as the long shadow of Kenya’s history – the persistence of colonial policy and institutions in arid and semi-arid lands (ASALs). We shall explore this further later in this article. While ASALs clearly play a significant role in the Kenyan landscape, rainfed agriculture is considered the backbone of the Kenyan economy.

Not all Kenyan drylands are created equal. Northern Kenya arid lands, in particular, are isolated and insecure and suffer from weak economic integration and limited political leverage. In addition, they host two of the largest refugee camps in the world and 18 of the 20 poorest constituencies in Kenya, where 74–97 percent of pastoralists live below the poverty line (GoK 2012b). Poverty, inequality and underdevelopment, which are prevalent here, are known to translate into increased vulnerability to the effects of global climate change, often leading to starvation and death of both people and livestock. This intersection of variables clearly poses an enormous challenge to overall human development and raises economic and environmental concerns, all of which are what the SDGs are dedicated to addressing. Further, they touch on the Triple P pillars of development (people, planet and profit) and, additionally, threaten peace

and global partnerships. It is these concerns that the SDGs seek to address in their rallying call to 'Leave no one behind'. The question, here, of whether to pursue alternative ways of knowing towards attaining the SDGs in Kenyan drylands is borne of contemplation of the very poor development policy outcomes thus far for pastoralists and drylands, as outlined above. The long shadow of institutions responsible for Kenyan dryland development interventions, overwhelmingly operating from within EuroAmerican epistemological frameworks, is illuminated here in an effort to demonstrate the need to understand their continuing influence and potential to short-circuit the aspirations of the SDGs.

SDGs: Challenges and Opportunities for Dryland Community Knowledge

A number of SDGs and targets are strongly linked to land and the role of traditional knowledge, indigenous people, pastoralists, local communities and culture. They include SDG 15 – Life on land; SDG 1 – No Poverty; SDG 2 – Zero Hunger; SDG 4 – Quality Education; and SDG 13 – Climate Action (General Assembly 2015; UN 2020). Notable is the explicit mention of indigenous people, culture, pastoralists, local communities and traditional knowledge within 5 out of 17 SDGs. Community knowledge becomes a fundamental asset in this context, given its wealth of understanding of how to navigate drylands, including the use of tools, technologies, skills, capacities, culture and social organisation that have allowed pastoralists to thrive in drylands since time immemorial. However, the SDGs are data intensive. While references are made to indigenous peoples' culture and traditional knowledge as contributing to sustainable development, as per the curated SDGs above, the SDG global policy framework has elevated the centrality of metrics (Costanza et al 2016; El-Maghrabi et al. 2018; Holden, Linnerud & Bannister 2014; Miola & Schiltz 2019; Steve 2016). The SDG global policy further frames development challenges as technical and thereby situates the power to address them in field knowledge experts who can measure and evaluate according to set parameters. This, according to Fisher and Fukuda-Parr (2019), shows how the agency of people is undermined, especially taking into consideration the infrastructure of measurement. The challenge for dryland community knowledge here is that a majority of pastoralists are not sufficiently educated in a formal/Western-style classroom. In fact, most are illiterate, and in abiding by the standard for measuring and evaluating the SDGs, they are therefore unqualified to engage as they cannot be plausibly labelled field knowledge experts.

Merry (2019, p. 2) defines the infrastructure of measurement as being 'The material and technological basis of deciding what to count, how to count it, and how to analyze and present the data'. She further postulates that this infrastructure of measurement is a function of the material objects for data collection and analysis, the social organisation of expertise, bureaucracies, hierarchies of management and funding sources, and *a knowledge system about ways of converting ideas about social life into numbers* (emphasis mine). This is a nod at the reification of knowledge. It is also, inherently, a power and political process. Viewed through this lens, dryland community knowledge becomes difficult to inject into this ontology of knowledge production and measurement. The framework outlined above does not auger well for a people whose social construct is based on the concept of interdependence and social organisation premised on: *olla fi dudan dhabatu – the village(rs) is the backbone that makes you stand straight*. At a macro level, there is the unequal distribution of and access to development data between the Global North and the Global South, between public and private actors, and between international development actors and local civil society. Questions about whose data, how it is collected and analysed, who participates in its collection and analysis, and how it

gets disseminated, and by whom, all deserve enquiry. Similarly, at a micro level, this tension is replicated by the dichotomy between research hypothesis and the application of academic theories and knowledge in development of dryland policy interventions and the everyday practice and application of community-based knowledge, which is variously labelled by academia and those at the macro level as being local or indigenous or traditional or cultural.

Pastoralist Knowledge and its Application to Dryland Management

I would be quite satisfied if my novels (especially the ones I set in the past) did no more than teach my readers that their past—with all its imperfections—was not one long night of savagery from which the first Europeans acting on God's behalf delivered them. (Chinua Achebe, 'The novelist as a teacher', 1965.)

The SDGs Decade of Action presents an important opportunity to centre knowledge democracy within policy-making for sustainability and resilience in Kenyan drylands. Given the convergence of present-day disadvantages in (Kenyan) drylands, and their history of sociopolitical, economic and epistemological neglect, actors in the development space must reflect on: What ought to be the role of community knowledges towards attaining these goals? Are pastoralists' ways of knowing and being relevant to sustainable development? In as much as it concerns higher education, how should community knowledge intersect with academia to shape government policy for expanding pastoralists' capabilities? Put simply, moving forward, who's knowledge counts?

We begin the discussion by revisiting the first inflection point in this article: the bedrock of the pastoralist dryland tenure system and its economic and sociopolitical base: communal rangeland management. Communal rangeland management is characterised by open grazing land access, open water points access within a well structured system of governance, and a succinct understanding of the interaction between man, nature and animals. Mounting scientific research evidence shows that livestock and human mobility in drylands is the best adaptation to and the most productive use of the ASAL environment as it is linked to pastoralists' ability to manage risk and uncertainty (Behnke & Muthami 2011; Behnke & Scoones 1993; Dyer 2013; Homewood 2008; Jode 2010; Scoones 2018). Just the fact that the practice of pastoralism has persisted to date is telling evidence that it is indeed the best adaptation to ASAL management.

Tied to communal rangeland management is pastoralists' interaction with nature and the environment by way of their cohabitation with livestock, basic wildlife and large mammals. This interaction is centred on everyday practice and application of knowledge by communities and hinges upon a sophisticated understanding of interactions between man, land and animals. Pastoralists' community management of this cohabitation is tightly woven into the fabric of their culture – how they make meaning out of their environment, which in turn is a function of their language, how they name things, how they name places, how they name themselves. In essence, it is an epistemology that derives from being, because their land *is*. It results in a knowledge that proceeds from this reality and is encapsulated in the inclusion of livestock and wildlife in major life transition ceremonies, celebrations, songs, riddles, proverbs, sayings, poetry, jokes – the full gamut of most of Africa's oral tradition. It manifests in dryland political and socioeconomic constructs, which include concrete cultural commitments to protect the environment. The result is environmental sustainability.

Polycarp (Ikuenobe 2014) invites us to consider that Africans' epistemological view is fundamentally experientialist and that African ontology blurs the distinction between object and subject, so that the observer cannot escape responding to it. What this translates into is a merging of the natural, the supernatural, the spiritual and the sacred as spirits that dwell in forests and rivers, hence the need to take care of them; and totems that protect, herbs that heal and sacrifices that appease, hence the need to do well by your goats and sheep. Contrasted with the anthropocentric approach, culture is a biocentric approach (nature as an end in itself, respected for its own sake: sacred, divine, in harmony with humans, and with an inherent moral worth which derives from its role in cosmic and ontological order and its moral and religious primacy). This approach was geared towards a harmonious interaction of all things in nature. Loss of harmony would bring about illness or drought. Seen from this orientation, magic and mysticism were not efforts to overcome separation of man from nature; rather, they were to restore balance and harmony between man and the universe (Abungu et al. 2009; Gathogo n.d.; Ikuenobe 2014; Sone 2014; Ssozi 2012; Teresa & Raga 2018). In addition, and as noted earlier, most pastoralist communities had an expansive clan-based system of rangeland governance, complete with language subsets, across the different functionings of the rangeland. For instance, there was language and governing rules around watering different types of livestock and wild animals, movement from one pasture ecosystem to another, access to wetland reserves, etc.

Women deserve honorary mention, being the primary custodians of food, food production and food security. Women understood the diversity of food plant species (everyday, domestic, wild and contingency), organic farming, storage and household waste management. Firewood, being a central cog in the food custody space, inherently meant that forest and vegetation conservation was also a key function performed by women. Firewood was gathered from the forest floor and from specific trees, and trees were never cut down to provide fuelwood, hence the language frame of "collecting" firewood. These understandings were passed on through stories, riddles and jokes around an evening fire and a pot of food, sometimes served on the palm of a child's hand. The use of a hand as a plate and; clay, palm fronds and swamp reeds to construct everyday household items ensured that they would be reintegrated in nature (or recycled in the case of clay) once they got to their end of use. The practice of thatching a manyatta by pastoralists, used grass that goat kids and calves could eat before they got strong enough to go to pasture with the rest of the herd. The use of thatch and mud was/is an architectural aesthetic, ensuring blending with nature as opposed to standing separate from it. It also served the functional purpose of keeping the manyatta cool so that expectant mothers, babies and little children could rest inside during the peak of dryland sun. When it was time to migrate, the entire manyatta was pulled down back to the earth that it had come from.

Dryland Management in Kenya: The Long Shadow of Institutions

In order to genuinely explore knowledge democracy as a tool towards enhancing climate change resilience in Kenyan drylands, it behoves us to ruminate on where we are at present, in order for us to launch ourselves into the kind of world we want for future generations and the role of knowledge in the creation and representation of that world. Kenyan drylands in particular, have to contend with development paradigms born of epistemologies centered on normative philosophies of knowledge curation, and singular ways of knowing as put forward by the Global North. Wenzel (2017) notes that many of the academic disciplines in the modern university trace back their origins or institutional consolidation to colonialism.

She observes that, during the early days of European exploration and subjugation of Africa, language around nature was commodified and reframed in anthropocentric terms, including 'raw materials', 'natural resources' and 'wildlife'. European study treated people and plants in remarkably similar ways, subjecting them to taxonomies of classification and, where necessary, ferrying them off to the home countries for further scientific research. Even death did not stop this claimed objectivity of scientists. Nothing demonstrates this better than the case of the 'Hottentot Venus' (Funambulist 2020).

Conversations about agricultural improvement, which fuelled the agricultural and industrial revolutions, went hand in hand with the introduction of private land tenure systems characterised by land demarcation and enclosure. This, tied to research on enhanced agricultural production, was at the same time a disparagement and destruction of existing land tenure architecture and stewardship, as well as an introduction to a non-communal extractive economic land management model, solely centred on looting and appropriation of nature and the people within it. Science dislocated viable economic production methods and permanently introduced the ignoble concepts of poverty, malnutrition and food insecurity, and with it, insecurity and conflict, a reality that cuts across most African drylands today. Central to all of this was land.

Alongside the anthropocentric framing of nature, there emerged a narrative among colonial settlers that dryland people deforested their own land, leading to its degradation and desertification. Essentially, they were blaming the community for the environment they found themselves in, thereby necessitating the mobilisation of Western science and expertise to stop desertification and to improve the lives of their colonial subjects. This narrative is known as the 'Desiccation Theory' (Benjaminsen 2017; Davis 2016; Kubat 2015). At its core, the theory of desiccation states that deforestation causes aridification. It was supported by prominent scholars of the Enlightenment period, including Edmond Halley and John Woodward, and it gained currency among French naturalists like Pierre Poivre (1719–1786), who introduced a land development program and tools, as practised in England and France, to their newly acquired dryland colonies. This was used to justify dispossession, capital accumulation by England and France, and drylands underdevelopment. Also introduced were privatisation of common lands, afforestation (despite scientific evidence that rangelands cannot support arborescent forests), irrigation, livestock improvement, fire suppression, sedentarisation of pastoralists and criminalising of pastoralists through new laws controlling forest use, and controls over the movement of people and livestock. *Prosopis juliflora*, a raucous, invasive species and the bane of all pastoralists' goats existence, was introduced to Indian rangelands as forest cover during this time. It has become an ecological disaster in Kenya. Tying the Theory of Desiccation to the long shadow of institutions and the persistence of colonial policy and knowledge frameworks mentioned earlier in this article is the Sessional Paper Number Ten of 1965 on African Socialism and its Application to Planning. This government paper has proved to be the biggest policy malfunction ever to be implemented by the government of Kenya in the context of drylands and development. Below is a sample of its contents:

PROVINCIAL BALANCE AND SOCIAL INERTIA

133. One of our problems is to decide how much priority we should give in investing in less developed provinces. To make the economy as a whole grow as fast as possible, development money should be invested where it will yield the largest increase in net output. This approach will clearly favour the development of areas having abundant natural resources, *good land and rainfall*, transport and power facilities, *and people receptive to and active in development* (emphasis mine) (GoK 1965)

A finger wag at pastoralists by their own government and a copy/paste of the Desiccation Theory. It is interesting to pause here and note that the areas being favoured because of their abundance of natural resources, good land and rainfall is about 18 percent of the total Kenyan land surface, otherwise referred to as 'The White Highlands'. (These are areas from which colonial settlers expunged crop-growing communities to set up estates of export cash crops, including coffee, tea, wheat and pyrethrum. So, even here, malnutrition and food insecurity was introduced. Challenging the legitimacy of pastoral land management institutions and knowledge systems through state imposed strategies and programs set the stage for the gradual weakening of resilience of herders. They failed because of pastoralists' resistance that was rooted in a pragmatic understanding of their natural endowments and precisely because their livelihoods would have been wiped out through such measures. The result, however, was the cutting off and marginalisation of pastoralists and drylands: no schools, no water, no health care facilities, no tangible economic investment. Predictably, pastoralists in the drylands begin to appear as a people, 'not receptive to or active in development'. This lingering effect is a consequence of what Chimamanda would call 'the danger of a single story' (Adichie 2009) and it lasted until the year 2013, barely seven years ago, when operationalisation of devolution provided an opportunity to reset the Desiccation Theory. A point of reflection: it is because the EuroAmerican scientific approach to dryland development failed to take root and erode the pastoral-nomadic communities' lived experiences that they were able to continue their lifestyle and retain their livelihood systems. It is also precisely because of this that their knowledge system is labelled by both macro and micro institutions as being indigenous.

What was happening in the vacuum left by the absence of government in dryland Kenya? International Non-Governmental Organisations (NGOs) of all shades: NGOs concerned with food aid, water provision, dryland agriculture, beekeeping, girl child education, livestock management, women empowerment, health, wildlife conservation, alternative income generation, disaster risk reduction, value chain management and so on, and so forth. Western educated subject matter experts, expatriates and technical personnel landed and continue to land in the ASALs with the sole mission of engendering dryland development. This they do, using methodologies, pedagogies and normative understandings steeped in EuroAmerican education systems. To say that this is the direct cause of the continued dryland epistemicide and cultural imperialism would not be to overstate. In addition, given that the research conducted by these entities is geared towards securing development aid and therefore, by extension, securing their jobs, NGOs' research and research findings have a tendency to confirm the objectives of donor requests for proposals for dryland development.

When scientific methods of inquiry labelled these knowledges traditional, cultural and indigenous, based on their biocentric, cosmic and ontological ordering, they effectively rendered them no good for policy making and development planning. Through questionnaires, GIS and focus group discussions that primarily relied on community elders and women for data, these local knowledges needed to be studied, measured, quantified, classified and published as groundbreaking research, while patenting rights to the healing herbs (Harry 2014; Whitt 2009). The magic and mysticism was redirected towards the one true (colonialist) God. Above all, from an anthropocentric lens, a reification of indigenous stories, proverbs and riddles happened, which they needed to translate into money. So, the expansive communal land, the foundation of rangeland management, upon which the pastoralists had once freely interacted with lions and elephants, went the way of land fragmentation, hived off to game parks, game reserves and conservancies. This, so that the tourist gaze can gently rest on the amazing wildlife without having to be confronted by an angry Borana or Maasai community

who have just lost to a new conservancy their open access to a water point during a drought. Further, money is earmarked to study the causes of conflicts in drylands, after which, having established a credible one, more money is meted out to train the aforementioned angry Borana and Maasai community on how to manage human–wildlife conflict. It is easy to point to population growth in the drylands as being the major cause of human–wildlife conflict, were it not for the fact that, at present, donor money is being channelled to expand mostly white owned conservancies as models of wildlife conservation in drylands. Currently, such conservancies control 10.8 million acres of land or about 8 percent of the total Kenyan land mass. Insidious plans are underway to bequeath these conservancies the title of world heritage sites by UNESCO which will consequently make it impossible for communities to ever reclaim their land (Cavanagh et al. 2020; Gatu 2019; Halakhe 2019; Mbaria 2017; Ogada 2019; Review 2018).

Lastly, we contend with the labelling of knowledge, which I postulate is a function of the commodification of knowledge. Once knowledge becomes commodified, naturally a split has to emerge and a clear distinction made between high-value knowledge, represented by those who know, and relatively low-value knowledge, represented by those who live it. Oddly, those who do not know are the ones from whom the high-value scientific knowledge is extracted and then hidden behind a paywall. This mined knowledge is what fetches research funding and project money. Its source material remains local/cultural/traditional/indigenous and only good enough to incorporate as and when deemed necessary. We therefore need to make room for knowledges and multiple ways of knowing, analysing and presenting data and research results. Knowledge democracy becomes key to achieving this, especially in the context of data inequalities and the aspiration of the Sustainable Development Goals to leave no one behind. There needs to be a reckoning of how to navigate an infrastructure of measurement that leans heavily into knowledge systems which require the conversion and quantification of ideas and practice of social life into numbers. Admittedly, given the function of power, politics and inequality, it is a tall order.

In the SDG conversation, Kenyan drylands and the people within them have to contend with the tension between community knowledge and ways of being, which has seen them cut off from mainstream development and marginalised from around 1920 to 2013; newly acquired access to modern schools and curricula that is unfailingly orientated towards promotion of EuroAmerican epistemologies and; the increasingly high-pitched call to fall back on and leverage so-called indigenous knowledge that essentially crippled their capabilities pre- and post-independence, to attend to the emergency of global climate change. Coupled with concerns around bio-colonialism (Harry 2014) it is hard to tell how this will play out. A third dimension of this tension is the lingering potency of dryland colonisation theories and consequent policies, and the permeation of these 19th-century understandings of drylands into the UN system. The UN absorbed European understandings of arid lands and desertification, and UN agencies largely replaced colonial institutions as the main actors in supporting and reproducing the desertification narrative, as framed by the Desiccation Theory (Benjaminsen 2017). This adoption was so pervasive that the first ever global conference organised by the United Nations Environment Programme (UNEP) in 1977, following its establishment in 1972, was on desertification. Leading the discussions were dryland experts with data and research findings extracted from communities, but no community representation. This small group of experts continue to dominate the UN Convention to Combat Desertification. This top–down approach, backed by a 19th-century thought process, might explain the mismatch

between science and policy and the colossal failure of dryland interventions, which have had real life consequences for ASALs and the people who live there.

Social Responsibility in Higher Education: Knowledge Democracy and the Academy in Drylands

What should the academy do to help situate community knowledge at the heart of achieving the SDGs? On 9 March 2015, Chumani Maxwele, a black student at the University of Capetown, hurled human excrement from a bucket toilet that he got from the township of Khayelitsha on the face of a statue of British colonialist Cecil Rhodes, which stood in the campus (Fairbanks 2015; SAHO 2015). Maxwele's action catalysed student activism and movements across South Africa and beyond. It also sparked (political) discourse on the transformation of university learning in the African continent and around the world. Its ripple effect touched Oxford University, BlackLivesMatter and Palestine, among others. It was on the back of the #RhodesMustFall protests that Achille Mbembe (n.d.) called for a reinvention of:

... classrooms without walls and different forms of intelligence in which we are all colearners; a university that is capable of convening various publics in new forms of assemblies that become points of convergence of and platforms for the redistribution of different kinds of knowledges.

Essentially, he called for a democratisation of access, under which the university would deprivatise and rehabilitate its public space so that it would be accessible to all, and one where the teacher–student relationship and the teaching of obsolete forms of knowledge with obsolete pedagogies would be interrogated and redefined. A moving away from constructs of knowledge that perpetuate EuroAmerican ways of knowing and whose pedigree is marked by being a Rhodes Scholar.

A way towards this type of liberating democratisation of knowledge and social responsibility in higher education is perhaps to take the academy out to the community. New universities like Garissa University, Kenya, have an opportunity within the SDG development agenda to learn from #RhodesMustFall and to innovate around the living heritage that is part and parcel of the so-called indigenous knowledge, even as the UN turns to it – albeit selectively – to save the planet. Mawere (2015) talks about how indigenous knowledge can and ought to be a teaching and learning tool in the continent's public education and a mechanism to address complexities plaguing the world such as those in the SDGs. He talks of social values, including language, oral traditions, taboos, rituals, music, dance, knowledge forms, art, folklore, riddles, idioms and cultural spaces, all of which fall within the realm of indigenous community knowledge because these values can only be manifested through lived ways of knowing, such as traditions, customs and practices (as in the traditions of dryland management, in the customs of social order that ensured survival in the event of droughts, in the practice of coexistence of pastoralists and lions). Mawere proposes that community knowledges be used to, among other things, deracialise education by recognising local languages as the means for preserving, transmitting and applying traditional/local/indigenous/community knowledge in schools, thereby providing an opportunity for learners to confront and engage with incoming knowledge with what they know.

Community knowledge can be used to promote innovative thinking as it provides the basis for problem-solving strategies for communities. This needs to be understood in the sense that indigenous/local/traditional/community knowledge is not static and that invention of tradition

actually happens in response and in relation to a community's environment. Intangible heritage is also useful in evaluating the effectiveness of conventional science. As demonstrated elsewhere in this article, African communities hold and teach beliefs and practices related to plant growth, human nutrition, childbearing, pregnancy, food preparation and preservation, medicine, animal husbandry, etc. These are packaged as Science and Agriculture in the formal education system. By incorporating these teachings into formal curricula, this knowledge would not only help learners evaluate the effectiveness of the new knowledge being presented to them, it would augment it. It would then become a source of motivation for students and generate interest; it would connect languages but maintain a sense of self-consciousness and cultural identity; it would be useful for dissemination of indigenous knowledge across cultures; promotion of interpersonal relationships and reciprocal obligations (versus individualism/score tests), all while promoting the cultural dimension of development. As the World Bank (1988) noted, knowledge, not capital, is the key to sustainable social and economic development. A way to take the academy into the community, to reinvent a classroom without walls (akin to an open-access rangeland system) to reorient the learning relationship, and to produce and disseminate contemporary dryland knowledge that is useful for the attainment of the SDGs could perhaps be achieved through service learning.

By way of illustration, and the fact that it is the only university in Kenya using this approach to date, University Mtaani is a concept developed by Tangaza University College and run by the Institute of Social Ministry. A Mtaa is Kenyan slang for hood, oftentimes used to refer to informal urban settlements. University Mtaani is an outreach initiative that proactively takes university education to the community and deliberately targets those who have been neglected by universities. Learning happens in the Mtaa and lecturers have to find their way and deliver course content. The course content and curriculum are co-constructed with the learners and the course organisation takes into consideration time budget constraints as experienced by residents of urban informal settlements. Using multidimensional educational approaches, University Mtaani blends classroom learning and community dialogues, thereby engaging students to generate mtaa-relevant knowledge through their engagement with these dialogues. Importantly, University Mtaani is delivered in Sheng, Swahili and English, because of the multi-ethnic composition of urban informal settlements. They use a methodology that they have dubbed the 'Cycle of Praxis' to address the challenges of the communities. The Cycle of Praxis involves insertion, social and cultural analysis, and theological reflection and action. The teaching method used at University Mtaani is problem solving and application oriented. What learners pick up in class, they apply to solving their communities' problems by organising community dialogues. Through these engagements with their communities, students work with them to co-construct community solutions to community concerns (health, security, garbage, water, etc.) and in so doing students generate knowledge that informs classroom learning (Dzinekou 2017).

The University Mtaani approach to pedagogy broadly mirrors the principles of service learning regarding acquisition of knowledge (understanding), the analysis of issues (meaning making) and the application of skills (doing) (Cress et al. 2010; Flinders 2013; Hart 2006; Mason & Dunens 2019). Embracing such a pedagogy might offer a pathway towards engendering knowledge democracy in drylands. This might be a model that could be negotiated between learners, researchers and pastoralists and a way of incorporating pastoralists' living heritage with that of the lecture hall. It might also offer an opportunity to 'publish' their lived realities and, in this way, bridge the yawning gap between science and dryland policy, even as we enter the SDG Decade of Accelerated Action.

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