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# Drought Terroirs: Debating anthropological territorialities in the study of climate change and environmental disasters

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**ABSTRACT:** The term 'terroir' is traditionally used in wine making; in this article, we perform an analytical intervention on the concept of 'terroir,' as a potentially useful category to think through issues of territoriality in the framework of environmental disaster from an anthropological perspective. Incorporating ethnographic fieldwork on the extreme drought that has been unfolding in Southwestern Angola since 2009, we explore the analytical potential of 'drought terroirs' to untap the complexities and scales of environmental disaster, and at the same time debate the problem of territoriality as an ethnographic problem. We argue that an ethnographic transposition of 'terroir' into 'drought terroir' can help us grasp further complexities and nuances of territoriality in terms of scale, agency, and temporality in the face of current debates on global climate change.

**Keywords:** Terroir; Drought Terroir; Climate Change; Territoriality; Angola; Methods.

## Introduction: localising climate change

In these anthropocenic times, we are increasingly aware of the scales and networks of climate change and its effects. While it is presented as a global phenomenon, our anthropological insight has compelled us to focus on the local consequences of such global effects. This is a classic anthropological junction – 'small places, large issues,' as Thomas Hylland Eriksen famously put it (1995) – that has traditionally placed our discipline, as the expert on bounded socio-cultural spaces, at the forefront of the denunciation of globalising processes and their effects on the 'local.'

However, in recent times things have become somewhat complicated. As early as in the 1980s, Ulf Hannerz was discussing with his colleagues how we needed a new anthropological methodology that could grasp the complexity of the global-local 'system' beyond the classic nation-based approach (1987). Likewise, Arjun Appadurai (1996) discussed culture and flow within post-national settings, while scholars such Akhil Gupta and James Ferguson (1997) deconstructed notions of cultural boundedness. These early and popular identifications (of this requirement) within our discipline itself, paved the way for multi-sited and multi-

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layered ethnographic approaches, which culminated in ground-breaking studies of socio-spatial, cross-scale entanglements in the age of global capitalism (famously Tsing 2015).

On the other hand, when it comes to environmental issues, we can argue that, at least in mainstream discourse, the global process vs. local consequence approach still enjoys a strong epistemological, political, and economic currency. Here, certain processes and consequences – from the ozone hole, greenhouse effects, and El Niño to the Arctic and the Amazonian rainforest 'regions' – have become emblems in the 'localisation' of climate change processes. This territorialisation and localisation reveal a certain directionality or scaling in the configuration of the 'spatiality of environment' that relies simultaneously on the logic of boundedness and subjection to overarching globalising processes.

In this article, we argue that the global vs. local perspective can be as productive as it can be obscuring of certain socio-environmental processes, namely in what concerns the temporality, scope, and agency of both structure and infrastructure in the making of environmental disaster(s). While it is useful to draw attention to the local consequences of supralocal processes (e.g., El Niño or La Niña), it does not fully account for the complexity of agencies and scales involved in environmental disasters, as it perpetuates the idea of an overarching, depersonalised global process and frames the local as the 'victim slot' (see Hughes 2013), the recipient of disaster, the subject of vulnerability (Afifi and Jäger 2010). From this perspective, it feeds into a spatialised understanding of climate change as a globalised 'top-down' process with an identified directionality when it comes to scale and agency, and with a necessary end-result of the local as recipient and simultaneously the victim (Kirsch 2001; Oliver-Smith 2008).

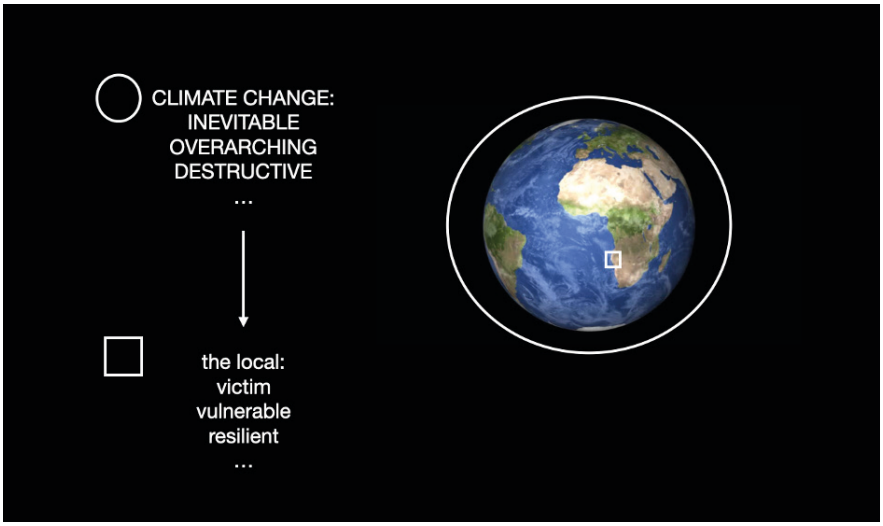


**Figure 1.** Representation of the spatiality, directionality, and scale of climate change

It is precisely this spatialising form that we intend to challenge in this article: while we do not ignore the importance of the local in the study of climate change effects, we propose to simplify our approach to it, focusing on agency and temporal convergence. In our

recent research conducted in 2020-21 on extreme drought in Southwestern Angola,[1] we have realised that the general explanatory narratives for the drought conveyed by the local government and mainstream media are restricted to lack of rainfall due to the El Niño cycle; however, beyond these narratives, there are other distinct local processes, agencies, and formations that produced very different kinds of drought. This was pointed out to us during our research several times, for instance by our colleague Francisco Osvaldo – a climate specialist from the Angolan Institute of Meteorology (INAMET) – who pointed to the distinction between meteorological drought (as a result of lack of rainfall), hydrological drought (stemming from the overuse of aquatic resources), and socio-economic drought (produced by human, economic, and industrial activities).

This goaded us into focusing on the specific processes that produce very diverse manifestations of drought within the wider spectrum of 'drought in Southwestern Angola,' which are ultimately the result of processes of 'convergence' (the conjunctural coincidence of socio-natural, socio-economic, and socio-political factors in a given spatiality) and 'divergence' (the friction and conflictuality produced by that same coincidence). Below we will explain, discuss, and problematise these processes of convergence and divergence as a form of 'terroir' – i.e., as an aggregation of processes and agencies into a given 'place' – which we play against the more traditional anthropological understandings of territoriality and locality. Before we describe such cases, we will first perform a conceptual unpacking of terroir, and its relevance for anthropological debates on territoriality.

## Terroir and its anthropological potential

'Terroir' is a concept commonly used in enology to describe the specific topographical and climatological conditions under which a specific wine is produced, enabling its uniqueness or particularity and subsequent marketisation. Or, as described by Pablo Alonso González and Eva Parga Dans, a notion that involves 'the taste of wine and its organoleptic properties, and ultimately the territorial, political, and economic model upon which the wine world is based' (Alonso and Dans 2018: 186). From this perspective, by highlighting locality in the production of value, the concept of terroir necessarily embodies a political economy that markets 'place' into a global audience (see also e.g., Demossier 2011; Hermansen 2012).

Specifically, terroir theory is grounded on four main factors for the formation of specific processes that form the idea of 'uniqueness': climate, terrain, soil, and tradition (see Figure 10 below). Agricultural scientist John Gladstones framed it in terms of the 'whole natural environment' and 'unique geography' (2011: 2), i.e., a combination of climate, topography, geology, and soil, which imparted a specific 'property' to grapes and vines.[2] At the same time, beyond the 'natural' factor, he also acknowledged the role of human 'modification' and 'treatment' of the natural environment as a factor in the production of the uniqueness

[1] For the last 10 years, approximately, the provinces of Namibe, Huíla, and Cunene in Southwestern Angola have experienced a drought cycle that has had dramatic effects, to the extent of provoking a largescale humanitarian disaster that killed hundreds of thousands of livestock and put 1.3 million people in a situation of acute food insecurity (Blanes et al., 2022). In 2020 we began an urgent research project funded by FORMAS that assessed the impacts of the drought and the social and political mobilisations in response. We visited and talked to several communities in these provinces, and interviewed stakeholders, namely local administrators, community activists, and NGOs (Blanes et al., 2022).

[2] As rightly pointed out by one of the anonymous reviewers, while often presented as 'natural' in this framework, the soil component is inherently socio-natural, and more often than not a product of technique.

(2011: 2-3) – what is usually called 'tradition' in the wine industry. What stems from these formulations of terroir is an idea of convergence in territory that is inherently 'positive', in the sense that it highlights a 'productive' quality in terroir, which then becomes the subject of discursive and symbolic production.

Other than being a staple of the wine industry, 'terroir' was also the organising concept of a corpus of studies conducted in West Africa mainly by French geographers and agronomists, which rejected both environmental determinism and the conditioning based on assumptions about ethnic identities, and instead directed its focus to the various strategies deployed by African societies, their knowhow and their modes of relationship with land, soil, and topography (Suremain 2019).[3] Later, the terroir approach became a rural policy (*terroir villageois*), based on targeted initiatives for improving the livelihoods of agriculturists and pastoralists, grounded into ideas of 'territorial specificity' and 'locality.' Such development initiatives highlighted terroir as a 'socio-spatial construction' (Bassett, Blanc-Pamard and Boutrais 2017: 108) that articulates environmental conditions, subsistence and livelihood, governmental rule, and neoliberal formation.

Loosely inspired by these precedents, in this article we propose a conceptual adaptation of the concept of terroir, as a 'space of socio-natural convergence,' into climate change debates to talk about the specific conditions under which drought situations emerge beyond the general climatological context. This implies joint consideration of climate conditions, human-related factors, and their incorporated historicities, to explain drought. By human factors, we think specifically of forms of governmentality (or lack thereof) whereby situations of scarcity emerge (Hellberg 2018), as well as the connections of people, place, and economic venture (Sjölander-Lindqvist et al., 2019). And by historicity we mean a more overarching consideration of the short- and long-term climatological processes (cyclicities of rainfall and drought) as well as interventions and uses of the land – from traditional subsistence practices (small-scale agriculture, transhumant herding) to infrastructural designs (roads, canals, dams) and largescale farming or mining projects, for instance. We can already see here a fundamental distinction between 'terroir' and 'drought terroir': while the ideology of terroir relies on some degree of temporal depth, teleology, collective mobilisation, and stabilisation in the manufacture of unique products, the idea of drought terroirs points more towards a conjunctural and often unstructured convergence of agencies and factors stemming from natural and social processes and relations, with varying rhythms and directionalities.

With the necessary adaptation (or translation) to contexts of drought (or environmental disaster at large) the 'terroir approach' can offer a diverse understanding of territoriality that can transcend the usual binaries that a more classical anthropological approach to climate change enables through its boundary making: global vs. local, internal vs. external, etc. It also allows for the identification of different forms of agency and temporality involved in processes of territorialisation, as we will argue.

As mentioned above, our identification of 'drought terroirs' derives from the empirical confrontation with a wide diversity of drought situations in the vast region of Southern Angola, explained by different processes and actors, but all resulting in the same kind of

[3] From a geographical and biological perspective, terroir can be understood as in proximity to the concepts of 'endemism' or 'endemic zone,' in terms of the identification of bounded native singularities in what comes to landscape elements or species. However, terroir exceeds the biological and geographical by introducing a human factor.

humanitarian and environmental disasters. Instead of being uniformly distributed, the effects of climate events – in this specific case, water scarcity – manifest, and are experienced by the communities in diversified ways, depending on various factors such as the existing infrastructure, political administration, the use of the soil, the access to resources, etc. Thus, 'drought terroir' as a methodological tool emerges inductively out of the observation of specific local processes and formations that produce different kinds of drought experiences. Here, a central aspect is what we could call, reinterpreting Don Handelman's concept (2005), 'micro-historicity,' or the concrete confluences that produce a present convergence, which thus becomes necessarily an ephemeral assemblage of factors.[4]

Yet, this ethnographic attention to specific, localised ways in which the drought is experienced does not preclude us from being attentive to the regional, national, and global scales of analysis. In fact, very much like the terroir approach designed by the French agronomists, our proposal here is to be taken as part and parcel of a larger cartographic aspiration (Bassett, Blanc-Pamard, and Boutrais 2017: 109) that ultimately aims at outlining the regional contours of a drought that manifests itself differently from one place to the next, and lends itself to diverse readings according to the person who is describing it. The 'drought terroir' as methodology is, therefore, an invitation to focus on locality by acknowledging the different (temporal, agentive) convergences and conjunctures that frame it, however ephemerally, as a 'problem.'

From this perspective, drought terroir is also conciliable with the idea of the Anthropocene, and 'the global and longue durée scales' it calls for (Mathews 2020: 68). We have observed a proliferation of reflections on the methodological implications that the Anthropocene brings along for anthropology. The challenges of ethnographically chronicling the undoing of the nature/culture divide on the one hand and global phenomena with different local imprints on the other, are plentiful (Mathews 2020; Tsing, Mathews and Bubandt 2019). Some authors have used ontologies as methodological approach to their studies on climate change (see e.g., Whitaker 2020; Rosengren 2018); in the same instance, others have questioned the role of anthropology within the geopolitical unfolding of climate change, and its capacity to account for the (perceived and/or real) destabilisation that the change is effecting unto social life (Crate and Nutall 2009; Barnes and Dove 2015).

In any case, what we may call the methodological *predicament of scales* is far from being new to anthropology. Long before the concept of the Anthropocene entered the lexicon of the discipline, a different sense of growing global connectedness and flow had shaken its foundations and changed its 'research imaginary' (Appadurai 1996; Marcus 1999) for good. We refer here to the debates on the cultural consequences of globalisation (or the world-system, *apud* Wallerstein, Frank, Amin and others) and the fate of ethnography. Working upon the fact that 'a conversation between cultures goes on,' as put by Ulf Hannerz (1987: 555), anthropologists had to leave behind old assumptions of an 'isomorphism between place and culture' (Inda and Rosaldo 2002: 11) and change altogether their conceptualisation of the latter, at the same time that they would need to come up with new methodological strategies to account for this.

Authors engaged in these debates came to describe culture as somehow disconnected from a specific, bounded location, i.e., deterritorialised on the one hand; and reinserted in

[4] We would like to thank Richard Georgi for suggesting this formulation. See also Nel (2017) for a discussion on territorial assemblage.

new time-space contexts, or (re)territorialised (Inda and Rosaldo 2002: 11) on the other hand. The term de/territorialisation coined by Inda and Rosaldo, captures effectively this double epistemological movement of 'lifting of cultural subjects and objects from fixed spatial locations and their relocalization in new cultural settings' (ibid.).[5] On the other hand, it perpetuates the idea of binarisation of the experience of territoriality, which does not fully encapsulate the 'socio-natural agencies' we are trying to convey here.

Thus, expanding on the notion from Inda and Rosaldo, we could describe our concept of 'drought terroirs' as accounting for a *terroirisation* (instead of a *territorialisation*) of climate change. From them we learn that no global dynamic is ever apprehensible outside of the concrete processes by which it becomes territorialised. But at the same time, and in counterpoint with the mainstream understanding, this territorialisation emerges not so much from a logic of localisation or delimitation, but rather one of temporal convergence of environmental, economic, political, and sociocultural factors, or perhaps even conjunctures (Sahlins 1981), which may or may not coincide with more classic geographic systematisations. This convergence thus highlights the temporality (ranging from ephemeral to 'eternalised') of certain expressions of territorialisation.

Methodological solutions like multi-sited ethnography have also marked these debates. As noted by Candea, though, the proposal by George Marcus and further explorations of it, were always stronger in sketching an ontological horizon – a seamless world in which everything is in connection, in flux, in assemblage – than in establishing an actual methodology to study it. How to know about this world and, more concretely, how to identify the (multitude of) sites in which ethnography would actually take place? It is in reaction to this zeitgeist that Candea advances his suggestion of 'bounded fieldwork' in 'arbitrary locations' (Candea 2007) – actually existing instances, in which arbitrariness results from the fact that they do not bear a necessary relation to the wider object of study. As he describes, 'as a heuristic device, the arbitrary location is perhaps best understood as the symmetrical inversion of the 'ideal type.' If the ideal type is meaning which cuts through space, the arbitrary location is space which cuts through meaning' (Candea 2007: 180).

Tsing et al. (2019) recognise these anthropological studies of globalisation as a source of inspiration for more recent reflections on the Anthropocene. In that line, cursorily recalling these debates, particularly in their methodological unfolding, paves the way to arguing how the notion of 'drought terroirs' is useful for an 'anthropological awareness of the Anthropocene' (Moore 2016: 28), one in which we acknowledge multiple, more than human agencies – from the farmers' tractor capabilities to the salinity of the soil, the taste of the *capim* (grass), the size and status of the Ngombe or Barotse ox, or the inclination of the Oncocua mountain – across different forms of hierarchy and intersection (Vaughn et al. 2021).

In conclusion, the 'drought terroir' approach is an explicitly localised point of departure for a reflection that stands in the continuation of recent anthropological research on climate change, which critically takes on the connections between local and global experiences and perspectives, and provides ethnographic accounts of 'uneven histories, discourses, and political economies' (Moore 2016). This is precisely what we will attempt in the next section, where we explore instances of 'drought terroirs' in Southern Angola.

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[5] Arjun Appadurai, in turn, claimed that ethnographers had always attended and contributed to 'processes of localization' rather than actually existing localities, except that they were unaware of it (1996).

## Drought Terroirs in Southern Angola

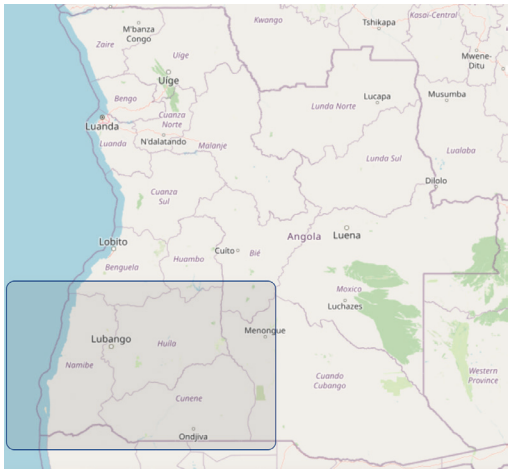


**Figure 2.** Southern Angola and the provinces affected by drought. Source: OpenStreetMap.

Beyond the urban sprawl of its capital Luanda and mid-sized cities such as Huambo, Benguela or Lubango, Angola remains very much a rural country, with a vast majority of population living directly off the land (see e.g., Heywood 1987; Neves 2010; Pacheco et al. 2013). About 80 per cent of the agriculture produced in the country is for local livelihood. In this framework, along with the country's central plateau, Southwestern Angola – in particular the provinces of Cunene, Huíla, and Namibe – is typically known as the country's 'cellar': the main areas of agricultural production in the country, both in terms of largescale and subsistence production. It is also known as Angola's 'milk reservoir,' due to the traditionally ideal conditions it harbours for pastoralist activity. This is due to the fertility of its soil, the diversity of its landscapes and the aquatic networks provided among other things by the Cunene and Caculuvar rivers. In this regard, although it is not necessarily famous for its wine production,[6] Southwestern Angola has several different forms of agricultural terroirs populating its landscape, due to the specific produce it offers in the Angolan context – from strawberries in Humpata to *massango* (sorghum) in Oncocua or milk in Cahama. However, as explained above, in recent years this region has experienced a situation of extreme drought which has created a serious humanitarian disaster. In this context, beyond those agricultural terroirs, it also incorporates what we call 'drought terroirs': spaces of convergence of socio-natural processes that temporally produce diversified heightened drought experiences. Let us look at two such cases.

### *Drought Terroir 1: Humpata*

We take as first example a 'counterintuitive situation' we encountered in Humpata, a municipality situated a few kilometres southwest of the city of Lubango, the capital of the province of Huíla. We use the term counterintuitive because, unlike other areas of the province severely hit by low annual rainfall such as Gambos, Humpata has experienced less rainfall but has also remained a relatively humid municipality throughout the current drought cycle. This is explained by its mountainous and plateau topography and abundant water flow (both surface and underground) coming from the nearby Chela mountain ridge – a microclimate that also explains why both indigenous Ova-nyaneka communities and Boer and Portuguese settlers chose the area for their herding and agricultural endeavours throughout the late 19th and early 20th centuries. Most of the hydraulic infrastructures we find in Humpata (the Neves dam and the open-air water canals stemming from it) are remnants of those early settlements. Today, the main road that intersects the municipality

[6] We should note, however, that we did come across recent, pioneering efforts to produce wine in the province of Namibe, specifically in the Bero region.

(connecting Lubango to the province of Namibe) is populated by largescale agro-industrial ventures, specialising in a range of produce from citrines and strawberries to dairy and meat products. Around such *fazendas*, moving inland from the main road is where we find small-scale farming and herding communities (of Ova-nyaneka, Nganguela or even Ovimbundo ethnicities), who live mostly off selling their goods and produce in the local Humpata market.

It was among these communities where we encountered a 'drought terroir.' The problem began in 2018, when one of the water canals that carried the water from the Neves dam collapsed due to a sudden episode of flooding of a river that flew under the canal, after construction work undertaken upstream by the local administration diverted its usual flow intensity (see Figure 3). The flooding exerted too much pressure on the old infrastructure and led to its collapse, causing a dispersal of the water flow and the subsequent interruption of downstream distribution. This affected several hectares, leaving herders and small-scale farmers suddenly without any access to water. As one of those affected explained to us, the water flow now spreads around the broken canal, and it is only good 'for the cows to drink.' Though our conversations with the locals, we estimated approximately 2,000 people directly affected by these circumstances. Inversely, the collapse did not dramatically affect the agro-industrial projects located south of the terroir, mostly because they had the necessary infrastructural resources for water autonomy, namely privately built underground water holes (See Figure 4).

**Figure 3.** Local farmers observing collapsed canal in Humpata (Huíla, Angola). Photo by Helder Alicerces Bahu, 2019.

In the meantime, the affected populations in the terroir have sought different solutions. Farmers in the northern section and with sufficient financial resources paid Chinese companies to build their own water holes and *chimpacas* (water reservoirs) that could either collect rainwater or retain underground water coming from the mountain ridge to the West. Others resorted to more artisanal methods, using petrol engines to pump water from upstream into containers for transport. But those in the southern areas and with fewer resources, who relied on the canal for their *lavras* (family plots) where they cultivated corn, potatoes, carrots, or sprouts to sell in the local market, could not continue their agriculture,

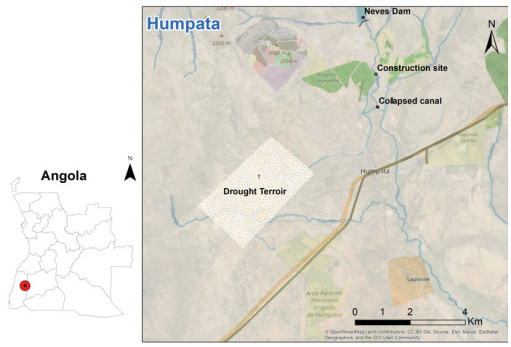


**Figure 4.** Map of 'drought terroir' in Humpata. Map by António Válter Chissingui.

also due to the lower rainfall. Many of them took their business elsewhere, investing their meagre savings (up to 1500 kwanzas, or 2 euros) to purchase other goods to sell in the market, or ultimately move to the city of Lubango to find jobs, working as *kupapatas* (motorcycle taxiing) or *zungando* (street selling). In the same instance, the women and children had to walk back and forth to collect and transport water '*de cabeça*' (with containers on their heads), since they could not afford to pay for water distribution such as moto-cisterns (see below).

In response to the events, the local administration declared that it did not have the funding to address the problem at short notice, despite the recent municipal funding programs promoted by the state (e.g., the PIIM, a municipal development investment program sponsored by the national government). So, the local dwellers mobilised and decided to develop a provisional reconstruction of the canal based on voluntary work as well as material and transport donations from both the administration, local construction companies, and the nearby *fazendas* (Figures 3, 5). Pajó, a local farmer, while not being directly affected by the problem at the canal, took on the technical leadership of the venture, using his former experience in construction to design a technical solution and mobilise neighbours to help out in the reconstruction. When we visited the canal in October and November 2020, we found a group of about 10 locals diligently building a support structure. However, considering the voluntary nature of the reconstruction, and the recent exodus of many locals to Lubango, as of June 2021, the work of reconstruction continued, although interrupted by lack of construction materials. By the end of the year, the local administration announced that it had obtained funding for the construction of a long-term solution, to begin in the month of November.

**Figure 5.** Locals working on the reconstruction of the canal. Photo by Ruy Llera Blanes, 2020.

Thus, the 'drought terroir' of Humpata emerged not from a severe lack of rain, but an infrastructural problem created by lack of urban planning, financial deferment, land occupation and exploitation, and an incompetent public administration. In this respect, the lack of rainfall experienced in Humpata, although not dramatic in absolute terms, heightened the problem for a group of small-scale farmers.

### *Drought Terroir 2: Gambos*

In the recent history of drought in Southern Angola, the Gambos region has been recurrently signalled as one of the most affected, with abnormal rainfall since at least 2009. This is particularly problematic because, like Humpata, this region is not necessarily arid or semi-arid, it has traditionally enjoyed abundant underground water, making for a very fertile, albeit quite stony, soil – which becomes attractive for the livestock's consumption but requires recurrent rainfall or irrigation for successful agriculture. For this reason, the valleys of Tyimbolelo and Tunda dos Gambos for instance, were traditional go-to areas for transhumant herders of Kuvale ethnicity flocking in from the nearby Namibe and Cunene provinces, as well as to the local Ova-nyaneka communities. The river Caculuvale, which intersects the Gambos from Lubango down to the Bicuar National Park, has also traditionally carried abundant water for both grazing and farming. This explains why, after the constitutional reforms of 1992 – which allowed for private initiative – and the end of the civil war in 2002, many *fazendas* (agro-industrial projects) began to set up operations in the area, sponsored mostly by regional or national politicians. Since 2017, after the rise to power of João Lourenço and the development of largescale investment plans in national production, Angolan agriculture experienced a boom of sorts, in particular in the central and southern provinces of the country. In this framework, Gambos became an Eldorado for a new wave of agroindustry (specialising in corn, sorghum, and livestock). According to the local administration, in 2020 there were more than 30 different *fazendas* found operating in the Gambos region alone. This growth implied an increasing pressure on the local topography and resources, and the backbone for the drought terroir we describe below.

Since 2010, the drop in annual rainfall in the region began to affect both largescale and small-scale farming and herding. For small scale agro-pastoralists, the lack of rain ruined their annual crops, and forced them to take their herds further into the mountains in search for edible graze, extending the transhumance routes throughout hundreds of kilometres and several months. It also pushed them into reducing their livestock (something they have traditionally avoided, because of the status, power, and wealth involved in cattle accumulation) by selling or bartering their cows or goats. For largescale farmers, it forced them to seek more aquatic sources in order to maintain their production plans. This necessity created two major problems for the communities living across the Gambos region.

On the one hand, it reduced the number of publicly accessible water holes – both the traditional hand-made holes (*cacimbas*) built by the communities and those built by the local administration – many of which began to appear 'privatised,' i.e., inserted within the limits of the agro-industrial *fazendas*. Local farmers and herders thus, had less sources of water, and reports of conflicts between herding communities for access to the few remaining holes began to sprout (see e.g., Amnesty International 2019). One such case took place in the area of Tyihepepe, where the Catholic Mission of Santo António dos Gambos stands.

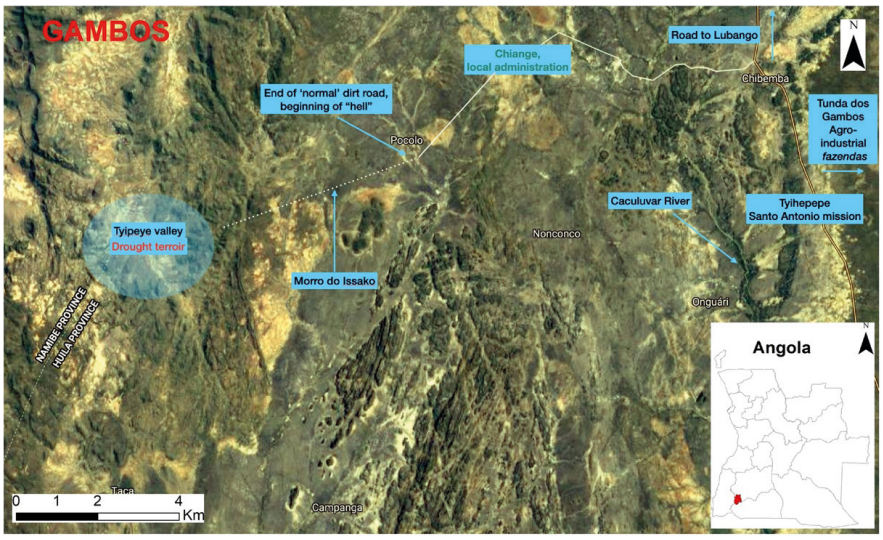


**Figure 6.** Map of 'drought terroir' in Gambos. Map by António Válter Chissingui.

The mission was created in the early twentieth century, spearheading the Portuguese colonisation endeavours towards the eastern province of Cunene. One of the reasons for its importance was the easy access to water on that site, both from the Caculuvar river and the underground. Through the work of the local priest Pio Wakussanga in recent years, it has played a major role in supporting the local communities suffering from lack of rain by offering a free water access point, collecting foods and seeds for local distribution, and campaigning in the national media to raise awareness regarding the drought situation. A few years ago however, a conflict emerged. With the backing of the national government, the then provincial governor João Marcelino Tyipingue (also owner of one of the fazendas) announced, without prior consultation, the construction of a pipeline that would transport water from Tyihepepe across the road into the Tunda dos Gambos. The plan was to build three water holes and a 60 thousand cubic meter tank that would then channel the water into the Tunda. However, an unprecedented local mobilisation and nationwide denunciation of the situation, led by Wakussanga, managed to halt the project.

At the same time, while the government was supporting largescale ventures with the development of such infrastructures, it did not do the same for local communities, especially those located further away from local administration (Chiange). The *kimbos* (households) located in the valley of Tyipeyo, for instance, have seen their crops die from the lack of rain. This in turn has affected their livestock, especially caprine, which has mostly died of starvation or has become unsuitable for barter or selling. Recently, the local administration sponsored the construction of a water hole in Tyipeyo, using funding from a national emergency fund. However, ignoring the community's advice, they built it in a location with a stony terrain that only accessed salty water, making it unsuitable for consistent farming.

In a conversation held with the local administrator in Chiange, he proudly told us that they had invested a lot of time and money in making water holes across the Gambos, but due to lack of preliminary technical surveys, most of the water prospections had come back negative (i.e., with none or insufficient water). He complained that the Angolan Geological Institute could be more proactive in their work, especially since the Angolan government

is reviving an old colonial research institute, Hidromina, to support the revitalisation of mining activities in the Gambos. This perspective was indirectly confirmed at a national level, through a conversation with the director of the National Institute of Water Resources (INRH), when he emphasised the largescale infrastructural projects developed by the government in response to the drought – none of which are located in the Gambos.

**Figure 7.** The *seculo* (leader) of Tyipeyo and his family in his kimbo in Gambos. Photo by Ruy Llera Blanes, 2020

However, their main complaint was not so much the salty water, but the state of the road that connected the community to the municipal headquarters (Chiange), which was barely passable unless by specifically prepared 4x4 vehicles such as the one we used to visit the community. One specific hill in this section, the 'Morro do Issako' was particularly nightmarish in this respect, as it combined a stony, irregular ground with a dramatic inclination (around 10 per cent). Despite the local administration's recent initiative to restore the road, one can only appreciate the levelling of the track in the first few kilometres from Chiange, up till the village of Pocolo, halfway between the town and Tyipeyo. This curtailed their options in terms of alternative strategies for resisting drought periods, for instance using motorcycles to engage in barter or sell their goats in Chiange. On other occasions, the younger members of the kimbo would travel north to the fazendas to seek temporal work, but the ongoing limitations with COVID-19 related mobility restrictions prevented them from doing so in 2020. In any case, the state of the road, and in particular the Morro do Issako, made it impossible to seek immediate solutions. For instance, in 2019 the community was offered a *moto-cisterna* – a motorcycle with a 500-liter cistern attached – in the framework of a program sponsored by the national government to bring water into rural areas. The motorcycle made it into the Tyipeyo valley, but never managed to circulate again. It never left the kimbo, where it remains parked. Pedro Uchito, the patriarch of the local community, told us: 'Traders avoid coming here. Usually, they would bring produce to barter for our animals, but they can't even take the animals back to the main village [Chiange], because of the road.'

The local administrator of Chiange told us about the effort to solve this problem, but also complained about how slow the process of funding was. All their requests and applications for funding and investment required presidential or ministerial approval in Luanda. This explained why the road was only partially completed: lack of funds.

**Figure 8.** A stalled 'Moto-cisterna' in Tyipeyo in Gambos.

**Figure 9.** A section of the 'road' that connects Chiange to Tyipeyo, near the Morro do Issako.

The 'drought terroir' in Gambos, unlike that of Humpata, begins with a severe lack of rainfall. However, while traditionally the local agro-pastoralist communities have relied on networks and mobility to access water or engage in alternative economic activities in times of

scarcity, the current infrastructural situation, in particular in terms of roads and hydrological structures, is pushing the communities of Tyipeyo into drinking salty water and remain dependent on external donations and assistance to survive. This situation of dependence vis-à-vis other actors in the field and the reduction of possibilities for subsistence as far as the local pastoralist and agro-pastoralist communities are concerned, in the face of the lack of rain coupled with infrastructural breakdown is in itself a 'drought terroir.'

## Unpacking Drought Terroirs

What does one make of these socio-natural formations of Humpata and Gambos? And in what way are they actually 'drought terroirs?' Let us briefly return to winemaking. Enology theory usually invokes four main factors for the formation of specific, micro-terroirs which ultimately compose its 'uniqueness': climate, terrain, soil, and tradition (see Figure 10). While the first three criteria (climate, terrain, soil) seem very much objectifiable and graspable, the concept of 'tradition' is, from an anthropological perspective, interestingly problematic. It refers loosely to ideas of technique and savoir faire, materiality and manipulation. For instance, more than just the quality of the available soil of the terroir, terroir tradition implies modes of 'working the soil,' e.g., through its topographical manipulation (terracing, drainage, etc.), the introduction of components (fertilizers, etc.) and handling the atmosphere or ecosystem (managing rainfall patterns, introducing or rejecting nearby fauna and flora, etc.). Likewise, beyond the crop output (grapes in their different varieties), terroir tradition implies their mixing, production, and preservation, e.g., based on traditional (wood) or modern (steel) artifacts.

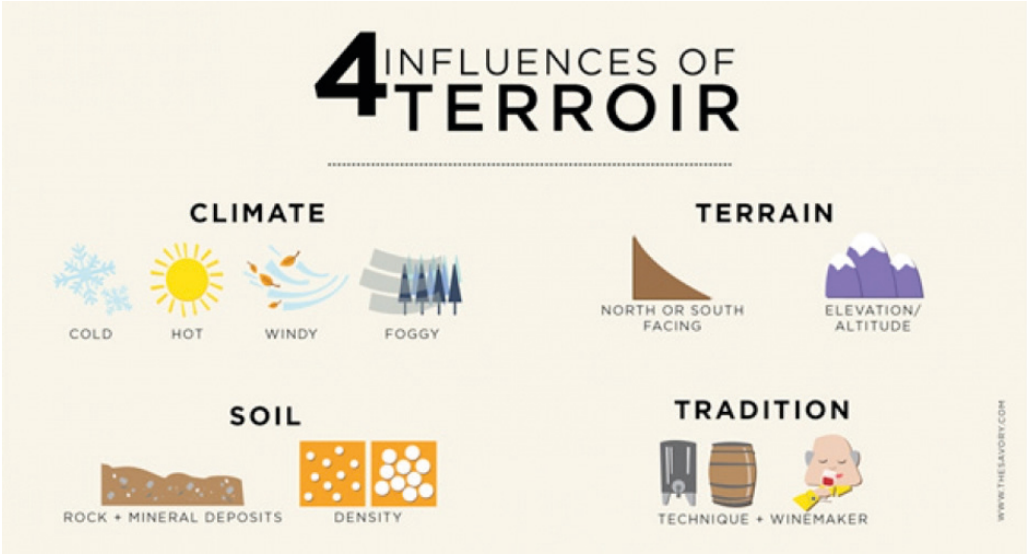


**Figure 10.** 4 Influences of Terroir. Image credit: www.winegeography.com

Within the analogy we are rehearsing here, we can argue that the drought terroir incorporates similar processes, however involving different actors, agencies, and results. In the drought terroir, 'tradition' includes other forms of 'technique,' in particular the structural and

infrastructural components (roads, engineering), political economy (investment in agro-industrial projects, disinvestment in small-scale farming), and different outputs (ruined crops, dead animals, etc.). To illustrate this analogy further, we have added below a table through which we attempt a transposition of the 'terroir' logic from winemaking into other socio-natural processes such as drought. While we do not necessarily espouse such classificatory exercises, in this case it can be helpful for the identification of layers and actors at stake.

| Terroir | Wine Terroir | Drought Terroir Humpata | Drought Terroir Gambos |
|---|---|---|---|
| Climate | - Cold<br>- Hot<br>- Windy<br>- Foggy | - Two seasons: cold and dry / warm and rainy<br>- Average lack of rain in this cycle | - Two seasons: cold and dry / warm and rainy<br>- Extreme temperature variation<br>- Average low rain<br>Severe lack of rain since 2009 |
| Terrain | - North or South-facing<br>- Altitude | - Plateau<br>- Western mountain ridge<br>- Abundant aquatic resources | - Caculuvar River<br>- Mountains and valleys<br>- Forest |
| Soil | - Rock<br>- Mineral deposits | - Fertile terrain<br>- Long-term farming history<br>- Agro-industrial use | - Stony but still fertile terrain<br>- Salty soil<br>- Agro-industrial use |
| Tradition | - Technique<br>- Winemaker | - Boer technology (roads, canals, transport)<br>- Neves dam<br>- Fruit cultures<br>- Public construction or lack thereof<br>- Local administration<br>- Governmental investment in agro-industry | - Traditional cattle 'paradise'<br>- Agro-industrial ***fazendas*** and their hegemony<br>- Governmental investment in agro-industry<br>- Appropriation or dispute of underground water resources<br>- Local administration problems<br>- Impossible road, lack of investment in infrastructures<br>- Impractical water hole<br>- Mobility restrictions |

**Figure 11.** Terroir, from wine to drought

What this transposition from wine terroir to drought terroir enables us to perceive is precisely the dimensions of scale, agency, and temporality. For instance, while a 'regular' terroir relies on a sense of cyclicity and repetition, in the drought terroir what we perceive is an 'event' or a temporal convergence of both natural and human processes in a given territory. Within these human agencies, some are located within the terroir (local agro-pastoralists, local administration, owners of *fazendas*, NGOs, etc.), while others are located in different scales and agency (the provincial and the national governments, and the infrastructure companies) and layers of materiality (initiatives, programs and strategies, funding campaigns, etc.). Furthermore, other, not necessarily human agencies are equally involved (water and its absences, bovine and caprine species, the sun, insects, etc.). It is precisely through the divergent agency of these different actors, processes and factors that a 'drought terroir' emerges and is expressed as a crisis or disaster.


**Figure 12.** 4 Influences of Drought Terroir. Authors' composition.

## Conclusion: anthropological terroirs in the face of climate change

As recently noted, (Alonso and Dans 2018; Sjölander-Lindqvist et al. 2019), the concept of terroir has acquired an 'emerging' condition, enabling new scenarios for the circulation of 'locality' in the global markets – beer and wine being cases in point. Based on this premise, and in complement to it, in this article we have explored such emergences from a less 'creative' and perhaps less 'optimistic' perspective: that of climate change and climate disasters. Here, we identified a different kind of terroir at work: drought terroirs.

The drought terroirs in Humpata and Gambos appear as a consequence of a convergence of 'socio-natural' conditions conjuring a specific drought event. In particular, the contemporary dynamics of local governance and administration in southern Angola, which on the one hand allowed for the full-blown development of large-scale agro-industrial exploitation of the landscape, and, on the other, did nothing/little to accommodate the local communities and their reliance on the material infrastructures inherited from colonial times. It is through the divergent directionality and impact of these different agencies that the environmental and humanitarian disasters appear. However, the cases of Humpata and Gambos are not unique in Southwestern Angola. In our research so far, we have encountered multiple other micro-instances of drought produced by 'socio-natural processes'.

In any case, a 'terroir approach' can be understood as a methodological contribution to ongoing research on the social impact of (as well as contribution to) climate events such as droughts, highlighting the scales of convergence of different agencies and infrastructures at a local level. It allows us to challenge the mainstream idea of a global agency impacting local victims, and explore different layers and scales of environmental agency, in particular to what concerns ideas of victimhood and vulnerability. Here, as Malm and Esmailian (2013) have pointed out, the focus on specific determinants of vulnerability becomes key: in a given drought terroir, for instance, who becomes vulnerable, and how (O'Reilly et al. 2020; Vaughn 2022)? And who doesn't?

From an anthropological perspective, the terroir introduces complexity to the dimensions of temporality, scale and agency, transcending the more traditional understanding of territory and community as not only bounded but also stabilised, socio-political categories. Here, they can also appear as ephemeral assemblages, the socio-material convergence or conjunction of structural and infrastructural articulations, mediated by human and non-human agencies – from the rain that doesn't fall, to the canal that falls apart, the road that remains unfinished and the corn that does not grow.

Methodologically, it reminds us of the necessary incompleteness of our ethnographic evocations (Strathern 1991): while today it appears as a convergence located for instance, in Humpata, tomorrow it may appear elsewhere. In this respect, socio-natural convergences (and subsequent divergences) such as the drought terroirs, illustrate an Anthropocenic problem of fragmentarily and fleetingly accounting for uncertainty, precarity, and transformation. In this framework, ideas of both territorial and temporal continuity ('culture' and 'tradition', for instance) become bracketed, as we realise that terroir *agencements* are in continuous articulation and re-articulation.

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