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Adolfo Mascarenhas, GAURAV SINHA, Elizabeth Wangui

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## Differentiated livelihoods, local institutions, and the adaptation imperative: Assessing climate change adaptation policy in Tanzania



Thomas A. Smucker<sup>a,\*</sup>, Ben Wisner<sup>b</sup>, Adolfo Mascarenhas<sup>c</sup>, Pantaleo Munishi<sup>d</sup>, Elizabeth E. Wangui<sup>a</sup>, Gaurav Sinha<sup>a</sup>, Daniel Weiner<sup>e</sup>, Charles Bwenge<sup>f</sup>, Eric Lovell<sup>g</sup>

<sup>a</sup> Department of Geography, Ohio University, Athens, OH, USA

<sup>b</sup> Benfield UCL Hazard Research Centre, University College London, UK

<sup>c</sup> LInKS Trust Fund, PO Box 35097, Dar es Salaam, Tanzania

<sup>d</sup> Department of Forest Biology, Faculty of Forestry and Nature Conservation, Sokoine University of Agriculture, P.O. Box 310, Chuo Kikuu, Morogoro, Tanzania

<sup>e</sup> Department of Geography, University of Connecticut, Storrs, CT, USA

<sup>f</sup> Department of Languages, Literatures, & Cultures, University of Florida, Gainesville, FL, USA

<sup>g</sup> Department of Geography, University of Colorado-Boulder, Boulder, CO, USA

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### ABSTRACT

This paper interrogates the framings and priorities of adaptation in Tanzania's climate policy and examines the implications for the role of local institutions and differentiated rural populations in climate change adaptation. Although Tanzania lacks a "stand alone" climate policy, Tanzania's National Adaptation Programme of Action (NAPA) and National Climate Change Strategy (NCCS) provide the most comprehensive statements of the central government's framing of adaptation and its priorities with regard to adaptation. In assessing discursive framings of adaptation, we find that the dominant policy discourse constructs an anti-politics of adaptation through its framing of climate change as an urgent and generalized threat to development while failing sufficiently to address the complex governance and social equity dimensions of climate change adaptation. The technocratic prescriptions of Tanzania's NAPA and NCCS converge with similar prescriptions found in Tanzania's national development policies, such as the major agricultural development initiative *Kilimo Kwanza*. Adaptation challenges identified by communities in Mwanga District demonstrate complex local institutional and resource tenure questions that are not addressed in climate policy but which require policy attention if social equity in climate change adaptation is to be achieved.

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### The anti-politics of the adaptation imperative

More than twenty years ago, Ferguson (1990) introduced the notion of an 'anti-politics machine' in explaining how exclusively technical discourses of development and simplified accounts of societies serve to erase the politics of development and create a chasm between external development agendas and local realities. We find that concept useful to understanding climate change adaptation policy in Tanzania and other least developed countries (LDCs), where concern for integrating climate change adaptation into development policy comes amidst a growing sense of urgency surrounding what has been called the 'adaptation imperative' (Ki-moon, 2009; World Resources Institute, 2011). Calls to *Adapt Now!* (Leary et al., 2008) from academic, policy, and development circles reflect this urgency, as climate extremes that may be the

harbinger of future climate change are already having substantial negative impacts on livelihoods and resources of the most vulnerable in developing countries (O'Brien et al., 2012; Field et al., 2014). For example, in its assessment of African adaptation, the language of the Inter-governmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) is unequivocal: "for many in Africa adaptation is not an option but a necessity" (Boko et al., 2007: 452).

Amidst this sense of urgency, calls to integrate or mainstream adaptation into development policy have proliferated (Davidson et al., 2003; Klein et al., 2005; Lim et al., 2005; Mwandosya, 2006). In the international policy arena, adaptation is now at the center of negotiations within the United Framework Convention on Climate Change (UNFCCC) framework, resulting in an internationally-mandated process through which LDCs identify national priorities through the development of National Adaptation Programmes of Action (NAPAs) in anticipation of adaptation finance through various mechanisms (UNFCCC, 2001). Mainstreaming is a central concern because the integration of adaptation policy into

\* Corresponding author.

E-mail address: [smucker@ohio.edu](mailto:smucker@ohio.edu) (T.A. Smucker).

LDC development policy may take advantage of synergies between rural development, disaster risk reduction, and climate change adaptation (Wangui et al., 2012; Wisner et al., 2014; O'Brien et al., 2006). Indeed, progress toward global development priorities enshrined in the Millennium Development Goals (MDGs) and the post-2015 Sustainable Development Goals will likely require comprehensive inclusion of climate change adaptation alongside disaster risk reduction concerns in development policies (Schipper and Pelling, 2006). In the run up to the end of a decade of work on disaster reduction, the UN agency coordinating these efforts states (UNISDR, 2014: 6):

Climate change is arguably the most important underlying disaster risk factor and is implicated in the increase in disasters worldwide. Drought, desertification, flooding and environmental degradation, (such as deforestation, erosion and loss of biodiversity) are all affected by climate change and have far-reaching consequences in terms of food and water security. It is therefore crucial that in [the second Hyogo Framework of Action guidelines for disaster reduction]... disaster risk reduction efforts not be isolated from climate change mitigation and adaptation measures.

Running parallel to the adaptation imperative and calls for policy integration, there is growing concern for advancing dialogue on equity, fairness, and justice related to the benefits and burdens of adaptation choices (Adger et al., 2006; O'Brien, 2012; Paavola and Adger, 2006; Pettit, 2004). These are political issues, and this scholarship has identified several grounds on which adaptation may be framed as an inherently political process. At the micro-scale, adaptive practices undertaken by communities reflect unequal access to natural and other resources underpinned by political relationships within communities and between communities and the wider political-economy (Eriksen and Lind, 2009). Additionally, the benefits and burdens of specific adaptation choices or trajectories are unevenly shared at community, sub-regional, national, and international scales.

Furthermore, policies and interventions undertaken in the name of climate change adaptation could serve to reinforce or exacerbate existing inequalities and patterns of differentiated climate risk (Marino and Ribot, 2012). Where such policies and interventions ignore societal differentiation in livelihoods, resource access and resultant climate risk, adaptation could be fundamentally at odds with core notions of sustainable development and even threaten progress toward poverty alleviation (Eriksen et al., 2011). Thus, both spontaneous and planned adaptation increasingly confront political questions of social equity and justice in sharing the burdens and benefits of adaptation, highlighting the need to reconsider adaptation as not merely an unavoidable response to environmental change but a set of individual and collective choices embedded within existing institutions and structures of development (Agrawal, 2008; O'Brien, 2012; Wangui et al., 2012). It follows that the realization of synergies between adaptation and development would not merely require steps toward piecemeal technical "climate-proofing" of development sectors (e.g., agriculture, health) within conventional development frameworks, but may require transitional and transformative forms of adaptation that address institutions, governance, and the broader set of discourses and ideologies of development (Pelling, 2011).

If adaptation is inherently political on multiple levels, its political dimensions and related questions of equity and justice may be concealed by the apolitical framings, simplifying discourses, and technocratic policies that we associate with an adaptation imperative. As finance becomes available for rapidly expanding adaptation activities by governments and non-governmental

organizations (NGOs) (e.g. Michaelowa, 2012), planned adaptation may take on characteristics of Ferguson's (1990) anti-politics machine. Following Ferguson (1990) and related critiques of development (e.g., Rist 1997), an anti-politics of adaptation would frame adaptation as consisting of expertly designed, neutral interventions to address urgent societal needs, namely the protection of a vulnerable population from the highly generalized threat of climate change. In constructing human-environmental geographies of adaptation, an anti-politics of adaptation would draw on the dominant narratives of the "apolitical ecologies" (Robbins, 2012) of eco-scarcity and modernization, wherein technocratic interventions targeting productivity and improved management of environmental resources are the primary means of avoiding environmental calamities. Just as Hart (2001) argues that intentional development has tended to obscure immanent processes of development and social change, technocratic planned adaptation may eclipse and even render less effective the adaptive practices and capacities of communities—what Wangui et al. (2012) have called spontaneous adaptation, following usage suggested by the IPCC (Field et al., 2014).

We argue that Tanzanian policy has created an anti-politics of adaptation by silencing the multiple institutional and political dimensions that hang in the balance in the identification and pursuit of adaptation priorities. Furthermore, we contend that the policy discourse of adaptation in Tanzania reflects convergence with the predominant neo-liberal approach to development policy, including the country's major agricultural policy initiative that promotes foreign agribusiness at the expense of addressing the complex and differentiated livelihood needs of pastoralists and small farmers.

We begin by contrasting definitions of transitional and transformative adaptation and identifying the potential for such framings to inform adaptation policy. The second section examines local environmental governance in Tanzania, with specific concern for the local institutional frameworks in which adaptation is to be pursued. We argue that local government in Tanzania bears the burden of a model of decentralization that gives local government heavy responsibilities but few resources to pursue locally sensitive development and to mediate questions of equity in the local context.

Tanzania's NAPA and National Climate Change Strategy (NCCS) are the foundation for Tanzania's national approach to climate change adaptation policy. We find parallel themes and priorities in the current national agricultural development initiative, *Kilimo Kwanza* and related development initiatives such as promotion of overseas direct investment by agribusiness in Tanzania's so-called Southern Corridor (SAGCOT, 2014). These themes and priorities are shown to be congruent with the overarching discourse of climate change adaptation in contemporary Tanzania which constructs climate change as a generalized threat to a homogenous, impoverished rural population.

In the penultimate section, we draw on the authors' field research in the Kilimanjaro region to examine recent changes in livelihood and resource access among farmers and pastoralists. The case study highlights the complex local institutional and resource tenure questions that are silenced by current adaptation policy but which must be incorporated into policy if synergies between adaptation and rural development aspirations are to be realized.

### Transitions and transformations in adaptation policy

Adaptation policy may draw on a range of framings of nature-society relations and more recent ways of understanding adaptation to climate variability and change (Head, 2010; Schipper,

2006). Adaptation scholarship increasingly recognizes the limits of incremental adaptation that would merely intensify or extend existing measures, strategies, and capacities to limit the impacts or take advantage of opportunities associated with climate change (Kates et al., 2012). However, definitions of and distinctions between alternative framings, including transitional and transformational forms of adaptation, vary widely. In this section, we explore these distinctions as seen from different theoretical perspectives and consider their relevance to contemporary adaptation policy in LDCs.

The IPCC's SREX report and several chapters of the *Fifth Assessment Report* identify transformation as an emergent concept within adaptation scholarship and practice (IPCC, 2012; Field et al., 2014). Transformation is broadly understood as encompassing “changes in the fundamental attributes of a system in response to climate change and its affects, often at a scale and ambition greater than incremental activities” (Noble et al., 2014: 5), yet an operational definition remains elusive due to the varied theoretical orientations through which different scholars have approached transformation.

Transformation is a core concern of scholars working within resilience frameworks. As reflected in socio-ecological systems (SES) theory, adaptation is fundamentally understood as a component of resilience and is undertaken primarily as a means of maintaining functional persistence and, thus, system stability. Thus, transformation is seen as adaptive change at the system level in order to ensure persistence of existing capacities and functions (e.g., Folke et al., 2002; Walker and Salt, n.d.). While recent resilience work recognizes “the interplay of persistence, adaptability, and transformability” it broadly retains a focus on change that allows socio-ecological systems to “remain within a stability domain” (Folke et al., 2010: 25).

Scholars working within development and disaster risk reduction frameworks have argued that systems science-inspired approaches to transformation are limited by their failure to address political economy and social power (Béné et al., 2014; Levine et al., 2012; Weichselgartner and Kelman, 2014). Drawing on previous critiques of adaptation in natural hazards research (Bassett and Fogelman, 2013), transformation would entail an intentional process of change within the wider social, cultural, and political-economy structures that produce vulnerability to climate change (Ribot, 2010, 2011; Wisner et al., 2004). Such structural changes include transformation of values, discourses, and political-economic structures that distribute access to resources and decision-making power, matters that determine the social objectives that adaptation will serve (O'Brien, 2012; Pelling, 2011). Clearly, transformational adaptation would address distributive justice concerns related to structural causes of differential vulnerability. It would also address procedural justice by considering socio-political arrangements and processes that result in particular prescriptions for adaptive action. Procedural justice issues would include questions of access to information and the ability to participate in and influence institutional processes that determine priorities for and action on adaptation to climate change (Paavola et al., 2006; Pelling, 2011).

As a step toward transformation or an alternative to it, Pelling (2011) argues for the notion of transitional adaptation. Transitional adaptation neither upholds the stability-seeking logic of social (and ecological) systems, nor does it explicitly seek to replace “political-economic regimes and associated cultural discourses on development, security and risk” (Pelling, 2011: 50). In contrast to transformational adaptation, transitional adaptation is less ambitious, focusing on change within existing social orders, such as the realization of rights and pursuit of distributive and procedural justice through reform of established governance systems. In specific geographical contexts, transitional adaptation raises

the question of “the potential for adaptation associated with climate change to open space for wider and connected reform within the constraints of existing governance regimes. This provides a driver for actors to assert rights or claim entitlements to participate in development and risk management and enable progressive transitions; that is, improved action on social justice and environmental integrity as part of everyday development” (Pelling, 2011: 69).

Where resilience-inspired notions of transformation retain an apolitical systems orientation and the alternative is concerned with fundamental restructuring of socio-political regimes, transitional adaptation emphasizes the realization of rights and action on social equity within existing socio-political regimes, including through contemporary adaptation policy (Huq and Khan, 2006). Specifically, transitional adaptation highlights three central functions of local formal institutions—primarily local government and civil society—in adaptation processes as discussed in recent adaptation policy literature (Agrawal, 2008; Ayers, 2011). Local, formal institutions structure climatic risk by mediating access to natural and other resources and resolving or managing conflict over resources, thereby facilitating or discouraging particular adaptation pathways. Secondly, local institutions may also serve to mediate or resolve conflicts between externally-driven interventions and local practices, for example serving as an interface between national policy directives and the local adaptive practices undertaken by different livelihood groups.

A third critical role of formal institutions in transitional adaptation is to evaluate and diffuse what might otherwise be isolated and spontaneous but effective practices to manage climate risk (e.g., for example, new local practices in pest management or income diversification) (Mercer et al., 2008; Wangui et al., 2012). Drawing from community-based disaster risk management (CBDRM), practitioner experience suggests that such scaling up requires “a functioning institutional infrastructure and so was most likely to be found within a supportive, inclusive and open governance system” (Pelling and Smith, 2008: 19; Pelling, 2011).

Among the perspectives discussed above, resilience thinking is the most pervasive in development and donor policy (e.g., USAID, n.d.) perhaps precisely because it does not explicitly address inequality, wider social and political questions, or winners and losers in adaptation. Whereas one would not expect adaptation policy in LDCs to lay out a radically different socio-political vision of development, transitional adaptation speaks to the immediate governance concerns of institutional capacity and social equity that are historically the domain of development policy and are of growing importance in adaptation policy discussions (Adger et al., 2006; Klinsky and Dowlatabadi, 2009).

## Development and environmental governance challenges in rural Tanzania

Tanzania's post-colonial environmental governance is a useful starting point for assessing transition and transformation as objectives for adaptation policy. In assessing structures of environmental governance in Tanzania, a backdrop appears against which to evaluate the focus of current adaptation policy.

Tanzania's environmental governance structures are the culmination of processes of decentralization over several decades, but which accelerated with political and economic liberalization in the mid to late 1990s (Maro and Mlay, 1979; Mniwasa and Shauri, 2001). Reforms have sought to counter top-down models of local governance through the creation of elected local positions and by administrative decentralization of central ministries and departments. These reforms are in keeping with what has been termed “the governance agenda”, shorthand for the view that greater political participation and social equity result from a

deconcentration of administrative and financial functions and devolution of political power (Jenkins, 2002). By the late 1990s, decentralization through Tanzania's Local Government Reform Programme (LGRP) encompassed both administrative deconcentration and political devolution (Massoi and Norman, 2009). Tanzania's local government system gives a critical role to elected village councils that take primary responsibility for villages' fiscal administration, social development, adjudication of resource rights, and service provision through direct, participatory engagement with village assemblies (i.e., all adult members of a village) (Fig. 1). Village councils are downwardly accountable to village assemblies through the electoral process. Their ability to pursue social development initiatives depends heavily on the success or failure of proposals that are vetted by ward development committees and either approved or denied by district councils.

A key power devolved to village councils is that of developing and enforcing village land use plans. The land use plans enact a system of rural zoning by assigning major land uses (agriculture, livestock grazing, residential and commercial settlement, etc.) to specific areas and distinguishing between communal and private land, ideally through a participatory process of stakeholder engagement (UCRT, 2010). Where it has been carried out, village land use planning alone has the potential to mediate, resolve, or exacerbate resource-related conflict and, ultimately, to substantially rework access to natural resources that influence patterns of climate-related risk.

Despite the presumed benefits of electorally accountable local institutions, recent scholarship on decentralized governance and environmental management in Tanzania suggests serious challenges in converting democratic governance structures into democratic performance in pursuit of environmental or developmental objectives. First, some argue that decentralization has taken place without the center fully relinquishing power to local elected authorities. For example, forest management by village authorities is limited by restrictions put in place by the Forestry Division (Ribot et al., 2010) and district government retains a level of control over ward development committees and village councils through its power to appoint executive officers who sit on those councils. Furthermore, since their right to levy local taxes was revoked in 2003, village councils are heavily dependent on ad hoc project funding by district councils, which are themselves almost entirely dependent on central government funding (Pallotti, 2008). The autonomy of village authorities to pursue environmental conservation or development activities sensitive to local

needs is severely constrained by centrally-funded mandates, such as school and health center construction. Implementation of such externally-driven infrastructure projects is often the primary focus of local development, both by village councils and local 'civil society' in the form of World Bank-funded Tanzania Social Action Fund (TASAF) rural road building committees and other community-based organizations. This limits autonomy of local institutions in pursuing development sensitive to micro-environments and specific agro-pastoral needs (Green, 2010; Lange, 2008; Venugopal and Yilmaz, 2010).

Despite the existence of downwardly accountable elected government, there is substantial evidence to suggest that village councils' relationship to their constituencies are marked by everyday forms of coercion, prevalent misappropriation of village resources, and a general lack of transparency in village affairs (Brockington, 2008; Crook, 2003; REPOA 2008). Thus, rather than local empowerment of politically accountable institutions to pursue locally-sensitive development and resource management, Green (2010: 29) argues that decentralized governance in Tanzania is "constituted not so much as the marshaling of resources toward an object of government, but as the articulation of hierarchical relations between organizational levels, with lower tiers hoping to access resources channeled through higher tiers".

Furthermore, the capacity of local government to adjudicate competing claims to natural resources appears limited given the scale of emerging pressures. Livelihood diversification—and accompanying economic stratification—accelerated with economic liberalization and have continued apace, as wage labor was supplemented by a range of rural "non-farm" sources of income such as small-scale trading and transportation (Bryceson, 1999; Ponte, 2001; Wangui et al., 2012). Pastoralist diversification into agriculture and expansion of irrigation farming has led to increased conflict over land access, with village authorities' ability to adjudicate access rights in question, even where village land use plans have been enacted (Mbonile, 2005).

While land use planning has met with some success owing to community participation (e.g. UCRT, 2010), recent pressures may be overwhelming the ability of local government to mediate new and intensifying challenges related to competing claims to natural resources. New challenges include international "land grabs" made possible by policy shifts that open the door to foreign investment (Deininger and Byerlee, 2011). The magnitude of the money and the size of these land deals makes it nearly impossible for local authorities to protect land rights against external threats (Nelson et al., 2012). In addition, in some cases local authorities collude in alienating land from communities to enable private investment, such as the establishment of wildlife conservation areas (Nelson and Makko, 2005; Ojalammii, 2006). These concerns have been further highlighted in the advent of new climate change mitigation projects, such as United Nations REDD+. Implementation of REDD+ could mean that the large proportion of Tanzania's rural population that lacks land certificates could be excluded from the benefits of climate mitigation projects that conserve forest resources over which they hold only customary rights (Veit et al., 2012). Even worse, some may face resurgent "fortress conservation" measures in the form of climate-related interventions (Beymer-Farris and Bassett, 2012).

This brief review of recent scholarship on local environmental governance provides a broad backdrop against which to evaluate Tanzania's adaptation policies. Decentralization in Tanzania has often been framed as a palliative to the top-down development and "fortress conservation" approaches that characterized the colonial and early post-colonial periods (Brockington, 2002; Neumann, 2001). However, recent scholarship suggests substantial challenges for the effective performance of formal institutions in addressing existing environmental and development priorities

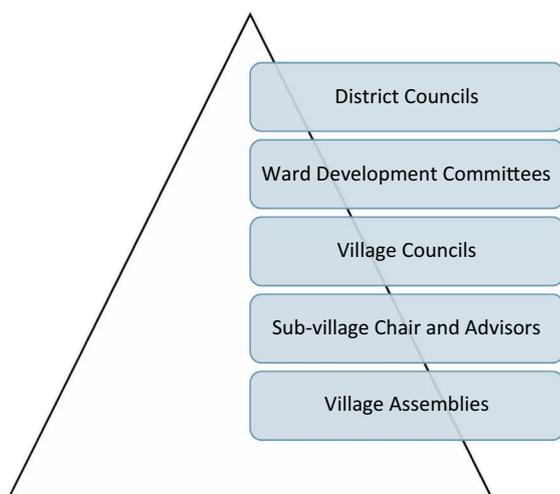


Fig. 1. The structure of Local Government Authority (LGA) in rural Tanzania.

and future adaptation efforts. As the centerpiece of decentralized government, village councils embody the best intentions of democratic, downward accountability to village assemblies, though they are under-resourced in their pursuit of locally-sensitive development. Village councils carry the additional burden of upward accountability to district, regional, and national governments, whose power trumps that of village councils in key resource management domains. Thus, the capacity of formal institutions to address adaptation needs—both in terms of equitably guiding resource access and enabling innovation sensitive to local needs—appears to be severely constricted.

### The apolitical ecologies of Tanzania's national adaptation policy

Tanzania was one of the first countries to produce a National Adaptation Plan of Action (NAPA), a report to the United Nations Framework Convention on Climate Change (UNFCCC) through which Least Develop Countries identify “urgent and immediate needs – those for which further delay could increase vulnerability or lead to increased costs at a later stage” (UNFCCC, n.d.). Because they serve as blueprints for national adaptation planning and internationally-financed adaptation programs for LDCs engaged in the UNFCCC process, NAPAs provide a unique insight into dominant adaptation framings that shape national climate policy discourse. NAPA development in Tanzania reflected a broad consultative process that incorporated the contributions of twenty government ministries and national governmental institutions (UNDP, 2008). In 2012, Tanzania's National Climate Change Strategy (NCCS) outlined national adaptation priorities that are “built on and extend beyond” the NAPA (URT, 2012: ix).

Three narratives frame issues and set priorities: (1) an undifferentiated view of rural poverty and vulnerability, (2) a narrow and ultimately deterministic notion of climate change's role in development, and (3) a similarly deterministic view of climate-induced conflict. These three narratives represent apolitical ecologies of adaptation and lay the foundation for an anti-politics of future adaptation interventions in Tanzania, especially when seen in the context of Tanzania's approach to environmental governance discussed earlier. We argue further that an apolitical approach is ultimately highly political to the extent that it reinforces the status quo and blocks transitional and transformational adaptation.

From their opening paragraphs, Tanzania's NAPA and NCCS paint a stark picture of undifferentiated rural poverty and vulnerability exacerbated by climate change. The NAPA suggests that climate change is a “threat mainly to the agrarian population that still depends on subsistence agriculture for their daily livelihood” (URT, 2007: viii). This characterization of a generalized vulnerability to climate change is unmitigated by the dynamism and increasing differentiation of rural livelihoods discussed above, nor does it take into account established local means of coping with climate stress (Eriksen et al., 2011; Goldman and Riosmena, 2013). The framing of climate change as a generalized threat to homogenous rural subsistence producers developed in the introductory narrative of the NAPA draws on previous vulnerability assessment reports (VARs) issued by the Prime Minister's Office (PMO). The summary of these previous government assessments of vulnerability suggests heightened perception of the impacts of drought, flood, pests and epidemics, but offers no assessment of how people are coping in established or new ways with these climate-related hazards. On the whole, the policy narrative constructs rural Tanzania as populated by undifferentiated, passive victims of climate change in need of urgent external intervention.

This greatly simplified representation of rural livelihoods is made more problematic by a framing of vulnerability as wholly produced by recent shifts in climate variability and extreme

weather associated with climate change, with no role for the wider set of socio-economic and political root causes of vulnerability (Wisner et al., 2004). Rural communities and their development prospects are portrayed as wholly at the mercy of the vagaries of climate. The NAPA argues that “the major causes of these vulnerabilities at village, district and national levels is climate change associated with prolonged heavy rainfall or drought” (URT, 2007: 13). The exception to this undifferentiated view of Tanzanian rural society is in the document's evocation of climate stress-driven conflict, whereby “shrinkage of rangelands is likely to exacerbate conflicts between livestock keepers and farmers in many areas” (URT, 2007: 7). While no ecological explanation is provided for the imminent decrease in rangeland area, conflict is said to be likely because livestock carrying capacity has already been surpassed. In response, the NAPA recommends controlling movements of livestock, a deeply political proposal in light of ongoing land access struggles of Tanzania's approximately 1.5 million pastoralists (Igoe, 2003; Goldman, 2011; Askew et al., 2013). This echoes similar suggestions on the mainstreaming of climate change concerns into national planning that call for “drawing an implementation plan to relocate and settle livestock keepers” as a means of addressing “environmental degradation arising from the encroachment of water sources and catchment areas by livestock keepers/herdsmen” (Mwandosya, 2006: 9).

Released in 2012, the NCCS offers a modest elaboration beyond the technocentric approach of the NAPA. It recognizes the need “to strengthen the existing national institutional frameworks to enhance the conducive environment for addressing long term climate change adaptation, resilience building and achieving sustainable development” (URT, 2012: p. 5). Despite its stated objective of “[putting] in place a better institutional arrangement to adequately address climate change” (p. vii), the NCCS merely reports on the existing system of decentralized governance while highlighting the emerging role of national climate change institutions such as the National Climate Change Steering Committee (NCCSC), an inter-ministerial committee that will oversee the implementation of national climate change initiatives through local government. For Yanda et al. (2013), while Tanzania's decentralized system of governance provides essential structures for carrying out the priorities identified at national level, there are “disconnects between local governments departments and the sector ministries” that relate to capacity and local autonomy' (29). They argue that:

Local Government Authorities [village and district governments] do not appear to be well prepared to respond to climate change, nor to spend any increased flow of finance in support of relevant change actions. Districts where NGOs are active on climate change issues appear to be better placed in planning and implementing climate change programmes and projects than those without. However, the sustainability of such initiatives is often in doubt since they rely on external finance to support implementation (p. vi).

An additional element of the anti-politics of adaptation reflected in the NAPA and the NCCS is that they simply do not acknowledge previous policy frameworks—from *ujamaa* villagisation to more recent expansion of national parks and other conservation areas as well as market reforms—that have shaped the evolution of rural livelihoods and socially differentiated vulnerability in Tanzania. Moreover, despite many successive policies of decentralization and experience with its challenges spanning decades, there is little discussion of the challenge of implementing adaptation through local government authorities whose potential role as arbiters of local equity in resource access are widely questioned at village level (Brockington, 2008). Efforts to draw attention to issues of governance, equity and justice in adaptation are

ignored in these policy documents (Adger, 2001; Paavola and Adger, 2002). There is similarly no reflection in official documents of development policy scholarship within Tanzania, such as the work of the Rural Food Security Policy and Development Group that has documented “the negative impacts on globalization, debt, economic reforms and increasing poverty on Rural Food Security” (Mbilinyi et al., 1999: 8).

Brockington (2006) describes anti-political tendencies of increasingly vigorous local and national environmental discourses that have developed in Tanzania since the 1990s. The adaptation framings of recent policy documents suggest that such tendencies now have even greater momentum in light of the promise of large-scale finance for adaptation. If the broad concerns of transitional adaptation are excluded from adaptation policy and planning, top-down technological interventions may exacerbate the already intensifying pressures on local institutions to adjudicate competing claims to resources at the local level. Technocratic intervention that does not explicitly incorporate changing livelihood, institutional, and differentiated risk concerns could entrench conflict over access to natural and program resources where it has already erupted and exacerbate tensions around local governance where they remain below the surface. Thus, our assessment raises the very real possibility that the current course of adaptation policy in Tanzania could result in greater harm than good and that “the ecological conditions, distribution of assets, and systems of power that place certain communities at greater risk in the face of change can also place them at risk in the face of policy responses” (Marino and Ribot, 2012: p. 323).

The apolitical ecological framings of climate change vulnerability in NAPA inform its ranking of priorities for adaptation. The specific priorities identified by the NAPA reflect a core concern for increasing agricultural productivity through technological intervention. The NAPA ranks agriculture and food security as the top sectoral priority and, specifically, “increased irrigation to boost maize production in all areas” as the highest national priority. This prioritization aligns Tanzania’s NAPA with the focus of the national agricultural policy initiative known as *Kilimo Kwanza* (Agriculture First), to which we will next turn our attention in the next section.

The tendency in current adaptation policy documents to over-generalize about rural populations is neither unique to this country, nor to the contemporary period. Indeed, critiques of development anti-politics have long raised concerns about representations of rural populations that paint them as isolated and undifferentiated objects in need of intervention (Ferguson, 1990; Rist, 1997). More recently, Agrawal et al. (2012) found that of the forty-seven NAPA documents submitted to the UNFCCC, eighty-five per cent are lacking any consideration of the role of local institutions in implementing climate change adaptation activities. While we examine the representations of rural society and framings of adaptation specific to Tanzanian policy, preliminary evidence suggests that the sense of urgency surrounding adaptation may lead to similar depoliticized framings beyond Tanzania.

### **Kilimo Kwanza: a sectoral response to the climate imperative**

The UNFCCC’s guidelines for NAPA preparation emphasize the urgency of the mainstreaming of adaptation policy. They urge “... integration of objectives, policies, strategies or measures outlined within a NAPA ... [so] they become part and parcel of national and regional development policies, processes and budgets at all levels and stages, and [that] they complement or advance the broader objectives of poverty reduction and sustainable development” (UNFCCC, 2002: 19). The central themes of undifferentiated rural poverty and absence of appropriate agricultural technology in Tanzania’s NAPA raises the question whether and how Tanzanian

agricultural and rural development policy has been integrated into the national policy on climate change and vice versa. The national policy of *Kilimo Kwanza* (Agriculture First) was adopted in 2009 (URT, 2009), soon after the NAPA was completed. While the language promoting *Kilimo Kwanza* is rhetorically similar to many past national policies, the nature of the policy is distinct from past initiatives (Coulson, 2012a,b). *Kilimo Kwanza* seeks to generate foreign direct investment (FDI) to promote large-scale agribusiness and also, in parallel, to transform small-scale farmers into commercial small farmers on the model of the Green Revolution. Indeed, the *Kilimo Kwanza* initiative has won substantial financial support from the Alliance for a Green Revolution in Africa (AGRA) (Agdevco, n.d.; *The Guardian*, n.d.). The report of the World Economic Forum on Africa (WEF, 2010: 24) states:

A new vision for Africa’s agriculture is necessary to provide food for all Africans, promote sustainable development and generate economic growth. . . In this spirit, international companies created an alliance to support the government of Tanzania in its *Kilimo Kwanza* (Agriculture First) Initiative, a programme expected to help spark a green revolution.

One “pillar” of *Kilimo Kwanza* is to make land available for large-scale capital investment and production. It seeks to achieve this in part by amending the Village Land Act No. 5 of 1999 to facilitate greater ease of access to village land by investors (Mbunda, 2013). Given the major emphasis on identifying land for foreign investment, critics of *Kilimo Kwanza* in Tanzania have voiced fears that small farmers will not benefit and will certainly not be transformed (*The Citizen*, 2012):

Large-scale farmers dubiously acquire huge tracts of arable land and turn small-scale farmers into labourers in their own country. It is wrong to argue that flows of farming investments into Africa will end hunger if the G8 scheme ignores the majority of those engaged in the continent’s agriculture. The bulk of produce from large-scale farms will either be exported or become too expensive for ordinary Africans to buy.

Critics include Tanzania’s National Small Farmer Association and the Tanzania Gender Network Platform. The latter criticizes *Kilimo Kwanza* for “favouring large scale producers at the expense of the smaller ones, and completely locking out the marginalized” (Qorro, 2011).

Similar to the NAPA, *Kilimo Kwanza* is inspired by a notion of undifferentiated rural poverty among small-scale producers. Its prescription lies in raising agricultural productivity through increased capital inputs as the primary pathway out of rural poverty. It seeks an African Green Revolution through which ‘Tanzania’s agriculture will be transformed from a backward subsistence agriculture to a modern highly productive one’ (Kikwete, 2007: 8). Civil society and academic critics have suggested that the stated concern for poor farmers belies the emphasis of *Kilimo Kwanza* on ensuring land access for large scale, export-oriented production, particularly along the Southern Agricultural Growth Corridor where a major emphasis has been placed on large-scale commercial production (*Business Times*, 2011; SAGCOT, 2014). *Kilimo Kwanza*’s tax benefits are solely targeted at large-scale commercial producers who qualify for value added tax (VAT) exemptions for transportation costs and large machinery purchases (*Policy Forum*, nd). A recent agreement between the presidents of Tanzania and the U.S. seems to guarantee massive direct foreign investment by U.S. agribusiness in Tanzania (*Ally*, 2012).

One of the primary objectives of the UNFCCC-sponsored NAPA process is to encourage integration of its principles and priorities into development policy and planning. Yet, to date, observers have

noted little or no integration of Tanzania's NAPA into national policy (Norrington-Davies and Thornton, 2011). Instead, what we find is broad alignment absent a formal process of integration, whereby NAPA mirrors *Kilimo Kwanza's* discursive framings and priorities in what are effectively policies designed to attract donor assistance and international private investment. NAPA and *Kilimo Kwanza* can thus be seen as an extension of the reform agenda that has been central to government-donor relations for more than two decades and which offers little space for divergence from neo-liberal "consensus" (Mercer, 2003).

### Differentiated livelihoods and local institutions in Kirya village, Mwangi District, Kilimanjaro Region, Tanzania

This case study examines elements of transitional and transformational adaptation that are silenced by contemporary adaptation policy in Tanzania. In contrast to the picture of undifferentiated backwardness and poverty presented in policy documents, we describe the richly diverse livelihoods and adaptive practice present within a single village in Mwangi District in northern Tanzania's Kilimanjaro Region. Our case study demonstrates that the capacity of formal institutions to address adaptation needs—both in terms of mediation of local resource access and enabling innovation and adaptation sensitive to local needs—is severely constricted. Pressures resulting from narrow technical approaches emanating from national policy may conflict with peoples' multifaceted responses to recent changes in climate variability.

The Local Knowledge and Climate Change Adaptation Project (LKCCAP) has examined understandings of and responses to change from villages at the highest inhabited altitudes and those along altitudinal gradients of Mount Kilimanjaro and the North Pare Mountains that extends to the neighboring savanna drylands (Fig. 2) (Muthoni and Wangui, 2013; Wangui et al., 2012; Wisner et al., 2015). Field research covering four districts in the Kilimanjaro Region of Tanzania has revealed a complex mix of local responses to multifaceted change (including climate change) among differentiated communities of farmers, fishers, and pastoralists. We conducted a household survey ( $n = 640$ ) with sampled sites at high, medium, and low elevations in four districts. Additionally, we have conducted extensive qualitative and participatory research in three villages in Mwangi District (Fig. 2). Villages were selected purposively with input from local experts (e.g. agricultural extension) to ensure the sample of villages encompassed the major livelihood activities present at each elevation. Random sampling of households was conducted in each village. In the lowland site in Mwangi District, the longstanding Maasai pastoralist population of Kirya village is now a minority among a growing number of non-Maasai farmers and more recent in-migrants who have come from neighboring highlands and elsewhere in Tanzania to practice irrigated agriculture near the Ruvu (Pangani) River.

In Kirya village, contemporary livelihoods reflect the patterns of differentiation and diversification identified elsewhere in rural Tanzania. The village is divided into three sub-villages: Emangulai A, Emangulai B and Kirya sub-villages. The predominately agricultural sub-village of Emangulai A is made up of people from thirty different ethnic groups in Tanzania and elsewhere in East Africa. Nearly half (49%) of the residents in our random sample of the sub-village of Emangulai A ( $n = 20$ ) regularly acquire income from non-agricultural sources, primarily casual labor and trading activities.

The neighboring sub-village of Emangulai B is home to most of the Maasai population of Kirya village. Maasai engagement in horticulture and maize cultivation began soon after the construction of an initial irrigation canal in 1974 and has continued to increase

through subsequent development of irrigation infrastructure. We found that diversification into farming among Maasai has taken place beyond Kirya village, as seventy-four percent of our wider sample of Maasai households ( $n = 91$ ) across four districts cultivated land that is either rented or owned. Additionally, Maasai women depend periodically on income from casual wage labor opportunities, especially on the larger and more established irrigation scheme of Lemkuna in nearby Simanjiro District. Nevertheless, pastoralism remains the foundation of livelihoods for most Maasai, but limitations on local forage amidst expanding crop cultivation have coincided with more frequent and severe droughts over the last decade. The result has been a downward pressure on livestock numbers and more frequent recourse to long-distance movements of livestock (Lovell, 2011). Permits issued to urban-based traders by the District council have led to substantial extraction of wood-fuel in Emangulai B, posing a threat to both local forage and fuel resources. Despite village council's powers to address environmental questions, it is largely powerless to address this external pressure on local resources. Thus, not only do we note a more complex array of activities required to get by—with livelihood diversification blurring the lines between pastoralists and farming—we also find pressing concerns related to the institutional arrangements governing resource access at different scales.

In community workshops, participants identified the primary means by which people have reduced the negative impacts of recent shifts in climate variability.<sup>1</sup> Table 1 indicates a mix of agronomic, environmental, or non-farm adaptive practices identified as most important in mitigating climate risk in Emangulai A and B. Most striking is that irrigation farming is identified by residents from both communities as the single most important adaptive practice undertaken in the recent past to lessen the impacts of climate variability. In both communities, improved maintenance and expansion of the existing irrigation infrastructure were central to peoples' aspirations for managing future climate variability.

In Kirya village there would appear to be compatibility between the national adaptation priority placed on irrigation and the aspirations and existing adaptive practices at community-level. However, one obstacle to greater synergy between national level development priorities and local practices is the national policy's focus on the development of large-scale, capital intensive irrigation production rather than the kind of smallholder, small-scale irrigation that is practiced in Kirya. Below we focus on institutional dimensions of irrigation. We find that question of institutional capacity and equity in the sharing of burdens and benefits of planned adaptation are central concerns for both farming and pastoralist communities. Our engagement with communities suggests that they largely view risks and impacts associated with climate change through a transitional adaptation lens in which procedural and distributive justice issues are deeply entwined with aspirations related to technological intervention.

For the Maasai community in Emangulai B, equity questions are of two kinds. First, future irrigation expansion will constrict livestock mobility and result in loss of access to riparian calving areas, known as *alilili*, a critical resource for the viability of pastoral systems and one often subject to a strong conservation ethic (Goldman, 2011). Loss of *alilili* is framed by Maasai as primarily as a question of undue burden on them resulting from further

<sup>1</sup> Among pastoralists and farmers in Kirya village, there is a widely shared narrative of declining rainfall and changes in seasonality that is particularly pronounced in the last decade. Sub-village workshop participants began by noting a wide range of new activities and practices that people have undertaken to moderate the impact of changes in climate variability that were discussed in detail at previous workshops. Participants then drew from the large pool of practices to identify and rank the six most important risk-reducing practices in specific community. In some cases, one practice was seen as fundamentally related to another, and these were grouped together at a single rank.

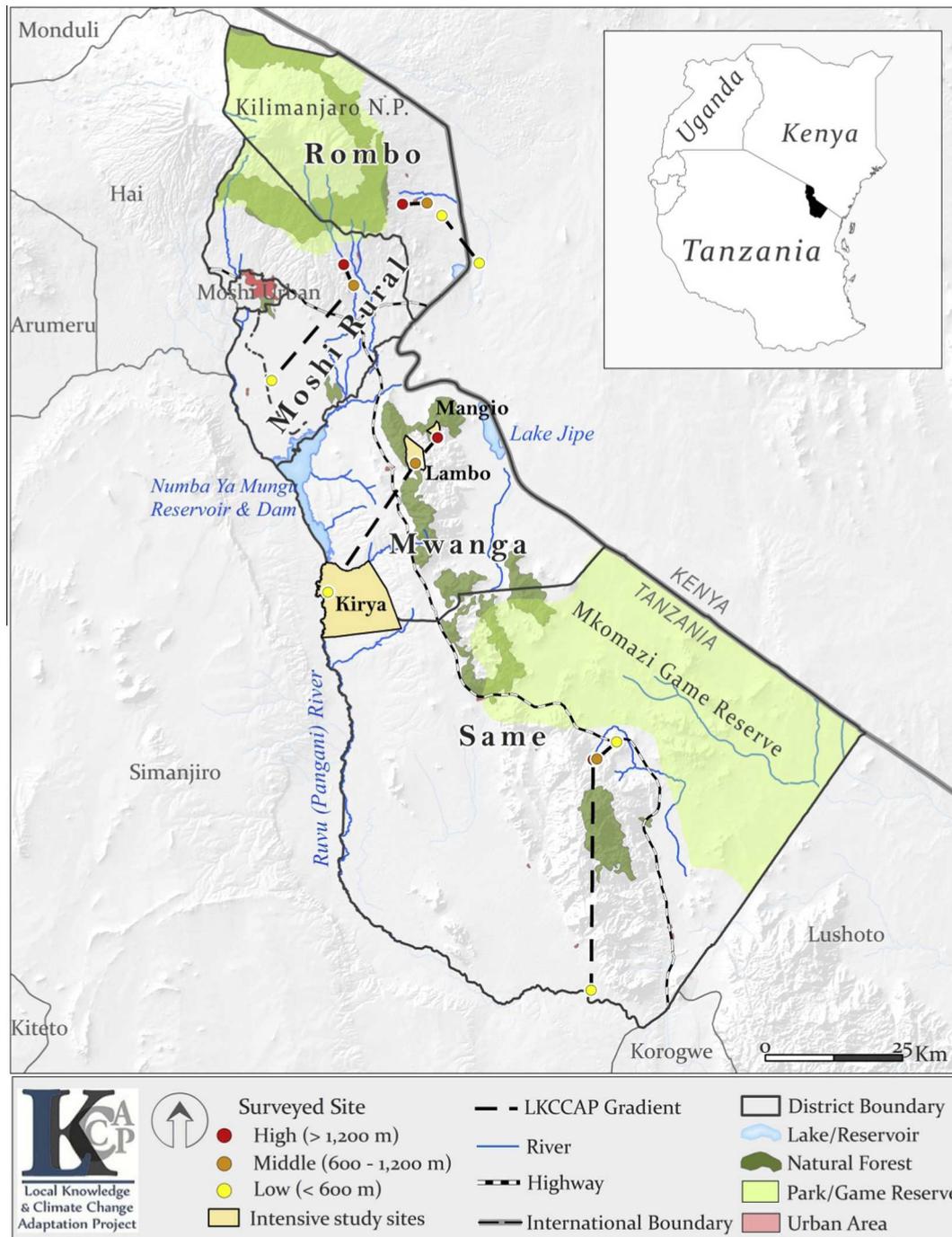


Fig. 2. Study sites in Mwanga District and Kilimanjaro Region.

Table 1  
Ranking of adaptive practices based on effectiveness in reducing the impacts of recent changes in climatic variability (e.g., shifts in rainfall seasonality).

Rank	Emangulai A	Emangulai B
1	Irrigation farming	Irrigation farming
2	Use (box) terraces in cultivation	Engage in both farming and herding activities
3	Engage in both farming and herding activities	Mix local and exotic breeds of livestock
4	Invest in education	Educate children
5	Start wealth generating groups	Treat livestock diseases (with veterinary medicines)
6	Farm a diversity of cash crops	Engage in buying and selling of livestock perform wage work
	Use of means of transportation (e.g., bicycle)	Move livestock in search of pasture
	Use of new means of communications	Buy fodder to feed livestock

expansion of irrigation infrastructure. In the first instance, therefore, Maasai seek a balance between agricultural expansion and the maintenance of the foundation of their livelihood and a major source of income in pastoralist activities. A second equity concern relates to the proportion of the newly irrigated land to which Maasai residents will have access and for which they will receive land certificates, versus the proportion assigned to the growing number of neighboring farmers and the many additional farmers and investors who routinely visit Kirya in search of a land rental or purchase opportunity. The potential for the expansion of irrigation infrastructure to benefit primarily recent arrivals and non-resident investors was a major concern voiced in community workshops.

Turning to the non-Maasai farmers of Emangulai A, they see potential in the opening of new land for irrigation, but they voice

concerns that question the national policies of *Kilimo Kwanza* and laid out by the NAPA. Residents of Emangulai A have heard of *Kilimo Kwanza*, but they have seen no signs of change in access to capital, technologies, or land for smallholders. Farmers express concern that village government has not been able to secure resources at district level to rehabilitate the existing irrigation system that suffers from a broken weir, lack of drainage back into the river, and inadequate leveling that leads to waterlogging. Seasonal flooding is a persistent problem that substantially reduces the productivity of agriculture in the scheme.

Concerns related to livestock encroachment and resulting crop damage in irrigated fields have led to greater tension between farmers and herders in Kirya village. Farmers fault village council for not doing enough to prevent the conflict and for susceptibility

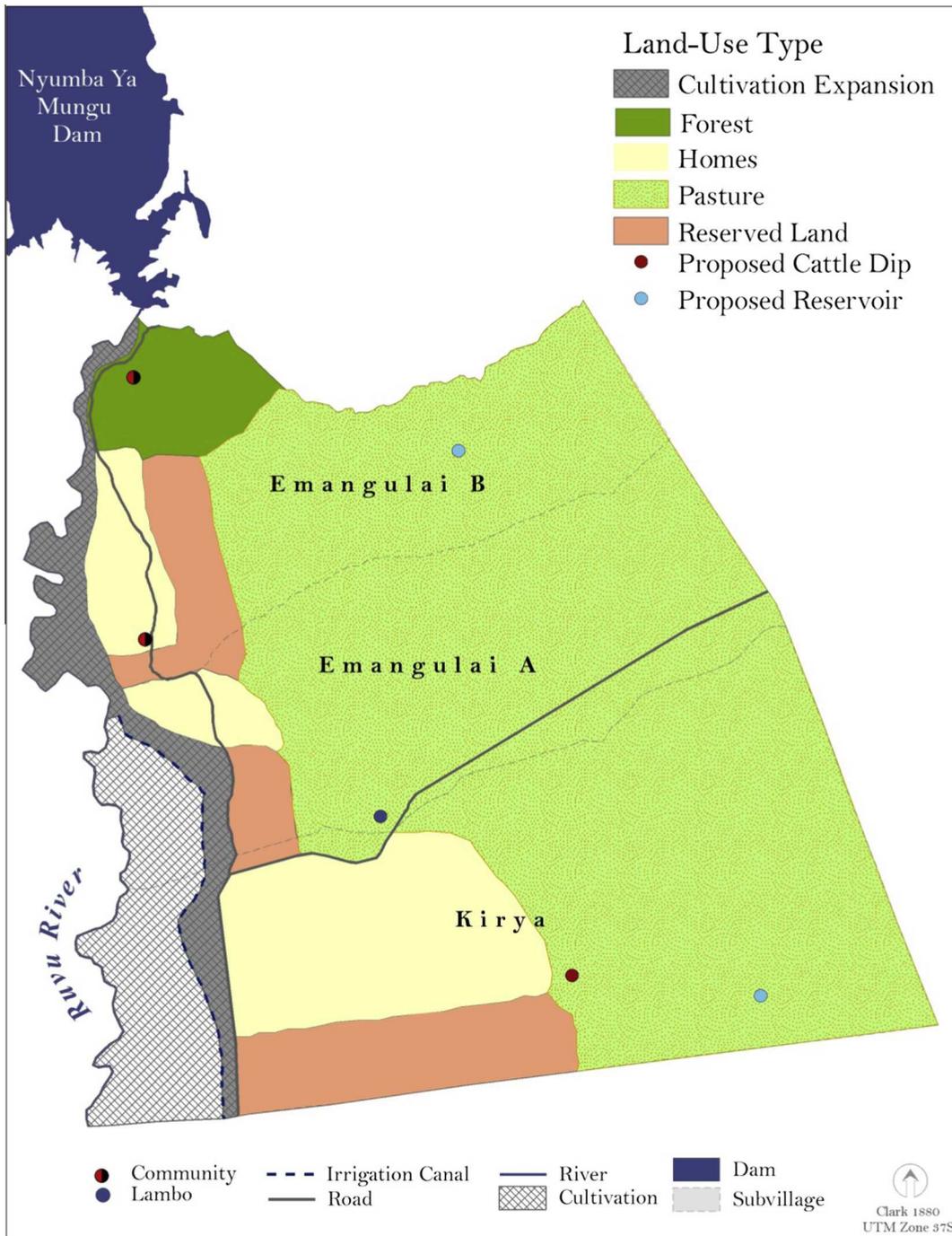


Fig. 3. Land use map of Kirya village.

to bribery in resolving local conflicts related to crop damage. To date, a village land use planning process that sought to identify areas for future expansion resulted in a new land use map but little agreement as to the terms of future irrigation expansion, particularly among residents of Emangulai B. As indicated in the digital recreation of the village land use map (Fig. 3), the planned northward expansion of irrigation along the Ruvu and into the riparian zone immediately south of the Nyumba ya Mungu dam would constitute a major encroachment into areas of *alilili*, a development that would likely be met with considerable local resistance from the pastoralist community in Kirya.

With its funding from district council targeting primarily road and school rehabilitation, village council has few resources at its command to pursue local development. Despite limited resources, its legally mandated powers require it to take on the considerable task of adjudicating access to newly irrigated land among users of different historical connections to the village and different priorities for future land use. It must furthermore resolve conflicts that may develop in the aftermath of major infrastructural investments, such as the planned expansion of irrigation in Kirya. Such conflicts are not the direct outcome of a changing climate as suggested by the NAPA, but rather the emergence of new patterns land access that reflect the prioritizing of certain land uses and livelihoods over others. For example, if the new scheme were to encroach on the calving reserve near the Ruvu, as seems likely, village council would take primary responsibility for managing the fallout following displacement of livestock-keeping activities to the drier periphery of the village. In short, local institutional capacity to mediate between adaptation priorities emanating from national adaptation policy and the aspirations and adaptive practices of differentiated local communities are severely limited, even where there seems to be broad convergence around overarching priorities such as expanded irrigation.

## Conclusion

Our analysis demonstrates that Tanzanian policy assumes climate change to be a generalized threat to an undifferentiated rural population, thus advancing a depoliticized framing of climate change impacts and a technocratic vision of adaptation. We argue that this approach is emboldened by an adaptation imperative that is increasingly prominent in global academic, development, and policy circles. By suppressing the most basic elements of transitional adaptation, the numerous pressures on local institutions are likely to intensify and exacerbate existing problems of capacity and transparency that limit their potential to contribute positively to socially equitable adaptation. As a result, policy prescriptions that emanate from these depoliticized framings of adaptation may well result in such populations being “further insulted and injured by their lack of recognition and by misrecognition as simplified, stereotyped victims in local, national and international climate conversations” (Marino and Ribot, 2012: p. 323). Furthermore, national climate adaptation policy and related development initiatives such as *Kilimo Kwanza* adopt similar themes, framings and priorities, casting doubt on the presumed benefits of integrating adaptation into development policies.

It need not be so. Current adaptation scholarship provides framings of adaptation that may be useful to rethinking policy approaches through a broader lens. Rather than a simple imperative of response to imminent climate change, adaptation can be seen as a wider set of choices that are, however, deeply embedded in existing development institutions and practices. The set of concerns raised by transitional adaptation, including social equity and related questions of distributive and procedural justice, deserve the attention of adaptation policy.

Additional comparative research is needed among low income countries engaged in the NAPA and other adaptation policy processes to assess critically the full range of institutional capacity and equity issues that a major injection of adaptation finance will raise for development and environmental governance. In the context of existing policy, we see a growing need for research that identifies the incongruities and conflicts between adaptation agendas pursued by national governments and the spontaneous adaptive practices and aspirations for improved livelihoods on the part of rural communities responding to changing patterns of climate variability. If such narrowly technical approaches emerge as the norm within adaptation policy, there may be strong grounds for reevaluating the consultative and participatory processes that are integral to policy development.

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