

Agriculture and Climate Change in Kenya: Climate Chaos, Policy Dilemmas

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Summary

This paper analyses emerging policy discussions on climate change and agriculture in Kenya. Kenya has been ahead of many other countries in developing a national climate change strategy, and agriculture is one of the key critical sectors of interest. However, there are concerns about whether policy goals may be achieved amidst the actors' many and diverging interests. This paper sets out to map how these debates are starting to take place in practice, and poses the following questions: what are the arguments, who is promoting them, and what are the implications for Kenya's agricultural sector? A better understanding of the key actors, their interests and through what narratives actor-interests are mobilised is important because they will all have implications for the kinds of support farmers at the local level do or do not receive, and the extent to which their own interests are foregrounded or marginalised within the policy process. Ultimately, the policy response to climate change in the agricultural sector is one important factor which mediates local-level vulnerability.

The paper examines key policy narratives and documents on climate change and agriculture, how (groups of) key actors cluster in relation to the narratives, and how they are manifesting themselves in practice. In the area of climate change, Kenya has a comparably strong government interest and activity. Politically, the debate has centred on the National Climate Change Response Strategy (NCCRS) which is implemented through the National Climate Change Action Plan (NCCAP). The NCCAP has been finalised and was launched in March 2013 (GoK, 2013).

The emerging dominant narratives in Kenya are focused on the need to protect food security and agricultural resources from the negative impacts of climate change, and on the other, the possible opportunities for capitalising on carbon funding, often with an all-too familiar emphasis on the 'technical fix'. A number of activities are taking place with donor support. In addition, a large number of NGOs and an increasing number of private actors are becoming key players. However, it should be acknowledged that the agricultural sector has only recently started to grapple with the implications of climate change. As a consequence, the key policy narratives, actors and interests which will shape the policy response to climate change are still coalescing, and the picture remains somewhat unclear. Moreover, the uncertainty over the timing and extent of international funding to assist the agricultural sector to build resilience to climate impacts both slows the process and raises a series of questions about demonstrating added value.

The paper argues that, so far, the lack of policy coherence creates a risk of undermining long term policy goals on climate change and agriculture. To develop greater coherence, the paper posits that there is a need for more joined up policies across government beyond strategies laid out in NCCRS. The new NCCAP (GoK, 2013) provides some directions. Some of the proposed actions in the crops sector include promotion and bulking of drought tolerant traditional high value crops, conservation agriculture and integrated soil fertility management. The priority actions for livestock and pastoralism are fodder banks, price stabilisation mechanisms, livestock diversification, and capacity building. Given that there are already signs that the ways in which food security and carbon funding objectives are pursued seem already to favour some interest groups (i.e. intensive farming over pastoralism and dryland farming), there is a need to ensure there is space for a diversity of perspectives to be heard.

1 Introduction

Kenya was among the first non-LDC countries in Africa to develop government plans for responses to climate change across key economic sectors. Kenya's recent National Climate Change Response Strategy (NCCRS, GoK 2010) and the national climate change implementation framework (2012) illustrate that climate change has acquired the status of a key national policy challenge. The National Climate Change Action Plan (GoK, 2013) was launched in March, 2013. This was developed through a consultative process that engaged actors across government, the private sector and civil society. Agriculture is a key part of the NCCRS, and the NCCAP reflecting the reliance on agriculture for the national economy and for providing labour locally; 80% of Kenyans live in rural areas and depend directly or indirectly on agriculture for their livelihoods. The agricultural sector comprises 24% of Kenya's GDP and 19% of the formal wage employment. An estimated 60% of all households are engaged in farming activities.

At the same time, a large number of organisations and actors are conducting activities which are taking place across government ministries and departments, NGO and the private sector (see Annex 2). The resulting picture is arguably a confusing array of goals and interests. This is in a situation where agricultural policies, meanwhile, revolve around the main goals of transforming Kenya's agricultural sector into an innovative, commercially oriented, competitive and modern industry for poverty reduction, improved food security and equity in rural and urban Kenya (GoK, 2010; ASDSP, 2011; ASDS, 2010). There is little mention of climate change in these documents that will guide the development of the agriculture sector in the coming decades. Amidst these, there are concerns at both international and national levels about how climate funding will be spent, specifically how funding may help achieve policy goals of adaptation, mitigation and poverty reduction, so-called "triple wins" embodied in recent terms such as "climate smart agriculture" and sustainable intensification (FAO, 2010).

This paper maps how key actors consider challenges for climate change and agriculture in Kenya¹. In particular, the paper looks at how climate change–agriculture linkages are framed, how different actors cluster around these narratives, and why. Finally, the paper addresses the implications of this for the future. This is so far an under-researched area, but one that will be increasingly important in understanding how climate funding is governed and whether this funding contributes to attainment of the goals of "low carbon climate resilient" agriculture.

We identify the following key findings:

1. Dominant narratives focus on technical "fixes" and management-oriented solutions to climate change in the agricultural sector.
2. There is a perception that a number of actors are redefining themselves as "climate change

champions" in order to take advantage of expected climate funds.

3. The lack of a coherent national policy framework leaves significant space for powerful actors to influence and direct the climate change-agriculture agenda in the country
5. There is recognition of the need for increased adaptive capacity in agriculture, but limitations in strategic actions or other 'alternative' narratives in the current environment.

The paper is structured as follows. Section two charts the concepts and methods that underpin this study. This is followed in section three by a consideration of the current policy context on climate change and agriculture in Kenya. Section four offers an account of stakeholders' perceptions on climate change and agriculture policy processes on the emerging 'climate policy' in Kenya in terms of the main narratives underpinning this, and the key actors and how they relate to the different narratives. While not an exhaustive review, the mapping gives a flavour of the sheer number and diverging views on causes, consequences and implications for action. Section five then discusses the implications of these rapid developments, with examples of projects on the ground. Section six reflects on the findings and offers some concluding remarks.

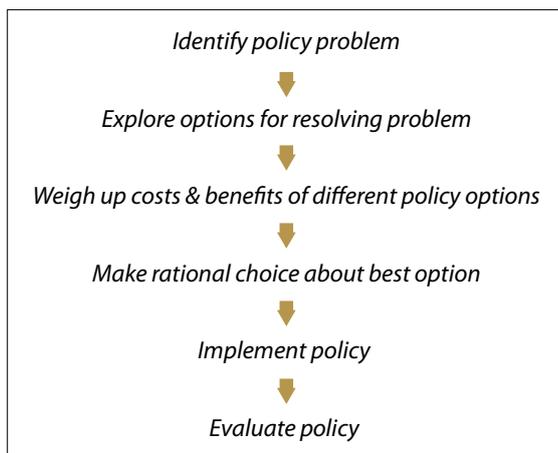
2 Concepts and methods

2.1 Understanding policy processes: a conceptual framework

This paper's approach to the climate change and agriculture landscape in Kenya is guided by a conceptual framework at the heart of the Future Agricultures Consortium's research agenda. The framework provides a systematic way of understanding and explaining policy processes. In so doing, it starts by deconstructing the notion of policy itself. Policy making is often portrayed as a linear process which proceeds through the following stages set out in Figure 1.

However, we start with the premise that policy processes are better described as "incremental, complex and messy", involving actors with often competing goals and interests, and which invoke evidence provided by research in less than straightforward or transparent ways (Keeley and Scoones 1999). This is in contrast to the conventional view, in which research results are communicated to policy-makers, who then make policy changes according to best available knowledge. Our approach to the policy process integrates three bodies of literature that help us to understand policy. One emphasises political economy and the interactions of state and civil society, and different interest groups. Another examines the histories and practices linked to shifting discourses, and how these shape and guide

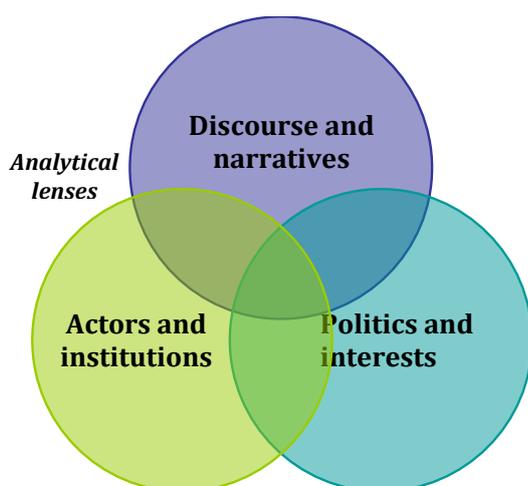
Figure 1. Conventional rationalisation of policy processes (adapted from Keeley and Scoones, 2003)



policy problems and courses of action. The third gives primacy to the roles and agency (or capacity to make a difference) of individual actors (Keeley and Scoones 1999, 2003). These three interconnected themes have been clustered in a simple framework, captured in Figure 2, whose component 'lenses' are described below:

1. Discourse and narrative (what is the 'policy narrative'? How is the policy issue framed through science and research?)
2. Actors and networks (who is involved and how they are connected?)
3. Politics and interests (what are the underlying power dynamics and incentives for policymakers to promote some policies, often at the cost of others?)

Figure 2. Conceptual lenses for analysing policy processes (adapted from Keeley and Scoones 2003)



It is, then, through an examination of the interplay of discourses and narratives, actors and institutions, politics and interests, that the paper presents its analysis of Kenyan agricultural policy in relation to climate change.

2.2 Methodology

Employing the policy processes analytical lenses; the methodology comprised a four stage process and was conducted between January 2011 and February 2012. In the *first* stage, a literature search on agriculture and climate change in Kenya was conducted, which served the following purposes:

- It provided information on the broader agriculture sector policy context in Kenya, as well as the recent policy initiatives on climate change;
- It allowed us to identify the principal actors working on agriculture and climate change in Kenya;
- It allowed us to identify the key narratives shaping debates and priorities for actors and institutions working on agriculture and climate change in Kenya.

In the *second* stage, we proceeded to map actors and institutions onto narratives and priorities for policy and practice. This was a gradual process and entailed the following steps:

- Use of the literature review to identify key actors and institutions;
- Team 'brainstorming' exercise in March 2011, which was also used to identify key actors and institutions, thereby filling gaps in the literature review. This done, we proceeded to map out (a) Where actors stood in relation to each other, (b) The narratives with which different actors were associated, and (c) The interests held by different actors.

This mapping procedure set up the *third* stage, by providing a sampling frame for the selection of the key actors with which semi-structured interviews were to be conducted. In total, 15 key informants were selected for interview (see Annex 1), each characteristic of the following types of institutions:

- Government ministries and departments
- Kenyan farmers' organisations
- Kenyan private sector organisations
- International donors
- National and international NGOs
- International research organisations

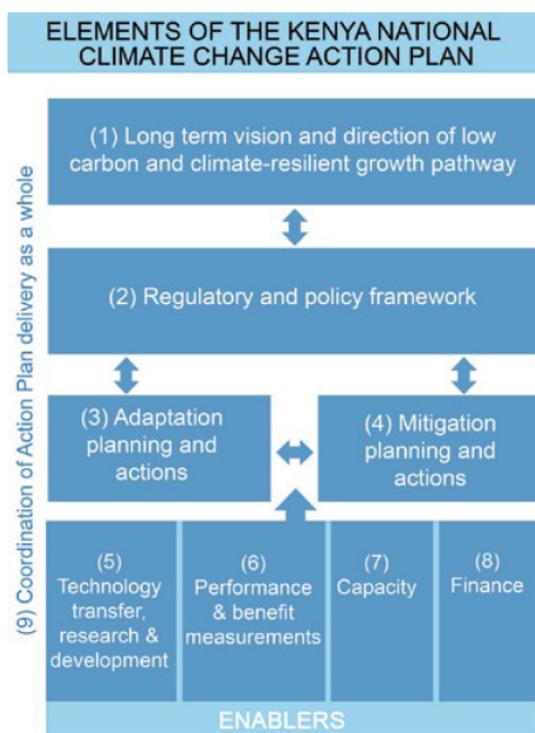
In the *fourth* stage, once the interviews had been collected, the analysis was done and written up into the first draft of this report. The results of the report were summarised into a briefing paper, which was used as the basis for discussion of the research findings in a policy roundtable that was held in Nairobi, in February 2012². The aim was to validate – and offer the opportunity to contest – our analysis with key actors in the agricultural

sector that work on climate change, and to discuss the implications for policy and practice of our findings. During the policy roundtable, there was strong agreement with the broad thrust of the analysis. Where there were disagreements, clarifications or corrections, these were noted and reflected in a FAC research update (Maina et al. 2012) and re-writing of the briefing paper. The outcomes of the policy roundtable have also informed the analysis of this paper.

3 Policy context on climate change and agriculture in Kenya

The arrival of climate change on the policy agenda in Kenya is fairly recent. The main Government document on climate change is the National Climate Change Response Strategy (NCCRS) from 2010 (GoK 2010). A National Climate Change Action Plan is now finalised, in order to operationalise the NCCRS. A draft climate change policy is also in circulation. The NCCRS is not a policy document but a government strategy. However, as there is no policy document on climate change and agriculture, the NCCRS has received much attention and can be seen as the de facto policy document of the Kenyan government, until March 2013 when the NCCAP was launched. The NCCRS lays out the strategies and modes of coordination across the range of sectors in Kenya (Figure 3).

Figure 3: Elements of the Kenya National Climate Change Action Plan³.



Until March 2013, the two key Government bodies working directly on climate change issues were the

Ministry of Environment and Mineral Resources (MEMR), which was the lead technical agency, and the Office of the Prime Minister (OPM), which has a coordinating function; 10 sector ministries constituted the agricultural sector:

- Ministry of Agriculture (MoA)
- Ministry of Livestock Development (MoLD)
- Ministry of Fisheries Development (MoFD)
- Ministry of Cooperative Development and Marketing (MoCD&M)
- Ministry of Lands (MoL)
- Ministry of Water and Irrigation (MoW&I)
- Ministry of Regional Development Authorities (MoRDA)
- Ministry of Environment and Mineral Resources (MoE&MR)
- Ministry of Forestry and Wildlife (MoF&W)
- Ministry of Development of Northern Kenya and Other Arid Lands (MoNK&AL)

The Ministry of State for Planning, National Development and Vision 2030 (MoSPND and Vision 2030) was also an important ministry because the agricultural sector is an important sector in achieving the goals of the economic pillar of Vision 2030.

The NCCRS and more recently the NCCAP grew out of a process involving a wide range of stakeholders, including parliamentarians, clusters of stakeholders on government, private sector, civil society, and development agencies in national and regional workshops (GoK 2010). Kenyan civil society (local NGOs and international NGOs based in Kenya) has had an active role in consultations for the NCCRS, for the most part through the Kenya Climate Change Working Group (KCCWG). KCCWG has been leading the process of preparing a draft Climate Change Bill⁴.

The NCCRS has thus been intended as a coherent response strategy from the Kenyan government, ready to be rolled out across sectors. However, there is so far no clear linkage between NCCRS and the agricultural sector ministries. The agricultural policy in Kenya does not mention climate change explicitly. Agricultural sector goals revolve around increasing productivity and income growth, especially for smallholders; enhanced food security and equity, emphasis on irrigation to introduce stability in agricultural output, commercialisation and intensification of production especially among small scale farmers; appropriate and participatory policy formulation and environmental sustainability. Policies in the Agricultural Sector Ministries are shown in Annex 3.

The government has used a "systems approach"⁵ to the agriculture sector. This means that the agriculture sector ministries are viewed as components whose synergistic functions should lead to attainment of the objectives set out in the agricultural sector. In the nexus of climate change and agriculture, this strategy postulates that when each of the sector ministries aligns its operations to the tenets of the NCCRS and now the NCCAP, then the agricultural sector will respond effectively to the

challenges of climate change and climate variability. This is debatable.

In principle, agricultural sector ministries are meant to align their climate change activities and plans to the NCCRS as stipulated in the NCCAP and in consequence to the international policy debates including that by the UNFCCC. While this may take care of the upstream interests at national, regional and international levels, the downstream may be neglected. Implementation of the NCCRS through the NCCAP strategies is in its formative stages and remains at the level of mainstreaming into government plans and development of implementation strategies.

In the Kenyan agricultural policy, key areas of concern include:

- Increasing agricultural productivity and incomes, especially for small-holder farmers.
- Emphasis on irrigation to reduce over-reliance on rain-fed agriculture in the face of limited high potential agricultural land.
- Encouraging diversification into non-traditional agricultural commodities and value addition to reduce vulnerability.
- Enhancing the food security and a reduction in the number of those suffering from hunger and hence the achievement of Millennium Development Goals (MDGs).
- Encouraging private-sector-led development of the sector.
- Ensuring environmental sustainability.

Both the NCCRS and the NCCAP view agriculture, as the most weather - dependent sector of the Kenyan economy, as the one which will 'bear the brunt' of climate change and variability. Agriculture is centre-stage as a livelihood activity in Kenya. Specifically, climate change is seen as a stressor threatening food security through increases in droughts and floods, and increased dry spells during the rainy season. There is a particular focus on drought, given recent history of recurring droughts in Kenya. A current government initiative that provides a supportive framework for implementing climate change responses to drought is the National Policy for the Sustainable Development of Northern Kenya and other Arid Lands. The policy established the National Drought Management Authority (NDMA), the National Disaster Contingency Fund and the Council for Pastoralists education. The strategy and the action plan also point to the potential for Kenya to tap into global carbon markets. The NCCRS and the NCCAP thus frame the challenge of climate change for agriculture in ways which are consistent with global narratives on the relationship between agriculture and climate change (FAO 2009, Barrios et al., 2008, Brown and Funk 2008). Thus arguably there is a clear overlap between policies and strategies for climate change and agriculture, at least in the solutions suggested. However, there are also contested areas, which we will now turn to.

4 Confronting climate change in Kenyan agriculture: Narratives and actors

A wide range of agricultural-based actors have a stake and interest in climate variability and climate change in Kenya. Figure 4 is one depiction of the landscape of actors, showing a snapshot of some of the key organisations involved in debates surrounding climate change in Kenya. While by no means exhaustive, the figure illustrates the seemingly "chaotic" picture and the multiplicity of organised efforts geared towards climate change and climate variability in the country.

As noted above, there is wide agreement over the core message (as also framed in the NCCRS and the NCCAP) around climate change and agriculture in Kenya, namely that climate change is an externally imposed problem, which the country will suffer from. Agriculture is given particular attention as a very climate sensitive sector. At the same time, there are also hopes of funding for projects to help store carbon.

Beyond this broad agreement, however, the debate remains at a relatively incipient stage. What we can see – and what the following sections discuss – is the emergence of two major narratives straddling the debate in Kenya:

1. Climate change as a threat to food security, and
2. Climate change as an opportunity to address energy and forest degradation problems

Beyond discursive positioning, though, response to the challenge of climate change is in its infancy. Moreover, there is not yet a huge amount of funding available yet for climate-specific initiatives, as discussed below, which constrains the size of the response that is currently possible, and also distorts the process through which priorities are decided. The most important implication of this situation is that there is more space for manoeuvre amongst existing dominant interests, some of whom are starting to position themselves as 'climate change champions', and to rebrand existing activities as responses to climate change. Using the lens of understanding policy processes, this section charts what activities are starting to be vaunted as climate solutions, who are likely to benefit and which other actors may be excluded or harmed as a consequence.

4.1 Adaptation, resilience and food security

At the heart of this narrative is the concern over food security and how it may be threatened by climate change. The Kenyan National Climate Change Response Strategy (NCCRS) brings food security centre stage:

as institutionalisation of early warning systems and early response mechanisms.

These efforts are supported by research activities of bodies such as the Kenya Agricultural Research Institute (KARI) who provide the technical information regarding crop and livestock varieties that are resistant or tolerant to pests and diseases, drought, and have improved nutritional value as well as vaccines against priority livestock diseases. The non-governmental institutions are also heavily involved in this area. At the national level the Kenya Climate Change Working Group brings together many civil society organisations that support reduced climate change vulnerability of poor communities in Kenya through awareness and strengthening the capacity of Kenyan local communities and civil society to implement community based adaptation projects.

The following sections explore three policy areas that typify some of challenges associated with agriculture and climate change, particularly for the groups most vulnerable to climate change.

4.1.1 Drought tolerant and disease and pest resistance crops

Growing of crops well adapted to local conditions with disease and pest resistance as well as drought tolerance emerged in the interviews as a key element in responding to the threat to food security from climate change. In the words of a senior government official, research into improved crops is “how you develop your resistance to drought”. Specifically, greater pest and disease incidence among crops, as a result of changes in temperature, were identified as key challenges to address. For this reason, the need for pest resistant crops has been vaunted as a viable option in dealing with the effects of climate change and climate variability.

The intuitive appeal of addressing drought and pests with crops that are less susceptible to these phenomena is very clear, and it is understandable that actors in the Kenyan government, as well as others in the private sector should find the greater production of the great Kenyan staple, maize, a logical proposition. However, advocating drought resistant maize is not as straightforward, and perhaps not such an effective adaptation strategy as it may sound; at least not on its own. Future Agricultures Consortium-related research on maize and environmental change in Kenya (Brooks et al 2009) has highlighted the dangers of ‘pipeline’ technology supply models. These concentrate on private sector provision of drought-tolerant maize, which fit well with the classic ‘modernisation’ narrative that has proved as enduring as it has problematic in the agricultural sector in Africa.

Brooks et al (2009) argue that concentrating on this kind of response to climate-related threats to

food security, the forms of knowledge and the actor-networks that accompany it can provoke a dilemma. This is because, in seeking to respond through the ‘formal’ maize distribution system, the informal systems and seeds farmers use are prone to be overlooked. The interests of private seed distributors working through a formal seed distribution system are not necessarily the same as those of local farmers. Therefore, if the narrative surrounding a new Green Revolution based on this type of drought resistant maize holds sway, we should not necessarily expect attainment of food security to be achieved, especially in areas where maize does not do well, or is unlikely to do well due to climate change and climate variability.

Another issue that came out strongly from the research conducted by Brooks et al (2009) was that for a great many farmers, one way to deal with increased droughts is to plant other drought tolerant crops such as cassava, millet, cowpeas or green grams. However, most of these crops which traditionally were widely consumed are sometimes considered “the poor man’s crop”, which can put some off cultivating them. There is a danger to this framing that one NGO respondent expresses thus:

“The attitude that food is equivalent to maize limits adoption of relevant technologies in support of the variable climate. Communities fail to adopt alternative technologies that are more suited to climate adaptation such as sorghum due to a fixation with maize.”

However, on this front, there is increasing engagement on the government side, with some of the other strategies farmers are finding useful, such as a greater government commitment to work on ‘orphan crops’, or to change the framing to the friendlier ‘sibling crops’. Yet an alternative narrative around strengthening resilience in the face of drought cannot solely be based on cultivating ‘orphan’/‘sibling’ crops. Rather than simply enlisting private sector interests to supply drought tolerant maize through a formal ‘pipeline’ distribution system, the types of engagement with farmers also needs to be considered, so that their voices are heard, not marginalised and so that solutions are tailored to the various ways in which they use maize. This speaks, then to an agenda that goes well beyond appropriate technologies, but which instead encompasses broader questions of participatory governance of the design of adaptation measures in Kenya.

4.1.2 Conservation agriculture (CA)

Conservation farming is seen as another activity that will enhance the attainment of the ideals enshrined in the climate change strategy. The benefits of this approach of agricultural production are however not completely worked out. Its acceptance and benefits in practice is also questionable. Conservation agriculture (CA) was motivated by the efficacy of combating erosion

and reversing crop yield decline in the United States of America and Brazil in the 1970s. Research and extension programs in Africa, supported by major international initiatives (e.g. FAO, GTZ, GFAR, ECAF, CIMMYT, AFD) have increasingly promoted the principles of CA. There is no clear funding pipeline in the Kenyan context to help promote conservation agriculture and within the NCCAP, the strategy is not widely articulated but is rather mentioned as work under research (pg. 125). Furthermore, weeding/tilling is often an occupational role and a livelihood strategy for women, the main agricultural practitioners, in most African countries. This may limit the wide adoption of the approach that promotes non-tillage in Kenya, and hence investments in upscaling the technology may not yield the advantages the approach may have for climate change adaptation and are likely to go to waste.

4.1.3 *Dairy farming and rearing small ruminants*

Kenya is the regional hub for dairy technology. The East Africa Agricultural Productivity Program (EAAPP) is designed to invest in regional approaches to agricultural research through supporting the strengthening and scaling up of agricultural research in Eastern Africa focusing on dairy, wheat, cassava and rice. Kenya was identified as the host for the dairy centre of excellence due to its comparative advantage in the dairy sector in terms of superior genetics, feeding technologies, animal health technologies and organisation of farmers' producer units. The lead implementing agency for the EAAPP is the Kenya Agricultural Research Institute (KARI). The dairy technology centre of excellence is housed at the KARI station in Naivasha. The dairy industry in Kenya is a major income earner for a large proportion of the population in highly productive areas. It is also an industry in which many technocrats and top level decision-makers in the country have invested in. The industry enjoys social, economic and political patronage. It is unlikely for the country to curtail its development.

Unfortunately, however, the focus on the dairy industry might be at the expense of the small ruminants that are widely utilised and that support many poorer livelihoods over the expansive arid and semi-arid lands (ASALs). This raises a crucial question: are current efforts for development of dairy production, versus those given to small ruminant development, commensurate with the need to focus on the people most vulnerable to climate change impacts? Some government actors were of the view that, with increased consumption of meat, farmers need not lose out on the opportunity to make money, and therefore emphasis should be on promotion of small ruminants and to a lesser extent the larger beef animals.

This view was contradicted by other stakeholders who were of the view that emphasising small ruminants, especially the grazers, could lead to greater environmental damage through large scale degradation of grazing lands. There is little scientific evidence to support or discredit

these arguments and there remains considerable scope for conjecture. Nevertheless, the above highlights the need for development policy to consider climate change so that the livelihoods of the poor that are expected to be most at risk from climate change are not further marginalised.

4.2 Mitigation, energy and REDD+

The key argument here is that carbon funding holds great promise for the agricultural sector in that it can give major potential contributions to energy security as well as lower degradation. This is supported by the government through its Nationally Appropriate Mitigation Actions (NAMAs), but also other key institutions.

NAMAs form part of the Kenyan government's mitigation strategies, aimed at moving the economy into a low-carbon path as set out under the Cancun Agreements. Energy is key to agricultural development, and particularly relevant for newly set up mechanised irrigation schemes, in drying of vegetables and grain and also for value addition. Proper drying of grains also yields other positive externalities like combating the aflatoxin problem. Since current hydro-power energy output is not sufficient for Kenya's energy supply, there is a growing dependency on diesel power generators. To increase the national electricity grid and to drive the economy on a low-carbon trajectory, there is also focus on other forms of power such as geothermal power, solar or wind power. The narrative appeal of these "green" power sources is that they hold out the promise of enabling the country to adapt to climate change and mitigate emissions.

However, access to electricity does not necessarily translate into connectivity of households to the national grid. Many households, especially in rural areas, have electricity lines passing over their houses, but due to low resource endowment, they lack the capacity to connect. Thus, it is not automatic that a majority of rural households will benefit from increased energy availability, green or otherwise, at least in the short term. In contrast, the large commercial farming operations that do have an energy supply, and who use it in order to increase their capacity to service high-value markets (such as cut flowers in Europe) may contribute to widening the gap between themselves and smallholder farmers.

Activities in this area were previously carried out by government ministries, particularly the Office of the Prime Minister; Ministry of Environment and Mineral Resources (MEMR); Ministry of Energy; Ministry of Planning, National Development and Vision 2030, with funding from international donor agencies such as the AFD. Private sector actors such as CAMCO, KAM and KEPSA as well as the policy research bodies such as KIPPPA provide additional research services.

Development of geothermal power and increasing the country's tree cover and other forest resources, including agroforestry practices and improved natural resources management systems, are some of the mechanisms

already embraced. The NCCAP lists solar home systems; energy efficient bulbs; geo-thermal power generation; wind power generation and improved cooking stoves as mechanisms within actions for energy mitigation and adaptation.

Yet even if energy access was improved, prior to being able to benefit from renewable energy sources, farmers would require access to mechanised farming technologies, which raises long-standing issues both around the affordability and the appropriateness of such technologies to current farming practice. This then complicates the argument that a focus on energy generation is critical to agricultural production in the face of climate change impacts.

Working closely with the Ministry of Planning, other government departments and the private sector, the Office of the Prime Minister was also involved in efforts geared towards carbon financing and trading under Clean Development Mechanism (CDM). Given the apical positioning of the Office of the Prime Minister in Kenya's former governance structure, the energy debate continues to receive considerable attention. This situation gives credence to the postulation in the policy process framework by Keeley and Scoones (2003) that some voices are heard over others when making policy decisions, and in terms of how resources to implement the decisions are allocated. Yet it remains unclear whether the Kenyan government renewable energy strategy leaves space for, and is responsive to the needs and priorities of, smallholder farmers. In fairness, Kenya appears to be making efforts to ensure greater inclusivity. For instance, it established a geo-thermal energy initiative in July 2012, which is part of the Nairobi-Paris Initiative for Electricity, and which the Kenyan government is hoping can be funded. The justification for the initiative, according to one senior government official is that it can attempt to bridge the "difference between access to electricity and connectivity"; which arises when people who can access electricity do not connect, principally for reasons of poverty.

The country is also undergoing the process of identifying priority activities for implementation of the 'Reducing Emissions through avoided deforestation and degradation' scheme (REDD+), one of the few parts of the UN international climate negotiations process to have gained a significant amount of traction. The focus on REDD resonates with an influential climate change and agriculture narrative at the global level, which attributes widespread environmental degradation to African agricultural practices (i.e. World Bank 2005). Though this proposition has been much contested and problematised (e.g. Leach and Mearns 1996, Fairhead and Leach 1998, Keeley and Scoones 2003, Tiffen et al 1994), current framings of the relationship between climate change and agriculture leave considerable space for this narrative of environmental crisis (Silva Villaneuva and Hiraldo, 2013).

Whilst it is hard to deny a link between agricultural activity and degradation in the round, the risk is that this framing can misattribute blame and thereby

de-legitimise small-scale farming practices which may actually contribute to objectives of sustainability, and which may further constitute a source of considerable adaptive capacity in the face of climate variability. An NGO respondent voiced this concern as follows:

"The REDD process poses the danger of restricting small scale farmers because these farmers are considered the main agents of degradation. This is notwithstanding the activities undertaken by big concessions in mining and logging for example Tiomin in the Coast Province."

4.2.1 *Production of bio-fuels instead of food production*

The debate over the relationship, and potential tradeoffs, between food and biofuels production is gathering momentum in Kenya. Biofuels can offer carbon emissions reductions at both national and international levels, and for this reason, can be framed as one contribution that the agricultural sector can make to dealing with climate change. A source at the Kenya Private Sector Alliance (KEPSA), argued, "I am quite a supporter of the biomass fuel because that will reduce coal in this country". Whilst concerns have been raised that growing biofuels reduces space for food production (e.g. Nunow 2011), the KEPSA source maintained that "Kenya has got enough land to grow food and fuel", as current crop production does not cover all the cultivable land available. KEPSA also advocated the use of biomass for power generation; for example, the potential of a eucalyptus-fuelled power plant in an area such as Bungoma can be exploited by, encouraging eucalyptus production by paying local producers, and using the proceeds from the energy sold to cover the costs of power generation. This was viewed as more efficient and profitable than growing maize, as more of the biomass produced would be sold in the case of eucalyptus than it would in the case of maize (where only a small proportion of the biomass of the whole plant is marketable and only a small proportion of the plant is eaten).

While there may technically be sufficient land to accommodate the growing of biofuels and food, there are two concerns that opponents of biofuels production have put forward. First, the prices of the oil seeds have been on a downward trend and the buyers of the seed are few, causing concern about its sustainability. Certainly, the history of agriculture in Africa is littered with examples of farmers being advised to switch to mono-crops on the basis of greater profitability, and then find themselves exposed to the volatility of international commodity markets over which they have no influence. These examples should act as a caution for Kenyan farmers interested in the biofuels market.

So far, though, it is not smallholder farmers that have been doing the running on biofuels in Kenya, but commercial actors geared up for larger-scale, intensive production. It is the predominance of this type of actor

which leads to the second concern. Establishing biofuels production in Kenya has become embroiled in conflicts over land use, in which some of the people already most vulnerable to climate change could lose access to farming land. For example, in the Tana River Delta, one commentator warns that up to 25,000 people living in 30 villages could face eviction from their ancestral land due to land deals struck to produce biofuels and other intensive land uses (Nunow 2011a). Within this context, pastoralists are particularly at risk of losing access to land and other resources required for their livestock (ibid). Certainly, the Kenyan government has not been slow in contemplating the selling of land for intensive agriculture in the Tana River Delta to commercial actors, some of whom are Kenyan, some of whom are international. According to the same commentator (Nunow 2011b), for biofuels alone, land deals of 130,000ha have either been agreed or are currently in negotiation, out of a total of 345,000ha under consideration in the area.

On the face of it, this looks like a case in which corporate and government interests stand to gain at the expense of those of local farmers, in ways which threaten to increase, rather than to reduce, vulnerability to climate impacts. However, without entirely ruling out this possibility, other commentators suggest that the picture is not quite so straightforward. Smalley and Corbera (2012) argue that in the case of both biofuels-related land acquisitions in the Tana Delta, local level opposition and manoeuvring led to concessions, changes and stalling of implementation. The complicated land tenure situation comes into play, in which de facto customary tenure provides a strong basis for resisting de facto ownership claims. Moreover, for the scheme that has gone ahead there is some local support as well as there is opposition. Nevertheless, Smalley and Corbera (2012) conclude that this capacity for resistance is patchy, and that greater decision-making power lies with local and national elites than with local farmers. Without denying the capacity for local agency, therefore, there do appear to be strong grounds for concerns about the implications of biofuels and other land acquisitions for the vulnerability of local farmers to climate impacts.

4.2.2 'Climate-Smart Agriculture'

Narratives around climate-smart agriculture (CSA) has been storming the international agenda, figuring heavily as a topic for international conferences and taking centre-stage at recent agriculture side events at the UN climate summits in Cancún and Durban. The Food and Agriculture Organisation and the World Bank, amongst others, have been investing heavily in the term. Indeed, the standard, accepted definition of CSA is that provided by the FAO: "agriculture that sustainably increases productivity, resilience (adaptation), reduces or removes green house gas emissions (mitigation) while enhancing the achievement of national food security and the Millennium Development Goals" (2010:ii). This is often dubbed the 'triple win' scenario.

Kenya is very much an emerging 'player' in the climate-smart agriculture narrative that has quickly emerged,

as it plays host to the Kenya Agricultural Carbon Project (KACP), perhaps the African flagship CSA project (though Ethiopia, Tanzania and Uganda also have projects classifiable under the CSA banner). A joint initiative between the World Bank and the Kenyan government, and implemented by the Swedish Cooperative Center - Vi Agroforestry Program (SCC-ViA), the Kenya Agricultural Carbon Project is an attempt to kick-start an offset market for soil carbon sequestration (Sharma and Suppan 2012; Atela 2012). Financed through the World Bank's BioCarbon Fund, it is a response to the fact that currently, carbon credits sequestered by agriculture are not accepted either by the European Trading scheme or by the UNFCCC Clean Development Mechanism. The World Bank argues that this exclusion impedes smallholder farmers in Africa from "accessing emerging carbon markets and from benefiting from significant payments for emission reductions" (2010:3). The KACP is seen as a step towards showing the benefits of climate smart agriculture, so that eventually, it will be possible to include carbon sequestration credits from agriculture in international carbon markets (Lager and Nyberg 2012). But it is also about getting farmers to adopt what are billed as 'sustainable agricultural land management' practices which are intended to aid adaptation in the face of climate impacts and improve food security outcomes.

The KACP therefore is clearly framed in terms of the 'triple win'. However, not all Kenyan policy actors are convinced who the winners from the KACP are supposed to be. One informant worried that the KACP was another instance of an externally imposed agenda:

"International policy processes impinge what we do on the ground and it's not friendly sometimes. The Ministry of Agriculture is focusing on carbon agriculture, which in reality is futile in Africa, to be practical. It's a political tool to enhance below ground carbon sequestration, the hand of international politics. Even the strategic plan for MoA has a lot of donor influence because of funding.

This informant is not the only one to voice concerns about the Kenya Agricultural Carbon Project. Sharma and Suppan (2011) have criticised the project on the following grounds:

- The monetary benefits that carbon sequestration could bring to farmers even if it does become possible to sell the credits is negligible, working out at little over US\$1 per year over the 9 year lifespan of the project (assuming a carbon price of US\$4 per ton of CO₂). There is nothing in this project which is likely to be able to change the rather moribund state of the carbon markets which are central to its *raison d'être*.
- The transaction costs behind the project are considerable, and explain in part why the financial benefits are so low.

- Farmers are being asked to adopt new farming methods which they have taken little or no part in designing.
- The computer model-based method for reporting and verifying emissions reductions is so uncertain that the emissions reductions total it projects will be discounted by 60%. Such uncertainty brings into question whether this method will be accepted according to the criteria of The Verified Carbon Standard, a benchmark against which the credibility of methods for reporting and verifying emissions reductions. To date, despite 5 rounds of modifications to the method, it has yet to be accepted.
- As with other forms of carbon trading, carbon agriculture arguably shifts the burden of emissions reduction onto the poor.

4.3 *Finance for climate change and agriculture in Kenya*

A considerable number of informants interviewed in the research highlighted climate finance as a difficult area in the Kenyan context. One of the key perceptions is that the climate agenda is often determined not by local priorities but by donor imperatives. A respondent from the Ministry of Environment and Mineral Resource maintains:

“The local institutions’ course of action is being driven by where the funds are coming from. This is the reason why donors have a great influence on the CC activities and processes within the country.”

In the words of the climate change desk officer at the Kenya National Federation of Agricultural Producers (KENFAP):

“When agencies at the international level are giving funds to LDCs it’s not that they want us to adapt to climate change but (they give us funds) so that they can do what they want to do.”

In other words, the concern is that there is not sufficient space for the agenda to be defined locally: the suggestion is that it is defined by the donors through the conditionalities attached to the funding. Even a programme officer in the Kenya office of AFD, the French government’s international cooperation agency, admits:

“International politics also play a great role in determining what goes on in Kenya or what investments go into CC issues. As an example, what AFD gets as funds for loans is decided by the French government. Because of this you cannot rule out political influence and political priorities on the funding process and activities.”

A lot of climate change funding from the North is targeted at the Least Developed Countries (LDCs). This framing is unhelpful for Kenya, as it is not classified as an LDC, and thereby denied access to this kind of funding. As a result, Kenya has adopted the position in the climate negotiations that climate finance should go to the countries which are most affected by and most vulnerable to climate impacts. However, a senior government official pointed out that there is resistance from other African countries to this broader framing:

“We always have a war between Kenya and Tanzania when they use the word LDCs because we want them [i.e. Annex I countries] to generally say most affected developing countries [as recipients of climate finance]. Tanzania thinks that will make it too open and we will make the money available to them less.

Furthermore, even in the case of Annex I countries who do publicly favour targeting finances on the most vulnerable countries more broadly, the same informant was not convinced that Kenya will automatically stand to benefit. This is, according to the same source, partly because even within this broader framing, Annex I nations will continue to:

“have their favourite countries. So we won’t be among their favourite countries yet we are among those vulnerable to Climate Change and we have produced evidence, through our climate change strategy that it is impacting us”.

But it is also because the very inclusivity of a framing focused on the most vulnerable makes space for countries such as China or Mexico to make their case for consideration as recipients of climate funding. Given strong US (and other Northern) opposition to providing finance to countries perceived to have sufficient resources of their own, it is harder to gain international agreement on what level of finances should be provided, and to whom. Therefore, Kenya, it could be argued is caught between a rock and a hard place: it is not an LDC, and the larger category into which it would fit is subject to global geo-political wrangling over which Kenya itself can hope to have little influence.

This is not to say that Kenya does not receive any climate funding. Kenya is a beneficiary of the UNFCCC special loans for CDM projects whose proposals for funding are vetted by NEMA. Direct negotiations with donor agencies and foreign government have also yielded resources that include the Adaptation fund; the Green fund as well as the GEF funds on biodiversity, climate change and agriculture. Yet again, NEMA is the implementing entity for this fund and it also screens proposals for GEF funding. Other funding agencies include the UNDP, FAO, Rockefeller Foundation, DANIDA, the European Union, UNDP, FAO, IDRC, UNEP, World Bank and other donors. Some funds are used for capacity development at post-graduate level. UNEP, World Bank, UNDP, the Danish

Government and other donors fund various civil society groups in Kenya directly.

However, even qualifying for this kind of finance does not guarantee that the country will receive additional funds. As one informant explains:

“...The key is the word *additional* to the traditional Overseas Development Assistance (ODA), the commitment that all these countries have - I mean it's not a favour they have been doing when you see them supporting the developing world, it's a commitment they have. It's a percentage of their GDP -0.7%. And they have never reached it. So when you say additional that's what negotiators in the climate change discussion are trying to push for. So they want money exceeding 0.7% over the ODA and tagged as climate change. So these people do not divert traditional ODA and say this is climate change money.”

Whilst the Green Climate Fund has now become established in the international climate negotiations under the UNFCCC, there are still not sufficient requirements on donors to demonstrate whether the funds they allocate to demonstrate that they are complying with their obligations are new or additional. The implications of this lack of monitoring are evident in Kenya. According to a number of interviewees, the funding that is provided by many donors through these various channels is not actually additional, but is instead existing ODA which has been relabelled. The risk, then, is that some activities that are implemented in the name of climate change are not necessarily designed from scratch to address these objectives (even if they can make contributions to enhancing adaptive capacity or to mitigation objectives). Moreover, the lack of additional funding ensures that much of what is done under the climate rubric would have been done anyway, leaving to one side the more difficult question of whether such efforts will be sufficient to deal with the scale of the challenge. Even calls for additional funding of US\$100 billion to assist developing countries in dealing with climate change are frequently challenged as being insufficient to respond to the magnitude of the climate problem. The fact that very little of this funding appears to be materialising suggests a limited room for manoeuvre to work on climate change, and goes some way to explaining why efforts to tackle climate change in the agricultural sector remain at an incipient stage.

Accessibility to funds and funds allocation within government ministries is guided by the planning processes in the various ministries. However, some informants were of the view that when it comes to allocation of the funds to the various sectors, politics and interests play a critical role. Hence though the national level plans for funds allocation are clear, implementation of budgets may differ. The following remark from a key informant alludes to this:

“Generally I think that funds allocation is guided by the planning process at the various ministries. The work plans submitted are then moderated at the treasury before the funds are allocated; this is at the national level. But on the other hand, when it comes to allocation of the funds at the various sector levels (e.g. agriculture, energy, and water, etc), politics and selfishness plays a critical role. Hence, though at the national level plans everything may look rosy, during implementation the picture is different.”

At other times allocation of funds is done on a reactive basis. For example, when natural calamities like prolonged droughts affect food security, government is forced to respond in an emergency manner and re-allocate funds to agriculture to deal with the impacts of climate change. Government efforts are often focused on the vulnerable mostly after a crisis has taken place. There are calls for forward planning where investments can be put in place for preparation, knowing that a drought may occur instead of waiting for short term reactionary adaptation measures.

The fragmented donor-based call for proposals and projects discourages the development of a centralised kit or fund for climate change from which institutions could borrow. This makes donor funds allocation among climate change players highly fragmented and uncoordinated. Many stakeholders were of the view that for marked up impact all climate change funding should be consolidated.

5 Implications for future development

The above mapping of actors raises several issues with implications for future pathways on climate change and agriculture.

5.1 Overall direction – undefined climate change and agriculture ‘landscape’

A key question is what current interventions look like and whose interests they serve? We argue that the current intervention on-the-ground seem to have a common thread: they tend to focus on technical fixes, techniques and modernisations, driven by the strength of the narrative that technology is the key to Kenya's agricultural problems. As noted above, this resonates with a global narrative around agricultural modernisation which in many ways has been accommodated, rather than challenged by current framings of the climate change-agriculture relationship (cf Silva Villanueva and Hiraldo, 2013).

Despite the existence of the NCCRS and more recently the NCCAP, much of the climate change and agriculture

'landscape' remains largely undefined. There are differing levels of technical backing to the adaptation initiatives under implementation. In respect of responses to climate change at the local level, the lack of a coherent climate change policy effort leaves significant spaces for powerful actors to shape the agenda and activities. The land acquisition dynamics in and around the Tana Delta, in addition to a modernisation focus which favours formal supply networks and the actors associated with them, both stand as testament to the potential for climate policy in the agricultural context to be shaped by such actors, with potentially adverse implications for less powerful actors at the local level such as resource poor farmers and pastoralists.

5.2 Lack of capacity leading to spaces for external actors?

In government systems, efforts are geared towards ensuring that climate change issues are factored into national socio-economic planning and the necessary resources are availed in national annual budgets to support these activities. This being a relatively new area of activity, staff members require new skills and capabilities to plan for climate change effectively. This also includes development of mechanisms to monitor and coordinate and enforce compliance of environmental regulations and guidelines. That said, one informant in the National Environment Management Authority (NEMA) stated that they were "actively involved though the agriculture office in NEMA on climate change issues, on policy engagement and enforcing compliance to various laws touching on agriculture. Overall, a number of informants recognised the need for more capacity building in the following areas:

- Water institutions
- Increasing market access of livestock and livestock produce to counter losses due to drought
- Institutional efficiency and effectiveness in service delivery
- Effective stakeholder engagement with processes geared at improving agricultural practices.

Questions have been raised around organisations' understanding of climate change, and in turn the resulting strategies. In the view of one interviewee in the Ministry of Development of Northern Kenya and Other Arid Lands, "Efforts on the ground on climate change seem to be ad-hoc and opportunistic – many are not aware exactly what climate change is, the impacts, linkages etc." There are also concerns (which in fairness are hardly exclusive to Kenya), that the integrity of decision makers may not always promote the public good. In the words of one informant,

"I am not sure actually whether we have good policies. I suspect that we have bad policy implementers, personal interest takes precedence

over national interests and that happens in almost every Ministry. So we can have policies designed to propagate that kind of situation".

As a consequence, the risk is that funding goes to supporting actors close to the policy makers rather than the most vulnerable.

5.3 Redefining actors and activities

With donor funding driving local priorities, and with the potential for existing ODA funds to be relabelled as climate funds (rather than as additional sources of finance), an understandable and indeed necessary response is for some actors to position themselves as worthy recipients. In the words of the respondent from the another Ministry,

"Many government sectors and also the civil society have converted themselves into champions of CC issues without any technical information about CC. This is because it seems to be the buzzword at this moment and at the same time many donors seem to be interested in the same. The danger of this is that we may end up not addressing the real issues on CC&A."

All the actors are involved in one way or other in sensitisation, awareness creation and capacity building at various levels including the practitioners, policy makers, the scientists and even the farmers. Thus, references to capacity building, awareness raising etc, are not just about capacity in the abstract, but about what kind of capacity should be built, which relates to furthering existing agendas, interests and activities.

As the policy process progresses some actors – especially civil society – see their purpose as one of providing capacity building for policy making and implementation, and serving as points of contact for exchange of views on public policy issues affecting Kenya. The private sector actors such as KEPSA and KAM are active in the policy formulation, enactment and administration in order to improve the business environment, reduce the cost of doing business, and ensure that they remain competitive. Others such as CAMCO provides clients with project development expertise, technical delivery capabilities; policy advice as well as regulatory, technical and financial advice on clean energy project development and investment; carbon project development; energy and carbon advisory; energy efficiency software; carbon, energy and emissions reduction projects; REDD and Land Use projects.

NGOs advocate and campaign for a policy and legislative framework that puts into account the effects of climate change on human development. They also support reduced climate change vulnerability of poor communities in Kenya through awareness and strengthening the capacity of Kenyan local communities and civil society to implement community based adaptation projects. They promote and advocate

for climate-friendly and equity-based development. Through wide consultations and collective action, the umbrella civil organisations like KCCWG and PACJA amplify the voices of the grassroots people and those of vulnerable households in the climate change debate. However, since they operate with funding from external sources, it is not always clear whether what they propose reflects the interests of the poor people they advocate on behalf of need or the priorities of the funding agencies.

6 Conclusions

The starting point for this paper was the concern over appropriate policy responses to challenges (and opportunities) presented by climate change. The assumption is that to get policy responses right, there is a need to move beyond the idea of policy as a linear, technical process in which experts provide advice, techniques and technology to inform policy decisions, which are then translated into action.

First, dominant narratives focus on technical “fixes” and management-oriented solutions to climate change in the agricultural sector. The example here is the focus on maize and its distribution through a formal network. This limits the space for crop diversification, despite some signs of increasing government engagement with “orphan crops”. Technical fix-style interventions are often posited without tackling the underlying reasons which explain why farmers in Kenya are vulnerable in the first place. Interventions dealing with vulnerability yield positive results in an environment of positive political leadership, supportive and coherent government policies and strategies, land tenure arrangements that make investments worthwhile and, more importantly, access to markets and inputs. These are not new opportunities. On the contrary, they have been at the heart of debates on agricultural development for many decades, and it is clear that there are no quick fixes in their absence. Moreover, there could be a disconnect between the technical fixes proposed and what is happening at ground level. Local contexts are often quite dynamic: the static and linear character of some technical fixes may not necessarily fit with these. Thus, “technical fixes” will continue to face confounding factors unless the farmer’s voices and narratives especially the silent narratives on the ground, are unlocked, listened to and considered.

Second, new actors have taken on board the climate change issues or reinvigorated their advocacy around this issue. Examples include the Kenya Climate Justice women champions developed in July, 2010 that seek to drum up grass root support to climate change issues. Government institutions such as KARI have set up climate change units and subsequently attracted funds, while ministries have climate change desk officers. Within a seemingly “chaotic” picture (and within a short period) and emerging international funds, many actors cluster

around key narratives. Many genuinely pursue the climate change agenda, though within this some are perceived to have “recast” themselves as climate change champions. There is a strong perception that there is a tendency on the part of donors to re-label funds given for agricultural development as climate change funding. Whilst this allows them to appear to comply with commitments made during the international climate negotiations, it obscures the lack of additionality in the funding. It also means that some activities that are implemented in the name of climate change adaptation were not necessarily designed from scratch to address adaptation objectives (even if they can make contributions to enhancing adaptive capacity).

Third, there is significant space for actors with vested interests in the prevailing agricultural *status quo* to present existing activities as ‘climate solutions’, even when these may have adverse impacts on the resilience and adaptive capacity of poor farmers. We can see the potential for this in the land acquisition dynamics occurring in and around the Tana Delta, and the adverse implications they can have for pastoralists. Many of these involve the use of new technology for the purposes of modernisation, efficiency and greater environmental sustainability. This amounts to a narrative of long standing within the agricultural arena, which has been substantially critiqued in the political economy literature on agricultural development.

From the foregoing, climate change and agriculture efforts in Kenya will remain varied and widely spread over many actors, regions and priority areas, at least in the foreseeable future. The ongoing efforts address both adaptation and mitigation scenarios. This could be because the agriculture sector strands many economic activities all impacted upon by climate change in different ways. This makes the agricultural sector in Kenya complex with many varied agro-ecological zones, many players and actors with differing interests, roles, responsibilities and spheres of influence. The underlying challenges include high poverty levels, low capacities to adapt and dynamic cultural practices add to the complexity. The fact that the country lacks localised data and (possibly) the critical technical manpower to implement projects that deal effectively with the impacts of climate change and to plan over varied regions compounds the whole sector. A cohesive policy for climate change and agriculture, that which is capable of embracing this inherent complexity and uncertainty should be adopted. This calls for adaptive policies, that are designed to function under complex, dynamic and uncertain conditions to navigate towards successful outcomes in settings that cannot be anticipated in advance (Venema and Drexhage, 2009; Barg and Tyler, 2009). The policy should create and promote effective spaces for and continuous deliberations, adjustment to plausible and identified future circumstances and enable self-organisation and social networking in support of best practices.

END NOTES

- i Kenya Agricultural Research Institute (KARI), Nairobi, Kenya
- ii Institute of Development Studies, Brighton, UK
- 1 Similar case studies are carried out in Ethiopia, Ghana and Malawi as part of the Future Agricultures' Climate Change Theme (Chinsinga et al., 2012; Sarpong and Anyidoho, 2012; Yirgu et al., 2013).
- 2 <http://www.future-agricultures.org/climate-change/7664-policy-dialogue-climate-chaos-policy-dilemma-in-kenya>
- 3 Source: MENR, <http://www.environment.go.ke/wp-content/uploads/2011/12/KENYA-CLIMATE-CHANGE-AP-PROCESS.pdf>
- 4 <http://www.kccwg.org/news/19-key-milestones-in-climate-change-bill>
- 5 An agricultural system is an assemblage of components which are united by some form of interaction and interdependence and which operate within a prescribed boundary to achieve a specified agricultural objective on behalf of the beneficiaries of the system. In the specific Kenyan context, The Agricultural Sector Development Strategy (ASDS 2010-20) uses the term agricultural systems to refer to production systems as opposed to agricultural innovation systems (AIS) perspective.
- 6 Ministry of Agriculture, the Ministry of Livestock Development, the Ministry of Development of Northern Kenya and other Arid areas and the Ministry of Water and Irrigation
- 7 <http://presa-worldagoforestry.org>
- 8 www.ilri.org/ibli/

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Annexes

Annex 1: List of key informants and interviewees, July-October 2011

Office of the Prime Minister
Office of the Prime Minister
Ministry of Environment and Mineral Resources
Ministry of Agriculture
Ministry of Agriculture
Ministry of Development of Northern Kenya and other Arid Lands
Kenya Meteorology Department
National Environmental Management Authority
The Kenya Institute for Public Policy Research and Analysis (KIPPRA)
French Technical Assistant
OXFAM
CARE-Kenya
Kenya National Federation of Agricultural Producers (KENFAP)
Kenya Private Sector Alliance (KEPSA)
International Livestock Research Institute (ILRI)

Annex 2: List of key actors and networks

Government Ministries	
Institution & Affiliate institutions/Committees/ Programmes	Main activities – related to climate change and agriculture
<p>Office of the Prime Minister</p> <ul style="list-style-type: none"> • Climate Change Coordination Unit, • Inter-ministerial Consultative Forum on Climate Change • Taskforce for accelerated development of green energy 	<ul style="list-style-type: none"> • Development and rapid expansion of the national generation of green energy • Approval of follow up activities to implement UNFCCC outcomes • Facilitation of the implementation of the National Climate Change Action Plan • Assistance in resource mobilisation for implementation of the Action Plan • Certifying that the relevant Ministries mainstream climate change issues in their planning and budgeting processes • Ensuring that climate change issues are factored into national socio-economic planning and the necessary resources are availed in national annual Budgets to support these activities • Works closely with the Ministry of Planning, other government departments and the private sector on carbon financing and trading under CDM or voluntarily markets
<p>Ministry of Environment and Mineral Resources (MEMR)</p> <ul style="list-style-type: none"> • National Environment Management Authority (NEMA) • Kenya Meteorological Department (KMD) • Mines and Geology Department • Department of Resource Surveys and Remote Sensing (DRSRS) 	<ul style="list-style-type: none"> • Environmental and Natural Resources policy formulation, analysis and review • Sustainable management of mineral resources and conservation of the environment. • Development of geo-database for integrated natural resources and environmental management systems • Conducting applied research and dissemination of research findings in land resources and geology • Promotion, monitoring and coordination of environmental activities and enforcing compliance of environmental regulations and guidelines. • Developed the NCCRS • The Climate Change Secretariat at the Ministry is propelling the climate change agenda in the country. • Through NEMA; coordinate statutory environmental committees under the Environment management and Coordination Act (EMCA) of 1999, which are multi-stakeholder groupings responsible for policy making and implementation up to the local level • Through KMD: Provides meteorological and climatological services to agriculture, forestry, water resources management, civil aviation and the private sector including industry, commerce and public utilities
<p>Ministry of Water and Irrigation</p> <ul style="list-style-type: none"> • Kenya Water and Sanitation Programme (KWSP) • Water Resources Management Authority (WRMA) 	<ul style="list-style-type: none"> • Management of water resources • Provision of water services • Provision of irrigation, drainage, and water storage services • Land reclamation services • Capacity building for the water institutions • Water harvesting and storage technologies to expand the potential for increased agricultural production and livestock development • Irrigation and land reclamation for increased agricultural production, particularly in arid and semi-arid lands (ASALs)

Ministry of Agriculture	<ul style="list-style-type: none"> • Soil and water management • Water harvesting using small and medium size dams • Conservation agriculture • Agro-forestry • Promotion of drought tolerant crops
Ministry of Livestock Development <ul style="list-style-type: none"> • The National Agriculture and Livestock Extension Programme (NALEP) • Pan-African Tsetse and Trypanosomes Eradication Campaign Programme (PATTEC) • The ASAL Based Livestock and Rural Livelihoods Support Project • Smallholder Dairy Commercialization Programme (SDCP) • The Kenya Agricultural Productivity Project (KAPP) • Somali Ecosystem Rinderpest Control Unit (SERECU) 	<ul style="list-style-type: none"> • Develop appropriate policy and legal environment • Increase livestock productivity through provision of widely accessible inputs and services to farmers and pastoralists • Enhance investment in the livestock sector • Increase market access of livestock and livestock produce • Enhance institutional efficiency and effectiveness in service delivery
Ministry of Development of Northern Kenya and other Arid areas <ul style="list-style-type: none"> • Arid land Resources Management Project 	<ul style="list-style-type: none"> • Increasing resilience to drought and floods • Improved water management to prepare for abundance and scarcity • Development of regimes to increase equitable access to areas of crop and forage production • Investment on infrastructure that can resist the frequent extreme weather events • Provision of drought induced off-take • Institutionalisation of early warning systems and early response mechanisms • Establishment of a National Drought Management Authority • Exploring opportunities and develop mechanisms through which communities can benefit from bio-carbon initiatives

<p>Ministry of Energy</p> <ul style="list-style-type: none"> • Kenya Power and Lighting Company Limited (KPLC) • Kenya Petroleum Refineries Limited (KPRL) • Kenya Electricity Generating Company Limited (KenGen) • National Oil Corporation of Kenya (National Oil) • Kenya Pipeline Company Limited (KPC) • Energy Regulatory Commission (ERC) • Rural Electrification Authority (REA) • Energy Tribunal • Geothermal Development Company (GDC) • Kenya Electricity Transmitting Company (KETRACO) 	<ul style="list-style-type: none"> • Energy policy development • Hydropower development • Geothermal exploration and development • Thermal power development • Petroleum products – import/export/marketing policy • Renewable energy development • Energy regulation, security and conservation • Fossil fuels exploration and development • Rural electrification Programme.
<p>Agricultural Sector Coordination Unit</p>	<ul style="list-style-type: none"> • Drive reforms in the sector and fast-track implementation of the ASDS in a coordinated manner across sector ministries and other partners • Referral centre for reforms, and collect, analyse and disseminate information on agricultural reforms • Influence sector resource allocation to areas of highest impact • Initiate major studies and policy developments within the agricultural sector • Centre for capacity building for all stakeholders involved or affected by the agricultural reform process • Monitor implementation of ASDS activities
<p>Ministry for Planning, National Development and Vision 2030</p>	<ul style="list-style-type: none"> • Coordination of government economic policies, including regional and international cooperation policies. It is also mandated with the coordination and preparation of the planning components of the Medium Term Expenditure Framework (MTEF); the Fiscal Strategy Paper and the requisite budget documents. • Preparation of the main National Development Plan documents, including the District Development Plans; National Development Plans, and specific socio-economic programmes and plans. • Coordination and management of population, economic and national statistical services within government; • Provides leadership in the national Monitoring and Evaluation (M&E) framework. • Facilitate and coordinate the national development planning process and provide leadership in national economic policy management.

Research and Policy Institutions	
Kenya Agriculture Research Institute (KARI)	<ul style="list-style-type: none"> • Strengthening biotechnological research in crop and livestock varieties that are resistant or tolerant to pests and diseases, drought, and have improved nutritional value • Undertaking countrywide assessments to determine regional vulnerability of the agricultural sector to climate change elements • Strengthening research in vaccines against priority livestock diseases • Strengthening research on good agricultural practices • Integrating a long-term climate-risk perspective into planning and investments
Kenya Institute for Public Policy Research and Analysis (KIPPRA)	<ul style="list-style-type: none"> • Research and policy analysis in all sectors of the Kenyan economy, • Provides capacity building for policy making and implementation, and serves as a point of contact for exchange of views on public policy issues affecting Kenya. • Establishment of a database of stakeholders in policy research and advocacy to build climate change resilience that equips communities with the ability to plan for, survive, recover from, and even thrive in changing climatic conditions.
Private Sector Organisations	
Kenya Private Sector Alliance (KEPSA)	<ul style="list-style-type: none"> • Provides a unified voice for sector to engage and influence policy formulation, monitor government's implementation of development plans, and promotion of dialogue among sector members on matters of their interests.
Kenya Association of Manufacturers (KAM)	<ul style="list-style-type: none"> • Provides an essential link for co-operation, dialogue and understanding with the Government by promoting trade and investment, upholding standards and representing members' views and concerns to the relevant authorities. • Encourages the formulation, enactment and administration of sound policies in order to improve the business environment, reduce the cost of doing business, and ensure that Kenyan firms attain and maintain world-class competitiveness.
CAMCO	<ul style="list-style-type: none"> • Developer of greenhouse gas emission reductions and clean energy projects • Provides clients with project development expertise, technical delivery capabilities; policy advice as well as regulatory, technical and financial advice on clean energy project development and investment; carbon project development; energy and carbon advisory; energy efficiency software; carbon, energy and emissions reduction projects; REDD and Land Use projects • Lead agency in developing the National Climate Change Response Strategy for Kenya. • Supports the development of renewable energy projects in various sectors including biomass for electricity (e.g., wood, sugar bagasse, other crop wastes, etc.), solar photovoltaics (PV, both grid-connected and non-grid-connected), small hydropower and wind

Non-governmental Organisations	
Kenya Climate Change Working Group	<ul style="list-style-type: none"> • Forum that brings together Civil Society Organisations, donor partners, government departments and agencies working in climate change and climate justice • Advocate and campaign for a positive policy and legislative framework that puts into account the effects of climate change on human development • Support and coordinate civil society organisations, and the government to participate meaningfully in the climate change debates at the local, national, regional and international level, including at Subsidiary bodies and Conference of Parties (COP) • Supports reduced climate change vulnerability of poor communities in Kenya through awareness and strengthening the capacity of Kenyan local communities and civil society to implement community based adaptation projects.
Pan African Climate Justice Alliance (PACJA)	<ul style="list-style-type: none"> • Promotes and advocates for climate-friendly and equity-based development • Unifies civil society efforts on climate change advocacy and coordination in Africa • Encourages strategic alliances with international partners, national governments, regional governmental bodies as well as individuals to ensure that the African voice is amplified in international climate change dialogue processes • Works with like-minded partners from the North and the South, so as to ensure that the resultant framework on climate change agreed by the community of nations is not only equitable, but also a product of massive consultation, responsive to the realities of vulnerable communities. • Works closely with key stakeholders such as African Ministerial Conference on the Environment (AMCEN), UNEP Regional Office for Africa, regional economic integration bodies and national governments to enhance the continent's voice in international dialogue process, as well as driving climate-related policies in African governments
CARE Kenya	<ul style="list-style-type: none"> • Increasing the capacity of vulnerable households in Sub-Saharan Africa to adapt to climate variability and change and to incorporate Community Based adaptation (CBA) approaches for vulnerable communities in development policies and programs • Making carbon markets work for the poor by developing carbon finance for agricultural projects through identification of appropriate carbon accounting methodology and on-farm tree planting • Sustainable Agriculture in a changing Climate is a project that provides information, seedlings, and training to households to introduce agro-forestry and woodlot management practices with a view to increasing availability of energy, food and enhancing incomes and reducing carbon emissions

International Development agencies	
DFID	<ul style="list-style-type: none"> • One of the largest donors in Kenya and a core partner in the Kenya Joint Assistance Strategy (2007-2012) • Climate change efforts in building resilience and supporting low carbon growth to reduce losses from extreme climate events
French Development Agency	<ul style="list-style-type: none"> • Chairs the Climate Change Donor Coordination Group where climate change activities and funding mechanisms are discussed • Works so closely with the Ministry of Energy and its counterparts to support the government's efforts in the energy sector • Involved in the rural electrification program • Investments in the geothermal energy sector in support of a low carbon development pathway as a mitigation action
Rockefeller Foundation	<ul style="list-style-type: none"> • Testing interventions that could be implemented more extensively to build resilience to climate change • Developing the necessary scientific evidence base and policy environment to promote agricultural resilience • Building the required capacity that will enable a core of agricultural scientists and development experts to execute best practices in climate change resilience measures.
UNDP	<ul style="list-style-type: none"> • Building Kenya's capacity to address climate change by providing a set of integrated support services geared towards helping the country assess climate change impact and realistic response strategies and to develop and implement relevant policies and regulations • Mainstreaming climate change into core government development areas, including energy, agriculture, health, waters resources and infrastructure, emphasising that climate change is not only an environmental issue, but a core developmental concern • Helping diversify funding sources Kenya can access to facilitate effective financing of sound solutions • Building the country ability to access foreign direct investment and appropriate technologies through environmental finance opportunities such as the Clean Development Mechanism (CDM)
IDRC	<ul style="list-style-type: none"> • Provides significant support for research activities led by universities, research institutes, government departments and non-governmental organisations (NGOs) in Kenya
Kenya National Federation of Agricultural Producers (KENFAP) <ul style="list-style-type: none"> • Kenya National Domestic Biogas Programme (KENDBIP) 	<ul style="list-style-type: none"> • Promotes unity, co-operation and dialogue among its members and between its members and other actors in the agricultural sector • Ensures timely intervention in the resolution of issues affecting the agricultural sector • Ensures effective representation of the farming community and expression of its views to government and the public at large • Encourages effective networking and collaboration with national and international associations which share the Federation's objectives and aspirations • Conducts and documents research into problems affecting agricultural production, marketing, value addition and policy • Encourages collaboration between members of the farming community and any other legitimate entity whose actions are in the interest of the farming community • Though KENBRID – supports investments in renewable energy

Annex 3: Summary of policies in the Agricultural Sector Ministries in Kenya (1994-2008)

Policy	Year introduced/ passed	Coverage (crops, region, farming system)
National Food and Nutritional Security Policy	1994	Food security
Pyrethrum Industry Sessional Paper	1999	Pyrethrum, liberalisation of the industry
Liberalisation and restructuring of the Tea industry, Sessional paper No. 2 of 1999	1999	Tea
Oil Seed Crops Development Policy	2001	Oil crops
National Seed Industry Policy	2004	Avail high quality seed and planting materials
Amendment of the Coffee Act No. 9 of 2001	2005	Coffee
National Agriculture Sector Extension Policy	2005	Extension services on crops and livestock
Pest Control Products Board (PCPB) Amendment Bill, 2005	2005	Pesticides and Herbicides
National Horticulture Development Policy	2005	Horticulture
National Forest Policy, Sessional paper No. 9, 2005	2005	Sustainable land use through soil, water and biodiversity conservation and tree planting
Cotton Amendment act, 2006	2006	Reviving the cotton sector
Sessional paper on soil fertility and a bill on Fertilisers and soil conditioners, 2006	2006	Soil fertility, Fertilisers
National Potato Industry policy	2006	Potato
Cassava Policy	2006	Cassava
Dairy Development Policy	2006	Dairy value chain
National Biotechnology and Development Policy	2006	Biotechnology (seed, crops, animal)
Amendments to the NCPB Act Cap 338	2007	Strategic reserve for cereal for food security
Development of a concept paper on modalities for Harmonisation of the Kenya Agricultural Sector Legislation	2007	130 legislation relating to agriculture to be consolidated into 7 legislations covering all aspects in crops and livestock
Nut Crops Development Policy and Bill	2007	Macadamia
KEPHIS Bill	2007	Inspectorate services on all matters related to plant health and quality control of agricultural inputs and produce
The Agricultural Produce (Export) Rules, 2007 (Cap 319)	2007	Crops grown for export, horticulture and industrial crops.
National Land Policy	2007	Secure rights over land and provide for sustainable growth and investment.
National Land Use Act	2007	Establishment of guidelines and control on use of land resources
Regional Development Policy	2007	Achieve equitable and balanced National Economic Development
Co-operative Development National Policy	2007	Revitalise, realign and liberalise the co-operative movement
Investment Policy	2007	Encourage prudent investment in co-operatives

Ethics and Governance Bill	2007	Strengthening the leadership management and governance in co-operatives
SACCO Bill	2007	Strengthen SACCO operations
Sessional Paper Seed Industry/Draft Seeds and Plant Varieties Bill, 2008	2008	Harmonised seed and related planting materials legislations
Sessional paper and amendment of Sugar Act No.10 of 2001	2008	Sugar sub-sector restructuring the sector to make it more efficient and competitive
Regional Development Act	2008	Harmonise operations of the six Regional Development Authorities
National Water Storage Policy	2008	Aims at increasing water storage from 5.3m ³ to 1000m ³ per capita by 2030
National Irrigation and Drainage Policy	2008	To accelerate sustainable development of irrigation and drainage

Annex 4: Acronyms and abbreviations

AAP	Africa Adaptation Program
AFD	French Agency for Development
ASALs	Arid and semi-arid lands
ASCU	Agricultural Sector Coordination Unit
ASM	Agricultural Sector Ministries
CA	Conservation Agriculture
CARE	Christian Action Research and Education
CC&A	Climate Change and Agriculture
CCU	Climate Coordination Unit
CDKN	Climate and Development Knowledge and Network
CDM	Clean Development Mechanism
CIMMYT	International Maize and Wheat Improvement Centre
COMESA	Common Market for Eastern and Southern Africa
COP	Conference of Parties
DACs	District Agricultural Committees
DANIDA	Danish International Development Agency
DFID	UK Department for International Development
EAAPP	East Africa Agricultural Productivity Program
ECAF	European Conservation Agriculture Federation
FAC	Future Agricultures Consortium
FAO	Food and Agriculture Organization
GFAR	Global Forum on Agricultural Research
GHG	Green House Gas
GoK	Government of Kenya
GTZ	German Technical Cooperation
IDRC	International Development Research Centre
ILRI	International Livestock Research Institute
IPCC	Intergovernmental Panel on Climate Change
KAM	Kenya Association of Manufacturers
KARI	Kenya Agricultural Research Institute
KCCWG	Kenya Climate Change Working Group
KENFAP	Kenya National Federation of Agricultural Producers
KEPHIS	Kenya Plant Health Inspectorate Services
KEPSA	Kenya Private Sector Alliance
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KNOTS	Knowledge, Technology and Society
LDCs	Least Developed Countries
MDGs	Millennium Development Goals
MEMR	Ministry of Environment and Mineral Resources
MoA	Ministry of Agriculture
MoDNKAL	Ministry of Development of Northern Kenya and Other Arid Lands
NAEP	National Agricultural Extension Policy
NAMAs	Nationally Appropriate Mitigations Actions
NCCRS	National Climate Change Response Strategy
NCPB	National Cereals and Produce Board

NEMA	National Environment Management Authority
NGOs	Non Governmental organisations
NRMP	Natural Resource Management Programme
ODI	Overseas Development Institute
OPM	Office of the Prime Minister
ODA	Oversees Development Assistance
OXFAM	Oxford committee for Famine Relief
PACJA	Pan African Climate Justice Alliance
SACCO	Savings and Credit Cooperative Organisation
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

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