Climate action and drylands development

Accepting and working with variability

Arresting climate change is a major global challenge of our time and cuts across all other development challenges. Ireland is future-proofing its development cooperation by integrating climate action into all areas, so that the poorest and most vulnerable are not left further behind by the climate crisis. This is one of a series of Climate Key Sheets that describe how climate action interacts with pressing development concerns.
Overview

Drylands cover two-fifths of the Earth’s land and are home to 2.3 billion people worldwide. Although they are among the world’s most unpredictable environments, people have learnt to harness this variability to support sustainable and productive economies, societies and ecosystems. Too often, policymakers misunderstand this rich local knowledge, accepting instead narratives portraying drylands as suffering irreversible degradation, resource scarcity, impoverishment, conflict and now climate change.

Most development strategies use this low-potential characterisation to justify replacing traditional livelihoods and customary systems. This has largely failed, but is often repeated. Misunderstanding dryland dwellers’ resilience to variability not only misses opportunities to capitalise on drylands’ potential, but also makes communities and economies more vulnerable to climate change, disproportionately affecting women and girls, particularly amongst pastoralists.

Climate projections generally predict greater short- and medium-term variability and more extreme weather; some indicate rainfall shortages exacerbated by higher maximum and minimum temperatures. Such scenarios pose real difficulties for climate adaptation — particularly where an historical legacy of limited and often inappropriate development has made people more vulnerable.

Drylands development, incorporating climate action, must follow the Paris Agreement’s adaptation guidance and be “based upon and guided by the best available science ... and local knowledge systems” (United Nations Paris Agreement 2015, Article 7, paragraph 5). Despite their struggles, dryland people have much to teach us about living in an increasingly variable and uncertain world.

Drylands matter for climate action because:

Drylands have large populations living in poverty, but their economic potential is under-emphasised and under-valued. Drylands offer ways out of local and national food security challenges in the face of increasing climate risk and rapid urban growth. Climate change adds uncertainty in drylands, and this can encourage risk-averse policy development that attempts (but fails) to control variability. Rather, development policy and programming for drylands should draw on local knowledge and adaptation strategies. The need to do so has never been greater. Economic failure in the drylands is a risk factor in geopolitical instability and extremism (see the Climate Action and Conflict Key Sheet in this series), and continued failure in the drylands will mean failing to meet the SDG objectives, the Paris Agreement and other global commitments.
1. Development policy undermines dryland resilience

Drylands development policy and interventions almost invariably take a ‘limited natural resource base’ as a starting point, emphasising scarcity, environmental degradation and food insecurity, and asserting that drylands’ unpredictable and scattered rainfall makes resources fragile and poor quality. This, many policymakers argue, compels local communities to over-farm or over-graze their land, exacerbating the problems and inducing desertification, conflict and migration. These poorly informed perceptions (see Box 1) have led to failing development policies and have undermined livelihoods, peace and resilience. In reality, drylands hold much wealth (see Box 2), and their people are experts in proactively managing climate risk and resource variability.

1.1 Undervalued and under-invested

In national development, the narratives portraying drylands as low-potential, barren areas have persistently restricted public and private investment in economic development, infrastructure and social services.

Box 1. Challenging the degradation myth

Dryland environments are inherently variable and uncertain. Seasonal and yearly rainfall variations bring periodic droughts or floods. But they are not the hopeless situation development circles generally assume. The scientific support for ‘degradation narratives’ is inconclusive and contested in both ecological and socioeconomic terms (see also Box 2 on drylands’ hidden wealth).

Claims that up to 70 percent of drylands have degraded soil and vegetation\(^1\) draw on small-scale, short-term case studies that are not widely representative. Extrapolating from such an evidence base is simplistic and error prone. For example, vegetation productivity actually increased in the Sahel-Sudan zone from 1982-2006,\(^4\) contradicting many localised case studies.

Other studies contest the common belief that ‘fragile’ drylands are more prone to degradation than humid environments. A global assessment using remote sensing data\(^3\) found drylands accounted for 22 percent of the world’s degrading areas from 1982-2006. The correlation between land degradation and aridity was low — in fact, 78 percent of degrading areas are in humid zones. The same study found only a weak correlation between land degradation and population pressure. This echoes earlier research in northern Nigeria and central Kenya\(^6,7\) that showed rising population levels led to more sustainable farming practices, helping to reduce degradation.

For example, back in 1965, Kenya decided that quickly growing its economy required investing development money in areas “having abundant natural resources, good land and rainfall, transport and power facilities, receptive to and active in development”.\(^1\) Today, Kenya’s drylands have the country’s lowest development indicators and highest poverty rates, despite covering 80 percent of the land and holding a third of the population and approximately 70 percent of the national livestock herd. Fifteen of Kenya’s 20 most marginalised counties with the lowest County Development Indices are in the drylands.\(^2\) And Kenya’s policy bias is not unique — similar situations exist in countries including Tanzania, Uganda and Ethiopia.

We need to better understand the true extent and potential of economic activity in dryland livestock and other sectors. For too long, the economic roles and potential of the households, producers, and businesses, and their activities, have gone largely unrecognised. This is because they operate largely as agricultural producers and micro and small enterprises in the informal (unregistered) sector, and because businesses, households and producers are often not clearly defined, static units. Instead, they often engage in, and move in and out of, a range of different livelihood activities.

In part, the failure to appreciate livestock’s true value (especially in pastoral systems) in sustaining livelihoods

Box 2. Drylands’ hidden wealth

- Each hectare of dryland in Africa, Asia and South America generates an estimated average of US$9,184, US$6,462 and US$9,764 a year, respectively, in contrast to only US$4,290 and US$277 for drylands in Europe and North America.\(^8\)

- Drylands provide approximately one third of cultivated plant species and 50 percent of the world’s livestock.\(^9\)

- Animal products from dryland grazing systems have a smaller water footprint than those from industrial systems.\(^10\)

- Cattle trekked for over 450km from southern Somalia account for 16 percent of beef eaten in Nairobi, and 26 percent of beef consumption across Kenya.\(^11\)

- In Ethiopia, livestock services were worth an estimated 113 billion Ethiopian birr to the national economy (roughly US$11.3 billion at 2009 exchange rates).\(^12\)

- The textile sector in Pakistan, which includes cotton produced in the country’s semi-aridlands, is the largest industrial sector and accounts for around 40 percent of the country’s industrial labour force. Ten million farming families in Pakistan rely on the textile industry.
and economies in the face of climate variability has limited public investment. The Intergovernmental Authority on Development (IGAD) estimated that in 2009, livestock in Ethiopia, Kenya, Sudan and Uganda contributed 19-150 percent more to national GDP than previously thought. Livestock were worth over US$0.5 billion in Uganda, over US$14.5 billion in Sudan, and over US$23 billion for the four countries combined (at 2009 exchange rates). In Kenya, livestock’s 2009 contribution (US$4.21 billion) was similar to crops and horticulture, including cash crops such as tea and coffee (US$5.25 billion). Yet despite its importance, Kenya’s livestock sector has historically received much less public expenditure than crop farming, for example an estimated 29 percent of agricultural expenditure during 2003-5.

Where capital-intensive dryland development initiatives are used, they often try to decouple agricultural and livestock production from environmental variability and uncertainty, for example with large-scale irrigated cropping and commercial ranches. These are often associated with foreign investment and privatisation of land and other resources, and do little for poverty levels and rising inequality and vulnerability. The logic underpinning local practices has received little attention, and institutional change to support local resilience is generally ignored. Yet dryland people know best how to exploit the heterogeneity, variability and ecological and economic dynamics of their environments, and how to adapt in periods of stress.

1.2 Livelihoods, peace and climate resilience undermined

Governments have misunderstood the multiplicity of livelihoods in dryland areas and the connections and dependencies between these livelihoods. Investments have been made around large technological projects and irrigated farming. This has ‘unbalanced’ multiple livelihood systems and has created tensions and conflicts and eroded peace in affected areas. Some people have lost out while others have gained. In drylands development, choices made have tended to marginalise pastoralists and deprive them of the resources they need. This has affected the traditional agreements that farmers and pastoralists had and has led to further conflict/tension over resources. These agreements benefited both farmers and pastoralists and now both are disadvantaged by the erosion of traditional practices, rules and agreements. Farmers who do not have irrigation or access to fertilisers are also losing out.

Governments have not only erroneously invested in large technological projects, they have also failed to protect key pastoral resources, such as wetlands and livestock corridors. In Senegal and Mali, large riverside tracts were converted to irrigated rice farming, depriving pastoralists of land and water. In East Africa, pastoralists have lost vast areas to commercial farming, game parks and nature reserves. Over 30 percent of Tanzania is designated as ‘protected’, with the two largest protected areas — Ngorongoro and Serengeti — in pastoral zones. In Ethiopia, the Afar’s dry season pastures along the river Awash have been converted to irrigated farming. The Kereyu in Ethiopia, the Barabaig and the Maasai in Tanzania, the Karamajong in Uganda and the Samburu in Kenya have all lost critical grazing land to wheat, brewing, sugar, flower and game interests.

Inappropriate policies and practices, over which local people have very limited control, are undermining dryland livelihoods. Rangelands become fragmented when strategically important and better-watered grasslands are set aside for wildlife conservation, sold as private land, become government or private ranches, or are used for irrigated and commercial agriculture. Poorly planned services and water resource development encourage new permanent settlements. Populations grow, while wealth disparities increase. More households have minimal assets, making them less able to withstand drought, and maladaptive ‘last resort’ practices such as charcoal production spring up, intensifying pressures on drylands. Young people increasingly need to look beyond pastoralism and dryland farming to secure viable livelihoods, and some take to banditry and other illegal activities (for more information see the Climate Action and Conflict Key Sheet in this series).

2. Drylands are changing

2.1 Land access and tenure

Most rural people in drylands depend on land and natural resources for their livelihoods. But where land was formerly plentiful, demographic change and the spread of large-scale commercial agriculture and private investment are often making access to productive land harder. Urban expansion also drives competition for land, increasing land values and in some cases intensifying agricultural production in peri-urban or well-connected rural areas in response to growing urban markets.

In recent years there has been increasing investment of foreign capital derived from countries such as China. It has often focused on resource extraction and large-scale infrastructure and agriculture investments (not rooted within or benefiting local livelihoods). Often this investment has been accompanied by large-scale land grabs.

Growing competition over land requires mechanisms for negotiation and mediation. But socioeconomic changes are eroding customary tenure systems in many drylands, while limited institutional capacity and resources restrict the reach of government policy and legislation, creating a local governance vacuum. Unresolved competition leads to tenure insecurity, which can cause conflict, undermine efforts to increase agricultural productivity and hinder climate resilience.

Where efforts have been made to improve land tenure security, they generally emphasise individual titling and registration programmes that are slow, expensive, difficult to up-date and hard for poor people to access. As a result, what little rural land has been registered is mainly to urban elites. Instead, land laws should build on local concepts and practices.
2.2 Commercialisation and rising inequality

Drylands' economic wealth is routinely undervalued. This is particularly true of pastoralism. Government statistics focus narrowly on direct benefits such as meat, milk, hides and skins marketed through formal channels. They ignore the numerous informal exchanges and the indirect benefits, such as manure and traction for agriculture; associated enterprises like restaurants, bars, hotels, and butchers; informal financial services; and environmental services (such as carbon sequestration). A 2013 report estimated the annual trade in livestock and livestock products in the IGAD region at US$1 billion or more in foreign exchange, and possibly 5-6 times that amount in local currencies. In 2006, meat reared in pastoral systems supported 601 informal roast meat (nyama choma) businesses in Arusha, Tanzania, employing 5,600 people with an estimated 25,000 dependents — 6.6 percent of the city's population. However, by 2030, 77 percent of pastoralists and 55 percent of agro-pastoralists across Africa may have insufficient livestock to stay above the poverty line, and could be forced to seek alternative livelihoods. Pastoralism is not declining, but livestock are becoming concentrated in fewer hands, exacerbating inequality as wealthier herders can better protect themselves from shocks.

2.3 Urbanisation and diversification

Dryland towns have rocketed in size and number over the past two decades as public investment has brought roads and transport services, as poor or destitute pastoral households are increasingly sedentary, and off-farm employment opportunities (generated by urban capital and international remittances) rise.

Growing towns can create opportunities for local economic development and household livelihood diversification — key strategies in climate resilience. Pastoralists and dryland farmers have relied on diversified livelihoods for decades. Younger family members often seek seasonal casual work in urban areas, supporting the family so fewer livestock have to be sold to cover food and other expenses or to avoid drawing on the household granary before next farming season. But in recent decades, the scale, range and persistence of diversification strategies have expanded as the pressures on rural households increased.

Research in Narok, Kenya shows how settled lifestyles can benefit collective action on women-led micro, small and medium enterprises (MSMEs). However, women's businesses were often confined to high-risk, low-return sectors. They faced the usual constraints on electricity, transport, water, finance and so on, but had additional gender-associated barriers (for example fewer educational opportunities or limited assets to use as security).

Most income-generating activities available to people in rural drylands are in the informal sector. Casual seasonal labour and petty trade require little capital or skills, but they do not necessarily build resilience to climate change. Given climate uncertainties, it would be better to diversify risk rather than just income and assets, and invest in livelihoods that draw more on human and physical capital than natural capital. Education is the most effective path to long-term livelihood diversification. But it must be compatible with mobility, low population density, and children participating in, and acquiring the skills for, dryland livestock production and agriculture. It must not alienate children with negative messages about their own cultures; and must offer decent, secure schools that they are happy to attend.

Migration as a livelihood strategy has been used by people in drylands for decades and is now increasing. There are multiple forms of migration but all are part of the livelihoods and economy of drylands. And while most countries have policies on international migration, very few have policies on internal migration and how to ensure it benefits both the sending areas (such as drylands and rural areas) and for the receiving areas (often towns and cities, which can also be in drylands). This may be a crucial dimension for resilience both in rural and urban areas within and outside of drylands.

2.4 Crop farming and irrigation

Rainfed farming of food and cash crops, often combined with trees, livestock and, in some areas, with fish, all under family-based production systems, are the backbone of local livelihoods and the wider rural and urban economy in the drylands. Rainwater harvesting and small-scale irrigation are often integrated within the wider farming system to manage climate risk. Large-scale irrigation, increasingly used to boost agricultural productivity, is often associated with specialist or industrialised farming that displaces local communities. Small-scale irrigation costs less, can have decentralised management, and can assist mixed farming systems that poorer farmers use for subsistence and cash crops. However, practical limitations still mean small-scale irrigation will benefit relatively few of the households currently using rainfed agriculture.

With effective climate action and diversification, fully exploiting the opportunities for rainfed agriculture could raise production more efficiently and help many more households build resilience to climate change. The benefits might be spread more thinly, but would reach further. Development investments need to consider the trade-off between small improvements for the many dryland households in rainfed agriculture, versus larger improvements for the small proportion that could benefit from irrigation technology.

3. Understanding drylands as ‘dynamic’

Climate risks are inherent to dryland regions — for example, rain may or may not arrive in the right place, at the right time or in the right amount. Production systems that rely on stable rainfall and temperatures are not suitable. Drylands producers manage environmental and climate variability by varying their production strategies and processes according to rainfall and other factors.
Essentially, they work with, rather than against, variability, using many options to manage the uncertainty associated with unpredictable conditions.21

Farmers may grow crop varieties with varying maturation times, vary plantings across different soils, intercrop varieties or use sequenced sowing (often in small pockets that concentrate moisture and nutrients), use terraces to collect run-off, or cultivate smaller scattered fields rather than one large field.

Pastoralists use strategic mobility to deal with variable rainfall and grazing. Pastoral resources traditionally have an overarching common property tenure regime, with access rights regulated by negotiation and reciprocity rather than fixed rules. Pastoralists have various species, breeds and sub-groups within their herds to help them exploit diverse fodder plants. Herds are split into more and less mobile groups.

Dryland-adapted livelihoods aim to minimise climate risks and, in some cases, to exploit variability to improve productivity. Communities use flexible institutions that manage unpredictable and uncontrollable incidents in ‘real time’, side-stepping problems and grasping opportunities.

However, escalating climate risks may challenge this capacity, especially where local practices and institutions are weakened by poor policies. Local expertise in managing and valuing variability should be the starting point for building climate resilience in the drylands, especially since some climate models expect the drylands to expand.22

3.1 Delivering social services

Providing health, education, water and sanitation services is crucial for reducing poverty and building climate resilience. Health and education facilities in drylands are usually only available in large settlements and small towns, and generally lack sufficient funding, staffing and equipment.

Poor service delivery disproportionately disadvantages women and girls (see Box 3), given their domestic and caring responsibilities. Pastoralists are especially disadvantaged because services are fixed, ignoring pastoralists' mobility. Dryland households increasingly value education because it supports their diversification strategies, however curricula often undermine pastoral livelihoods. Many ‘educated’ pastoralists leave school lacking the skills, and even the inclination, for a pastoral lifestyle. Many end up as poorly paid labourers or urban night watchmen, or simply swell the ranks of the urban poor as ‘pastoralist drop-outs’.23

Despite evidence that community-based health systems, mobile schooling and, more recently, radio-based teaching offer opportunities, such approaches remain as project-driven experiments, often implemented by international NGOs, and are not integrated into national policy.

3.2 Local governance for resilience

Local management of natural resources, by formally recognised community-based institutions that are

Box 3. Gender equality in drylands development

Promoting gender equality in the drylands must recognise that gender dynamics are driven by societal norms and intersect with ethnicity, religion, sedentary or mobile production systems, education, income levels and inter-generational needs and priorities. This can lead to multiple layers of marginalisation for women and girls.

Pastoralist women’s access to productive resources differs from non-pastoralist women and between pastoralist groups. In most pastoral societies, women acquire livestock through birth, marriage and inheritance. They can buy and sell livestock and thereby access income. While in many cases women and men decide how to dispose livestock at the household level, control over resources does differ.

Climate change can put stress on gender relations for pastoralists living in harsh environments and increase the burdens upon women and girls. Droughts can increase domestic and income-generating burdens on women, as men stay away from the household to graze livestock. Pastureland resource degradation, compounded by encroachment, can mean that women and girls spend more time on unsafe activities of searching for water or gathering fuelwood.

However, evidence shows that when pastoralists are supported they can diversify their livelihoods and engage in additional production businesses which can support adaptation to climate change impacts. Support might include promoting women’s and men’s income-generating activities through training, appropriate technology, credit access, support to livestock value chains and access to markets; identifying and addressing issues of unequal access to land and land tenure; addressing intergenerational equity through engaging the youth in productive pastoral investments and policy engagement to address disenfranchisement of pastoralism as a way of life; and providing access to knowledge and finance through dedicated funds for women, including empowering pastoralist women individually and developing their agency in making choices and decisions in their businesses.

Gender dynamics within pastoralist societies are changing, with increasing settlement, economic diversification and access to health and education services. Projects working to redress gender inequality must work simultaneously with women and men (and boys and girls), recognising societal changes (good and bad) for both. Focusing only on women risks ignoring the influence of wider societal processes which, in the public sphere, are largely controlled by men.
supported by local government, is crucial for climate resilience. Centralised state agencies rarely have the reach or skills needed in highly heterogeneous drylands. Instead, decentralisation offers an institutional framework for building climate-resilient livelihoods and economies. Local governments with decision-making power over planning and financial resources can respond flexibly and quickly when facing climate risks, and are accountable to their constituents.

Unfortunately, decentralisation has not lived up to expectation in many countries. Effective decentralisation must give local governments adequate finance for local priorities and genuine discretionary authority over development. Citizens too must have the rights, and develop the capacity, to participate in decision making and hold government to account. Insufficient funds, authority and technical capacity mean most local governments fail to manage public goods so that these build climate resilient livelihoods and economies that support the most vulnerable.

However, Kenya's 2010 constitution, devolution reforms and accompanying policy and legislation on drylands development and climate change go further than most. Kenya's devolved County Climate Change Fund mechanism lets county governments tailor investments to strengthen local adaptation by vulnerable communities. Its pilot successfully catalysed local-level investments, climate resilience and inclusive economic development by applying subsidiarity to planning and finance decisions and empowering community-based institutions. The approach is now being scaled out nationwide and has been successfully tested in Tanzania, Mali and Senegal.

3.3 Progressive policies

Over the past two decades, several policy and institutional reforms reveal shifting government attitudes to dryland development. The African Union's policy framework for pastoralism (2010) recognises pastoralism's social, economic and ecological values and the importance of enhancing livestock mobility. The Economic Community of West African States (ECOWAS) provides an institutional framework to facilitate cross-border livestock mobility. The Common Market for Eastern and Southern Africa (COMESA) implements a regional livestock trade initiative under its Livestock Policy Framework. Additionally, IGAD is close to adopting a Protocol on Transhumance, which will facilitate free, safe and orderly seasonal cross-border mobility for livestock and herders. It will commit Member States to adequately resource pastoral regions and institutions managing transhumance; and to harmonise national laws and policies covering livestock and pastoral development, land use and governance, disease control and cross-border measures. Several bilateral agreements between countries in the Sahel and the Horn of Africa also aim to facilitate cross-border dimensions of livestock development, disease control and trade.

The Sahel, Burkina Faso, Guinea, Mali, Mauritania, Niger and Senegal have all passed specific legislation supporting, to varying degrees, pastoralists’ rights over resources and to movement within and across countries.


In the Horn of Africa, the 1995 Constitution of Ethiopia guarantees pastoralists access to land for grazing. The Ministry of Federal and Pastoral Development Affairs oversees pastoralism, and some regional governments with mainly pastoral populations are developing policy and institutional frameworks that prioritise pastoralism. However, in Uganda, a commercialisation and modernisation ethic, combined with security concerns in the Karamoja region, has undermined pastoralism’s prospects under decentralisation policy and the National Land Policy. Proposed legislation on rangelands management has stalled.

Indeed, moving from supportive policies to effective implementation will always be challenging, especially given entrenched attitudes to drylands within government, donor, humanitarian and development circles. Wider policy and legislative objectives for key resources such as land, water and forests also hamper implementation where conflicting provisions are backed by powerful political and economic interests and there is no organised drylands constituency to hold government to account.

4. What to do in your work

Given the long and damaging history of ill-informed dryland interventions, especially in pastoral areas, development programming needs a re-think. Improving agricultural productivity and making livelihood systems more resilient to escalating climate risks necessitates working with variability and uncertainty, rather than seeking to control them. Programmes must also expand options for dryland populations and develop their capacities to take opportunities including those for climate action. There is no single ‘tailor-made’ recommended path.

Recognising linkages across various scales is crucial for building climate resilience in the drylands. Cross-border dynamics support trade, livestock productivity and seasonal labour flows, and strong economic links between urban and rural settings support diversified livelihoods.

Senior managers

- Ensuring no-one is left behind necessitates closing the 'development gap' caused by misguided interventions. Develop a balanced investment strategy that recognises
the economic viability of existing livelihood systems that work with variability. These will remain the foundation of dryland economies.

- Growing populations and deepening economic differentiation mean that more people, especially youth, will need alternative livelihoods within and outside drylands. Seek alternatives that complement (and certainly do not undermine) dryland farming and pastoralism. They should harness the opportunities and address the risks that change inevitably brings for women and girls, including (i) their strengths in collective action and innovation, (ii) the double burden they carry as female entrepreneurs, and (iii) their risk of being squeezed out of markets as commodities rise in value and trade becomes more formalised.

- Recognise education’s central role in livelihood diversification, but ensure it includes vocational training in support of complementary livelihoods, is appropriate to drylands and offers genuine opportunities in the labour market, and provides equitable gender and generational access.

- Commercialisation, particularly of livestock, is driving inequality, concentrating wealth in the hands of a few. To address poverty and promote gender inclusion, focus programme interventions on domestic and regional trade, particularly of small stock and produce from family farms.

- Climate action in drylands needs integrated, flexible learning-by-doing and systemic approaches to programming and budgeting. Take a multifaceted approach to strengthening institutions’ ability to address climate risks.

Programme staff

- **Use market-based approaches** to protect livelihood assets. Millions of dollars spent on pastoral drought relief in dryland Africa since the 1970s mostly provided food aid that saved lives but not livelihoods. Without livestock, many pastoral communities cannot resume mobile livelihoods when the rains return. They remain near towns where they received life-saving food aid. Sometimes they take up agriculture or charcoal making. Some succeed in a new livelihood, but some resort to violence. This is both a human tragedy and an economic failure, as governments lose the benefits of livestock production and bear the cost of supporting these communities. Commercial destocking (see below) and drought insurance have had some success in averting such outcomes.

- **Consider commercial destocking interventions** to help pastoralists sell some of their animals at reasonable prices early in a drought, saving lives and livelihoods.25 Destocking releases money to buy food and lets pastoralists access services they want (rather than those provided by aid agencies), including buying fodder or veterinary care. Local service providers and markets need accessible credit if they are to provide such services for herders.

- **Support asset protection insurance** that’s feasible, affordable, and pro-poor. Kenya and Ethiopia, for example, have designed and successfully piloted insurance for herders that is linked to weather and vegetation indices, automatically paying out if rain and vegetation growth falls to a predetermined trigger point. This lets various poverty cohorts within pastoral societies benefit from livestock insurance.

- **Take multi-faceted approaches** that secure local land rights and manage competition among multiple interests. These should recognise customary rights that give people access to rural land; strengthen decentralised local government and citizen capacity to develop effective land management systems; proactively improve women’s land rights, drawing on legislative reform while bridging the gap between law and practice; implement locally negotiated resource management agreements; and support regional land institutions and processes.

Delivery partners

- Take a long-term view; don’t focus exclusively on short-term, project-driven results. It takes time to build institutional capacity, skills and systems for sustainable and equitable climate-resilient development.

- Focus on five key groups:

  (i) Invest in local/customary institutions, strengthening their capacities (for example on gender and social inclusion) and ensuring their decisions feed into all levels of government decision making for land use planning, land and resource governance, conflict management, etc.

  (ii) Strengthen local government’s planning and budget processes to integrate climate change information, encourage recognition and empowerment for customary/local resource governance institutions, ensure gender and social inclusion, boost public accountability, etc. This is difficult and will take time, but is essential to ensure sustainability, build local governance, ensure subsidiarity, provide timely and appropriate responses, and strengthen the citizen and state relationship.

  (iii) Support national government to build capacity so policymakers understand dryland ecosystems, economies and institutions, recognise their dynamic nature and drive policy reform.

  (iv) Develop links with national and local NGOs/CSOs, particularly in programming and fiduciary skills, gender equality and social inclusion, to ensure sustainability, relevance and value for money.

  (v) Engage the private sector in the delivery of key services recognising the diversity of actors (households, social networks, traders) and the significance of micro and small enterprises, often run by women, in contributing to economic productivity.
Figure 1. Global change in net primary productivity between 1981 and 2015


8 Piotrowski, J (2013) Developing nations have ‘more to lose’ from loss of drylands. Scidev.net. www.scidev.net/global/funding/news/developing-nations-have-more-to-lose-from-loss-of-drylands-.html


11 Little, P and Mahmoud, HA (2005) Cross border cattle trade along the Somalia/Kenya and Ethiopia/Kenya borderlands. Research Brief. PARIMA [do you have a weblink?]


Arresting climate change is a major global challenge of our time and cuts across all other development challenges. Ireland is future-proofing its development cooperation by integrating climate action into all areas, so that the poorest and most vulnerable are not left further behind by the climate crisis.

Irish Aid and IIED have identified several themes that are central to climate action, especially for those furthest behind. Our series of Climate Key Sheets includes:

- Climate action and extreme vulnerability
- Climate action and conflict
- Climate action and drylands development
- Climate action for governance programmes
- Climate action and the biodiversity crisis
- Climate action to support trade and green growth
- Climate action to support health and human nutrition
- Climate action that lessens displacement and migration
- Climate action and humanitarian responses
- Climate action for adaptive social protection.

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The views expressed in the Climate Key Sheets are those of the authors and not of the Department of Foreign Affairs and Trade.