



Pathways to Resilience in Semi-Arid Economies (PRISE)

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List of acronyms

AFD	Agence Française de Développement
AfDB	African Development Bank
ASALs	Arid and Semi-Arid Lands
ASSAR	Adaptation at Scale in Semi-Arid Regions
AU	African Union
AUC	African Union Commission
BRACED	Building Resilience and Adaptation to Climate Extremes and Disasters
CAREC	Regional Environmental Centre for Central Asia
CARIAA	Collaborative Adaptation Research Initiative in Africa and Asia
CCU	Consortium Coordination Unit
CEDERES	Centre d'Études, de Documentation et de Recherche Économiques et sociales
CIDP	County Integrated Development Plan
COP	Conference of the Parties
CRIC	Committee for the Review of the Implementation of the Convention
CSA	Country Situation Assessment
CSR	Corporate Social Responsibility
DFID	Department for International Development
FAO	Food and Agriculture Organization of the United Nations
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GRI	Grantham Research Institute
HBS	Heinrich Böll Stiftung
HI-AWARE	Himalayan Adaptation, Water and Resilience
HLPF	High-level Political Forum
IDRC	International Development Research Centre
IED Afrique	Innovation Environnement Développement Afrique
IOM	International Organization for Migration
IPCC	Intergovernmental Panel on Climate Change
ITC	International Trade Centre
KMC	Knowledge Management and Communications
KMT	The Kenya Market Trust
LiDeSA	Livestock Development Strategy for Africa
LNOB	Leave no one behind
MGC	Memorandum of Grant Conditions
MoU	Memorandum of Understanding
MSME	Micro, Small and Medium Enterprise
MSP	Multi-Stakeholder Partnership
NAP	National Adaptation Plans
NARC	National Agriculture Research Centre
NCCAP	National Climate Change Action Plan

NDA	National Designated Authorities
NDC	Nationally Determined Contributions
NIE	Nationally Implemented Entities
NWCMS	National Wildlife Conservation and Management Strategy
ODI	Overseas Development Institute
OSF	Opportunities and Synergies Fund
PI	Principal Investigator
PNDES	Plan National de Développement Économique et Social
PNDL	Programme National de Développement Local
PRISE	Pathways to Resilience in Semi-Arid Economies
PSE	Plan Sénégal Emergent
RCP	Representative Concentration Pathways
RiU	Research-into-Use
SALs	Semi-Arid Lands
SAP	Simplified Approval Process
SCF	Standing Committee on Finance
SDG	Sustainable Development Goals
SDPI	Sustainable Development Policy Institute
SGP	Small Grants Programme
SME	small and medium-sized enterprise
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WEF	World Economic Forum

Executive summary

Pathways to Resilience in Semi-Arid Economies (PRISE) is a five-year interdisciplinary and cross-regional research consortium that has generated new evidence on how economic development can be achieved in semi-arid regions in ways that are sustainable, equitable and resilient to climate change. PRISE achieved this by supporting and strengthening the commitment of decision-makers and economic actors in local, sub-national and national governments, trade bodies and businesses. Actors were supported to develop policy interventions and make investment decisions that mainstream climate change risks and adaptation options into core economic activities and development planning.

PRISE adopted what it termed a 'policy and development first' approach by jointly formulating its research questions and study areas in collaboration with target stakeholders (in-country decision-makers) and framing them in relation to their knowledge needs and development priorities. Through research, consultation, dialogue and trust-building with stakeholders, PRISE produced a wealth of evidence to inform climate-resilient and equitable development pathways in dryland economies.

This report summarises: the key thematic, national and global findings and policy recommendations; related engagement activities and stories of impact; the approach taken by the consortium and how it was set up and managed; the monitoring of outcomes; the lessons learned; and next steps for how the research findings and recommendations can be used to inform future programming and the climate adaptation and 'leave no one behind' agendas. Some of the key highlights in the report are further summarised below.

Thematic and national findings: PRISE research on semi-arid lands has revealed important dynamics relating to themes of climate risk, seasonality, production, mobility, gender and informality. Changing climates and contexts of production in semi-arid lands (SALs) have led to greater mobility and trade exchanges across regions, communities and borders. This movement of people, goods and services has created opportunities for economic growth, but has also brought about challenges such as competition over natural resources and political influence. Adaptation policies need to recognise and work with the specific characteristics of SALs – characteristics that also need to be mainstreamed into national development planning and monitored to avoid maladaptation. PRISE research found that much of the adaptation on the ground is done by private actors – including producers, households and small- and medium-sized enterprises – who need to be supported by an enabling environment that provides the right incentives for adaptation to be a viable investment. Adaptation options must be socially acceptable as well as economically viable. Inclusive, gender-focused policies and support are also required to harness the potential of women and other marginalised groups, including youth. Adaptation requirements are always context specific.

Global-level findings and recommendations: Synthesising evidence emanating from seven research projects brought to light important commonalities across all PRISE countries. These global-level findings highlighted that climate vulnerability is conditioned by broader socio-economic vulnerability and inequalities; that even though producers, households and businesses have developed a range of coping and adaptation strategies, these are often no longer sufficient to deal with weather extremes and climate change impacts; that private actors face a series of barriers that undermine their ability to adapt sustainably; and that viable adaptation strategies need to be built on the specific characteristics of SALs: seasonality, mobility and informality. PRISE research, however, also identified the opportunities that exist in SALs to realise climate-resilient development, especially in production systems that are rooted in SALs. From these, PRISE devised a series of recommendations to inform the objectives and implementation of the Paris Climate Change Agreement, the Talanoa Dialogue and the 'leave no one behind' principle so central to achieving the Sustainable Development Goals (SDGs). The recommendations are targeted at low- and middle-income country governments of semi-arid lands, who have a key role to

play in supporting the sustainable adaptation of their citizens and businesses, removing barriers and working with communities and the private sector to strengthen resilience; as well as developed countries and development partners, who have a key role to play in supporting low- and middle-income-country governments – through investments, providing funding and capacity building support – in their efforts to strengthen resilience and enable sustainable adaptation. Specifically, PRISE recommendations argue that supporting climate-resilient economic development in drylands:

- (i) should start with building on existing productive sectors and approaching this via value-chain transformation;
- (ii) requires a conducive enabling environment built around appropriate policies and institutions; resilient infrastructure, markets and technology; accessible data, information and capacity development; and an appropriate economic and financial environment;
- (iii) must recognise and support mobility as a sustainable adaptation strategy;
- (iv) should focus on the most vulnerable groups;
- (v) should foster transboundary collaboration; and
- (vi) needs to prioritise investments in drylands by public and private actors supported by targeted climate funds.

Engagement activities: PRISE has generated significant traction with stakeholders, including policymakers at local, sub-national, national, regional and international levels, as well as with key private-sector actors from small producers to big businesses. It also engaged with other Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA) consortia to leverage its influence in specific countries. PRISE's findings and engagement activities have achieved noteworthy levels of influence in shaping national-level policies, strategies and development plans, as well as feeding into party manifestos. PRISE has extended its reach beyond PRISE countries, with multilateral organisations such as the World Bank picking up PRISE messages and requesting PRISE participation at major conferences. At the global level, PRISE has informed and engaged in international processes through participation at the United Nations Framework Convention on Climate Change (UNFCCC) Conferences of Parties (COP23 and COP24), Adaptation Committee (AC) meetings, the Adaptation Futures conferences (2016 and 2018), the Talanoa Dialogue at the May Intersessional meetings in Bonn (2018), and the UN High-level Political Forum (July 2018). It worked closely with the development and climate communities with the aim of raising the profile while challenging the current negative narrative of SALs. PRISE ended its activities by organising a high-level roundtable on 'Climate-resilient and equitable value chains' in order to develop a roadmap for transforming dryland economies involving champions across the private and public sectors.

Communications: PRISE produced a broad range of outputs targeted at relevant audiences, ranging from policy briefs, working papers, synthesis reports, flagship reports and journal articles, as well as innovative and high-impact products such as films or infographics. The consortium's ability to engage with, and impact, a diverse range of stakeholders at the national, regional and global levels is also illustrated by its media hits.

Capacity building: Capacity building was a core aspect of PRISE's objectives and delivery model, exemplified by its focus on empowering and promoting active involvement of, and leadership from, young researchers. PRISE placed great emphasis on mentoring project leads, building methodological capacity to ensure research quality and rigour, and offering training opportunities in outcome monitoring and research communication. Equal emphasis was placed on building the capacity of target stakeholders to help them better understand the opportunities and challenges of climate change and to identify climate risks and adaptation options.

Spin-off projects: As a result of the traction PRISE research gained, a number of

organisations and donors have expressed an interest in replicating the PRISE model and a number of concrete 'spin-off projects' and partnerships have resulted. One example is the *Regional Dialogues on Livestock Value Chain Transformation* in the Sahel and the Horn of Africa, for which additional funding could be secured.

Lessons and recommendations: Important lessons were learnt in regard to how the consortium was set up, including its internal governance and partner selection, and in relation to the consortium's approach to stakeholder engagement, capacity building and the monitoring of outcomes. Based on these insights, lessons learnt can inform the design and implementation of future consortia-based research programmes, including earmarking budget for cross-consortia activities and synthesis, and including follow-on proposal development as part of the project cycle and budget.

Next steps: After almost five years of intensive research, collaboration and engagement with stakeholders, PRISE has identified several areas for further synthesis, policy engagement and research. These include:

- Supporting implementation of recommendations and expanding on pilots launched in-country;
- Engaging with National Designated Authorities (NDA), Nationally Implemented Entities (NIE) or the secretariat of the Green Climate Fund to promote the idea of climate-resilient economic development in marginal areas;
- Building on PRISE insights to strengthen micro, small and medium enterprises' (MSME) efforts to adapt to climate change impacts;
- Assessing what transboundary adaptation and a territorial approach to resilient economic development could look like in West Africa or the Horn of Africa; and
- Assessing the costs and benefits of any specific adaptation options identified.

Conclusion: PRISE research has provided evidence challenging conventional narratives that frame drylands as climate-vulnerable, low-productivity, poverty-stricken regions with limited potential. A hotspot approach focusing on areas with strong climate signals and large concentrations of marginalised people, combined with a transdisciplinary approach to research that puts the knowledge needs of decision-makers centre stage, has shown over the past five years to be the right way to address complex, even wicked, problems in semi-arid areas of Africa and Asia.

PRISE's engagement with decision-makers, building on rigorous research evidence, has led to a series of changes in the policy and practice of government ministries, municipalities and businesses towards achieving an economic development pathway that is climate resilient and inclusive. The project's engagement at national and international levels in challenging the narrative of semi-arid areas as offering little in terms of economic development also shows promise – by presenting the opportunities for climate-resilient and equitable economic development in drylands, the project is working towards the 'leave no one behind' agenda and proposing a way forward in reducing territorial and group-based discrimination.

1 Introduction

1.1 Semi-arid lands: Context, research agenda and research problem addressed

Semi-arid lands (SALs) have been marginalised in terms of economic and social development, and are weakened by degradation of natural resources, a variable climate and chronic under-investment. Many semi-arid regions in low- and middle-income countries suffer from low economic growth, combined with high levels of poverty, food and water insecurity, conflict and increasing climate change impacts (de Souza et al., 2015, Tucker et al., 2015, Jobbins et al., 2016; Keys and Falkenmark, 2018; Stringer et al., 2018). Misconceptions also exist that SALs are remote and sparsely populated places, in which few people live (ibid.). Yet SALs cover 16 per cent of the world's land surface (Middleton et al., 2011) and are home to almost one billion people (Koohafkan and Stewart, 2008).

Semi-arid regions are home to vibrant and diverse economic activities that make a major contribution to national economies (Carabine and Simonet, 2018). For example, the livestock sector and pastoralists are vital in the SALs of Kenya, Senegal and Tajikistan. In Kenya, the livestock sector contributes around 12% of the country's GDP (Behnke and Muthami, 2011) and employs about 50% of Kenya's agricultural workforce (Ministry of Livestock Development, 2010). The textile sector in Pakistan, which includes cotton produced in the country's SALs, is the largest industrial sector nationally and accounts for around 40% of the country's industrial labour force. Ten million farming families in Pakistan rely on the textile industry (Batool and Saeed, 2017).

The Intergovernmental Panel on Climate Change (IPCC, 2007) has concluded that semi-arid regions are particularly susceptible to periods of drought and erratic rainfall. In addition, temperatures in SALs are likely to rise above the United Nations Framework Convention on Climate Change (UNFCCC) global target of a 1.5°C increase, and rainfall will become more unpredictable over the next century (IPCC, 2014). Based on the IPCC's Fifth Assessment Report, climate change impacts will increase the risk of food insecurity and the breakdown of food systems in drylands, resulting in the loss of rural livelihoods and income due to insufficient access to drinking and irrigation water and reduced agricultural productivity, particularly for farmers and pastoralists (IPCC, 2014).

Climate change therefore threatens to undermine development progress achieved to date in these regions. Alternative development paradigms such as green growth or climate-compatible development were put forward (Messerli et al., 2012). Often, though, these development paradigms do not sufficiently reflect the political realities or address the trade-offs between social groups, geographical locations, sectors and generations. Efforts to strengthen the resilience of SALs to climate change have so far often been limited to small-scale pilots rather than being transformative. Few policy frameworks are dedicated to promoting the development of these marginal regions in lower-income countries, and even fewer treat climate change as an integral component. This was therefore the key research agenda for the PRISE consortium (see Box 1).

Box 1: Pathways to Resilience in Semi-arid Economies (PRISE) Consortium

PRISE (www.prise.odi.org) (2014–2018) was funded through the Collaborative Adaptation Research Initiative in Africa and Asia (CARIIA) programme, launched by the International Development Research Centre (IDRC) and the Department for International Development (DFID) in 2013, to fund adaptation research on three 'hotspots' of climate vulnerability: glacier-fed rivers, mega-deltas, and semi-arid lands (de Souza et al., 2015). 'Hotspots' are defined as areas where a strong climate signal coincides with a large concentration of poor, vulnerable or marginalised people.

PRISE developed projects in seven countries with semi-arid regions: Senegal, Burkina Faso, Kenya, Tanzania (until 2015), Pakistan and Tajikistan and Kyrgyzstan (since 2016).

CARIAA is also rooted in progressive research for development principles, including knowledge co-creation (Harvey et al., 2017) and transdisciplinarity (Cundill et al., 2018), and this is reflected in the approaches and methodology employed by PRISE.

Over the course of five years of research and engagement, PRISE has demonstrated that semi-arid regions need not have a bleak future (Carabine and Simonet, 2018; Jobbins et al., 2018). While they do suffer from low levels of economic development, and climate change does present major challenges – especially for those reliant on primary production – climate variability, seasonality and comparably low productivity of natural resources has always been a feature of SALs, and communities and economies have developed production and livelihood systems able to deal with, and capitalise, on these characteristics. The research shows that engaging with the specific characteristics of dryland areas, such as informality (informal economic activities), mobility (of people and flows of funds and assets) and seasonality (see Figure 1), yields tangible, sustainable opportunities to build climate-resilient economic development (see Box 2) in marginal geographies (Carabine and Simonet, 2018).

Figure 1: Key characteristics of, and considerations for, drylands



Source: Carabine and Simonet, 2018

Box 2: Climate-resilient and equitable economic development

Developing a climate-resilient and equitable economy requires a range of evolutions, both economic and social, towards sustainable development.

Economic development that is both climate-resilient and equitable is characterised by a shift towards sectors that boost inclusive and adaptable growth, and a gain of productivity that enables all aspects of the economic system (i.e. the means of producing, exchanging and distributing goods and services) to avoid, absorb and adapt to climate impacts.

This increase in growth and productivity must be attained without putting extensive pressure on natural assets and without generating negative environmental spill overs that cannot be internalised. To achieve equity, all in society must share the benefits of this growth and productivity and have access to opportunities.

Source: Carabine and Simonet, 2018

2 The PRISE Research Consortium

2.1 PRISE's overall aim and approach

PRISE's vision of climate-resilient development is inclusive development that both eliminates poverty and maximises people's capacity to adapt to change – climatic and otherwise (PRISE, 2015). It needs to be grounded in existing policy and development perspectives and engage with existing economic and social frameworks. To ensure progress towards climate-resilient and equitable economic development, adjustments are required to structures of economies and to the mechanisms of economic growth and social development, including institutional and regulatory frameworks, markets and human and natural capital.

Consequently, PRISE research focused on these adjustments, by considering:

- How are economic development and growth affected by, and do they affect vulnerability to, climate change?
- Where does economic development fail to meet the needs and aspirations of poor and marginalised people? and
- How can the trade-offs between these different dimensions be resolved?

More specifically, the project aimed to strengthen the commitment of decision-makers in local and national governments, businesses and trade bodies, to realising rapid, inclusive and resilient development in dryland regions. PRISE approached this aim by supporting decision-makers to deepen their understanding of the threats and opportunities that climate change and greater variability poses to semi-arid economies, and what semi-arid economies already offer in view of dealing with greater variability and extremes.

Climate change and extremes pose growing risks to economic growth. However, many businesses and policymakers have not been convinced by the need to invest in climate adaptation and resilience, especially since many of the projections of climate impacts are long term (to 2050 or 2100), are difficult for non-specialists to interpret, and do not provide detailed information about climate impacts on specific economic sectors, businesses or producers and how they can be managed. These long-term projections are not useful given the often short-term horizons of decision-makers and investors motivated by profits, or politicians concerned with re-election and more immediate demands from their constituencies.

This led PRISE to choose a different approach. The project team was unconvinced they would achieve the desired outcome by starting with assessments of climate change impacts and working backwards to identify options for adapting business-as-usual activities to new climate conditions. Instead, they focused on identifying investments and adaptation options that unlock rapid economic growth, poverty reduction and climate resilience simultaneously. While hoping to identify options that could address these three goals concurrently, they were also aware of the need to understand and map trade-offs between them (Jobbins et al., 2016).

This approach was called a **policy- and development-first approach** to engaging decision-makers. The research began by identifying (and subsequently supporting the implementation of) investment and adaptation options that needed to be taken in the present, in line with current policy priorities and broader economic and political agendas, while ensuring that these not only focused on imminent extreme events such as floods or droughts, but also took into considerations longer-term projections of climate change impacts.

During the inception phase of PRISE, a broad range of decision-makers and the research team jointly formulated research questions and identified study areas to ensure that the research responded to demand. This approach enhanced the likelihood of research uptake and therefore the potential for influencing policy and practice on the ground.

2.1.1 PRISE Objectives and Impact Statement

An Objectives and Impact Statement was formulated at the outset of the project (see Box 3).

Box 3: PRISE Objectives and Impact Statement

Impact: Economies of semi-arid lands are growing and are resilient to climate variability and change, with the benefits of these shared equitably among all communities, especially the most vulnerable.

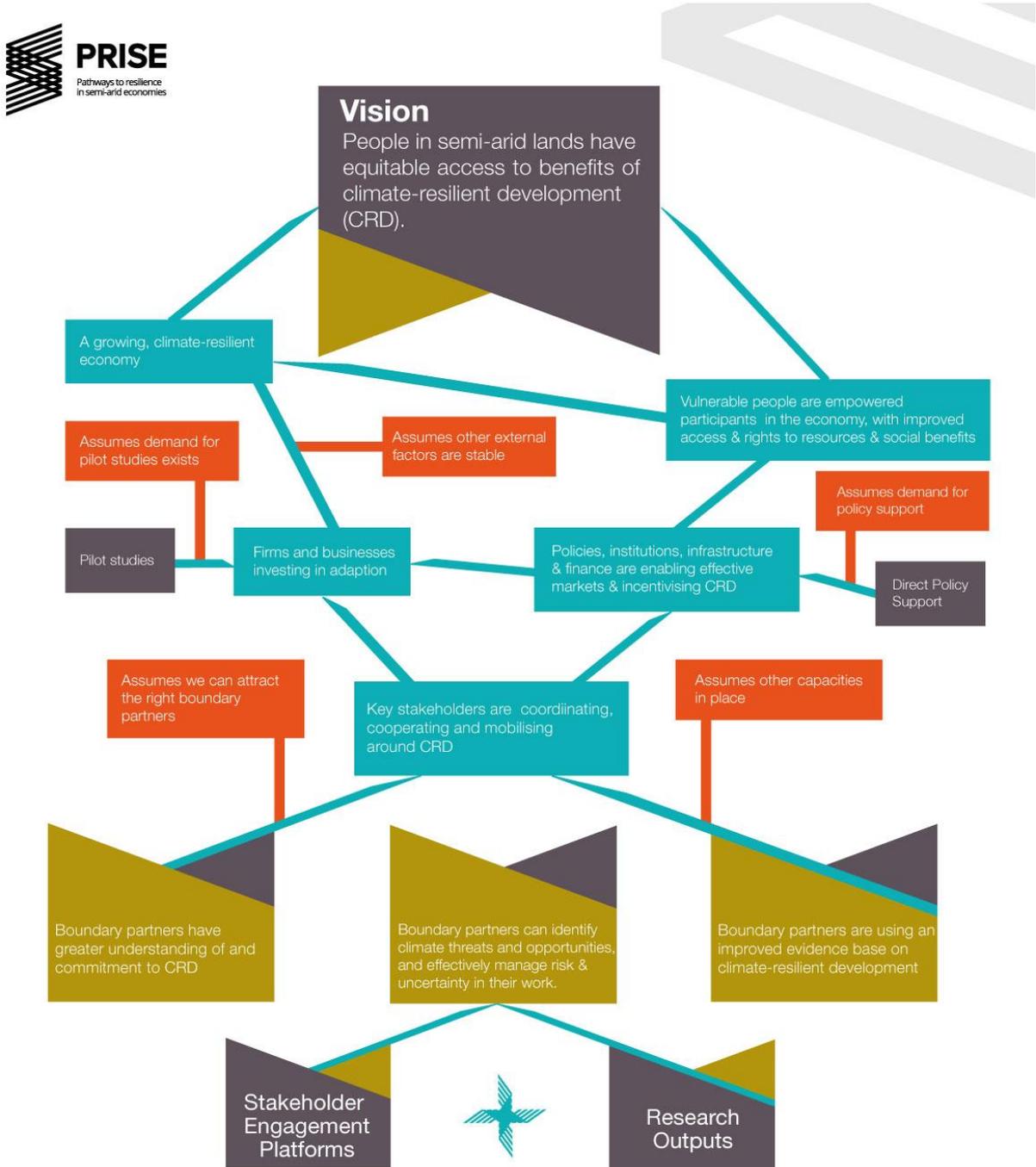
Key objectives:

1. Develop an evidence base on the impact of climate change on key factors conditioning the economic growth of semi-arid lands, and conversely how these factors condition vulnerability to climate change among men, women and different social groups;
2. Develop an evidence base on the risks posed to equitable economic growth in semi-arid lands by extreme climate events, particularly droughts and floods;
3. Identify gender-sensitive investment, policy and planning measures for inclusive and equitable climate-resilient development and growth in semi-arid lands;
4. Leverage existing initiatives and networks in a gender-sensitive and equitable stakeholder engagement process that co-creates knowledge, builds credibility with research users and promotes the uptake of results; and
5. Support the emergence of a new cadre of policy-oriented researchers working on climate-resilient development, engaged with key southern institutions.

2.1.2 PRISE Theory of Change

Figure 2 shows PRISE's theoretical model of change, setting out the overarching vision, and illustrating the logic of how research and engagement can achieve change. The key inputs and conditions of the change pathways are shown, as well as the resulting outcomes and output for both dryland regions and the research community.

Figure 2: PRISE Theory of Change



www.prise.odj.org

2.1.3 Routes to impact

2.1.3.1 Direct pathways

The most direct pathway to the desired impact (see Figure 2) was to engage directly with stakeholders 'on the ground'. PRISE's approach to engagement with decision- and policymakers was built on developing and nurturing relationships of trust with stakeholders involved in shaping the economic development of semi-arid regions in the PRISE countries. Through dialogue, trust-building and a demand-led research approach, research evidence

was used to demonstrate the pathways that can achieve equitable, climate-resilient economic development.

A core commitment of the consortium was to promote gender equality and provide a voice to marginalised groups, including women, youth and the elderly. From the outset, PRISE was aware that the issue of gender cuts across economic resilience and climate change, and that women and other marginalised groups must benefit from adapting policy and practice in support of enhancing resilience. PRISE recognised and demonstrated that women are potential agents of change that can be 'unlocked' and engaged in building inclusive economic growth in semi-arid lands.

2.1.3.2 *Indirect pathways*

The objectives were also supported by impactful indirect approaches, aimed at including the wider community. For instance, PRISE aimed to reshape the narrative around semi-arid regions at both national level and internationally. The project team produced and strategically disseminated high-quality research; authored visible, compelling and evidenced-based reports; presented research evidence and policy recommendations at national and international events and brought them into high-level policymaking processes; strengthened the capacity of institutions; and supported a cadre of junior researchers to lead this agenda in the future.

2.2 PRISE partner and country selection, baseline analyses and research areas

2.2.1 Partner and country selection

The Consortium consisted of four core consortium member institutions - the [Overseas Development Institute](#) (ODI, UK), the [Grantham Research Institute on Climate Change and the Environment](#) at the London School of Economics (GRI-LSE, UK), the [Sustainable Development Policy Institute](#) (SDPI, Pakistan) and [Innovation, Environnement et Développement en Afrique](#) (IED Afrique, Senegal) and four country research partners - [Kenya Markets Trust](#) (KMT, Kenya), the [University of Ouagadougou](#) (UoO, Burkina Faso), the [Regional Environmental Centre for Central Asia](#) (CAREC, Tajikistan) and the [University of Central Asia](#) (UCA, Kyrgyzstan). Partners within the PRISE consortium were identified based on a range of factors and each organisation brought a broad range of competencies, skillsets and expertise to the consortium. This included expertise in policy-relevant research on climate change and semi-arid regions; relationships and networks with national-, regional- and global-level stakeholders; and extensive experience in large-scale, multi-country, multi-partner research programmes. While the consortium partnership was new, many of the organisations had worked together previously on other research programmes.

The consortium's research and stakeholder engagement activities focused on three geographic regions: East Africa, West Africa and Central / South Asia - more specifically on Senegal, Burkina Faso, Kenya, Pakistan and Tajikistan with smaller activities in Kyrgyzstan and Ethiopia (see Figure 3). At the outset of the programme, Tanzania was one of the core countries. However, the main research and stakeholder engagement activities were wound down after the inception phase of PRISE as the Centre for Climate Change Studies at the University of Dar es Salaam (CCCS) left the consortium at this time.

Countries were selected based on their semi-arid geography and economy and the expertise and networks of PRISE partner organisations.

Figure 3: Map of core PRISE countries and institutional leads¹



2.2.2 Baseline analyses: Country situation assessments and thematic reviews

During the inception phase of the project (see Section 5.2), PRISE carried out country situation assessments (CSAs) in the six core countries [Pakistan](#), [Tajikistan](#), [Senegal](#), [Burkina Faso](#), [Kenya](#) and [Tanzania](#) to summarise the current situation in terms of economic growth, social development objectives, climate vulnerability and adaptation to climate change (see Box 16).

Thematic review papers were developed for each of the original five workpackages:

- [Management of climate risks](#) (Wade et al., 2015);
- [Institutions, governance and finance](#) (Castells-Quintana et al., 2015);
- [Markets](#) (Lemma et al., 2015);
- [Natural capital](#) (Mabhuye et al., 2015), and
- [Human capital](#) (Qaisrani, A., 2015).

These reviews provided a gap analysis and a conceptual foundation for research during PRISE's implementation phase. Each review documented the state of extant knowledge, identified important research questions for semi-arid lands and reflected on the context in different PRISE countries to ensure research ideas were sufficiently grounded.

2.2.3 Research areas

The research and stakeholder engagement activities during the inception phase shed light on existing knowledge and policy gaps and revealed the research priorities. The consortium then refined its initial five work packages into [seven, multi-country research areas](#), each led

¹ Map disclaimer: This map was produced by the authors, using data extracted from Microsoft Excel. The boundaries shown and the designations used on the maps in this report do not imply the expression of any opinion on the part of the authors, ODI, PRISE consortium partners, IDRC or DFID concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

by a designated consortium-member organisation (further details in Section 3):

1. **Research area 1:** Migration futures in Asia and Africa: climate change and climate-resilient economic development, led by SDPI.
2. **Research area 2:** Migration, remittances, adaptation and resilience in arid and semi-arid regions of Senegal and Tajikistan, led by IED Afrique.
3. **Research area 3:** Harnessing opportunities for climate-resilient economic development in semi-arid lands: value chain resilience and adaptation options in key sectors, led by ODI.
4. **Research area 4:** Enabling environment for private sector/multi-stakeholder action to strengthen resilience to climate change, led by GRI.
5. **Research area 5:** Property rights, investments and economic development in the context of climate change in semi-arid lands.
 - a) The role of access to, and ownership of, land in reducing climate vulnerability and enhancing climate-resilient economic development in semi-arid lands, led by ODI.
 - b) The effects of climate change and climatic extremes on structural change and the effect of their interactions with land tenure insecurity to short- and long-term economic wellbeing, led by GRI.
6. **Research project 6:** Multi-Scale governance and resilience measuring, led by GRI.
 - a) **Part 1:** Cross-boundary multi-scale governance of semi-arid lands: implications for climate resilience and economic development.
 - b) **Part 2:** Resilience to climate-related shocks and stressors in Kyrgyzstan: developing resilience indicators to predict wellbeing.
7. **Research project 7:** Water governance in semi-arid lands: political and economic insights for the management of variability and extremes in a changing climate, led by ODI.

3 Research results

3.1 Methodological approach common to all research projects

This section does not describe the specific methodologies and tools used by each research project. Instead, it summarises a few overarching considerations common across all research projects.

Project teams were put together, each of which included researchers from at least two countries and from different institutions. While focusing predominantly on current weather impacts and extreme events, all research assessed how current weather impacts might change under climate projections for their study areas. This guided the research and helped identify actions that householders, small- and medium-sized enterprises (SMEs) and sectors would need to take in order to adapt to climate variability and extreme events now as well as climate impacts in future.

To obtain primary data, all the PRISE research teams applied a mixed methodology approach, combining extensive literature reviews with qualitative research, such as key informant interviews and focus-group discussions, and quantitative data from surveys. For example, the value-chain work (Research Project 3) surveyed on average 400 producers per value chain, equating to approximately 2,300 producers across six value chains and five countries (see Box 4), and the private sector adaptation work (Research Project 4) conducted a structured survey of 325 SMEs in Kenya and Senegal.

Continuous engagement with stakeholders was a critical part of the methodology across all project teams, to discuss the implications of research findings – for example what the surveys reveal about how households and businesses manage and adapt to current climate variability and extremes, and how they may be affected by future climate-projection scenarios – and to identify and assess adaptation options and viable policy interventions that would enable producers, SMEs and other actors to adapt to future climate change.

Box 4: Highlights of methodologies employed by Research Projects 3 and 6

Methodology – value chains

VC-ARID is an innovative and interdisciplinary approach to value chain analysis through accounting for the specific characteristics of semi-arid systems. VC-ARID methodology integrates key principles that support its application in a territorial – or hotspots – approach as developed within the PRISE programme. Key to the approach is the recognition that in semi-arid lands, ecological and socio-economic variability represent key structural differences when compared to other production systems.

VC-ARID three-step methodology:

- **Step 1:** Mapping the value chain
- **Step 2:** Assessing climate risks at each level of the value chain
- **Step 3:** Identifying adaptation and private-sector investment options for climate resilient value chain transformation

Methodology – subjective resilience measures

- Drawing on insights from both the development resilience field and the subjective wellbeing and psychological resilience fields.
- Used methodological theory to construct own scale of climate resilience in the three livelihood zones, representing a geographical and socio-environmental range of livelihood types.
- Subjective wellbeing: the Satisfaction with Life Scale was included as a robustness check for the resilience measures developed for this study.
- Objective outcome measure: the Household Food Insecurity Access Scale was chosen as a well-known metric that has been validated for use across many cultures in identifying household-level food insecurity.

Sources: Carabine and Simonet, 2018; Clare et. al., 2018b

3.2 Key thematic findings²

3.2.1 RESEARCH AREA 1: Migration futures in Asia and Africa: Climate change and climate-resilient economic development

This project aimed to bridge the knowledge gap in the field of climate-induced migration, identifying how climate-induced migration patterns can be better understood and planned for, thus improving resilience, equality and economic development in semi-arid regions.

The project examined potential links between climate change impacts and variability of internal migration patterns and the economy; and of internal migration patterns and their impact on economic development, poverty, conflicts, urbanisation and adaptation capacities in Pakistan, Burkina Faso and Kenya.

Box 5: Research output of Research Project 1

Fankhauser, Waldinger and Parfitt, 2015
Saeed, 2015
Qaisrani, 2016
Saeed, Salik and Ishfaq, 2016
IED Afrique; 2017
Salik, Qaisrani, Umar and Ali, 2017
Qaisrani and Salik, 2018
Qaisrani, Umar, Siyal and Salik, 2018
Umar and Saeed, 2018

Film: Climate change and the cotton sector in semi-arid regions of Pakistan (2018)

3.2.1.1 *Key findings*

- In semi-arid areas, rainfall and temperature variability is increasing, which is reflected in prolonged droughts, floods and heat stress that cause varying water availability for agricultural activities, declining soil fertility and shrinking of arable land.
- Climate change impacts interact with existing economic, social and political drivers of migration to encourage population outflows towards city centres or other rural areas in the SALs of Pakistan, Kenya and Burkina Faso. It is difficult to identify a single cause of migration and it should therefore be considered as a multi-causal process.
- Projected climate change impacts are likely to exacerbate push factors for migration in future. If unplanned, this may lead to development concerns such as pressure on urban resources, urban poverty and the growth of slum settlements, which in turn increase vulnerability for the country as a whole.
- Rural out-migration is dominated by young men moving to seek economic opportunities. Left-behind women often shoulder greater responsibilities with limited concomitant improvement in their agency.
- Potential improvements to the livelihood resilience of rural households through planned migration include: livelihood diversification, inflow of remittance, transfer of knowledge and skills, promotion of innovation and expansion of social networks (see Figure 4). However, 'sending' regions should be included in development plans otherwise they can experience the 'double deprivation' of both climate change and development neglect.

² All full list of the research output in the form of bibliographic references can be found in Annex 1.

- Adaptation and developmental planning at the national and sub-national scales were found to neglect the potential of migration as a positive, resilience-enhancing strategy.

Figure 4: Livelihood resilience index scores for migrant and non-migrant households

Livelihood resilience index	Migrant score	Non-migrant score
Adaptive capacity		
Assets, access, income and food security	0.526	0.462
Strengthening and adapting livelihoods	0.467	0.401
Anticipatory capacity		
Preparedness and planning	0.526	0.452
Capacity, information and mobilization	0.589	0.536
Absorptive capacity		
Saving and safety nets	0.504	0.470
Substitutable and diverse assets and resources	0.211	0.146
Resilience index score (sum of adaptive, anticipatory and absorptive capacities)	2.822	2.467

Source: Qaisrani and Salik, 2018, p. 6

3.2.1.2 Policy recommendations

- Migration should be integrated into policymaking as a positive factor that has the potential to contribute to economic development and resilience enhancement. Internal migration policies should be developed at the national and/or sub-national levels to holistically reflect the government's commitment to migration planning.
- Local administration capacity should be enhanced to manage population flows. Local administrations in SALs also need to invest in the economic integration of the migrant population in the destination labour markets. This would include activities such as imparting relevant skills training, and ventures such as job matching schemes for employers and job-hunters.
- The flow of internal remittances should be measured, and rural households should be provided with attractive avenues to invest these remittances in activities that increase their resilience and avoid maladaptation. This would simultaneously develop rural areas and build climate resilience as households' and communities' economic health improves.
- Formal social safety nets and support networks should be introduced, specifically targeting women, to help them access required facilities and support. As well as the need to increase state-provided facilities, platforms such as women-led self-help groups would also be useful to encourage female leadership and promote empowerment.
- Development planning policies must include rural 'sending' areas, or points of departure for migrants. The introduction of diverse economic activities in these areas would provide an opportunity to those who do not want to migrate, helping to build livelihood resilience through alternate sources of income.

- Local conventions for natural-resources management need to be reinforced.

3.2.2 RESEARCH AREA 2: Migration, remittances, adaptation and resilience in arid and semi-arid regions of Senegal and Tajikistan

This project analysed how remittances from migrants can be more effectively channelled and re-invested in ways that will make a real impact to people's resilience in the semi-arid lands of Senegal and Tajikistan.

Box 6: Research output of Research Project 2

Babagaliyeva, Kayumov, Mahmadullozoda and Mustaeva, 2017
 Wade, Dime, Tandian and Ehode, 2017
 Dimé, Wade and Ehode, 2018a
 Dimé, Wade and Ehode, 2018b
 Tall, Wade and Ehode, 2018

3.2.2.1 Key findings

- Individually or through their associations, migrants are involved in addressing some of the adverse effects of climate uncertainty. This can take several forms, including investment in land, investment in equipment/facilities to improve agricultural performance, diversification of agricultural activities, purchase of short-cycle seeds, processing of agricultural and livestock products and investment in small-business development or real estate, both of which are less dependent on rainfall than agriculture.
- In particular, remittances sent to semi-arid lands are an important contributory source for job creation, local development and climate resilience.
- Using remittances from migrants, women have been able to strengthen their entrepreneurial and empowerment dynamics. They are able to save money and develop their own businesses.
- The diaspora can also be a source for new technologies, knowledge and know-how.
- Good governance of migration and remittances could help to achieve local development plans, the Sustainable Development Goals (SDGs) and, ultimately, local resilience. However, it is essential to integrate cross-cutting dimensions (migration, climate change, gender and nutrition) into local planning guidelines. A first step was taken in 2018 – with the support of IED Afrique and its partners, including the African Institute of Governance (AIG) and IOM – with the revision of the national Local Development Planning guide to include specific tools to help communities take cross-cutting dimensions into account when they formulate their local development plans.

3.2.2.2 Policy recommendations

- The national governments of Senegal and Tajikistan should develop coherent external and internal migration policies that foster inclusive and sustainable economic development by creating a formal collaborative framework between government and civil society (including local communities, migrant associations and the migrant diaspora).
- Central government decision-makers in both sending and receiving countries should open dedicated offices to allow migrants to share their knowledge and skills, and provide information and training about climate-resilient business ventures into which

migrants can invest remittances. This will support migrants and government to collaborate on investments into sustainable, climate-smart development activities.

- Decision-makers planning and budgeting at city council level, regional development agency level, and at local community level in both Senegal and Tajikistan should consider the vital contribution migrant remittances make to spending on education, healthcare and local economies. This can help pave the way for decision-makers and returning migrants to coordinate the planning and funding of local development programmes in these areas.
- Local officials should engage with communities to protect women’s rights (such as ensuring women have access to land and active roles in decision-making) to ensure that national-level laws that guarantee women’s rights are understood and implemented at the local level.

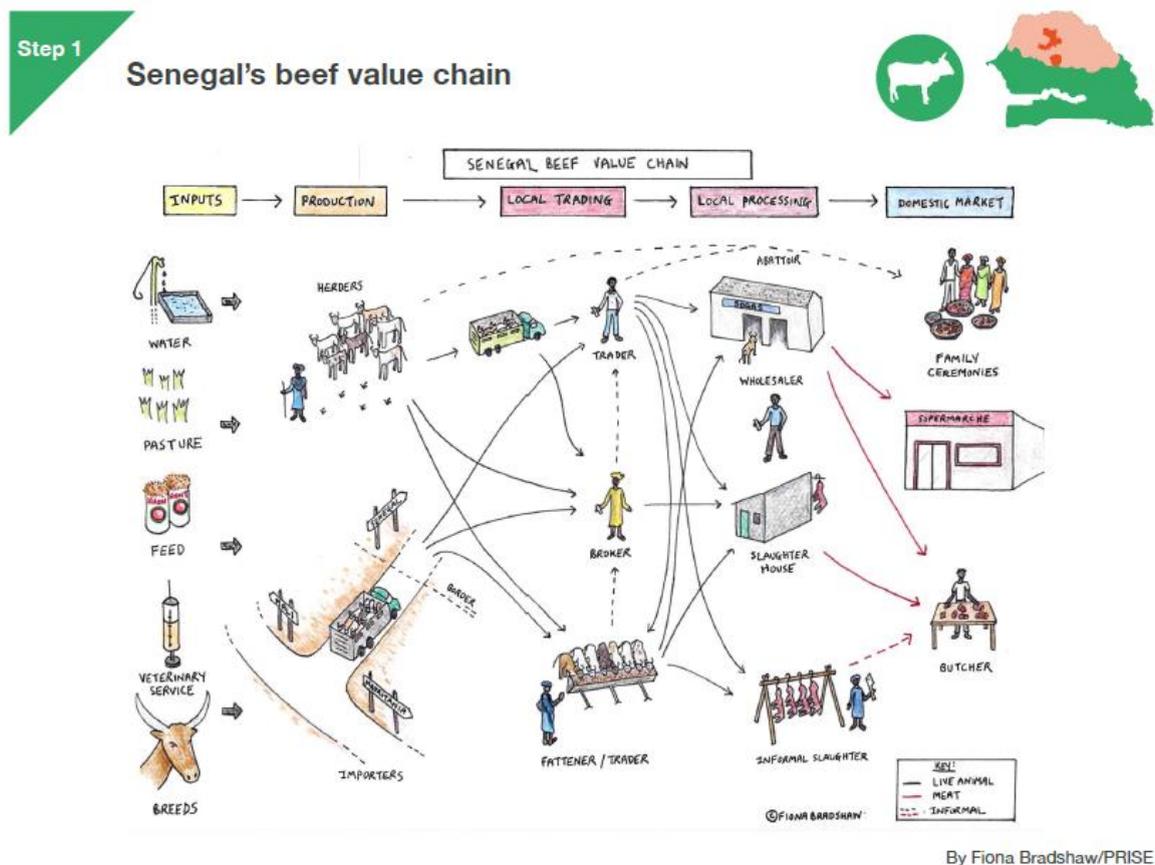
3.2.3 RESEARCH AREA 3: Harnessing opportunities for climate-resilient economic development in semi-arid lands: Value chain analysis adaptation options in key sectors

Focusing on Senegal, Burkina Faso, Kenya, Ethiopia, Pakistan and Tajikistan, this project sought to identify the potential for economic transformation and diversification in important sectors in semi-arid lands. The project developed an innovative, three-step methodology – Value Chain Analysis for Resilience in Drylands (VC-ARID) – to assess climate risks at each level of the value chain and identify adaptation and private-sector investment options for climate-resilient value-chain transformation. Figures 5–7 show the methodology in practice, with examples from all three of the process steps.

Box 7: Research output of Research Project 3

Carabine and Simonet, 2016 Batool and Saeed, 2017 Carabine and Simonet, 2017 Carabine, Lwasa, Buyinza, and Nabaasa, 2017 Batool and Saeed 2018 Carabine and Simonet, 2018
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Figure 5: STEP ONE: Mapping the value chain of Senegal beef

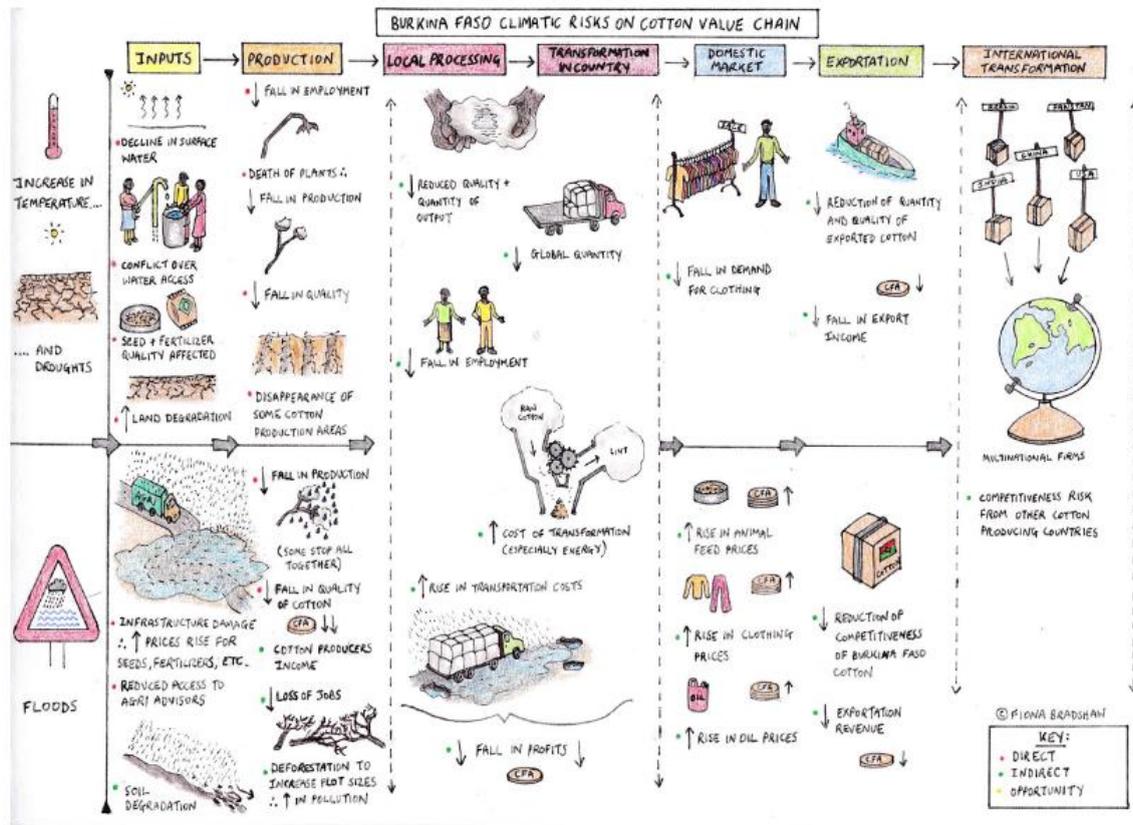


Source: Carabine and Simonet, 2018.

3.2.3.1 Key findings

- The focus on identifying climate risks at each step of a given value chain as well as across an overall sector, allowed a distinction to be drawn between coping, adaptive and maladaptive responses.
- Opportunities were identified to smooth supply and demand, and therefore prices; for example, fattening of livestock during lean months to increase overall quality.
- The territorial – or hotspots – aspect of VC-ARID ensured that the approach was tailored to the specific geographical context, providing more region-appropriate options for climate-resilient economic development. This shifted the narratives held by stakeholders; for example bringing about recognition that production in semi-arid lands can be the basis of viable businesses with private-sector investment, whereas previously they were viewed only as vulnerable subsistence livelihood activities.
- Focusing specifically on gender in exploring the value-chain actors, adaptation responses and opportunities, revealed existing inequalities in terms of rights and financial inclusion, but also highlighted where adaptive capacity can already be harnessed. While women may not be visible in the value chain, their decision-making plays a role and can be harnessed for both vertical and horizontal integration.
- Flexibility is key to managing climate-related and other risks in the SALs. For example, mobility (inputs or people), labour (employment or alternative activities) and capital (ability to draw on assets through access to markets) all play important roles in people's responses to shocks and stresses and decisions to adapt.

Figure 6: STEP TWO: Assessing climate risks for Burkina Faso's cotton value chain

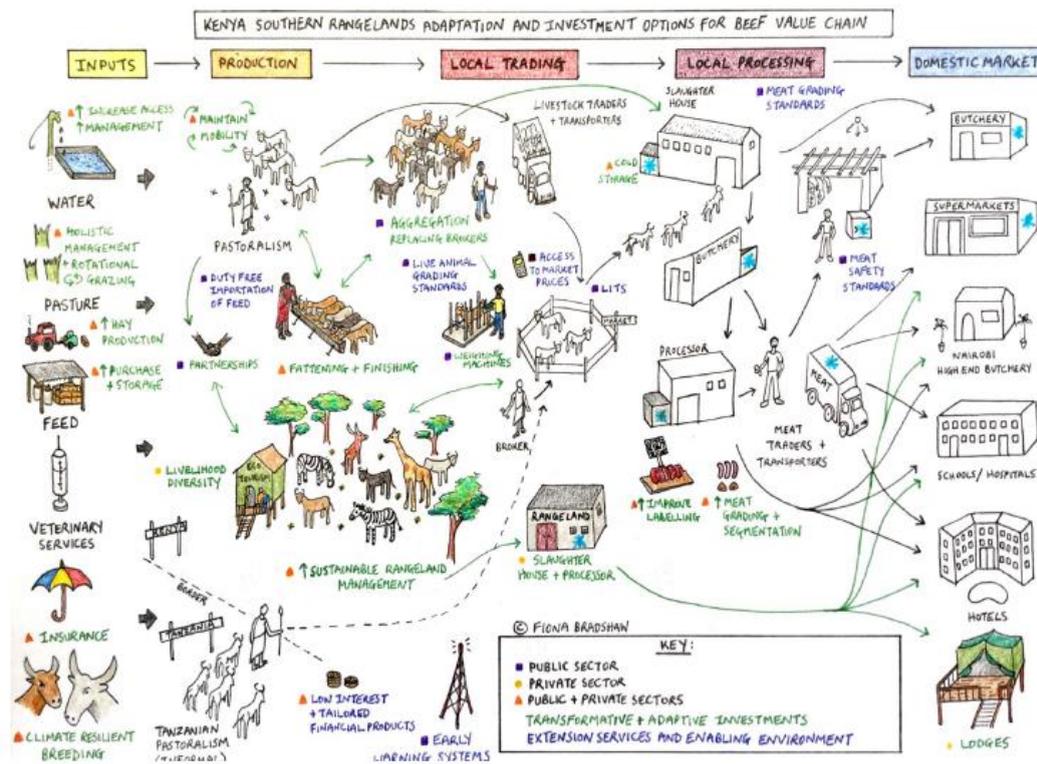


By Fiona Bradshaw/PRISE

Source: Carabine and Simonet, 2018

- The most vulnerable producers are less aware of adaptation even though they perceive climate change accurately and respond appropriately to these shocks, thereby creating a knowledge/action gap.
- The research highlighted the diversity of private actors within all the value chains studied.
- Informal economic activity is a key adaptive characteristic of semi-arid lands.
- Most adaptation options require relatively low public investment but significant policy change. At the same time, the private sector is not incentivised to invest, which hampers the aim of fostering an enabling environment.
- Sectors where production is rooted in SALs are vulnerable and exposed to climate risk but there is inherent adaptive capacity that is the basis of climate-resilient economic development. Across all the value chains studied, combinations of horizontal and vertical integration offer opportunities for increasing productivity within the given sectors, but also for diversification into related sectors, for instance tourism. However, to be sustainable and inclusive, adaptation options must be socially acceptable as well as economically viable and climate resilient.

Figure 7: STEP THREE: Identifying recommendations for Kenya beef value chain



By Fiona Bradshaw/PRISE

Source: Carabine and Simonet, 2018.

3.2.3.2 Key messages for stakeholders

- Transformation within existing climate-resilient sectors can help avoid maladaptation. The diversification of livelihoods – moving away from production activities that support social ecological systems and local economies, towards alternatives – may be less socially acceptable, environmentally sustainable or economically viable with a changing climate. Investments within climate-resilient sectors offer greater potential for climate resilience economic development.
- The formal private sector needs to be incentivised to invest in adaptation, with medium to large private-sector actors currently expecting producers and/or policymakers to take the necessary adaptation action. Private and public actors are generally not aware how the private sector can plug the investment gap.
- Regulation is a key factor in quality issues through the value chain. Public–private partnership or horizontal competition alone are not sufficient to drive improvements in quality; vertical integration or regulated monopolies are often needed. It is essential for public authorities to take the lead and implement solid adaptation plans, requiring adjustments to the regulatory environment, significant policy change and improvements in the enabling environment.
- In SALs, national adaptation action is required, but the local and regional levels are also important for governance and climate-resilient economic development since many economic activities do not fall neatly within national borders.

3.2.4 RESEARCH AREA 4: Enabling environment for private sector/multi-stakeholder action to strengthen resilience to climate change

This research project focussed on Senegal and Kenya and aimed at deepening

understanding of how private-sector actors can contribute to, and become key agents of, change for inclusive, climate-resilient development; how businesses can adapt and take advantage of new opportunities created by the dynamics resulting from climate change and how the public sector and multi-stakeholder partnerships can incentivise this process.

The main activities of this project can be divided into two parts: Part 1 investigated the role of the private sector in inclusive climate-resilient development in semi-arid lands in Senegal and Kenya and asked how the public sector can support this. Part 2 investigated the role that multi-stakeholder partnerships (MSPs) can play in supporting adaptation and climate-resilient development in semi-arid lands in Senegal and Kenya.

Box 8: Research output of Research Project 4

Mountfort, 2015 Batool, 2016 Parker, 2016 Atela and Gannon, 2017 Diop, Diouf, Diouf, Crick and Gannon, 2017 Diop, 2017 Atela, Gannon, and Crick, 2018 Crick, Eskander, Fankhauser and Diop, 2018 Crick, Gannon, Diop, and Sow, 2018 Diop, Crick, Sow, Diouf, and Diouf, 2018

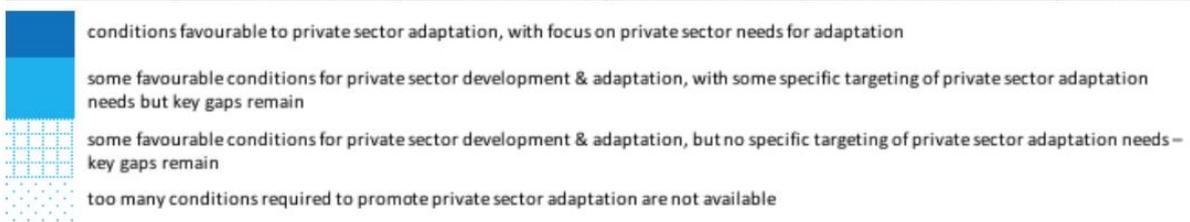
3.2.4.1 **Key findings**

- In SALs, the private sector is dominated by micro, small and medium enterprises (MSMEs), which are often in the informal (i.e. unregistered) sector. These MSMEs actively respond to climate risk, but their adaptation behaviours are not always 'sustainable'; as they may help enterprises to cope in the short term, but do nothing to help build longer-term MSME adaptive capacity.
- Factors that contribute to firms adopting either sustainable or unsustainable adaptation responses (or a combination of both) include:
 - ✓ The more frequently MSMEs face extreme events, the more the balance of their responsive actions shifts from sustainable to unsustainable behaviours.
 - ✓ The business environment has a statistically significant impact on the likelihood of firms adopting 'sustainable' adaptation behaviours. This is even more statistically significant than firm characteristics, such as employee gender, firm size and type of ownership.
 - ✓ Limited access to finance (a barrier experienced by 78 per cent of MSMEs surveyed) is strongly correlated with firms adopting unsustainable strategies.
 - ✓ Access to adaptation assistance (for example from government, NGOs, family) and to general government support makes firms more likely to adopt some form of response to climate risk – and more likely to pursue sustainable adaptation strategies.
 - ✓ SMEs that received support from extension services are more likely to be planning for climate change in the future, while lack of sufficient climate information and relevant climate data is a significant barrier to businesses planning for future climate change.

- Female-led MSMEs face high exposure to climate risk, so supporting their adaptation represents an important route to supporting wider resilience in SALs. Strong socio-cultural norms around gender roles and resource use and access not only confine female-led MSMEs to sectors that experience higher exposure to climate risk – most notably agriculture – but also trigger more pronounced barriers to building resilience within their businesses.
- Some evidence suggests that women-led SMEs may be more likely to engage in sustainable adaptation in response to climate risk. Also, a strong dependency (and ‘double vulnerability’) exists between household resilience and business resilience, implying that building resilience at the household level could support adaptive capacity among female-led MSMEs.
- Other private-sectors actors are aware of climate change but do not develop adaptation options, despite the fact that those operating in the agro-industry are highly affected by climate change impacts on the agricultural and livestock sectors (supply side).
- There is a key role for governments and public policy planners to create an enabling environment to support all dimensions of the private sector in developing sustainable strategies for adaptation. Figure 8 provides an example of a theoretical starting point for developing private-sector adaptation in Kenya, showing various key dimensions of an enabling environment and an assessment of the favourability or otherwise of conditions to support these factors.

Figure 8: Assessing the conditions for private-sector adaptation in Kenya

Institutional arrangements	CC coordinating bodies & agencies at national & regional level	National/regional agencies for private sector development	PPPs to support adaptation decision making	Networks or consortia on climate change	
Regulatory Framework and Policies	CC adaptation policies at national/ regional level	Private sector development policies	Building standards &/or codes	Local zoning rules	
Economic & Financial incentives	Government incentives	Financial instruments (accessible to SMEs)	Climate and Adaptation Funds	Insurance schemes	
Data & Information	Climate Observations & early warning systems	Climate change projections	Direct/indirect impacts of climate change	Adaptation measures costs and benefits & case studies of adaptation	Adaptation decision support tools
Information & Communication Technologies	Climate and adaptation information delivered through ICTs	Online portals on climate change adaptation			
Knowledge, Capacity development & Training	Adaptation training courses for private sector	Research institutions	Forums for private sector	Agricultural extension and training services	Training & technology development centres
Infrastructure & Markets	Road & transport Infrastructure	Water & electricity infrastructure	Markets & business centres/zones	Access to inputs, irrigation & new technologies	Public & key infrastructure incorporating CC considerations



Source: Crick et al. 2016

- Multi-stakeholder partnerships (MSPs) may offer a route to overcoming multiple barriers in creating enabling environments for MSMEs, and for mobilising and coordinating action in line with nationally determined development agendas.
- They can also unlock the private sector for adaptation; even small and informal private-sector actors can support wider resilience in SALs through, for example, increasing access to new markets, technologies, services and finances.
- Weaknesses in enabling environments that are not dealt with by a partnership may still serve as road blocks to effective MSME adaptation and development. As partners in MSPs look to the private sector to make partnerships self-sustaining, MSPs risk entrenching existing power inequalities as well as creating dependencies, with the potential to increase vulnerabilities

3.2.4.2 **Policy recommendations**

- Governments and development partners have an active role to play in enabling private-sector adaptation, since the ability of firms to respond to climate risks depends largely on factors that can be shaped through policy intervention. Developing enabling environments holistically can address the broader structural deficits and barriers that limit adaptive capacity and condition vulnerability. Tools, such as the framework developed in this research, could help policymakers identify gaps and opportunities.
- Policy- and decision-makers engaged in enterprise development can use these tools to identify and address some of the barriers that not only limit the ability of SMEs to adapt to the impacts of climate change but also restrict SME growth more broadly. Integrating climate change adaptation planning within broader development strategies would support this process.
- Women can be key agents of economic growth. However, it will be difficult for the private sector to harness this potential unless national governments and development partners mainstream and monitor national-level gender-based policies at the ground-level.
- MSPs may offer a route to developing more holistic and coherent programmes for upscaling adaptation planning, while still delivering adaptation through community-led initiatives at the local level. However, continuing interest in MSPs as a model for development may necessitate a rethink about the duration of NGO and donor funding and programming.

3.2.5 **RESEARCH AREA 5: Property rights, land tenure and climate resilience in the context of climate change in semi-arid lands**

3.2.5.1 ***Project 5a: Access to, and ownership of, land and its role in reducing climate vulnerability and enhancing climate-resilient economic development in SALs in Kenya.***

This project assessed the influence of property rights on people's ability to adapt to climate change impacts and on climate-resilient economic development, as well as the joint effects of climate risks and land tenure insecurity on people's economic welfare.

Box 9: Research output of Research Project 5a

Bedelian and Ogutu, 2017
 Atela, Bedelian, and Moiko, forthcoming
 Bedelian, Moiko, and Atela, forthcoming
 Moiko, Bedelian, Atela, Said, and Abuya, forthcoming

Said, Ogutu, Bedelian, Moiko, Muhwanga, Abuya, and Carabine, forthcoming
Said, Bedelian, Moiko, Muhwanga, Atela, and Abuya, forthcoming

Key findings:

- The strategies and options that communities pursue in climate change adaptation are defined by the form of land tenure in operation. In Kenya, communities that operate communal land tenure maintain human and livestock mobility on communal land, but also through negotiated access to neighbouring counties and countries. In contrast, in areas of private land tenure, individual land owners fence and preserve their pastures for drought, destock, and also purchase or produce fodder for livestock use during drought.
- Land tenure transition is increasingly shifting livestock investment patterns from resource-extensive investments centred on traditional mobile pastoralism, to more resource-intensive market-based investments, such as fodder production and milk and meat processing. The changing investment patterns drive vulnerability according to who benefits and who loses from land tenure privatization processes. In Kajiado County, Kenya, the project found that some groups, especially resource-endowed private investors, are stepping up livestock investments through value chain investments and drawing more benefits from the expanding markets, such as fodder production or improved dairy farming. Other groups, such as poor livestock keepers who do not own or control land, may be pushed out of the livestock value chain as extensive pasture land transitions to more intensive livestock uses or other non-livestock businesses. This renders these poor livestock keepers more vulnerable to climate change.
- Despite the transformation of land to private ownership, social networks and reciprocal grazing arrangements remain important for access to pasture or water. Socially connected units, such as kin, clan or neighbours, grant reciprocal access to land and share grazing and water resources. This effectively facilitates land consolidation or re-aggregation, where land owners continue to use their land communally, a strategy that is particularly important for creating grazing reserves that can be used during droughts.
- Under both communal and private tenure systems, women and youth hold weaker rights to land and thus reduced decision-making control over land-based adaptation and investment options.
- The project also analysed scenarios of projected climate change and their potential impacts on cattle production and the pastoral economy in 21 arid and semi-arid land (ASAL) counties in Kenya. Climate projections for RCPs 2.6, 4.5 and 8.5 predict increases in maximum temperature between 0.88°C and 3.41°C over three future time slices: 2030s, 2050s and 2070s. It was estimated that 1.7 million cattle, worth approximately KSh 34–68 billion, would be vulnerable to temperature changes above 30°C by 2030. This has the potential to affect the livelihood of 13.4 million cattle owners in Kenya.

Policy recommendations:

- National and county governments should implement land-use policies and planning frameworks that control inappropriate land subdivision and prevent continued land fragmentation and the creation of land parcels of sub-economic size. Additionally, national and county governments, supported by their development partners, should put in place appropriate measures that help to protect communal property holdings, improve land tenure security among communal title holders and discourage calls for land subdivision inspired by tenure insecurity.

- Institutional arrangements that facilitate mobility across community, county and national boundaries, and the reciprocal sharing of pasture and water, especially during droughts, should be supported.
- National and county governments need to ensure procedures and laws related to obtaining spousal and family consent in the sale of land, are fully observed before any land sales and subdivisions are allowed. Land sales approvals need stringent controls to protect women and youth from dispossession through illegal land transactions.
- County governments, such as that in Kajiado, supported by their development partners, should establish a County Climate Change Fund (CCCF) to help provide communities with access to finance from county funds and national and international sources. Communities can use these funds to prioritise the type of public investments they need to build resilience to climate changes, such as more climate-resilient breeds, fodder production, water conservation and management and livestock marketing infrastructure.
- This calls for support mechanisms, social safety nets and policies that are more widespread, targeting the non-farming sector as well as supporting climate-resilient agriculture.

3.2.5.2 ***Project 5b: Institutional factors, land-related investment and vulnerability to climate extremes***

This second part of Research Project 5 aimed to investigate the impact of climatic extremes on economic behaviour in Pakistan, and touched on the income- and welfare-related effects of climate change-induced tenure insecurity and conservation investment in Tanzania. This part of the project used an econometric analysis framework, based on open-access survey data.

Box 10: Research output of Research Project 5b

Eskander, Fankhauser and Jha, 2016
 Eskander and Barbier, 2016
 Eskander, Fankhauser, Jha, Batool and Quaisrani, 2018

Key findings:

- Exposure to disasters increases dependence on agriculture for both flood-affected and storm-affected households in comparison to those households not affected by flood or storms. However, disaster-affected farmers lower their dependence on agriculture more than unaffected nonfarmers. These results indicate a structural change from non-farm to farm employment in general, and farm to non-farm for the farming households.
- The effects of exposure vary by the type of disaster. Storm-affected households undergo a greater structural change than flood-affected households. Storm-affected households use more of their savings in a disaster than flood-affected households do, but storm-affected farmers have a greater increase in their savings than flood-affected farmers when compared to corresponding unaffected farmers.
- Although farmers move away from agriculture as an immediate response to disasters, they return to agriculture within a year. The observed changes in employment strategies are not permanent and are accompanied by increased investments in livestock and seed and decreased cash savings, indicating a determination to revive their agricultural activities post-disaster. While repeated flood victims have higher rates of temporary migration, even these households intensify their farming activities.

Thus, while flood exposure changes the income composition of Pakistani farmers, such changes are only short-term coping strategies and do not imply any longer term structural change.

- While experiencing frequent disasters, farmers save to meet immediate subsistence needs but may not be able to save for future risks. The high frequency of climate shocks adversely affects the accumulation of cash savings between successive events. These harmful effects are further heightened in the case of low-income countries such as Pakistan.
- Exposure to disasters and the prevailing coping strategies in Pakistan have long-lasting impacts on the income and savings of affected households. While farmers have long considered seasonal risks and uncertainties in their agricultural practices, the magnitude and frequency of climate shocks is now increasing as a result of climate change.

Policy recommendations:

- In common with Research Project 5a, these results call for more widespread support mechanisms, social safety nets and policies.
- In Pakistan, international aid agencies have piloted with some success cash-for-work schemes aimed at rebuilding infrastructure as well as providing employment and helping to reassemble the village economy. The replication and/or scaling-up of this initiative should become a support mechanism for both the agricultural and non-farming communities.
- Insurance programmes are still scarce in the rural areas of low-income countries and where they exist they can be overwhelmed when a large number of people are simultaneously affected. Social safety nets should be provided to support the nascent insurance industry.
- There is an urgent need to invest in adaptive capacity to reduce vulnerability of farmers in light of climate change and climate-related hazards and natural disasters.

3.2.6 RESEARCH AREA 6: Multi-scale governance and resilience measuring

3.2.6.1 ***Project 6a: Cross-boundary multi-scale governance of semi-arid lands: Implications for climate resilience and economic development***

This project focused on Senegal (and Tanzania), and analysed the role of various institutional, economic and socio-political drivers in influencing the design and delivery of climate policy and influencing adaptive capacities on multiple scales. It reviews multi-scale (vertical and horizontal) governance arrangements for environmental and land-use planning and examines the institutional and regulatory factors that support or constrain cross-boundary collaboration.

Box 11: Research output of Research Project 6a

IED Afrique, 2016 Fall, Lo and Crick, 2017 Ndiaye, Lo and Crick, 2017 Lo, Crick, Leck, Ndiaye and Fall, 2018

Key findings:

- There is increasing interest in this type of cross-boundary approach to responding to vulnerabilities, starting at the international level with the adoption of the Agenda 21 in Rio 1992. Senegal started a decentralisation process in the 1970s to address this. But

major gaps exist conceptually and politically, and in terms of knowledge and practice. For example, very little is known about how a development policy adopted at one level (national or local) impacts on another level (national or local).

- Highlights of the research findings show that, as climate change impacts go beyond political and administrative borders, the challenge is to adopt an approach that is truly multi-scale, taking into account all levels of decision-making and the relationship between these levels.
- Adopting a cross-boundary approach is beneficial for the integration of climate risks into regional/territorial policies. It can potentially reduce vulnerability, as inter-dependencies and linkages between bordering municipalities/regions are considered in vulnerability assessments and in the development of adaptation strategies. It also facilitates mutually supportive adaptation actions across vertical and horizontal scales.
- A multi-scale approach should take into account the vulnerabilities of each level and also the vulnerabilities emerging from the interdependence between these levels.

Policy recommendations:

- A cross-boundary approach to combatting climate change requires leadership from local communities. The territorialisation of climate change, like other local development challenges, means that a new relationship between the state and the local level should be explored, and local leadership must be strengthened through a clarification of roles and responsibilities.
- It is important to protect natural resources, for many reasons, but in this context also because natural resources can be the starting point for the development of local climate adaptation plans.
- The fact that climate change impacts go beyond political and administrative borders also means that rural and urban areas are increasingly being integrated from an economic, environmental and social point of view. Therefore, a flexible and integrated governance approach to climate adaptation planning is essential.

3.2.6.2 ***Project 6b: Resilience to climate-related shocks and stressors in Kyrgyzstan: Developing resilience indicators to predict wellbeing***

This project aimed to develop and test an innovative approach to tracking household resilience over time and space. Using subjective resilience indicators, the research team explored questions about how communities respond to climate-related shocks, and the socio-environmental factors that enable wellbeing in these conditions. The output from surveys conducted in this way is significant because it can be used by decision-makers to assess who is most at risk and where support should be directed at a community level.

Box 12: Research output of Research Project 6b

Clare, Sagynbekova and Uluu, 2018 Clare, Sagunbekova, Singer, Bene and Rahmanberdi, 2018

Key findings:

- Kyrgyzstan has a relative lack of adaptive capacity to climate-related shocks and stressors, making vital the ability to accurately identify which households are most vulnerable.
- Subjective resilience indicators are strong independent predictors of future food security and are capturing variance that is not picked up by objective indicators for socio-demographic characteristics, assets, coping strategies and help received in response to shock and stressor experiences.

- Subjective resilience indicators could be used to create shorter, more efficient resilience indicator tools where establishing a resilience level, rather than understanding resilience drivers, is the focus.
- There is tentative evidence that the subjective resilience indicators developed in this project may be comparable across contexts, however more research is required to confirm this observation.

Policy recommendations

- Policy-makers should account for subjective perceptions of resilience and use them alongside objective measures in prioritising adaptation measures.

3.2.7 RESEARCH AREA 7: Water governance in semi-arid lands: Political and economic insights for the management of variability and extremes in a changing climate

Box 13: Research output of Research Project 7

Batool, 2015
 Jobbins, Oates and Mosello, 2015
 Newborne, 2015
 Newborne and Tucker, 2015
 Shabbir 2016
 Suleri, 2016
 Newborne and Gansaonré, 2017
 Wetta, Sampana, Noufe, Sana, Sirima, and Idogo, 2017
 Wetta, Sampana, Janvier, Noufe, Sana and Sirima, 2017
 Soma, Wetta and Sampana, 2018

Agriculture and water: testimony from two villages in Burkina Faso (2018) [Film]

This project focused on Burkina Faso and Pakistan and used a ‘political economy’ lens to analyse how institutions and decision-makers respond to crises of too much and too little water, as well as oscillations between extremes.

3.2.7.1 Key findings

- The viability of rain-fed agriculture in the semi-arid central zone of Burkina Faso is threatened by increasing climate variability (manifesting as shorter and less predictable rainy seasons). The communities are managing by ‘exporting’ for six months of the year their prime male labour force (on average 2.6 men per household) to take part in agriculture elsewhere. The departures are a necessity more than a choice: in this zone of already high food insecurity, agriculture does not provide enough for food needs.
- The migrants’ remittances are an important support to families, although the male absence for half the year leaves the women carrying a very heavy work load: in addition to care of children and aged parents, household tasks and tending livestock, women have to create additional income-earning activities. Migration is largely internal to Burkina Faso, with a few exceptions (to neighbouring Ivory Coast). There is a clear

desire among Burkinabè to remain in their own country, with which they identify strongly.

- While the legal and institutional framework for the national programme of ‘integrated water resources management’ (IWRM) in Burkina Faso is being put in place starting at the national level – in pursuance of SDG 6.5 – the country lacks the resources to establish processes of water governance at river basin and local level. Despite efforts to promote better collaboration between public agencies, ministries still tend to operate in ‘silos’.
- In the national finances of Burkina Faso, there is currently no budget-line for flood management. Resources are taken from other activities after a flooding event, in an improvised manner. In the context of increasing climatic variability, major precipitation events are expected. There is little concerted forward planning to reduce the impacts of heavy rainfall. There is, in other words, a major leadership gap.
- In Pakistan, uncertainty in water availability for farm irrigation is a prime factor in sensitivity to climate change, especially where irrigation infrastructure is weak.
- In Pakistan, the standard operating procedures (SOPs) for infrastructure management preserve the interests of particular organisations whilst increasing vulnerabilities for the communities.
- Land-use planning in flood plains (flood risk zoning and opportunities to relocate) is inadequate.
- Building bundhs or embankments is not sufficient alone to improve resilience to flood events. They can protect cities, railway lines, military installations and other infrastructure, but do nothing to assist the poor rural communities who are more vulnerable.
- Of 200 small businesses surveyed, only 5 per cent had recovered from flood within a month and 46 per cent had not recovered. Access to credit is key to recovery.

3.2.7.2 **Policy recommendations**

- Burkina Faso must store more water by financing and constructing more small- and medium-sized dams for dry season irrigation, as a complement to ‘growth zones’ around large dams. Rural areas have been losing out to the urban in allocation of financial and institutional support for water infrastructure. Documented examples of communities in Burkina Faso and elsewhere in West Africa show how the construction of small, built water-storage infrastructure can help local rural development. The new dams should be accompanied by support to farmers’ organisations, capacity for maintenance of infrastructure and training in marketing. Projects should specifically target women as key participants.
- If elected leaders in Burkina Faso and policymakers in other countries wish to reduce future external migration, including departures towards Europe, they should assist rural communities in pursuit of their agricultural livelihoods. It remains a key role of the state to support and protect those who wish to stay as well as those who wish to move.
- To increase collaboration between government agencies in Burkina Faso, the National Water Council should be empowered to require coordinated design and management of water infrastructure – as part of a long-term vision of water management in changing climatic conditions. To allow water governance to function at local level, donors and international agencies should support a review of how ‘integration’ can take shape in the form of practical rules and procedures for water allocation and access, adapted to context, for water users to organise collectively, as well as acting individually.
- City mayors and national elected representatives need to do more for flood management in high-risk zones, with more drainage channels and more frequent cleaning of roadside culverts. Better urban planning is called for and district

development plans should be strengthened. Above all, in a country that faces water shortages, flood waters must be captured and stored.

- In Pakistan, the Irrigation Departments can play a more effective role by introducing innovative irrigation and water-harvesting technologies to reduce disruption in water flows. The authorities also need to improve early warning systems for flood events.
- Government should support the establishment of flood protection insurance schemes.

3.3 Global-level key findings and recommendations

3.3.1 Global-level findings

The size, spread and the critical challenges SALs face in terms of development and climate resilience make them a global concern. Drawing on insights from across all PRISE research projects and countries (for references to all research output see Annex I), PRISE aimed to have an impact on a global level by informing the objectives and implementation of the Paris Climate Change Agreement through its Talanoa Dialogue, the Sustainable Development Goals (SDGs) and the related leave no one behind (LNOB) agenda. PRISE analysis has shown the extent to which many of the SDGs are of particular importance to SALs and, more broadly, dryland, contexts (see Box 14). Article 7 of the Paris Agreement, which sets out the aim of taking into account the urgent and immediate needs of those that are particularly vulnerable to climate change, as well as the SDG pledge to 'leave no one behind', is also particularly significant in light of the challenges faced by SALs. PRISE has provided evidence that SALs need to be a priority for global support if we, as a community, are to achieve the SDGs and the objectives of the Paris Agreement.

Adaptation requirements are always context specific. However, PRISE has identified important commonalities in regard to the challenges faced by people, households, producers, businesses, governments and development partners in drylands. Key findings that apply at a global level are set out below.

- *Climate vulnerability is set in a broader socio-economic vulnerability context*

Vulnerability to climate change in SALs is set in a wider context of social vulnerability and structural inequalities that constrain opportunities. The poorest and most vulnerable are indeed less able to cope. Women in particular are disproportionately affected by climate risk because they are often confined to marginal agricultural activities and their businesses are often in the informal sector, which makes them especially exposed to climate change impacts.

Having looked at a broad spectrum of private actors in SALs, PRISE also found that there is a 'double vulnerability', i.e. the impacts of climate stress may occur simultaneously at the household and business levels, and that they are interconnected (Atela, Gannon, and Crick, 2018). Households also often experience a mix of idiosyncratic and covariate shocks, which, when experienced together, increase vulnerabilities. Women are key to dealing with idiosyncratic, household-level shocks (Carabine and Simonet, 2018).

SDGs of particular importance to drylands

SDGs 1 & 2: Large numbers of smallholders and livestock producers in drylands live in chronic poverty, challenged by low productivity, scarce water and degraded soils. This calls for a focus on the sustainable intensification and diversification of production systems, including livestock systems, and the sustainable transformation of value chains.

SDG 5: Women form over 45% of the agrarian workforce in developing countries, yet the gender gap in agriculture is significant. Gender-focused research, value chains and innovations, as well as diversified income sources, are required.

SDGs 6 & 12: Water is at a premium in drylands. Yet agriculture consumes about 80% of the fresh water resources in these areas. Poor farming practices are degrading soils and reducing productivity. Improved water management and conservation agriculture are needed to manage this scarce resource effectively.

SDG 8: Drylands suffer from sluggish economic growth, and high unemployment and underemployment. Sustained, inclusive and sustainable economic growth that offers full and productive employment and decent work for all is a key requirement and can be achieved by increasing productivity within key sectors in drylands and diversification into related sectors.

SDG 10: Poverty is particularly pervasive in dryland areas compared to more humid regions. Dryland areas have long been marginalised and are characterised by under-capacitated public institutions and weak markets. Addressing inequality within and between countries through investments in human capital and policies that support the growth of dryland economies are needed.

SDG 13: Climate change is affecting drylands disproportionately, increasing the risk and challenges for crop and livestock production. Climate-resilient crop and livestock systems need to be strengthened and communities empowered to access climate-resilient technologies and knowledge, including early warning systems.

SDG 15: Land degradation in drylands is a serious issue, leading to loss of fertile soils and desertification. In irrigated areas, soil salinity is spreading fast and reduces productivity. A new global ambition of a Land Degradation Neutral World is required to tackle these issues.

SDG 17: Dryland regions have suffered from weak national agriculture research institutions. Strengthening national research capacities and establishing research partnerships are required to enable countries to tackle the specific challenges in drylands.

Sources: [Jobbins et al., 2016](#); [Carabine and Simonet, 2018](#); [ICARDA](#); [UNDP](#)

- *Existing adaptation strategies exist but are often no longer sufficient*

People in SALs are already aware of climate risk and they feel increasingly exposed in relation to their activities. However, they are also taking a series of actions to manage these risks and build their resilience. Some examples include: adjustments in production and in value chains, human migration and migration of pastoralist herds (seasonal and permanent, rural to urban and rural to rural), the sending of remittances, farm-level adaptation strategies (including seed selection, soil and water conservation, farmer-managed natural regeneration, livestock management, etc.), livelihood diversification, intensification and switching between activities within and outside agriculture, selling business assets and scaling down production and enterprise activities, and taking out credits and loans. These examples show how adaptation strategies in SALs are marked by flexibility, heterogeneity and mobility characteristics (Carabine and Simonet, 2018; Crick et al., 2018; Qaisrani et al., 2018; Wade et al., 2017).

However, these strategies are not all sustainable, nor sufficient to deal with current and future shocks. Indeed, some strategies may actually reduce people's future adaptive capacity and increase their vulnerability, or are outright maladaptive. In particular, people's and businesses' responses to current weather or climate impacts do not necessarily take future climate risk into account and some of their responses may simply transfer vulnerability into the future, which can impact the most vulnerable most severely.

Recognising and unlocking the potential for women and other marginalised groups to be

agents of change for supporting resilience in SALs is particularly important. At the household level, women often allocate economic returns more efficiently and to the most critical household assets, and at the business level, survey data collected in Kenya and Senegal suggest that women entrepreneurs may also be more likely to engage in ‘sustainable’ adaptation behaviours (Crick et al., 2018).

- *Private actors face a series of barriers that undermine their ability to achieve sustainable adaptation*

The ability of people in SALs to manage climate risk is constrained by a series of barriers relating to finance, technology, infrastructure, information, institutions and regulation as well as social barriers. More specifically, producers and business people 1) often lack funds and do not have access to capital, 2) have limited access to markets and technologies, 3) cannot access general government business support and specific adaptation assistance, 4) do not have enough information on options for adaptation and also lack data (e.g. on climate risks) about the right time and place, 5) lack access to climate information specifically adapted to their needs, and finally 6) are impacted by lacking coordination between sectors and policies, with some policy options weakening adaptation strategies put in place. Again, women have more limited access than men to land, finance and educational opportunities and other assets, which makes it even more difficult for them to adapt.

- *Opportunities exist in SALs to realise climate-resilient development more broadly*

The issues of poverty and vulnerability that SALs face, combined with a characterisation of SALs as having low productivity, form the dominant narrative about SALs in international development circles. However, PRISE research has provided evidence of the important role played by SALs in the wider national and global economy and the potential for them to contribute to climate-resilient and equitable economic development, if only more support were to be provided.

Producers in SALs are often linked to large and sometimes highly competitive value chains that spread across formal and informal sectors and that incorporate a range of businesses of different sizes both within and outside SALs (Carabine and Simonet, 2018). This economic potential can be unlocked through greater support that takes into account the way producers and businesses in SALs operate, in particular the informality of economic actors, the dominance of micro-, small- and medium-sized enterprises and their existing adaptation strategies.

Another element that is often overlooked is the contribution that the private sector in SALs is already making to climate adaptation and resilient development. Besides providing employment opportunities, the private sector integrates communities and small businesses into national and international value chains and it creates markets. Through business linkages, it also offers a potential avenue to increase access to finance, communication technologies, climate smart technologies, products and inputs, and it supports community adaptation through partnerships with other businesses and producers. Therefore, through provision of the necessary enabling conditions, there is also potential for governments and the private sector to work together to support people in better managing climate risks (Carabine and Simonet, 2018).

3.3.2 Global-level recommendations

Synthesising evidence emanating from the seven research projects, PRISE identified a series of recommendations targeted at the governments of low- and middle-income countries with semi-arid lands, as well as at those in developed countries, and at development partners, including financial institutions. Low- and middle-income-country governments have

a key role to play in supporting the sustainable adaptation of their citizens and businesses, removing barriers and working with communities and the private sector to strengthen resilience. Equally, developed countries and development partners have a key role to play in supporting these efforts, through investment and funding support, including for capacity building, in their efforts to strengthen resilience and enable sustainable adaptation. Key recommendations are set out below.

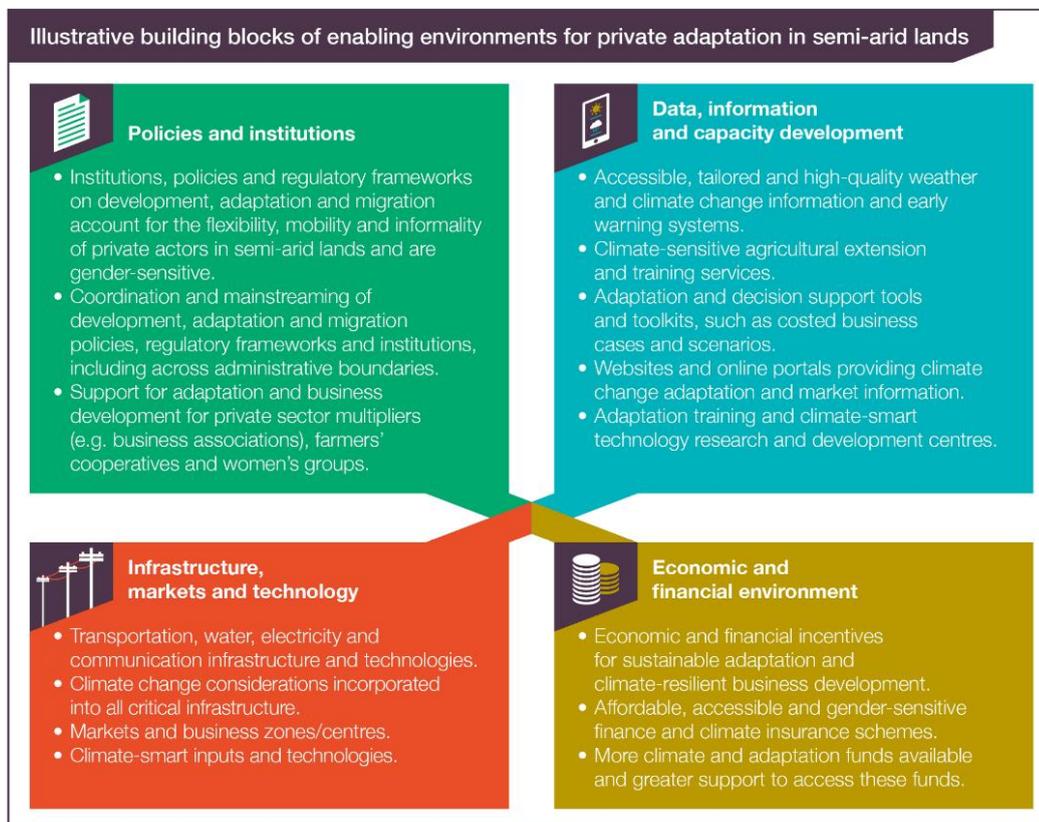
- *Supporting climate-resilient economic development in drylands should start with building on existing productive sectors and through value chain transformation*

-country governments should identify and build on existing productive sectors and key livelihood activities to drive inclusive and sustainable development (Jobbins et al., 2018). Value chains that link SALs to national and international markets can also stimulate growth and support economic development that is climate resilient and inclusive. VC-ARID, utilised in Research Project 3, can be replicated more widely to any value chain where climate change should be considered, to help identify climate risks and adaptation and private-sector investment options for climate-resilient value chain and sectoral transformation (Carabine and Simonet, 2018).

- *Providing an enabling environment to support private actors in adapting to climate risks*

Low- and middle-income-country governments should focus on four interlinked building blocks that will help provide an enabling environment, to facilitate the adaptation of private actors and climate-resilient development in SALs (Gannon et al., 2018) (see Figure 9).

Figure 9: Building blocks of an enabling environment for private adaptation in SALs



Source: Gannon et al., 2018

Enabling conditions need to be designed to take into account the nature of the existing socio-economic systems in SALs – flexibility, heterogeneity, informality and mobility – and to target the full range of SAL actors, including women-led and informal (unregistered) enterprises to avoid further marginalising the most vulnerable groups.

- *Recognising mobility as an adaptation strategy*

Mobility is a key adaptation strategy for people in SALs. Low- and middle-income-country governments should recognise the sustainability and value of this strategy and provide support, including through adequate social protection, supportive infrastructure and financial services (Carabine et al. 2018). Mobility aspects should also be integrated within territorial and national development and adaptation policies (Wade et al., 2017).

- *Focusing on the most vulnerable groups*

In all policies and interventions, women need to be better supported so they can become agents of change. Actions must also support collectives, such as women's groups and farmers' cooperatives, who currently support the most marginalised actors to overcome a range of barriers to adaptation and business growth and development.

- *Fostering transboundary collaboration*

SALS needs to be understood and planned through a systems perspective to achieve more coherent, inclusive and large-scale adaptation and climate-resilient development. To do this, transboundary collaboration and coordination between local governments, including between urban and rural areas and between the national and the local level, is critical (Lo et al., 2018). Multi-stakeholder partnerships could be considered as a way to convene stakeholders and pull together knowledge and resources (Gannon et al., 2018).

- *Better targeting of international funding*

The international climate and development policy processes provide an opportunity for public and private actors, high-income and low- and middle-income countries to increase support towards SALs and those who need it most within them. Low- and middle-income-country governments should prioritise private actors in SALs when applying for international climate funds. High-income-country governments should upscale their support via targeting a bigger share of their funding commitments at SALs and their private actors. Finally, development partners need to make international climate funds more accessible to the private sector in SALs, by recognising the sector's diversity and unlocking its potential to contribute to climate resilience (Carabine and Simonet, 2018; Gannon et al., 2018; Jobbins et al., 2018).

4 Achieving engagement and influence

PRISE supported decision-makers in local, sub-national and national governments, civil society and businesses to strengthen their commitment to implementing interventions and make investments that foster equitable and resilient economic development. The two key components to PRISE's approach to making an impact³ and influencing policy and practice are:

- (i) Producing robust, high-quality evidence and tailored outputs to increase the understanding of decision-makers about the threats and opportunities posed by climate change, and how these can inform their current development plans and investment decisions; and
- (ii) Planning and executing targeted engagement activities to support decision-makers with the implementation of policy recommendations and pilot projects.

Influencing stakeholders – parliamentarians, government, businesses, NGOs and academics – is not a one-off process. Decision-makers do not absorb information in one sitting and proceed to make immediate decisions. The process of influence is a relationship-building exercise, whereby researchers and other project staff must use keen observation skills to identify opportunities for communication, partnership and collaboration

Engagement activities may take the form of high-level roundtables, workshops, bilateral meetings, participation at conferences, telephone calls and informal meetings, among others. PRISE engaged decision-makers at local level building on specific research project insights, at national level, drawing on insights across relevant projects operating in a country, and at global level, influencing and supporting the implementation of international and regional frameworks and policy processes, such as the SDGs and the Paris Agreement.

The first three sections of this chapter provide an overview of the most noteworthy engagement and influencing activities at national, regional and global levels, as well as cross-consortia engagement. The fourth section describes PRISE's approach to monitoring outcomes and impact on the ground, through development of an outcome monitoring system that captures changes in stakeholders' behaviour and actions as a means of measuring influence in policy and practice that can (or may) be attributed to PRISE research and engagement activities.

4.1 Key engagement and influencing activities at national level

In the sections below, selected examples of engagement at country level are provided to illustrate how PRISE researchers engaged with a range of stakeholders and what changes in policy and practice resulted from this. See PRISE Stories of Change (Annex iii) for more details on select country-level engagements.

4.1.1 Pakistan

The work in Pakistan was led by [the Sustainable Development Policy Institute](#) (SDPI). Their engagement efforts focused on government agencies and parliamentarians, while still building a relationship with the private sector, NGOs and research institutes to keep them abreast of the research and cast an eye to any future collaborative activities.

Interactions over time have helped build the research's credibility among target stakeholders at policymaking level in Pakistan, and the first four years of interacting with government officials set the stage for major highlights in 2018. For example, as a result of successful collaborative research under PRISE, a letter of support was drafted by the Ministry of

³ 'Impact' refers to a long-term, sustained environmental or social change. Achieving impact in terms of measurable poverty reduction or significantly improved adaptive capacity is not likely to be achieved within a five-year research programme.

Climate Change that highlighted their interest to collaborate on PRISE research around gender, climate change and migration themes.

Figure 10: Co-PI Abid Suleri (SDPI) meeting with members of Pakistan's National Assembly Standing Committee on climate change



The SDPI team was also approached by major political parties to help draft policy commitments on the environment and climate change for their manifestos. The PRISE team drafted a complete section on 'Environment and Climate Change' and proposed a number of policy interventions including, but not limited to, targeted resilience policies for marginalised communities and women; investment in renewable energy; climate-friendly housing and construction; promoting adaptation in agriculture; and water resource management.

A similar positive trend can be seen in terms of relationship building with parliamentarians, as illustrated in Figures 13 and 14. During the research phase the SDPI team realised the need to engage with policy implementers who could take up the research messages coming out of the three projects implemented in Pakistan. SDPI was therefore proactively engaging parliamentarians. However, a key challenge experienced was that there were no previous relationships with this group of research users, and they had limited existing knowledge of climate change. SDPI approached this challenge by carrying out a thorough stakeholder analysis to identify those individual parliamentarians who could act as potential 'champions' to disseminate the research evidence and messages to others.

The team devised a capacity-building plan to sensitise parliamentarians to key climate issues and reinvigorate the Green Parliamentarians Caucus.⁴ They did so in collaboration with the Heinrich Böll Stiftung (HBS), a German foundation operating worldwide, who approached the SDPI team after noticing their successful work with parliamentarians. A select number of parliamentarians were invited for coffee table programmes (Sustainable Development Television, n.d., a, b, c) in September – November 2017 to assess their knowledge about climate issues and allow the SDPI team to draft and refine a capacity-building manual for parliamentarians. Furthermore, the team highlighted how parliamentarians can help promote climate-resilient economic development at an event co-organised by the chair of the Climate Change Committee of the National Assembly (see Pakistan Story of Change, Annex iii, for further details).

⁴ A networking forum to equip parliamentarians with necessary information and capacity and enable them to spearhead environment-friendly policy changes.

Figure 11: Participants of the second parliamentarians event held on 8 November 2018



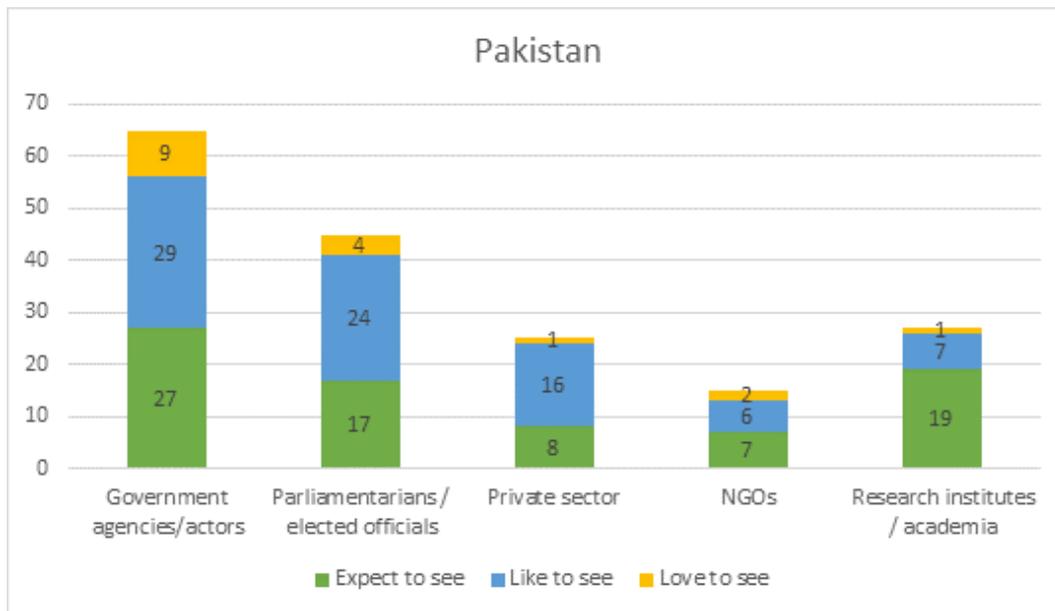
The result of its engagement activities in Pakistan is that SDPI has now become a ‘go-to think tank’ for policy advice on climate change. Continuous engagement with parliamentarians helped SDPI to voice its research messages at various high-level national and international events. Some highlights include:

- Romina Khursheed, parliamentary secretary to the Ministry of Climate Change, requested that the SDPI team provide her with talking points for her interventions at the meetings of the World Commission on Forced Displacement, a multi-country platform seeking to expand the definition of ‘refugees’ to include the forcibly displaced due to factors such as climate change and socio-economic insecurities.
- Malik Muhammad Uzair Khan, chair of the Standing Committee on Climate Change, also asked the team members to send him a summary of PRISE findings and other up-to-date research related to climate-related migration during his participation in Conference of the Parties (COP) 23.
- SDPI team lead and PRISE co-principal investigator, Abid Suleri, was called upon by the prime minister (Shahid Khaqan Abbasi) to discuss policy interventions related to climate change, and PRISE-related policy interventions were highlighted during the meeting.
- Pakistan’s Cotton Commissioner approached the SDPI to share the findings and policy recommendations of the Project 3 research. He will be sharing these during a high-level consultative meeting organised by the Pakistan Cotton Ginners Association and to be attended by cotton- and textile-sector experts.

Figure 12: Quotes from parliamentary champions

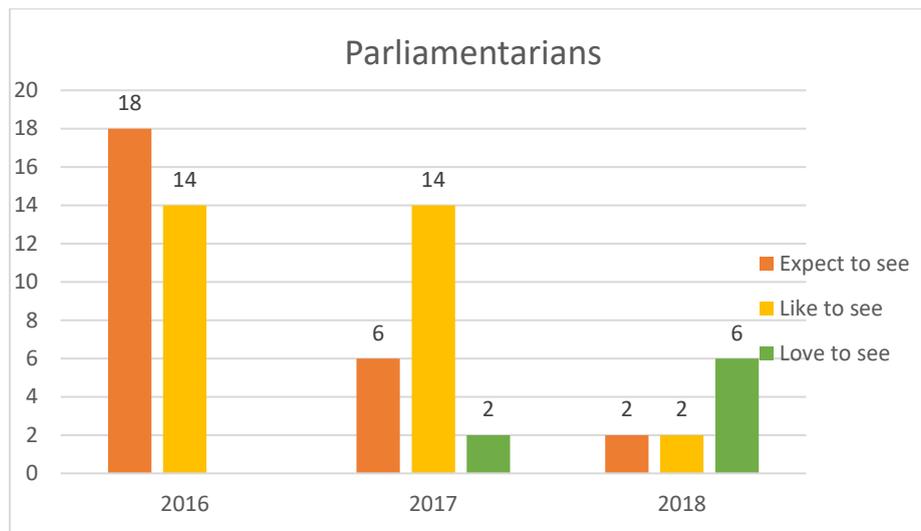


Figure 13: Cumulative total of Pakistan's progress markers⁵ per actor



⁵ See section 4.4.1 for an explanation of progress markers and 'expect-', 'like-' and 'love-to-see' indicators.

Figure 14: Progress markers for parliamentarians



4.1.2 Senegal

[Innovations Environnement Développement en Afrique](#) (IED Afrique) led engagement activities in Senegal and were able to influence national strategies and local development plans in a number of ways.

As a result of their engagement with national decision-makers, IED Afrique were invited by the Government of Senegal to support the alignment of the new national development model and framework for Sustainable Development (Vision 2035), also known as the [Plan Sénégal Emergent \(PSE\)](#)⁶, with local development plans (PDC), and to integrate climate change resilience; both of which were clear recommendation from PRISE’s research findings.

In a clear sign of the Senegal government’s interest in PRISE findings, the Director of the Operational Office for the Monitoring of the Senegal Emerging Plan (BOS/PSE), Ibrahima Wade, invited IED Afrique researchers to discuss opportunities for IED-PRISE to partner with the Government of Senegal to the develop a roadmap to test the alignment of local development plans in some selected municipalities. As a result, PRISE and BOS/PSE created a task force of different stakeholders, which included the UAEL (Union des Associations d’Elus locaux), mayors, National programme for local development (PNDL), BOS/PSE, DADL and IED Afrique. The Mayor of Ndiob and President of the Association of green cities, said: "Through an inclusive approach, mayors have the opportunity to actively participate in this reflection. We have a strong desire to improve decentralisation, but we need to be advised and supported. This type of task force is truly an opportunity to work together and focus on themes that directly concern us”.

As a result, several municipalities (Ndiob, Dianke Souf, Baba Garage, Gagnick, Keur Madiabel and Nganda) are now developing local development plans that integrate the strategic direction envisaged in the PSE and the climate change dimension. By October 2018, IED Afrique had signed three partnership agreements with three pilot municipalities – in Diawara, Dianke Souf and Ndiob – to test the formulation of a new generation of local development plans. The BOS/PSE have also committed to deepen the focus on local development and climate change within the PSE framework, by considering climate data and

⁶ The Government of Senegal has adopted a new development model to accelerate its progress towards growth and development. This strategy, known as the ‘Plan Sénégal Emergent’ (PSE), is the country’s national economic and social reference policy document, which stands as the action plan for the implementation of the Senegal’s Vision 2035 in the medium and long term.

developing participatory methodologies for more effective engagement with communities.

Significant changes in the attitudes of taskforce members towards increased cooperation between the local and national levels were also observed. *‘We are currently engaged in the process of formulating the PSE second Operational Action Plan which will cover the period 2019 – 2023. There is no doubt that the results of the work being implemented by IED Afrique and the task force to develop a methodology to facilitate the alignment between local level planning systems and national strategies will be carefully exploited by the public authority’* said Ibrahima Diagne from the BOS/PSE.

Figure 15: Stakeholder Task Force to develop a roadmap for aligning local development plans in selected municipalities

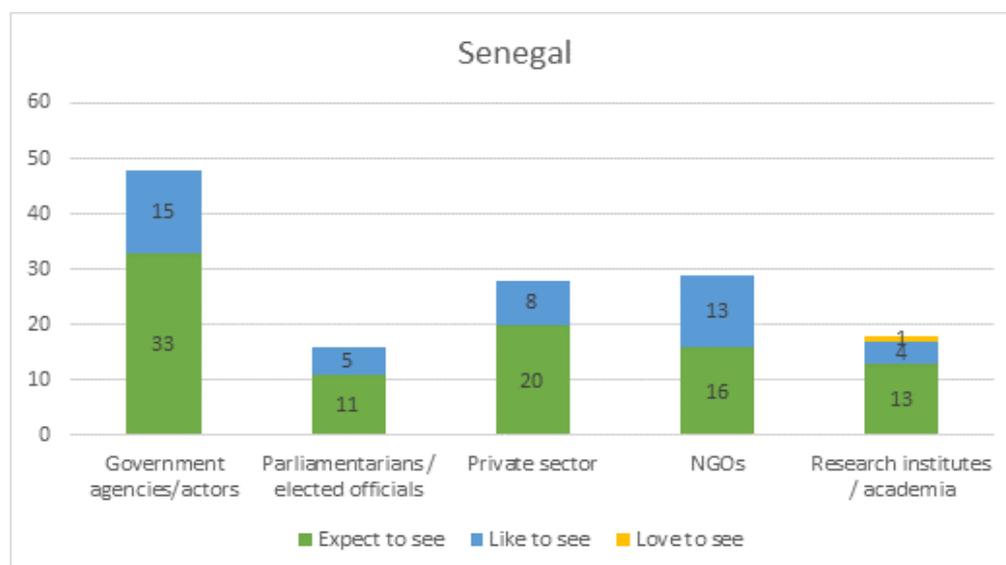


Source: PRISE/IED Afrique - Workshop with stakeholders in Toubab Dialaw. December 2018

As Figure 16 illustrates, government agencies were the most engaged actors in Senegal, due to the mobilisation of actors from ministries in relation to the above-mentioned activities. Ministries included: the Ministère de l'Environnement et du Développement Durable (MEDD), the Ministère de la Gouvernance Territoriale, du Développement et de l'Aménagement du Territoire (MGTDAT), the Ministère de l'Economie, des Finances et du Plan (MEFP), the Ministère des Affaires Etrangères (MAE), and the Ministère de l'Elevage et des Productions Animales (MEPA). Furthermore, the demand of parliamentarians and elected officials for PRISE support has increased over the years and is now reflected in the support provided by

IED Afrique to the formulation of community development plans to integrate cross-cutting dimensions such as climate change, gender, migration and nutrition.

Figure 16: Cumulative total of Senegal's progress markers per actor



Large companies were initially identified by IED Afrique as key stakeholders for supporting climate adaptation due to their clear contribution to economic development in Senegal. However, as they showed little interest in and willingness to engage with the PRISE project, IED Afrique changed its engagement strategy to focus on MSMEs. These were more responsive as they were more exposed to climate risks and uncertainty. As a result, there was a marked increase in the level of private-sector participation in PRISE activities. Beyond the level of attendance at meetings or workshops, there is a growing awareness on the part of private-sector actors about the link between business development and adaptation to climate change. As a result, the demand for information has increased significantly over the past two years.

Among the influencing factors that contributed to these deep interactions and resulting policy influence were the availability of quality evidence and results, the strength and richness of the dialogue between researchers and decision-makers and the communication mechanism put in place to ensure regular sharing of project results.

4.1.3 Burkina Faso

The [University of Ouagadougou](#) led the research in Burkina Faso, overseen by the regional lead partner IED Afrique in Senegal. In Burkina Faso, PRISE research findings were used to inform strategic objective 3.1 of the *Plan national de développement économique et social* (PNDES), which aims to develop a sustainable agro-silvo-pastoral, wildlife and fisheries sector that is more market-oriented and based on the principles of sustainable development.

PRISE successfully engaged with a number of actors, most notably government ministries (see Figure 17) to develop strategies that enhance the productivity of the agro-silvo-pastoral sector and enhance its resilience to climatic shocks. This included: the Ministère de l'Administration Territoriale et de la Décentralisation; the Ministère de l'Enseignement supérieur, de la Recherche scientifique et de l'Innovation; the Ministère de l'Agriculture et des Aménagements Hydrauliques; the Ministère de l'Eau et de l'Assainissement; and the Ministère de l'Urbanisme et de l'Habitat.

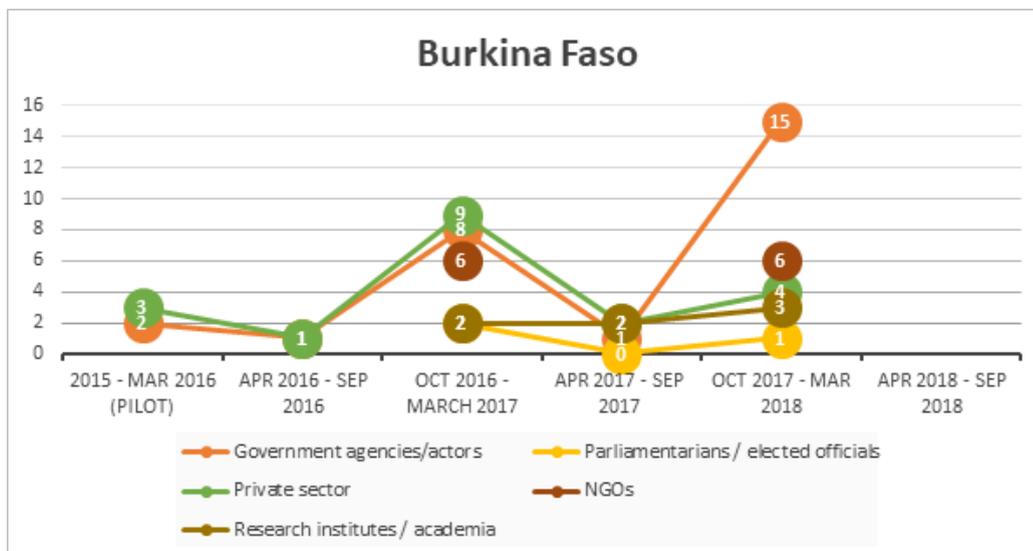
PRISE worked with national stakeholders to influence the development of strategies to:

develop a competitive industrial and artisanal sector, with high added value and the creation of decent jobs; increase high-quality and resilient hydraulic infrastructures to promote the structural transformation of the economy; reverse the trend of environmental degradation and ensure sustainable management of natural and environmental resources; and capitalise on migration resources but also manage future migrations.

A key strategic aim was to enhance the synergy of action among stakeholders in key sectors by facilitating inter-ministerial collaboration to address issues at territorial level. The national-level work drew on insights across PRISE research projects: project 3 about the development of the cotton value chains; project 1 about control of (and support to) migration patterns and dynamics; and project 7 in relation to supporting strong governance systems for water resource management.

The result of these efforts towards engagement is that some of the PRISE’s lead researchers are continuously called upon by government to take part in debates around climate change issues, and demand for information by government increased throughout the life of the project.

Figure 17: Number of progress markers across time in Burkina Faso



4.1.4 Kenya

[Kenya Markets Trust](#) led PRISE’s work in Kenya, coordinating across four projects. Figure 18 provides a summary PRISE research evidence used to engage decision-makers, and the sections below outline how PRISE’s research and engagement efforts influenced national policies, strategies and county plans in Kenya.

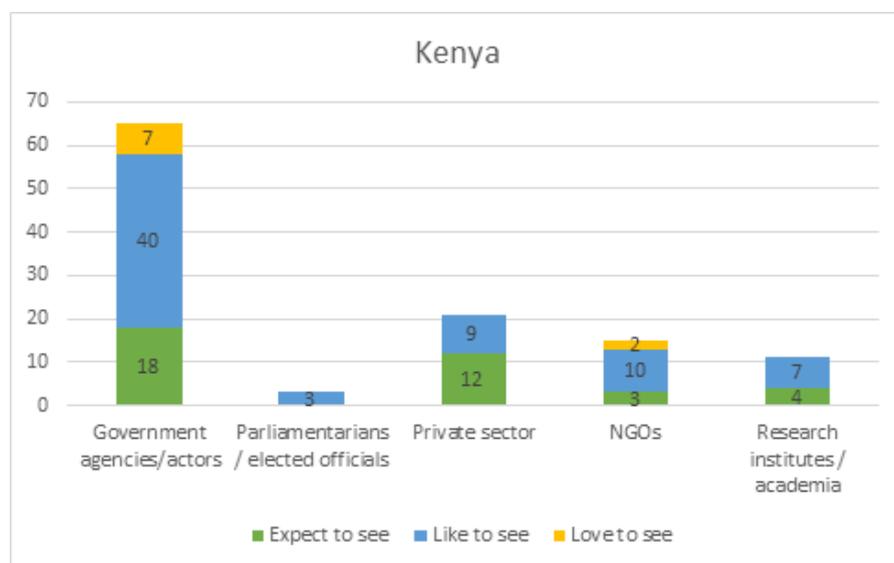
Figure 18: PRISE research evidence in Kenya

Implications of PRISE research on Kenya's SALs

1. Research by PRISE/KMT shows there has been a large decline in the cattle population in SALs, and an increase in camel and small stocks (sheep and goats) between 1977 and 2016. Livestock growth will be low if tenure, vulnerability to climate change, and human wellbeing are not addressed. This will not support trade in livestock in Kenya, within the region or for export markets, which means the country's meat deficit must be met from neighbouring countries.
2. The projected climate in terms of rainfall and temperature indicate that SALs will continue to be vulnerable to food insecurity, increased malnutrition and poverty – all of which are compounded by low investments in climate-smart interventions and businesses.
3. The movement of livestock and people across counties and countries in the region will result in increased resource-use conflict, cattle rustling, the spread of disease and the destruction of rangelands due to the over-exploitation of land and water. Differences and changes in land tenure across countries will hinder the movement of livestock in the future.
4. The private sector is not incentivised to invest in SALs due to poor infrastructure, inadequate enabling policies, and poor livestock management (grazing and disease control). This means producers in SALs cannot access international markets that may offer them better returns and support, improving the livelihoods of local communities.

The implementation of KMT/PRISE projects in Kenya from 2015 to 2018 coincided with electoral changes in the country. Kenya held national elections in 2017, which meant that the National Government and the 47 County Governments needed to develop their five-year development strategies for the 2018-2022 period. This presented KMT/PRISE with an opportunity to work with policy-makers at the national and county levels to develop their plans (see Figure 18). At the county level, KMT/PRISE worked with the counties of Kajiado, Narok, Laikipia and Makueni. For more detailed descriptions of the engagement activities and the key messages and policy recommendations disseminated, please refer to Annex III.

Figure 19: Cumulative total of Kenya's progress markers per actor



During a series of PRISE workshops in early 2018, policy-makers in Narok County showed a particular interest in PRISE findings on: climate change analysis of rainfall and temperature over the last 50 years; climate projections for the 2030s, 2050s and 2070s; livestock trends and projections; and human migration. As a result, county-level decision-makers asked KMT to incorporate PRISE findings, adaptation options and policy recommendations into the county CIDP. The PRISE team worked with the county to revise sections of the CIDP to include climate change and the potential of livestock production at county level, as well as contributing to the national agenda on food and nutrition security. Furthermore, the Makueni

County government asked the PRISE-KMT team to provide technical inputs based on PRISE evidence on climate change into the County Spatial Plan.

The second policy opportunity targeted by PRISE focused on two national-level policy documents that needed to be developed under the new constitution. Firstly, the National Climate Change Action Plan (NCCAP 2018–2020), coordinated by the Ministry of Environment and Forestry. The adaptation technical committee asked PRISE to review and give technical inputs into the first two chapters, with a focus on climate change situation analysis and projections, and the potential impacts of climate change on agriculture, biodiversity and health sectors.

Figure 20: The launching of Kenya's National Wildlife Conservation and Management Strategy, which was informed by PRISE findings



Photo: US Embassy His Excellency the Vice President William Ruto (centre left), Cabinet Secretary Ministry of Tourism and Wildlife, the Honorable Najib Balala (centre right), and the US Ambassador to Kenya (right) during the launch of the National Tourism Blueprint and the National Wildlife Strategy 2030.

Secondly, the National Wildlife Conservation and Management Strategy (NWCMS), which the Ministry of Tourism and Wildlife began developing in March 2017. Mohammed Said, a PRISE researcher with KMT, was nominated in June 2017 to join the strategy synthesis team to support decision-makers with evidence from PRISE research on the links between climate change and changing wildlife numbers in Kenya. PRISE research recognised that wildlife and wildlife conservation areas play an important role in livestock grazing and marketing. As a result, this strategy promotes the mutual co-existence of the two in the ASALs of Kenya. The strategy was launched in May 2018 by H.E the Vice President of Kenya, William Ruto, as a blueprint that will guide Kenya in the conservation of its wildlife.

These opportunities were demand-led, as a result of PRISE's ongoing stakeholder engagement with national policymakers through one-on-one meetings and presentations of PRISE research and findings at conferences and workshops. In response, corresponding ministries invited PRISE researchers to input into these policy processes. More specifically, the Ministry of Environment and Forestry sought PRISE input on the adaptation actions for the NCCAP.

The KMT/PRISE team will continue to exploit national-level opportunities, such as the Big Four Agenda, and work with the national government and the four counties to address issues of climate change threats and opportunities, including livestock value chain transformation and potential adaptation options to invest in SMEs, with a special emphasis on women and youth.

Furthermore, the PRISE team in Kenya gained significant media attention and invested resources to build the capacity of journalists. For example, it held training workshops for Kenyan journalists, resulting in coverage of the consortium's research and policy findings in

key national media outlets, including The Daily Nation. In 2018 alone, PRISE work was featured in the print and digital media in Kenya ten times (19 times total) (see Annex ii for full list of media hits).

4.1.5 Tajikistan

The [Regional Environmental Centre for Central Asia \(CAREC\)](#) led engagement activities in Tajikistan on behalf of PRISE. CAREC oversaw a number of significant national and regional activities over the duration of the project.

Figure 21: Opening Speeches. Mr. Olzhas Agabekov, Director of the Climate Change Department of the Ministry of Energy, Republic of Kazakhstan (left) and Mr. Guich Abaev, Head of the Information and Analytical Department of the Executive Committee of the International Fund for Saving the Aral Sea (right). January 24, 2018



For example, they organised the Central Asia Climate Change Conference (CACCC) in May 2018 in Almaty, Kazakhstan. This conference brought together international and regional experts and practitioners from governmental and non-governmental agencies, academia, multilateral development banks and civil society, with the aim of exchanging best practice on climate change adaptation measures. The event introduced the methodologies, key findings and policy recommendations from the PRISE projects on migration, remittances and climate resilience in arid and semi-arid regions of Tajikistan to a broader range of national and regional stakeholders, thus enhancing the synergies between research and policymaking. The workshop also introduced the results from a gender case study and explored how gender contributes to climate-resilient development in the countries of Central Asia.

PRISE researchers also informed Tajikistan's National Adaptation Plan, National Development Strategy and the National Strategy on Climate Change Adaptation until 2030, as well as the resulting Local Adaptation Plans of Actions, with a focus on how labour migration contributes to social safety nets and climate resilience.

Furthermore, PRISE evidence was used to highlight the need for household training in the use of remittances to ensure a larger share of remittances is invested in the development of small enterprises, and the consequent creation of employment and self-employment opportunities, as well as significant financial contributions to climate-adaptation measures in agriculture. This includes raising local awareness on existing knowledge and expertise for sustainable farming – agricultural extension services by local experts could be a potential option for supporting less experienced farmers.

Figure 22: Women are selling their handcrafted goods and jars with pickles and jam during the PRISE field visit to NGO “Мунус” in Hissar region, Tajikistan. May 11, 2018



4.2 Cross-consortia engagement

4.2.1 PRISE–Hi-AWARE collaboration in Pakistan

The presence in Pakistan of two CARIIA consortia – PRISE and [Hi-AWARE](#) (Himalayan Adaptation, Water and Resilience) – gave rise to a tremendous opportunity for cross-consortia engagement. In early 2016, a number of planning meetings were organised by SDPI and the National Agriculture Research Centre (NARC) to identify common research themes and a way forward for collaborative research. Migration and water were identified as common areas of interest. The focus of SDPI’s work was on semi-arid lands and the challenges regarding water availability, management and migration, while the same issues were explored in the geographical context of the Upper Indus Basin by the NARC team, providing a comprehensive narrative on these challenges starting from the upper Indus basin in Northern Pakistan to the semi-arid lands in Southern Punjab.

The CARIIA Opportunities and Synergies Fund (OSF) provided the necessary funds to support joint research and advocacy activities, including synthesising information on migration as an adaptation strategy in semi-arid plains (PRISE) and the Upper Indus Basin (Hi-AWARE). The joint working paper, led by the SDPI team, identified that migration patterns are shaped by a confluence of multiple economic, social, environmental and political factors. Migration acts as a positive contribution to rural households’ resilience in both geographies. However, it may not always result in an intensification of farm investment and may add to the household resilience through diversification of livelihood and consumption smoothing.

Another component for which this OSF fund was used was lessons learnt about the management of water risks in the Indus Basin region of Pakistan. The working paper, led by NARC, looked at how existing structures of water governance (water supplies, irrigation, groundwater pumping, storage, sharing and distribution) are decoupled from the food and energy sectors and how this compartmentalisation leads to financial and managerial duplication and to suboptimal utilisation of natural and human resources; and how learning from community level water-food-energy interlinkages can increase resilience to climate change and provide an institutional and policy framework.

The two teams also co-hosted multiple stakeholder engagement events to communicate the findings and to influence action. A joint high-level stakeholder meeting was organised in

Islamabad, stressing the important role of the parliament in formulating climate action policies integrating adaptation strategies such as migration, and in formulating better water governance policies. The event successfully fostered greater interest in collaboration between SDPI and NARC as well as with common stakeholders. NARC also played an active role during SDPI's 19th and 20th Sustainable Development Conference, where common stakeholders were approached and invited to attend co-organised panels.

A joint documentary was also developed on the findings of SDPI's and NARC's common thematic areas of water and migration. A 10-minute documentary film titled 'Resilience through adaptation' highlights climate threats and vulnerabilities faced by communities in semi-arid lands and the Indus River Basin.

4.2.2 PRISE–ASSAR collaboration in Kenya

Two of CARIAA's consortia undertook research in Kenya: PRISE and [ASSAR](#) (Adaptation at Scale in Semi-Arid Regions). Whilst the two consortia have a different focus, approach and target audience, there was an overlap in some stakeholders and both consortia made an increasing effort over the course of the programme to invite respective stakeholders and consortia members to stakeholder events and engagements at local and national level. During ASSAR's research-into-use (RiU) country stakeholder consultation in 2016, PRISE partner KMT was one of the stakeholders interviewed on climate change research in Kenya and how it uses evidence from research to influence decision-making. KMT and ASSAR teams also found themselves invited to climate change related events by third party stakeholders, for example Adaptation Learning organised by CARE International in Nairobi, Kenya.

Other joint activities included a BRACED/ASSAR (Building Resilience and Adaptation to Climate Extremes and Disasters) webinar/experiential learning on climate change adaptation in which PRISE participated (2016), PRISE researchers presenting evidence from climate analysis and projections and how they engaged with decision-makers at an ASSAR workshop on influencing; and PRISE inviting ASSAR researchers to attend their national and regional workshops.

4.2.3 CARIAA-wide economics working group

At the CARIAA inception workshop in Nairobi in 2014, it was agreed that PRISE partner GRI-LSE would serve as the first rotating chair of the cross-consortia working group on economic considerations. The objective was to coordinate information sharing, joint capacity-building activities and comparative research, ultimately comparing the effectiveness of the different approaches to the economics component of the research. In the first year of CARIAA, the working group members concentrated on defining the roles and objectives of the group and sharing initial research plans on economics. They agreed to have conference calls approximately twice a year to coordinate on plans and activities and explore avenues for collaboration. A scoping paper was prepared early on that highlighted the initial points of convergence and differences, in terms of themes, methods and approaches used in the different consortia. However, as at the time the CARIAA consortia members were all in the process of identifying their research priorities for the coming years with the objective of reflecting existing research gaps and stakeholder needs, the group agreed to reconvene after going through this essential process to decide on the next steps.

In 2016, the first round of the CARIAA OSF was launched. The group agreed that this would be an opportunity to discuss further the initial synergies and differences identified while also convening the broad community of CARIAA early-career researchers involved in economics-related research, to learn from each other and from more senior colleagues – as well as practitioners in the field – and possibly begin work together. To support this, a capacity-building training workshop took place at TERI University in Delhi in January 2017. The

European Union Climate Adaptation and Services Community project provided co-funding which allowed the participation of an even greater number of people.

The objectives of this workshop were threefold:

1. Train junior researchers on state-of-the art methods in the economics of adaptation and development, and via hands-on discussions of successful examples of private sector initiatives;
2. Contribute to the development of the research agenda of the working group for the remaining time of CARIIA, to guide and inform research across consortia; and
3. Promote joint publications across consortia members.

The week-long workshop involved the participation of approximately 50 members from across the four consortia and ten external faculty members including four Delhi-based practitioners sharing their experience of adaptation and sustainability. Group discussions focused specifically on themes of mutual interest, including migration, cost-benefit analysis, economic modelling and more broadly on economic approaches for climate adaptation research. A small writing team was formed subsequently to prepare a synthesis of the work from CARIIA on economic approaches to climate adaptation research. The objective of the paper was to identify practical lessons learned from framing adaptation research in climate change hotspots through an economic lens. A paper is currently in preparation.

Overall, the economics working group managed to produce two significant outputs, reflecting the initial objectives set at the start of the programme: the Delhi workshop, which provided a platform for early-career researchers to meet and exchange ideas, present their work and learn from their peers; and the working paper, which presented the work done across the four consortia on the topic.

Despite no specific funding being allocated to the working group, it managed to achieve its objectives. GRI-LSE eventually led the group for the entire duration of the programme, which provided continuity both for the working group members and for the funders. The working group was made up of over 50 members, but having a core team led by a chair and a coordinator at GRI-LSE as well as a few members from other consortia proved to be essential to drive the process and make progress. It was important to have representatives from all consortia at all times to gain legitimacy for activities and decisions taken, and following the workshop held in Delhi, the balance of the group increasingly shifted to the 'south', with many members based in India driving the discussions. Finally, the continuing involvement and support of the International Development Research Centre (IDRC) contact person helped the group to stay connected with the priorities of the wider programme.

4.3 Global and regional engagements and influence

Global-level engagement became more prominent in the latter half of the project. Using evidence synthesised from project and country findings, PRISE targeted a range of flagship outputs at global-level stakeholders, events and policy processes. These have been divided into stakeholder categories with distinct dissemination approaches for each audience:

The international development community, targeting the Sustainable Development Goals (SDGs) and the leave no one behind Agenda (LNOB);

The international climate community, targeting UNFCCC processes, including implementation of the Paris Agreement, Nationally Determined Contributions (NDCs), and the Talanoa Dialogue; and

Global economic-development actors and processes, including the High-level Political Forum (HLPF) and the World Economic Forum (WEF).

PRISE's engagement aim is 'To increase recognition of the opportunities SALs offer to deliver climate-resilient economic development within the climate change policy/programme community and with economic development actors, governments and business.'

Global communications and engagement strategy, 2018

ODI and GRI-LSE led this global engagement programme, with ODI leading on climate-resilient economic development in SALs and GRI-LSE leading on private (autonomous) adaptation to climate change in SALs.

4.3.1 Examples of global and regional engagements

This section sets out highlights of the regional and international engagement activities in 2018. Annex v list additional events at global level for the period 2014–2017.

November 2018

High-level, closed-door roundtable: *Climate-resilient and equitable value chains: a roadmap for transforming dryland economies.* This roundtable, organised by ODI and held in London, brought decision- and policy-makers together with PRISE researchers to discuss opportunities to foster climate-resilient and pro-poor economic development in drylands through support to key value chains and enterprises. The objective of the roundtable was to convene a space in which stakeholders from among the private sector, donor community, government and PRISE partners could collaborate to develop the initial outline of a roadmap for national and international businesses, investors, public agencies and multilateral institutions to support productive, climate-resilient and pro-poor dryland value chains and businesses. The discussions at the roundtable were underpinned by PRISE evidence, particularly the consortium's work on value chains, and focused on pathways to improve the accessibility, sustainability and quality of advisory services for MSMEs to identify adaptation and investment options; to create enabling environments for MSMEs by reforming their institutional, policy, and infrastructural environments; and to mobilise and channel investment finance to MSMEs. Work on drafting a roadmap to be shared with the roundtable participants and additional stakeholders is ongoing.

October 2018

Workshop: *Adaptation futures in developing countries: UK perspectives on research, practice and collaboration.* GRI-LSE organised this event in London, which included thematic sessions on: private sector adaptation; governance and institutions for adaptation; climate information and infrastructure; and economic and financial environments. It was a targeted platform at which the consortium showcased insights from its research. PRISE Project 4 lead Florence Crick highlighted PRISE research evidence at a session on 'private sector adaptation', and PRISE principal investigator (PI) Eva Ludi participated in a panel discussion that followed the presentations, on 'priorities and challenges to achieve the "leave no one behind" agenda: Future directions for adaptation research', alongside Bruce Currie-Alder (IDRC), Rosalind West (DFID) and [Binny Prabhakar](#) (AfDB). Camilla Toulmin, former Director of the International Institute for Environment and Development, drew extensively on PRISE research during her keynote speech.

A joint ODI-LSE Panel **Pathways to and perspectives on private sector adaptation in developing countries: from domestic value chains to international trade** was organised

at a workshop convened by the International Trade Centre (ITC) and UNFCCC on ‘Fostering the engagement of the agri-food sector in resilience to climate change’ (29–31 October) in Geneva. The panel, chaired by the PRISE PI Eva Ludi, brought together researchers from Project 3 (Catherine Simonet) and Project 4 (Florence Crick) with researchers working on similar issues related to supporting value chain actors to adapt to climate change. The workshop allowed for interesting discussions with attendees on what is required in terms of policy support, financing and changed consumer behaviour to enable producers from marginal areas such as drylands to be integrated on beneficial terms into global agri-food value chains. Contacts made, especially with representatives from the ITC, will need to be followed up as there is a window of opportunity to more closely collaborate with ITC on mainstreaming climate change adaptation into their work on value chains.

Green Climate Fund meeting, Manama, Bahrain. Erin Roberts participated in the preparatory meetings and the 21st board meeting of the Green Climate Fund (GCF). She had several meetings with relevant stakeholders about funding future work and about collaborating or integrating the PRISE findings into their work. This included the United Nations Development Programme (UNDP) in Addis Ababa, the African Development Bank (AfDB), the Agence Française de Développement (AFD), the Southern African Development Bank and several representatives of the GCF secretariat. Several discussions were also held with national decision-makers, including those from the DRC, Egypt, Liberia, Mali, Senegal and Sudan – all of which are very keen to work with PRISE.

Standing Committee on Finance, Bonn, Germany. The primary outcome of the meeting for PRISE was a strengthening of relationships established earlier in the year with stakeholders like the GCF, the UNFCCC secretariats and the chair of the African Group of Negotiators. Numerous stakeholders showed an interest in working with PRISE, however none have access to funding. There is nonetheless an opportunity to partner with an entity accredited to the GCF, such as the AfDB, to develop a project and submit it through the Simplified Approval Process (SAP).

September 2018

Conference: *Climate change and resilience of territories: Lessons from West Africa.* IED Afrique organised a regional conference in Dakar that provided a multi-stakeholder platform to share knowledge, as well as evidence and policy recommendations on the interrelationships between climate change and resilient economic development from a territorial perspective. The conference was informed by evidence generated throughout the PRISE project and paid particular attention to the challenges and transformations underway in semi-arid zones. The objectives of the conference included reflecting on the evaluation of existing land use, governance and economic systems (at local, national, regional and international levels), with a view to determining their content, performance and comparative advantage, as well as their feasibility for scaling up and synthesising the evidence on ways and means for better territorial resilience; proposing synergies and multi-scale and multi-actor governance frameworks; identifying gaps in knowledge on the issue of resilience of economies for in-depth studies at the level of territories and marginal zones; and proposing programmatic instruments to support the resilience of territories, and contribute to the achievement of SDGs and national strategic visions to local, national and international decision-makers.

UNFCCC intersessional, Bangkok, Thailand. This event was specifically relevant for negotiations to the Paris Agreement and the finalisation of the work programme that will guide its implementation. Erin Roberts facilitated relevant discussions on adaptation communications as well as other discussions under the ad-hoc working group on the Paris Agreement, including the transparency and global stock-take discussions. PRISE evidence fed into a number of negotiations on finance as this is an important issue for low- and middle-income countries. On the margins of the negotiations, Erin had meetings with

national and global decision-makers, including the United Nations Environment Programme (UNEP) and UNDP, who are interested in further exploring synergies between PRISE and their work.

July 2018

High-level Political Forum (HLPF) on Sustainable Development, New York. Bara Gueye, PRISE Co-PI at IED Afrique, represented the consortium at this year's HLPF in New York as part of the consortium's support to the government of Senegal as it submitted its voluntary national review. The Senegalese Ministry of Environment and Sustainable Development and the Ministry of Economy and Finance will further explore the integrated and territorial perspective presented by PRISE, and the possibility of its mainstreaming. PRISE also partnered with the government of Senegal at a HLPF side event on 'leave no one behind' and participated in a second side event on transboundary cooperation on water governance. Both events were well attended by Senegalese officials as well as UN officials and other international organisations. The consortium also launched a policy briefing: 'Leaving no-one behind through enabling climate-resilient economic development in dryland regions' (Jobbins et al., 2018). Drawing on PRISE research, this targeted the global development community in line with PRISE's strategic vision to bring decision-makers in the global climate and development communities together to explore options to harmonise approaches, share experiences and support each other's policy recommendations.

Green Climate Fund, Songdo, South Korea. Discussions with the GCF secretariat and the AfDB were held about how PRISE could work with the GCF secretariat to integrate the findings of PRISE into its work, particularly on the development of National Adaptation Plans (NAPs). PRISE has continued discussions with the GCF secretariat ahead of GCF board meetings in Autumn, and have been invited to Abidjan to give a presentation on PRISE and its research. PRISE will consider exploring these opportunities in early 2019.

Forum of the Standing Committee on Finance (SCF), Songdo, South Korea. The annual forum of the SCF 2018 focused on climate finance infrastructure. Erin Roberts facilitated a session on national finance infrastructure. On the margins of the meeting, several discussions were had with country representatives, further discussions with the chair of the African Group of Negotiators, the African Union Commission (AUC) and the AfDB on potential future collaboration. The outcome was an offer from the African Group of Negotiators to collaborate on future initiatives.

June 2018

Adaptation Futures. Bringing together scientists, practitioners, business leaders and policymakers from around the world, [Adaptation Futures 2018](#) was an ideal platform to showcase PRISE evidence (see Box 15).

Box 15: Adaptation Futures 2018: PRISE contributions

AF2018 Session		PRISE speaker (institutional affiliation and Research Project number)
S60	Mapping the frontiers of adaptation research and practice	Panellists: Eva Ludi (ODI, PRISE PI), Elizabeth Carabine (ODI, P3)
S82	Hotspots 2.0: Innovation for climate resilient development	Speaker: Elizabeth Carabine (ODI, P3)
S160	Harnessing climate resilient economic transformation in semi-arid lands	Chair: Eva Ludi (ODI, PRISE PI)

		Speakers: Elizabeth Carabine (ODI, P3), Mohammed Said (KMT, P3/5), Waoundé Diop (Senegal, P3), Issiaka Sombié (University of Ouaga, P3), Catherine Simonet (ODI, P3)
S61	Private adaptation in semi-arid lands	Chair: Kate Gannon, Florence Crick (GRI-LSE, P4) Speakers: Florence Crick (GRI-LSE, P4), Kate Gannon (GRI-LSE, P4), Catherine Simonet (ODI, P3)
S195	Research for impact: Dynamic approaches, experiences and lessons on research uptake	Speakers: Nathalie Nathe (ODI, PRISE consortium manager), Lancelot Ehode (IED Afrique, Knowledge Management and Communication Officer and monitoring and evaluation focal point)
S56	Engaging small- and medium-sized enterprises in building resilience to climate change	Speaker: Samavia Batool (SDPI, P3)
6	Migration and displacement in climate hotspots: Adaptation or loss and damage	Speaker: Cheikh Wade (PRISE Coordinator in Senegal and Burkina Faso)
S200	Evidence-based guiding principles for developing adaptation pathways to inform adaptation policy and practice in Africa and Asia	Speaker: Cheikh Wade (IED Afrique, P2)
S64	What enables the adaptation of women in climate hotspots?	Speaker: Ayesha Qaisrani (SDPI, P1, PRISE gender focal point)
9	How do African SMEs respond to climate risks? Evidence from Kenya and Senegal	Speaker: Florence Crick (LSE-GRI, P4)
10	Role of land tenure in pastoralist climate change adaptation strategies and investment options	Speaker: Claire Bedelian (P5)
S326	Resourcing Adaptation	Speaker: Florence Crick (GRI-LSE, P4)
11	CARIAA Exhibition Stand	Showcasing PRISE outputs

May 2018

UNFCCC Climate Change Conference (May intersessional), Bonn, Germany. PRISE PI Eva Ludi participated as a panellist at the [SBI/SBSTA Technical Expert Meeting - Adaptation](#) of the adaptation committee in May 2018 at the [Bonn Climate Change Conference](#). The panel, organised by Samantha Harris, manager for climate change at the Business for Social Responsibility (BSR) focused on adaptation planning for vulnerable groups. The panel discussed aspects of why climate change disproportionately affects women and how this relates to adaptation, and how evidence arising from PRISE research can be used to develop sustainable solutions.

Talanoa Dialogue. PRISE PI Eva Ludi took part in the Talanoa Dialogue as part of the UNFCCC on 6 May, which brought together representatives from governments as well as non-state representatives. The Talanoa Dialogue discussed the questions 'Where are we?', 'Where do we want to go?' and 'How do we get there?' Eva Ludi, on a RINGO (Research and Independent Non-Governmental Organisations) ticket, was allocated to a Talanoa group

of 30 party and 5 non-party representatives trying to answer the question ‘Where do we want to go?’ through storytelling. PRISE evidence on enabling adaptation and climate-resilient economic development in drylands through targeted investment by both the private and public sectors and more robust institutional frameworks was well received and reflected in a summary of the proceedings. PRISE made three submissions to the Talanoa Dialogue, with the aim of enhancing understanding of the importance of supporting adaptation and climate-resilient economic development in drylands. ([Submission 1](#) on ‘Supporting adaptation to climate change among businesses and households in semi-arid lands’ submitted by GRI-LSE in May 2018, [submission 2](#) on ‘Unlocking climate resilient economic development in drylands: pathways to a resilient world’ by ODI in May 2018 and [submission 3](#), a revised and expanded version of submission 2 on ‘Unlocking climate resilient economic development in drylands: pathways to a resilient world’ by ODI in October 2018). Reference to SALs was made in [the summaries of submissions](#).

April 2018

Africa Regional Dialogue on Livestock Value Chain Transformation. Organised by Elizabeth Carabine and Catherine Simonet together with KMT, this workshop brought together a group of key policy- and decision-makers from Senegal, Kenya and Burkina Faso in Nairobi. Discussions focussed on the implications of the evidence from PRISE Project 3 (opportunities for economic transformation and diversification through value chain analysis) and Project 5 (access to and ownership of land and implications for reducing climate vulnerability). Also discussed was the need for governments, NGOs and the private sector to support viable pastoral and agro-pastoral livelihoods and climate adaptation in SALs through providing access to financial services, such as livestock insurance, credit and grants, establishing feed supply chains, providing access to climate services and early warning systems and holistic land management.

NAPs Expo, Sharm el-Sheikh, Egypt. The aim was to engage with decision-makers and those working on adaptation at a global and regional level. The participants were made aware of PRISE through distribution of key outputs, and bilateral discussions were held with the AfDB, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the UNFCCC, UNDP, Food and Agriculture Organization (FAO), as well as several countries, including Angola, Burundi, Central African Republic, Chad, Ethiopia, The Gambia, Ghana, Liberia, Malawi, Mali, Senegal, Sierra Leone, Sudan and South Sudan. Many indicated that they would be very happy to have further discussions about how PRISE could undertake work in their countries.

Standing Committee on Finance, Bonn, Germany. The chair of the African Group of Negotiators (AGN) under the UNFCCC expressed interest in PRISE and in future collaboration. The meeting was organised by the finance team at the UNFCCC secretariat, who also took an interest in PRISE, and was attended by global decision-makers such as representatives of UNDP and the African Union Commission (AUC). The secretariat of the GCF and the Global Environment Facility (GEF) were also represented. Erin Roberts, leading PRISE’s engagement with the climate community, was invited to participate in the forum of the SCF in July of 2018, and discussed collaboration with GIZ and representatives from Senegal.

March 2018

Executive Committee (ExCom) of the Warsaw International Mechanism, Bonn, Germany. The aim was to raise awareness of PRISE and engage with global processes to address loss and damage under the UNFCCC. As a result, PRISE was recognised as a partner of the ExCom and discussions were initiated on future collaborations including through the co-development of knowledge products. PRISE’s work on migration and displacement was also highlighted and, as a result, representatives of ODI were invited to

participate in a stakeholder meeting of the Task Force on Displacement. Relationships with South Africa and Sudan were also consolidated and a potential project to take the PRISE findings forward through a South–South collaboration project was discussed.

Adaptation Committee, Bonn, Germany. The aim of PRISE's participation was to increase awareness of PRISE's key findings and recommendations amongst the global adaptation community, and understand potential entry points for engaging in and influencing adaptation processes under the UNFCCC. The result is that ODI and PRISE are now considered partners in the work of the Adaptation Committee, as well as in the global work on adaptation and loss and damage under the UNFCCC. Potential partnerships were also established with Munich Climate Insurance Initiative, the Senegal climate change focal point and the national climate change committee in Senegal, in relation to the mapping of projects to understand gaps and needs on comprehensive risk management in the context of agriculture and livestock.

4.4 Monitoring outcomes and measuring influence

As mentioned previously, influencing stakeholders is not a one-off process that results in an immediate decision being taken. If it were, it would be a lot easier to measure success rates. Rather, measuring the influence of policy-oriented research can be tricky because of its high unpredictability, slow timelines, incremental and seemingly 'small' steps and interactions with actions by other actors also aiming to achieve policy change.

Regular reflection with research teams should be an essential element of stakeholder engagement. A quarterly reflection session helps identify targeted interventions, avoid mistakes and refine engagement tools'

SDPI Final OM report 2018

4.4.1 Outcome mapping system

Outcome mapping (OM) is an approach developed by the International Development Research Centre (IDRC) in 2008 for planning, monitoring and evaluating development programming. Based on this methodology, PRISE developed an outcome monitoring system⁷ to capture changes in stakeholders' perceptions, behaviour and actions around the research process, results and engagements, and how they may ultimately be leading to sustained changes in policy and practice. The aim of the system was to help projects make evidence-based improvements to their stakeholder engagement strategies and activities to maximise research uptake and impact. The system helped to signal these opportunities and understand how stakeholders were changing the way they perceived, inquired, communicated and used the research evidence to influence policy and practice.

In the first instance, indicators (progress markers) were developed to identify a variety of planned behaviours (actions and interactions), which were expected to demonstrate research uptake. Three types of progress markers were developed:

1. **'expect to see'** – progress markers that suggest basic or low-level changes in behaviour following initial engagement, such as stakeholders responding to invitations to attend PRISE meetings;

⁷ See section 4.4 and the paper on 'Outcome monitoring and learning in large multi-stakeholder research programmes' by Pasanen et al. (2018) for more information on the approach, how the system was developed and relevant lessons learned.

2. **'like to see'** – progress markers showing changes that demonstrate active engagement, such as policymakers requesting additional information from PRISE; and

3. **'love to see'** – progress markers that indicate transformative changes; boundary partners taking ownership of change themselves, such as making changes to policy or practice in response to PRISE findings.

This allowed PRISE to track and understand its engagement with stakeholders by looking for changes within the stakeholder groups from early positive responses to the research, to active/proactive engagement with the research results and subsequently to deep transformation in applying the research to policy and practice (Pasanen et al., 2018). It also allowed teams to identify and appreciate the depth and the nature of changes taking place, and to spot gaps or irregularities.

The 'expect to see' category tends to be associated with early project activities as stakeholders are new to the project and begin to respond to invitations to meetings, workshops or research proposal reviews. As stakeholders become more involved and are equipped with more information and capacities, they are the ones who begin requesting meetings, engaging in forward-planning policy change based on research outputs ('like to see' outcomes), and eventually designing policy ('love to see' outcomes). As such, Figure 23 represents the general movement of stakeholder involvement in the intended direction (from reactive to proactive). We want to see the bulk of 'expect to sees' at the beginning of the project and, as time goes on and activities shift towards engaging stakeholders more meaningfully with the research, we should see an increase in 'like to see' outcomes and potentially 'love to sees' (which commonly only become visible beyond the duration of the project).

The amount of progress markers does not necessarily correlate to specific project activities. They reflect responses of PRISE stakeholders to PRISE evidence and activities, and those responses are very specific and tangible – 'small steps' that stakeholders take to show that they are moving in the 'right' direction. The activities themselves could be quite numerous, but the amount of activities realised does not necessarily correlate to a progress marker being achieved (meaning that a change in action, reaction or relationship on the part of the stakeholders will happen or will be observed).

4.4.2 Outcome mapping results

At national level, the relative amount of 'expect to see' level observations decreased over time, and towards the end of the project there were more 'like to see' observations that reflected the increased and more active engagement of stakeholders with PRISE research. The number of 'love to see' changes considerably increased in the latter phase of the project, which indicates that PRISE research was used to take policy or investment actions such as developing new strategies. Figure 23 shows the changes according to progress markers across time across all countries. Figure 24 shows the total number of observations of change (progress markers across all three types) that each country reported, categorised by different types of stakeholder. This also thus demonstrates the concentration of the projects' respective engagement focuses in each country.

Figure 23: Numbers of progress markers across time

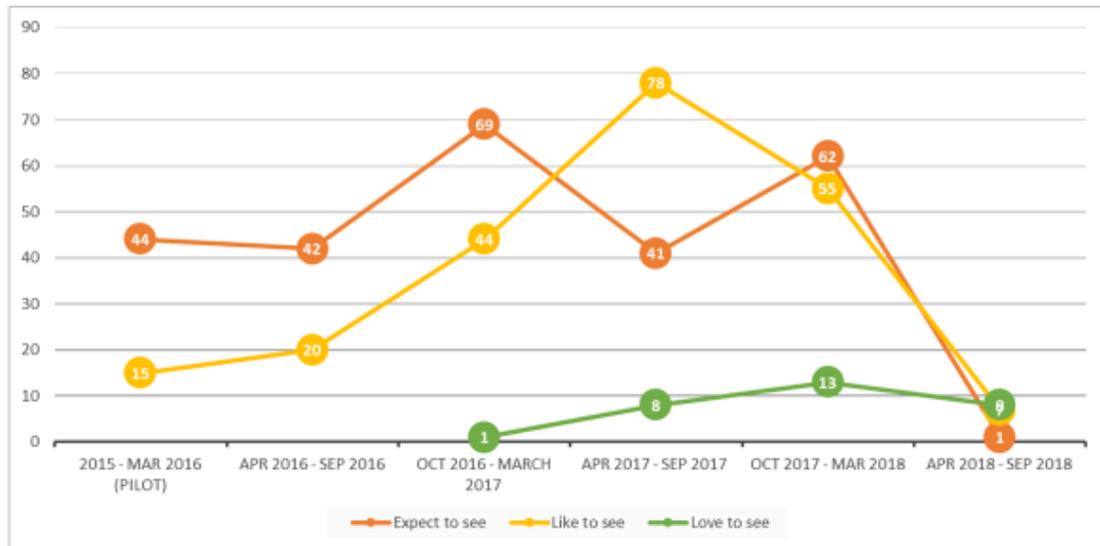
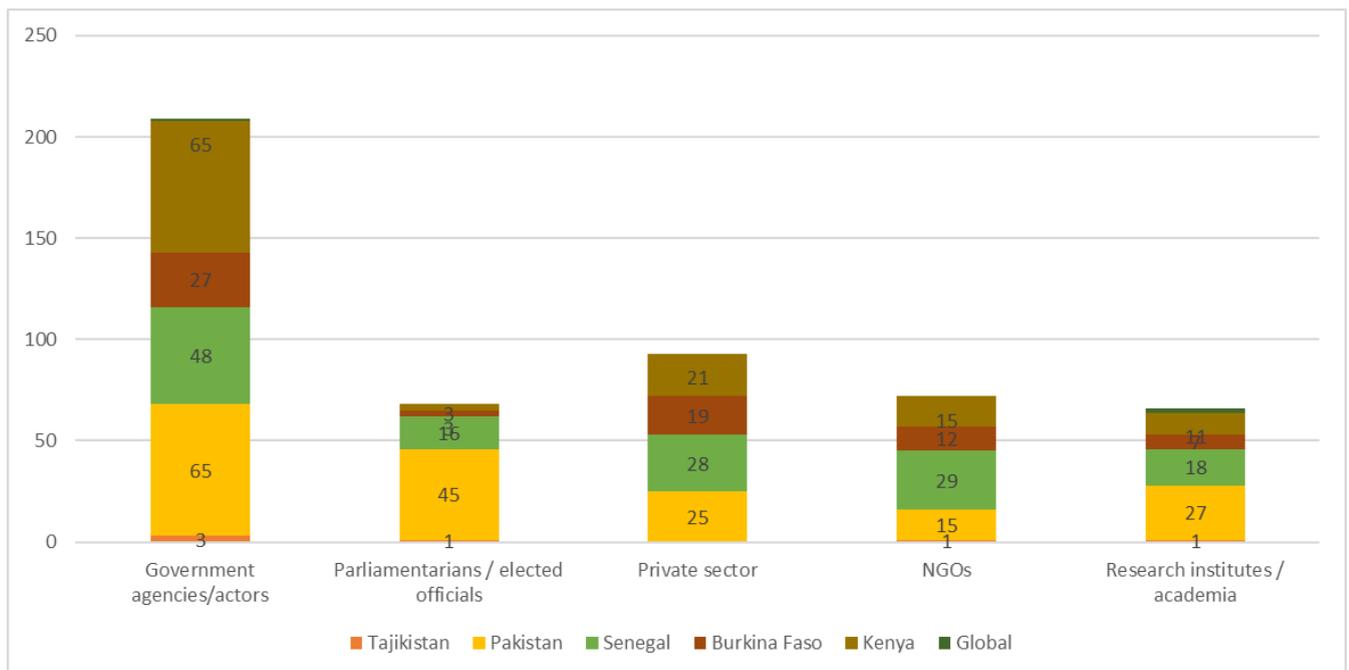


Figure 24: Numbers of progress markers by country and stakeholder



At a global level, engagement and changes observed in stakeholders have only recently been reflected in the outcome monitoring system. However, the description of engagement activities, as well as actions taken by global stakeholders, still shows progress towards acknowledging, showcasing and using PRISE’s work.

Following these global level engagements (see Section 4.3), PRISE partners recorded nine 'like to see' and one 'love to see' observation in the OM system. 'Like to see' examples include a number of PRISE publications that have been endorsed and/or published on various websites including on the [IOM migration-environment portal](#), [Prevention Web](#) and the UNESCO-led project [AfriAlliance](#). PRISE researchers have also been actively encouraged by the Adaptation Committee to participate in a meeting on '[Fostering](#)

[engagement of the agri-food sector in resilience to climate change](#)', organised by the International Trade Centre and the UNFCCC secretariat, because of its unique insights into how to strengthen resilience along value chains and among MSMEs.

Other 'like to see' examples have demonstrated the active engagement of global stakeholders in requesting PRISE inputs or support for high-level processes, outputs or events. For example, during a meeting of the board of the Green Climate Fund, the secretariat of the Green Climate Fund wanted to know more about PRISE. This led to a discussion about how the secretariat could support countries in implementing some of the good practices and lessons learned published by PRISE.

One of the 'love to see' indicators – of global stakeholders approaching PRISE partners to build on/replicate PRISE research and jointly searching for funds – was recorded when the Munich Climate Insurance Initiative approached PRISE colleagues at ODI in February 2018 to discuss the potential for developing a project to build on the PRISE findings and enhance comprehensive risk management. The project is being developed as a South–South collaboration between South Africa, Senegal and Sudan.

The outcome mapping system is a tool for developing 'Stories of Change' (SoCs) as examples of influence and impact that help with sharing learnings and best practices. They illustrate some of these exciting journeys towards significant change and more involved stakeholder engagement and research uptake that have evolved over the course of PRISE. As these engagements are continually tracked and reflected in the OM system, the resulting data (and monitoring and reflection process) help teams to improve their research-into-use (RiU) strategies and identify these as examples of how research can change policy and practice.

4.5 Communicating PRISE evidence

The consortium's strong ability to achieve research and policy impact, as well as outreach, can be demonstrated by its digital presence – with the [PRISE Twitter feed](#) having 1,805 followers at the time of writing. The project has also published 72 outputs on its [website](#), including policy briefs, working papers, synthesis reports, flagship reports and journal articles, in addition to producing and disseminating research in innovative, high impact ways, including the production of films or infographics.

The semi-arid land myth-buster leaflet '[Challenging the myths around semi-arid lands](#)' countered five common myths about drylands with PRISE evidence. This short, but impactful, communication was produced for and disseminated at UNFCCC COP23 with the specific objective of raising the global profile, challenges and opportunities of semi-arid regions among the international climate community. Feedback provided by PRISE researchers who attended COP23 highlighted the positive reception the flyer had as a succinct, targeted output designed to dispel misconceptions about semi-arid lands and to inform stakeholders of the exciting potential these regions hold for equitable, climate-resilient economic development. The output continues to be a tool that PRISE researchers use when participating in conferences and events. An example of the positive feedback PRISE received about the myth-buster includes:

'I loved the PRISE leaflet. We have been trying to think of ways to communicate our research findings in few words and with visual aids – in this region the visual and the tangible play a big role. We have tried out infographics, but this leaflet is great as it is an infographic in a compact, easily transportable format.'

At the time of writing, PRISE outputs have been downloaded 56,082 times since the start of the project from the PRISE consortium website (www.prise.odi.org) alone, and this does not include downloads of PRISE research from partner websites. The consortium's ability to engage with, and impact, a diverse range of stakeholders at the national, regional and global level is illustrated by its responsive approach to engagement and impact with a range of stakeholders including government, the private sector, academia and the media. A summary of media coverage of PRISE research includes articles in the [Express Tribune](#) in Pakistan, the [Overseas Development Institute](#) website, the website of the South Asia Centre at the [London School of Economics and Political Science](#), the [Pan-African Media Alliance for Climate Change](#), the [Daily Nation](#) in Kenya, and the [Thomson Reuters Foundation](#), and [Climate Analytics](#). PRISE evidence and engagement with regional stakeholders including the Pan African Parliament has also been given coverage by the [United Nations Commission for Africa](#) (see Annex ii).

4.6 PRISE spin-offs and demand for research and implementation support

There has been an overwhelmingly positive response of policy and research audiences to PRISE findings, and as a result a number of spin-off projects and partnerships have come into being. Multinational private sector actors and multilateral organisations such as the World Bank have picked up PRISE messages, and this has enabled PRISE to extend its reach beyond the originally selected countries. Within the target regions (East Africa, West Africa and South / Central Asia), other countries and donors have expressed interest in replicating aspects of the PRISE approach and funding additional projects that built on PRISE research.

For example, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) funded a project using the VC-ARID methodology to identify economic opportunities for entrepreneurs and companies to invest in climate change adaptation to enhance the resilience of the livestock value chain in Karamoja, Uganda.

A second example is the partnership between Senegal's PNDL (Programme National de Développement Local), the International Organization for Migration (IOM) and other institutions to mainstream cross-cutting issues, such as climate change and migration, into the national local-development guide. The uptake and mainstreaming of climate and migration recommendations was a result of PRISE's engagement, via the PRISE partner IED Afrique, with PNDL and IOM through the latter's participation in PRISE's stakeholder engagement activities. As a result, there was demand from key stakeholders to pilot action research to showcase how a territorial/geographical approach can be more effective in mainstreaming climate change adaptation and the leaving no one behind agenda towards achieving the SDGs. PRISE was subsequently pivotal in advising and supporting piloting of the guide in several communes across Senegal. Additional support will be needed to carry out the training of representatives of communes and support the development of new local development plans.

Furthermore, IED Afrique, through PRISE, signed a memorandum of understanding (MoU) with [AMMA2050](#) to provide support in documenting and sharing knowledge from research, building on IED Afrique/PRISE's capacity for this, as evidenced by the extant set of edited publications (briefs and reports) as well as its stakeholder engagement.

A fourth example is the Regional Policy Dialogue Towards Livestock Value Chain Research and Transformation in the Sahel and Horn of Africa. This was a separate ODI project that received additional funding from IDRC, and was established to meet the demand that has

emerged from the PRISE programme work in the Sahel and Horn of Africa for a cross-regional dialogue around livestock value chains and how these can contribute to climate-resilient economic transformation. It builds on the VC-ARID methodology and the strong partnerships developed in the regions to start a process of knowledge sharing and dialogue to collate evidence and shift the paradigm around livestock systems in sub-Saharan Africa. The regional dialogue provided the platform for partners to discuss experiences in East and West Africa of building resilience in livestock systems. Furthermore, it facilitated an exchange by regional and international stakeholders on how best to contribute to policy processes including the SDGs and the African Union Livestock Development Strategy for Africa (LiDeSA) 2015–2035, as well as supporting regional policy processes by contributing to the implementation of the AU LiDeSA. The stakeholder dialogue contributed to the Inter-Governmental Authority on Development (IGAD) Drought Disaster Resilience and Sustainability Initiative (IDDRSI), with a particular focus on supporting the pastoral economy. This was achieved through direct engagement with governmental implementing agencies at local, national and regional levels. Secondly, support was provided to the implementation of the Nouakchott Declaration on Pastoralism that was adopted in 2013. This was achieved through support to the Regional Sahel Pastoralism Support Project, implemented by the Permanent Interstate Committee for Drought Control in the Sahel.

In Kenya, through engagement of officials in Laikipia county who had an interest in developing forage banks, the KMT/PRISE livestock team were invited to work with them to ensure the successful start and implementation of an upcoming DFID-funded AMAYA Triangle Initiative, which includes forage development, livestock traceability and livestock fattening and marketing. The Amaya Triangle brings the counties of Laikipia, Isiolo, Samburu, West Pokot and Baringo under a new initiative that aims to introduce commercial livestock farming that uses modern technology, such as feedlots (yards for animal feeding operations prior to slaughter) and disease-free compartments for livestock. KMT/PRISE is now leading the implementation of specific components of the project, including livestock traceability.

The PRISE Project 3 lead, Elizabeth Carabine, and co-lead, Catherine Simonet, organised two regional interactive workshops to share insights and lessons from across the livestock value chain analyses in PRISE and discuss these with experts in each of the regions (East Africa and West Africa), followed by two days of smaller workshops targeted to specific issues, building on the PRISE-level stakeholder engagement taking place in Kenya and Senegal around all PRISE research themes. To support this, Elizabeth Carabine and Catherine Simonet developed and ran modules to train stakeholders on the use of the VC-arid methodology. They also organised a final event, bringing together different economic actors, including producers, transformers, traders, policymakers and donors in value chains, from East and West Africa, during the [D & C Days 2018](#) in Katowice in December 2018. Their workshop was titled ‘How to support transformation and raise climate ambition through regional and sectoral exchanges?’ and focused on discussing the barriers and opportunities these actors face in adapting to climate change and how exchanging insights across regions can contribute to finding innovative solutions.

There were a number of other examples of demand for PRISE research and support. For example, the PRISE Kenya partner, KMT held four county workshops in the first quarter of 2018 and the research findings presented have gained considerable traction. New stakeholder relationships emerged as a result, as KMT were approached by a private sector firm to provide design support and technical advice on investing in building new abattoir facilities as part of their Corporate Social Responsibility (CSR) strategy.

An initial engagement with the UNFCCC Adaptation Committee in March 2018 led to a series of further engagements, including the PRISE principal investigator being invited to a panel at the SBI/SBSTA Technical Expert Meeting – Adaptation in May 2018 during the May Intersessional of the UNFCCC Climate Conference in Bonn. In addition, several PRISE members from ODI and LSE were approached during the Adaptation Futures Conference /

CARIAA Annual Learning Event in Cape Town in June 2018 by Kulthoum Omari, member of the Botswana COP delegation involved in the UNFCCC Adaptation Committee, who wanted to explore future collaboration. Overall, there is significant interest among members of the Adaptation Committee and the adaptation team of the UNFCCC secretariat in PRISE's work. An invitation to collaborate in the future was extended and contacts are being maintained to deepen relationships.

Furthermore, following publications about the PRISE outcome mapping system as a tool to monitor changes in policy and practice brought about through research, the PRISE consortium manager, Nathalie Nathe, was invited to participate in a high-level roundtable on 'Monitoring research uptake and policy influence' in London. She shared PRISE's approach to achieving impact through research and engaging stakeholders, and the tools for monitoring actual versus intended outcomes. This was a fruitful discussion and a strong networking opportunity. Nathalie has since been asked to share the recent PRISE paper on 'Outcome monitoring and learning in large multi-stakeholder research programmes' with the roundtable participants and their wider M&E practitioner network (Pasanen et al., 2018).

5 How it was done: Design, methodology, systems and processes

5.1 Set up of the consortium structure

Even before PRISE started, potential consortium partners met to agree on objectives, approach, partner and country selection, and to co-develop the proposal. This project preparation phase also included country visits to assess stakeholder demand for research that guided the proposal formulation. The PRISE consortium was initially established by five core partner organisations⁸ who worked in collaboration with country partners.⁹

Contractual arrangement: The International Development Research Centre (IDRC) directly contracted each of the core consortium partners, while PRISE consortium partners in turn subcontracted country partners. This arrangement was the result of contractual requirements set out by IDRC allowing a maximum of five core partners. Sub-contracting country partners enabled the consortium to expand its reach geographically and to bring on board relevant country partners with strong connections to in-country and regional decision-makers. The contractual model was not a typical consortium model, as there was no 'head contract' and, instead, the chain of accountability sat between individual institutions and the donor (IDRC). In response, PRISE developed a Memorandum of Understanding (MoU), signed by all consortium partners, to ensure cooperation, research partnership and accountability and agree common principles in relation to the implementation of PRISE.

Partnership selection: Partners within the PRISE consortium were identified based on a range of factors and each organisation brought varying competencies and skillsets to the group. This included: expertise in policy-relevant research on climate change and semi-arid regions; relationships and networks with national-, regional- and global-level stakeholders; and extensive experience in large-scale, multi-country, multi-partner research programmes. While the consortium partnership was new, many of the organisations had worked together previously on other research programmes. The incentives for consortium partners to operate in a consortium model varied. For example, in-country partners provided a platform and network to access national policymakers, private decision-makers, and other stakeholders, as well as a wealth of country-specific expertise and knowledge. UK-based partners (research institutes) offered capacities in academic excellence and international scope, as well as expertise in acting as consortium leads and managing large multi-country, multi-partner research programmes.

Governance: The PRISE consortium was governed by a steering committee made up of a representative of each core consortium partner, namely a Co-Principal Investigator (Co-PI), and chaired by the Principal Investigator (PI), with support from the Consortium Manager (CM). Other governance mechanisms included: the Consortium Coordination Unit (CCU), which was based at ODI and consisted of the PI, the Consortium Manager and the Communications Manager; the PRISE MoU, and the Memorandum of Grant Conditions (MGC) held directly with IDRC. These arrangements allowed PRISE to establish working practices that ensured project objectives and activities were achieved in a mutually beneficial and supportive way.

A series of consortium strategies were also agreed, on how to monitor and evaluate impact, engage with stakeholders, communicate internally and externally, manage risk and ensure

⁸ Overseas Development Institute (ODI, UK, lead), Innovations Environnement Développement (IED Afrique, Senegal), the Sustainable Development Policy Institute (SPDI, Pakistan), the Centre for Climate Change Studies at the University of Dar es Salaam (CCCS, Tanzania) and the Grantham Research Institute on Climate Change and the Environment, at the London School of Economics and Political Science (GRI-LSE, UK).

⁹ The Regional Environmental Centre for Central Asia (CAREC, Tajikistan); INTASAVE and Consultant Prof Njoka, (Kenya, until 2015); Kenya Markets Trust (KMT, Kenya, since 2015); University of Ouagadougou (UoO, Burkina Faso); and the University of Central Asia (UCA, Kyrgyzstan, since 2016).

quality throughout each stage of the project cycle. Additional strategies on capacity building and forging knowledge and influencing partnerships were also developed, along with approaches for how PRISE members could engage, support and learn from other consortia supported by the CARIIA programme.

The PRISE end-of-programme consortium survey found that face-to-face meetings was ranked as the most useful management function, followed by PRISE sub-group meetings (such as M&E and comms/KM) and communication from the CCU such as the bi-monthly internal newsletters

PRISE end-of-programme survey, 2018

Management: PRISE had various formal and informal management functions. At the consortium level, the CCU would coordinate and manage annual PRISE face-to-face meetings; monthly steering committee meetings; bi-monthly project reporting and newsletters; and PRISE sub-group meetings for communications, knowledge management and M&E. At the country level, Co-PIs managed teams and their country partners, as well as the continuous engagement with stakeholders. Co-PIs were also tasked with additional responsibilities, for example the Co-PI at ODI (Guy Jobbins, later Elizabeth Carabine) led on the Small Grants Programme, while the Co-PI at GRI-LSE led the CARIIA economics working group.

At the project level, PRISE consortium partners each led one or more of the seven research projects that were developed following the inception phase. A description of responsibilities for all roles across PRISE was agreed from the outset. While this project set-up did create coordination and connectivity challenges, especially with projects that worked with several consortium partners but were accountable only to one, there was real value in this set-up as it allowed for comparison, with comparable data sets between countries, and for addressing research questions at various scales. It also increased learning and capacity-building opportunities for researchers across the regions.

Additional systems were put in place (e.g. the bi-monthly progress reporting) to ease the sharing of information and give the Co-PIs and the CCU necessary information on what was happening in their regions and in projects that they did not lead, enabling them to provide the necessary support to and have oversight of the full range of research projects.

5.2 Research and consortium development: Year-by-year overview

PRISE inception phase (February 2014 – March 2015): PRISE's inception phase aimed to summarise the current situation in-country, develop relationships between consortium partners and prepare the ground for the research phase by engaging with stakeholders, becoming familiar with datasets and identifying knowledge gaps. This foundational year instilled the principles of co-design, a comparative framework between semi-arid regions, cross-regional and cross-organisation partnerships and a development- and economy-first perspective.

The initial country scoping was undertaken to look at: a) the nature of development in different geographic areas, including their growth models and how climate change is anticipated to impact these; b) a description of research demand, from whom, the likely beneficiaries and users of the research, and the likely/desired impact; and c) institutional consortium capacity to deliver and the interests of the different consortium partners.

Through the country situation assessments (Box 16), thematic reviews and deep dive

studies, coupled with an iterative discussion and co-design process with stakeholders, PRISE developed a number of key research projects that guided the consortium's research through years 2 – 4 of the project. See I for bibliographic information.

Box 16: PRISE Country Situation Assessment (CSA)

During the inception phase, PRISE carried out CSAs in each of the PRISE countries to summarise the current situation in terms of economic growth, social development objectives, climate vulnerability and adaptation to climate change.

The CSAs were structured into three categories:

- *The development context*: A review of key development plans (e.g. its poverty-reduction strategy; short- and long-term policies/plans) and the role of SALs in these plans. This was complemented by a summary of the socio-economic context, both external (e.g. regional trade links, technological progress) and internal (e.g. demographics or urbanisation).
- *Current and future climate risks*: This section detailed how development plans affect and are affected by climate risks. Only high-level climate information was included from existing tools. However, this was complemented by CARIAA-wide climate information as it became available over the course of the project. This data was overlaid on development objectives to identify climate-related risks.
- *Implications for adaptation*: Identification of existing adaptation practices and knowledge (including community-based knowledge, where that information was available). This was followed by the identification of adaptation strategies that may be policy priorities and were therefore worthy of further analysis and stakeholder discussion during the PRISE implementation phase.

Pakistan: Climate change is one of the most challenging crises in this low-middle-income country, where most of the population is dependent on climate-sensitive economic sectors or livelihoods. Mean temperatures are projected to increase by 3.8°C by 2100, along with an increase in precipitation, heat waves, dry spells and heavy rainfall events. Climate change will in particular impact Pakistan's water resources and agricultural sector, as well as increasing human health risks. There is a disconnect between development policy and planning, and no development strategy caters to the development needs of semi-arid and arid lands, which constitute 60 per cent of Pakistan. Although current development and adaptation frameworks identify 'climate proofing' as a vital component, they lack concrete action plans.

Tajikistan: Although living standards have improved in Tajikistan over recent years, poverty remains a widespread phenomenon. Development decisions are informed by the National Development Strategy (NDS) for 2010–2015, with its main objectives being to achieve sustainable economic growth, improve access to basic social services and poverty reduction. Tajikistan's economy is heavily reliant on remittances (funds sent by overseas migrants to recipients in their country of origin). The coping capacities of the country and its people to adapt to climate change are extremely low.

Senegal: Senegal, like other Sub-Saharan African countries, is among the most vulnerable to the effects of global warming, due to the sensitivity of its economy to climatic factors. Increasing climate variability and extreme events have exacerbated poverty. Many sectors are now subject to risks to natural and human capital. The CSA identified the importance of the role that different forms of capital (human, natural, financial, social) play in supporting resilience in key value chains, and highlighted that the quality of governance, alongside financial resources, infrastructure and technologies, will contribute significantly to resilience.

Burkina Faso: The state, and the different stakeholders, have initiated responses towards building the resilience of the economy and communities to climate change impacts, which contribute significantly to an increase in food insecurity and poverty in Burkina Faso. The Burkina Faso CSA recognised organisational shortcomings at an institutional level, which have the potential to impact successful resilience building. It also highlighted the need for improvements in economic governance, including good economic and financial management of public affairs.

Kenya: Arid and semi-arid lands (ASAL) make up 88 per cent of Kenya across 23 counties. Semi-arid counties are mostly agro-pastoral, with integrated crop/livestock production systems. ASAL have low rates of human development (high poverty, low literacy), low population density, but a high growth rate, and poor infrastructure. However, they are also endowed with a variety of natural resources, key among them wildlife biodiversity, forests, wetlands, various minerals and diverse cultural characteristics. Changes in rainfall and temperature patterns have been observed over the past 50 years. Although rainfall is highly variable, wet extremes have been observed every 10 years, and this is expected to increase in the future. In ASALs, actual observed temperature trends indicate significant 'warming'.

Tanzania: Tanzania has seen a slight decrease in rainfall over the period 1997–2000 and a significant positive temperature trend in both maximum and minimum temperatures. ASALs in Tanzania are endowed with various development opportunities, including sustainable pastoralism and community-based wildlife resource management. Interventions towards building resilience need to consider the challenges and opportunities for various sectors, including agriculture, livestock, water, energy, wildlife, forestry and mining.

Box 17: Inception phase outputs

- Country Situation Assessments (Senegal, Burkina Faso, Tanzania, Kenya, Pakistan, Tajikistan)
- Thematic reviews (Institutions, governance and finance, markets and private sector, natural capital., human capital)
- Stakeholder engagement reports (Senegal, Burkina Faso, Tanzania, Kenya, Pakistan, Tajikistan)
- Deep dive topics

PRISE Year 2 (April 2015 – March 2016): PRISE's commitment to co-designing research plans with stakeholders led to the research focus changing throughout the first 18 months as PRISE filtered ideas through lenses of supply and demand. Intensive stakeholder engagements in all PRISE countries and two extensive consortium-wide discussions in Dakar and Istanbul led to seven research projects emerging as priority topics for the period from July 2015 to March 2018. The research activities and work plans were developed collaboratively through extensive deliberation and coordination among partners. This collegial process developed a good basis of trust and shared understanding of the tasks involved, and helped to build on previous collaborations and working relationships between consortium partners. All PRISE partners led on one or more of the seven research projects, and research team included contributors drawn from PRISE consortium members, country partners and sub-contractors. The set-up of the research projects created shared accountability for delivery – each partner was responsible for leading a project, and contributing staff, time and resources to multiple others.

'Focusing on six key project countries with eight partner institutions creates a complex institutional and contractual arrangement, with high management, coordination and transaction costs that were not accounted for. Despite this, there was a strong willingness and genuine interest of all project leads and teams to work across countries and cultures, highlighting that this model can offer new insights, hotspots thinking and can support researchers to develop new networks in areas that are unfamiliar and encourages learning beyond individual country/thematic focus'

PRISE end-of-programme survey, 2018

Year 2 saw research teams developing their conceptual frameworks, research methodologies and methods (including survey tools), selecting field sites, conducting literature review, making preliminary field visits, pilot-testing questionnaires and engaging and mapping stakeholder groups specific to their areas of study.

PRISE Year 3 – 4 (April 2016 – March 2018): The focus during years 3 and 4 was on research implementation. Research teams undertook extensive field work – including surveys, key informant interviews and focus group discussions, and qualitative and quantitative data analysis. Teams closely engaged diverse stakeholder groups throughout the research and numerous stakeholder meetings were conducted to seek feedback and validate initial research findings. Towards the end of year 4 there was a shift in focus towards publishing working papers, journal articles and other research outputs. This was coupled with extensive engagement activities at local, national and global levels.

PRISE Year 5 (April 2018 – November 2018): Synthesis of research findings in the final year of PRISE was completed at multiple levels: at the project level, bringing together insights from case studies across several countries and drawing out lessons for policy and practice; at the country level, targeting specific policies and actions and bringing together insights across several projects and their interrelations at the country level; and global (high-level) synthesis which cuts across all PRISE research. Topics such as mobility, household and private-sector adaptation to climate change in SALs, policy-first approach and the building blocks of resilient and equitable economic development were addressed.

5.3 PRISE's approach to stakeholder engagement and tracking

Stakeholders were critical to PRISE's theory of change, both as people with influence over policy and investments, and also as clients for research and articulators of demand. PRISE established a comprehensive stakeholder engagement strategy and initial Stakeholder Engagement Platforms (SEPs) were set up in each of the core PRISE countries during the inception phase. The stakeholder engagement workshops brought stakeholders and researchers together to analyse early results, help select case studies, pilot projects and study sites. The SEPs were regularly engaged throughout the PRISE research process.

The approach: PRISE's stakeholder engagement activities were informed by two approaches – a direct one through developing close relationships with stakeholders, and an indirect one targeted at changing the narrative around semi-arid regions through high quality research (see Section 2.1.3).

Monitoring PRISE's engagement: After stakeholder mapping and the selection of key stakeholders ('boundary partners' in OM terms) in year 1, partners developed outcome challenges to specify the ultimate desired change they would like to see in boundary partner actions and interactions. The first three stakeholder groups identified were

parliamentarians/elected officials, government agencies and the private sector. Later two more were added: academia/research institutes, and NGOs.

Progress markers were developed to identify a variety of planned behaviours – actions and interactions – to influence research uptake in the form of ‘expect’, ‘like’ and ‘love’ to see observations (see section 4.4 for more information). Six-monthly analysis of project- and country-level data also ensured that observations were discussed and examined, and that stakeholder engagement strategies could be adapted based on the observations. A simple, online Google-based form and database were set up to support internal knowledge sharing. Researchers and M&E focal points recorded their progress marker observations, which were then regularly analysed and interpreted by the M&E focal points as well as the research teams. Figure 25 illustrates the development of the outcome monitoring system.

Figure 25: Development of the PRISE outcome monitoring system



Source: Pasanen et al. 2018

5.4 Capacity Building

During the inception phase, the CCU formulated the consortium's capacity building strategy. Its general objective was to improve the ability of individuals, project teams and organisations to undertake and disseminate high-quality research efficiently and effectively and to influence policy- and decision-makers to ensure that the economies of semi-arid lands are growing, are resilient to climate variability and change and the benefits of these are shared equitably among all communities. Capacity-building goals were set out in the consortium log frame, which included specific indicators for building internal and external capacity:

- **Internal capacity:** Capacity-building activities included learning on the job, peer support and tailored support to PRISE stakeholders. The output indicators were:
 - ✓ *number of PRISE stakeholders participating in capacity-building activities (disaggregated by gender), and*
 - ✓ *number of those participants rating those experiences as useful.*
- **External capacity:** PRISE partner organisations increased external capacity to undertake high-quality research and use it to influence/inform stakeholders. The output indicators were:
 - ✓ *number of grants awarded to PRISE members for research programmes related to PRISE research themes;*
 - ✓ *number of research outputs published (as leading author) by junior researchers (PhD and post-doc); and*
 - ✓ *number of new research partnerships focused on research related to PRISE goals and objectives.*

5.4.1 Internal capacity

At the internal level, capacity development was concentrated on increasing collaborative and transdisciplinary working, setting high quality standards and supporting researchers to reach these standards. The overarching goal was to support the emergence of a new cadre of policy-oriented researchers working on climate resilient development and engaged with key southern institutions.

Building the institutional capacity of member and collaborating institutions was also important in order to a) increase the understanding and commitment of business leaders and national and local government decision-makers to climate-resilient development in semi-arid regions and b) ensure that PRISE stakeholders identified climate change-related threats and opportunities and managed risk effectively.

The different dimensions of the internal capacity-building endeavours are each summarised below.

Training and intake of research students: PRISE member organisations and country research partners engaged young research students to work with PRISE researchers. For example, in the inception phase, GRI-LSE engaged five young research students from across the institute to work with the team. These students were from different disciplinary backgrounds and most were new to climate-resilience work. The consortium supported Kashif Salik (SDPI, Lead Project 1), to embark on a PhD at the University of Southampton, UK, in 2016, and in 2018 Ayesha Qaisrani (SDPI), started an MSc in migration studies at the University of Oxford, UK. Three MPhil students were supported to work on migration and water issues in the context of climate change at the University of Agriculture Faisalabad, Pakistan, and three Master's degree scholarships were awarded in Senegal. PRISE provided a PhD scholarship each to Chantal Karambiri from Burkina Faso and to Mame Aissatou Touré from Senegal, who both successfully defended their theses.

Mentoring of project leaders: PRISE aimed to develop the capacity of project leads through support structures (such as co-PI mentorships, through which project leads could draw on the support of the co-PI as and when needed), collaborative working mechanisms, setting high quality standards and supporting researchers to reach these standards.

Methodological capacity-building: Through GRI-LSE, PRISE organised a methodology training workshop during the inception phase to discuss issues and experiences with the research teams across areas they would like to focus on (i.e. methodologies, research frameworks, scenarios etc.). The session included training on scenarios and climate science and supported the development of PRISE research projects.

Quality assurance: Capacity development was also built in to the quality assurance process, including the mechanism for quality control, exchange of methodological tools, internal peer-review of research papers and products and collaboration of researchers across PRISE projects. The Consortium Coordination Unit (CCU) encouraged peer reviewers to engage constructively with researchers, while communications officers in the consortium often provided specific guidance to researchers on how to improve outputs stylistically, structurally or in terms of policy messaging.

Building communications capacity: PRISE held various capacity-building workshops, both internally with CARIIA colleagues and with stakeholders, to build their communications and knowledge management skills. These included the hosting of blog-writing training workshops for PRISE researchers in 2015; an all-CARIIA online training webinar on writing for the web in 2016; the delivery of workshops and presentations on creating Stories of Change (see Annex iii) through identifying and collating evidence from the consortium's outcome mapping system in 2016; and delivery of the same workshop to in-country PRISE teams at the annual consortium meeting in July 2017. Additionally, the PRISE team in Kenya, with the support of the CCU communications officer, held a journalism training event in early 2017 in Nairobi. This aimed to develop journalists' awareness of the importance of PRISE Project 3 research on economic transformation and diversification of value chains in Kenya's livestock sector, and of PRISE Project 5 work with pastoralists and wildlife conservancies in Kenya on the role of access to, and ownership of, land in reducing climate vulnerability and enhancing climate-resilient economic development. The training event led to increased awareness of PRISE objectives and coverage of the consortium's work in the Kenyan media.

Supporting PRISE researchers to develop research, presentation and engagement skills: PRISE also supported researchers to build their engagement and impact skills by funding their attendance at national, regional and global events, including scientific conferences, at which they could target and disseminate research evidence. Summaries of this engagement can be found on the PRISE consortium website's ['News'](#) section.

The consortium also supported researchers to develop their capacity on thematic areas including gender, by participating in a CARIIA OSF Gender Workshop as part of the project titled: 'Meta-Synthesis of Gender, Social Differentiation and Inclusion in Adaptation Research and Action - A cross consortia activity of Gender and Equity Subgroup of CARIIA' in early 2018.

In addition, as part of SDPI's Summer Internship Programme, two interns (one male and one female) were taken on board for PRISE research. Hands-on training was provided related to event management, stakeholder relationship building and research writing.

M&E capacity-building workshops: ODI hosted a monitoring and evaluation (M&E) capacity-building workshop in November 2014. All M&E focal points from PRISE-consortium partner-institutions attended a three-day training session where the PRISE M&E manager and PRISE M&E officer supported the focal points to finalise the M&E strategy, develop member-level M&E plans and plan the development of specific M&E tools, including the introduction of outcome mapping for planning and monitoring stakeholder engagement, and the establishment of the PRISE M&E working group.

As part of the consortium's policy to support colleagues in delivering and implementing M&E activities, in-country M&E focal points supported researchers to develop their M&E skills throughout the duration of the project, through training sessions on the use of the PRISE OM system. The consortium also held M&E training workshops at each of its annual meetings, with the support of the PRISE M&E consultant, and funded a number of consortium members to attend an outcome mapping training course in Belgium in 2016. This process was an integral part of the consortium's commitment to developing, implementing, tracking, evaluating and sharing best practice about research-into-use (RiU) and impact (further details in Section 6.1.3).

PRISE Small Grants Programme: The PRISE Small Grants Programme (SGP) was launched in June 2014 through Twitter, Facebook and other online communications channels of ODI and PRISE consortium partners. The programme had a special focus on supporting early-career researchers in low- and middle-income countries or associated with low- and middle-income-country research institutions. PRISE studies by SGP researchers specialised either in semi-arid lands globally, or semi-arid regions in one or more of the PRISE countries. PRISE supported researchers from Africa and Asia to publish ten SGP working papers, policy briefs, reports and journal articles (see Annex i).

5.4.2 External capacity

Building stakeholder capacity: The consortium undertook extensive capacity building of its stakeholders throughout the lifecycle of the project. Stakeholder mapping helped to create and implement targeted, in-country stakeholder-engagement strategies and served as a useful tool to identify the knowledge, training and capacity-building needs of stakeholders at the national level.

- After a series of PRISE-led meetings between IED Afrique and the International Organization for Migration (IOM) in 2016 and 2017 on the state of migration in Senegal, IED Afrique and IOM decided to collaborate to support the National Program for Local Development (PNDL) on ways to integrate migration into a PNDL planning guide. PNDL is the national governmental programme in Senegal to ensure the implementation of Senegal's national strategy for local development. The guide is a toolkit for territorial collectives and civil-society actors, which defines the procedure and methodology needed to devise and implement local development plans and communal investment plans, taking into account climate impacts and the need to support actors to adapt.
- KMT supported national stakeholders to draft the strategy on national wildlife, conservation and management building on evidence generated mainly from Projects 3 and 5. The strategy is a blueprint and sets out national targets and indicators for viable and sustainable wildlife and habitat conservation and promotes evidence-based integrated planning for wildlife conservation.
- In Pakistan, research teams at SDPI supported parliamentarians to increase their understanding of the risks and opportunities that climate change poses in Pakistan. This led to the PRISE-SDPI team being invited to hold 'climate change' awareness-raising workshops for decision-makers in parliament, and the subsequent identification of select climate 'champions' among parliamentarians who were willing to act as ambassadors to disseminate PRISE research evidence and policy recommendations (see the SDPI Story of Change in Annex iii).

Throughout these capacity-building processes, the PRISE outcome monitoring system helped to track engagement with stakeholder groups and allowed research teams to reflect on and monitor their engagement approaches and increase capacity to effectively engage with stakeholders if necessary.

5.5 Risk management

PRISE identified and managed various risks throughout the project lifetime. This was tracked through a 'live' tracking document that evaluated any known risks, and a risk matrix that was updated every 6 months. It rated risks as either high, moderate or low, and included the designated type of risk (i.e. operational, which would refer to factors impacting the physical security of researchers or risk to research subjects, or programmatic, such as the risk of failing to achieve programme objectives); the likelihood of the risk occurring; and the potential impact to the programme. It also identified mitigation actions that the programme would take in the event of the risks taking place.

While the PRISE consortium managed risks on a case-by-case basis, there were a number of mitigation actions PRISE took in advance. For example, political uncertainty and issues of security were identified as operational risks with potential significant impacts on project activities. These risks were rated as high, with a moderate likelihood but a high impact to the programme. Before deploying staff, PRISE analysed the situation in detail to identify and assess specific security concerns and during field research ensured travel and security policies were closely followed, withdrawing teams from the field, if required.

Each risk was tracked through regular communication between research partners and the wider PRISE leadership team. The bi-monthly reporting process also allowed researchers to report on risks (including delays or initial concerns) in a confidential manner. The consortium manager would then evaluate the risk, develop a mitigation plan and, where necessary, escalate the issue to the steering committee. Ensuring regular and open lines of communication, a strong degree of trust and a clear process for managing, evaluating and dealing with risk was critical for the success of the programme.

5.6 Observations and comparison of intended and actual outcomes

5.6.1 Comparison with actual outcomes

PRISE successfully delivered on its objectives (see Box 3). There was one notable divergence between the original objectives and the actual outcome: PRISE decided to rather than focusing on generating knowledge on vulnerability, it could add more value by identifying viable adaptation options for people, producers and businesses in dryland regions and identifying elements of the enabling policy environment that are required for stakeholders to adopt these strategies. The decision to focus the research in this way was taken because early country overviews showed that a considerable body of evidence on drivers of vulnerability in drylands already existed. PRISE therefore decided at the end of the inception phase to orient its research to be as forward-looking and solutions-oriented as possible, in order to equip decision-makers with solutions rather than further analyses of existing problems. This made for very impactful and productive stakeholder engagement, as the outcome monitoring results (Section 4) show: in all countries studied the evidence PRISE produced was instrumental in changing policy or practice towards a more climate-resilient and equitable development path.

A further shift in approach came at the end of the inception phase, when it was decided to restructure PRISE – moving from organisationally-led work packages to researcher-led thematic areas. A conscious decision was taken to empower young researchers and communications and knowledge management specialists to take on a much more prominent role in shaping the programme and at the same time grow in their roles and advance their own career. These will be the people, together with the Master's and PhD researchers the project supported, who will lead the next generation of applicable research on climate-resilient and equitable economic development in drylands.

5.6.2 Observations

The consortium team designed their knowledge-generation approach by incorporating the needs of end users right from the start of the process, and tailoring the research to address some of their most pressing knowledge gaps. By listening to the concerns that decision-makers grapple with and offering to provide evidence that helps them to deal better with these issues, the team ensured buy-in from the very start of the project.

While some of the research themes might not look academically ground-breaking, they covered areas where there was a significant knowledge gap in the country in question and among decision-makers. Interaction with practitioners and policy-makers was not confined to a specific point in time – it was a continuous process throughout the research phase. This enabled the research teams to take end users along with them on the journey of generating the evidence, and by doing this ensured that the evidence generated was plausible, relevant and useful.

Actionable options were co-developed with decision-makers and were thus much more readily implementable. This process also shaped the communications channels used, including face-to-face meetings, workshops, short written outputs such as policy briefs, longer reports detailing the evidence and its relevance for policy and practice, audio-visual outputs, blogs and tweets targeted at a non-specialist audience, and outputs targeted at academic audiences such as working papers, research reports and journal papers.

The knowledge the project generated filled important knowledge gaps at country level, but it also contributed to pushing academic and practical knowledge boundaries:

- In the field of migration, showing how migration can be a viable adaptation strategy, and therefore – rather than simply trying to stop or control migration – governments should develop policies that manage internal and international migration, including promote the use of remittances to help build resilience of people and businesses in drylands.
- Showing how adaptation options can be built into value chains that are rooted in dryland economies, and what reforms to policy are required to support value-chain actors in adopting sustainable adaptation options.
- Exploring what obstacles micro, small and medium enterprises (MSMEs) in drylands face that discourage them from adopting sustainable adaptation options, and what is required for businesses to overcome these obstacles.
- The role of different land tenure systems in enabling or undermining adaptation decisions by land users and land owners.
- The importance of multi-scale and cross-boundary collaboration for adaptation planning and elements that contribute to facilitate this.
- The crucial role of water governance in managing both floods and droughts and its implications, if not done well, especially on female producers and women-run businesses.

These insights, even though gained in specific country contexts, are more broadly relevant and have been synthesised into a set of global messages and policy recommendations that are relevant to enabling climate-resilient and equitable economic development in semi-arid regions (see Section 3.3).

6 Summary of key lessons, recommendations and next steps

Drawing on the consortium's experience and learning over the last five years, the following section presents a set of key messages and recommendations. Our aim is to inform the design and monitoring of future consortia-based research programmes.

6.1 Lessons learnt from designing and implementing PRISE

The messages below present key learnings based on the policy- and development-first approach, and consider how CARIAA's hotspot-focused, multi-disciplinary, multi-sited research model worked in practice.

6.1.1 PRISE Theory of Change

PRISE's vision was to see the economies of semi-arid lands growing and resilient to climate variability and change, and for the benefits of this achievement to be shared equitably among different socio-economic groups. Achieving this requires change in policies, institutions and other boundary conditions of markets, which hinder inclusive and equitable economic growth.

PRISE's research and engagement was therefore oriented towards the actors capable of driving such change and those who exert influence upon them (e.g. decision-makers in ministries of finance and economic development, decision-makers in sector ministries, business leaders and national, provincial and local government leaders – referred to generally as PRISE stakeholders). The PRISE Theory of Change (ToC) was presented in a narrative and graphical form, which illustrated this overarching vision for the consortium (see Figure 2). It was produced during the proposal-development stage of the project and illustrated a generic logic of how research and engagement was thought to contribute to the overall aim of the project, while also retaining some level of specificity for the country teams to consider how the PRISE theory of change applies in their specific country context.

While the PRISE ToC provided an overarching vision, it was not used as a practical tool to guide consortium activities on the ground. PRISE developed an outcome mapping monitoring system which was able to translate the PRISE vision into a set of behavioural changes among stakeholder groups that represented pathways of change. This system, including the 6-monthly sense-making sessions that analysed the data from the outcome mapping system, created a sense of responsibility and empowerment in PRISE researchers and encouraged PRISE to assess the outcome of its research, allowing researchers to recognise their own role in the project outcomes and adjust engagement strategies accordingly (Pasanen, et al. 2018) (See Section 4.4 for further details of the outcome mapping system).

6.1.2 Policy- and development-first approach: A fresh lens and approach to research programmes

PRISE's policy- and development-first approach was central to the thinking behind the PRISE ToC and an important feature throughout the life of the project. It shaped the way researchers, project leads and both M&E and communications focal points designed their research and how they created a continuum of engagement and communication with stakeholders around the research needs, processes, results and outputs.

'This approach has helped us develop a credible research protocol of involving stakeholders in the process. This practice is not common,

especially with regards to involving non-traditional stakeholders such as parliamentarians'

PRISE end-of-programme survey, 2018

In a recent PRISE consortium end-of-programme survey (August 2018), 72 per cent of PRISE colleagues felt that the approach had a major impact on the research uptake and influence on decision-makers, engagement with stakeholders and end users of the research and in the shape and design of their research questions. The approach:

- (i) guided the research teams to design research projects around specific knowledge gaps in relation to climate adaptation and economic development in specific areas and selected sectors: 'working to address a real problem and the research was solution oriented';
- (ii) ensured that stakeholders were consulted regularly, were part of the research process and invited to validate research findings; and
- (iii) capitalised on close networks and relationships (many pre-existing to PRISE) of in-country partners with key stakeholders: 'engagement with key stakeholders prior to PRISE contributed in developing a long relation of trust that PRISE capitalized on'.

'The OM system pushed us constructively to reflect on the means of communicating our research results and conducting the policy-influencing process'

PRISE end-of-programme survey, 2018

There were, however, also challenges inherent to this approach. For example:

- anticipating research priorities expressed by end-users in work plans and budgets;
- continuous engagement requiring substantial time and financial investment; time taken to build trust and develop the research and tailor key messages for stakeholders to take forward;
- tensions between producing rigorous research and engaging with and building the capacity of stakeholders to use the research evidence;
- high staff turnover in local and national government, including national elections leading to an almost complete change in key government personnel at central and/or district level;
- convening the right stakeholder(s); high demand but limited capacity and skills within PRISE organisations to address all demands and specific requests from all stakeholder groups;
- tension between researchers and decision-makers with different time horizons and the challenges of managing stakeholder expectations; and
- limited capacity of stakeholders to action the research.

Despite these challenges, PRISE colleagues felt the policy-/development-first approach helped to develop a credible research protocol that involved stakeholders in the process, by starting with the policy issues and decisions countries are facing and working alongside local stakeholders to address these.

6.1.3 Research-into-use: Tracking policy influence and lessons from CARIIAA evaluations

The true value of the collaborative model was fully realised in the final year of PRISE. The last 12 months showed marked improvement in the implementation of research-into-use

(RiU) practices and, from this, a number of key lessons were generated.

PRISE also offered huge learnings in terms of policy influence, which calls for a highly flexible and stakeholder-specific engagement approach. For example, the importance of timing and taking advantage of specific policy windows in which to feed in PRISE evidence and recommendations that capitalise on key decision-making points. Related to this, there is a need to have specific entry points into policy-development processes, such as a specific person of influence or a draft of a policy or strategy needing to be revised or implemented. Personal relationships are of key importance to the success of RiU and the uptake of findings, as is the 'right' timing. Senior-level buy-in to the importance of RiU was pivotal in promoting this, as was the leadership of the consortium institution having direct access to policymakers or politicians.

PRISE recognised that a 'one size fits all' approach to stakeholder engagement limits the transfer and uptake of research evidence and information. To effectively engage policymakers, teams have to make regular changes in their engagement strategy so that it is tailored to fit the need, capacity and interest of the target stakeholders. Continuous engagement with stakeholders and decision-makers and updating stakeholder mapping on a regular basis to understand their needs and interests in relation to the evidence the consortium is generating, was therefore a critical activity to increase the likelihood and quality of uptake.

This was particularly important when considering government policy, especially where elections led to new representatives and key staff taking office and needing to be updated on PRISE research and previous achievements, or where representatives of the private sector needed new information because of changes in the market. A related learning when trying to influence policy is, therefore, to not only engage the government, but to also take time to engage the opposition. This was the case in Pakistan, where the elected party changed and the PRISE team were able to continue their research-into-use activities with key members of the new government, who had already been informed about PRISE key findings and relevant policy recommendations when they were in opposition (see Pakistan Story of Change, Annex iii for more information).

Training researchers on approaches to RiU and thinking about the desired impact also greatly enhanced the success of RiU processes within PRISE. Larger, more complex programmes looking to have influence in policy and practice on the ground need to ensure that they have internal expertise to train and support researchers and facilitate RiU processes. Appointing an overall RiU lead that coordinated with RiU focal points in-country and with other CARIIA consortia's RiU focal points, was very important in influencing national and international policy processes.

Furthermore, the relationship between researchers and communications and stakeholder-engagement experts in the team was critical to achieving the programme objectives. Researchers need to be actively involved in (and lead) stakeholder engagement activities, and communication officers must have oversight of the research activities and key findings emerging. In other words, it should not be the case that researchers only provide the evidence and develop relevant outputs and the communication staff find relevant communication channels through which to disseminate findings. Rather, researchers and communication staff need to work closely together throughout, tailoring messages and output formats based on feedback from engagement activities to maximise research uptake and the potential for impact on the ground.

Outcome mapping: Whilst PRISE experienced some challenges in relation to the outcome monitoring system (OM), such as researchers taking time to familiarise themselves with the tool and key concepts, respondents of the PRISE end-of-programme survey said that it greatly supported uptake of their research findings and policy recommendations. They found the system most useful for developing and adapting their stakeholder approach and engagement strategy (78 per cent found it either useful or very useful) and for developing

Stories of Change (72 per cent found it either useful or very useful).

PRISE would therefore strongly advocate using outcome mapping for future programmes aiming to influence and monitor stakeholder behaviour(s) and policy (see Pasanen, 2018 for further details). The OM approach was able to recognise and be responsive to the complexity of influencing policy, practice and stakeholders – which are dynamic and non-linear processes with multiple possible outcomes. By categorising potential outcomes into ‘expect’, ‘like’ and ‘love to see’, it was not necessary to make precise predictions about the pace of change at the beginning of the programme. It also allowed research teams to appreciate smaller changes, which can ultimately lead to changes in policy and practice, by providing a foundation for policy change to take place and to be sustained.

That said, it is important to ensure that outcome mapping is context specific. The approach requires researchers and other team members to undertake deeper exploration of data, taking into consideration the complexity of the system, and then jointly identify examples of stakeholder action and research uptake from specific stakeholder groups. The OM system encouraged continuous stakeholder mapping to allow adjustments to engagement strategies to maximise uptake and use of evidence and policy recommendations. It also helped to create a shared, long-term vision and it supported collaborative sense-making (of data and stakeholder behaviours), as well as learning across projects, country teams and consortium partners. This stocktake needs to inform the research team to assess whether they are doing the right research to address stakeholder’s needs, whether the communication strategy and messaging is appropriate, whether there is a need to adapt engagement strategies, and if there is a need to involve additional stakeholders or allies to be successful. Because the nature of influencing policy is unpredictable, this kind of ‘evaluative monitoring’ of the process (e.g. the data collected, the evidence provided, the communication of the evidence) is necessary to keep the relationship with stakeholders on track.

In summary, in-country RiU/stakeholder engagement experience showed key elements that are crucial for successful RiU:

- (i) RiU needs to be a continuous process, not a one-off event, and needs to allow for adaptation; and
- (ii) Continuous stocktaking and stakeholder mapping are needed to track who the most influential stakeholders are, what their needs and interests are and how they evolve over time, as well as knowledge of what kind of information might ‘tip’ them over to make the ‘right’ decision.

6.1.4 Consortium design and model to foster strengthened collaboration

The contractual model established by IDRC in the CARIYA programme was not a typical consortium model. The chain of accountability for reporting sat between organisations and IDRC. While PRISE developed an MoU as a means of ensuring cooperating among partner organisations and agreeing common principles, the financial accountability was not fully reflected within this structure and therefore reduced the PIs’ ability to direct on certain project decisions, e.g. contracting of specific expertise and responding rapidly to demands and opportunities.

However, this contractual set-up encouraged an equal distribution of work and responsibilities among partner organisations, and they each had a shared stake in the quality of all aspects of the research process and outputs. There was “*a sense of being equal partners in a joint enterprise*” (PRISE survey, 2018). This led to an increased sense of ownership and joint incentives to deliver. It also enabled the partnership to get through the challenges associated with a consortium-based model, such as high overheads, logistics and resource constraints.

The strength of the connectivity between partner organisations was also facilitated by the switch from organisation-led work packages towards a more devolved project design with

multiple partners engaging on various projects. The different levels of reporting – where research leads were reporting both to their ‘home’ organisation as well as to other organisational partners with a stake in the project (e.g. country partner) – created stronger relationships and collaboration as partners relied on each other to deliver. However, there were challenges with this approach too; for example, in managing resources in a matrix environment, with a project led by one organisation relying on funds from another partner to support third-party consultants.

The programme promoted a new approach to research and most researchers reported that they are now doing research differently (PRISE Survey, 2018). The consortium approach brought people together in interdisciplinary teams, something that was not necessarily familiar to all participants. New topics and approaches were also introduced, and many researchers acknowledged learning from working with researchers in disciplines they had never engaged with before, e.g. physical scientists working with social researchers, and migration and gender experts with engineering and natural sciences researchers. The multi-sited, cross-country and cross-regional comparisons also provided rich datasets and offered unique insights that would otherwise not have been possible.

PRISE colleagues reported that the mix and types of consortium partners – academic, policy-focused – and their respective strengths in different fields also supported research activity. Policy-focused organisations in-country with existing strong networks made it much easier to implement the policy-first approach, while options were created for the more academic partners to focus on theoretical aspects and research.

In general, as found within the CARIAA Summative Evaluation (2018) ‘the benefits of the collaboration that has taken place in CARIAA over the years – collaboration across institutions, but also across countries, disciplines and thematic areas – cannot be overstated’. These include peer support, learning and sharing of knowledge between colleagues with varying capacities and expertise. *‘The most beneficial impact has been the opportunity to work with a broad range of researchers and support staff with varied expertise and from different cultural backgrounds, all bringing with them strong knowledge basis and experiences that I have been able to learn from’* (PRISE survey, 2018).

In the end-of-programme, consortium-wide survey, PRISE partners ranked various benefits and challenges of working in a consortium. The benefit with the biggest impact on the success of people’s research was ‘working with different cultures and partner practices’, followed by the peer support and new types of knowledge and cross-disciplinary insights.

Despite the high administrative and coordination transaction costs of a consortium model, 93% of PRISE respondents agreed that building resilience in climate change hotspots requires a scale of effort that exceeds what individual organisations can achieve working in isolation.

PRISE end-of-programme survey, 2018

In considering the various challenges, including resource constraints, language barriers, logistics, information overload and competing demands on time, it was the latter (specifically, different expectations from institutions versus the consortium) that was highlighted as having the greatest impact by 36 per cent of respondents; followed by resource constraints and logistics (field work, meetings, teamwork, feedback on documents) having a ‘moderate to great’ impact (combined score 54–56 per cent). Despite working across multiple countries and cultures, with varying capacities and expertise, ‘failed team work’ was ranked as having the least amount of impact from the challenges asked about in the survey.

The donor’s light and flexible management approach (super-structure) enabled the

consortium to make structural and programmatic changes, including changes in the type and number of deliverables as the project evolved. This enabled the consortium to remain responsive to demands and encouraged new ways of doing research and achieving research uptake. It also enabled the creation of rich and collaborative partnerships across CARIIA and promoted open dialogue and provision of space for reflection and exploratory research. As a result, PRISE, and the other CARIIA consortia, formed successful communities of practice, whose partnerships and collaborative work can continue beyond the CARIIA programme.

6.1.5 Capacity building of individuals and organisations

The PRISE consortium model has undoubtedly supported the development of a cadre of early-career researchers who have built their skills in producing evidence for policy and engaging with stakeholders. PRISE witnessed the growing confidence, aptitude and networks of these individuals. In some instances, this coincided with pivotal political and social shifts in PRISE countries. For example, the aftermath of the coup in Burkina Faso has led to a society-wide debate about the role of younger generations of professionals and academics in public life, providing the ideal conditions for PRISE researchers to emerge as voices on issues of economic development and climate change at national level. In Kenya, a particularly tense election period led to significant changes in local and national government, throughout which the team drew on their networks and evidence to remain nimble and relevant in the face of shifting opportunities and constraints.

The funding and support to Master's and PhD students and the inclusion of junior researchers in PRISE's research teams was an important long-term investment in capacity building. *'Among other things, the experience of working with PRISE has been instrumental for me to emerge from an early career researcher to a leadership position. The capacity development that I gained through this programme would not have been possible through any other programmes that my institute has been working on'* (PRISE survey, 2018).

At the organisational level, 64 per cent of respondents of the PRISE survey felt working with the PRISE consortium had impacted partner organisations' policies and programming. This included strengthening institutions' experience in stakeholder engagement, new climate-research methods and tools and strengthened capacity in coordinating a multi-location, multidisciplinary research project. Generally, respondents felt more confident with the evidence-based approach (i.e. integrating the stakeholders' point of view in the shaping of the project), as well as exploring alternative communications methods (such as *'producing a short documentary film which proved to be a powerful tool for policy-advocacy'*). One respondent noted that: *'before, our researches were too theoretical and there was no place for stakeholder engagement. With the PRISE project and now in our own works, we pay attention to stakeholders to give more impact to our results'*. Another mentioned: *'we have learned to be more consistent in the choice of actors to engage with. We have learned to be more synthetic to write and share our results'*, and: *'the involvement of different categories of actors in the definition of research priorities, engagement with stakeholders and the mapping of influences have now become fundamental aspects of the institution's approach'*.

6.1.6 Communications and knowledge management

The consortium's knowledge management and communications (KMC) model involved a communications officer based centrally in the Consortium Coordination Unit (CCU) at ODI, who led on KMC activities with a team of in-country KMC officers responsible for in-country communications and engagement activities with support from the CCU. This decentralised approach allowed PRISE to produce context-specific outputs and remain responsive to context-specific communications and engagement activities, by enabling targeted dissemination of evidence at the in-country and regional level for maximum impact.

This approach also allowed for innovative cross-institutional collaboration on ideas and communication activities between KMC officers from different countries. This included working in partnership to create and disseminate [films](#), [infographics](#), [comment pieces](#), [media articles](#) and promotional materials, such as posters and USB sticks, as well as traditional research outputs including reports, policy briefs, working papers and journal articles. KMC officers met online on a monthly basis throughout the project to discuss KMC activities and plan engagement activities. This model was outlined in the project's KMC strategy, which details the CCU and in-country KMC plans.

Figure 26: Still from the PRISE film on 'Agriculture and water: testimony from two villages in Burkina Faso' based on Project 7 research



That said, the potential to capitalise on these cross-country partnerships and the in-house KMC expertise can be limited if KMC activities and resourcing for them are viewed as being of secondary importance to the 'main' objective of producing high-quality research. They need to be recognised as an integral part of creating and delivering research and policy impact.

Communication material needs to be targeted and it is therefore important to consider which type of output might have the biggest impact with different groups of stakeholders. For example, writing up findings in a business case format might have been a more effective tool for engaging private sector stakeholders than a journal article. This is a tension often seen in transdisciplinary consortia that aim to achieve two goals – academic excellence and practical forward-looking policy and practice influencing. Both were explicit expectations from each of the CARIIA consortia and its partners. Moving forward, as donors and research organisations collaborate in consortia-based research projects in the future, these issues warrant greater attention at the proposal and bid-writing stages, as well as during the lifetime of the project.

6.1.7 Lessons from evaluations

In 2017, PRISE commissioned a mid-term learning evaluation focussing on gender integration within PRISE research-into-use practices. The evaluation produced useful recommendations to further 'translate' the gender equality messages for decision-makers, particularly from research projects specifically looking at how women's and men's roles are affected by climate change in SALs, and their respective roles in terms of adaptation.

A four-page guidance note was produced to understand where the projects were in terms of incorporating gender equality into research-into-use processes and building it into their stakeholder engagement plans.

Specific lessons generated from the mid-term evaluation as well as the work subsequently built on it, include:

- Stakeholder analysis (at the onset, but also as a continual process), needs to better describe and understand the prevailing attitude of decision-makers towards gender equality in order to better understand the opportunities for influence and ensure that consideration of vulnerable groups is thorough and impactful. It is difficult to support stakeholders to address gender equality when they themselves lack capacity, frameworks and analysis around the issue. We therefore need to know where those gaps are and devise strategies to address them.
- Stakeholder analysis, with a lens on gender equality, should also identify and create partnerships (alliances) with other organisations with a specific focus on gender-equality activism or policy-influencing goals. Stakeholder analysis is not solely about identifying those actors you want to influence, but also those that you can work in partnership with to influence others.
- In order to do this, some 'gender equality basics' need to be agreed amongst researchers/project staff, as there is fairly wide variation in the strength of capacity and depth of connections with gender champions from country to country, and even project to project.
- Gender equality mainstreaming and targeting works best when there is the support of a full-time dedicated expert to help define gender equality ambitions and theory of change, provide advice for stakeholder engagement, and contribute to monitoring and evaluating specifically those gender-equality ambitions.

The main lessons and recommendations from the mid-term gender review were:

- (i) Develop a clear vision for gender equality by specifying the theory of change and expected development results of the programme's support for gender equality.
- (ii) Identify knowledge and capacity gaps of both researchers and stakeholders and define a strategic approach for supporting knowledge and capacity development needs.
- (iii) Clearly define and communicate (including through capacity building) key concepts and frameworks of analysis related to gender equality.
- (iv) Enhance and operationalise accountability, feedback and learning structures and processes for the implementation of gender-equality-focused stakeholder engagement/research into use.
- (v) Make more and better use of partnerships with regional and national actors that have complementary expertise in gender equality.
- (vi) Allocate more human resources to support gender-equality efforts.

6.1.8 Private Sector Engagement

PRISE found that engaging with the private sector was not a straightforward process. This stakeholder group has until recently not been engaged in climate change debates and has also often been accused as key contributors of greenhouse gas emissions. To gain their confidence, this discourse had to be deconstructed by demonstrating to the private sector that they are part of the solution, and that climate change can provide an opportunity for a win-win - enabling them to make a profit, while contributing to a more resilient world through green technologies or adaptation investments, and therefore 'future-proofing' ahead of more stringent regulatory requirements.

The engagement strategy also needed to be tailored to the needs of the private sector, for example, the need for practical solutions rather than conceptual discourse; simple and pragmatic messages; and acknowledgement of time as a scarce resource, by only bringing them into conversations and activities where their presence and contribution added notable value.

6.2 Recommendations

From PRISE's experiences and lessons learned from setting up, managing and closing down a complex, cross-regional, multi-stakeholder research programme, a set of recommendations has been developed that can help inform future programmes. These may be relevant for donors when structuring calls for proposals or evaluating proposals and programmes, as well as for consortia that are structuring their proposals and developing their work plans for implementation.

Partner Selection and Relationships: Consortia of this complexity need to be composed of a mix of reputable partner organisations that have a history of collaboration and new organisations with specific skills. Given the strong focus on research-into-use, partner organisations also need existing trusted relationships with the target audience for the research, such as national policy-makers. This enables a consortium to 'hit the ground running' and engage the target audience from the offset with key findings and recommendations as they emerge. The process of co-designing research activities and sharing management responsibilities for the delivery of projects equitably among partner organisations, is recommended to accelerate trust building and promote joint ownership of activities and the quality of outputs. Having the flexibility to remove existing partners or bring on new ones that complement the stage of the project can further enhance the efficiency and potential for achieving consortium-level outcomes in line with the project's theory of change. For PRISE it proved important to have partners with a blend of experiences across research, policy and practice. But it might equally be considered helpful to have partners with greater research expertise in the initial phases and then bring in additional partners with greater policy engagement experience in the latter phases of the project.

Funding for longer-term, multi-phase research programmes: There is a high initial investment cost in setting up large research and engagement consortia. Establishing trusting relationships with stakeholders takes time and robust results from interdisciplinary and cross-country research only become available towards the end of a typical five-year project. This leaves very limited time remaining for dissemination of results, engagement with decision-makers, synthesis and supporting the implementation of recommendations for the longer term and for a sustained impact. Providing funding for a longer period, including multi-phase programmes would allow:

- (i) longer set-up times including defining research focus based on stakeholder needs;
- (ii) better training opportunities for researchers in specific methodologies (including gender-sensitive research);
- (iii) opportunities for greater cross-consortia collaboration and synthesis;
- (iv) deeper, more meaningful stakeholder engagement at the end of the project;
- (v) opportunities to work with stakeholders to identify funding to put some of the recommendations into practice; and
- (vi) time and opportunity to witness, assess and measure the real impact of research on policy (including relevance of assumptions and approach).

Structuring longer programmes into multiple phases would allow regular end-of-phase assessments of progress, including of individual partners, which would allow targeted restructuring if this was decided necessary by both the funder and consortium partners, to enhance programme performance and deliverables, while giving individual consortium partners sufficient securities.

Flexible funding and operational model: It is vital to remain flexible during all stages of a multi-year, complex programme with a focus on research into use. The shift from project (research implementation) phase to synthesis phase was challenging both operationally and conceptually. It requires changes in the ways of working, in partner relationships, in skillsets, in activities and in pace. A balance needs to be found that allows flexibility: on the one hand allowing for changes to the consortium composition if required, while on the other hand

providing sufficient security to consortium partners in terms of funding. This could in part be achieved by setting some contingency funding aside that can be allocated to existing partners or to new partners depending on the task at hand. Such contingency funds are also important to allow consortia to capitalise on key policy windows and emergent opportunities for engagement, making the RiU strategy more agile and strategic.

Earmarked budget for career development opportunities: Additional support for researchers and career development should be earmarked in consortium budgets. PRISE has supported a number of early career researchers, including Master's and PhD students. Budget specifically allocated to support this cohort of researchers on scientific writing; presenting research in academic fora; translating scientific findings into content that is accessible for non-technical or non-academic audiences and knowledge brokering, would strengthen the capacity-building element of large research programmes, creating the cadre of policy-oriented researchers that are able to work on climate-resilient development in a collaborative way.

Integrate outcome mapping into project design to inform stakeholder engagement approaches: A 'one size fits all' approach to stakeholder engagement limits the transfer and uptake of research evidence and information. To effectively engage policymakers, tailored engagement strategies are needed that fit the capacities, interests and needs of target stakeholders. Outcome mapping helps to better understand which evidence and which approach to communication and engagement has traction with different stakeholders and can thus inform a strategic research-into-use (RiU) strategy.

Earmarked budget for cross-consortia activities and synthesis: Based on PRISE's experience, it is recommended that funds be set aside to support synthesis and outreach activities towards the end of the programme, especially as many interesting opportunities for collaboration only emerge during the later stages of a research and engagement programme. Specific funding streams could be earmarked to allow such collaboration to evolve and/or permit joint business development and fundraising for new initiatives.

Follow-on proposal development as part of the project cycle and budget: More often, pressure and tight deadlines during the last year of project implementation do not allow consortium members to take the necessary anticipatory steps to develop well thought-through follow-on proposals. This results in some frustration of being obliged to close out the project while there are still good opportunities on which one could build. Such proposals would offset or limit the time gap between one project cycle and another.

6.3 Where next?

After almost five years of intensive research, collaboration and engagement with stakeholders, several areas for further synthesis, policy engagement or research have been identified:

- Build on pilots launched in-country, for example those in Senegal to mainstream adaptation and migration into national development plans and translate the national Vision 2035 (PSE) into local development plans. This involves the training of representatives of communes and supporting the creation of new local-development plans.
- Follow through on the MoU that IED Afrique, through PRISE, signed with AMMA2050 to provide support in documenting and sharing knowledge from research.
- Synthesise insights from across PRISE and the Adaptation at Scale in Semi-Arid Regions (ASSAR) consortium, outlining climate change implications for drylands; barriers, enablers and pathways to adaptation; and the role for private and public actors and the donor community to support resilience-building in drylands.
- Engage with National Designated Authorities (NDA) and Nationally Implemented Entities (NIE) to build on PRISE insights for strengthening MSME efforts to adapt to

climate change impacts, as recommended by the Green Climate Fund (GCF) secretariat. Other engagement activities at international level are to feed into the Committee for the Review of the Implementation of the Convention (CRIC) of the UNCCD in January 2019 and further engage with the AfDB and other pan-African institutions such as the AUC and the African Climate Policy Centre (ACPC).

- At the High-Level Political Forum in New York in 2018, PRISE and the Senegalese government presented an approach to focus on a territorial or geographic perspective, building on PRISE's vision for climate-resilient economic development, to ensure no-one is left behind and to support marginal areas and people. The following areas show promise and should be further explored: a combined approach to research; providing evidence of the links between different interventions in marginal areas; piloting what a planning process that links local and central government would look like; and identifying opportunities for scaling-up.
- PRISE's work on value chains has been recognised as highly innovative by a broad range of stakeholders. Requests have been made to replicate similar analyses on other value chains and in additional countries. While the research conducted under PRISE has identified possible adaptation options, not enough is known about which ones are the most economically viable. A fourth step could be added to the existing three-step methodology to conduct cost-benefit analyses of different adaptation options to (i) understand what incurred costs/investments are necessary to make a certain strategy feasible (for example, choosing storage as coping strategy might involve a high fixed cost to build a facility), and (ii) assess what the returns on investment are of different strategies under different climate scenarios and considering other risks (e.g. political instability). Since most value chains considered have an international dimension, a new focus on transboundary governance in global value chains could also be added with a focus on the role of national and international legislation in supporting inclusive and climate-resilient economic development and sustainable consumption.
- Building on insights from PRISE on the heterogeneous nature of the private sector and what is required in terms of an enabling environment for adaptation investments, there is more scope to both support private-sector actors and to engage them in the implementation of adaptation solutions. This also necessitates working with policymakers towards creating an enabling environment that supports climate-resilient and equitable economic development in marginal areas.
- 'Transformation' has emerged as a term very often used in the climate change adaptation space. However, its specific meaning remains elusive. Transformation of what and by whom, for what purpose and with what outcome? Who are the winners and losers and how does transformation occur in practice? These are among the questions that need further exploration. Besides more conceptual research on the meaning of transformation, there is scope to work alongside policymakers and practitioners who are pushing for transformation of economies and societies on the ground. A political economy approach to transformation, working with and alongside decision-makers, would allow deeper insights into how decisions are influenced and what the outcomes are for different people, economic sectors and the environment.
- Adaptation is a global challenge with local to international dimensions. This framing recognises that adaptation efforts in one country can impact the capacity of another country to adapt. Recently, adaptation research has begun to focus increasingly on issues related to transboundary adaptation or adaptation efforts that transcend national boundaries. PRISE also speaks to transboundary adaptation and development and has raised critical issues around the concept of a territorial approach to adaptation. This could be explored further to better understand how this might work in practice, for example across West Africa or the Horn of Africa. This would require a long-term engagement with decision- and policymakers across a region to design and implement the necessary policy and legislative frameworks to

ensure climate-resilient economic development at local, national and regional levels. This is an ambitious goal certainly, but moving forward to implement policy and practice will require more intense and sustained engagement with governments and institutions.

7 Conclusions

CARIAA started off on the premise that addressing the challenges posed by climate change requires new approaches and modalities for research (De Souza et al., 2015; Cochrane et al., 2017). Drivers of climate change, its impacts and the responses needed cut across sectors, academic disciplines and societal groups, thus requiring transdisciplinary research that is able to address issues across multiple scales (Harvey et al., 2017). A central plank of transdisciplinary research is the inclusion of key audiences, such as decision-makers and impacted communities, into the research process (design, implementation, analysis, validation) and, by this, co-producing research results that are inclusive and robust (Hirsch Hadorn et al., 2008; Harvey et al., 2017).

PRISE, as one of the four CARIAA consortia, adopted this approach – and through its policy-/development-first approach went even a step further. PRISE engaged with decision-makers – defined broadly and including households and producers, men and women running businesses small and large, representatives of trade bodies, municipalities or parliaments and local, national and international policymakers – right from the start in co-defining its research questions, which were based on the knowledge needs of decision-makers in relation to adapting to climate change impacts and strengthening the resilience of their economic activities.

The hotspot approach championed by CARIAA, focusing on areas with strong climate signals and large concentrations of marginalised people, combined with a transdisciplinary approach to research that puts the knowledge needs of decision-makers centre stage, has shown over the past five years to be the right way to go to address complex, even wicked, problems in semi-arid areas of Africa and Asia.

PRISE's engagement with decision-makers, building on rigorous research evidence, has led to a series of changes in the policy and practice of government ministries, of municipalities and of businesses towards achieving an economic development pathway that is climate resilient and inclusive. PRISE's engagement at national and international level in challenging the narrative of semi-arid areas also shows promise – by presenting the opportunities for climate-resilient and equitable economic development in drylands, a way forward is being proposed in reducing the territorial and group-based discrimination – a core requirement of the 'leave no one behind' agenda.

PRISE research has provided evidence that challenges conventional narratives framing drylands as climate-vulnerable, low-productivity, poverty-stricken regions with limited potential. These narratives are important, as they have shaped national and international policies, programmes and investments for economic development and poverty reduction in drylands. New paradigms and approaches are needed if programmes and investments in drylands – and other fragile ecosystems – are to invigorate economies, enable enterprises, reduce poverty and strengthen climate resilience. PRISE has framed these approaches in terms of climate resilient economic development.

Despite there being huge environmental, social, economic and political variations across places and sectors, PRISE research has identified a set of seven principles for climate-resilient economic development in semi-arid lands:

- Support sustainable sectoral transformation and diversification, building on sectors rooted in dryland regions;
- Enable private adaptation through creating an enabling environment (policies and institutions; data, information and capacity development; infrastructure, markets and technology; economic and financial environment);
- Work with informality;
- Work with mobility;
- Ensure gender and social inclusion;
- Build climate-resilient and socially inclusive infrastructure; and

- Strengthen cross-scale (transboundary) governance.

These principles will need to inform policy, programming and public and private investments. Practices that build on these insights, when carried out by national governments, international organisations, donors and financial institutions and the private sector, will contribute to leaving no one behind, and to marginalised areas like drylands no longer being overlooked but instead seen as economically, socially and politically integrated with the rest of the country, and home to thriving economic activity that is inclusive, fair and climate resilient.

These principles will help in targeting investment by both private and public sectors towards building robust institutional frameworks and adaptation actions that proactively support climate-resilient economic development and build the adaptive capacity of people, societies and economies. And finally, these principles call for an integrated approach to development and adaptation planning where actors work together at all levels – from the local to the global – in a holistic and integrated approach to understand the drivers of marginalisation and identify and capitalise on opportunities for socio-economic transformation that achieves a resilient world.

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Annexes

i. List of PRISE outputs

Flagship PRISE publications

Atela, J., Gannon, K. E., and Crick, F. (2018). Climate change adaptation among female-led micro, small and medium enterprises in semi- arid areas: A case study from Kenya. In Leal Filho, W. (ed.) *Handbook of Climate Change Resilience* pp.1-18. Cham: Springer.

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ii. PRISE media hits

Total media hits from 1 February 2014 to 14 December 2018: **78 hits**

Annual breakdown

1 February 2014 – 31 January 2015: 17 hits

Highlights include:

- *The Standard* (Kenya): [Kenya to benefit from Sh1.2b fund for arid lands](#)
- *Express Tribune* (Pakistan): [Tackling global warming: Climate change driving migration to urban areas, says speakers](#)
- *Express Tribune* (Pakistan): [Seminar: Earth warming up dangerously, warn experts](#)
- *Express Tribune* (Pakistan): [Climate change: Experts call for effective planning](#)
- *The News* (Pakistan): [Changing climate can pose threat to human security](#)

1 February 2015 – 31 January 2016: 15 hits

Highlights include:

- *Daily Times* (Pakistan): [Scientists urged to focus climate change policy research](#)
- *The Guardian* (UK): COP21: the climate case for investing in African livestock (page no longer available)
- *Devex*: [Why we need to rethink 'maladaptation'](#)
- *The New Nation* (Bangladesh): [Refocusing on maladaptation](#)
- *Daily Times* (Pakistan): [A challenge for cities of the future](#)

1 February 2016 – 31 January 2017: 4 hits

Highlights include:

- *IPP Media* (Tanzania): [Helping communities in arid and semi-arid lands to respond to climate change](#)
- *Pakistan Today*: [Urbanisation and the scope of intermediate cities](#)

1 February 2017 – 31 January 2018: 6 hits

Highlights include:

- *Pan African Media Alliance for Climate Change*: [Scientists seek ways on how pastoralists can dodge extreme climatic conditions](#)
- *ILRI News* (Kenya): [Livestock-wildlife trade-offs for pastoral livelihoods in the conservancies of the Masai Mara](#)

1 February 2018 – 14 December 2018: 38 hits

Highlights include:

- *Daily Nation* (Kenya): [Erratic weather hits farmers the hardest](#)
- *City Press* (South Africa): [How climate changes gender roles](#)
- *Thomson Reuters Foundation News*: [Pursue twin goals of adaptation and development in semi-arid regions](#)
- *Dawn* (Pakistan): [MoU signed for socioeconomic development of barani areas](#)
- *Express Tribune* (Pakistan): [SDPI, ABAD ink MoU for development of Punjab Barani Tract](#)
- *Daily Nation* (Kenya): [Here is soya, lucerne and sunflower market](#)
- *Times of Central Asia*: [Kyrgyzstan ranks third most vulnerable to climate change impacts in Central Asia](#)
- *Daily Nation* (Kenya): [Need for climate-smart county policies](#)
- *Daily Post* (Kenya): [Climate change to hit livestock farmers hard](#)
- *Daily Nation* (Kenya): [Pastoralists on the edge as land usage changes](#)
- *EnviroNews Nigeria*: [African lawmakers seek accountability for greenhouse gas emissions](#)
- *EnviroNews Nigeria*: [New study reveals threats, climate adaptation opportunities in Kenya's arid lands](#)
- *EnviroNews Nigeria*: [Strengthening climate resilience of livestock systems](#)

Full list of media hits:

No	Headline	Source	Date	Country	Reach
1	Pan-African Parliamentarians trained on climate information for development planning	Public Now (AU)	10-Mar-2018 08:36AM	Australia	34,849
2	Refocusing on maladaptation	The New Nation	08-Jul-2015 07:27PM	Bangladesh	-
3	The CARIAA Research-into-Use Learning Guide	The Communication Initiative Network	06-Jul-2017 09:34PM	Canada	11,287
4	Pan-African Parliamentarians trained on climate information for development planning	Economic Commission For Africa	10-Mar-2018 08:20AM	Ethiopia	100,098
5	Understanding patterns of climate resilient development: the case of Senegal	India Environment Portal	01-Apr-2016 11:31AM	India	70,372
6	Pastoralists on the edge as land usage changes	Daily Nation	02-Mar-2018 05:52PM	Kenya	612,619
7	Livestock-wildlife trade-offs for pastoral livelihoods in the conservancies of the Masai Mara	ILRI News	05-Jun-2017 06:01AM	Kenya	1,157
8	Investment in livestock value chain can help pastoralists adapt to climate change	Pan African Media Alliance for Climate Change	06-Apr-2018 02:11PM	Kenya	70
9	New study reveals threats and climate adaptation opportunities in Kenya's arid lands	Pan African Media Alliance for Climate Change	12-Apr-2018 07:08AM	Kenya	70
10	Save your burning house before pursuing the arsonist – African legislators told	Pan African Media Alliance for Climate Change	12-Mar-2018 09:31AM	Kenya	23
11	Save your burning house before pursuing the arsonist – African legislators told	Pan African Media Alliance for Climate Change	12-Mar-2018 09:31AM	Kenya	23
12	Pastoralists in Kenya abandon cattle to settle for sheep and goat amid rising temperatures	Pan African Media Alliance for Climate Change	12-May-2018 10:03AM	Kenya	65
13	Pan-African Parliamentarians trained on climate information for development planning	Pan African Media Alliance for Climate Change	13-Mar-2018 08:54AM	Kenya	23
14	Climate change to hit livestock farmers hard	Kenya Today	15-Apr-2018 06:58PM	Kenya	2,717
15	Climate change to hit livestock farmers hard	Kenya News	15-Apr-2018 07:45PM	Kenya	7,146

16	Need for climate-smart county policies	Daily Nation	16-Apr-2018 08:24PM	Kenya	570,502
17	Strengthening the climate resilience of livestock systems in East and West Africa	Pan African Media Alliance for Climate Change	16-Apr-2018 08:31PM	Kenya	70
18	Here is soya, lucerne and sunflower market	Daily Nation	18-May-2018 07:14PM	Kenya	638,787
19	Pastoralists in Kenya abandon cattle to settle for sheep and goat amid rising temperatures	Pan African Media Alliance for Climate Change	21-Jun-2018 10:28AM	Kenya	72
20	Investment in livestock value chain can help pastoralists adapt to climate change	Pan African Media Alliance for Climate Change	25-Feb-2018 12:11PM	Kenya	23
21	Kenya to benefit from Sh1.2b fund for arid lands	Standard Digital	28-Jan-2015 09:00PM	Kenya	1,812,614
22	Need for climate smart policies as temperatures in five counties rise beyond 1.5 °C	Pan African Media Alliance for Climate Change	29-Mar-2018 12:13PM	Kenya	23
23	Erratic weather hits farmers the hardest	Daily Nation	31-Aug-2018 08:03PM	Kenya	646,013
24	Pastoralists in Kenya abandon cattle to settle for sheep and goat amid rising temperatures	Pan African Media Alliance for Climate Change	31-Jul-2018 10:39AM	Kenya	105
25	Kyrgyzstan ranks third most vulnerable to climate change impacts in Central Asia	Kabar	24-Apr-2018 01:15PM	Kyrgyzstan	3,939
26	Kyrgyzstan ranks third most vulnerable to climate change impacts in Central Asia	Times Of Central Asia	25-Apr-2018 01:52AM	Kyrgyzstan	2,723
27	Kyrgyzstan ranks 3rd most vulnerable to climate change impacts in Central Asia	AKI Press	25-Apr-2018 08:07AM	Kyrgyzstan	11,162
28	PRISE Small Grants - Call for Proposals for Research on Climate Resilience in Semi-arid Lands	INSAM - International Society for Agricultural Meteorology	09-Jun-2014 03:33PM	Netherlands	-
29	New study reveals threats, climate adaptation opportunities in Kenya's arid lands	EnviroNews Nigeria	13-Apr-2018 12:26AM	Nigeria	2,126
30	African lawmakers seek accountability for greenhouse gas emissions	EnviroNews Nigeria	13-Mar-2018 11:07PM	Nigeria	1,887
31	Strengthening climate resilience of livestock systems	EnviroNews Nigeria	15-Apr-2018 03:58PM	Nigeria	2,126
32	Seminar: Earth warming up dangerously, warn experts	South Asian Media Net	05-Dec-2014 10:20PM	Pakistan	-
33	Seminar: Earth warming up dangerously, warn experts	Express Tribune	05-Dec-2014 10:25PM	Pakistan	823,987

34	MoU signed for socioeconomic development of barani areas	Dawn.com	05-Jun-2018 03:40AM	Pakistan	1,093,627
35	SDPI, ABAD ink MoU for development of Punjab Barani Tract	The Express Tribune	05-Jun-2018 12:22AM	Pakistan	1,122,996
36	Temperatures, heatwaves set to increase	Pakissan.com	12-Dec-2014 09:01AM	Pakistan	-
37	Tackling global warming: Climate change driving migration to urban areas, says speakers	South Asian Media Net	13-Dec-2014 07:40PM	Pakistan	-
38	Tackling global warming: Climate change driving migration to urban areas, says speakers	Express Tribune	13-Dec-2014 07:50PM	Pakistan	823,987
39	Pakistan in pressing need of research-based workable solutions to fight expanding desertification and aridity: Secretary	MediaLine Pakistan	19-Jan-2016 04:41AM	Pakistan	227
40	Pakistan in pressing need of research-based workable solutions to fight expanding desertification and aridity: Secretary	Asia Net Pakistan	19-Jan-2016 07:12AM	Pakistan	-
41	Scientists urged to focus climate change policy research	Daily Times	22-Jan-2016 02:00AM	Pakistan	189,230
42	A challenge for cities of the future	Daily Times	26-May-2015 12:17AM	Pakistan	213,191
43	Climate change: Experts call for effective planning	South Asian Media Net	27-Sep-2014 02:38AM	Pakistan	-
44	Climate change: Experts call for effective planning	Express Tribune	27-Sep-2014 02:44AM	Pakistan	646,799
45	Urbanisation and the scope of intermediate cities	Pakistan Today	28-Aug-2016 07:17AM	Pakistan	348,511
46	Changing climate can pose threat to human security	The News	29-Sep-2014 01:26AM	Pakistan	479,393
47	Value Chain Analysis for Resilience in Drylands (VC-ARID): identification of adaptation options in key sectors	Polity.org.za	05-Jul-2018 09:46AM	South Africa	38,358
48	Pan-African Parliamentarians Trained On Climate Information for Development Planning	AllAfrica.com	13-Mar-2018 11:44AM	South Africa	550,474
49	Resilience, equity and growth in semi-arid economies: a research agenda	Polity.org.za	23-Mar-2017 08:04AM	South Africa	24,900
50	Value Chain Analysis for Resilience in Drylands: identification of adaptation options in key sectors	Polity.org.za	23-Mar-2017 08:04AM	South Africa	24,900
51	How climate changes gender roles	City Press	26-Jun-2018 03:49PM	South Africa	143,744
52	Supporting private adaptation to climate change in semi-arid lands in developing countries	PreventionWeb.net	19-Jul-2018 04:26PM	Switzerland	26,478

53	Blog: Cities and country, or cities versus country?	IUCN	19-Nov-2015 01:01PM	Switzerland	-
54	Adapting to climate change through management of natural resources	IPPMedia.com	05-Jan-2015 05:58AM	Tanzania	8,074
55	Helping communities in arid and semi-arid lands to respond to climate change	IPP Media	05-Mar-2016 07:35AM	Tanzania	19,269
56	Climate change takes its toll on communities	Daily News	07-Jan-2015 05:41AM	Tanzania	-
57	Four regions targeted in climate change project	Daily News	23-Jul-2014 11:20PM	Tanzania	
58	COP21: the climate case for investing in African livestock	The Guardian	11-Dec-2015 10:06AM	United Kingdom	31,449,341
59	COP21: the climate case for investing in African livestock?	The Guardian (eClips Web)	11-Dec-2015 12:08PM	United Kingdom	40,813,655
60	FEATURE: Communities in semi-arid lands need adaptation support to unlock potential	The Climate and Development Knowledge Network	11-Jul-2018 10:04AM	United Kingdom	8,068
61	Pathways to Resilience in Semi-arid Economies (PRISE)	Global perspectives	14-Dec-2015 12:00AM	United Kingdom	-
62	Pursue twin goals of adaptation and development in semi-arid regions	Thomson Reuters Foundation News	18-Jun-2018 06:40PM	United Kingdom	329,500
63	Current events in Europe show how quickly a migrant and refugee crisis can escalate	LSE	19-Oct-2015 01:05AM	United Kingdom	640,486
64	About the Risk and Resilience programme	Global perspectives	20-Sep-2016 12:00AM	United Kingdom	-
65	How businesses in sub-Saharan Africa are adapting to climate change	LSE businessreview	23-May-2018 06:00AM	United Kingdom	15,598
66	Supporting private adaptation to climate change in semi-arid lands in developing countries	weADAPT	31-Jul-2018 04:58PM	United Kingdom	9,345
67	Tanzania: Climate Change Takes Its Toll On Communities	All Africa.com	07-Jan-2015 10:47AM	United States	632,716
68	CARIAA Targeting Research on Climate Change Adaptation in Africa and Asia	Climate Change Policy & Practice	07-Mar-2014 06:54PM	United States	-
69	CARIAA Targeting Research on Climate Change Adaptation in Africa and Asia	African Regional Coverage - IISD	07-Mar-2014 08:32PM	United States	-
70	BRACED/PRISE Project Administrator	ReliefWeb	11-Dec-2017 04:20PM	United States	664,216
71	Pan-African Parliamentarians trained on climate information for development planning	South-South News	13-Mar-2018 03:08PM	United States	794
72	Tanzania: Four Regions Targeted in Climate Change Project	AllAfrica.com	24-Jul-2014 10:51AM	United States	510,199

73	CARIAA Updates on Adaptation Projects in Africa and Asia	Climate Change Policy & Practice	28-Apr-2015 05:23PM	United States	118,625
74	CARIAA Updates on Adaptation Projects in Africa and Asia	African Regional Coverage - IISD	28-Apr-2015 05:24PM	United States	-
75	CARIAA Updates on Adaptation Projects in Africa and Asia	Water Policy & Practice - IISD	28-Apr-2015 05:26PM	United States	-
76	CARIAA Updates on Adaptation Projects in Africa and Asia	Asia-Pacific Regional Coverage - IISD	28-Apr-2015 05:26PM	United States	-
77	Why we need to rethink 'maladaptation'	Devex	29-Jun-2015 11:26AM	United States	150,827
78	The road to climate resilience: migration as an adaptation strategy	ReliefWeb	30-Apr-2018 04:55PM	United States	785,848

iii. PRISE Stories of Change (SoC)

[to be inserted in final document]

iv. PRISE risk matrix

Please refer to institution reports for country specific risks

Type of Risk: **O** = Operational includes things such as the physical security of researchers or risk to research subjects. **P** = Programmatic which includes risks of failing to achieve programme objectives

	Risk						Mitigation	
Risk No	Description	Region	Rating	Type of Risk2	Likelihood	Impact	Mitigation action	Risk Rat after mitigati
0	Project specific risks are captured on a monthly basis through the Monthly Progress Reports. These reports can be accessed through this link . Project specific risks are tabled and discussed at the monthly Steering Committee Meeting and will be captured within this table if deemed necessary by the PRISE Steering Committee.							
1	Management of Project X: The proposal for Project X was not strong enough and did not receive Steering Committee signoff. It is therefore lagging significantly behind all other projects	Africa	High	P	Mod	Mod – High	<ul style="list-style-type: none"> The CCU has taken an active and hands on role in strengthening the quality of the proposal with over 3 different review processes. There remains a moderate risk that Project X will not be able to deliver high quality research outputs. The PRISE Quality Assurance (QA) strategy sets out the expectations and minimum standards for all PRISE outputs as well as for internal research process-related aspects, including methods, concept notes and any material not meeting minimum quality standards will not be published. The onus for meeting quality standards rests with the individual authors, research and project partner. Consequently, the review process is led by the initiator, seeking the necessary engagement and sign off process. This helps to spread the work load involved in review. It now depends on the quality of researchers to deliver. Stronger support to researchers from Co-PIs / institutional leads is needed, and through this we hope that the intellectual content improves. If leadership and quality concerns continue, the CCU will work with IDRC as the contract holder to find the appropriate solutions. 	Moderat

2	Complexity of the consortium partnership and contractual Model	All	High	P	Mod	High	<ul style="list-style-type: none"> • PRISE members have signed a MoU as a means of cooperating and agreeing common principals. Close liaison between the consortium coordination unity and partners. • Strong experience and track record on leadership team on multi-partner ways of working. • Capacity-training will be provided to regional partner researchers/evaluators on methods, communications and learning through workshops on a needs basis. • Regular phone calls between the Principal Investigator and the IDRC programme officer to discuss project management and activity risks • Close monitoring and specific mitigation plans tailored to the specifics of the situation 	Moderate
3	Financial management of the PRISE consortium	All	High	O	Mod	High	<ul style="list-style-type: none"> • Agreed to transparent and open financial reporting between all PRISE members • Quarterly financial reporting to the CCU and PRISE partners • This will be managed on a case by case basis with close monitoring and specific mitigation plans tailored to the specifics of the situation 	Moderate
4	Skills, capacity or commitment of management and/or key implementing staff to deliver an effective research programme	All	Mod	P	Low	High	<p>This risk was defined as some organisations might be overstretched with work, overcommitted and/or with limited financial resources.</p> <p>The risk of a consortium partner failing to deliver on commitments in a timely and effective fashion will be managed through incentives and sanctions that apply to the contributions of all partners in the consortium agreements and in promoting a strong relationship with the PRISE partners and IDRC.</p>	Low
5	Procedures for team retention and handling team changes	All	Mod	O	Mod	Low	<p>Due to the 4.75 year timeframe of this project, staff turnover may occur during this period, with associated problems of loss of institutional memory, capacity and credibility. We will mitigate this risk by:</p> <ol style="list-style-type: none"> 1) Minimising staff turnover through provision of clear individual objectives, staff development and incentives 2) Contracting mechanisms to ensure that key staff can carry their involvement with them, should they change institutions. 3) In exceptional circumstances, the replacement of staff with like-for-like capacity (in consultation with IDRC). To achieve this, we are able to draw on our extensive database and network of associates. 	Low

6	Risk of non-delivery of research outputs or delivery of poor quality outputs by partners in the consortium	All	High	P	Low	High	<p>To ensure quality, PRISE has developed a strong quality assurance policy. Our research approach will also link together research teams from across the consortia.</p> <p>Risks around the quality of work and timeliness of delivery will also be managed through the standard toolbox of probation periods, clear research output milestones and sympathetic but robust peer review.</p>	Low
7	Natural hazards, particularly drought and flood, are potential risks to some of the field work, although this is difficult to quantify such risks.	All	Low	O	Mod	High	<p>Managed on a case by case basis. PRISE will monitor and address risk in accordance with the duty of care policies of individual members and IDRC's security and risk management policies.</p>	Low
8	Political uncertainty and or security concerns in the country of operation, which increases the cost of a project.	All	High	O	Mod	High	<p>This will be managed on a case by case basis. Before deploying staff we will ensure:</p> <ul style="list-style-type: none"> • We will analyse the situation and help us to forecast security costs at an early stage, allowing these costs to be better managed, using DFID/FCO early warnings • We will follow all steps in PRISE partner travel policies to ensure staff and contractor security overseas • We will closely monitor political and security risk for all of our project activities. At no time will we compromise team security because of financial constraints. • Depending on circumstances, we may withdraw our team or explore alternative approaches such as increased security provision. • Each situation is tracked through regular communication between research partners and wider leadership team 	Moderate

9	Working in remote semi-arid areas of developing countries: potential risk for social and political instability to affect research in the future.	All, Esp. Burkina Faso, Pakistan and Kenya	High	O	Mod	High	<p>Before deploying staff, we will ensure:</p> <ul style="list-style-type: none"> We discuss our project details with our internal Political Risk and security team members. We will analyse the situation and help us to forecast security costs at an early stage, allowing these costs to be better managed, using DFID/FCO early warnings Follow all steps in partner travel policies to ensure staff and contractor security overseas Closely monitor political and security risk for all of our projects. At no time will we compromise team security because of financial constraints. Depending on circumstances, we may withdraw our team or explore alternative approaches such as increased security provision. Each situation is tracked through regular communication between research partners and the wider leadership team. 	Moderate
10	Continuity with stakeholders and policy engagement: particularly when focusing on political appointees or elected officials such as government ministers	All	High	P	Mod	High	<p>Partners of the PRISE consortium have a strong track record of effectively communicating research. However, given the complex relationships between donors, governments, civil society and NGO, there is a risk of research not being utilised because key stakeholders are not open to research findings. In addition, in some countries stakeholders change frequently (high staff turnover) which requires substantial time input from researchers to update new stakeholders about the objectives and ways of working of PRISE. Steps for addressing this are described to include:</p> <p>The consortium will therefore focus on three types of boundary partner: the key decision maker (the business owner, the political appointee or elected representative), their technical advisors, and, finally, shapers of opinion more broadly. The consortium will spread risk by influencing decision-makers, the institutions providing them with technical advice, and the broader intellectual environment in which they operate.</p>	Moderate
11	Collection of data/conducting research in countries in which we operate takes longer than planned	All	Mod	P	Low	Mod	<p>Depending on the circumstances, we may recommend:</p> <ul style="list-style-type: none"> Change in resourcing or planning to make up for the lost time, or a revised timeframe. Sourcing alternative data / conducting alternative research (where this is viable) A revised timeframe (to be agreed with CARIAA). 	Low

12	Risk relating to limited research uptake	All	Mod	P	Mod	High	<p>PRISE consortium partners have a strong track record of effectively communicating research. However, given the complex relationships between PRISE key stakeholders, there is a risk of research not being utilised because key stakeholders are not open to research findings. In addition, in some countries stakeholders change frequently (high staff turnover) which requires substantial time input from researchers to update new stakeholders about the objectives and ways of working of PRISE. The stakeholder engagement strategy sets out the different methods for approaching and communicating our research. Further steps for addressing this also include:</p> <ul style="list-style-type: none"> • Ensuring that stakeholders are included at all stages of the research so that they 'own' evidence and research findings (i.e. through our SEPs); • Carrying out the country assessments in each to understand country contexts and when to engage in or direct policy engagement/influencing activities. • Assessing when stakeholders are likely to be more conducive to hearing about policy findings from external experts (sometimes seen as more objective) and when it is more appropriate to communicate through national partners. 	Low
13	Harm to participants engaged in study	All	Low	O	Low	High	<p>All partners have agreed to the IDRC Ethics in Research and Policy. All staff and contractors are required to follow at all times. The policy sets out clear guidelines for working with research participants to ensure that consent is informed and the research 'does no harm'.</p>	Low

v. Key global PRISE events in years 2014–2017

2015

Guy Jobbins (co-PI, ODI) presented initial PRISE experiences and insights at the UNFCCC Adaptation Committee Expert meeting on [‘Livelihoods and economic diversification to build resilience in the context of planning, prioritizing and implementing adaptation’](#) in September 2015 in Bonn, Germany.

D&C Days, UNFCCC CoP 21, 5-6 December 2015 (<https://www.odi.org/events/4296-development-and-climate-days-cop21>). The PRISE project collaborated with the Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) to hold two panels, focusing on economic resilience in semi-arid regions

- Session 3D. ***Unlocking the economic potential of livestock systems: climate resilience for Africa’s arid and semi-arid lands.*** This session will bring together decision-makers, practitioners and researchers from East and West Africa to discuss ways to build the ‘business’ case for investment in resilient livestock markets, ecosystems and livelihoods in Africa’s arid and semi-arid lands.
- Session 9A. ***High level panel on climate resilient growth in the drylands.*** The session will involve posing a provocative question to panellists and asking them for short responses then follow-up questions from the audience. The opening question might be: Fast-forward to 2030... how resilient do you think 41% of the earth’s land surface will be to more frequent and intense climate extremes? What will be happening in these economies?

2016

Adaptation Futures 2016, 10-13 May 2016, Rotterdam, NL.

Eva Ludi (PRISE PI) and Mark New (ASSAR PI) organised a joint PRISE–ASSAR panel on [Connections and disconnections between national and local agendas and aspirations for climate adaptation and development](#). This session also included presentations from Elizabeth Carabine (Project 3) and Florence Crick (Project 4)

Elizabeth Carabine (Project 3) organised and presented a panel on [‘Unlocking the potential of pastoralism: Opportunities for adaptation and development in Africa’s drylands’](#) and presented PRISE findings in a Panel on: [Ecosystem services for climate adaptation](#). Florence Crick (Project 4) present on [Adapting to climate change across boundaries – lessons from a territorial approach in Senegal](#) and on [Cross-boundary adaptation to climate change: learning from challenges and opportunities in Senegal](#)

Declan Conway (co-PI GRI-LSE) shared insights from PRISE at a panel organised by Lindsey Jones (ODI) and Ken De Souza (DFID) on [Planning the next generation of adaptation research: how to coordinate, broker and amplifying large research consortia to achieve development impact](#)

Mamadou Dimé presented research findings from PRISE Project 2 on ‘Migration, remittances, adaptation and resilience in arid and semi-arid regions of Senegal and Tajikistan’ at an official side event on the role of African researchers in addressing climate change and human mobility, jointly organised with the International Organization for Migration Morocco and the Kingdom of Morocco Conseil National des Droits de l’Homme (CNDH) on 7th November.

PRISE researchers led and participated in panel discussions and debates throughout the UNFCCC COP 22 and the twelfth session of the Conference of the Parties in Marrakech in November 2016.

Researchers from across the PRISE consortium participated in SDPI's 19th annual Sustainable Development Conference in Islamabad, Pakistan, in December 2016. PRISE hosted and led a panel debate on Project 1 'Migration futures in Asia and Africa', including a session on the distributional effects of out-migration, and livelihood resilience. The Project 3 team also presented on its unique, multidisciplinary value chain mapping approach. The PRISE team at GRI-LSE launched the book *The Economics of Climate-Resilient Development* in September 2016.

The Project 1 team at SDPI in Pakistan engaged with national-level key stakeholders during the [19th Sustainable Development Conference](#) held in Islamabad, Pakistan.

In July 2016, the Project 2 team leader in Senegal participated in a [Technical Meeting on Migration, Displacement and Human Mobility](#) in the context of the initial two-year work plan of the Executive Committee of the Warsaw International Mechanism for Loss and Damage. The meeting was organised by the International Organization for Migration (IOM) in Casablanca, Morocco.

IED Afrique, after having organised a meeting for senior representatives of the municipality of Dakar on the 'Elaboration and implementation of territorial policy on climate change: multiscale governance at the heart of the debate', were invited by the City Hall of Dakar to join the national platform in charge of developing a Plan Climat Energie Territorial (PCET).

PRISE, in collaboration with ASSAR, funded and organised a two-day workshop on evidence-based water security practice in semi-arid lands in November 2016 at the University of East Anglia, UK. The event brought together 40 researchers, practitioners and decision-makers from the universities of Oxford, Cambridge and London, WaterAid, the World Wildlife Fund (WWF) and DFID. The programme included debate on the challenges of developing robust policy advice based on water security research in semi-arid lands, and potential trade-offs between high-quality research and garnering evidence for policymaking, with a focus on the complex and dynamic nature of water and the diversity of users' needs.

March 2017

Elizabeth Carabine (Project 3) presented PRISE findings from Projects 3 and 5 '[Transformation of Land Tenure in Semi-Arid Areas and Implications for Climate Resilient Economic Development](#)' at the at the World Bank '[Land and Poverty Conference 2017: Responsible Land Governance—Towards an Evidence-Based Approach](#)'.

September 2017

At side events to the [UN Convention on Combatting Desertification \(UNCCD\) Conference of Parties 13 in Ordos, China in September 2017](#), Elizabeth Carabine (Project 3) and Rebecca Nadin (Head of Risk and Resilience Programme, ODI) presented the PRISE approach, with a specific focus on Projects 3 and 5.

October 2017

Ayesha Qaisrani (Project 1) presented PRISE findings on 'Building climate resilience through rural out-migration – the case of semi-arid Pakistan' at the at [Impacts World 2017](#) conference in Germany the Key research findings from Project 1 were disseminated at the.

November 2017

The consortium participated at several events and panels at UNFCCC COP23 in Bonn, at which a selection of key consortium outputs were disseminated.

PRISE researchers also presented research findings at the [Pôle Pastoralisme et Zones Sèches \(PPSZ\)](#) in Dakar, Senegal.

December 2017

In Burkina Faso, a major stakeholder engagement workshop was held, including the participation of key stakeholders from government, NGOs, academia and communities living in PRISE study sites. A short documentary film on '[Agriculture and Water: Testimony from two villages in Burkina Faso](#)' was screened at the event.

March 2018

Cheikh Tidiane Wade participated in the Gender Summit in Kigali (Climate Change through the Gender Lens: Focus on Africa 19–20 March 2018), led by the African Institute for Mathematical Sciences. The summit focused on gender issues in the context of climate change, with a focus on Africa.

February 2018

Rebecca Nadin and Erin Roberts, PRISE research associates, disseminated PRISE research evidence and outputs at the 13th Adaptation Committee meeting in Bonn, Germany.

DRAFT REPORT (not for circulation)