



Final Technical Report: Climate Resilient Economic Development in Semi-Arid Regions

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Pathways to Resilience In Semi-Arid Economies (PRISE)

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Final Technical Report

1. Synthesis

A proposal development grant awarded to the Overseas Development Institute (ODI) was used to prepare a consortium research proposal on climate resilient economic development in African and Asian semi-arid lands (SALs). A range of activities were supported by the grant. This included literature review and analysis, a series of diagnostic missions in six countries and a four-day workshop held in London involving consortium partners to develop an outline of the proposal.

Diagnostic missions were carried out in Burkina Faso, Kenya, Pakistan, Senegal, Tajikistan and Tanzania, pre-identified as likely core countries for consortium research. These countries all have large, economically crucial semi-arid lands, where water scarcity shapes ecosystems and social and economic opportunities. These missions were crucial in confirming their selection as core countries for the research programme, and for consulting with key stakeholders to scope research and policy issues and entry-points. Stakeholders from national governments, businesses, civil society, and regional economic organisations were engaged in these diagnostic assessments.

During the London Workshop, the consortium reflected on lessons learned from the diagnostic missions and elaborated a vision and theory of change for *climate resilient development* that both eliminates poverty and maximises the capacity of people to adapt to climate change. Wide-ranging discussions between team members on mechanisms of economic growth and social development led to the articulation of a trans-disciplinary theoretical framework. This was further developed in the selection and elaboration of research areas, research questions, and methodological aspects. Time was also taken during the workshop to conduct team-building exercises, and to establish foundations for working relationships, including agreement on consortium management and governance.

As a result of these activities, the final proposal submitted to IDRC on September 5th was grounded in the demands expressed during the diagnostic missions, and reflected the consensus of consortium members.

2. The Research Problem

In June 2013 IDRC awarded a proposal development grant to a consortium led by the Overseas Development Institute (ODI) to prepare a research programme aiming to catalyse inclusive climate resilient economic development in African and Asian semi-arid lands (SALs). Aside from ODI, this consortium included Innovation Environnement Developpement Afrique (IED), the Centre for Climate Change Studies at the University of Dar es Salaam (CCCS), the Sustainable Development Policy Institute (SDPI), and the Grantham Research Institute at the London School of Economics (GRI).

The outline concept note that led to the award of the proposal development grant had identified the problem area of climate resilient economic development in semi-arid lands of Africa and Asia as being of critical importance. Governments in these areas face the critical challenge of promoting sustainable and equitable economic development in the context of climate variability and change. Biophysically fragile semi-arid regions are home to over 1 billion people, yet their livelihoods, businesses, and economies are particularly sensitive to both climate impacts and unsustainable economic development choices.

The consortium proposed, through policy-oriented research, to strengthen the resilience of economic development in semi-arid regions exposed to climate impacts in ways that deliver rising prosperity, environmental sustainability and social equity. The concept note identified four complementary themes – macro-economic, sectorial, decision-maker, and policy perspectives – through which the research would identify means of reconciling multiple dimensions of vulnerability in economic development planning and policy.

The concept note also determined to engage governmental bodies, civil society, and private sector organisations, from local to national levels, and regional economic commissions in research and research uptake through an extensive multi-stakeholder process.

In order to orient and develop the ideas from the concept note into a full proposal, it was necessary to conduct scoping exercises in countries in which research activities would focus. These were intended to identify research and policy entry-points, target audiences and client groups, and also to assess possible case studies and sectors for analysis. It was also necessary to bring together the five consortium members in order to reflect on the findings of the diagnostic missions, refine the orientation and substance of the consortium's research agenda, and agree management and governance issues.

The proposal development grant was therefore used to support regional diagnostic exercises and a proposal development workshop. These activities were intended to ensure that the final project proposal balanced a visionary strategic approach with grounded assessments of regional knowledge needs and priorities, and that the consortium would therefore advance an innovative research agenda while being feasible, effective and responsive to demand.

3. Objectives

- To conduct diagnostic exercises in six countries (Burkina Faso, Kenya, Pakistan, Senegal, Tajikistan and Tanzania) to identify research issues and policy entry points for the consortium
- To hold a proposal development workshop for consortium members
- To produce a final proposal for submission to CARIAA/IDRC

4. Methodology

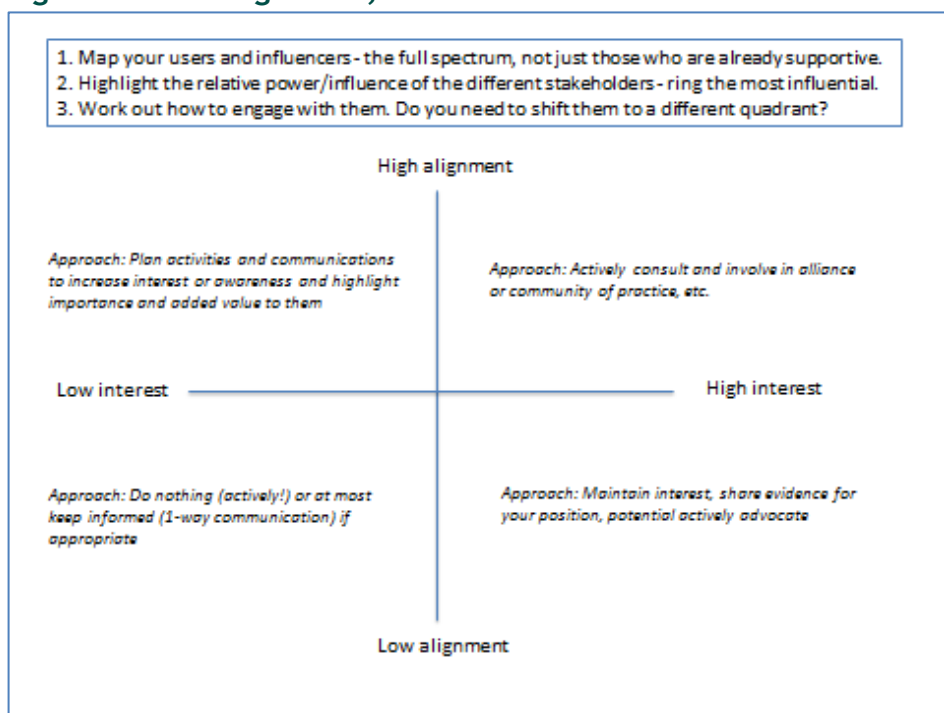
Diagnostic missions

Diagnostic missions were conducted in Burkina Faso, Kenya, Pakistan, Senegal, Tajikistan and Tanzania, which had been pre-identified as likely core countries for research activities. During July 2013 a joint ODI-IED diagnostic mission was conducted in Senegal and Burkina Faso (Bara Gueye, IED & Peter Newborne, ODI), and an ODI-CCCS mission took place in Tanzania and Kenya (Pius Yanda, CCCS & Lindsey Jones, ODI).

Initial plans to hold a joint ODI-SDPI mission in Pakistan and Tajikistan was curtailed due to the significant financial costs implied. Instead a senior ODI staff member, Roger Calow, Head of the Water Policy Programme, conducted the Tajikistan mission while SDPI conducted a diagnostic assessment in Pakistan (Kashif Salik, SDPI).

Diagnostic mission teams used a stakeholder assessment framework developed by IED-Afrique, based on the Alignment, Influence and Interest Matrix (AIIM) (Fig 1.). Interests and entry points for each stakeholder were also collected by the four research perspectives identified in the initial concept note (Macroeconomics - Development policy, growth and climate resilience; Governance, institutions and the political economy; the adaptive capacity of households and firms; and the Public Policy perspective). Data collection came from documentary analysis, consultation meetings with key stakeholders, and focus groups.

Figure 1: The Alignment, Influence and Interest Matrix



In total, 42 stakeholders from the private sector, research, government agencies, civil society organisations and intergovernmental agencies were consulted with. A complete list is given in Annex A.

London Consortium Workshop

The consortium members met at ODI headquarters in London between July 30th and August 2nd to review findings from the diagnostic missions and refine the proposal outline. A full agenda is contained in Annex B.

The workshop focused on distilling the findings of the diagnostic missions, and then refining of programme objectives, research questions, sectors and case studies, methods and stakeholder engagement approaches. The workshop was also used for team building amongst the consortium partners, in particular elaborating responsibilities and processes for co-management, coordination and oversight based on the model of management and governance of the consortium.

5. Findings from Project Activities

5.1 Results of the Diagnostic Missions

West Africa

Key findings in West Africa were clustered into issues of governance, sub-regional economic integration, local adaptive capacity, the role of the private sector, and opportunities afforded by climate change. A range of strong possible entry-point to policy and practice were identified, including through sub-regional economic groupings and networks of small agricultural producers.

Key questions around governance principally related to formal and informal arrangements for access to, and allocations of, resources for equitable development. These questions were particularly acute in terms of allocations of water for agriculture versus other uses, such as sanitation and drinking water, how decisions are made over land resources, and decision making over investments in irrigated agriculture. Examples of questions raised by stakeholders included how to prioritise and chose between investments in agriculture to achieve food security while sustaining the rural livelihoods systems in context of climatic variations: rain-fed or irrigated, and at what scales?

The second identified area of interest was building resilient national economies within an integrated sub-region. A wide range of stakeholders recognised the importance of supporting factors conducive to macro-economic stability and growth in sub-regional trade as a means of building climate resilience. Questions included how to best promote sub-regional trade and ensure that regional value chains benefit the most vulnerable and poorest agricultural producers, and the extent to which sub-regional transportation networks might improve food security and drought resilience.

The third cluster of demand related to organisational structures and support networks for local adaptive capacity. In particular, questions related to how small family farms and business can access capacity for adaptation to climate change and variability. Examples might include asset-building, improved access to markets and employment, and migration.

The role of the private sector was considered both in terms of small producers agglomerated in associations or federations, and domestic and foreign big business. Key areas of knowledge demand related to improved participation by the private sector in sustainable land management and activities supporting food and water security, with possible mechanisms including public-private partnerships, private sector-led projects, as well as enhanced roles for government in regulation and creating an enabling environment for business.

Finally, stakeholders were interested in new economic possibilities arising from climate change, including investments in renewable energy – particularly solar – and services in a green economy. Private sector stakeholders wanted research to identify opportunities of which they could take advantage, while public sector actors were interested in advice on establishing enabling policies.

The diagnostic mission team noted that inclusion and participation was a cross-cutting theme overlaying these five areas of research demand, particularly with respect to the role of women and youth.

East Africa

The diagnostic team in East Africa identified strong and clear demand from policy makers to provide inputs to national development planning and climate change strategies, particularly in Tanzania. With economic development strongly linked to natural resources through agriculture, livestock, wildlife and forests, East African semi-arid lands are highly vulnerable to climate change. As in West Africa, low flow periods have affected hydropower generation, while floods have damaged transportation infrastructure, and drought has also exacerbated conflicts between agricultural and pastoralist communities.

The diagnostic team in East Africa identified a number of knowledge needs and demands from stakeholders in three broad clusters: identifying opportunities, understanding the governance of resilience and economic growth, and strengthened adaptive capacity.

There is still a need for vulnerability assessments of natural and social systems in semi-arid lands of East Africa to identify the challenges that climate change and increased variability will bring. However, there is also demand to identify potential opportunities that may contribute to economic development and resilience. There is demand for assessments identifying practicable adaptation options using existing and potential resources and capacities, as well as developing and testing viable adaptation options using indigenous and modern technologies. Specific examples identified included rainwater harvesting, climate smart agriculture, establishment of micro-finance institutions, food processing technologies, and development of value chains.

As a second cluster, stakeholders were also interested in better information and advice on how institutions and policies contribute to resilience and economic development. Although there was a clear demand for knowledge to inform central government planning and strategies, there was also a particular interest in the interactions between local and central levels of government, and how they might be strengthened for climate resilient economic development. The marginalisation of semi-arid lands within developing countries was noted as both a result and a cause of the under-development of these regions.

The third cluster of demand was to strengthen the capacity of decision - and policy-makers to support adaptation to climate change. This included the development of an integrated decision-support tool for climate resilience economic development planning in semi-arid lands. Support for knowledge sharing and scaling up lessons learned on climate resilient economic development was also identified as a priority.

Central Asia

Tajikistan

Tajikistan has been highlighted as the most climate-vulnerable of the Central Asian states and the least able to adapt. Despite high levels of irrigation, agricultural systems remain linked to erratic rains due to limited water storage. High levels of environmental degradation and associated landslides, mudslides and flash floods contribute to major loss of life and infrastructure damage,

and the poor state of social infrastructure (e.g. access to safe water) also undermines resilience. Key entry points include the development of a national Green Growth strategy, as well as donor programmes by DfID and GIZ on private sector reform, and sectoral initiatives on water, energy and food security.

Green growth strategies in preparation are intended to mainstream climate compatible development across the public sector and to benefit from international climate finance. There is demand from multiple actors to produce knowledge that will usefully differentiate a green growth strategy from the existing National Development Strategy.

In terms of private sector-led growth, there is demand from different actors for knowledge on the potential role of private sector in supporting the green economy. This potentially includes dimensions of regulatory reform, tax breaks, and green technologies.

The water-energy-food security cluster also raises the sub-regional dimension, with politicised conflict between Tajikistan and Uzbekistan over a new multi-purpose dam at Roghun. Tajikistan's plan to sell hydroelectricity to Pakistan is another aspect of this regional dimension.

Pakistan

The diagnostic team in Pakistan identified three key clusters on the interface of climate change and economic development: business cycle interactions between climate and the economy; labour productivity and efficiency; and inclusive green growth and climate finance. Identified entry-points included private sector networks and associations at Federal and Provincial levels, as well as the Federal Minister of Finance.

The cluster on business cycle interactions reflects concerns that the key commercial and staple food crops, including rice, cotton, sugarcane, and wheat, in semi-arid regions of Pakistan are highly susceptible to climate change and projected to decline in both yields and production. These crops, along with livestock, poultry and forestry products, provide critical raw materials for industries. Limited research in climate-agriculture-industry interactions has been conducted to date, and policy makers are concerned by the extent of cascading economic impacts that could be triggered by climate change.

The second cluster on labour productivity and efficiency reflects the lack of knowledge on these issues in Pakistan, and in particular the additional pressures posed by climate change.

As a third cluster of knowledge demand, Pakistan is facing challenges in promoting green growth due to three factors. First, a lack of national climate change action plans and strategies that should provide clear road map for mainstreaming into development plan. Second, a need to improve decision making process at all levels. Third, a lack of public and private institutional capacities for capturing international climate finance. Actors consulted expressed clear demand prioritising knowledge on these issues.

Summary

These brief summaries cannot fully capture the range of issues captured in the regional diagnostic missions, but only reflect the most highly prioritised clusters of ideas. Each diagnostic mission also identified specific potential case studies and a range of other related research questions and areas of knowledge demand. Twinning researchers from ODI and other consortium partners was a useful means of building collaboration, ensuring consistency in approach, and ensuring that a plurality of views were represented. However, resources did limit the breadth of consultation possible in each region, and timing also was a challenge in arranging travel and visas.

5.2 London Consortium Workshop

Reporting back from the diagnostic missions revealed some critical structural challenges for the consortium to address. Firstly, the research structure proposed in the concept note, around four perspectives (macro-economy, decision-makers sectors, and public policy) was not a useful model for articulating an intellectually robust research agenda. Secondly, the range of issues identified during the diagnostic missions did not fit together easily, and would require repackaging and reorientation to develop a guiding framework for the consortium.

To resolve these issues, a mapping approach to develop a theory of change was used to identify the causal reasoning that would take the consortium from research to development impact. The reflections accompanying this process led to the realisation that the component processes and building blocks of the theory of change related to different enabling factors of economic development and how they might be affected by climate change. These enabling factors were then clustered into human capital, natural capital, effective policy, and effective markets, with a fifth, cross-cutting issue of climate risk. This framing of the problem harmonised with the underlying concerns found in each diagnostic study, even if these concerns had been initially expressed in different terms.

Consensus around this framing allowed the rest of the workshop to focus on refining the research agenda and further developing a research into use and stakeholder engagement strategy. This led to the development and articulation of a transdisciplinary policy-first methodology, taking enabling economic development rather than climate science as a starting point. The consortium also embraced the concept of deep engagement with stakeholders to influence policy and practice. This led to a three-phase research agenda based on an initial scoping of issues and engagement with stakeholders, an in-depth research phase, and a final consolidation and communication phase. The disadvantage of this approach is that research ideas presented can only be tentative until confirmed with stakeholders and end-users. However, the consortium considered that this is outweighed by the advantage of focusing on case studies and research issues of immediate benefit and interest to key stakeholders that the consortium wishes to influence.

Summary

It was a challenge to address all of the complex research and management issues in the time available, particularly as Pius Yanda was only able to join the meeting via videoconference due to problems in obtaining a visa in a tight timeframe. However, the London workshop was a crucial point in the development of the consortium's theoretical and methodological framework, without which it would have been extremely challenging to resolve the plurality of needs and issues raised in the diagnostic missions.

6. Project Outcomes

The principal outcomes from the proposal development grant included a proposal reflecting the knowledge needs and demands expressed through the diagnostic missions, a revised theoretical and methodological framework, and a strengthened consortium partnership with experience working together to establish a research agenda through consensus.

The consortium partners intend to produce a working paper summarising the findings of the diagnostic missions in due course, in which acknowledgement will be made of the financial contribution made by CARIAA.

7. Overall Assessment and Recommendations

The final proposal benefitted greatly from the opportunities afforded by the proposal development grant. As a consequence of the supported activities, the consortium:

- developed a stronger intellectual, theoretical, and methodological framing for the proposal
- ensured the proposal was grounded in research demands from key stakeholders in the core countries
- developed stronger working relationships and established a consensus-based approach to decision-making.

These key outcomes will ensure that, if successful, the consortium is better placed to deliver high quality results.

Key challenges also related to the logistics of the proposal development phase. The relatively narrow window of action between contract signature for the proposal development grant and the final submission of proposals led to some challenges in tasking staff with participation in activities, as well as challenges in arranging international travel.

Appendix A: Regional Consulted Actors and Organisations

Tajikistan

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Ilhomjon Rajabov, State Administration for Hydrometeorology, Chief Technical Advisor, Pilot Programme for Climate Resilience, Tajikistan

Prof Pulatov Yarash, Ministry of Irrigation and Water Resources. Tj_water@mail.ru, Tel + 919021411

Mr. Anvar Khamidov, Climate change specialist

Jorg Andreas Dinkelaker, Acting Director, GIZ, Tajikistan

Bakhtiyor Bahodurov, Tajeco Consultancy, lead author of Living Standards Improvement Strategy of Tajikistan

Ms. Matluba Uljabaeva, Chair, Association of small and medium-size business, Dushanbe

Dr Salimov Talbak, Committee on Environmental Protection under the Government of Tajikistan, Ministry of Irrigation and Water Resources

Zarina Kosymova, Deputy Team Leader, AFC Consultants International, Project Framework and Finance for Private Sector Development in Tajikistan

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Senegal

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Dr Stacey Noel, Director, Stockholm Environment Institute Africa, <stacey.noel@york.ac.uk>

Tanzania

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Magdalena Mtenga, Acting Director of Environment, Vice President's Office.

Prof. Samuel Wangwe, Executive Director, Poverty Research for Development (REPOA)

Annex B: London Workshop agenda

CARIAA: Climate Resilient Economic Development in Semi-Arid Regions

Proposal Development Workshop Agenda

July 30th – August 2nd 2013, ODI, 203 Blackfriars Road, London

Objectives

1. Develop project conceptual and logical frameworks
2. Agree project management and governance framework
3. Develop consortium and partner workplans

Tuesday 30th July

1000 - 1200	1. <i>Opening session</i>
Introductions, review of agenda, overview of consortium, feedback from IDRC, overview of program timeline, strategic budget questions	
1200 - 1300	Lunch
1300 - 1430	2. <i>Feedback from scoping exercises</i>
Research demand, questions, key audiences, and potential themes case studies identified from each region	
1430 - 1630	3. <i>Consortium governance and management</i>
Discussion on roles and responsibilities of each institution, consortium ways of working	
1630 - 1700	4. <i>Closing</i>
Wrap-up, next steps & responsibilities, parking lot issues	

Wednesday 31st July

0930 - 1130	5. <i>Project logical framework I</i>
Identifying objectives, themes, and research questions	
1130- 1430	6. <i>Methodology session</i>
Scope & scale of project, selection of countries & case studies, use of climate data & data needs, types of research to be conducted	
1200-1300	<i>Lunch in session</i>
1430 - 1630	7. <i>Other Modalities</i>
Small grant programs, capacity building activities, & cross-consortia working, etc.	
1630 - 1700	8. <i>Closing</i>
Wrap-up, next steps & responsibilities, parking lot issues	

Thursday 1st August

0930-1030	9. <i>Project logical framework II</i>
Recap of progress to date & review of logical framework	
1030 - 1630	10. <i>Research activities</i>
selection of research activities for each perspective	
1200-1300	<i>Lunch in session</i>
1630 - 1700	11. <i>Closing</i>
Wrap-up, next steps & responsibilities, parking lot issues	

Friday 2nd August

0930-1030	12. <i>Project logical framework III</i>
Review of progress so far, and over view of the project logical framework	
1030 - 1300	13. <i>Workplans & Outputs</i>

Developing research activities into workplans, with outputs (and budgets?)	
<i>1200-1300</i>	<i>Lunch in session</i>
<i>1300-1530</i>	<i>14. TBD</i>
Any remaining issues	
<i>1530 - 1600</i>	<i>15. Closing</i>
Wrap-up, next steps & responsibilities, parking lot issues	

Attendees:

Bara Gueye, IED Afrique
 Babar Jamal, SDPI
 Pius Yanda, University of Dar es Salaam (via videolink)
 Sam Fankhauser, GRI/LSE
 Judith Rees, GRI/LSE
 Florence Crick, GRI/LSE
 Tom Mitchell, ODI
 Karen Ellis, ODI
 Guy Jobbins, ODI
 Alberto Lemma, ODI
 Eva Ludi, ODI
 Simon Hearn, ODI
 Miren Gutierrez, ODI
 Helen Mountfort, ODI