



# ASSAR

Adaptation at Scale in Semi-Arid Regions



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The INTASAVE Partnership & CARIBSAVE

# Adaptation at Scale in Semi-Arid Regions



- ❖ As we understand more about the **global impacts of climate change**, so we need to know how people can **effectively respond and adapt** to these changes.



# Adaptation at Scale in Semi-Arid Regions



- ❖ Home to hundreds of millions of people, the **semi-arid regions of Africa and Asia** are particularly vulnerable to climate-related impacts and risks.
- ❖ These regions already experience **harsh climates**, adverse **environmental change**, and a relative **paucity of natural resources**.
- ❖ People here may be further marginalised by socio-economic challenges, including high levels of **poverty**, government processes that prevent sufficient participation and **low levels of development**.



# Adaptation at Scale in Semi-Arid Regions



- ❖ Although many people in these regions already display remarkable resilience, these **existing pressures are expected to amplify** in the coming decades.



- ❖ Therefore, it is essential to understand how to **empower people, local organisations and government** to adapt to climate change in a way that minimises their vulnerability and promotes their long-term resilience.

# Adaptation at Scale in Semi-Arid Regions



- ❖ ASSAR aims to transform climate adaptation policy and practice in ways that promote the long-term well-being of the most vulnerable and those with the least agency.



# Adaptation at Scale in Semi-Arid Regions

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- ❖ To achieve this ASSAR is:
  - ❖ Working with diverse stakeholders in a coordinated manner across 11 countries in southern Africa, eastern Africa, western Africa, and south Asia, to investigate the **root causes of vulnerability**.
  - ❖ Examining vulnerability through an **interdisciplinary and gender-sensitive lens**, focusing on both **climate and non-climatic stressors**.
  - ❖ Engaging with multiple levels of governance – from local communities to national and regional institutions – to understand what is needed to proactively spur **widespread, effective and sustained adaptation** that has positive and lasting effects on **socio-economic development**.

# Adaptation at Scale in Semi-Arid Regions

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- ❖ Over its 5-year lifespan, the **cross-regional and cross-disciplinary comparison** of research findings will enable ASSAR to develop a **unique and systemic understanding** of the processes and factors that impede adaptation and cause vulnerability to persist.



# Project Phases

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## Phase 1

### REGIONAL DIAGNOSTICS

Investigate what people in semi-arid regions currently know about climate change, and what they're doing to adapt to these changes.

At the same time, compile detailed climate projections to highlight region-specific vulnerabilities and challenges.

## Phase 2

### REGIONAL RESEARCH

Use the information gathered from the first phase, and add to it through novel case study research, to explore strategies for developing adaptive capacity at multiple scales - from individuals to business and governments - within each region.

## Phase 3

### RESEARCH UPTAKE

Promote research into use across all regions, by informing adaptation practices at multiple scales, and in different contexts, and enabling take-up of research insights in policy and practice interventions.





# Regional Diagnostic Study

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## West Africa



# The regional to sub-national context

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- ❖ The West Africa drylands hosts an enormous variety of biophysical environments intertwined with highly contrasted socio-economic, demographic and land use conditions. The drylands region features a sparsely populated Western half and a more densely populated Eastern half.
- ❖ In the West Africa drylands, spatial distribution of poverty is not intrinsically linked to the climate gradient nor to population densities. Areas of high and low poverty are observed in the dry areas as well as in the relatively moist areas and in high and low population densities.

# Climate Change, Trends and Projections

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- ❖ Temperatures across the region have increased by 1°C on average over the past 50 years.
- ❖ Future projections of temperature change show significant increases across the region. Temperatures in the north of the region, from the Sahel to the Sahara, are projected to increase by 2°C on average by the 2040s.
- ❖ Rainfall trends over the past 50 years are less evident than for temperature, and there are large variations in the direction and magnitude of changes across the region.
- ❖ There is evidence of a shift in the rainy season towards later rainfall for some regions. In general, rainfall trends are weak.
- ❖ Future model projections of rainfall contradict each other, showing potentially large increases as well as decreases. At present there is insufficient evidence to support either a shift to drier or wetter conditions in the future in most locations.

# Risks, Impacts and Vulnerability

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- ❖ Drought and high interannual climate variability contribute strongly to underdevelopment in West Africa. High levels of poverty, lack of social safety nets, climate-dependent livelihoods, gender inequalities, and low asset bases increase vulnerability to climatic extremes.
- ❖ Flooding and heavy rainfall events also contribute to vulnerability and are inflicting increasing damage in the region.
- ❖ Decentralization of governance authority over natural resources management, while having potential to better address local management needs, has thus far largely not been successful as local governments are ill equipped to assume responsibilities over natural resource management.
- ❖ Reduced access to pastoral corridors and other changes underway in pastoralism across semi-arid West Africa exemplify how climate and non-climate drivers intersect to enhance vulnerability. Herder-farmer conflict in West Africa has increased as northern pastoralists have extended further southwards into regions dominated by crop agriculture, while at the same time farmers have expanded crop production into lands used primarily by pastoralists.

# The Adaptation-Development Spectrum

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- ❖ There are important complementarities and synergies between sustainable intensification of agriculture and near-term adaptation to climate change. These include timely access to fertilizer inputs, improved crop varieties, contour-ridge tillage, stone lines, tied ridges, terracing, crop residue management and mulching, zaï pits, agroforestry, farmer-managed natural regeneration of field trees, and rainwater harvesting, and small reservoirs.
- ❖ However the ability to initiate widespread positive change is circumscribed by lack of land tenure security and lack of access to adequate roads and other infrastructure, markets, extension services, and appropriate microcredit schemes.
- ❖ The development of national level policy frameworks for adaptation planning is proceeding well in both Mali and Ghana. These national policies provide general guidance for investments and actions aimed at addressing adaptation needs. However, there are a lack of effective mechanisms, financial resources, and institutional capacities in place to effectively implement adaptation frameworks

# Conclusions

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- ❖ Important **barriers** to adaptation comprise development, gender, and governance dimensions. Among the key development barriers are: lack of integrated water resource planning, extensification of agriculture onto drought prone soils, reduced access to pastoral corridors, increased encroachment of farming onto rangelands, and under investment in drylands.
- ❖ Among the key gender barriers are: traditional gender norms that manifest in unequal access to resources and decision-making processes, limited livelihood and technologic options for women, predominance of male migration that leave women, children, elderly and disabled dependents vulnerable to shocks, particularly where remittance flows are weak or nonexistent.
- ❖ Among the key governance barriers are: incomplete government decentralization, top-down policy interventions for managing natural resources that lack local incentives and lock local communities out of resource access, and lack of coordination within national-level institutions and across national to district scales.

# Conclusions

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- ❖ Important **enablers** of adaptation also comprise development, gender, and governance dimensions. Among the key development enablers are: research agendas that increasingly emphasize participatory processes for knowledge co-generation, greater prominence of appropriate technologies for soil and water conservation and natural resource management, and increasing efforts to better channel weather information to local communities.
- ❖ Among the key gender enablers are that adaptation provides an entry point for better addressing the needs of differentially vulnerable groups.
- ❖ Among the key governance enablers are: a significant increase in national policy development around climate change, leadership that is emerging in key ministries, and increasing evidence of mainstreaming of climate into different sectoral policies and strategies.



## SUPPORTED BY

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