Confronting Drought in Africa's Drylands

Opportunities for Enhancing Resilience

Findings and recommendations of a major new study

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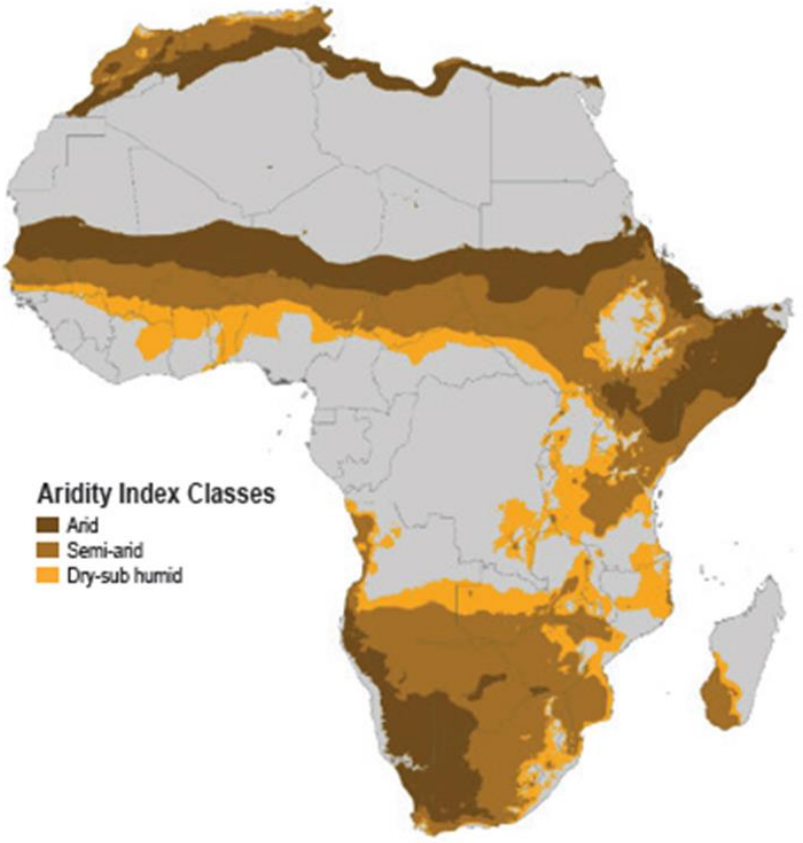
Collaborators and contributors

Why this report?

- Drylands (including arid, semi-arid and dry sub-humid areas) account for:
  - 43% of land area
  - 50% of population
  - 75% of agriculture land

- About 75% of Africa's poor (living on less than $1.25/day) live in countries where people living in drylands make up more than 25% of total population



Context

Many initiatives

- AGIR (Sahel)
- Global Alliance (Horn of Africa)
- Sahel Initiative (WB)
- Sahel Action Plan (AfDB)
- Great Green Wall (WB)

A fragmented dialogue

- Many parallel conversations
- Large range of views
- Lack of consensus
- High degree of sensitivity

Overall goal: Inform next generation of policies and programs for resilience

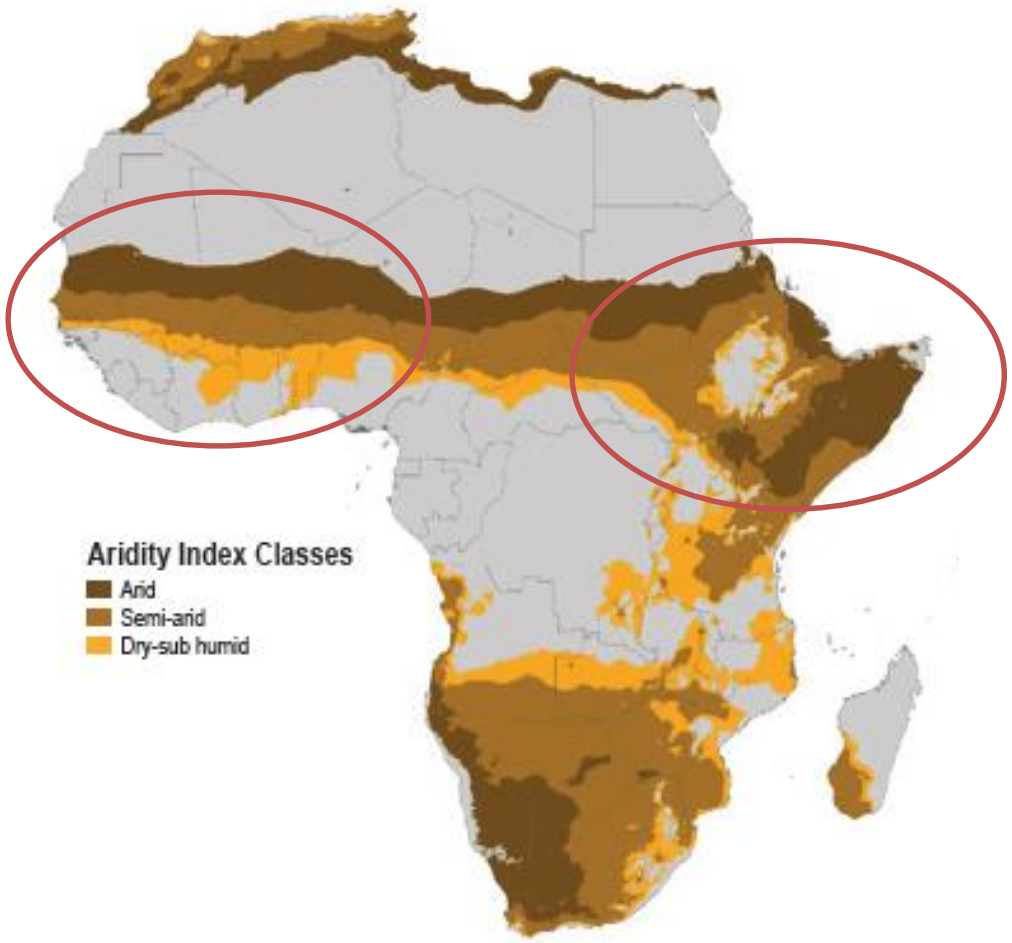
Specific objectives

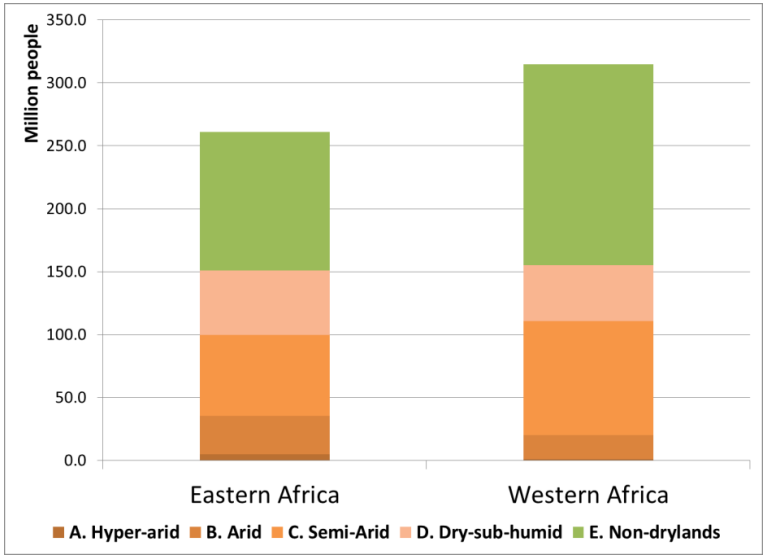
1. Characterize **current** and **future** challenges to reducing vulnerability and increasing resilience in drylands
2. Identify main interventions to enhance resilience, estimate their costs, and assess their effectiveness
3. Provide an evidence-based framework to improve decision making on alternative options to enhance resilience
4. Promote sharing of regional and global knowledge on resilient development in drylands

Three core messages

1. **Business as usual is not an option**
   - By 2030, up to 70% increase of population vulnerable to drought
   - Strong push to drop out of existing livelihoods (e.g. pastoralism)
2. **Better management of livestock, farming, and natural resources is effective and affordable**
   - Opportunity to cut in half or more the size of the problem
   - The cost ($0.4 - 1.3 billion/ year) is in the range of current development budgets
3. **But it needs to be complemented with:**
   - Better safety nets
   - Contingent finance mechanisms
   - Alternative livelihoods
   - Landscape restoration

Scope of analysis





Some 300 million people are estimated to live in drylands in East and West Africa

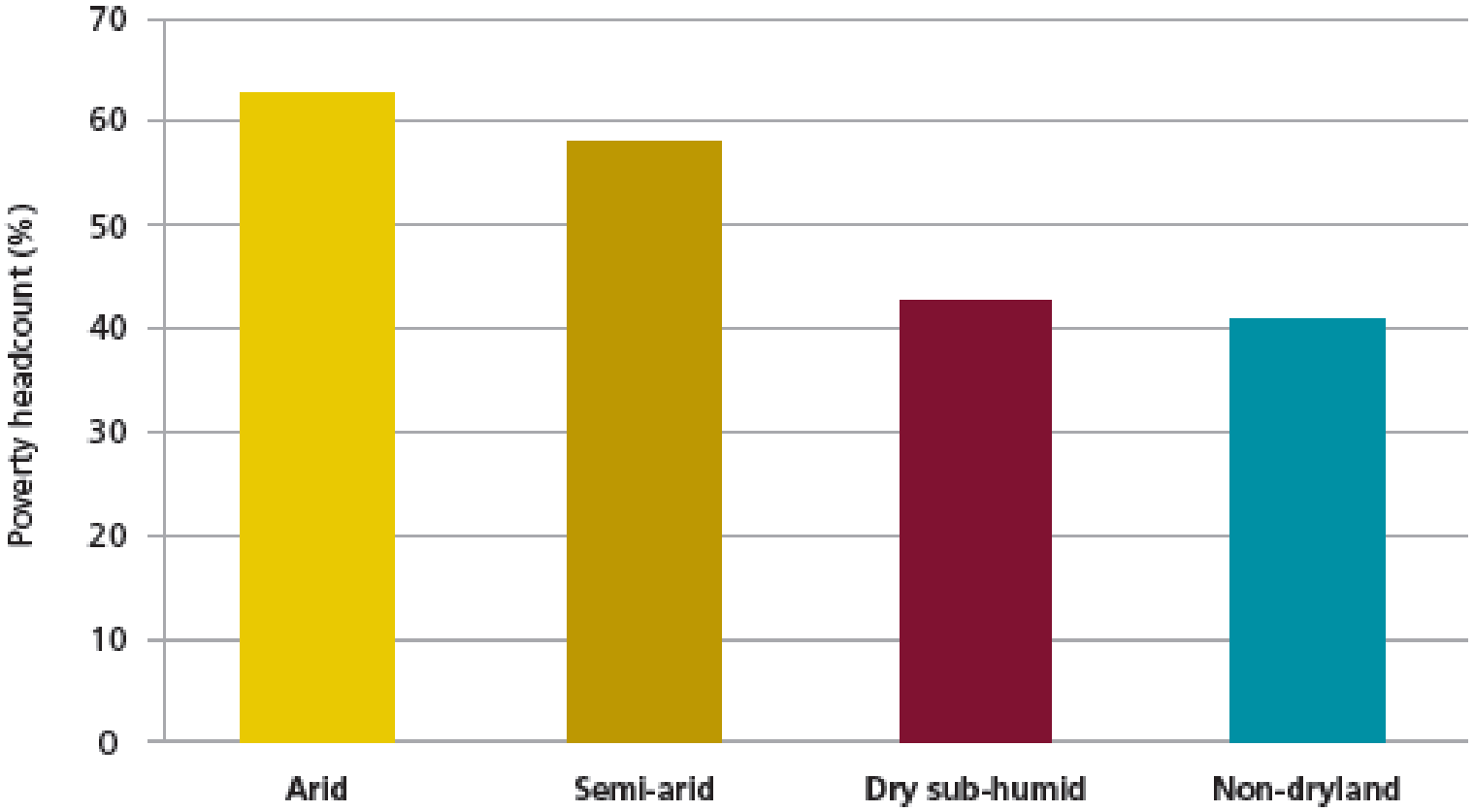
Drylands are defined based on the Aridity Index, which is consistent with UNCCD practice
Particular emphasis is given to the vulnerable areas in West and East Africa

Multiple challenges faced by drylands:

- Land degradation
- Climate variability
- Poor infrastructure
- Conflict
- Political marginalization

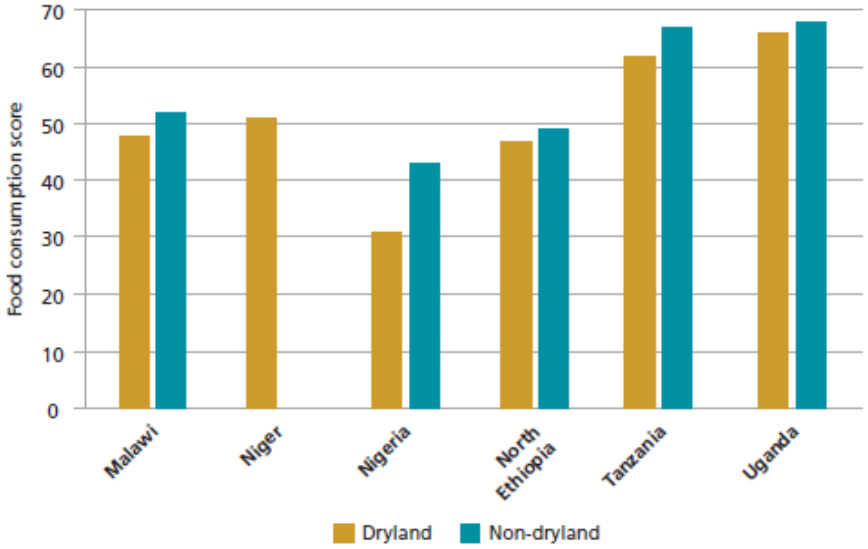
Result: Negative development outcomes

Poverty headcount by aridity zone (2010, selected countries)

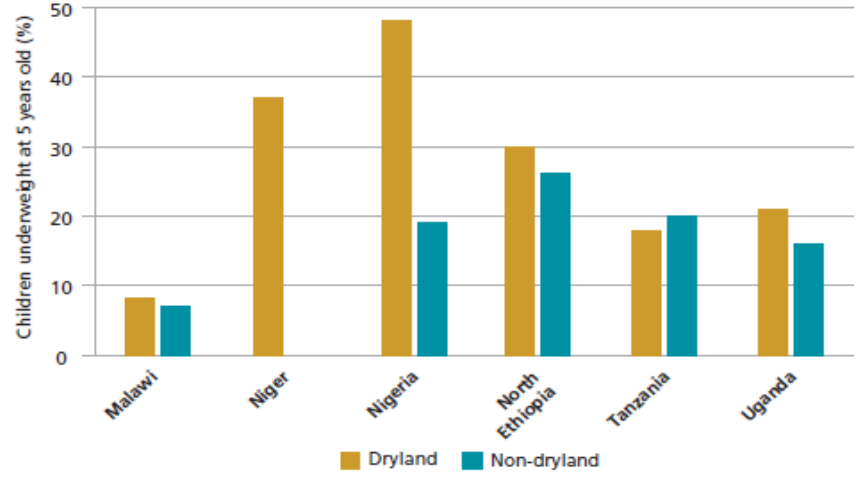


Figures refer to Niger, Nigeria, Ethiopia, Uganda, Malawi, Tanzania

Result: Lagging development indicators

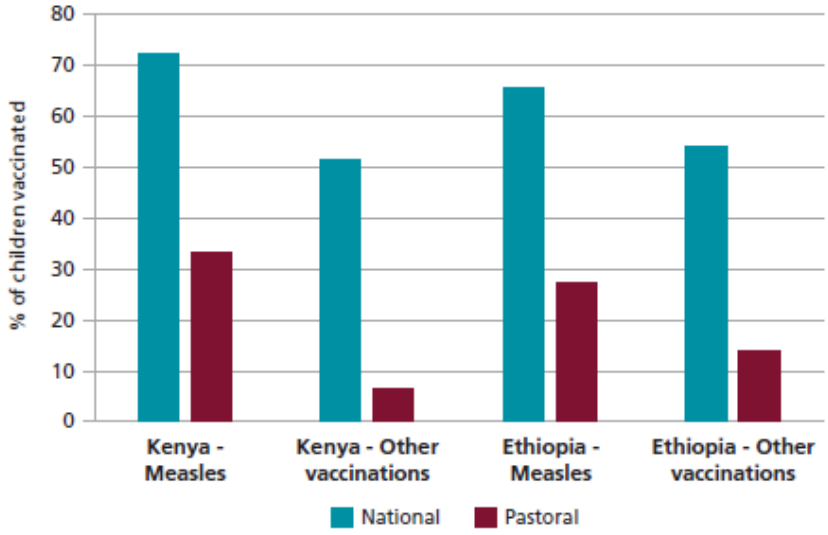


Food consumption scores lower in drylands

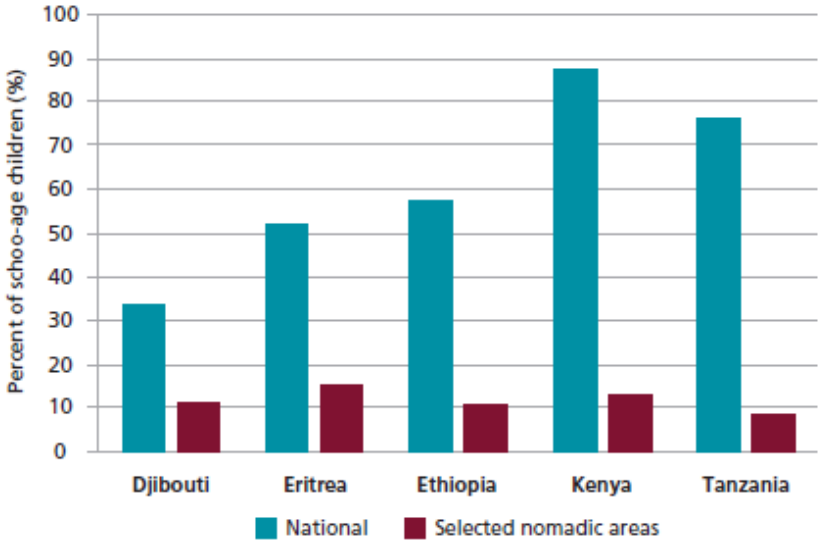


Proportion of underweight children higher in drylands

Result: Pastoralists particularly disadvantaged



Vaccination rates lower in dryland pastoral areas



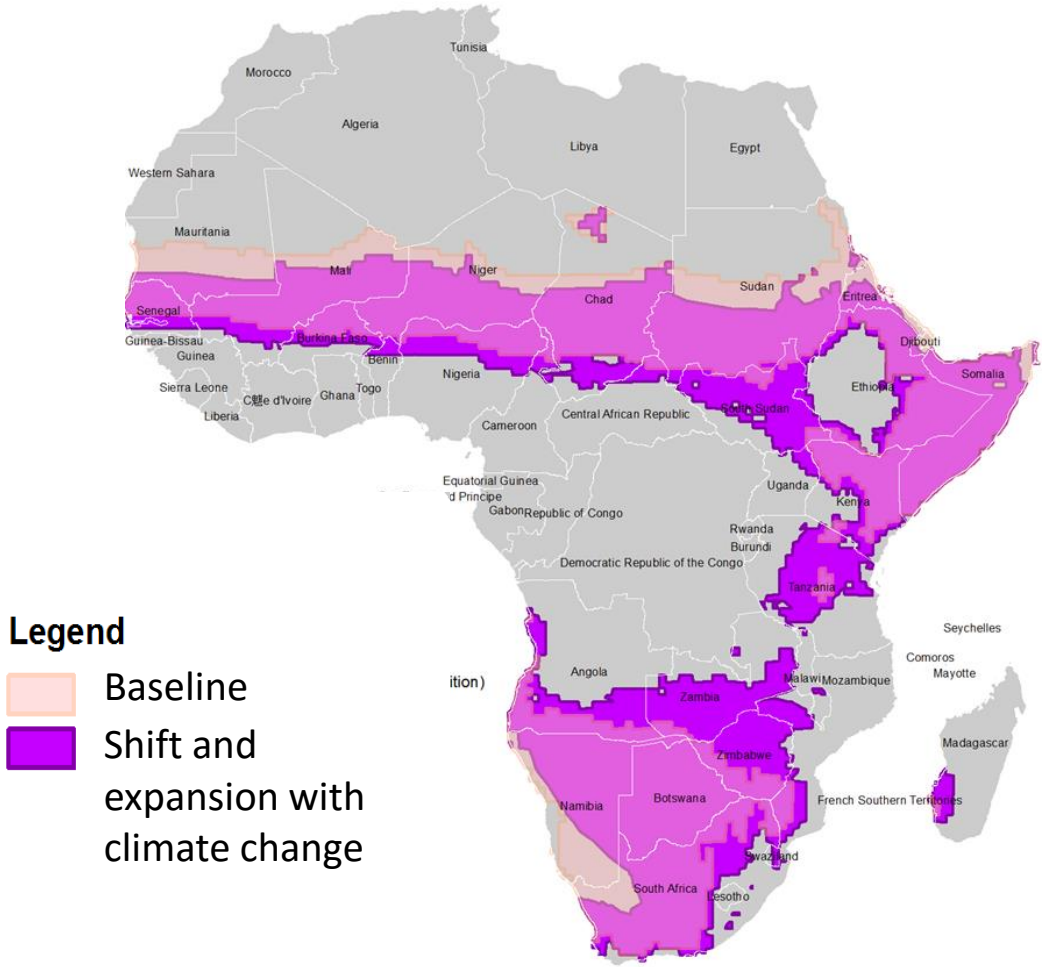
Primary school enrolment lower in dryland pastoral areas

Vulnerability profiles will change in the future

Change drivers	Exposure	Sensitivity	Inability to cope
Population growth	↑		
Climate change	↑		
Economic transformation		↓	↓

- Population growth and climate change will increase the number of vulnerable people living in drylands
- Economic transformation will reduce the number of people living in drylands who are sensitive to shocks and unable to cope

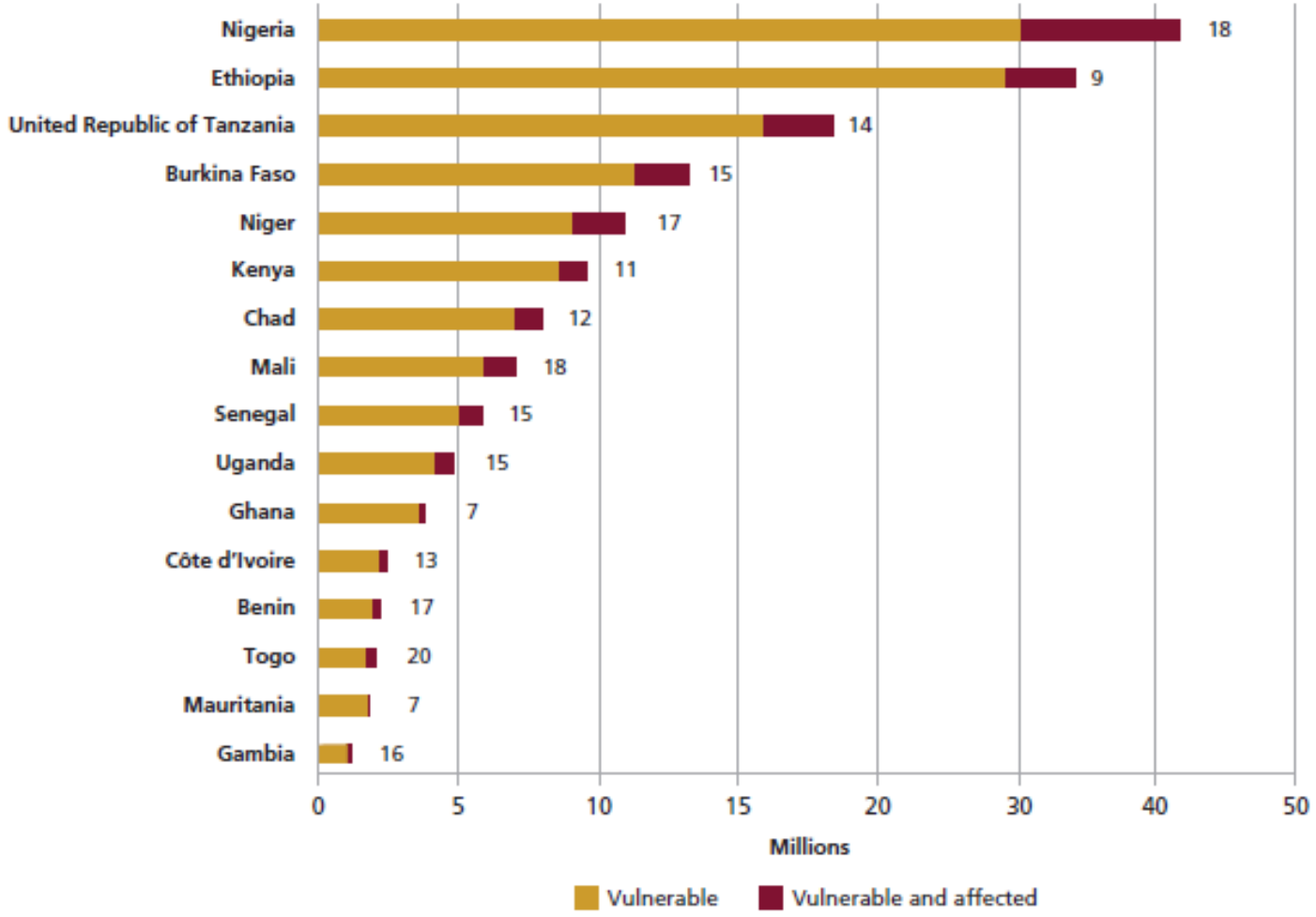
Climate change likely to shift the location of drylands



Climate change

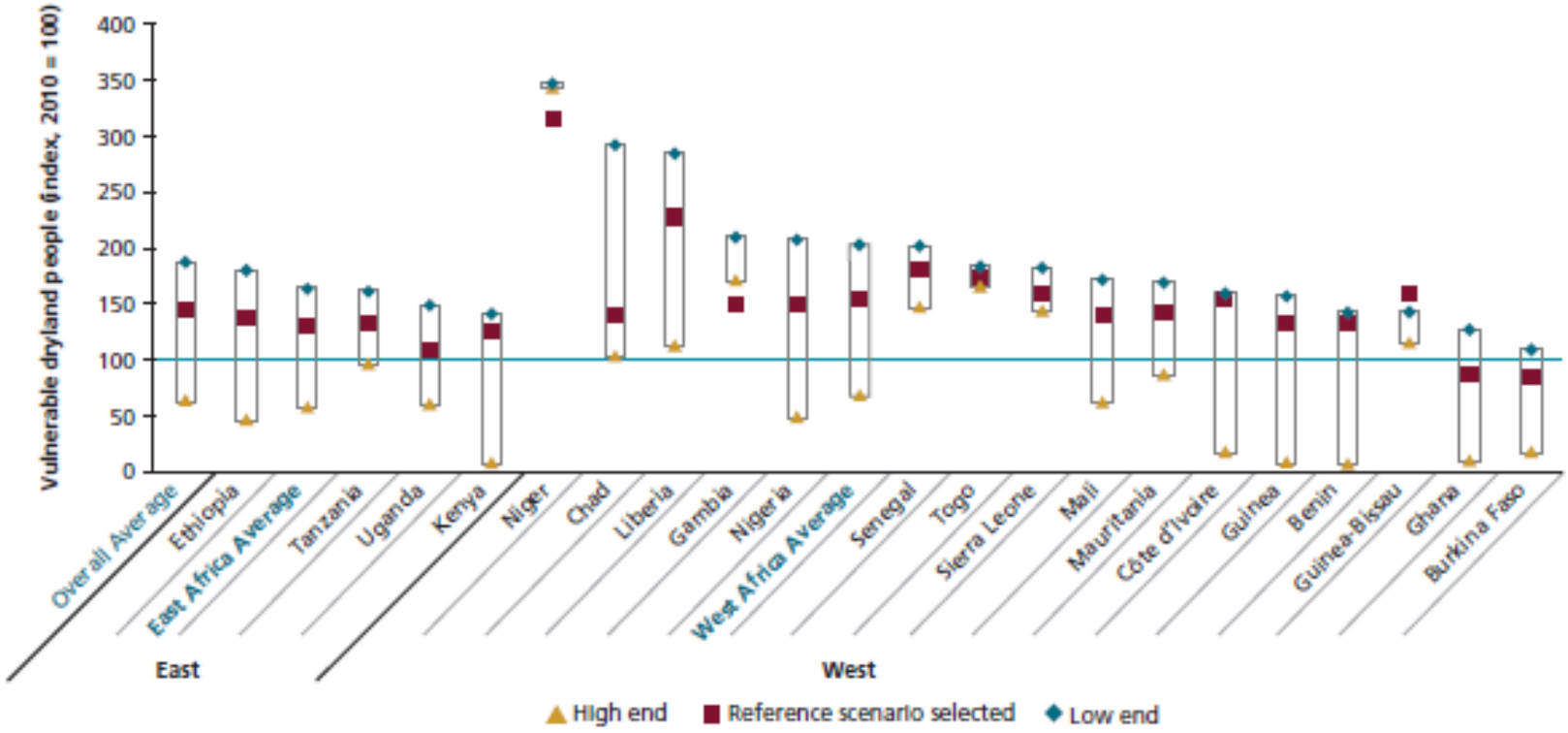
- Climate models used to analyze a range of climate change scenarios
- Drylands areas will expand and shift as the result of climate change
- Some zones might become incapable of sustaining livestock production and intensive agriculture
- In the driest scenario, drylands extent can increase up to 20% overall, much more in individual countries

Many people are already vulnerable…



Percent of people vulnerable to and affected by drought, 2010, selected countries

…and the problem is likely to intensify

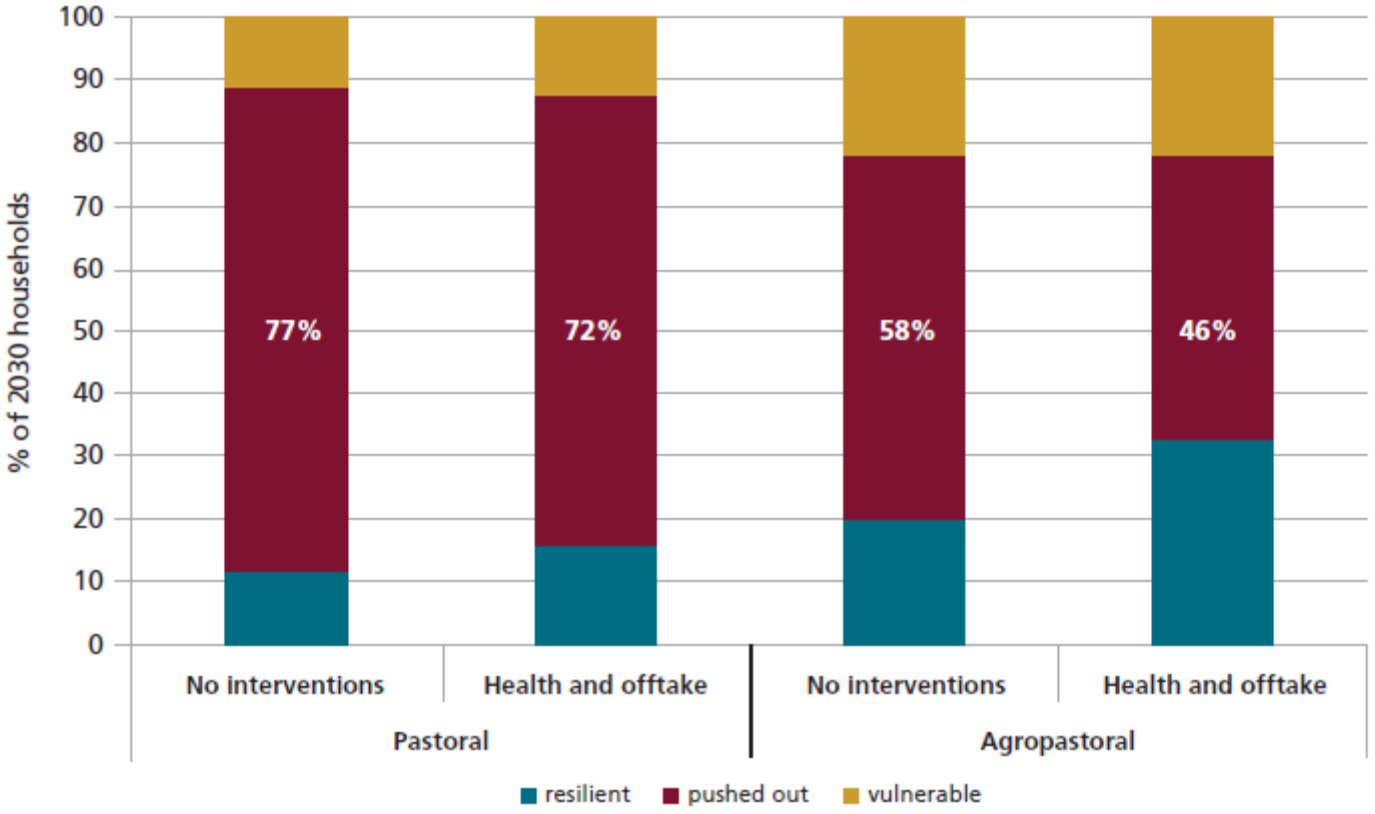


Vulnerable people living in drylands in 2030 (2010 = 100)

Report focuses on seven interventions to enhance resilience

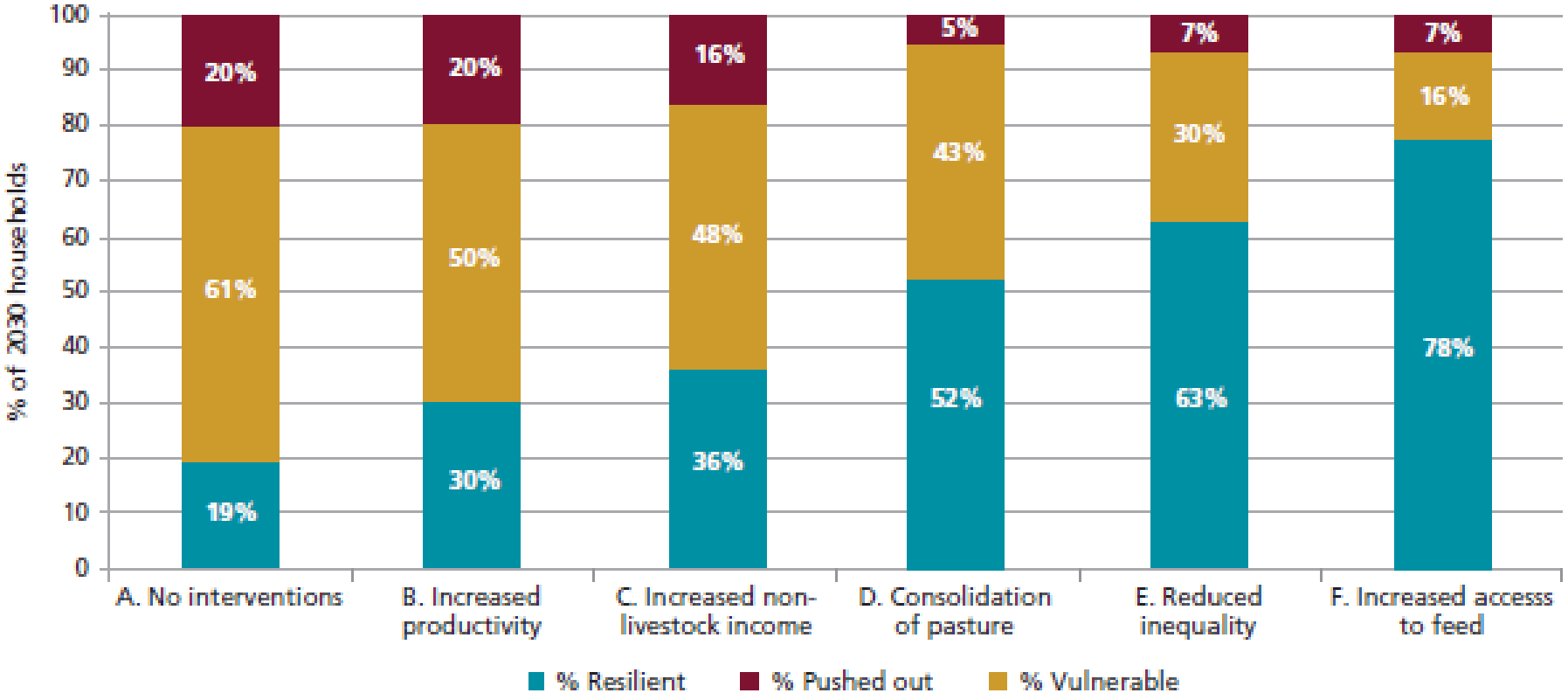
Interventions	Arid	Semi-Arid	Dry Sub-humid
Individual Themes			
Support to pastoralist livelihoods			
Irrigation			
Support to rainfed agriculture			
Tree based systems			
Cross-cutting			
Landscape approach			
Markets and trade			
Social Safety Nets			

Livestock: improved productivity can help…



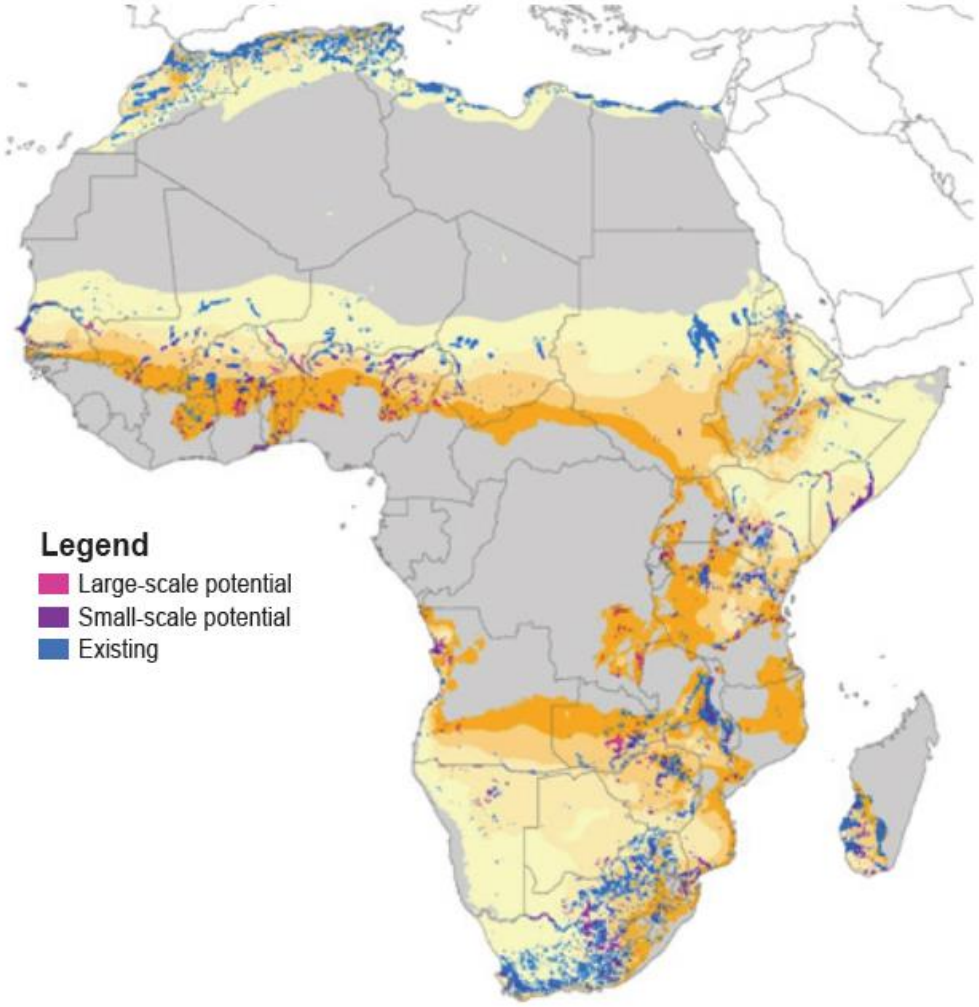
About 200,000 pastoral households and more than 3 million agro-pastoral households would become resilient by 2030, relative to the baseline.

..but only a wider set of interventions can make a difference

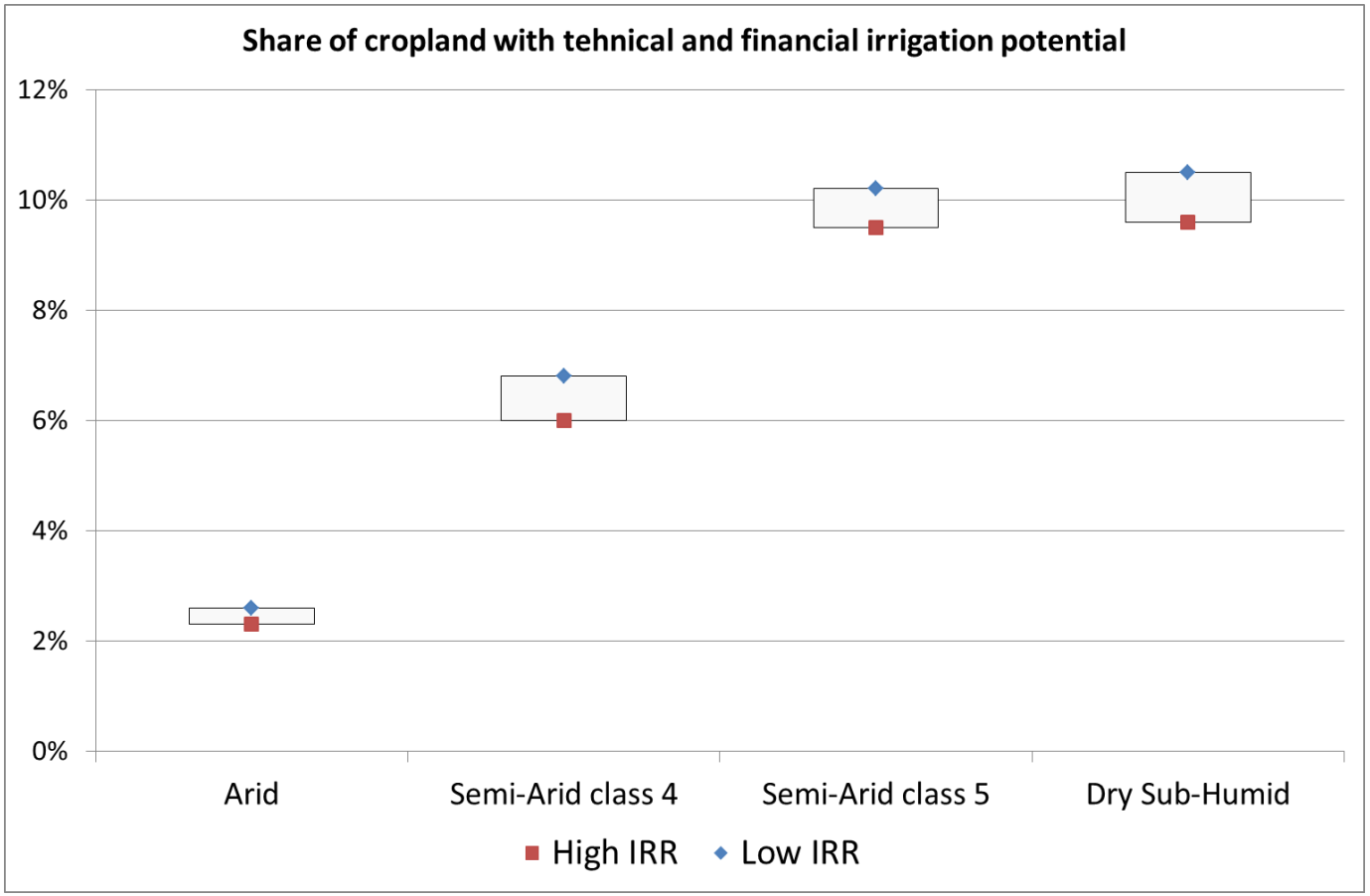


Impact of different interventions on the resilience status of livestock-keeping households, 2030

Irrigation: technically and financially viable to quadruple area..

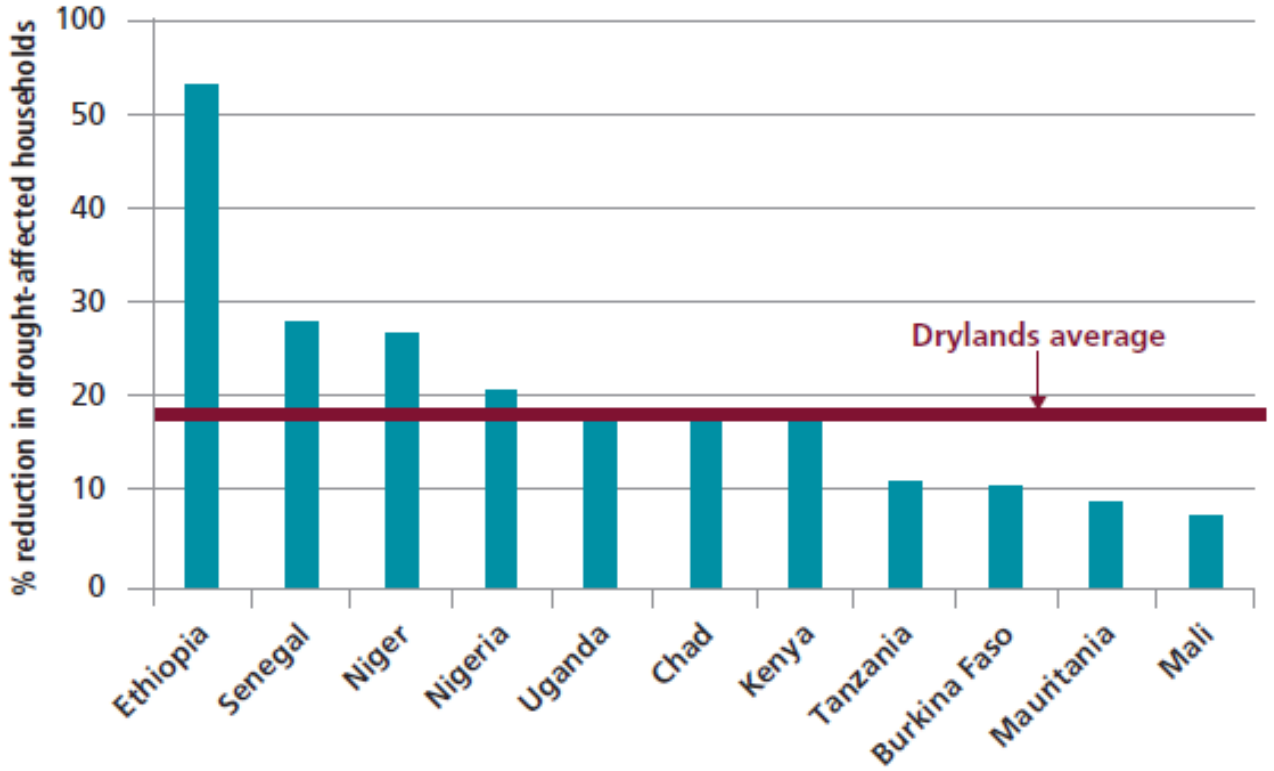


…but potential in drier areas is more limited



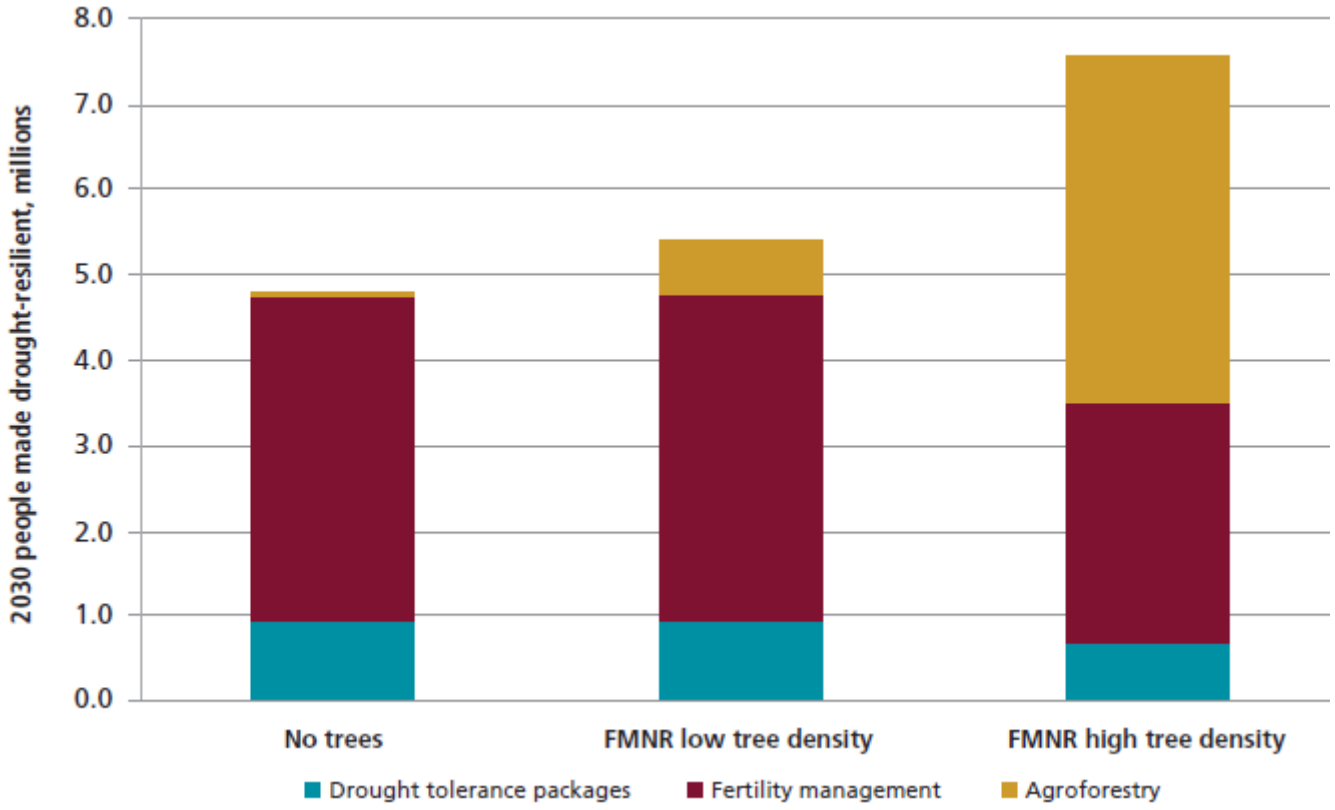
About 60% of the potential for irrigation expansion in East and West Africa is in drylands
About 85% of this area (about 8 million ha) suitable for small scale systems

Investing in rainfed cropping systems can reduce drought impacts…



The figure shows the reduction in 2030 in the share of drought-affected households relative to the BAU scenario that would occur under a scenario of optimal selection of the following interventions: Drought-tolerant germ plasm; Heat-tolerant germ plasm; soil fertility management; combined interventions

..and adding trees further boosts the benefits



Investing in landscape approaches

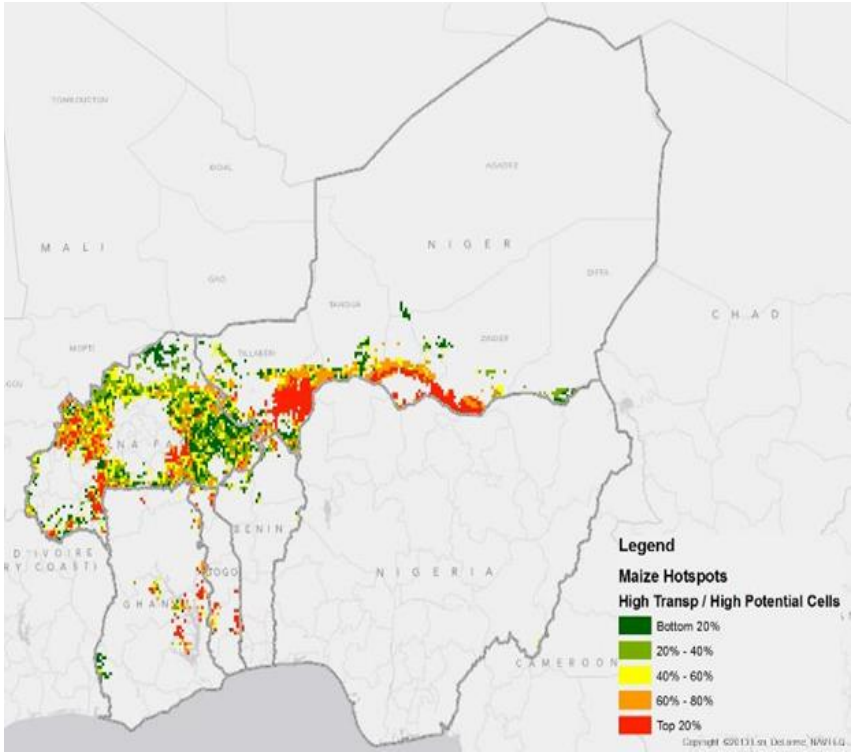
Use of landscape approaches could lead to triple wins:

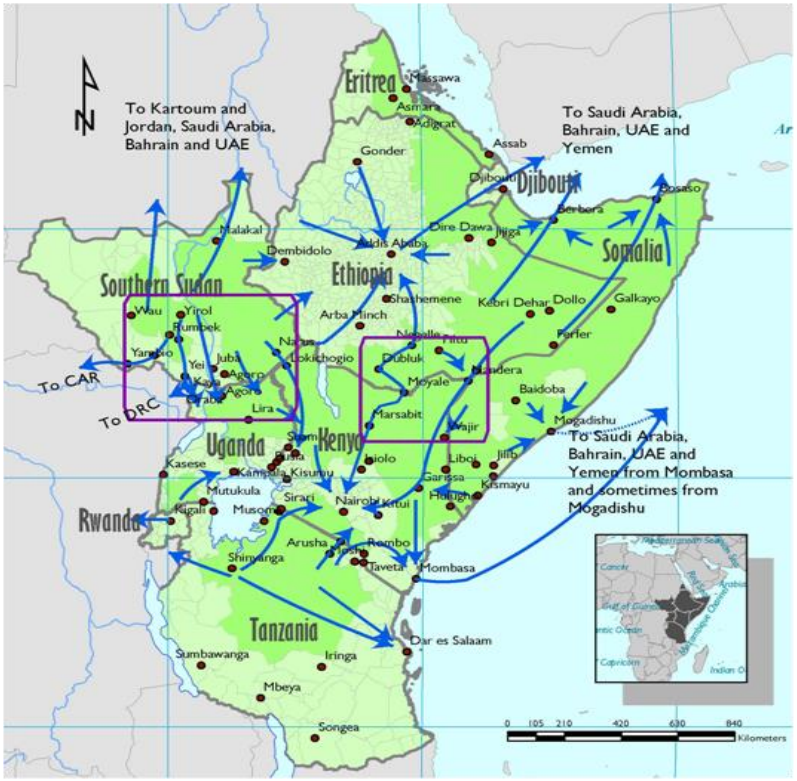
1. Improved productivity
2. Higher climate resilience
3. Carbon sequestration

Emerging experience in Africa and elsewhere points to the potential for enhancing the effectiveness of individual interventions and reducing risks of conflicting resilience interventions

Investing in market integration

Removing physical and regulatory trade barriers can help build resilience in normal years and facilitate movement of food in crisis years



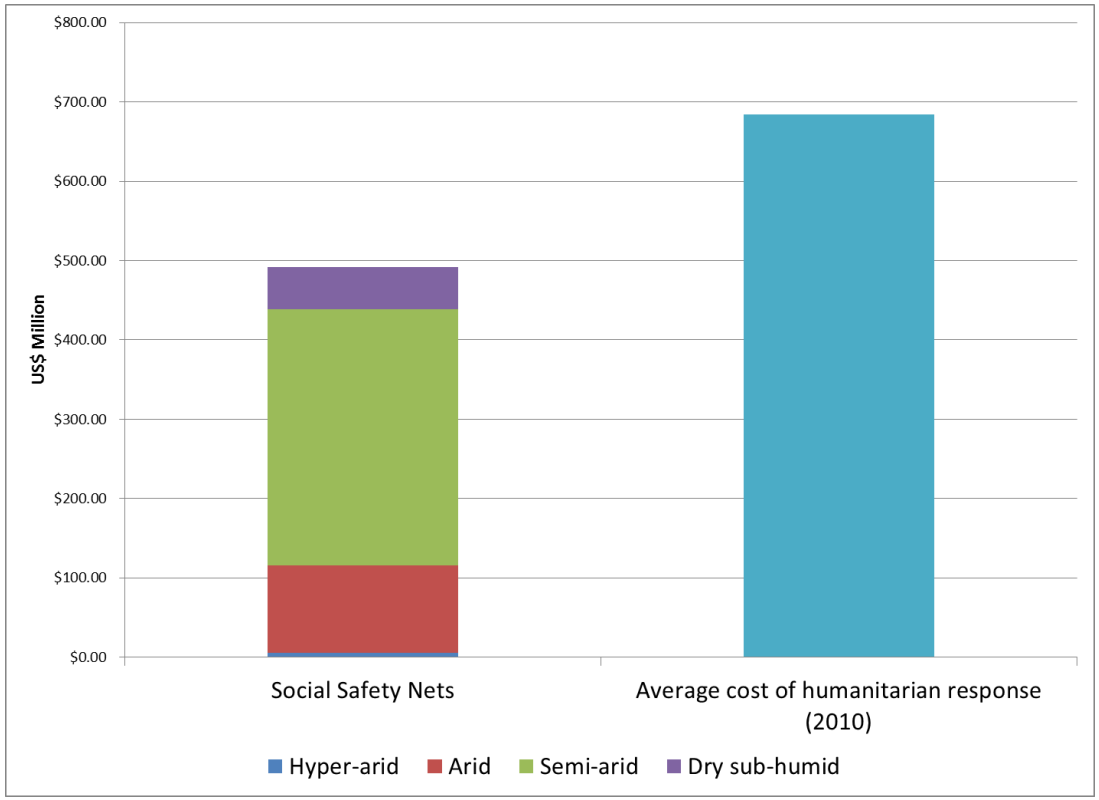


Improving infrastructure can enlarge marketsheds and lower food prices

Investing in safety nets

Expanding safety net coverage is cost effective…

The annual cost of safety net coverage…

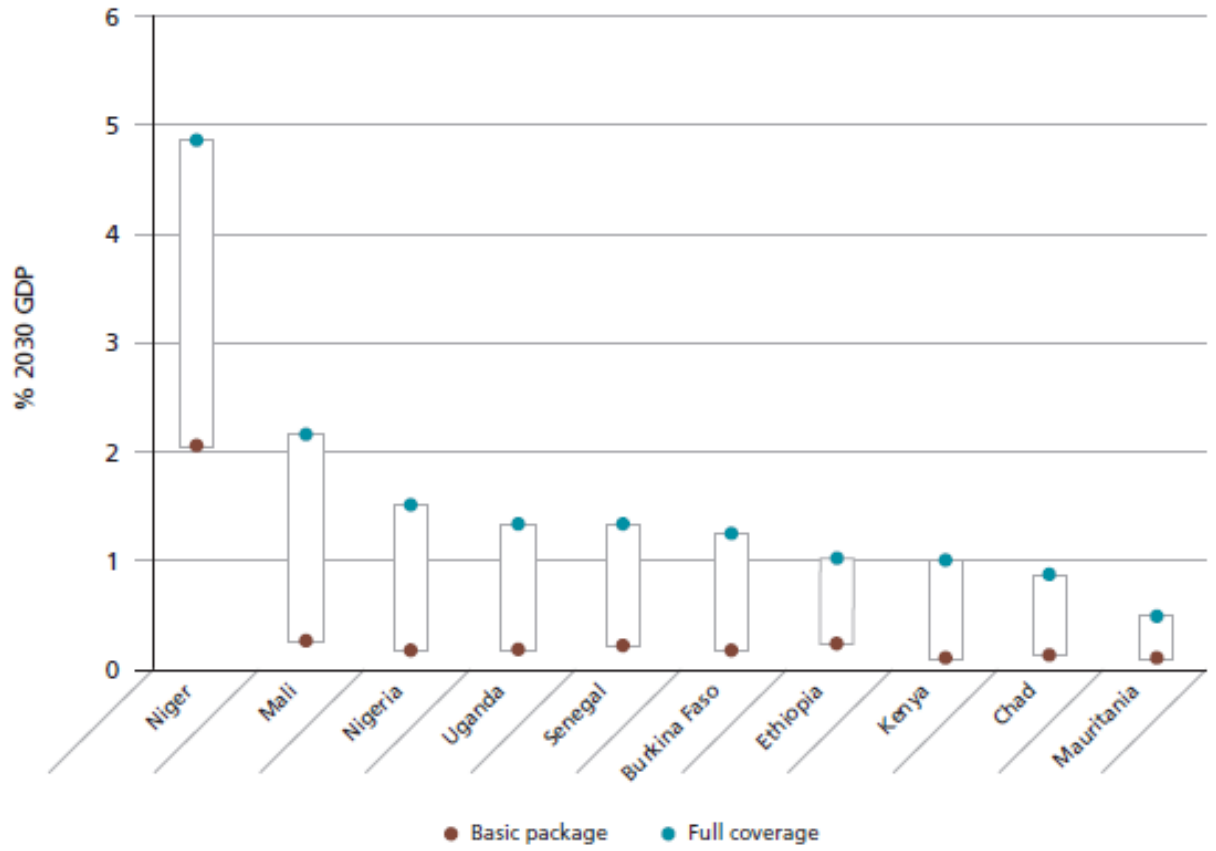


..is lower than annualized cost of humanitarian response in times of crisis

West Africa: Average annual cost (US$ million) of safety net support to poor households as compared with humanitarian response

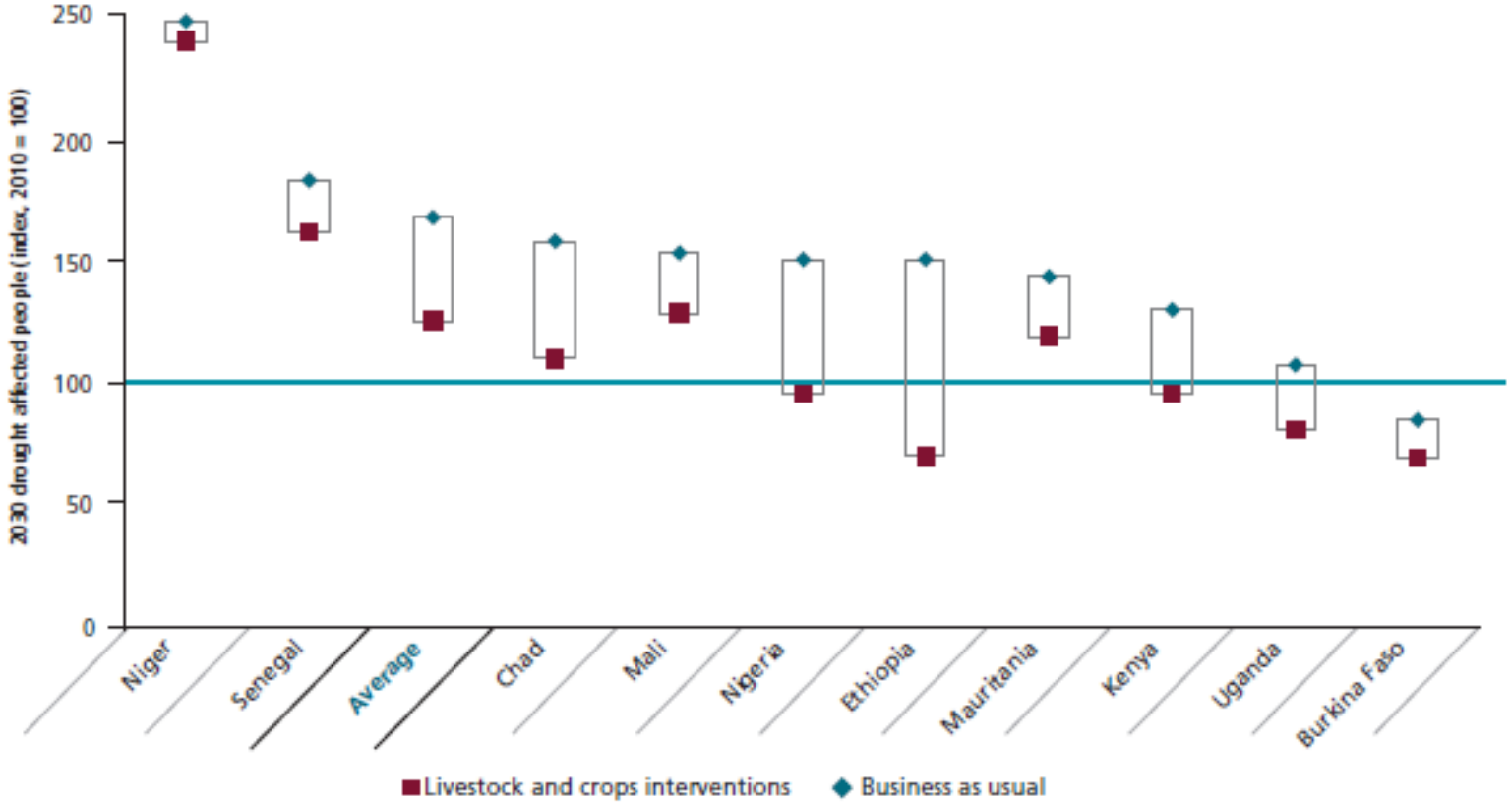
Investing in safety nets

…but the fiscal cost of complete coverage is large



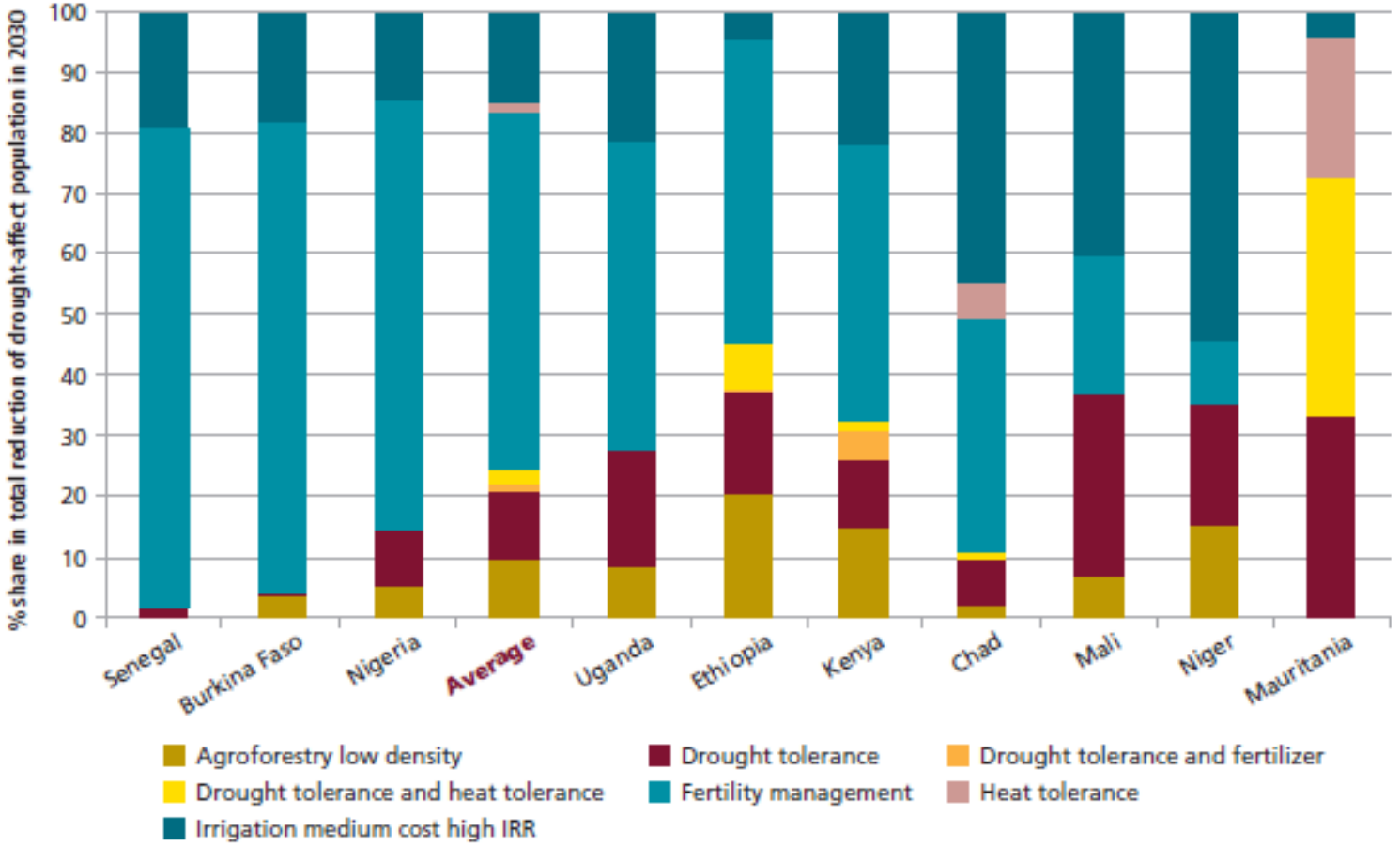
Cost of providing safety net support to population affected by drought on an average year, selected countries, 2030

Overall, investing in existing livelihoods can cut in half the 2030 number of drought affected people



Contributions of technical interventions to resilience, 2030

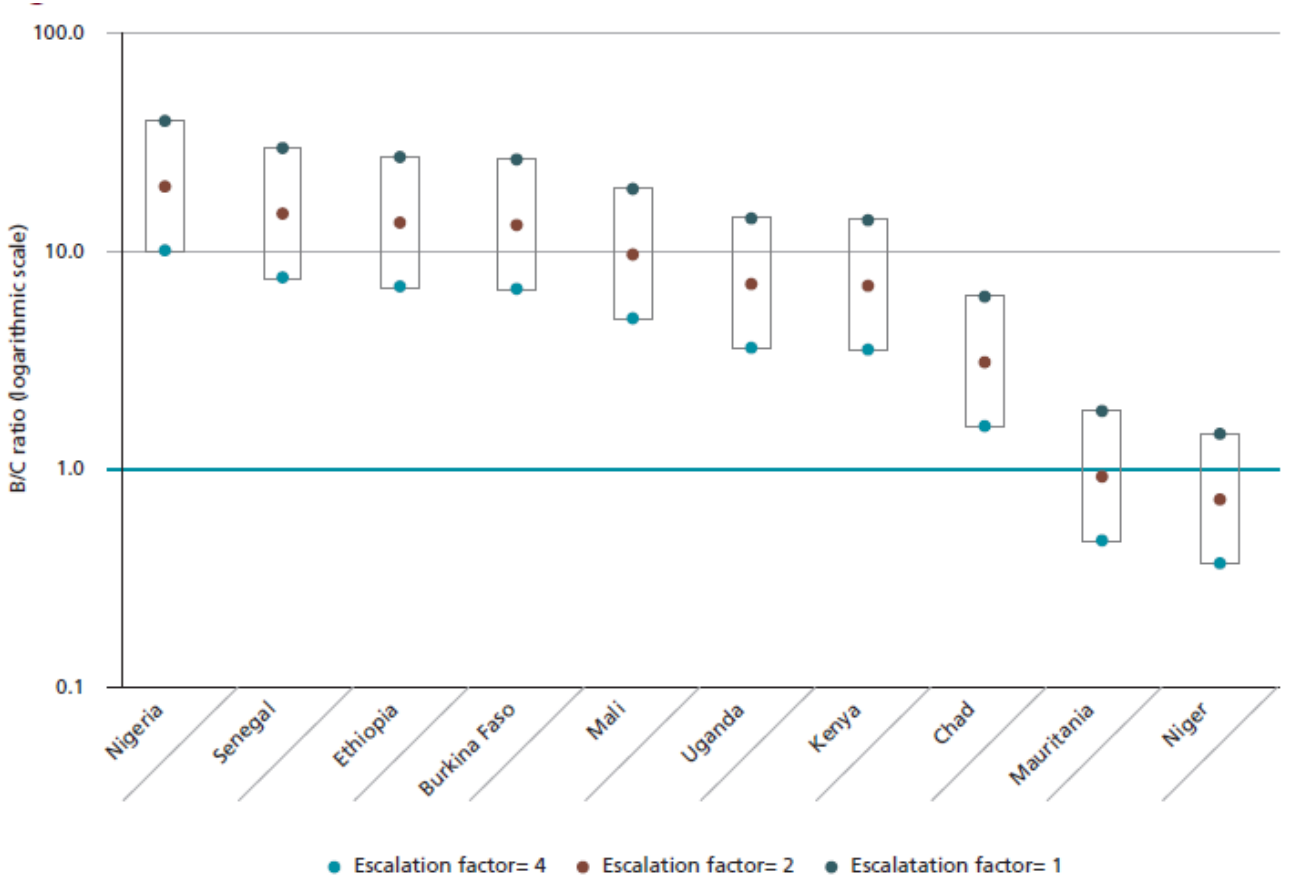
Optimal mix of interventions varies between countries



Relative contributions of technical interventions to reduced vulnerability, 2030

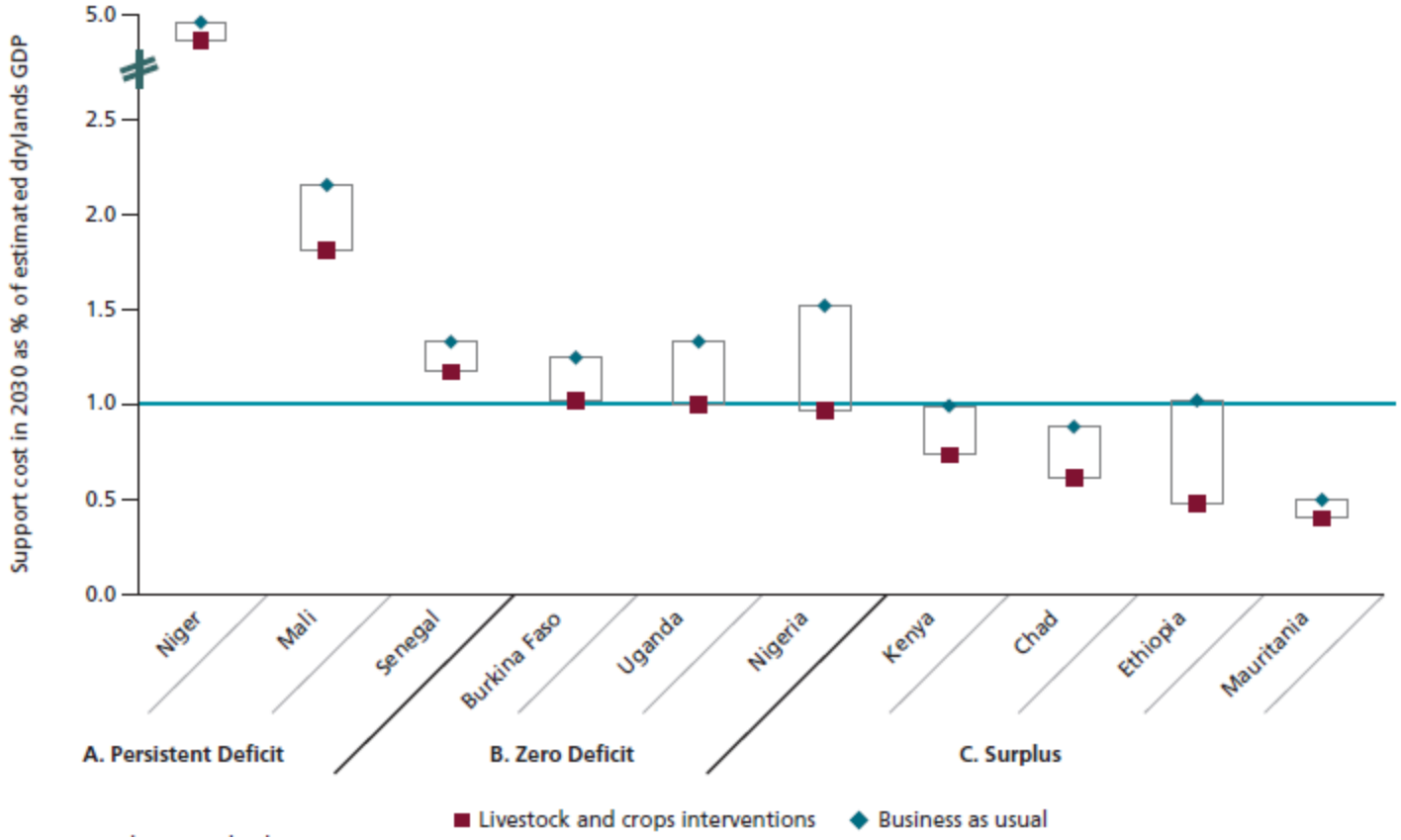
Investing in resilience cheaper than providing cash transfers to drought affected population

Benefit/cost ratios of resilience interventions

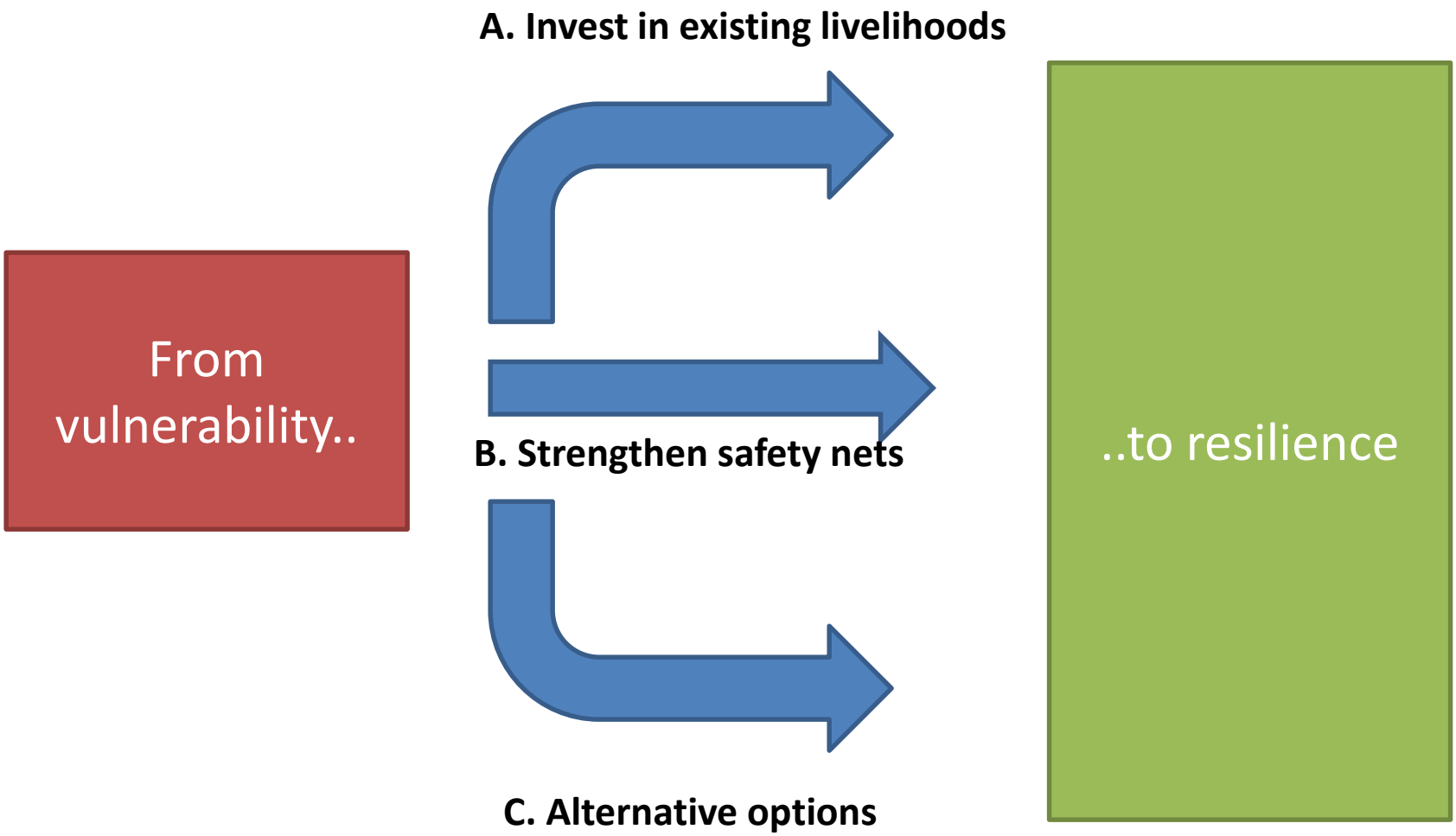


Investing in resilience can be self-sustaining

Cost of cash transfers needed to support drought-affected people in drylands in 2030 (with and without interventions)



Key recommendation: look at ALL the pathways towards resilience



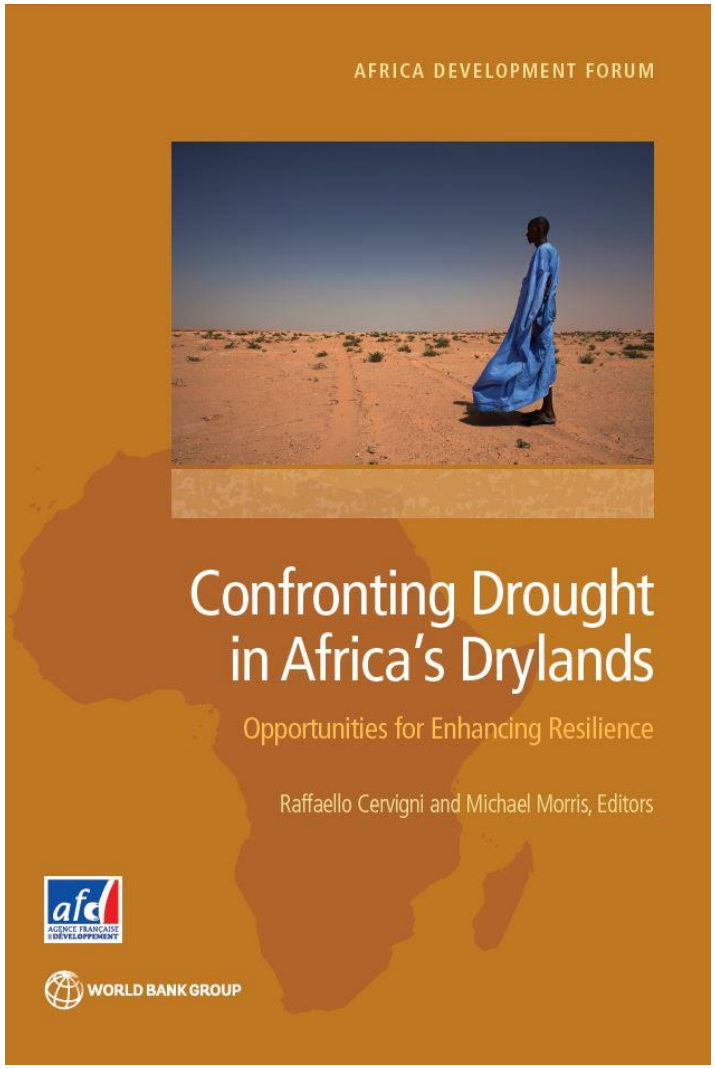
Selectively adopt individual recommendations

1. **Livestock**
   - Improve animal health, increase market integration
   - Enhance herd the mobility
   - Develop Livestock Early Warning Systems (LEWSs)
2. **Farming**
   - Accelerate the rate of varietal turnover and increase availability of hybrids
   - Improve soil fertility management
   - Improve agricultural water management, including irrigation
3. **Natural resource management**
   - Promote farmer managed natural regeneration (FMNR)
   - Invest in tree germplasm multiplication and promote planting of location-appropriate high value species especially in dry sub-humid areas
   - Develop value added opportunities for tree products produced in the drylands
4. **Social protection**
   - Expand the coverage of national adaptive safety net programs
   - Use social protection programs to build capacity of vulnerable households to climb out of poverty

Recognize the limits of current livelihoods and look at further options

1. Landscape restoration
2. Alternative livelihoods
3. Contingent financing

Outputs

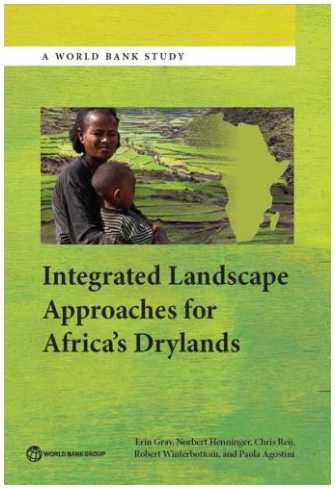


Main report

Book published in Africa Development Forum series

https://openknowledge.worldbank.org/handle/10986/23576

Background papers: World Bank Studies



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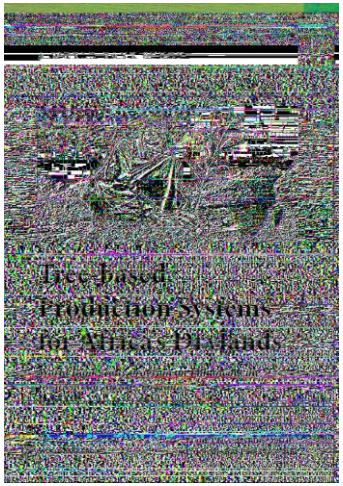

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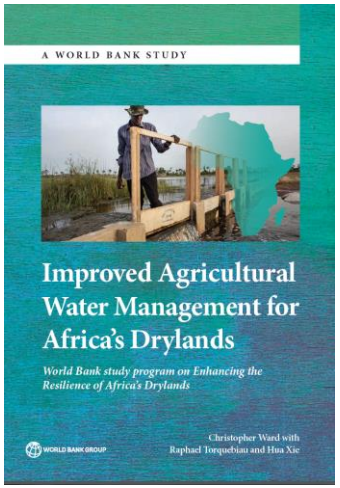

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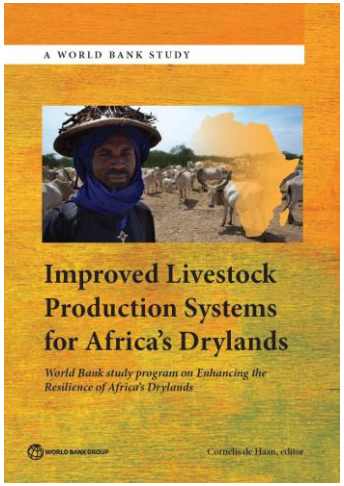

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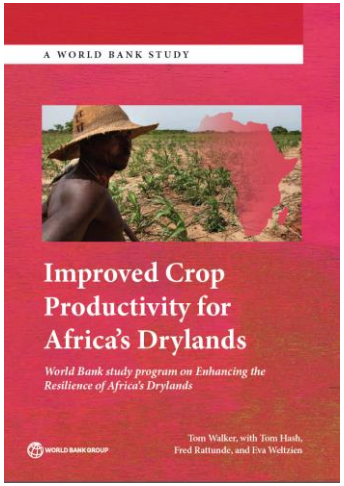

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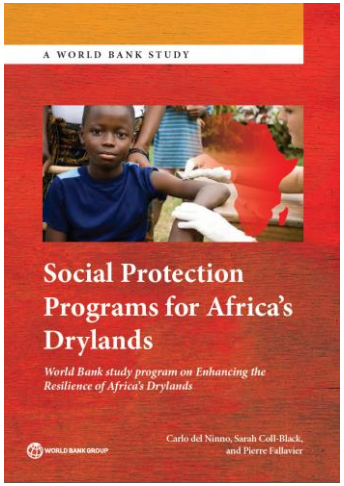

Access the report on-line

Impact of analysis: initial evidence

Operations

- Contributed to design of regional pastoral projects (Horn of Africa, Sahel)
- Modeling to be used in preparation of Nigeria new livestock ASA/ project
- Providing underpinning for regional program “Resilient Landscapes for Development Program in African Drylands” (Burundi, Ethiopia, Ghana, Mozambique, Rwanda, Sudan, Zambia)
- State-of-the art reference of choice quoted by development partners (e.g. USAID Global Alliance for Action for Drought Resilience and Growth)

Knowledge: some 7,000 file downloads