



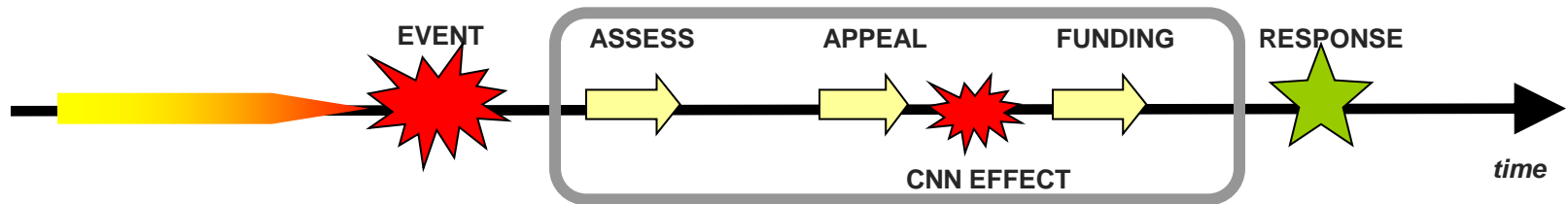
African Risk Capacity

Sovereign Disaster Risk Solutions
A Project of the African Union





The Way Disaster Assistance Works Now



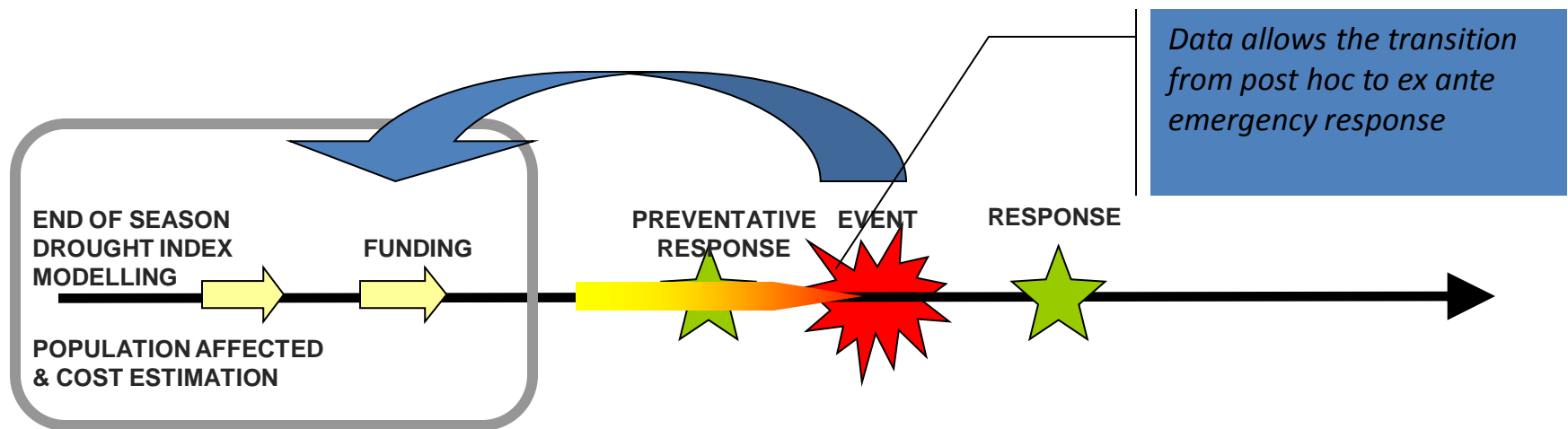


The Way Disaster Assistance Could Work

How do we close the gap in time and resources between event and response?

Is there a way to calculate how much we might need *before* the season ends?

How do we allocate certain resources against probable but uncertain risks?





Quantifying the Risk

HAZARD

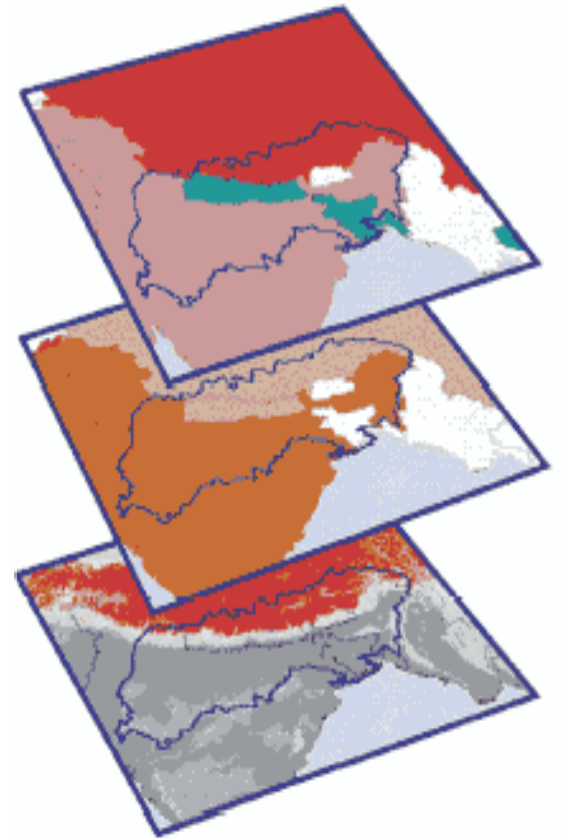
Satellite-based rainfall data for over 261,000 satellite pixels over Africa (0.1 dg x 0.1 dg or 10x10km sq near the equator) updated every 10 days.

VULNERABILITY

Who's at risk? Where are they? What are they growing or where do their herds graze?

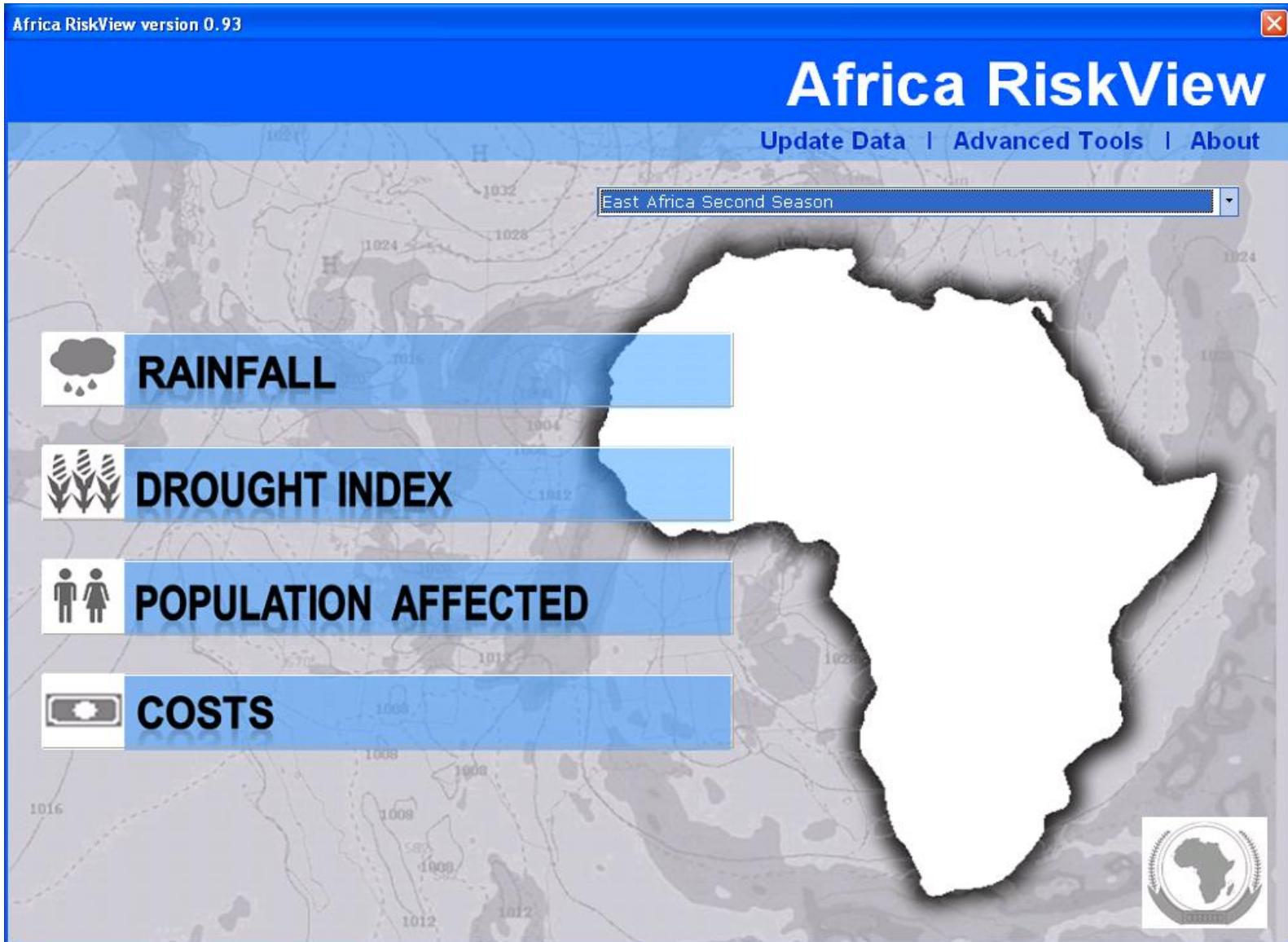
EXPOSURE

In today's procurement and logistic costs, how much will it cost to assist each potential person affected?





Africa RiskView Software





East Africa 2011



Situation Overview

The bordering pastoral areas of northern Kenya, southeastern Ethiopia, and southern Somalia have been affected by severe drought for more than a year

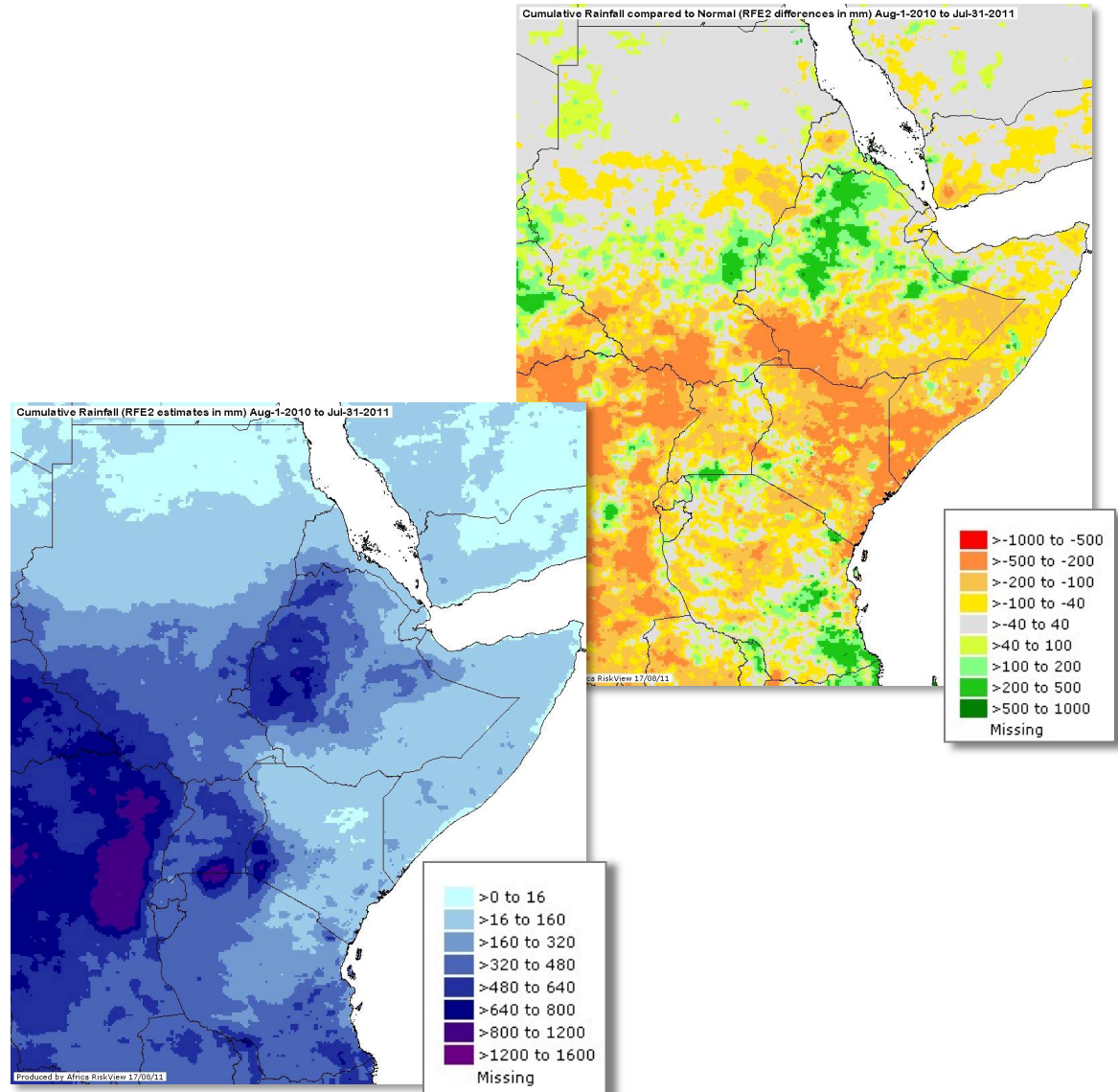
- **For these pastoral areas, particularly in Somalia, the August 2010 to January 2011 minor rains failed or were significantly below average**
- **The major rains from March until June 2011 were also below average**
- **It is these consecutive poor seasons that have led to the current humanitarian crisis affecting 13 million people in the region**



Hazard: Rainfall Monitoring

Data:

- 10-day rainfall imagery from US NOAA at 10x10 km resolution across Africa
- Pre-loaded archive 1996 – present, updated every 10 days automatically





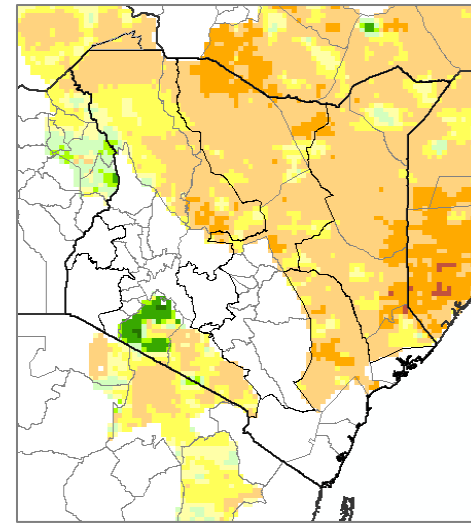
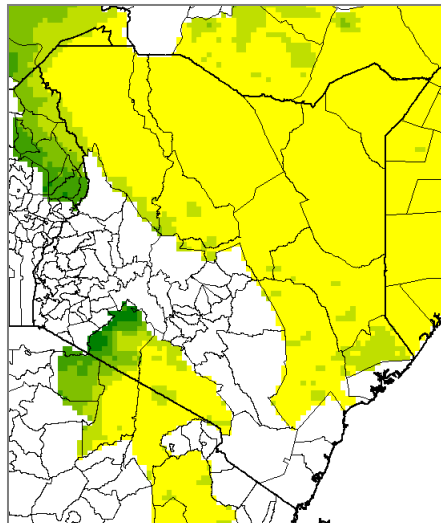
Hazard: Drought Index Monitoring – Kenya



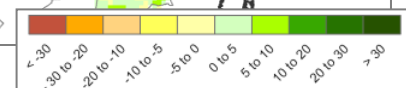
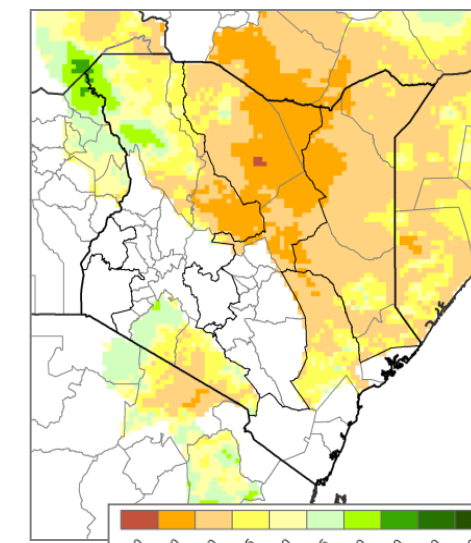
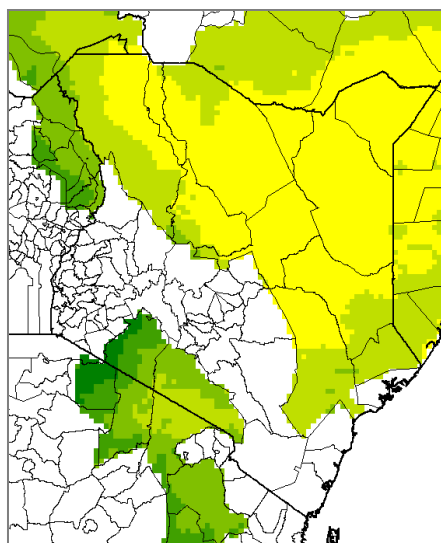
- *Africa RiskView* uses FAO's crop model the Water Requirement Satisfaction Index, WRSI
- Can be applied to crops and rangeland
- Updated every 10 days and is forward looking, i.e. estimates the end of season value as season progresses
- Drought defined when the WRSI falls below its average baseline in an area



Short Rangeland Season
(August-January 2010/11)



Long Rangeland Season
(February-July 2011)





Vulnerability: Risk Profiles



Within each administrative unit the population is divided into drought risk categories based on two dimensions extracted from household survey data:

Exposure to Drought Risk: Defined by the weight of agricultural activities in a household's total annual income

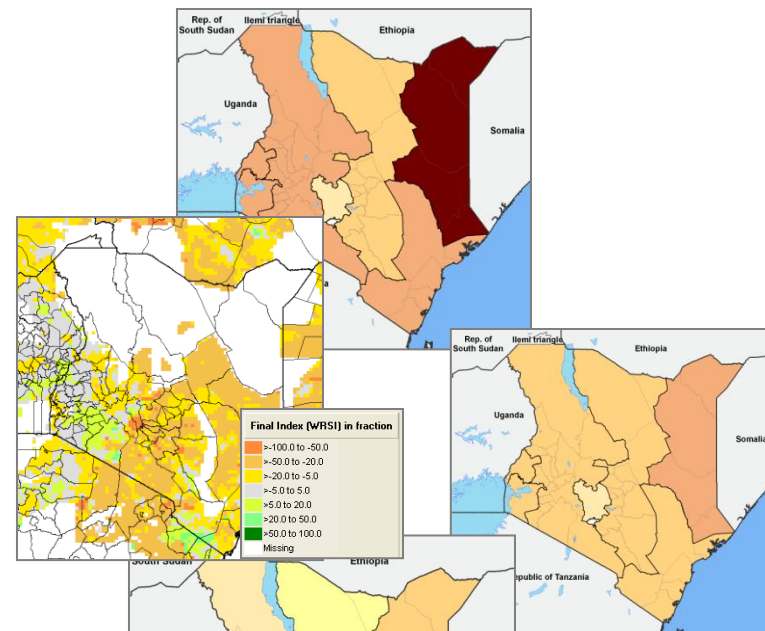
Resiliency: Household's distance from the poverty line

If a mild, medium or severe drought occurs, ARV generates high-level estimates of the people *directly* affected through impact on their livelihood

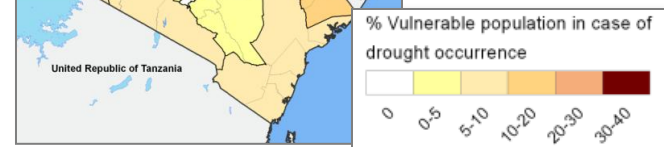
Estimates can be generated for each administrative level unit, country, region, season and across all countries using this standardized approach

As WRSI is updated every 10 days, so are these estimates

% Vulnerable Severe Drought



% Vulnerable Medium

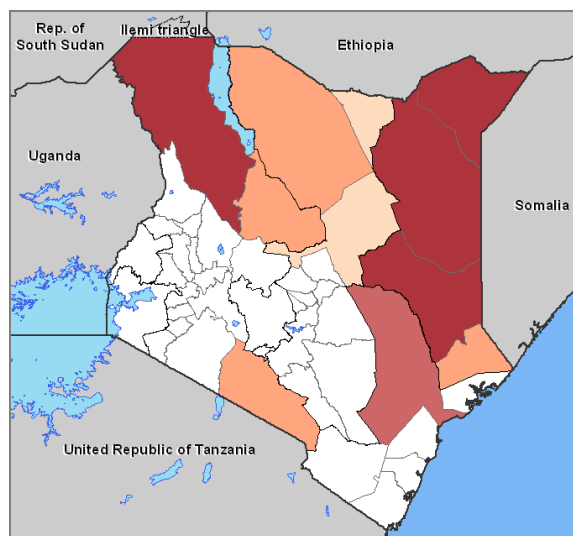


% Vulnerable Mild Drought

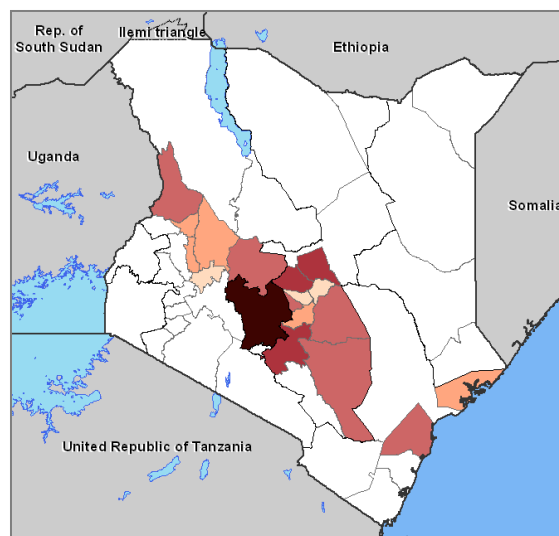


Vulnerability: Modelled Impact

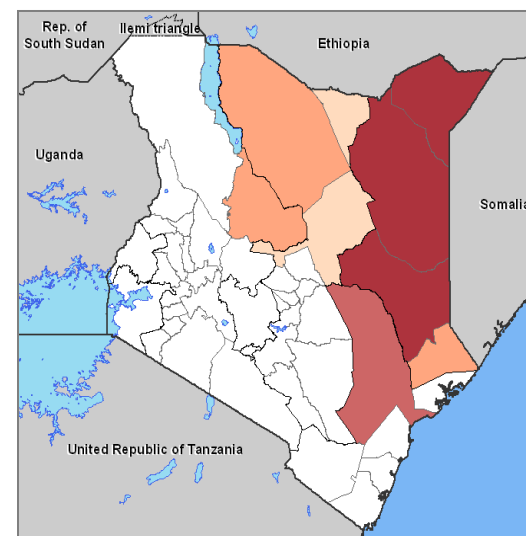
Short Rains (RL) 2010/11



Short Rains (Ag) 2010/11

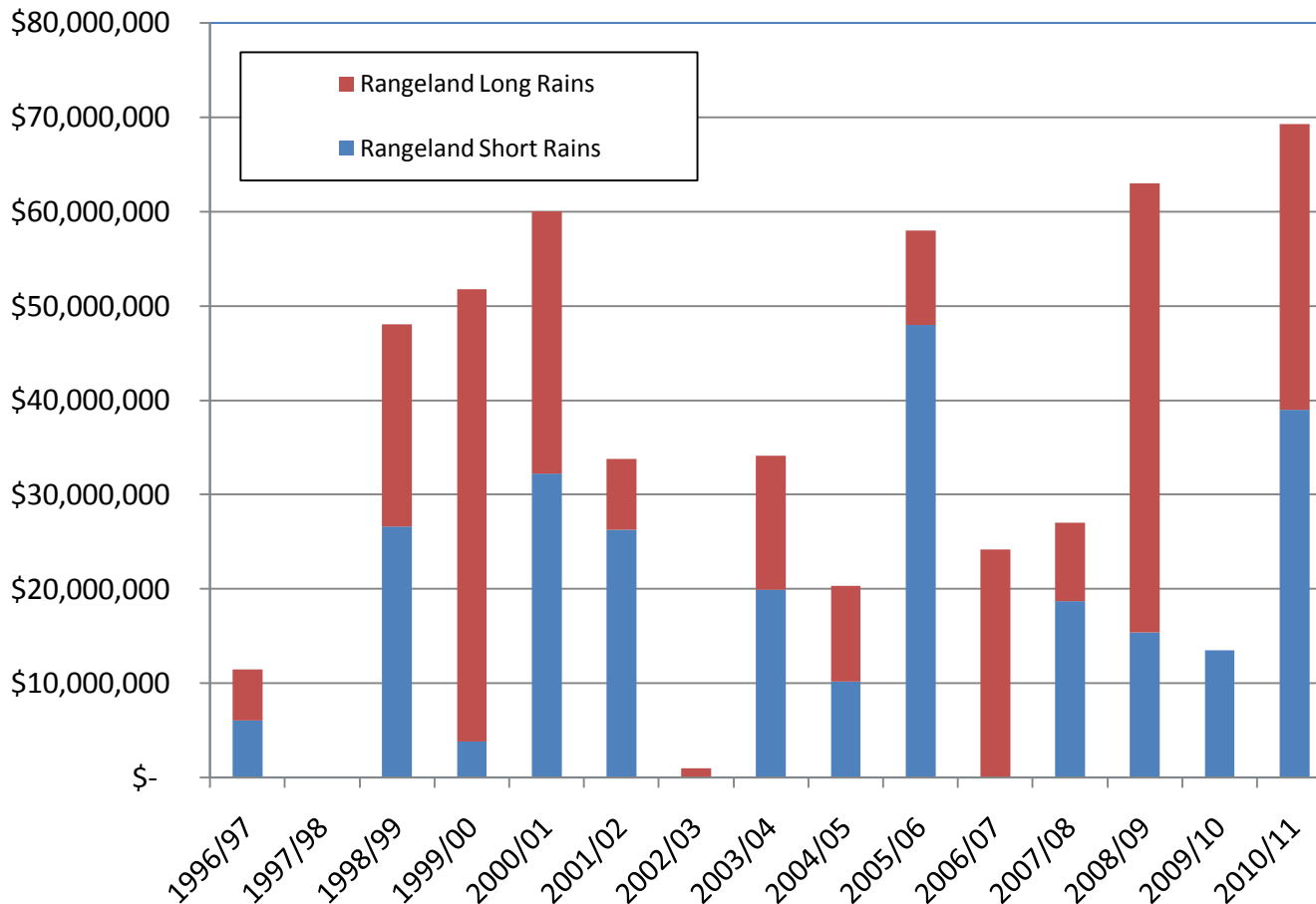


Long Rains (RL) 2011

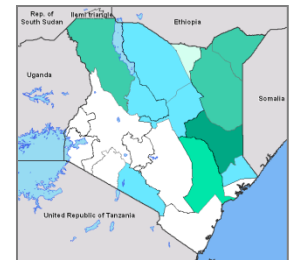




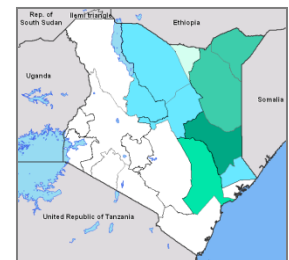
Exposure: Historical Modelled Response Costs



Short 2010/11



Long 2011



Estimated response costs (in million US\$)



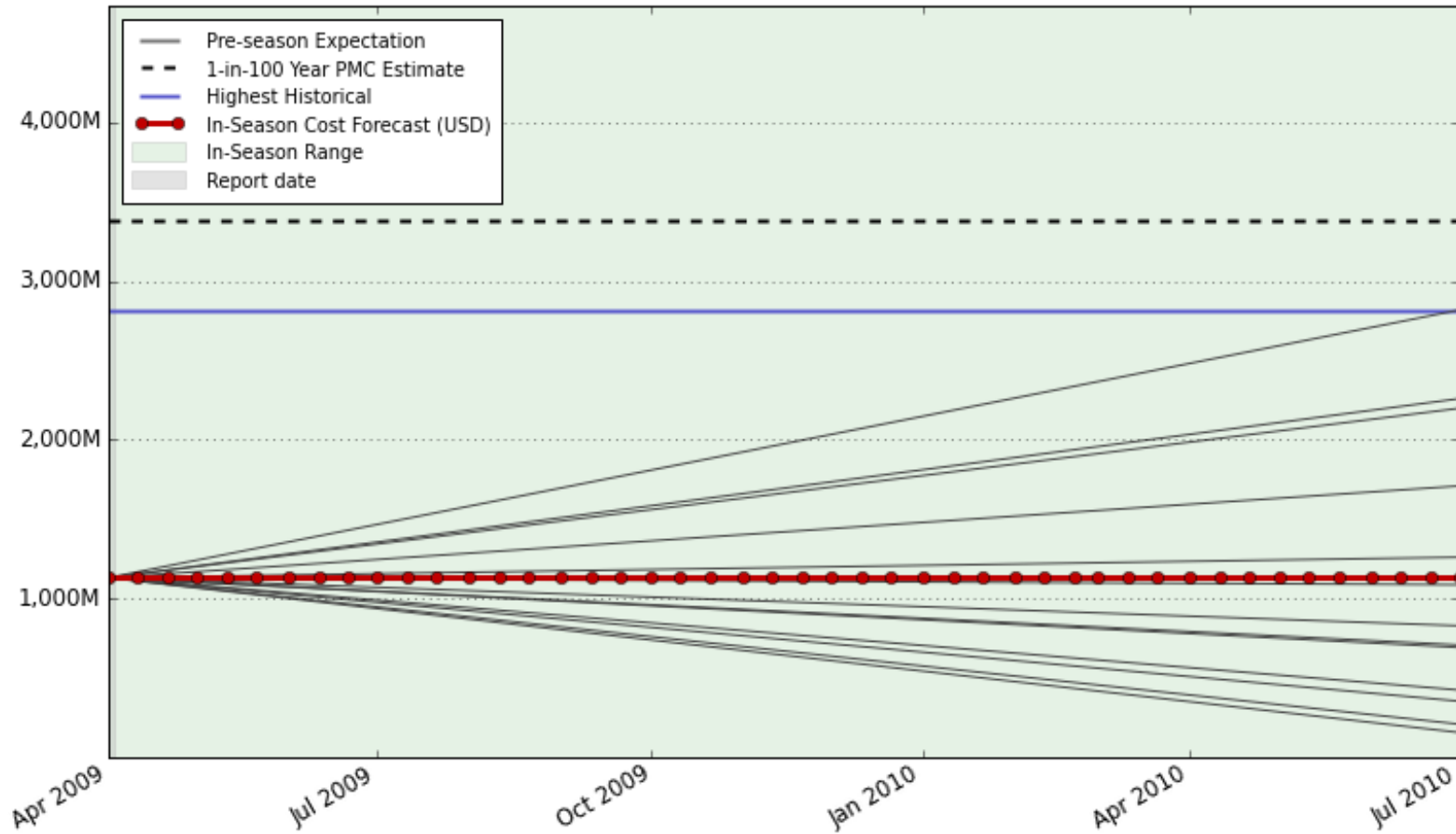
ARV estimates for both rangeland rainfall seasons *only*, including the impact of mild drought

➤ There are a lot of frequent drought events in these areas – how best to finance this risk?



Exposure

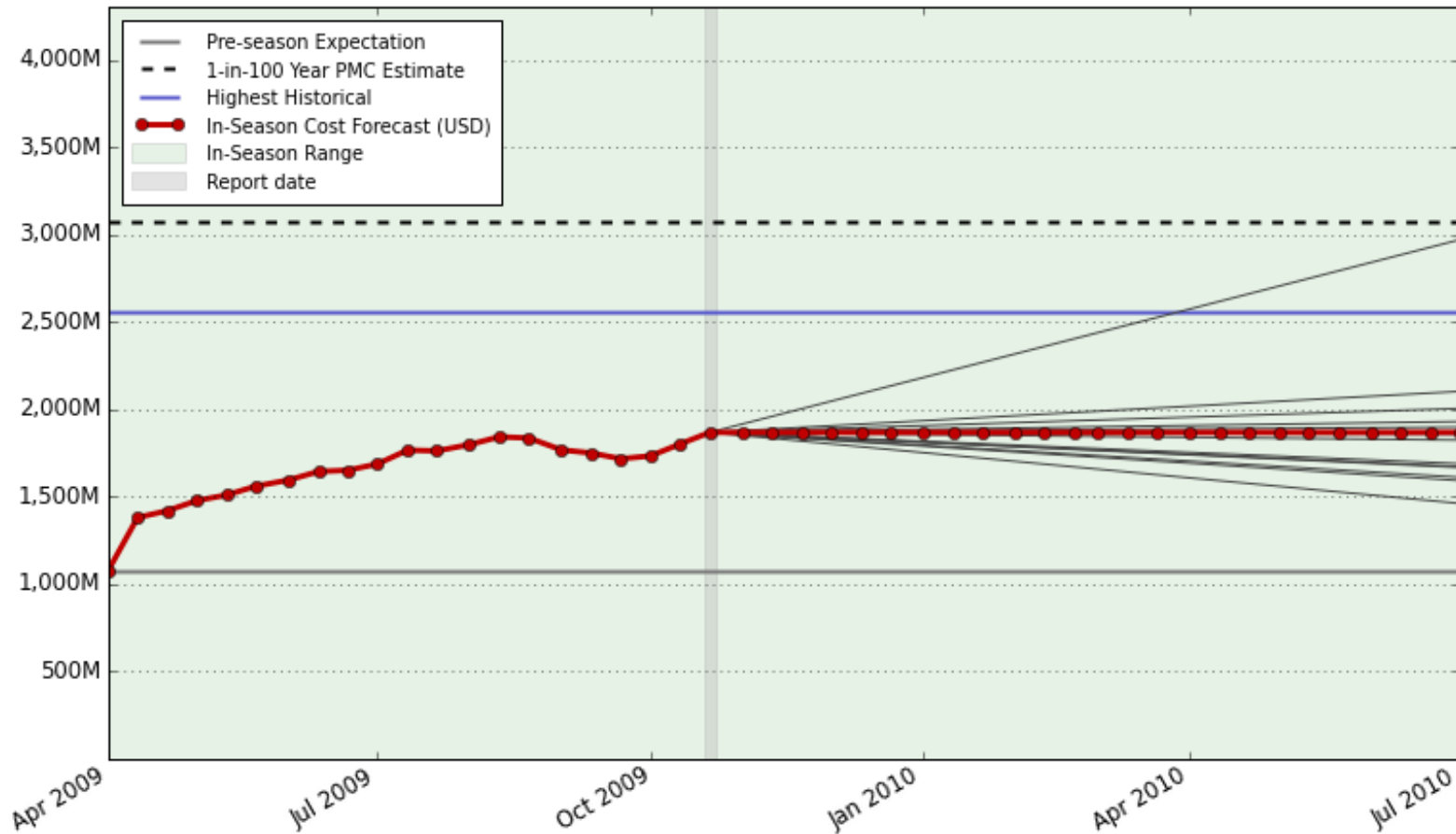
2009/2010 In-Season Cost Forecast (As-of D10)
All Seasons/All Countries/All Areas





Exposure

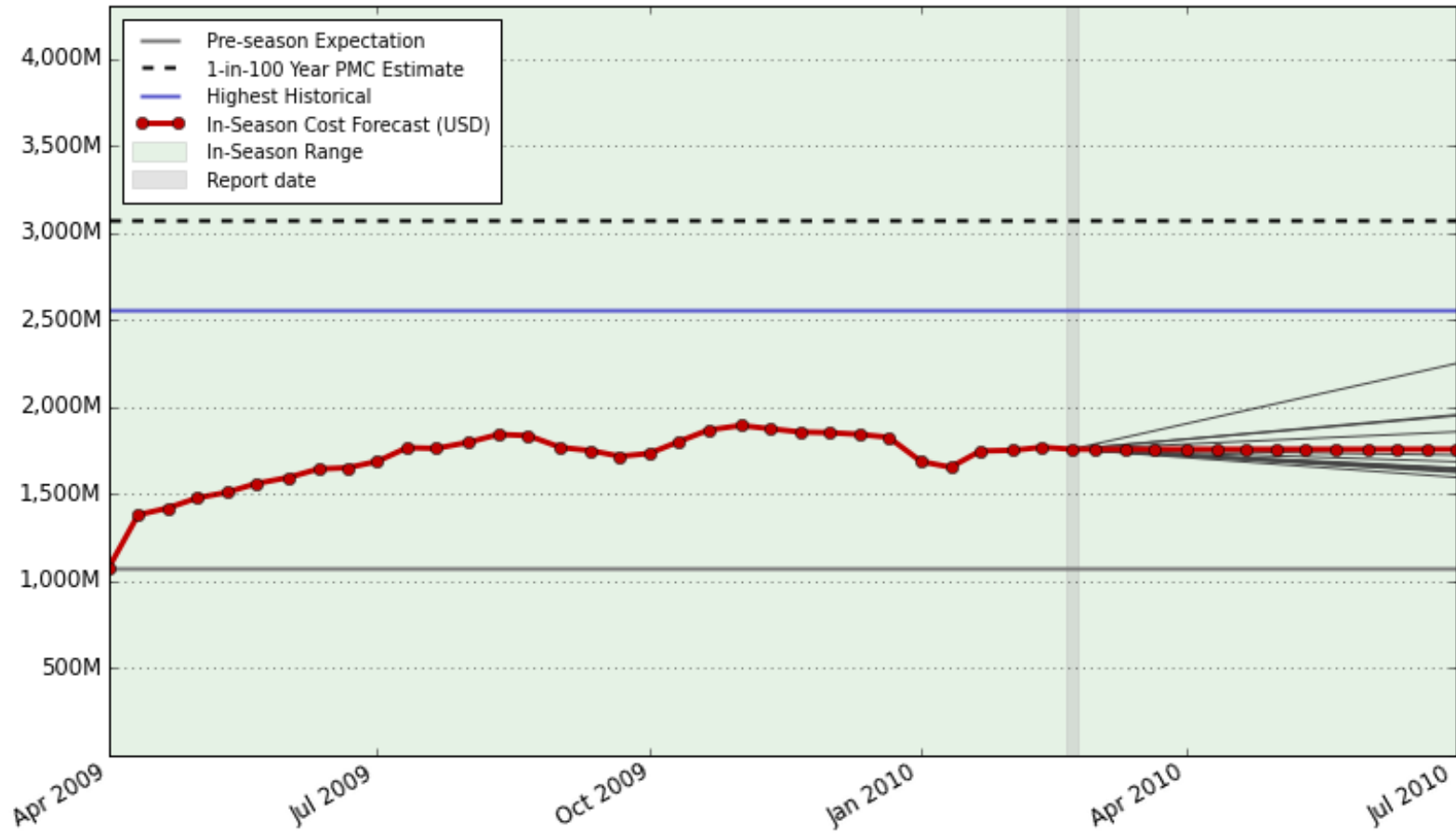
2009/2010 In-Season Cost Forecast (As-of D30)
All Seasons/All Countries/All Areas





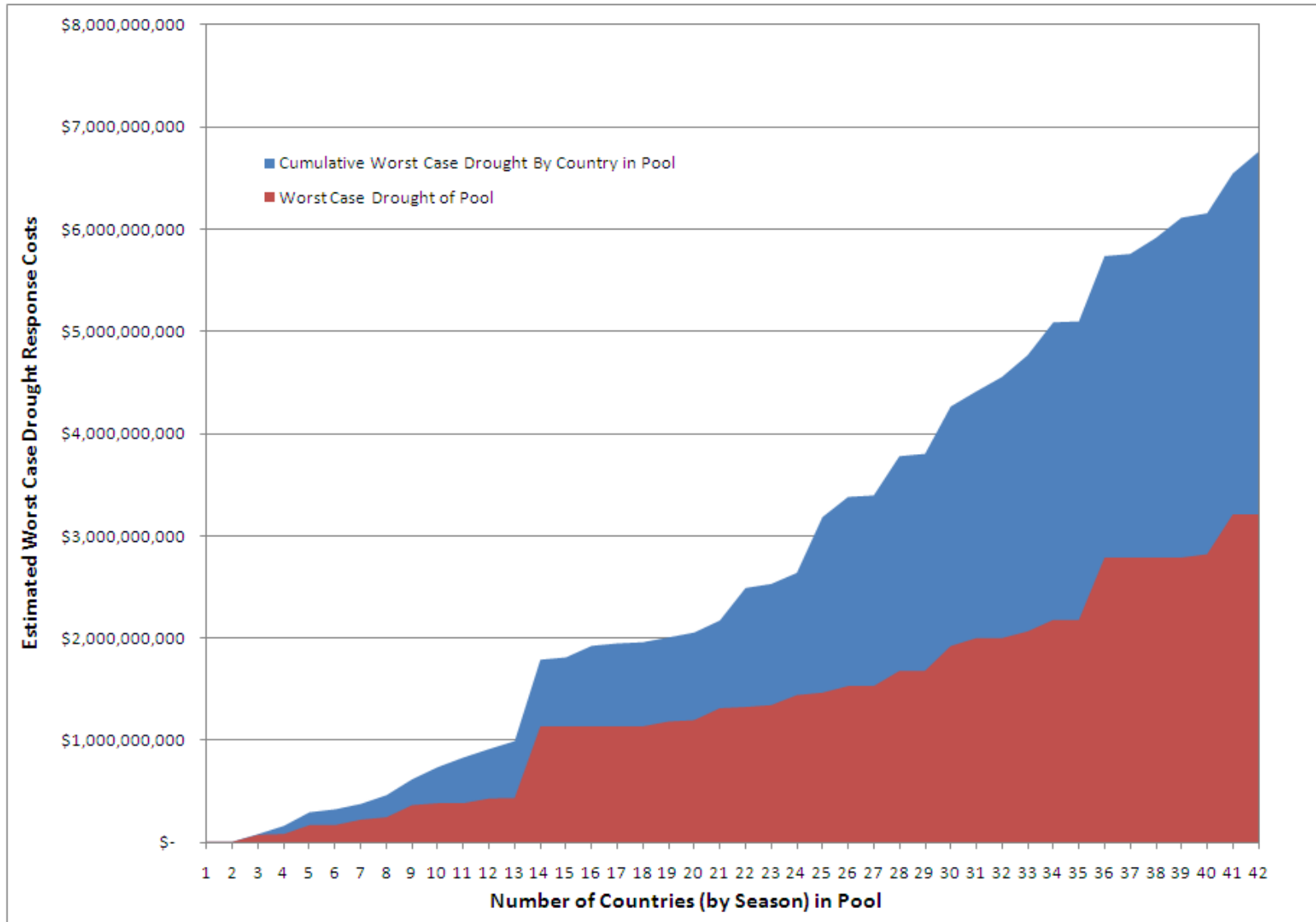
Exposure

2009/2010 In-Season Cost Forecast (As-of D6)
All Seasons/All Countries/All Areas





Pan African Solidarity is Cost Efficient





ARC Risk Transfer Cost Examples : Horn of Africa

Payout Frequency per season	Kenya (x2 Rangeland Seasons)		Ethiopia (x2 Rangeland Seasons)	
	Stand Alone Rate	Pool Rate*	Stand Alone Rate	Pool Rate*
1-in-5 Year	16.1%	12%	18%	14%
1-in-7 Year	15.6%	8%	17%	9%
1-in-10 Year	15.3%	5%	16%	6%
1-in-15 Year	15.1%	4%	15%	4%

Note: Savings are **indicative based on initial estimates from a sample 13-country risk pool, assuming a \$100 million maximum payout per rangeland season and every country in the pool having the same payout frequency*



Indirect and Direct Cost Savings

Benefits of Contingency Funds

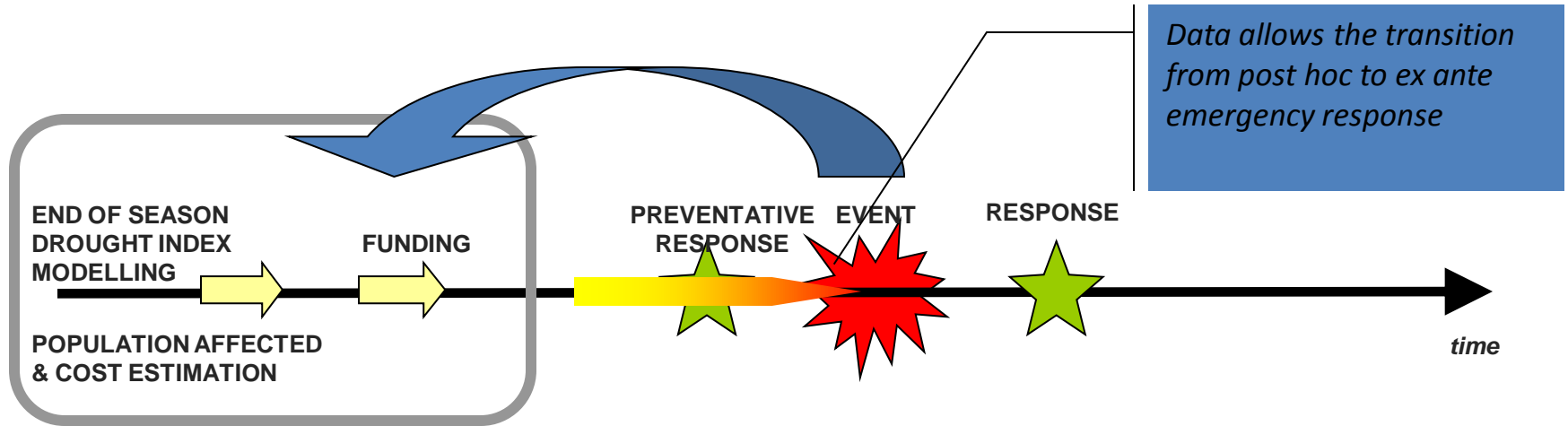
- Immediate liquidity that contingency funds provide reduces the time between **EVENT** and **RESPONSE** so that appropriate assistance can be mobilized quickly and efficiently to those in need
- Evidence from Ethiopia shows \$1 spent on early response can save \$4 in the cost of intervention once a crisis has escalated
- Knowing ahead of time the potential amount of funds available allows for direct cost savings:

Benefits of Risk Pooling

- Countries save on administrative costs of risk transfer when in a pool, since each bilateral deal would require the design of a bespoke product
- Countries save on cost of capital (premium), given the diversification of a pool



African Risk Capacity

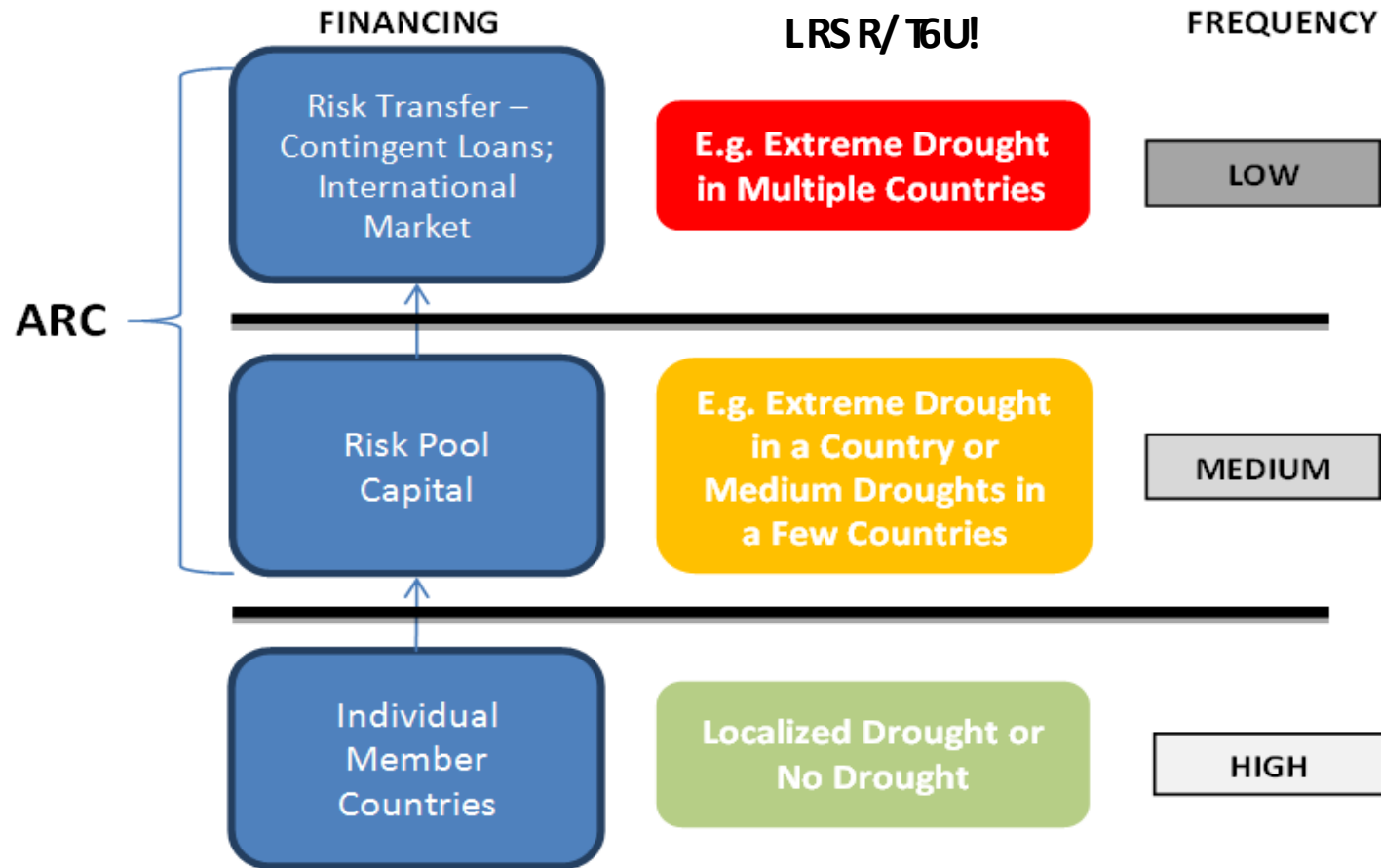


The ARC transfers risk away from governments charged with protecting farmers and pastoralists who shoulder the bulk of this burden to the pool and then to international financial markets that can handle it much better.

The ARC transfers ownership of disaster risk management from the international community to African governments, creates incentives for risk reduction and ensures more objectivity, transparency, accountability and fairness in the humanitarian assistance system.



Additional Explanatory Slides





ARC is One of Many Risk Management Options

Several tools are available to manage this risk as part of a layered financial risk management strategy and comprehensive disaster management plan:

1. Risk Retention:

Countries could use existing resources and programs to retain some risk and manage the impact of less severe, localized or frequent events in-country, e.g. through national reserves, annual contingency budgets and mechanisms such as safety nets, SGRs etc.

2. Risk Financing:

Contingent lending could also be considered. Countries could borrow to finance responses for more extreme events on pre-agreed terms from International Financial Institutions (IFIs) and repay back over a long period of time.

3. Risk Transfer:

Countries could choose to transfer risk, selecting to only receive compensation for drought events that are more extreme and less frequent in return for an annual fee, e.g. by entering into a transaction with a donor, reinsurer or by joining ARC

4. Risk Reduction:

Longer-term DRR and climate proofing investments by countries could reduce the overall financial cost of this risk over time, however while these investment take effect the risk of disasters remains