



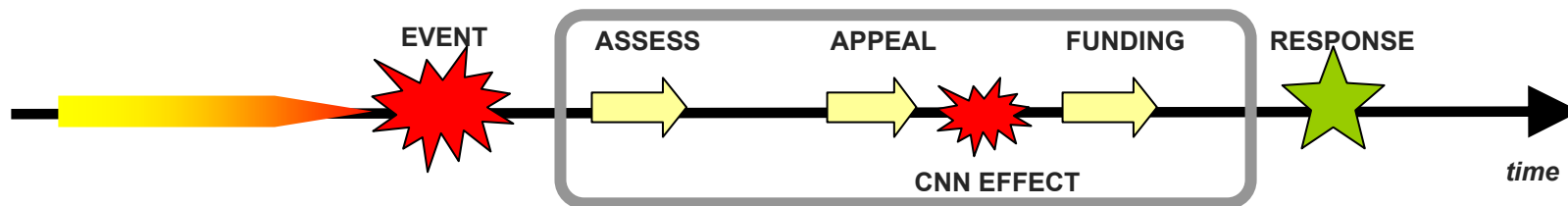
African Risk Capacity

Sovereign Disaster Risk Solutions
A Project of the African Union





The Way Disaster Assistance Works Now



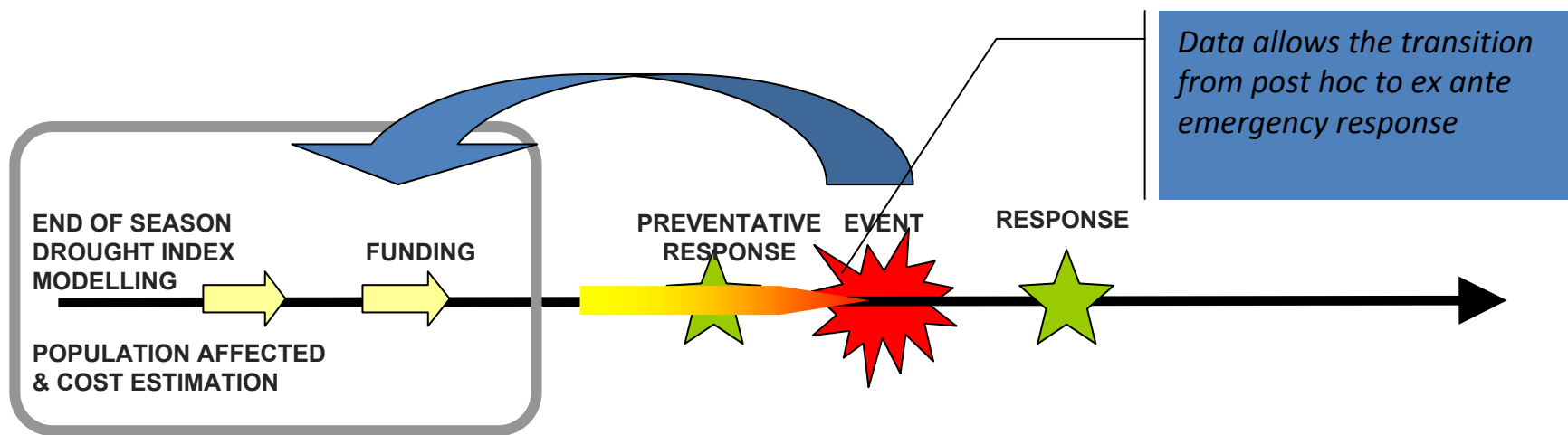


The Way Disaster Assistance Could Work

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

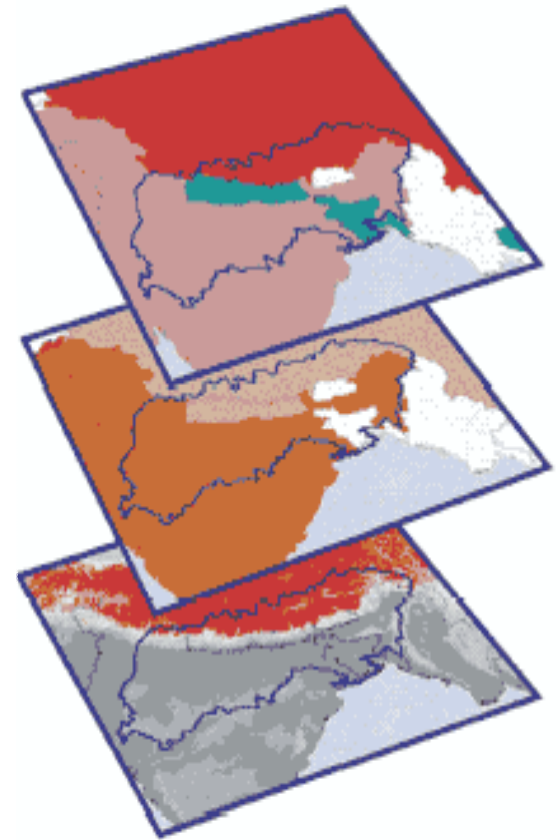
Satellite-based rainfall data for over 261,000 satellite pixels over Africa (0.1 dg x 0.1 dg or 10x10km sq near the equator) updated every 10 days.

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

Africa RiskView version 0.93



Africa RiskView

[Update Data](#) | [Advanced Tools](#) | [About](#)

East Africa Second Season



RAINFALL



DROUGHT INDEX



POPULATION AFFECTED



COSTS





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

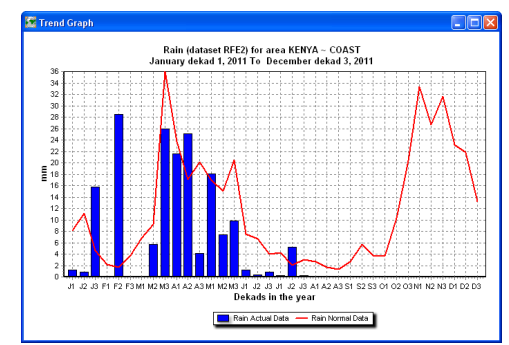
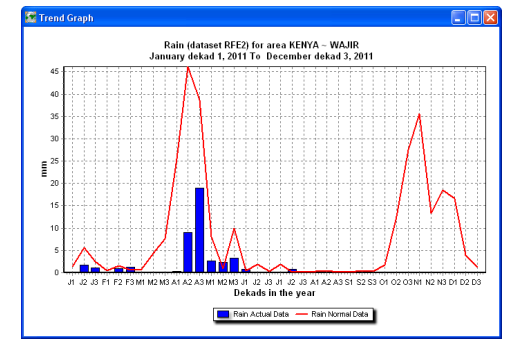
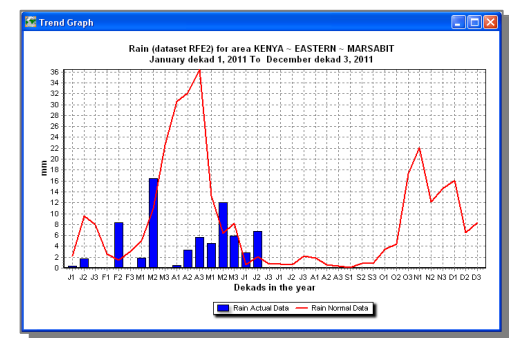
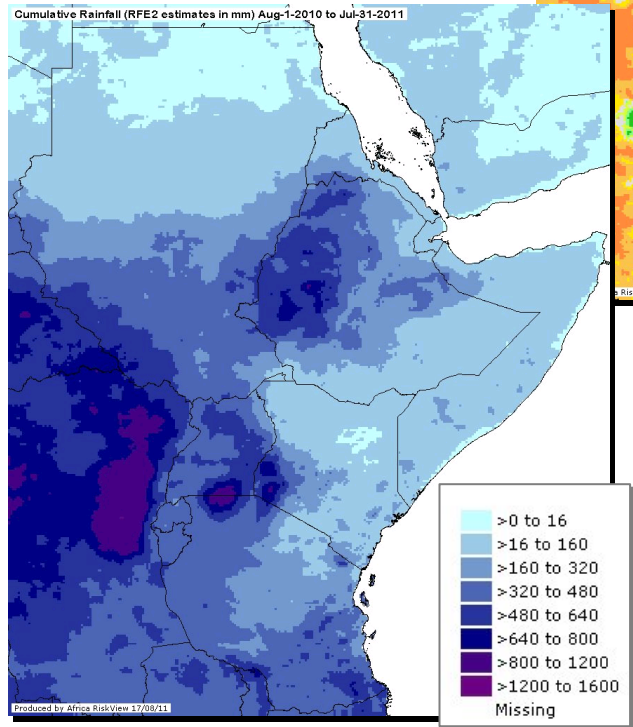
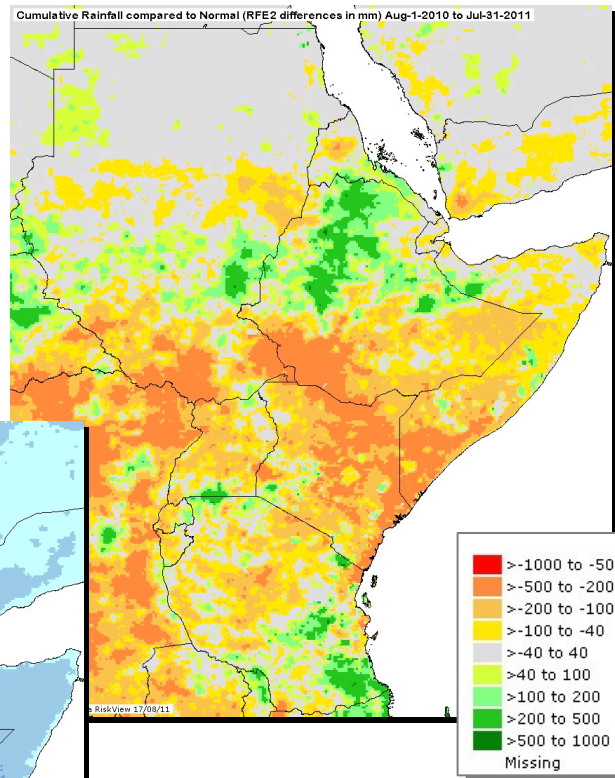
- **For these pastoral areas, particularly in Somalia, the August 2010 to January 2011 minor rains failed or were significantly below average**
- **The major rains from March until June 2011 were also below average**
- **It is these consecutive poor seasons that have led to the current humanitarian crisis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

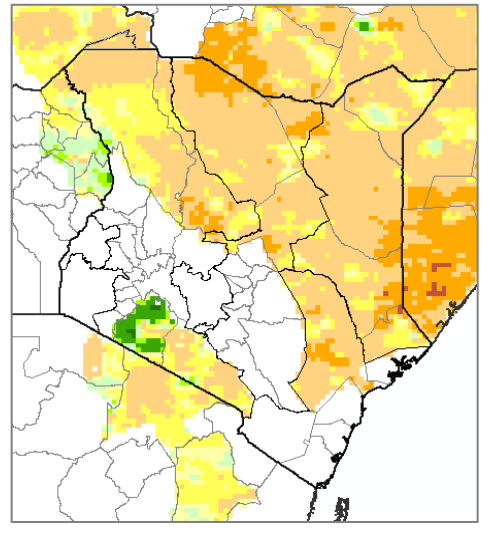
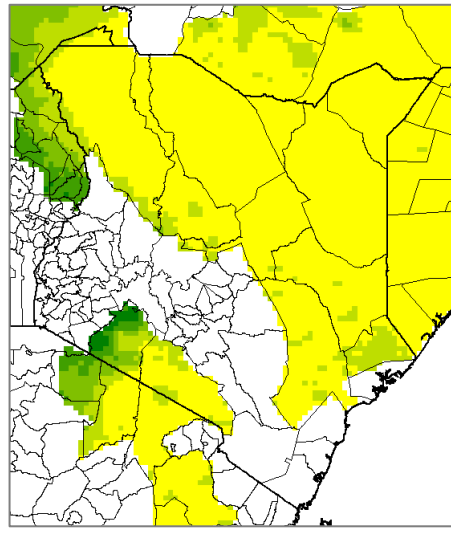
Ratio of actual seasonal evapotranspiration experienced by a crop to its water requirement and is linearly related to yield

Can be applied to crops and rangeland

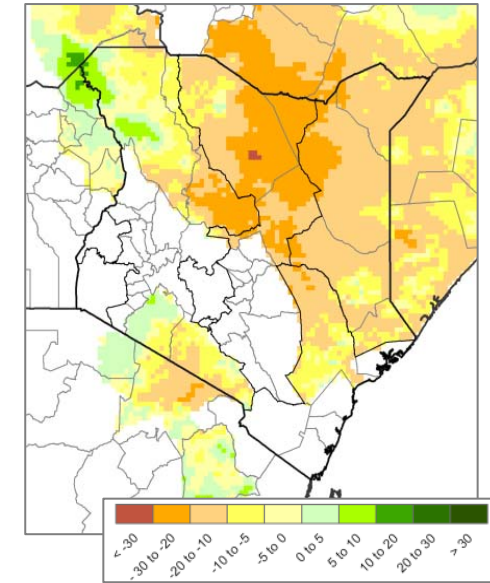
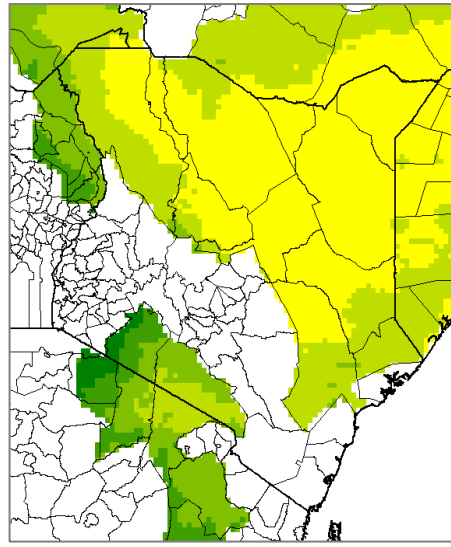
Updated every 10 days and is forward looking, i.e. estimates the end of season value as season progresses

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)



Rangeland WRSI in %	
	=0 to 20 Very Poor
	=20 to 40 Poor
	=40 to 60 Average
	=60 to 80 Good
	=80 to 100 Very Good
	Missing



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

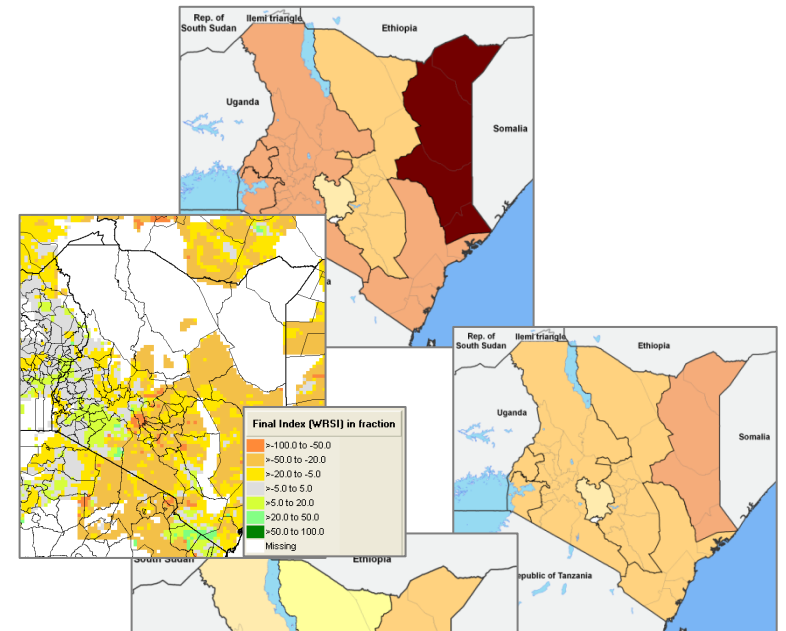
Resiliency: Household's distance from the poverty line

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

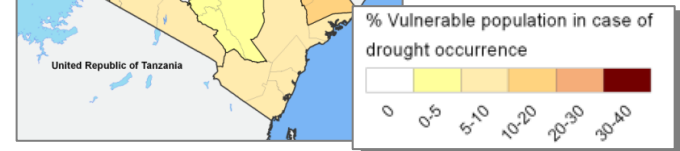
Estimates can be generated for each administrative level unit, country, region, season and across all countries using this standardized approach

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

% Vulnerable Severe Drought



% Vulnerable Medium

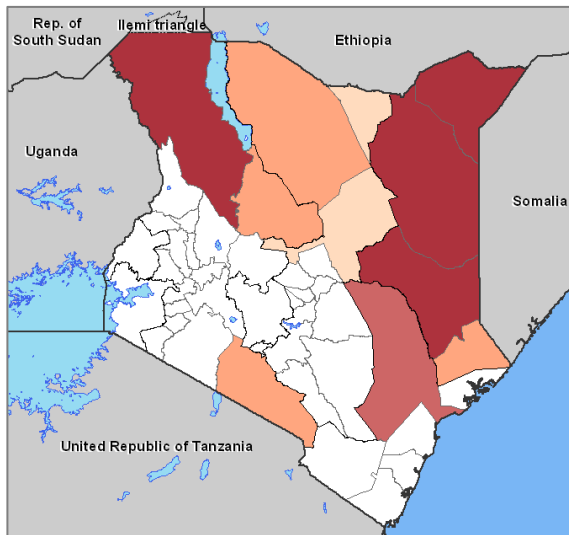


% Vulnerable Mild Drought

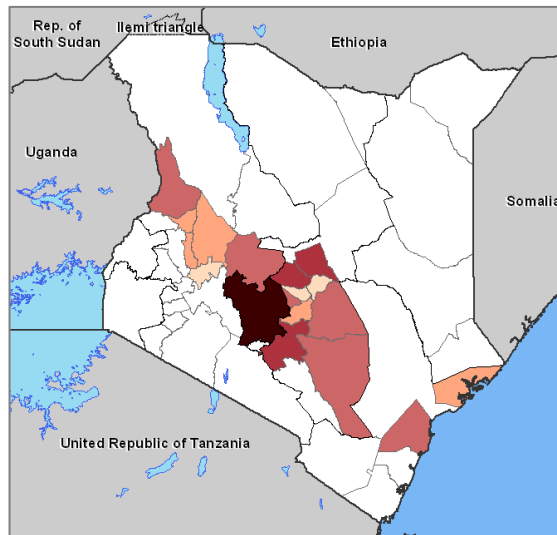


Vulnerability: Modelled Impact

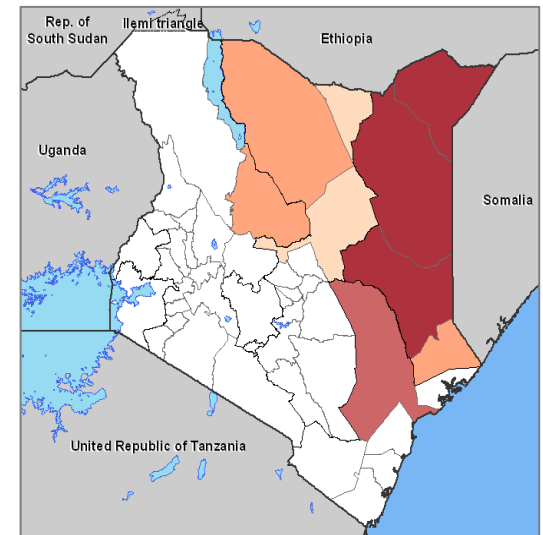
Short Rains (RL) 2010/11



Short Rains (Ag) 2010/11



Long Rains (RL) 2011



Estimated population affected (th)



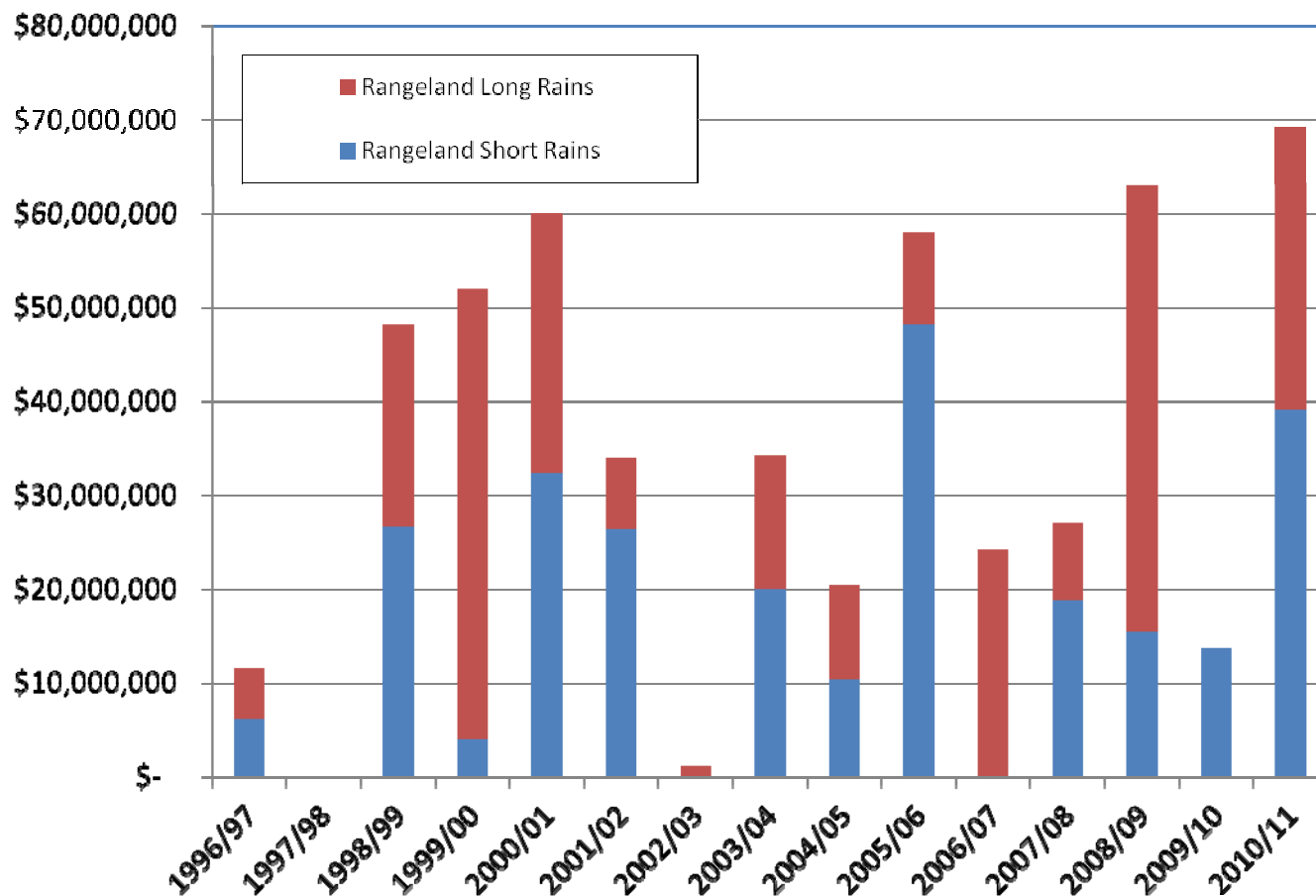
Estimated population affected (th)



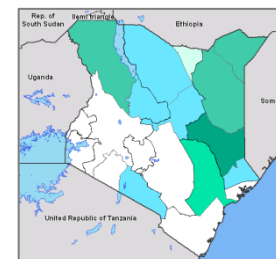
Estimated population affected (th)



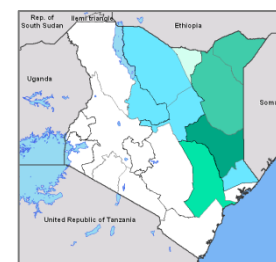
Exposure: Historical Modelled Response Costs



Short 2010/11



Long 2011



Estimated response costs (in million US\$)



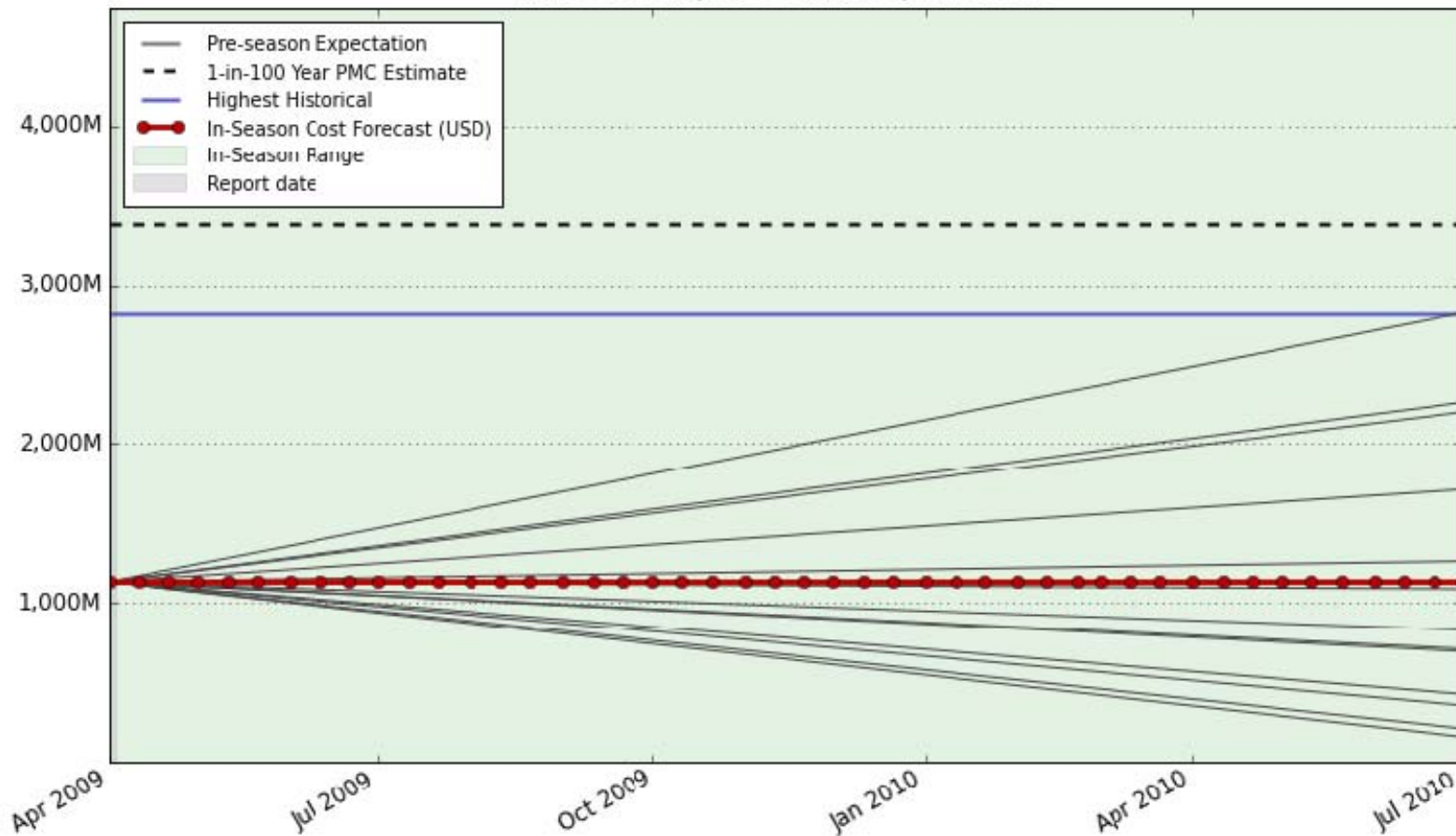
ARV estimates for both rangeland rainfall seasons *only*, including the impact of mild drought

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



Exposure

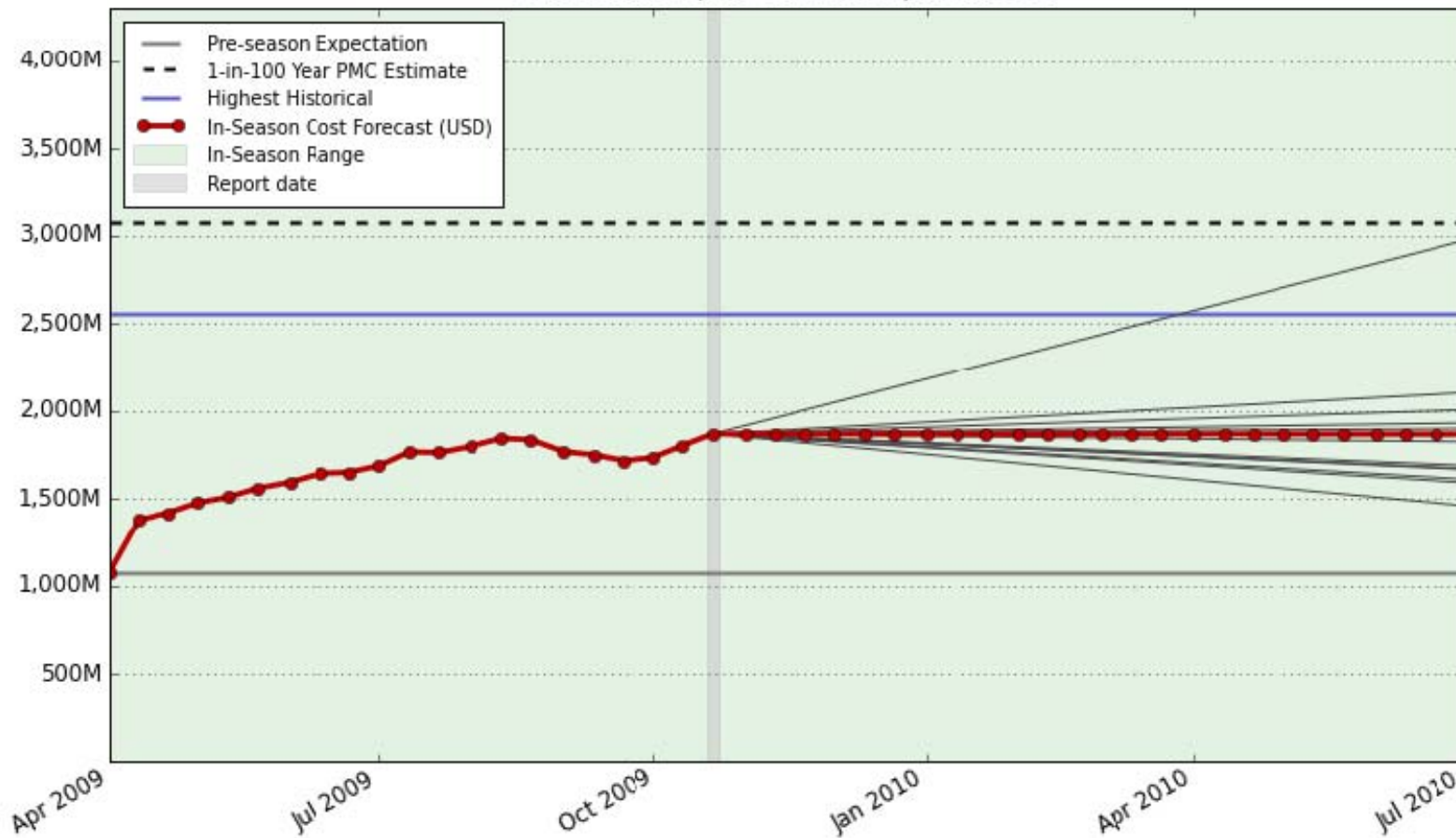
2009/2010 In-Season Cost Forecast (As-of D10)
All Seasons/All Countries/All Areas





Exposure

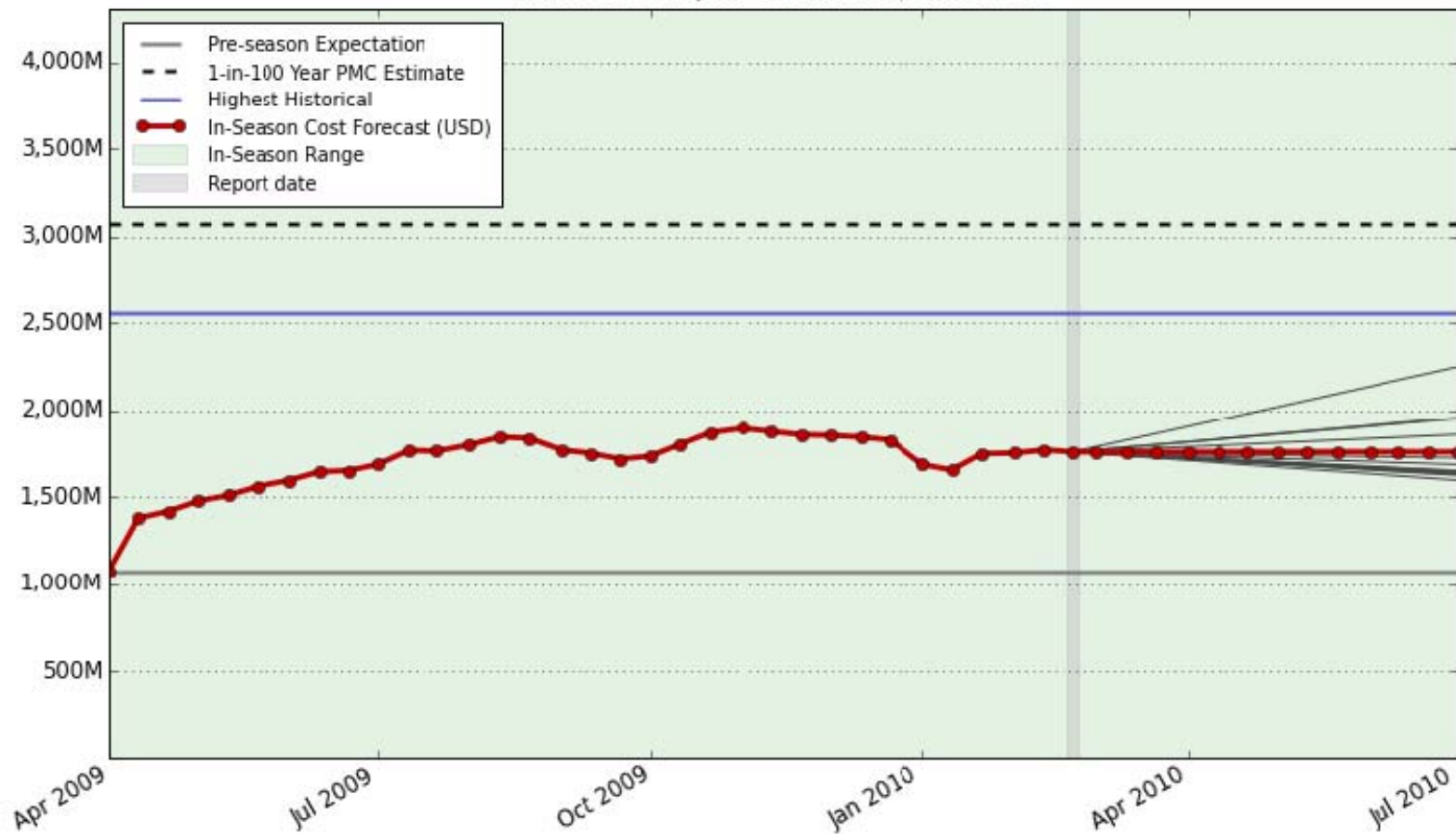
2009/2010 In-Season Cost Forecast (As-of D30)
All Seasons/All Countries/All Areas





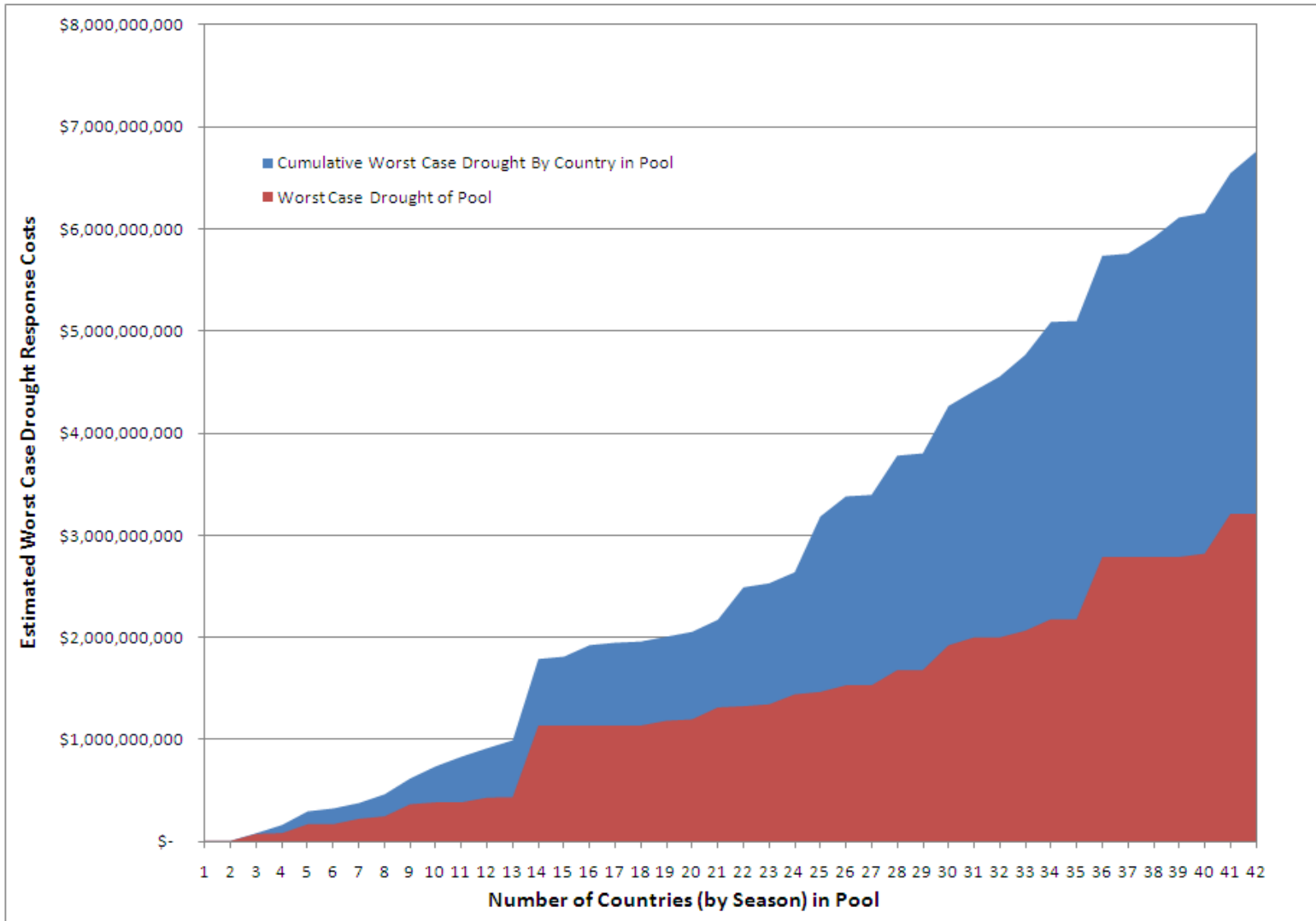
Exposure

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*

- **The cost decreases probability of a payout decreases, however more risk remains in the country**
- **Pool savings depend heavily on the participation of other countries in ARC**



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

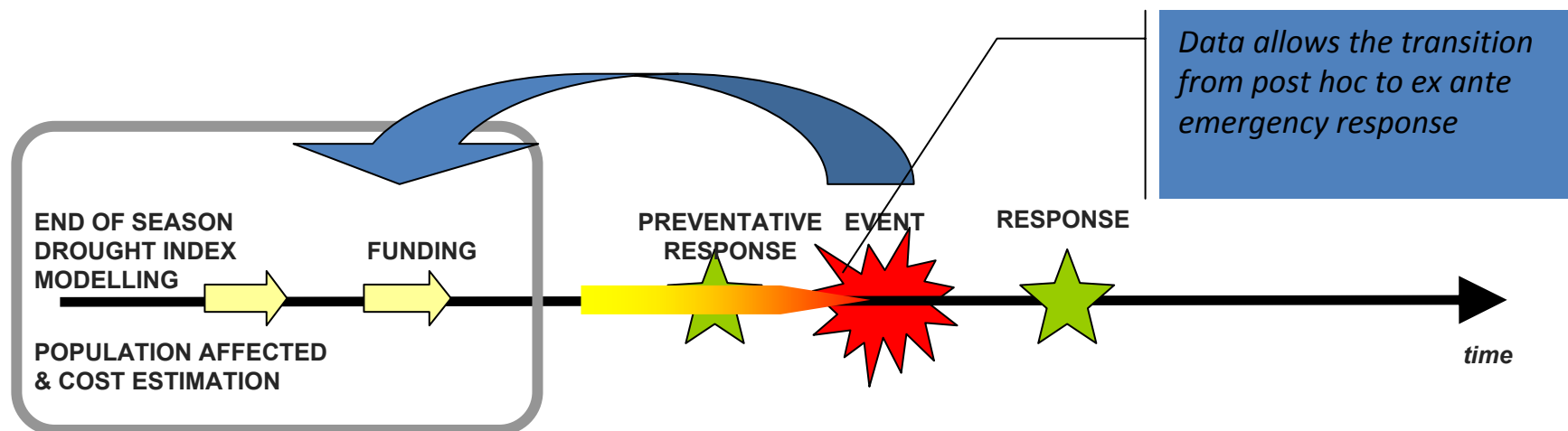


ARC Mandate

- **The ARC Project takes its mandate from African Heads of State and Government captured in the following resolutions adopted at the African Union Summits in July 2010 and January 2011, respectively:**
 - *“Member States resolve to support efforts towards enhancing national and regional capacities to mitigate exposure disaster risk through institutionalizing effective financial and other instruments such as strategic grain reserves, budgeted contingency funds as well as through sharing risk across regions.”*
 - *“Calls upon Member States, under the auspices of the African Union Commission, to explore the feasibility of continental financial risk pooling in working towards the creation of an African-owned pan-African disaster risk pool, building on existing and emerging tools and mechanisms for financing disaster risk reduction;”*
- **Further requesting in January 2011**
 - *“the Commission to accelerate action on the feasibility study to create an AU-led, African-owned Pan African Disaster Risk Pool that would allow Member States to share risk across regions, and to put in place the necessary administrative arrangements, pending the completion of the feasibility study;”*



African Risk Capacity



The ARC transfers risk away from vulnerable communities that 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.



Next Steps

1. Country Consultations and Engagement

- **Scoping Missions (Oct 24-Jan 15)**
- **Strategic and Technical Briefings (Jan 16-Mar 31)**
- Pre-Participation Agreements
- Coverage for Seasons Beginning Early 2013

2. Capitalization

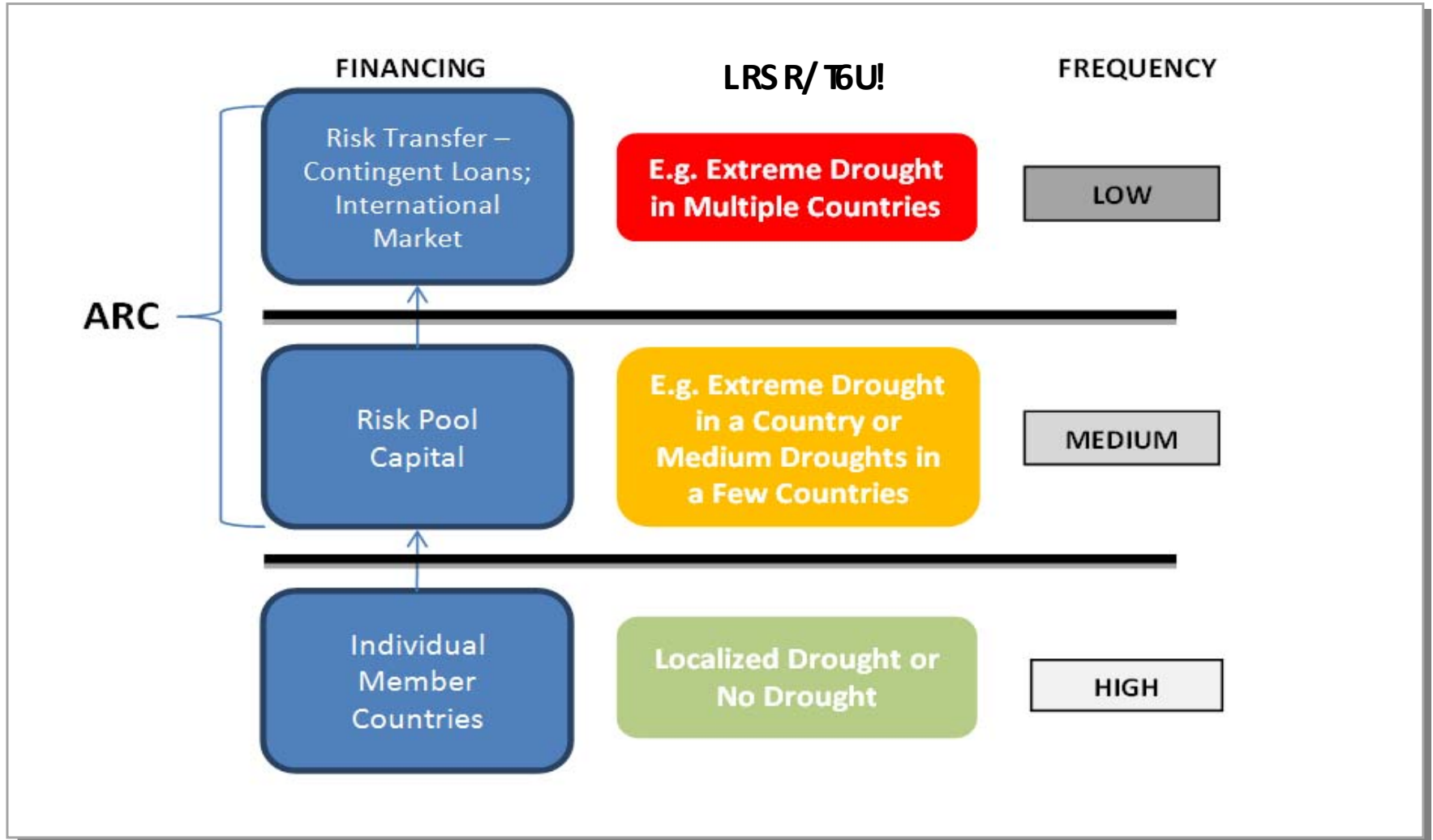
- Goal: \$300 million
- **COP 17 High Level Awareness-Building Event**
- Involvement of IFIs and Donors

3. Institution Building

- Governance
- Legal
- Financial



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