

Drought forecast based financing(FbF): Use of Standardized Precipitation Evapotranspiration Index (SPEI) as a Proxy for Water Scarcity

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Drought and Humanitarian Assistance



Urgent humanitarian assistance was needed!

Kenya Drought Flash Appeal 2021

APPEAL SUMMARY

APPEAL DATA

Response plan/appeal snapshot for 2021

US\$139.5m total requirements of plan ?

\$26.4m

\$113.1m

18.9% funded through this plan

81.1% unmet requirements

Anticipatory early action for drought

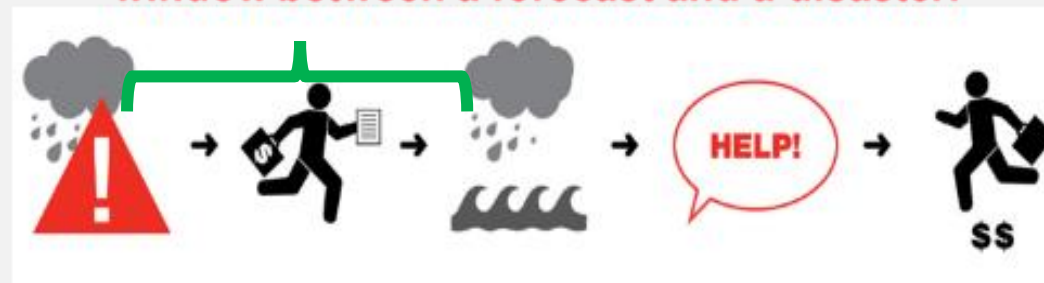
- Drought early warning systems exist (in Kenya)
- Why are so many people still in drought-induced food insecurity?

Humanitarian finance is often available only when disaster strike and suffering is almost guaranteed:



**Anticipatory humanitarian system needed!
Our approach: Forecast-based financing!**

Opportunity: Many humanitarian actions could be implemented in the **window between a forecast and a disaster:**

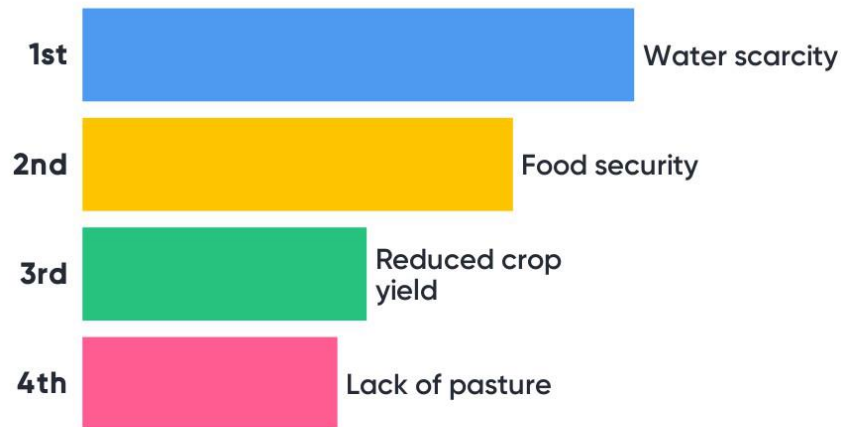


Implementing Drought Early Actions

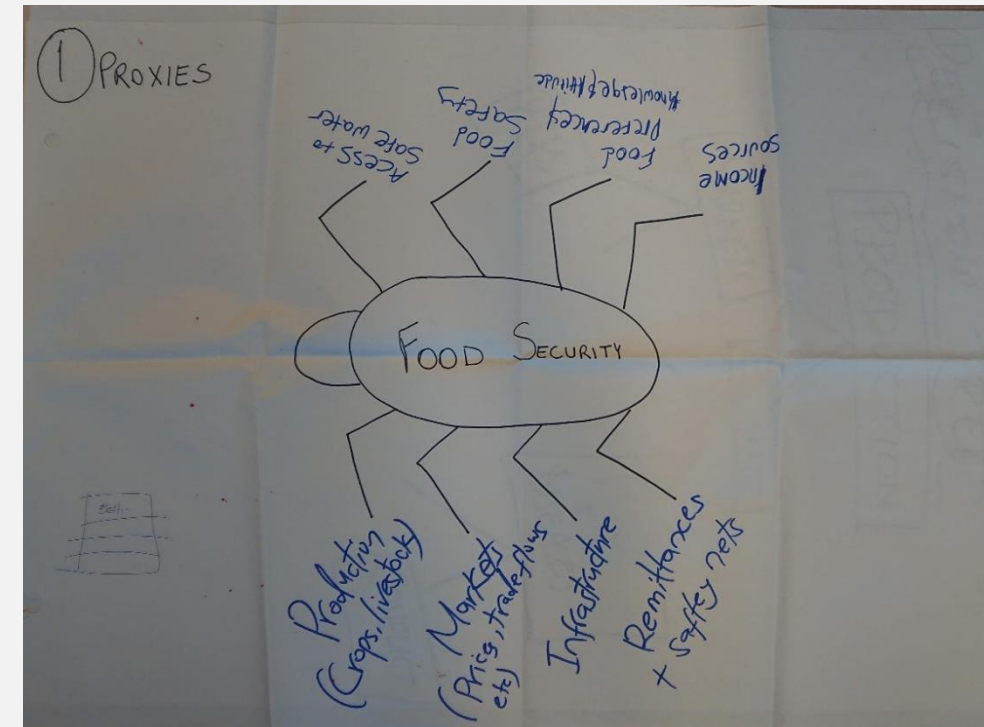
- Rather than floods which is a rapid onset, drought is a slow onset which makes it hard to implement early actions
- What impacts to focus on?
- Can these impacts of drought be forecasted (**impact based drought forecast**)?
- What is the **acceptable rate of acting in vain** based on a probabilistic forecast?

What drought impacts to address with early action?

Mentimeter



39



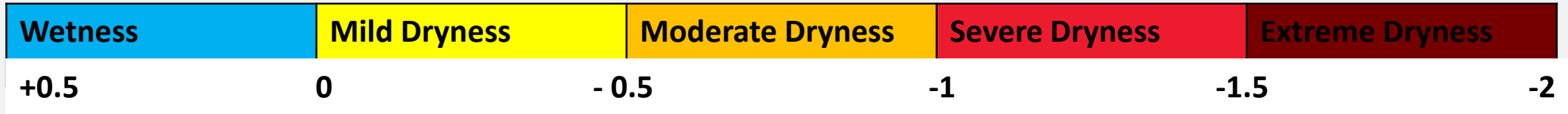
Prioritized Drought Impacts and their Proxies

Prioritized Drought Impact	Proxy
Water Scarcity	Standard Precipitation Evapotranspiration Index(SPEI)
Reduced Crop yield	Vegetation Condition Index(VCI)
Reduced Pastures	Vegetation Condition Index(VCI)

Standardized Precipitation Evapotranspiration Index (SPEI)

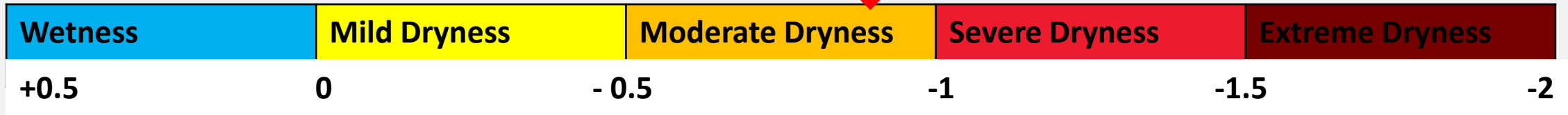
- SPEI is an extension of the widely used Standardized Precipitation Index (SPI) that is used is a widely used index for monitoring drought.
- It is designed to take into account both precipitation and potential evapotranspiration (PET) unlike the SPI
- Provides easy assessment of the severity of a rainfall deficit in the context of the past e.g. its return period

SPEI Values

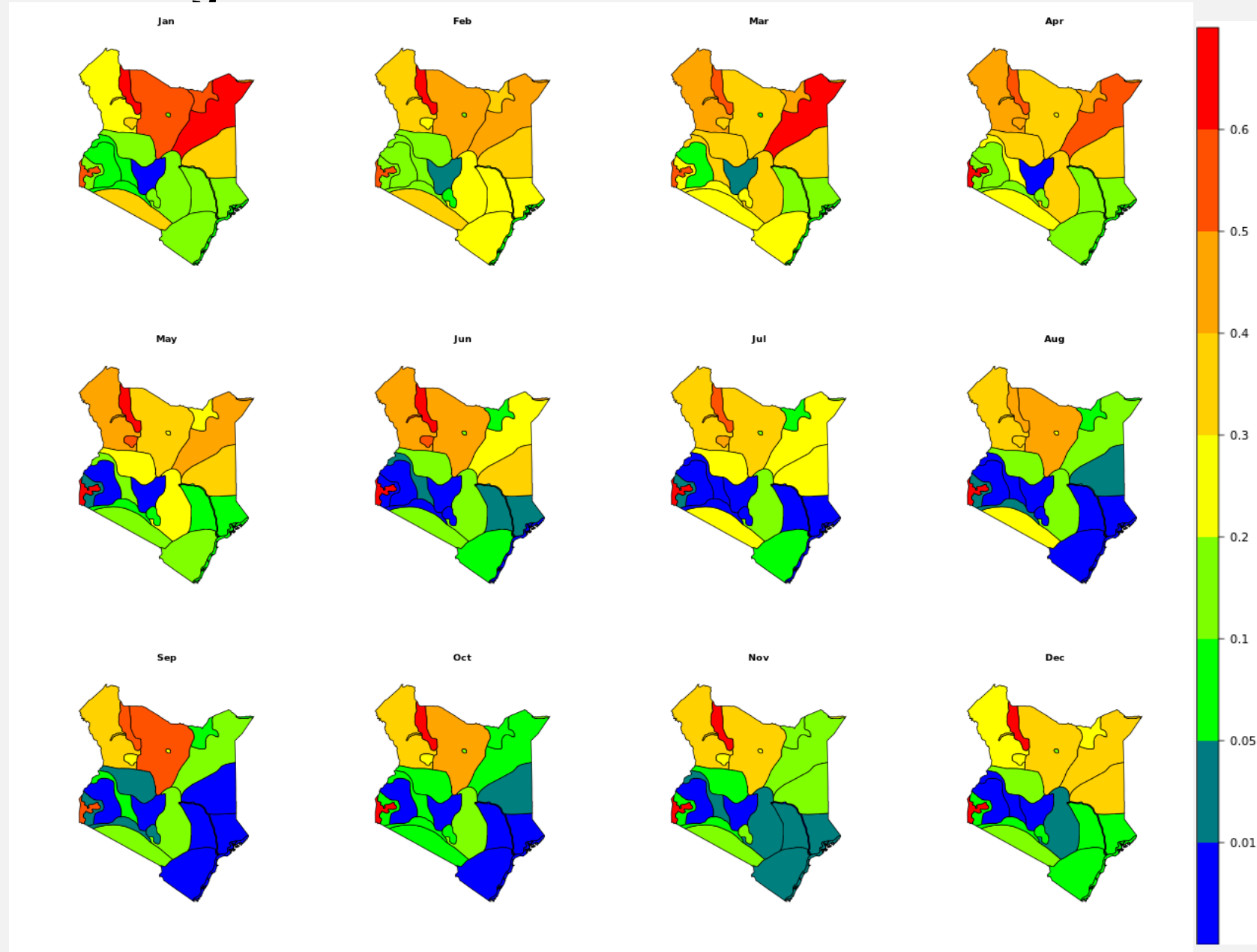


SPEI Values

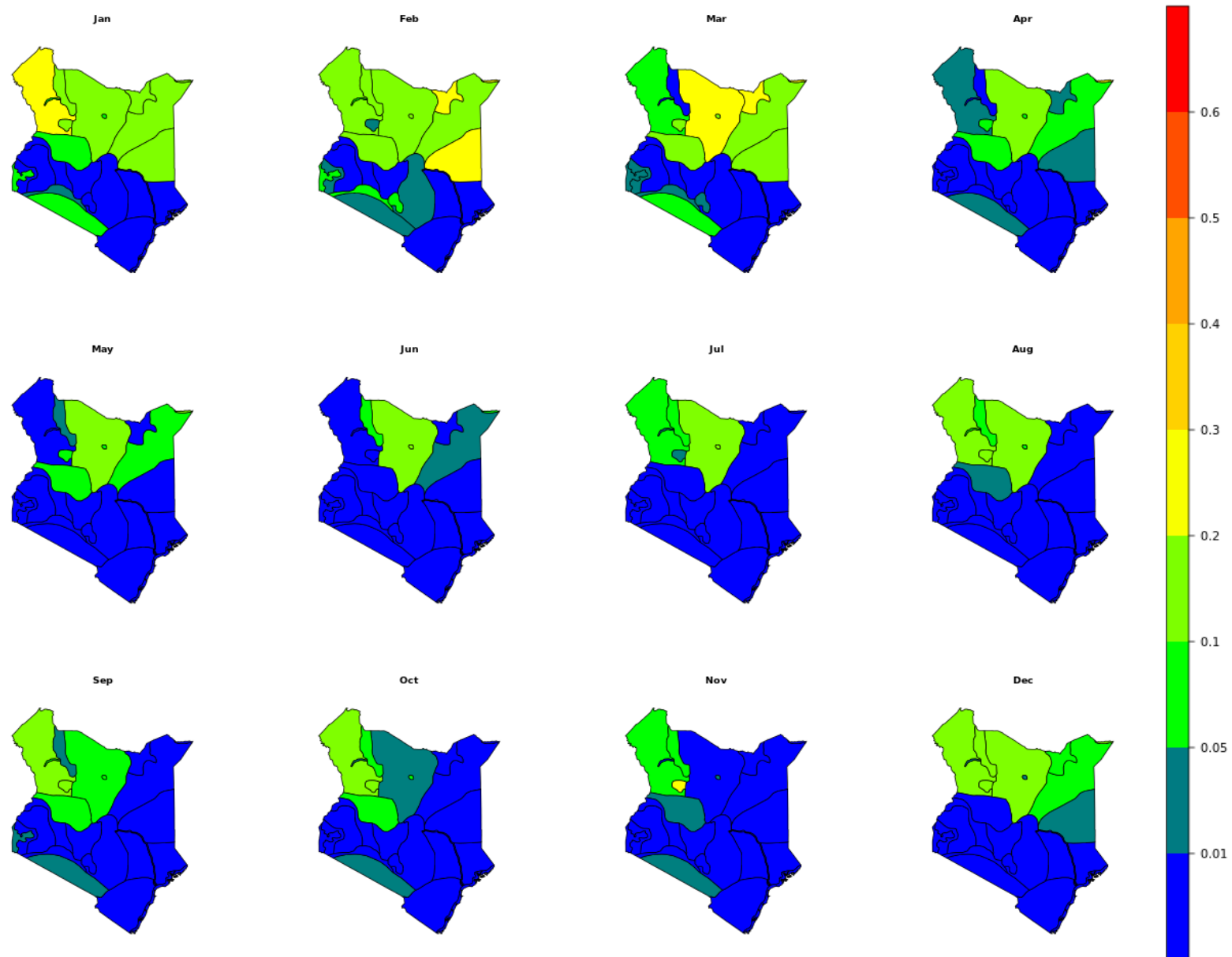
0.98 Threshold



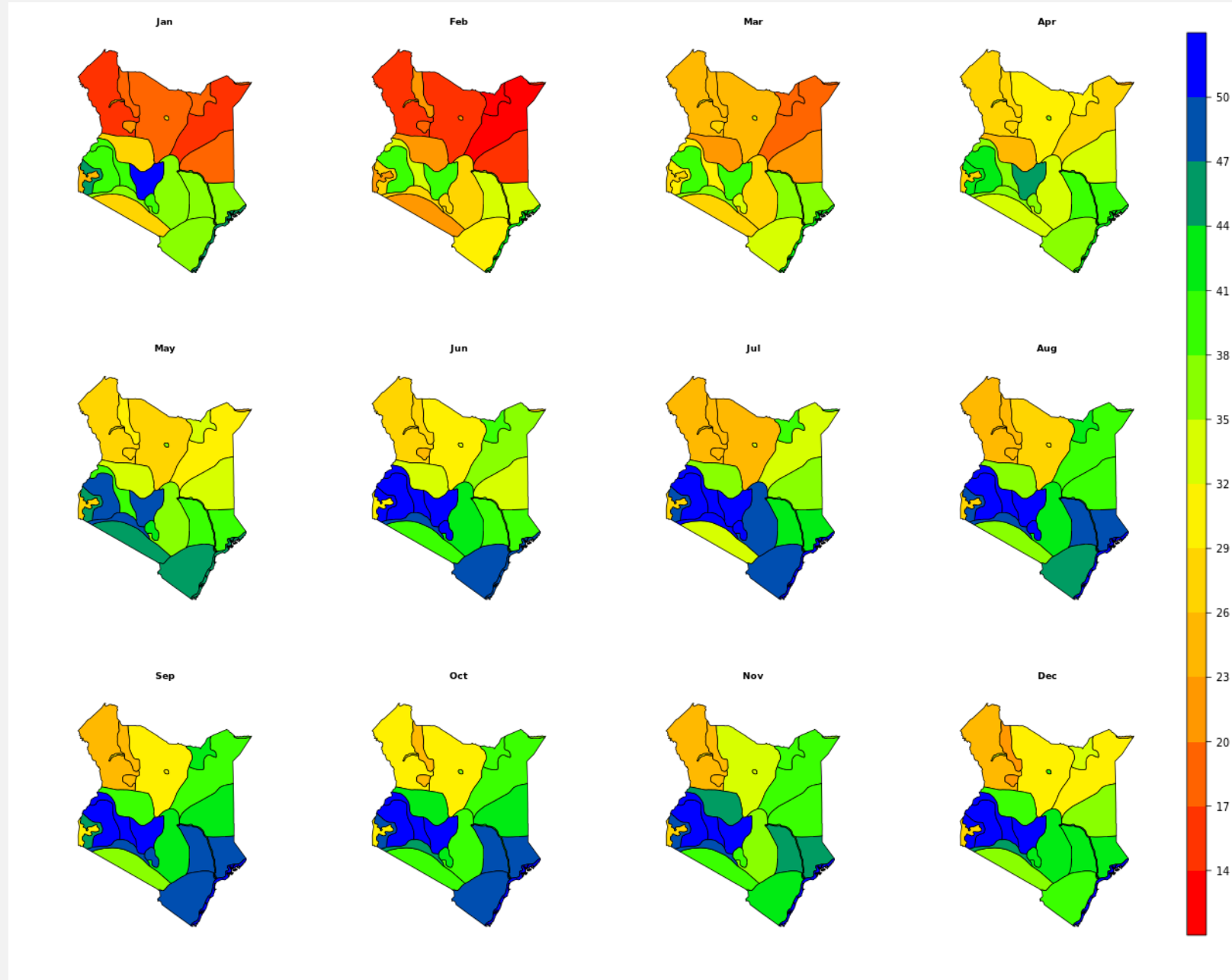
Frequency of Occurrence of Moderate Droughts using SPEI 2003-2020



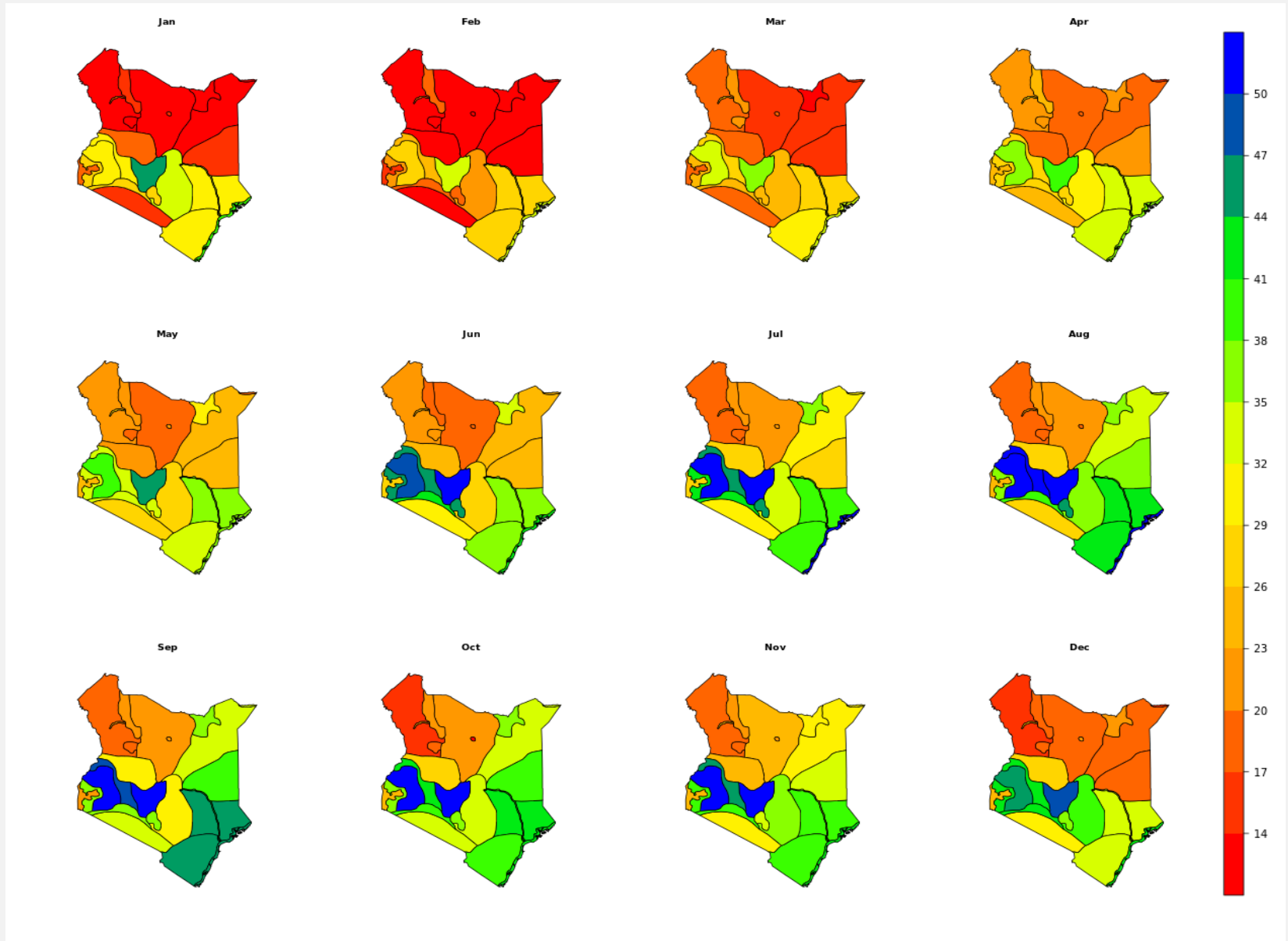
Frequency of Occurrence of Severe Droughts using SPEI 2003-2020



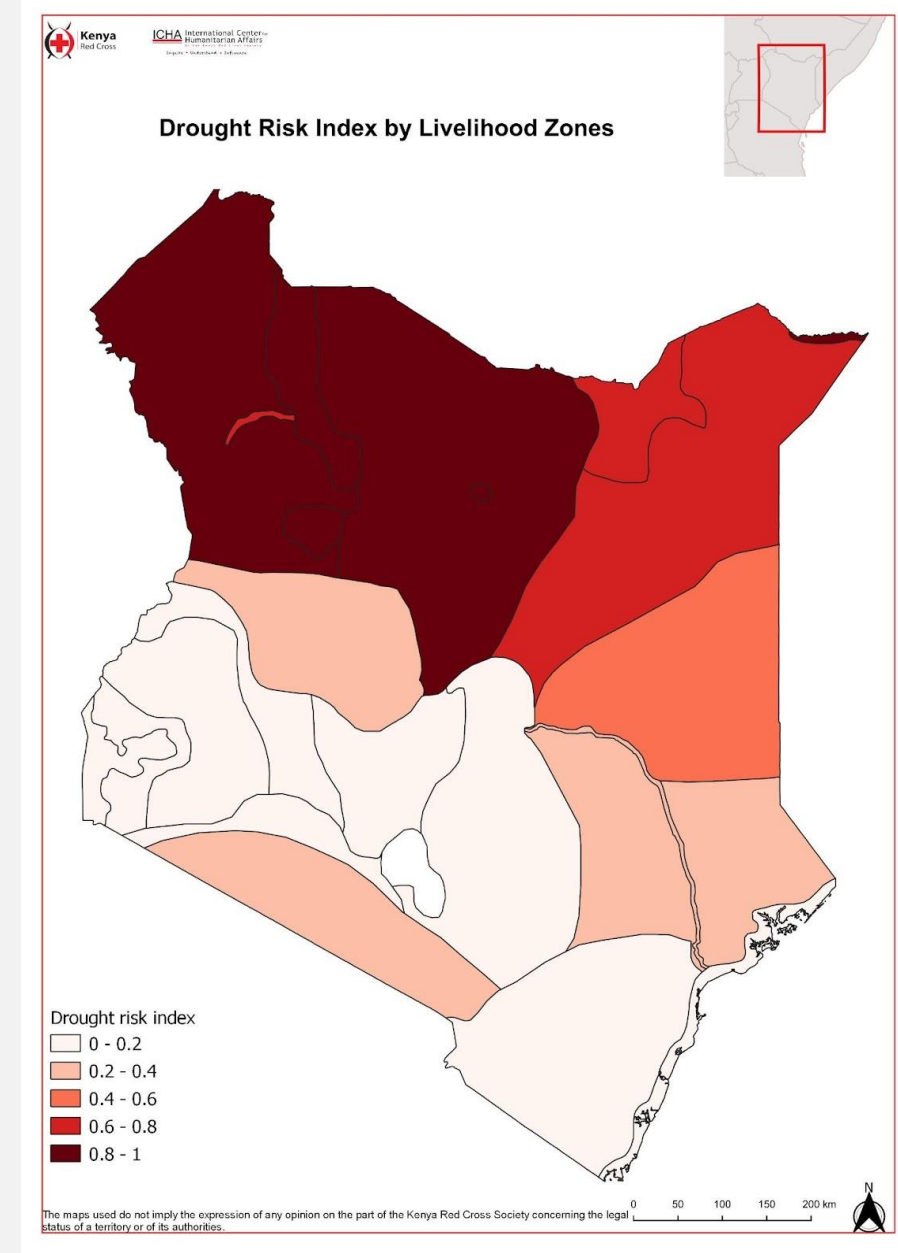
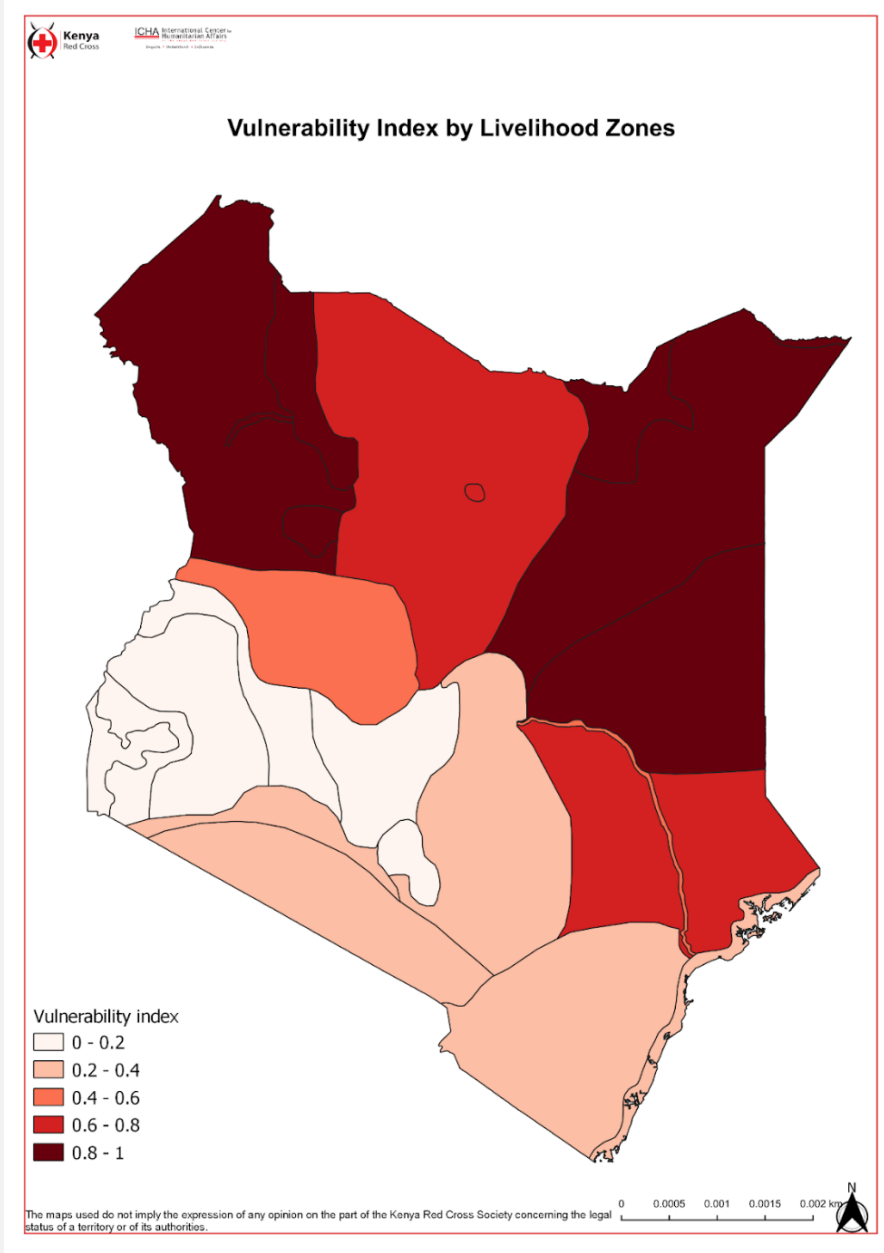
SPEI 3-year return levels



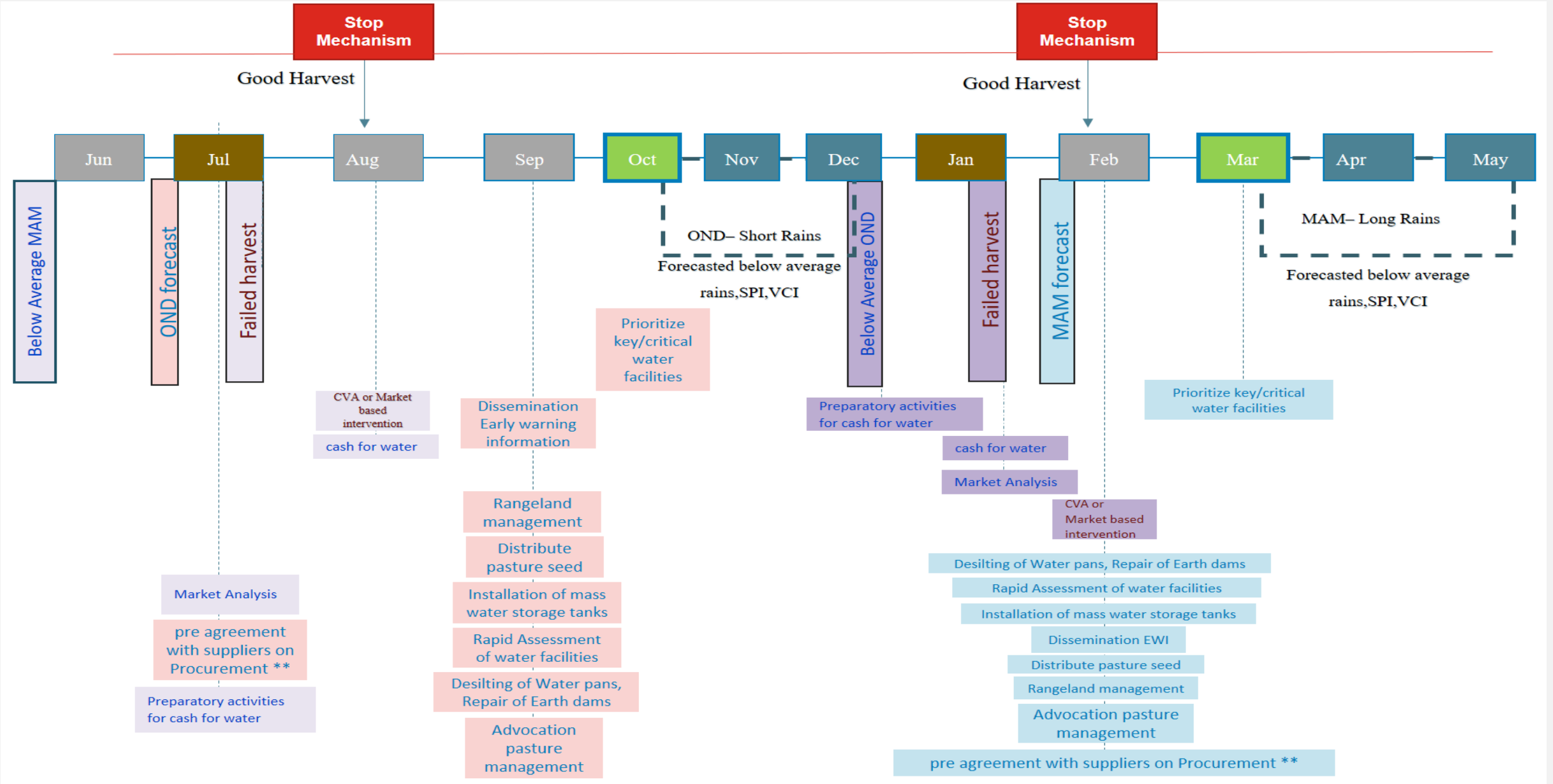
SPEI 10-year return levels



Drought Risk Index



Drought Trigger Calendar

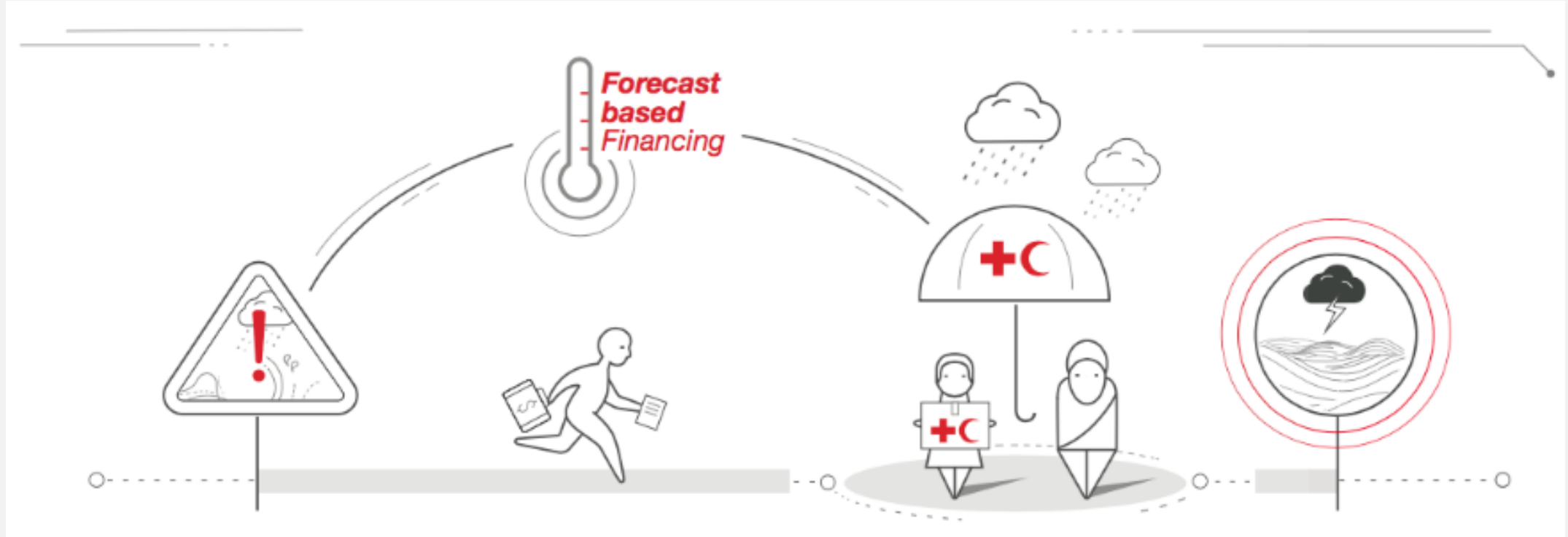


How to promote research, turn it into concrete recommendations for humanitarian actors?

Emphasis on research to action – practice and policy

- Humanitarian work is a ‘ripe’ place for developing **research questions [that matter]** on anticipatory/forecast based early action
- **Mapping the needs & matching with research expertise/ efforts** e.g. conferences, dialogues, embed researchers into humanitarian organisations, humanitarian practice in teaching programmes
- **Co-produce research to support humanitarian work**

Thank you! Asante!



For more information visit: www.forecast-based-financing.org

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