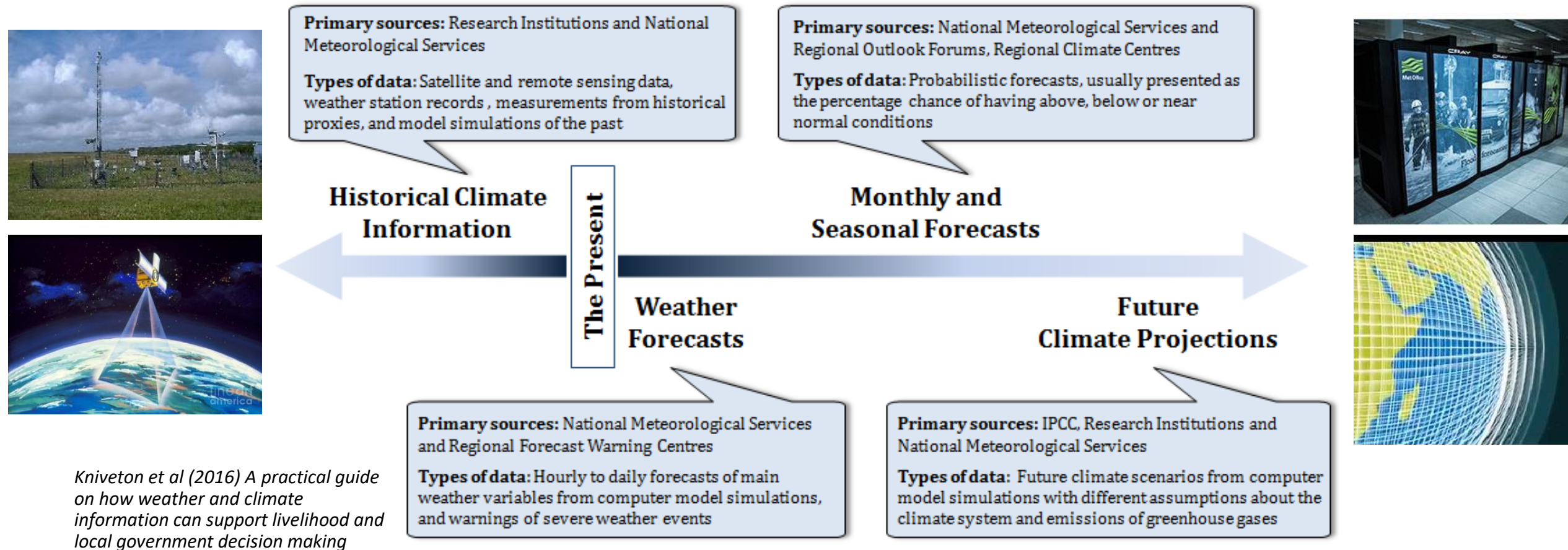


Developing climate information to support the ASPP in Senegal

Dr Joseph Daron, Science Manager, International Climate Services, Met Office, UK
joseph.daron@metoffice.gov.uk

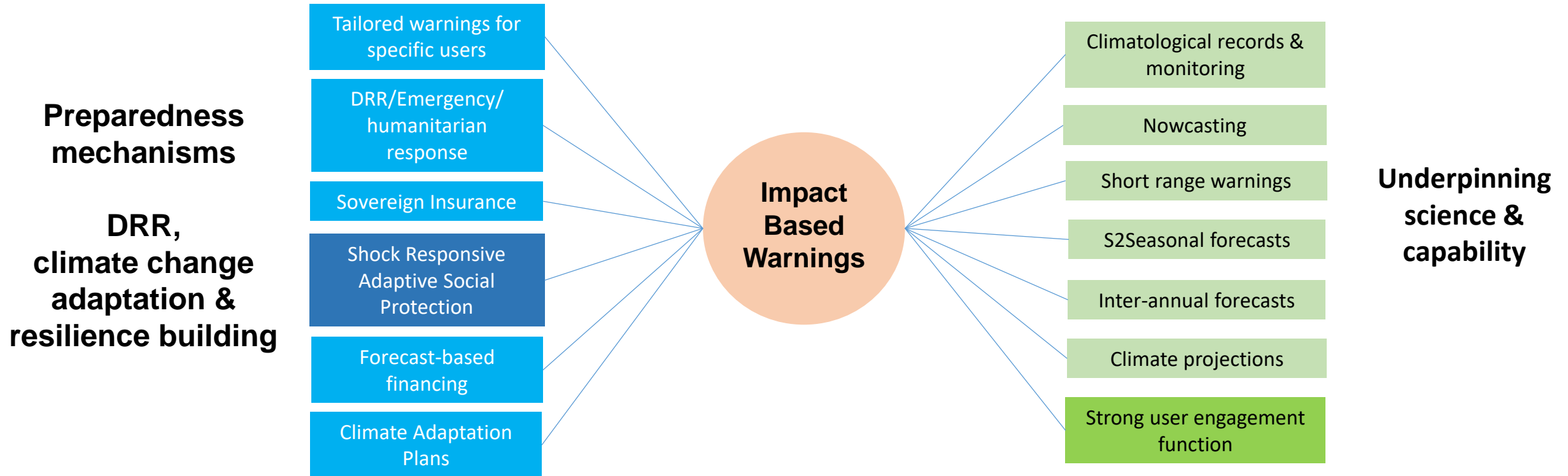
ASPIRE Senegal workshop, Dakar, 12th April 2018

Integrating weather and climate forecasts into decision-making



Integrating weather and climate forecasts into decision-making

ASPIRE aims to advance the development of **reliable and actionable** climate information to support the World Bank ASPP in the Sahel.



Forecast-based early action (FbA)



Contents

1. Introduction
2. **Forecasting and decision-making**
3. **Timing and planning actions**
4. Financing FbA
5. Mechanisms for delivering FbA
6. The evidence based for forecast-based early action
7. Taking forecast-based early action to scale
8. Conclusion



FbA definition: “...the use of climate or other forecasts to trigger funding and action prior to a shock or before acute impacts are felt, to reduce the impact on vulnerable people and their livelihoods, improve the effectiveness of emergency preparedness, response and recovery efforts, and reduce the humanitarian burden.”

Kenya

Initiative: **FAO Early Warning Early Action**
Period: **December 2016, negative forecasts for rainy season**

Numbers reached: **60,000 people**

Actions taken:

-  **Livestock feed, supplements and health treatments, destocking campaigns, training of local government officials on livestock emergency procedures**
-  **Rehabilitation of boreholes and provision of water**



Tajikistan

Initiative: **Start Network Anticipation Window**

Period: **July 2017 flooding and mudslides**

Numbers reached: **26,864 people**

Actions taken:

-  **Infrastructure for community-level preparedness. Provision of tools and equipment for responding to flooding and landslides**
-  **Emergency training, planning and simulation**

Bangladesh

Initiative: **Red Crescent Forecast Based Financing (Phase I)**

Period: **2016 flood, 2017 flood, 2017 cyclone**

Numbers reached: **5,000 households**

Actions taken:

-  **Unconditional cash transfer**

Peru

Initiative: **Red Cross Forecast based Financing (Phase I)**




Period: **2016 El Niño rains and flash floods**

2016 cold wave



Numbers reached: **2,440 households**

Actions taken:

2016 El Niño:

-  **Provision and purification of water, drainage**
-  **Hygiene and first aid training and kits, actions against mosquitoes**
-  **Stabilisation of houses/roofs**

2016 cold wave:

-  **Distribution of hay, veterinary kits**
-  **First aid and winter gear kits**

Zimbabwe

Initiative: **WFP FoodSECURE**

Period: **2015/2016 negative El Niño forecasts**

Numbers reached: **4,500 people**

Actions taken:

-  **Training farmers on 'climate-smart' agriculture and business practices, provision of seeds and fertilisers**





Somalia

Initiative: **SomReP**

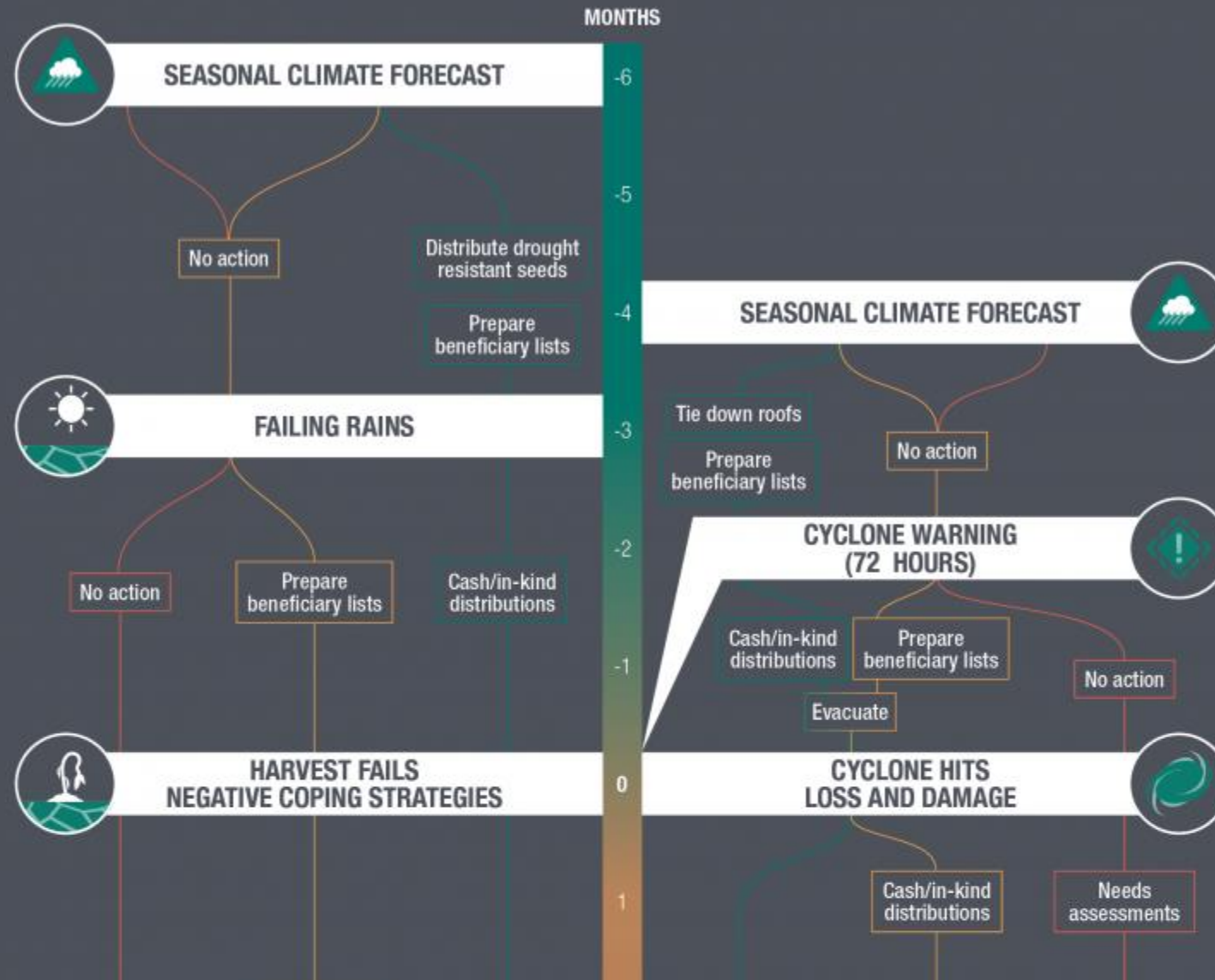
Period: **2014, late and inadequate Gu rains**

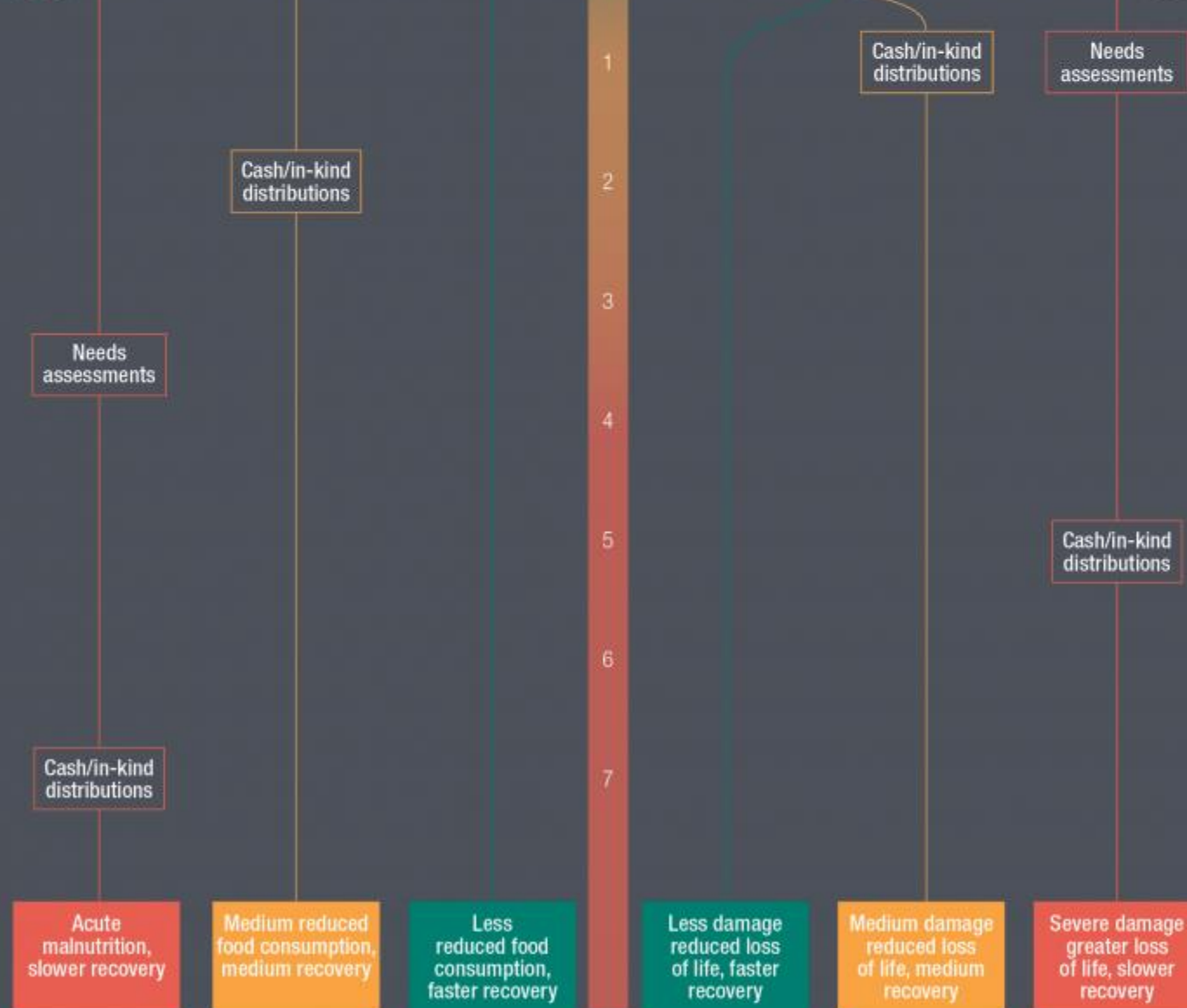
Numbers reached: **6,438 households**

Actions taken:

-  **Livestock vaccination**
-  **Conflict resolution (water and pasture)**
-  **Vouchers and cash programming**
-  **Rehabilitation of boreholes and provision of water**

FbA, early response and late response in the case of droughts and cyclones





The actions above represent a simplified chain of events in disaster preparedness and response, and are not meant to encompass all the actions that may be necessary to reduce the impact of a drought or cyclone. The authors would also like to caution that although forecast-based early action and early response can somewhat mitigate the effects of a disaster, they will not eliminate the need for further response and longer-term risk reduction.

Impact-Based Forecasting

Hazard

There is the potential for 150mm of rain in an hour



Flood



Impact

150mm of rain in an hour will cause flooding, action is required




Flood

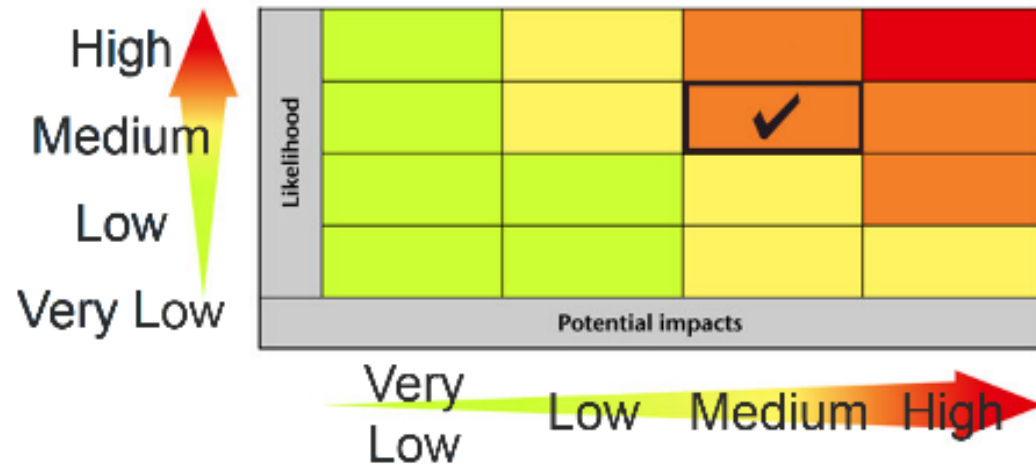
Some places will experience 60mph winds today



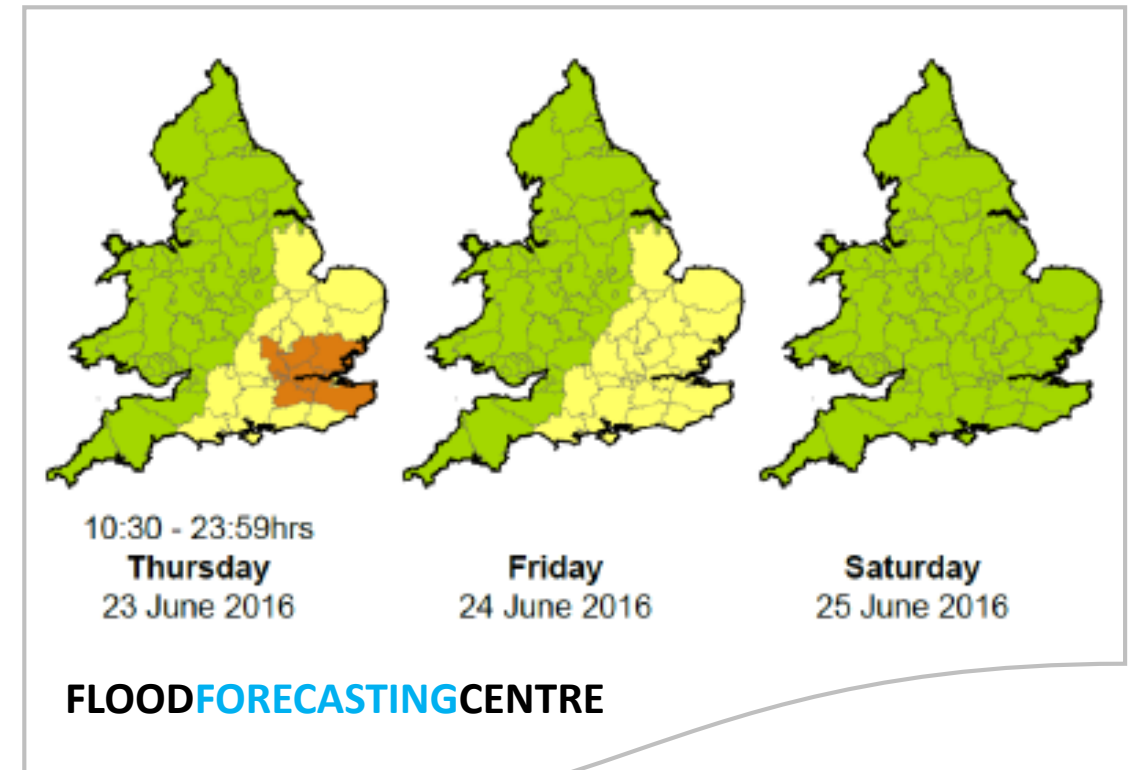
60mph wind gusts will cause travel disruption and fallen trees



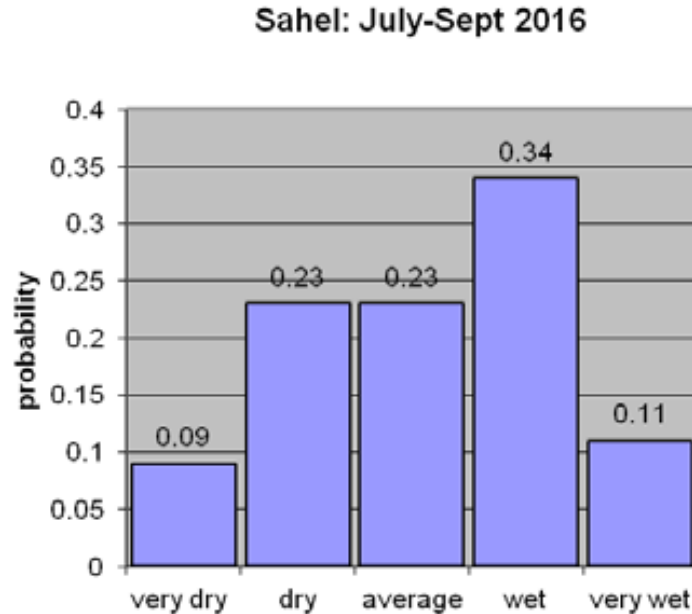
Impact-Based Forecasting



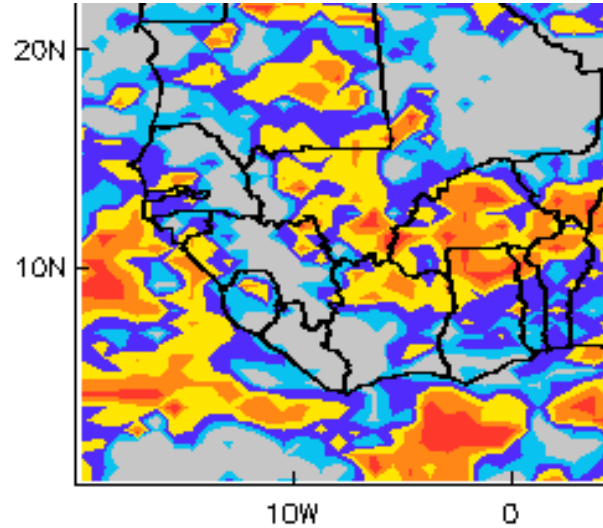
GREEN	NO SEVERE WEATHER EXPECTED
YELLOW	BE AWARE. There is a moderate risk of severe or a low risk of extreme weather occurring. <i>Remain alert and ensure you access the latest weather forecast.</i>
AMBER	BE PREPARED. There is a high risk of severe or a moderate risk of extreme weather occurring. <i>Remain vigilant and ensure you access the latest weather forecast. Take precautions where possible.</i>
RED	TAKE ACTION. There is a high risk of an extreme weather event occurring. <i>Remain extra vigilant and ensure you access the latest weather forecast. Follow orders and any advice given by authorities under all circumstances and be prepared for extraordinary measures.</i>



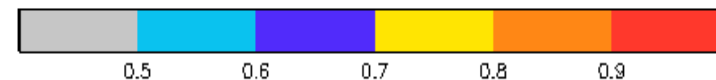
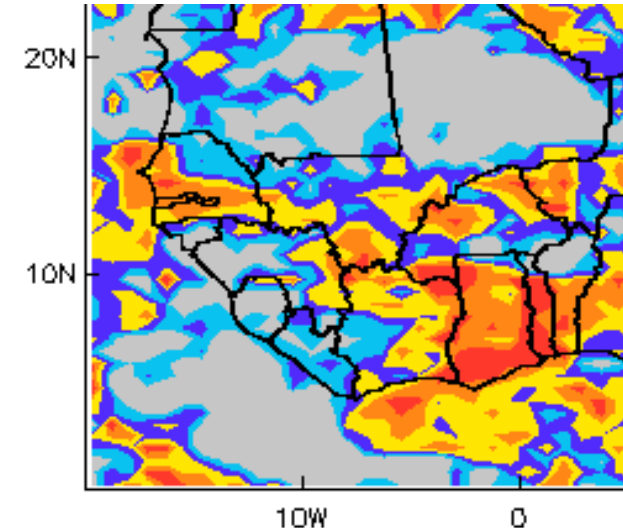
Seasonal forecasting reliability



Skill for “Well above normal” rainfall



Skill for “Well below normal” rainfall



Forecast skill of June-issued probabilistic forecasts for July-September rainfall totals above the 80th percentile (left) and below the 20th percentile (right), from the Met Office GloSea5 system. The score used is the Relative Operating Characteristic (ROC - Jolliffe and Stephenson 2003). Perfect forecasts would achieve a score of 100%, while a score of 50% indicates the forecasts are indistinguishable from guesswork.

Implementing FbA using impact-based forecasting

FbA relies on developing an early action protocol (or standard operating procedure) to pre-determine actions, decision triggers and responsibilities.

Questions to answer:

What can be done to mitigate potential impacts? What resources are available? How long will actions take? Who is responsible for taking action? ...



What is ASPIRE doing in Senegal?

- **Engaging with the World Bank and relevant stakeholders** to understand ASPP projects and the social protection landscape in Senegal, and discuss how to integrate climate and livelihoods information
- **Developing training programmes** for social protection stakeholders in the use of climate and livelihoods information to support early action
- **Advancing research** to assess climate trends and better understand seasonal forecast reliability in the region and improve the usefulness of seasonal forecasts for early action decision-making
- **Working with ANACIM** to provide training on seasonal forecasting and to advance forecast-based information and services