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How does DFID use forecasts?

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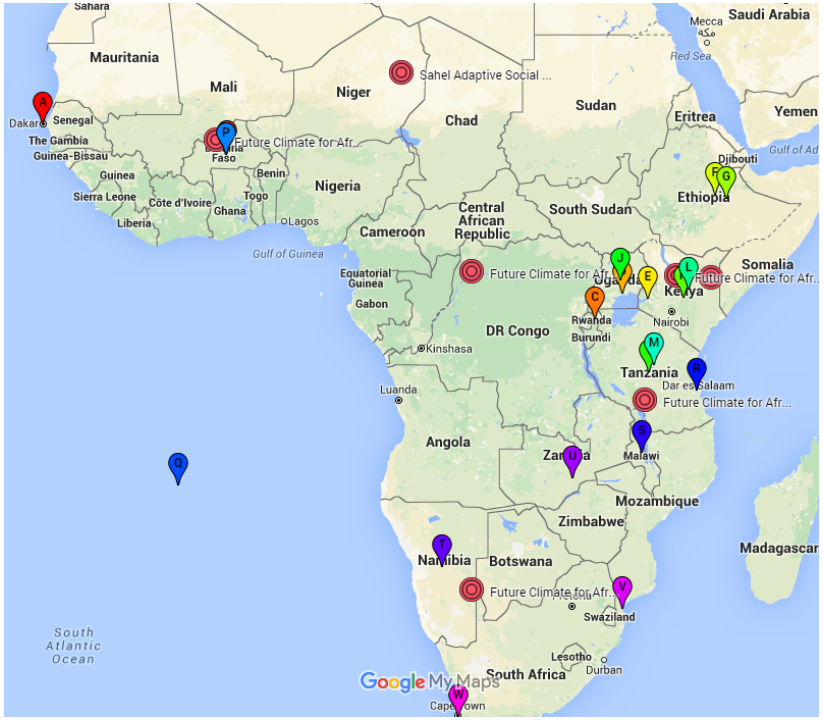
Background

- DFID sees climate information and services as crucial to achieving climate-smart development.
- Three components to how DFID uses forecasts:
  - **DIRECT USE**: we use forecasts directly in preparing for humanitarian response
  - **INDIRECT USE:** Some of our programmes make direct use of forecasts, e.g. shock-responsive social protection systems
  - **HELPING OTHERS TO ACCESS AND USE FORCASTS**: We are a major investor in the development and delivery of climate/disaster information and services, all along the value chain (from R&D, to met service modernisation, to development and dissemination of products to users)



Overview

Two examples… *(focus on hydromet processes)*

- Use of forecasts in preparedness for humanitarian response
  - E.g. 2015/16 response to the El Nino
- Use of forecasts in the delivery of DFID programmes

Perspectives:

- Challenges in using current forecast information
- How can forecast providers help?

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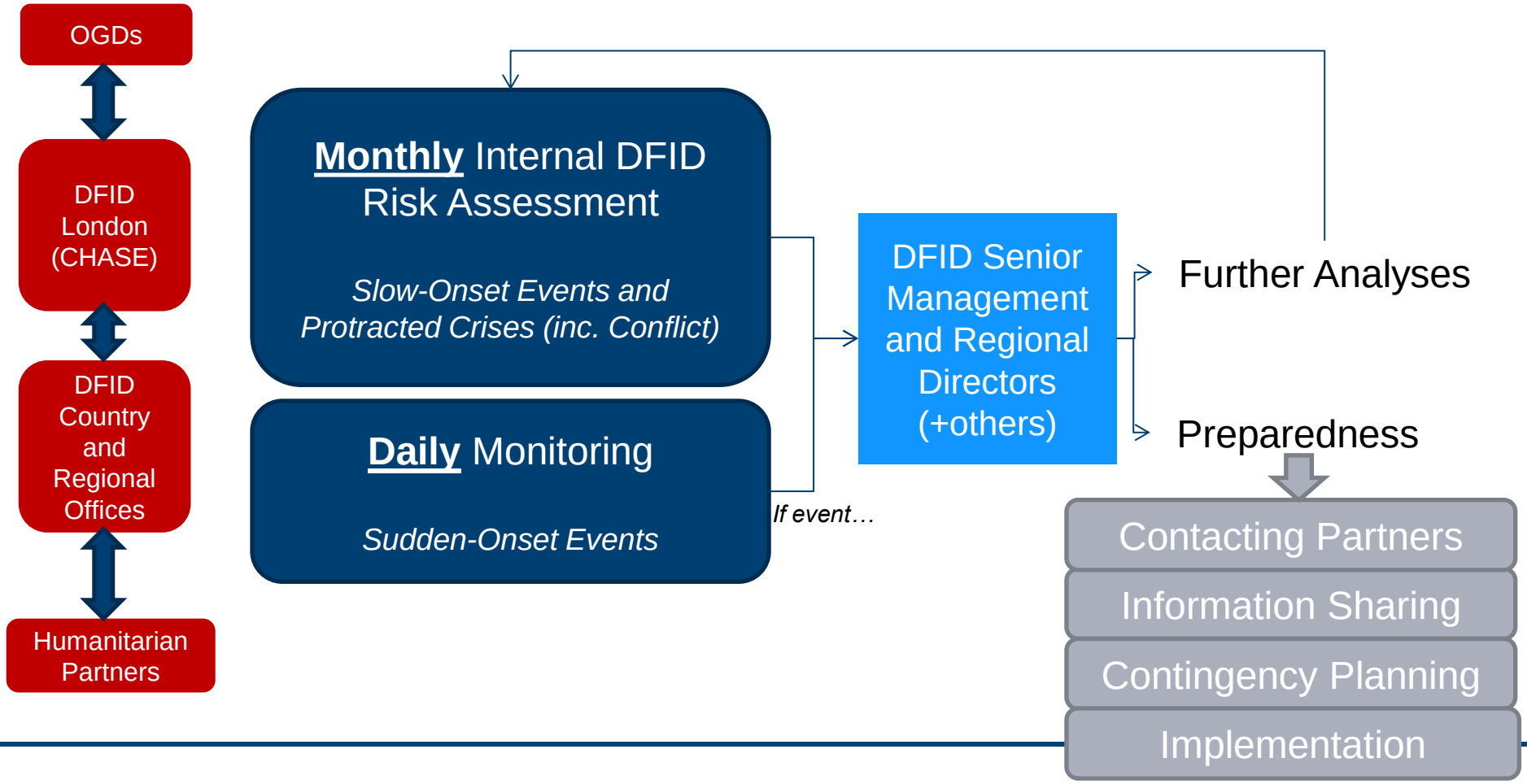
DFID's use of forecasts in preparedness



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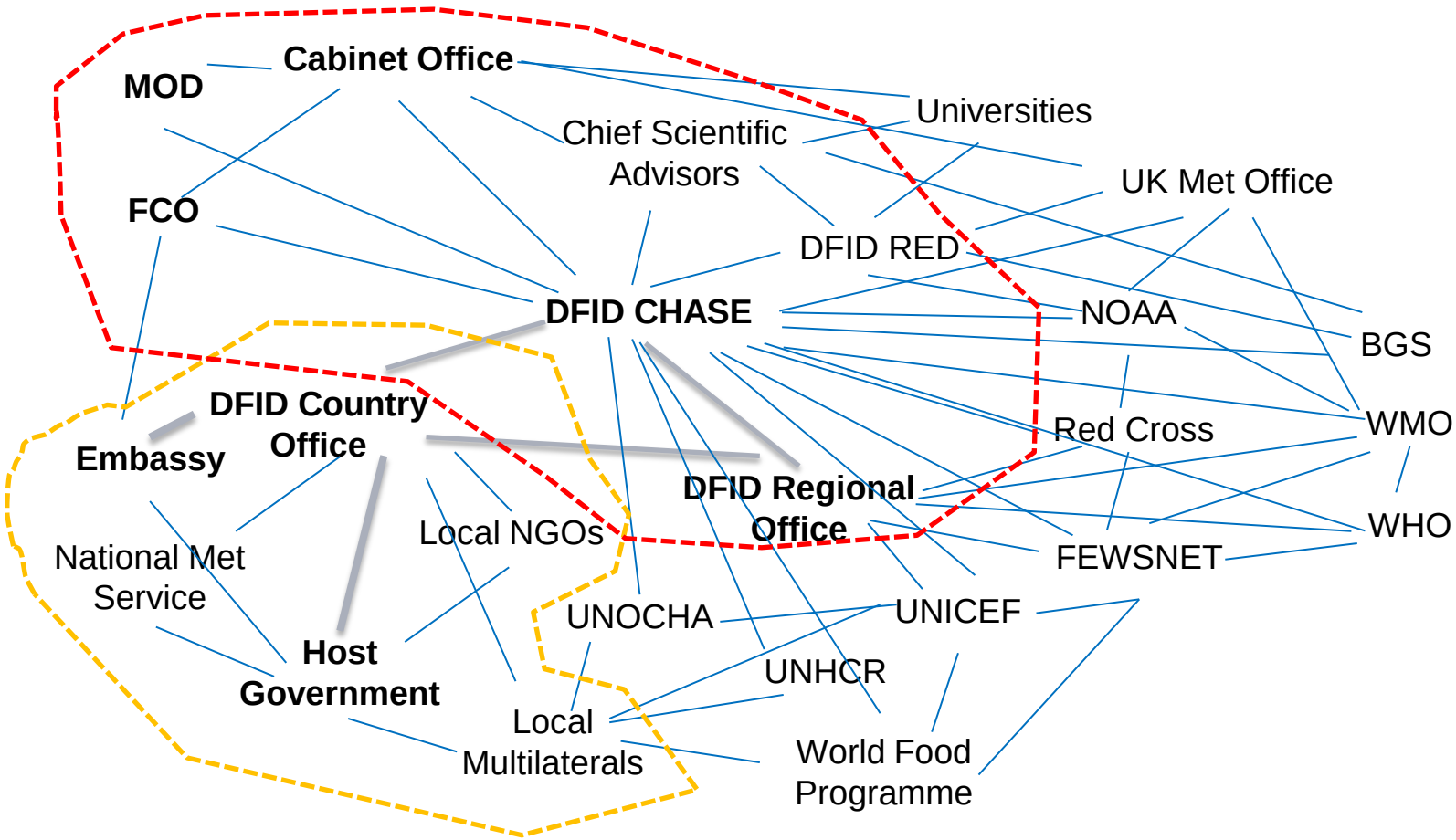
Uptake of forecasts is not a linear process



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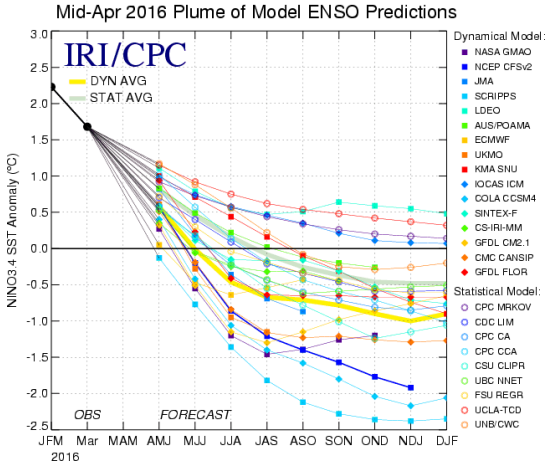
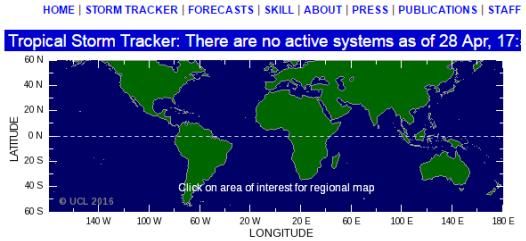
DFID uses multiple sources of information

- We <u>do not rely on any one forecast or model</u> or any one source of information
- We <u>use information in the public domain</u>.
- <u>Openness and transparency of methods/assumptions is crucial</u> – action is best based on a common understanding of the risk and openness facilitates quality assurance and discussion on interpretation
- <u>Timeliness</u> is crucial
- E.g. NOAA El Nino/La Nina advisories



Tropical Storm Risk (TSR)



Current Satellite Images		
Region	Image Type	
Atlantic	IR	Visible
Atlantic	WV	IR Enh
NE Pacific	IR	Visible
NW Pacific	IR	WV
Indian Ocean	IR	Visible
W Australia	IR	WV
E Australia	IR	WV
SW Pacific	IR	WV

Tropical Cyclone Windspeed Scale				
Strength	Category	1 Minute Maximum Sustained Winds		
		knots	mph	km/h
Tropical Depression	TD	<34	<39	<63
Tropical Storm	TS	34-63	39-73	63-118
Hurricane	Cat 1	64-82	74-95	119-153
Hurricane	Cat 2	83-95	96-110	154-177
Intense Hurricane	Cat 3	96-112	111-129	178-208
Intense Hurricane	Cat 4	113-136	130-156	209-251
Intense Hurricane	Cat 5	>136	>156	>251

Examples of forecast information

Global, long-term

e.g. El-nino/La nina forecasts e.g. NOAA weekly updates

Aim: identify where we may have a problem, feed into monthly reporting, trigger further analyses, start discussion with partners

Regional, medium-term

e.g. Seasonal forecasts *from Regional Climate Outlook Fora (RCOFs), Seasonal outlook of tropical storm risk,*
Food security forecasts FEWSNET and Integrated Food Security Phase Classification (IPC)

Local, Short-term

e.g. flood warnings, hurricanes (tropical storm risk)

Forecast is only one factor in decision making

- We need to assess risk, not just hazard
  - Vulnerability and coping capacity of the affected communities
  - Capacity of government to respond
  - Potential secondary impacts, e.g. civil unrest, epidemics
- Forecasts make up only one sub-element of the four criteria for action

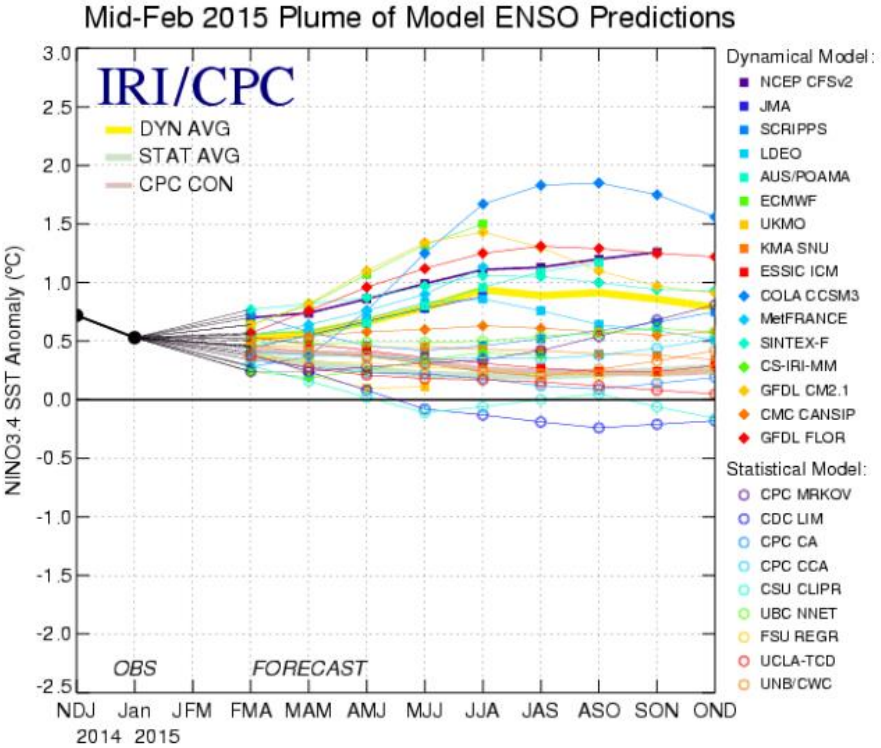
Intervention criteria for humanitarian response in sudden-onset contexts *(official, from gov.uk)*

(1) Estimated humanitarian impact of the events (severity/scale/vulnerability)
(2) Capacity of the affected country
(3) Reaction of other donors
(4) UK perspectives and considerations (commitments/comparative advantage in acting, national interest)

Example: DFID El Nino response

Initial preparations began in around March 2015

"There is an approximately 50-60% chance that El Niño conditions will continue through Northern Hemisphere summer 2015… Overall, these features are consistent with borderline, weak El Niño conditions… Compared to last month, several more models indicate El Niño (3-month values of the Niño-3.4 index equal to or greater than 0.5°C) will continue throughout 2015… Due to the expected weak strength, widespread or significant global impacts are not anticipated. However, certain impacts often associated with El Niño may appear in some locations during the Northern Hemisphere spring 2015". NOAA Advisory March 2015



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1st April – NOAA Advisory circulated to Humanitarian Network

8th May – official DFID request for information from Science in Humanitarian Emergencies and Disasters (SHED) mechanism

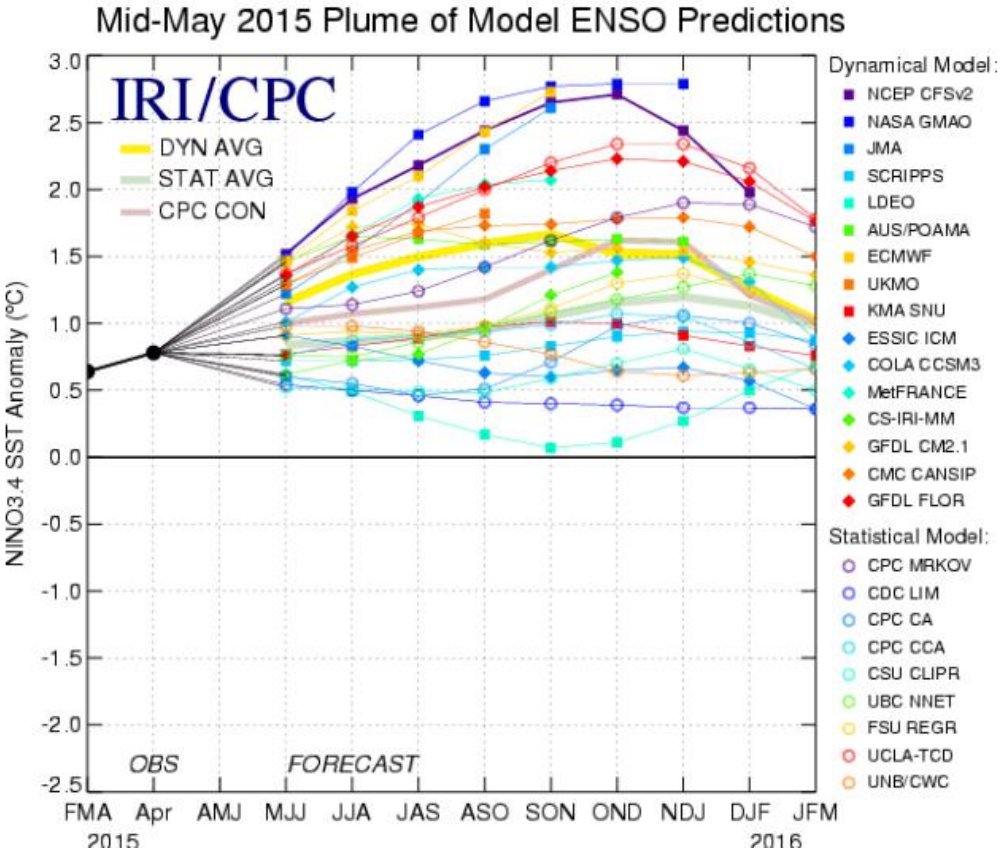
Mid-May – communicated updated information to DFID Humanitarian Network and NGO START Network

Mid to late May – widespread media reporting

2nd June – Ministers informed of risk and preparedness via formal Information Note

Mid to late June – various DFID and x-Whitehall meetings on risks and options

29th June – DFID Deputy Chief Scientific Advisor presents to DFID Senior Management



NOAA Advisory June 2015

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During July – continued information sharing and ‘up-skilling’ across DFID and discussions with partners, including official Info Note

Early July – RED commissions El Nino impact analysis from University of Reading

3rd July – start weekly media monitoring *(see reports of risks and impacts across the world)*

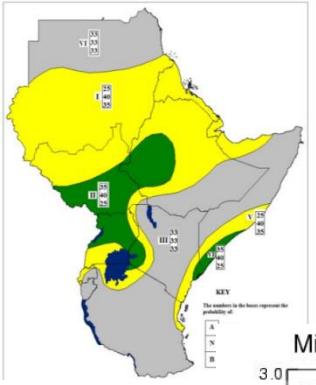
8th July – start El Nino Weekly Monitoring Report

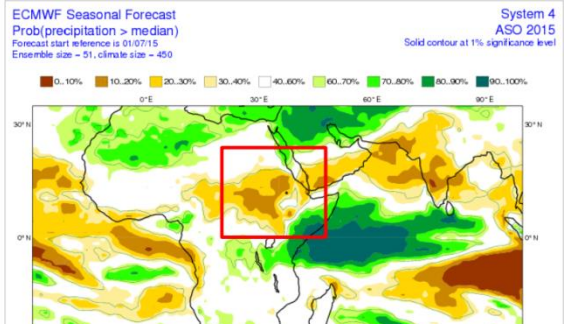
End July – country office teams commissioned to develop contingency plans & initial findings from El Nino Impact analysis communicated to Senior Management and Ministers

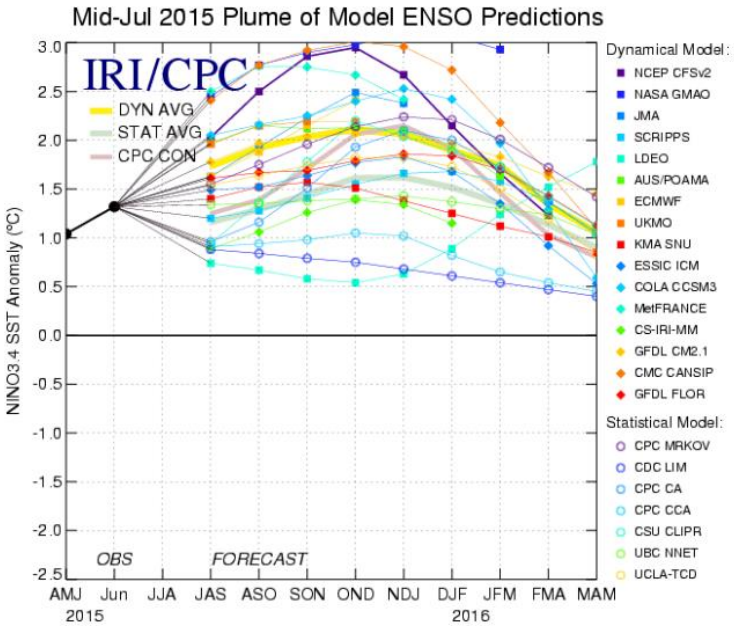
August – Country office teams work with partners on contingency planning and develop detailed programmatic, financial and human resource implications

21st August Contingency Plan deadline

26th August – Internal challenge meeting on preparedness for El Nino impacts







NOAA Advisory August 2015

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Shifting into response mode…

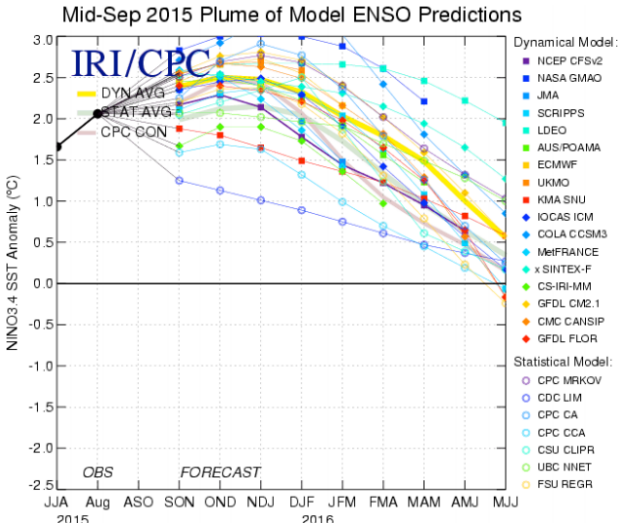
E.g. Ethiopia and Southern Africa severely affected by drought in late 2015 and early 2016. Estimated 18 million people in Ethiopia will require food aid over the coming months. In Southern Africa, lowest rainfall in 35 years and 10 million people highly food insecure.

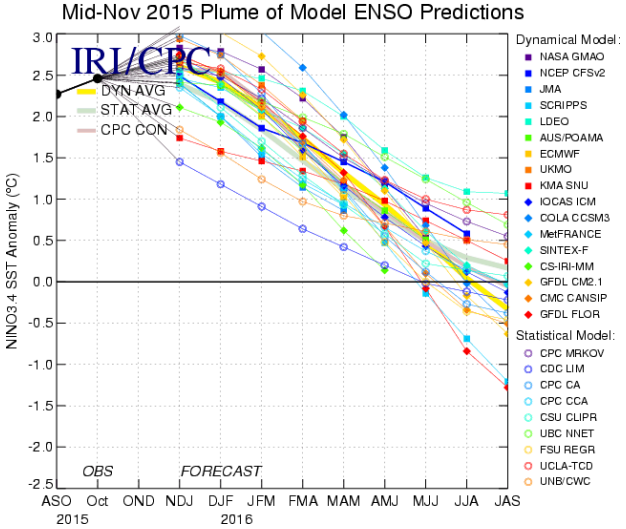
From mid-2015, DFID provides additional £150m to prepare for and mitigate the impacts of El Nino in Africa and to respond where need is highest

Response includes:

- Humanitarian assistance to drought affected communities
- Support to social protection
- Boosting disaster preparedness activities
- Fighting water-borne disease in areas affected by flooding
- Improving resilience of households

With forecasts, DFID was able to act months ahead of time, allowing earlier response and saving lives





Key influencers at international level

- Many others outside of DFID played an important role in enabling forecast information to be communicated and used effectively,
- E.g. Red Cross Climate Centre webinars on El Nino
- E.g. WFP Seasonal Monitoring briefings

Even with great information, there are challenges in using forecast information…

- Many factors influence the use of forecasts:
  - Mixed technical capacity to access right info and understand forecasts
  - Attitudes of host government to pre-emptive action using forecasts
  - Attitudes of other partners to pre-emptive action using forecasts
  - Systems with flexibility to expand during crises – e.g. shock-responsive social protection systems

A different perspective… BRACED

- Communication: forecast information available is too difficult for many users to understand – no process to translate information into simple understandable language
- Lack of guidance on how to interpret and use information in practice – we need an assessment of the available forecast information is required to evaluate if it is "actionable" in its current form.
- More tailored forecast information – e.g. to planting times
- Improved quality of locally-generated forecasts
- Understanding the value of forecasts from a decision maker perspective…

Beyond the forecasts themselves…

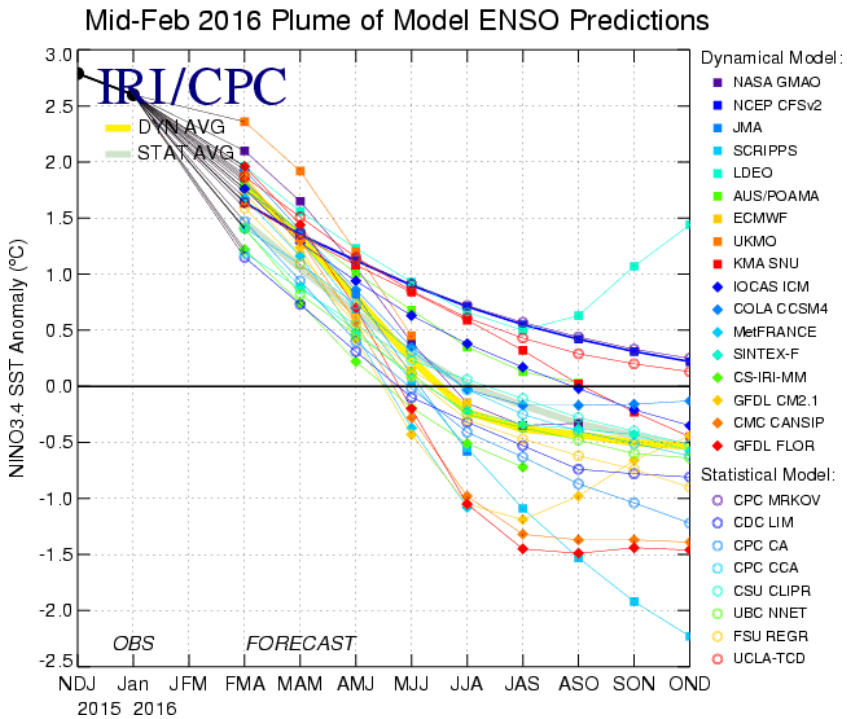
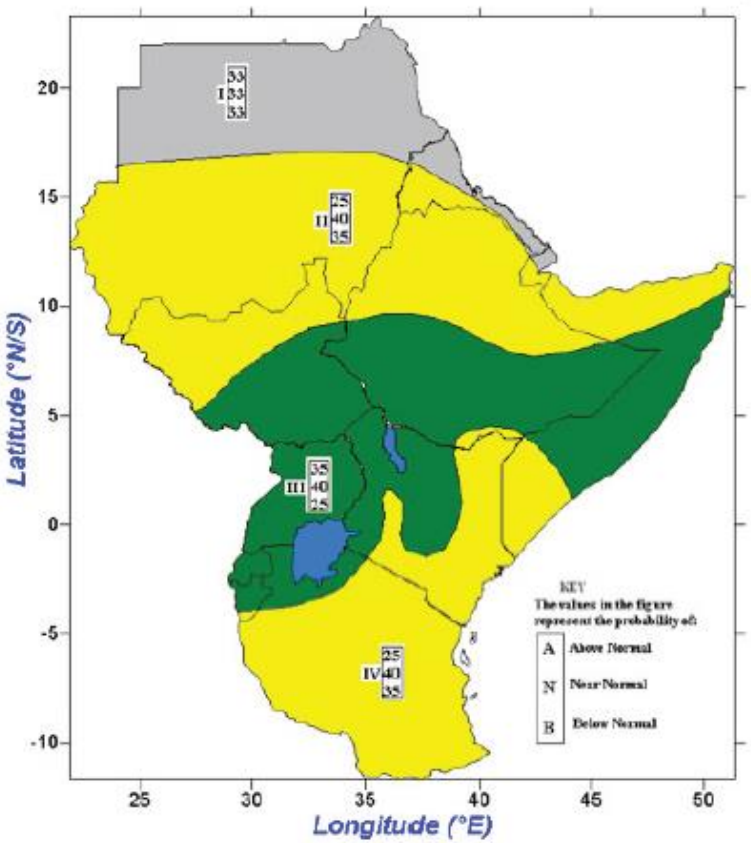
- More accessible forecasts
- More understanding of how forecasts can be used to catalyse actions
- Early warning systems that are more flexible to improvements in the science
- Increased capacity of intermediaries to interpret and communicate info
- Strengthened relationships with local, national and regional providers

Key Messages for Forecast Providers

- Many forecasts are still poorly communicated…
  - Still need to get some of the basics of presenting forecasts right
  - Need to strike the right balance between forecasts that are simple enough to be understandable vs. being detailed enough to communicate the accuracy
  - Provide simple forecast, with option to gain further detail where needed
- We need ‘value-add’ info on level of certainty/consensus
  - Forecasts from a single model are less useful… we need synthesis products across a range of models to understand the uncertainty
  - Need to provide more systematic information on the level of certainty and consensus in a forecast – we need to know how reliable a forecast is - *e.g. from RCOFs we need to know the level of consensus in the forecast*
  - Provide information on when we can expect greater certainty
- We need to be educated on what is possible and what is not
- We need openly accessible, quality-assured , synthesis products (a public good, not a tailored product) – we need an ‘honest broker’ of forecasts

Value-add services & honest broker…

NOAA Advisory March 2016: "A transition to ENSO-neutral is likely during late Northern Hemisphere spring or early summer 2016, with close to a 50% chance for La Niña conditions to develop by the fall".



GHOCAF Bulletin 42 MAM 2016: