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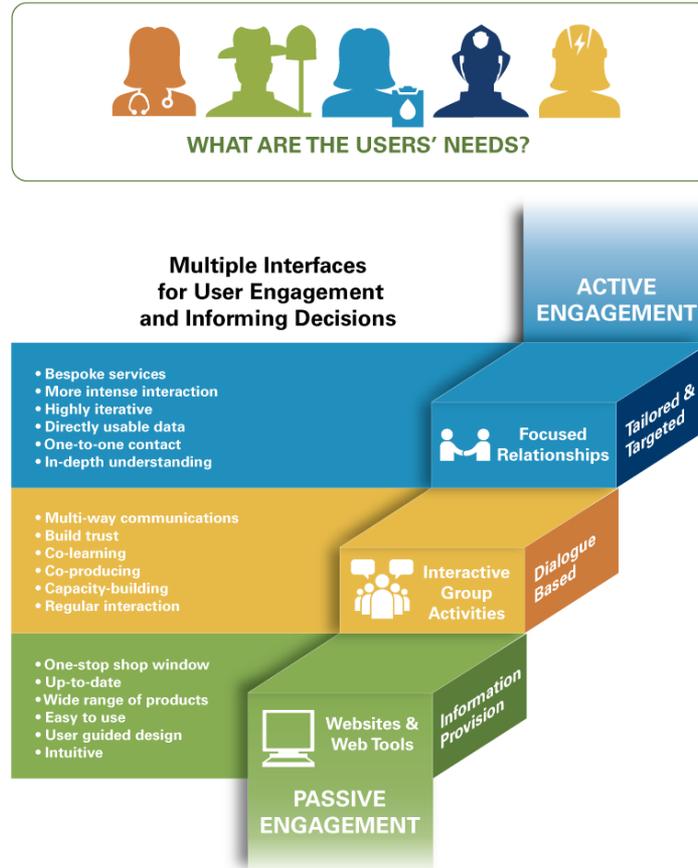
CCI Experts teams guidelines to help improving RCOFs

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Good Practices for Climate Services User Engagement

This document provides guidance on how to undertake **effective engagement** between **users** of climate information for decision-making and **providers** of climate services. The guidance is primarily intended for the providers of climate services, in particular for **National Meteorological and Hydrological Services (NMHSs)**, but will also be of use to other organisations involved in the development, delivery and use of climate services, and should be an important contribution to all involved in the GFCs.

Different levels of user interfaces for climate services



Examples of good practices for user engagement

14 Examples of good practices for user engagement

- Background▼.....
 - What are the objectives of this UI.....
 - Who was involved.....
 - How is the interface conducted.....
 - Any lessons learnt and recommendations for good (and bad) practice.....
-



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opinion & comment

COMMENTARY:

Improving the use of climate information in decision-making

Chris D. Hewitt, Roger C. Stone and Andrew B. Tait

To enable society to better manage the risks and opportunities arising from changes in climate, engagement between the users and the providers of climate information needs to be much more effective and should better link climate information with decision-making.

Nature, 2017



Table 1 | Illustrative examples, selected by the team of experts enlisted by the WMO, of effective engagement between climate service providers and users with good uptake and use.

Engagement	Category	Main objectives
Climatological information services website of the Hong Kong Observatory	Website	Provide online access to climate data, statistics, products, latest climate news and educational resources
Our Future Climate New Zealand	Web-based tool	Easy-to-use interface for selecting and downloading maps and plots of climate projections for New Zealand, designed through user feedback
Test effectiveness of websites supplemented with user workshops	Website, interactive group activities	Undertake research to assess how effective a website can be as an interface between climate service providers and users
Roving seminars for farmers in west Africa	Interactive group activities	Enhance farmers' capacities for decision-making by involving them in training and knowledge transfer, and improve the climate service providers' products through user feedback
Climate and disaster resilience planning workshops in Tuvalu	Interactive group activities	Improve the communication of climate information to villagers, seek feedback and improve climate bulletins, and produce a community climate and disaster resilience plan
Seasonal forecast forums: National Climate Outlook forum in Peru; Caribbean Climate Outlook forum; Climate Outlook forum for the Greater Horn of Africa	Interactive group activities	Three separate activities to establish regular dialogue and strengthen networking between providers and users at the national or regional scale, collect feedback to improve products and services, strengthen climate risk management through seasonal forecast services, and build awareness and capacity in climate-sensitive sectors
Climate risk management for the Japanese apparel industry	Interactive group activities	Assess and improve the effectiveness of climate risk management for industries vulnerable to climatic impacts
Climate and health working group in Madagascar	Interactive group activities	Identify the climate information and service needs of the health sector, help the sector use climate information for the prevention of epidemics and to guide responses for climate-sensitive diseases (malaria, plague and Rift Valley fever)
The UK climate programme and climate forum	Interactive group activities, focussed relationship	Identify user needs, co-develop products and services, provide up-to-date information on climate predictions and projections to support decision-making, and use feedback to continually develop the underpinning capability and products and services



The UK climate programme and climate forum	Interactive group activities, focussed relationship	Identify user needs, co-develop products and services, provide up-to-date information on climate predictions and projections to support decision-making, and use feedback to continually develop the underpinning capability and products and services
International and national coffee production, trading issues and seasonal forecasting	Focussed relationship	Identify key management decisions associated with climate risk on seasonal timescales, improve understanding of, and trust in, seasonal forecasts, and co-develop a climate service that fits within the company's management decision framework
Climate information for a Canadian energy company	Focussed relationship	Assess and demonstrate the value of using tailored climate forecasts and climate-change projections for hydroelectric power management
Climate service for the Australian sugar industry	Focussed relationship	Identify key management decisions associated with climate risk on seasonal timescales, improve understanding of, and trust in, seasonal forecasts, and co-develop a climate service that fits within the company's management decision framework



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Guidance on Verification of Operational Seasonal Climate Forecasts

By Simon J. Mason

Expert Team on CLIPS Operations, Verification, and Application Services

Guidance on Verification of Operational Seasonal Climate Forecasts

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Guidelines to Climate Risk Management

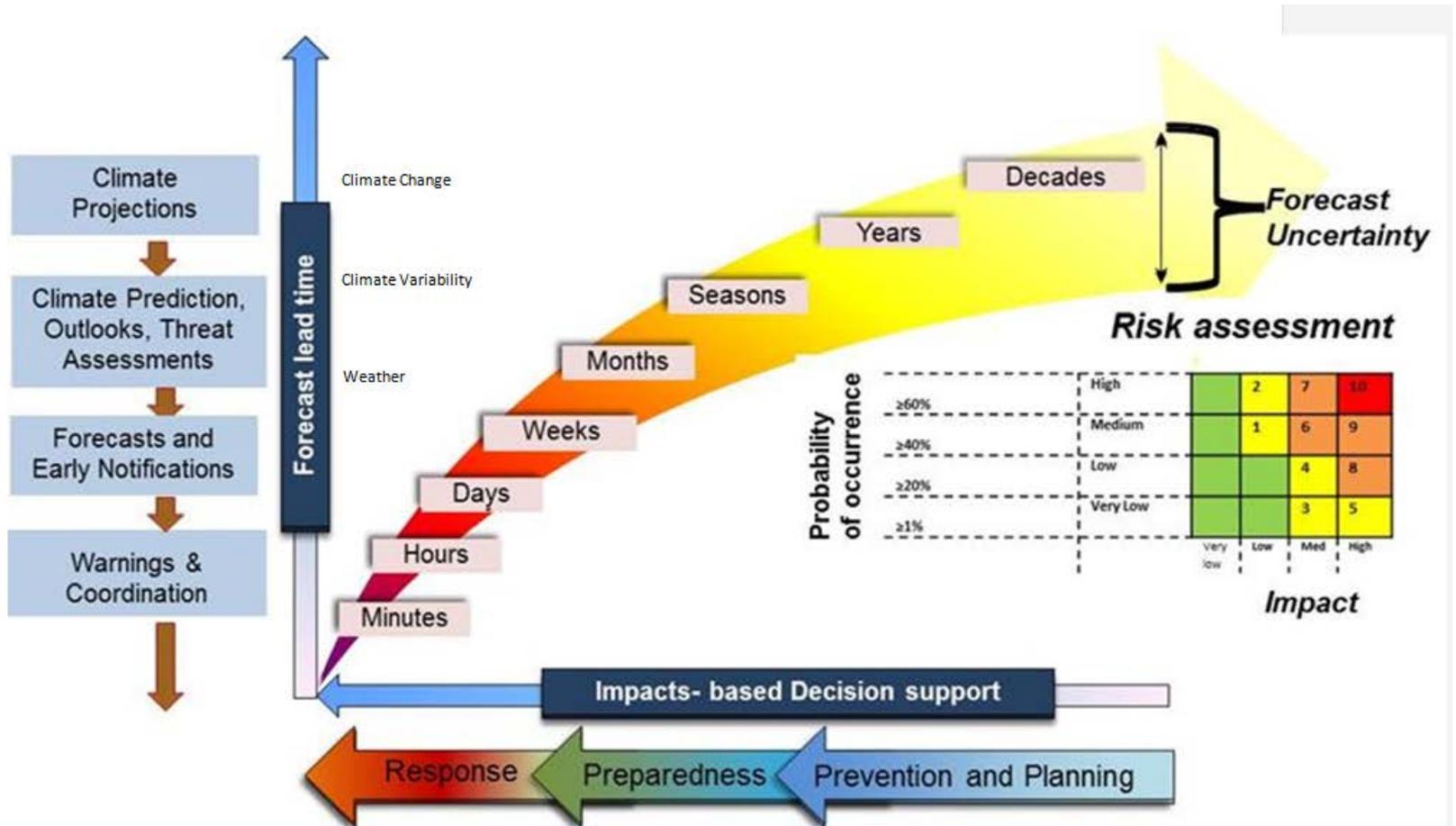


Jennifer Milton, Rodney Martinez, Elena Akentyeva, Ayse Sezin Tokar, Shahbaz Mushtaq, Rupa Kumar Kolli, Andrew Tait, Anahit Hovsepyan



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Guidelines to Climate Risk Management





Guidelines to Climate Risk Management

Check-List of specific actions of NMHSs to be taken for preparation and delivery of products for Climate Risk Management (CRM) and Adaption (CCA)			
Step	Action to be taken	CRM Phase application	Check
1	National Climate stations network definition and mapping	All CRM phases	
2	National Climate Data base implementation	All CRM phases	
3	Enabled access to climate data bases, indices and maps	All CRM phases	
4	National and subnational maps of historical changes in climate variables	Prevention/mitigation	
5	National and Climate Indices maps	Prevention/mitigation	
6	Meeting with users for evaluate user needs based on historical data	Prevention/mitigation	
7	Promote products and establish partnerships with Sectoral Planning agencies and National, Subnational and local Government planning and development offices	Prevention/mitigation	
8	Run in partnership with specific sector institutions and key stakeholders National Climate Outlook fora with different sectors	Early preparedness	
9	Capacity building activities to different key users on the use and application of climate monitoring and derived products for prevention activities	Early preparedness	
10	Combined maps of historical maps of impacts and losses	Early preparedness	
11	Maps of duration of severe and extreme events	Preparedness	

Check-List of specific actions of NMHSs to be taken for preparation and delivery of products for Climate Risk Management (CRM) and Adaption (CCA)			
Step	Action to be taken	CRM Phase application	Check
12	Maps of frequency of severe and extreme events	Preparedness	
13	Maps of intensity of severe and extreme events	Preparedness	
14	Statistical analysis of climate related hazards characteristics, : return periods, probability of occurrence exceedance thresholds	Preparedness	
15	Maps of climate related hazards assessment	Preparedness	
16	Climate Change Scenarios downscaled at Sub-national and local level as possible	Rebuilding/long term planning	
17	Decadal Modes monitoring and prediction (from global sources)	Rebuilding/long term planning	
18	Near-Climate Change trends and prediction	Rebuilding/long term planning	
19	Climate Change Scenarios downscaled at Sub-national and local level as possible	Adaptation	
20	Decadal Modes monitoring and prediction (from global sources)	Adaptation	
21	Near-Clima Change trends and prediction	Adaptation	
22	Tracking of relevant/climate environmental variables for climate/related sectoral parameters	Adaptation	

Recent Guidelines produced by CCI

OPACE 1

1. Guidelines on Best Practices for Climate Data Rescue (WMO 1182, 2016)
https://library.wmo.int/opac/index.php?lvl=notice_display&id=19782
2. Climate Data Management System Specifications (WMO 1131, 2014)
https://library.wmo.int/pmb_ged/wmo_1131_en.pdf
3. Guidelines on Quality Control: first draft available, expert review expected for June 2017
4. Guidelines on homogenization: first draft in progress, expert review expected for autumn 2017
5. CDMS User stories: first draft available, expert review expected for second half of 2017 (tbc)

OPACE 2

1. Guidelines for the Submission of the World Weather Records 2011+ (WMO-No. 1186, 2017)
http://library.wmo.int/opac/index.php?lvl=notice_display&id=19842
2. Guidelines on climate normal: expert review finished, endorsement by P/CCI and handing over to LCP for editing, translation and publication expected for early June 2017
3. Guidelines on transition to AWS: first draft available, expert review expected for May 2017
4. Guidelines on NCMP: first draft available, expert review expected for summer 2017
5. Guidelines on the definition of extreme weather events: first draft available, expert review under way, expected to be published in early 2018

OPACE 3

1. Heatwaves and Health: Guidance on Warning-System Development
http://www.who.int/globalchange/publications/WMO_WHO_Heat_Health_Guidance_2015.pdf
2. Guidance on Verification of Operational Seasonal Climate Forecasts-approved

OPACE 4

1. Guidelines on the development of a climate risk management approach for NMHS
2. Good Practices for Climate Services User Engagement- draft shared in early July 2017

OPACE 5

1. Guideline for NMHSs on Capacity Development (to be published by Sept. 2017)
2. Guideline on Quality Management for Climate Services (to be published by end of 2017)
3. Guideline on Implementation of Competencies for Provision of Climate Services
Updated version of the 3rd edition of Guide to Climatological Practices (WMO-100)
5. CCI Handbook on the use of Social Media (to be published by Sept. 2017)

Muchas gracias
Thank you
Merci



WMO OMM

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