

References/Resources

Introduction to Impact-Based Forecast Warning Services (IBFWS)

Primary Sources :

WMO Guidelines on Multi-hazard Impact-based Forecast and Warning Services

https://library.wmo.int/index.php?lvl=notice_display&id=17257

WMO Guidelines on Multi-hazard Impact-based Forecast and Warning Services Part II: Putting Multi-hazard IBFWS into Practice

https://library.wmo.int/index.php?lvl=notice_display&id=21994

Module 1: Fundamentals of IBFWS

https://en.wikipedia.org/wiki/Typhoon_Haiyan

Baylis, Paul & Te-Ping Chen (November 14, 2013). "How One Philippine Town Avoided Calamity". *The Wall Street Journal*. Archived from the original on November 14, 2013. Retrieved November 14, 2013.

National Disaster Risk Reduction and Management Council, 2014.

WMO, Post-Typhoon Haiyan (Yolanda) Expert Mission to the Philippines, Manila and Tacloban, 7–12 April 2014, Mission Report (2014). <https://public.wmo.int/en/media/news/post-haiyan-mission-visits-philippines>

https://en.wikipedia.org/wiki/Typhoon_Haiyan

UNDRR Online Glossary of basic definitions on disaster risk reduction

<https://www.undrr.org/terminology>

Module 2: Roadmap to the IBFWS Paradigm

Box and whiskers diagram https://en.wikipedia.org/wiki/Box_plot

A Heat-Health Action Plan in Croatia, Case study 5

https://www.euro.who.int/_data/assets/pdf_file/0010/386965/Pagoda-REPORT-final-published-2.pdf

Definition of temperature thresholds: the example of the French heat wave warning system.

Pascal M, Wagner V, Le Tertre A, Laaidi K, Honoré C, Bénichou F, Beaudeau P. Int J Biometeorol. 2013 Jan;57(1):21-9. doi: 10.1007/s00484-012-0530-1. Epub 2012 Feb 24. PMID: 22361805. <https://pubmed.ncbi.nlm.nih.gov/22361805/>

Early Warning System of Heat Waves and Health (SAT-TE), The Argentinian National Meteorological Service, https://www.smn.gov.ar/sistema_temp_extremas_calor

NMC issued red warning of typhoon, CMA initiates level II emergency response to Utor

Source: China Meteorological News Press13-08-2013

http://www.cma.gov.cn/en2014/news/News/201408/t20140812_255794.html

Environment Canada, Impact Approach to Air Quality Programme

http://weather.gc.ca/airquality/pages/index_e.html

Module 3: Best Practises for Collaboration and Strategic Partnerships in IBFWS

Guidelines for Creating a Memorandum of Understanding and a Standard Operating Procedure between a National Meteorological or Hydrometeorological Service and a Partner Agency (WMO- No. 1099, PWS-26)

https://library.wmo.int/index.php?lvl=notice_display&id=14093#.YgFOjvXML0o

Natural Hazards Partnership (NHP), UK Met Office

<https://www.metoffice.gov.uk/services/government/environmental-hazard-resilience/natural-hazards-partnership>

Impact-based Forecasting and Warning: Weather Ready Nations

<https://public.wmo.int/en/resources/bulletin/impact-based-forecasting-and-warning-weather-ready-nations>

Developing a hazard-impact model to support impact-based forecasts and warnings: The Vehicle OverTurning (VOT) Model

<https://rmets.onlinelibrary.wiley.com/doi/10.1002/met.1819>

Training and Capacity-Building

- Example Group Training Exercise by UK Met Service: Forecast Based Early Action Game <https://understandrisk.org/wp-content/uploads/FBEA-Game-v5-1.pdf>
- WMO Trainer Resources Portal <https://etrp.wmo.int/course/view.php?id=30>
- Guidelines for Trainers in Meteorological, Hydrological and Climate Services (WMO-No. 1114)
<https://public.wmo.int/en/resources/library/guidelines-trainers-meteorological-hydrological-and-climate-services-wmo-no-1114>
- Guide to Competency (WMO-No. 1205)
https://library.wmo.int/?lvl=notice_display&id=20181
- WMO Workshop Instructor Guide for Regional Training Centres, Regional Workshops on Hydrometeorological Information for Disaster Risk Reduction
<https://etrp.wmo.int/mod/resource/view.php?id=24763>
- Automated Impact Map Sent 120hrs Before Typhoon Kammuri Arrives, 03/12/2019 / 510, 510 Blog, 510 National Society Partner
<https://www.510.global/automated-impact-map-sent-120hrs-before-typhoon-kammuri-arrives/>

- The Bushfire and Natural Hazard Cooperative Research Centre, Australia
<https://www.bnhcrc.com.au/resources/poster/4886>
- Technical Regulations (WMO-No. 49), Volume I – General Meteorological Standards and Recommended Practices, Part V
https://library.wmo.int/?lvl=notice_display&id=14073
- The WMO Strategy for Service Delivery and its Implementation Plan (WMO-No. 1129)
https://library.wmo.int/index.php?lvl=notice_display&id=16002
- Compendium of WMO Competency Frameworks (WMO-No. 1209)
https://library.wmo.int/index.php?lvl=notice_display&id=21607
- Companion web page to WMO Guidelines No 1150: Part II
<https://community.wmo.int/activity-areas/public-weather-services-programme-pws/companion-web-page-wmo-guidelines-no-1150-part-ii-putting-multi-hazard-ibfws-practice>
- WMO Trainer Resources Portal <https://etrp.wmo.int/course/view.php?id=30>
- Guidelines for Trainers in Meteorological, Hydrological and Climate Services (WMO-No. 1114) <https://public.wmo.int/en/resources/library/guidelines-trainers-meteorological-hydrological-and-climate-services-wmo-no-1114>
- Guide to Competency (WMO-No. 1205)
https://library.wmo.int/?lvl=notice_display&id=20181
- PWS training workshops under “Past Meetings” <https://community.wmo.int/activity-areas/public-weather-services-programme-pws>

Module 4: Effective Communications Strategies for Impacts-Based Warnings

Warnings & Watches page, Meteorological Service of New Zealand,
<https://www.metservice.com/warnings/home>

MeteoAlarm, EUMETNET <https://meteoalarm.org/en>

CAP Courses, WMO ETRP <https://etrp.wmo.int/course/view.php?id=163>

WMO CAP Resources Portal (Modules in English, Spanish and French; CAP Related Publications; and Related Videos) <https://etrp.wmo.int/course/view.php?id=147>

Why Use CAP? A Video Introduction <https://youtu.be/WswMvelo0KE>

Forecast-based Action, Disaster Relief Emergency Fund of IFRC <https://www.ifrc.org/forecast-based-action>

Australian Bureau of Meteorology's Climate and Ocean Support Program
<http://cosppac.bom.gov.au/traditional-knowledge/>

Seasonal Awareness Campaigns, Government of Ireland
<https://www.gov.ie/en/campaigns/9e76d-be-summer-ready/>
<https://www.gov.ie/en/publication/3670b1-be-winter-ready/>

Impact Warning Levels Video From New Zealand MetService <https://fb.watch/bTNpDkSvzO/>

WMO Public Awareness Videos in multiple languages for RA IV(Caribbean) and RA V(Pacific)
<https://www.youtube.com/playlist?list=PLNaX-uTWSWrHr554n5hLdemL-idLcefM>
<https://www.youtube.com/playlist?list=PLNaX-uTWSWrGZ4yEMaYyv4o2SiQT20nsz>

Additional Resources:

COMET IBFWS Training Series

For additional training on impact-based forecasting warning systems please see the 3.5–4.5 hour [“Impact-based Forecast and Warning Services Educational Series”](#)

(https://www.meted.ucar.edu/education_training/course/92) available on the MetEd site from The COMET Program/UCAR.