World Meteorological Organization
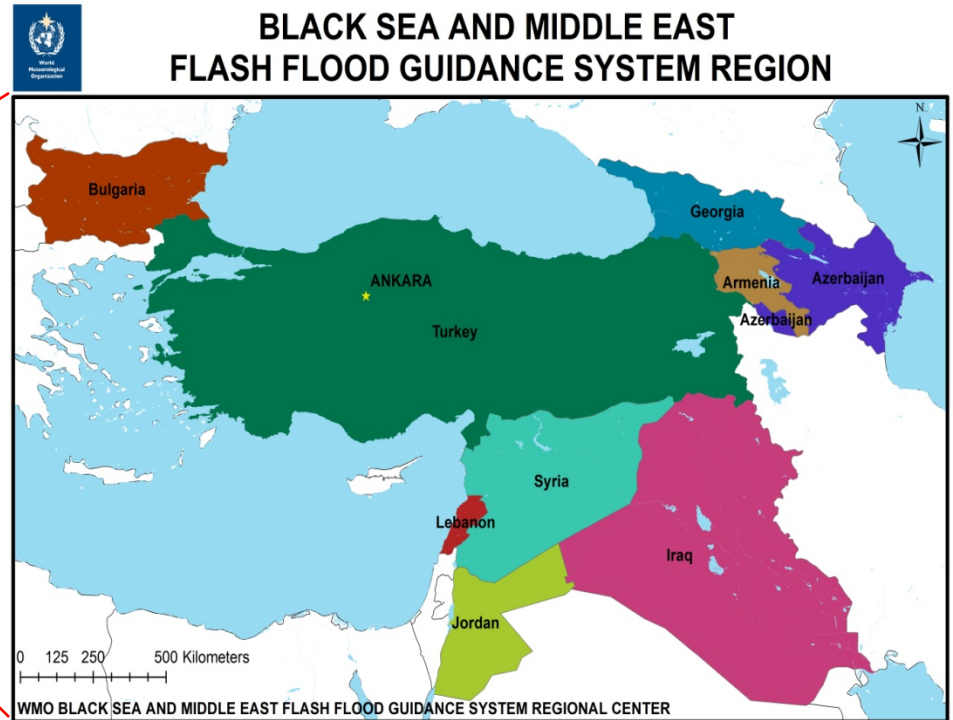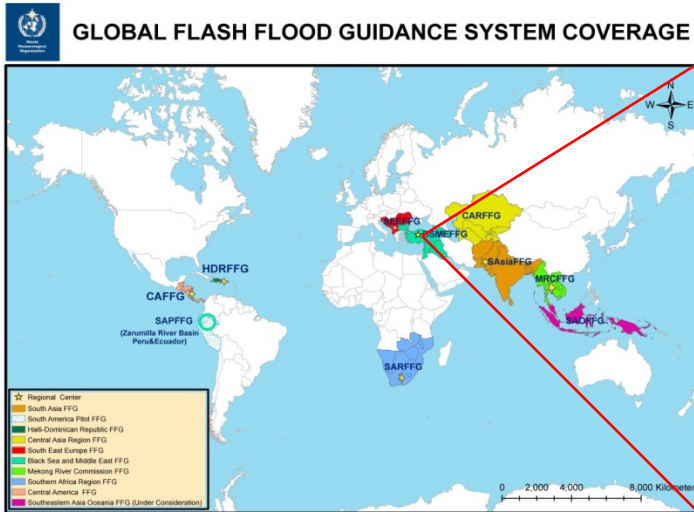
Weather • Climate • Water

Demonstration of an Operational FFG System: Black Sea and Middle East FFG System

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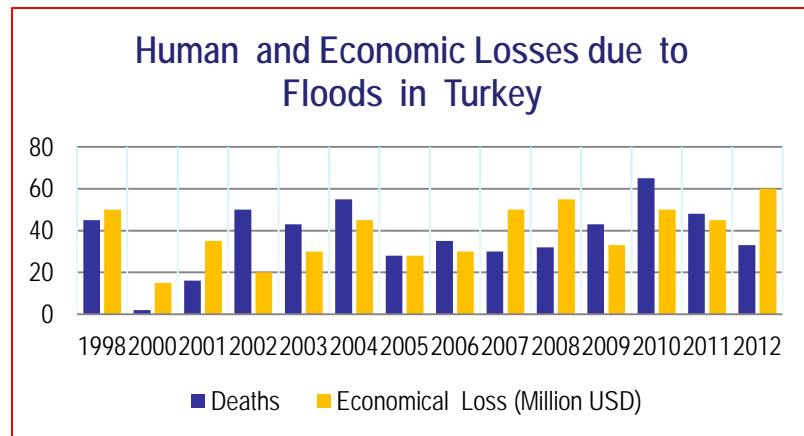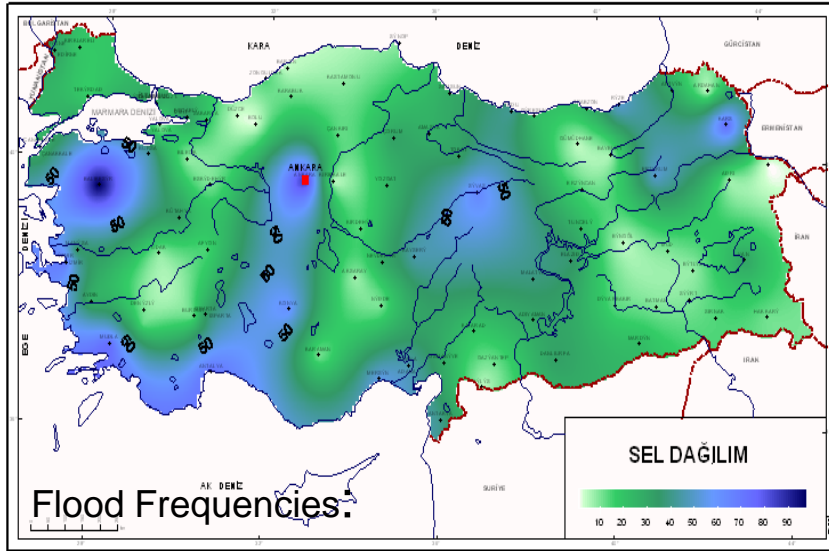# Black Sea and Middle East FFGS

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Black Sea and Middle East FFGS

- Black Sea and Middle East Flash Flood Guidance System initial meeting was held in İstanbul on 29-31 March 2010.

- Turkey was elected as the Regional Centre unanimously.

- *Turkey, Georgia, Armenia, Azerbaijan, Bulgaria,* and *Syria* have submitted Letter of Commitment (LoC) to WMO to declare their commitments to the project. *Jordan* and *Lebanon* joined the project in 2015.

Flash Floods in Turkey

Flood Frequencies.

Human and Economic Losses due to Floods in Turkey

Years: 1998, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012

■ Deaths   ■ Economical Loss (Million USD)

BSMEFFG User Console

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Concept of Operation in Turkey
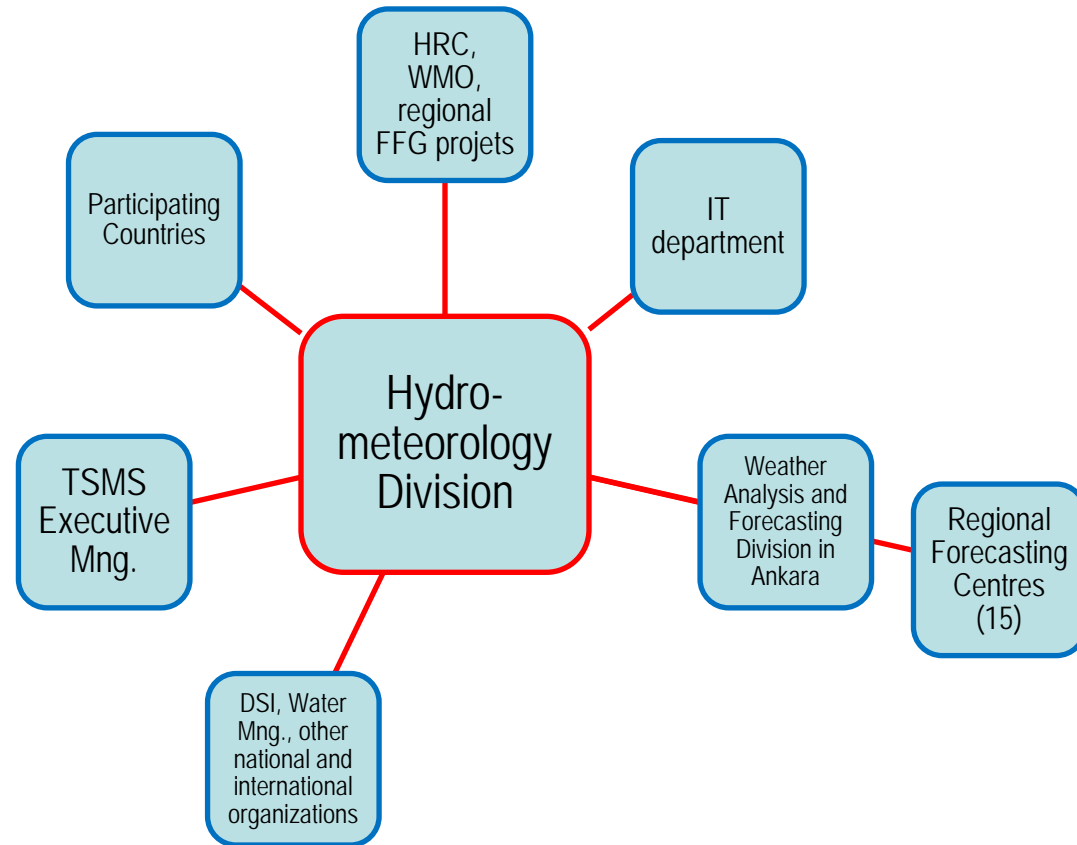
Responsibilities of Hydro-meteorology Division

- Monitor BSMEFFG and SEEFFG Systems;

- Provide fist level IT maintenance and collaborate with HRC and TSMS IT department to ensure robust operation of the servers;

- Coordination with HRC, WMO, participating countries, national and international organizations;

- Participate in FFG training programme and provide training to the local forecasters;

- Prepare flash flood bulletins and distribute to the weather analysis and forecasting division and executive management;

Responsibilities of Hydro-meteorology Division (Cont.)

- Conduct verification studies;

- Promote flash flood products to be used by other national agencies such as agriculture, water management;

- Organize and participate national and international workshops, conferences and meetings on flash floods and floods;

- Prepare user Manuel, brochures, and other material on Flash Flood Guidance System; and

- Cooperate with universities for the hydro-meteorological capacity development.

Human Resources for the FFG Systems

	Number of Employees
Hydro-meteorologist	4
Hydrologist (Civil engineer)	1
GIS expert and programmer	1
IT	1

Flash Flood Bulletins and Warnings

Flash Flood "**Bulletin**" prepared by **Hydro-meteorology Division**

Flash Flood "**Warnings**" prepared by **duty forecasters**

Dissemination of flash flood Warnings

Verification Studies by **Hydro-meteorology division**

Lesson Learnt
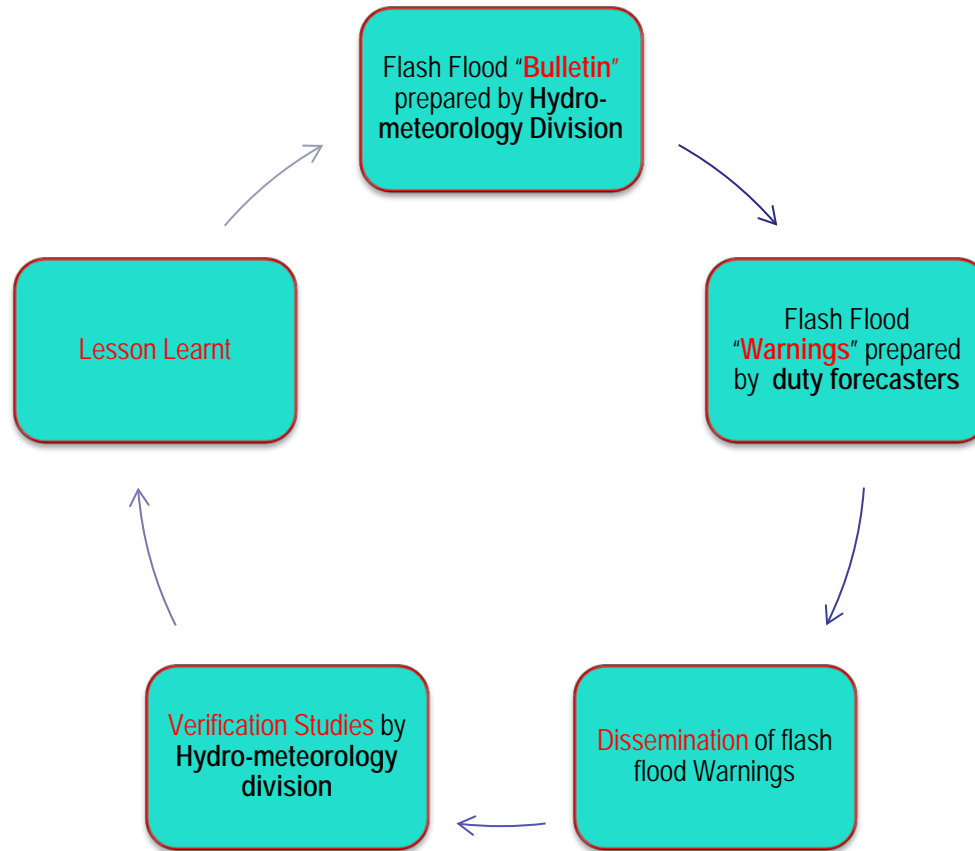
Flash Flood Bulletins

- <u>Flash flood bulletins</u> are prepared by the hydro-meteorology division as a summary of the possible occurrences of flash floods in particular regions and catchments.
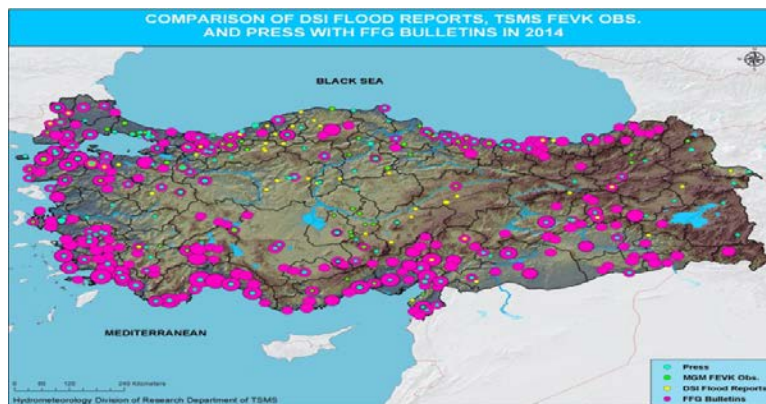
  Microsoft Word
  Document

Verification

Verification

	Observations (TSMS, DSİ, Press)			
		YES	**NO**	**Σ**
Bulletins (21 May 2012-17 June 2013)	**YES**	43 (a)	25 (b)	68
	NO	18 (c)	306 (d)	324
	Σ	61	331	392

	Observations (TSMS, DSİ, Press)			
		YES	**NO**	**Σ**
Bulletins 2014	**YES**	58 (a)	10 (b)	68
	NO	48 (c) (DSİ+MGM+Basın)	249 (d)	297
	Σ	106	259	365

Hit Rate (POD): (a/(a+c))	0.70
False Alarm Rate (FAR): (b/(a+b))	0.36
False Alarm Rate (POFD): b/(b+d)	0.07
Threat Score: (a/(a+b+c))	0.5

|	
Hit Rate (POD): (a/(a+c))	0.55
False Alarm Rate (FAR): (b/(a+b))	0.15
False Alarm Rate (POFD): b/(b+d)	0.04
Threat Score: (a/(a+b+c))	0.5

Operational Training at HRC (Step 3)

- BSMEFFG operational training took place in San Diego on 8 April-3 May 2013.

- Trainees from Turkey, Bulgaria, and Georgia participated.

- Scientific, technical, and operational aspects were presented and case studies were conducted.

Forecasters Training of TSMS (Step 5)

- 55 forecasters from 15 regional forecasting offices were trained about BSMEFFG products and how to use them in daily forecasting held in Ankara at WMO RTC on 30 October-1 November 2013.
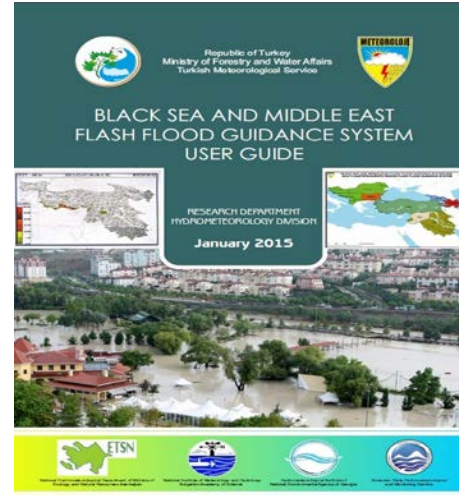
- BSMEFFG user guides were prepared in Turkish & English.

- Similar training is planned to be given in each member state.

Forecaster Training of Participating NMHSs (Step 5)

- BSMEFFG forecasters training took place at the NMHSs of Armenian, Azerbaijan, and Georgia on 19-23 May, 26-29 May, and 21-25 July 2014 respectively.

- Moreover, Meteorological Data Processing and Visualization Software of TSMS called METCAP+ was installed and training was provided to NMHSs of Georgian and Azerbaijan.

Cooperation with Universities

- Prof.Dr. Zekai Şen of İstanbul Technical University was the hydrological consultant to TSMS. He gave training on the principles of hydrology, hydrological forecasting, routing, Kalman Filter, numerical analysis, QPE. Pictures show him giving lectures to hydro-meterology division employees on ,among others, ensemble prediction on 4-8 November 2013 in Ankara.

Thank you for your attention

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