



# **Preparations of Operational Flash Flood Bulletins and Warnings**

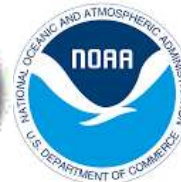
**Emel Ünal**  
**Meteorological Engineer**

**\*Turkish State Meteorological Service,  
Research Department, Hydrometeorology Division**

**South East Europe Flash Flood Guidance (SEEFFG) System  
2<sup>nd</sup> Steering Committee Meeting (SCM2)  
26–28 November 2017, Podgorica, Montenegro**



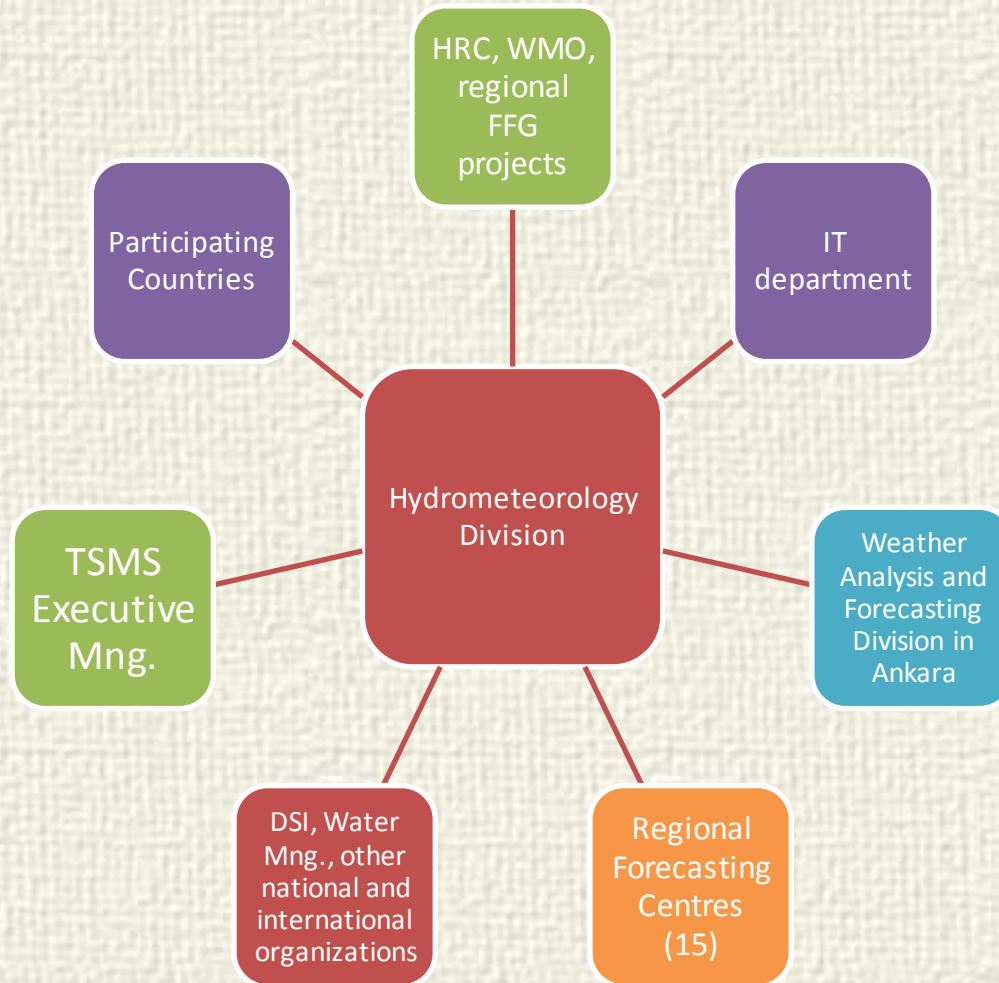
**WORLD  
METEOROLOGICAL  
ORGANIZATION**



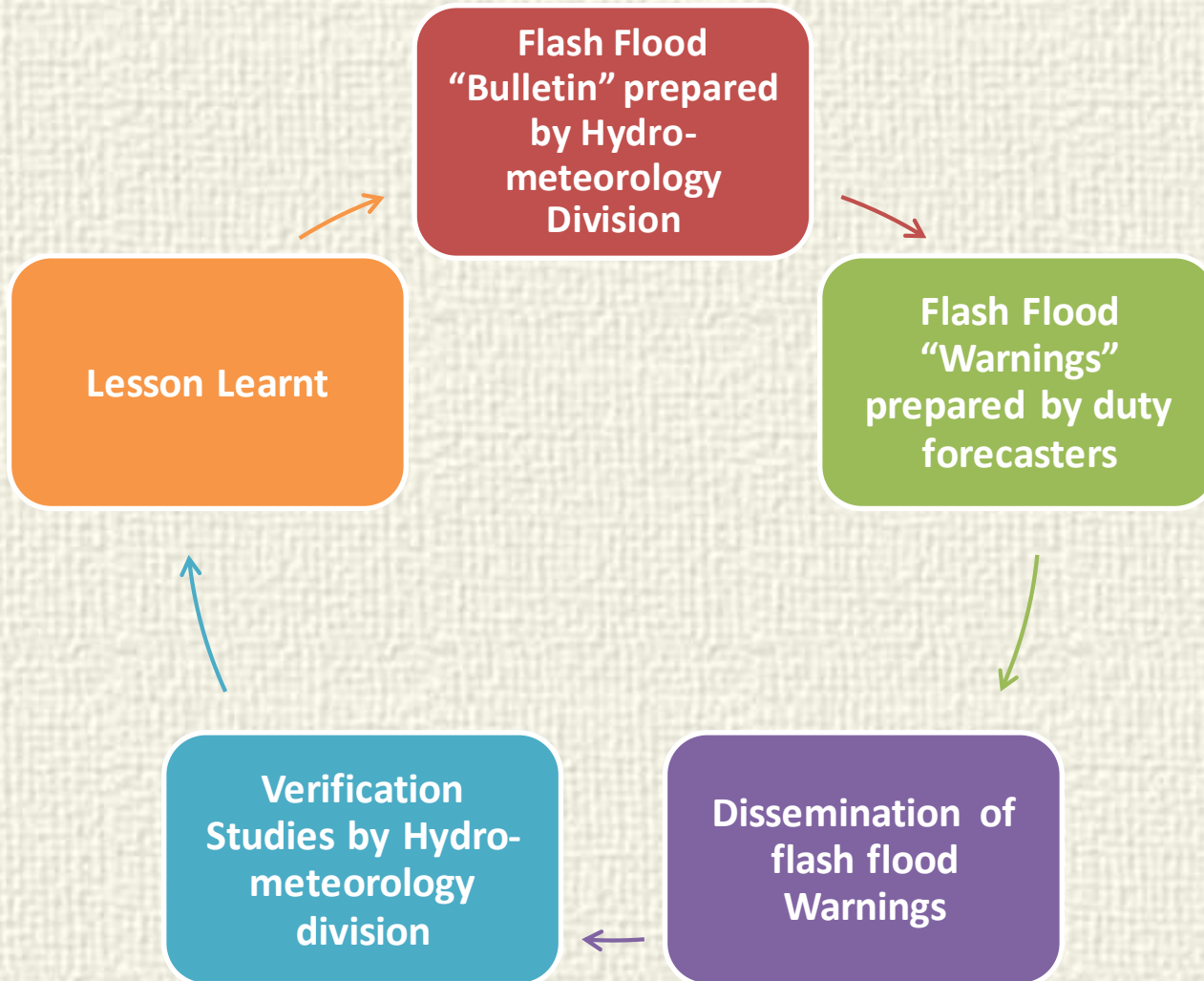


# Overview of Operational FF Forecasting and Early Warning System in TSMS

## Concept of Operation in Turkey










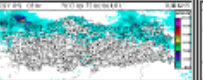


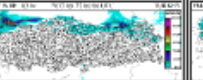
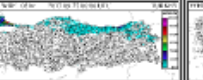

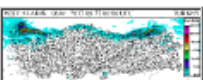
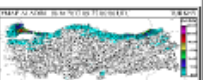

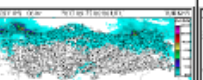
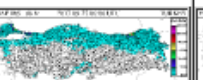

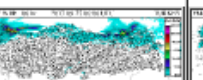
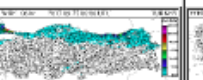
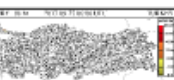
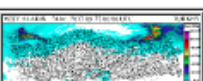
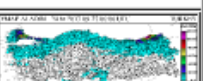
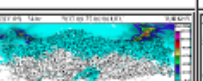
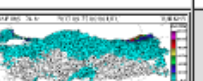
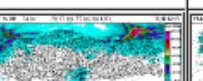
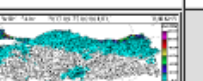


# Overview of Operational FF Forecasting and Early Warning System in TSMS





## Forecast Products

DT	ALADIN Forecast	ALADIN FMAP	ALADIN FFFT	IFS Forecast	IFS FMAP	IFS FFFT	WRF Forecast	WRF FMAP	WRF FFFT
01-hr	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>				 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>
03-hr	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>
06-hr	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>
24-hr	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>		 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>		 2017-09-27 06:00 UTC Text: <a href="#">view</a>	 2017-09-27 06:00 UTC Text: <a href="#">view</a>	



# Example


MINISTRY OF FORESTRY AND WATER AFFAIRS  
TURKISH STATE METEOROLOGICAL SERVICE



**FLASH FLOOD BULLETIN**  
24 AUGUST 2015  
( 06:00 UTC)

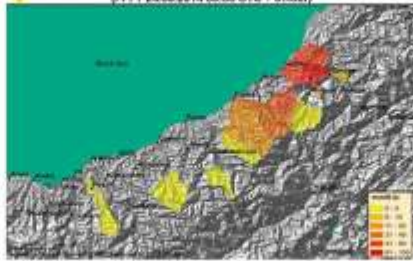
BSMEFFG SYSTEM FORECAST MEAN AREAL PRECIPITATION MAP  
(24.08.2015 06:00 UTC + 24 HOUR)

24-Hour Forecast Mean Areal Precipitation Map  
(FMAP 24.08.2015 06:00 UTC + 24Hr)



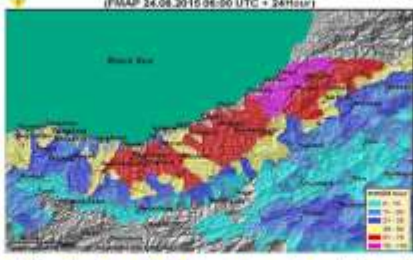
It is expected that heavy and intense precipitation may cause flash flood events at East Black Sea Region in 24 hours according to BSMEFFG system's Forecast Mean Areal Precipitation (FMAP) map.

6-Hour Forecast Flash Flood Threat Map  
(FFFT 24.08.2015 06:00 UTC + 6 Hour)



It should be aware of flash flood events are expected in Hopa, Murgul and Bartsik districts of Artnin province and also Güneşin, Fındıklı and Çamlıhemzîn districts of Rize province for next 6 hours since forecasted heavy and intense precipitation with respect to BSMEFFG system's Forecast Flash Flood Threat (FFFT) map.

24-Hour Forecast Mean Areal Precipitation Map  
(FMAP 24.08.2015 06:00 UTC + 24Hour)



Citizens should be cautious for any flash flood event because of expected heavy and intense precipitation in 24 hours who lives in Hopa, Murgul and Bartsik districts of Artnin province and also Güneşin, Fındıklı and Çamlıhemzîn districts of Rize province according to BSMEFFG system's Forecast Mean Areal Precipitation (FMAP) map.

GENERAL EVALUATION

(24.08.2015 06:00 UTC + 6 Hour)

It should be aware of flash flood events are expected in Hopa, Murgul and Bartsik districts of Artnin province and also Güneşin, Fındıklı and Çamlıhemzîn districts of Rize province for next 6 hours since forecasted heavy and intense precipitation with respect to BSMEFFG system's Forecast Flash Flood Threat (FFFT) map.

(24.08.2015 06:00 UTC + 24 Hour)

Citizens should be cautious for any flash flood event because of expected heavy and intense precipitation in 24 hours who lives in Hopa, Murgul and Bartsik districts of Artnin province and also Güneşin, Fındıklı and Çamlıhemzîn districts of Rize province according to BSMEFFG system's Forecast Mean Areal Precipitation (FMAP) map.



# Dissemination of flash flood warnings



T.C.  
ORMAN VE SU İŞLERİ BAKANLIĞI  
METEOROLOJİ GENEL MÜDÜRLÜĞÜ



Tarih : 27.11.2016

Saat : 09:30

Uyan No : 0295

Uyan Kodu: Normal

## Uyarı Yapan Merkez

Analiz ve Tahminler Şube Müdürlüğü

## Genel Başlık

Kıyı Ege ve Marmara bölgesinde kuvvetli yağışlara dikkat!

## Beklenen Hadise

Sağanak Yağış

## Hadisenin Şiddeti

Çok Kuvvetli Yağış

## Beklendiği Yer

Bugün öğle saatlerinden sonra ve akşam saatlerinde Çanakkale ile Balıkesir'in batı kıyı ilçelerinde, bu gece ve yarı (Pazartesi) Kıyı Ege ve Marmara bölge genelinde görülecek yağışların kuvvetli (21-50 mm), Çanakkale ve Balıkesir çevreleri ile İzmir'in kuzey ilçelerinde çok kuvvetli ve yer yer şiddetli (51-100 mm) olması beklendiğinden yaşanabilecek olumsuzluklara (ani sel, su baskını, ulaşım da aksamalar) karşı dikkatli ve tedbirli olunması gerekmektedir.

## Geçerlilik Periyodu

27.11.2016 15.00 TSİ - 28.11.2016 23.59 TSİ

**Oluşması Muhtemel Riskler:** Ani Sel - Su Baskını - Ulaşım da Aksamalar

## Yağış Şiddeti Sınıflandırması

Hafif Yağış	1 - 5 mm
Orta Kuvvette Yağış	6 - 20 mm
Kuvvetli Yağış	21 - 50 mm
Çok Kuvvetli Yağış	51 - 75 mm
Şiddetli Yağış	76 - 100 mm
Aşın yağış	100 mm üzeri

Not: 12 Saatlik periyotta miktara bağlı değerlendirme yapılmış ve bölgeler arası topografik farklılıklar dikkate alınmadan sınıflandırılmıştır.

## BİLGİ VERİLEN BİRİMLER

_____	_____
_____	_____
_____	_____

Ayrıntılı Bilgi İçin:

www.mgm.gov.tr

Tel

: 0.312.302.25.33

Faks

: 0.312.360.79.12

✓ Website

www.mgm.gov.tr

✓ Mobile application  
Meteoroloji

Uyarı Detayı

Artvin'in Kuzey İlçelerinde Şiddetli Gök Gürültülü Sağanak Yağış Bekleniyor!

Başlama Zamanı: 27.09.2017 12:00

Bitiş Zamanı: 28.09.2017 06:00

Yapılan son değerlendirmelere göre; bugün öğle saatlerinden itibaren Artvin'in kuzey ilçelerinde (Arhavi, Kemalpaşa, Hopa, Borçka ve Murgul) yerel olarak çok kuvvetli ve yer yer şiddetli (51-100 kg/metrekare) sağanak ve gök gürültülü sağanak yağış beklendiğinden meydana gelebilecek sel, su baskını, yıldırım, heyelan, ulaşım da aksamalar gibi olumsuzluklara karşı dikkatli ve tedbirli olunmalıdır.

T.C.  
Orman ve Su İşleri Bakanlığı  
Meteoroloji Genel Müdürlüğü





# Thank you

Presented by

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Contributed

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