Promotion of the Albanian Strategy for Services Development of the National Meteorological and Hydrological Services (NMHS).

Strategia e zhvillimit
në fushën e Meteorologjisë
IGJEUM
SHQIPËRIA

Prof.Dr. Petrit ZORBA
Head of the Department of Climate & Environment
IGEWE – Tirana © 2016
E-mail: p.zorba@geo.edu.al
E-mail: petrit.zorba@gmail.com
Mob. Phone: 00355682151684

Tirana, ALBANIA © October 17, 2016

First of all let's take in consideration that any investment in the field of METEOROLOGY and HYDROLOGY compare to the profit gained by the whole economy of the country has a rate of up to:

1 : 20

If the money are invested in the right way and respecting the WMO technical and scientific standards.

AN OVERVIEW ABOUT

Meteorological Information provided by:

IGEWE

Tirana - ALBANIA

INSTITUTI I GJEOSHKENCAVE, ENERGJISE, UJIT & MJEDISIT

Overview

Albania is rich in water
ding rivers,
lagoons

exceed
n,
r
n the dry

sin of
km², of
within

ent) is in
Greece, the FYROM, Monte Negro and Kosova, so Albania shares upstream and downstream water resources with its neighbors.

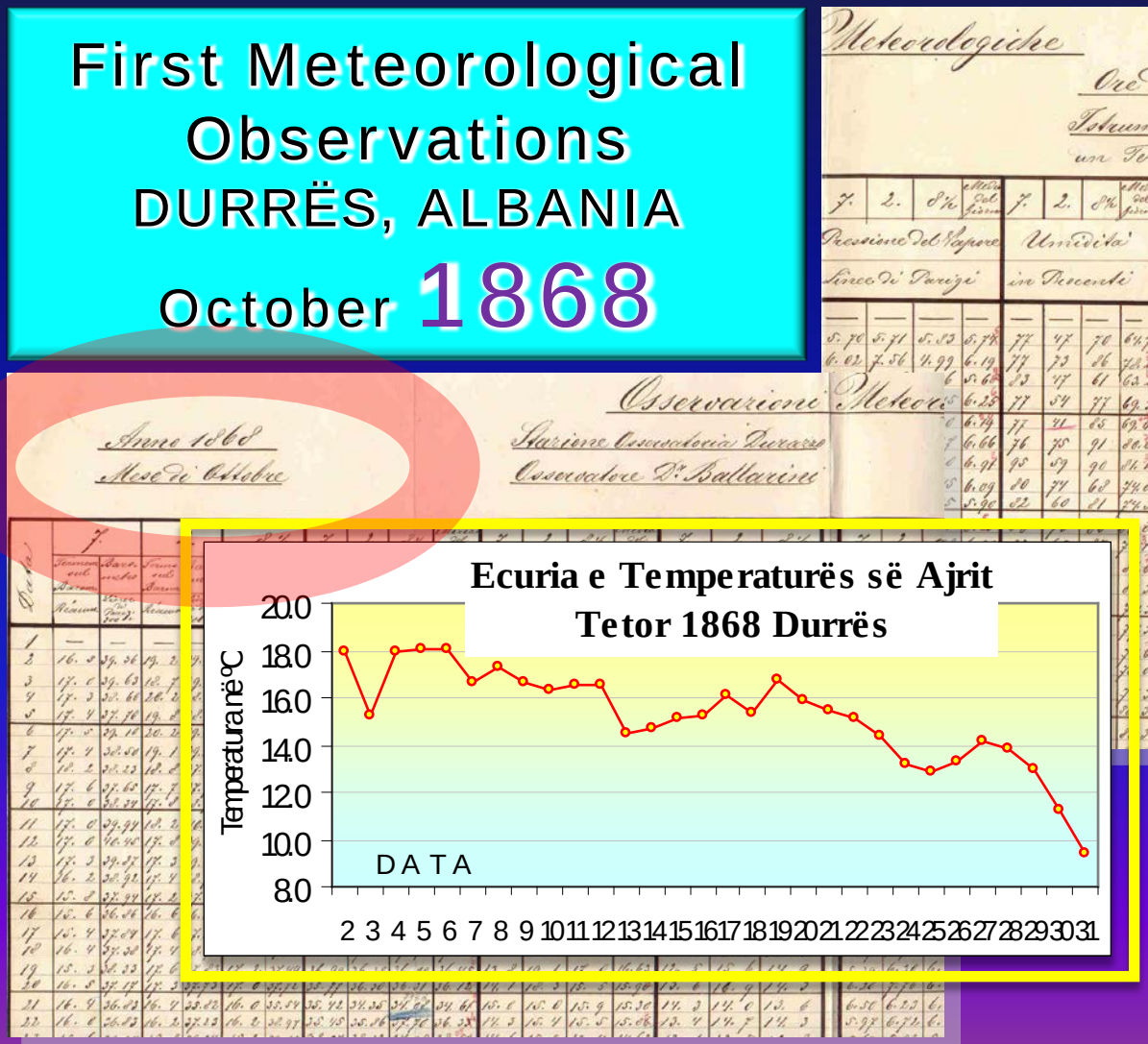
CLIMATE has to be considered a National Property.

IGEWE

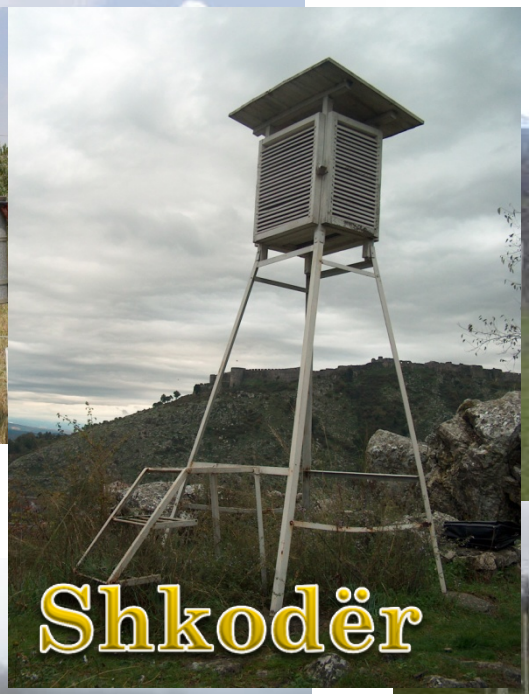
First Meteorological Observations

DURRËS, ALBANIA

October 1868



An overview thorough some photos of the meteorological network.



Shkodër
Fshati i Paqes

16 Hydrological stations

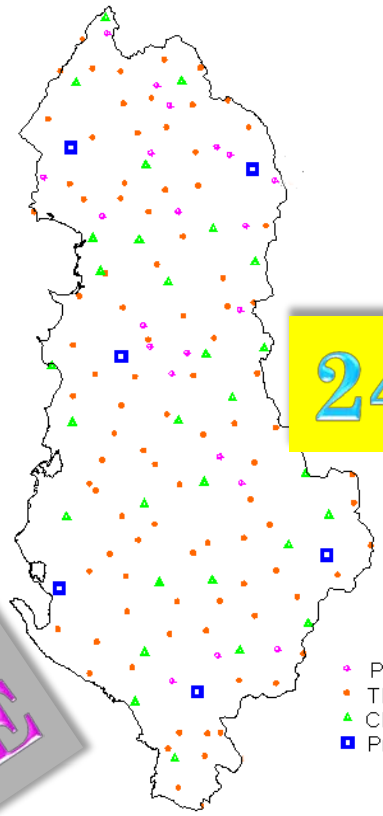
+ 150 other stations

National Meteorological Network of ALBANIA
(135 Stations)

11
IHM

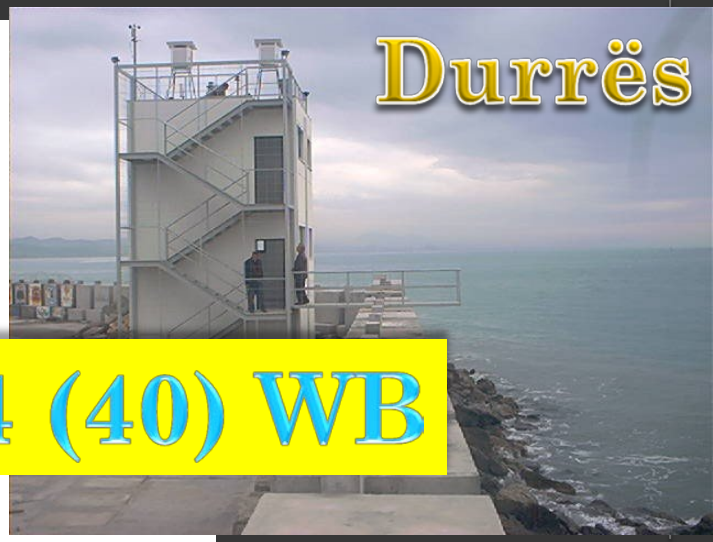
5 GIZ

135
IGEWE



NATIONAL METEOROLOGICAL NETWORK

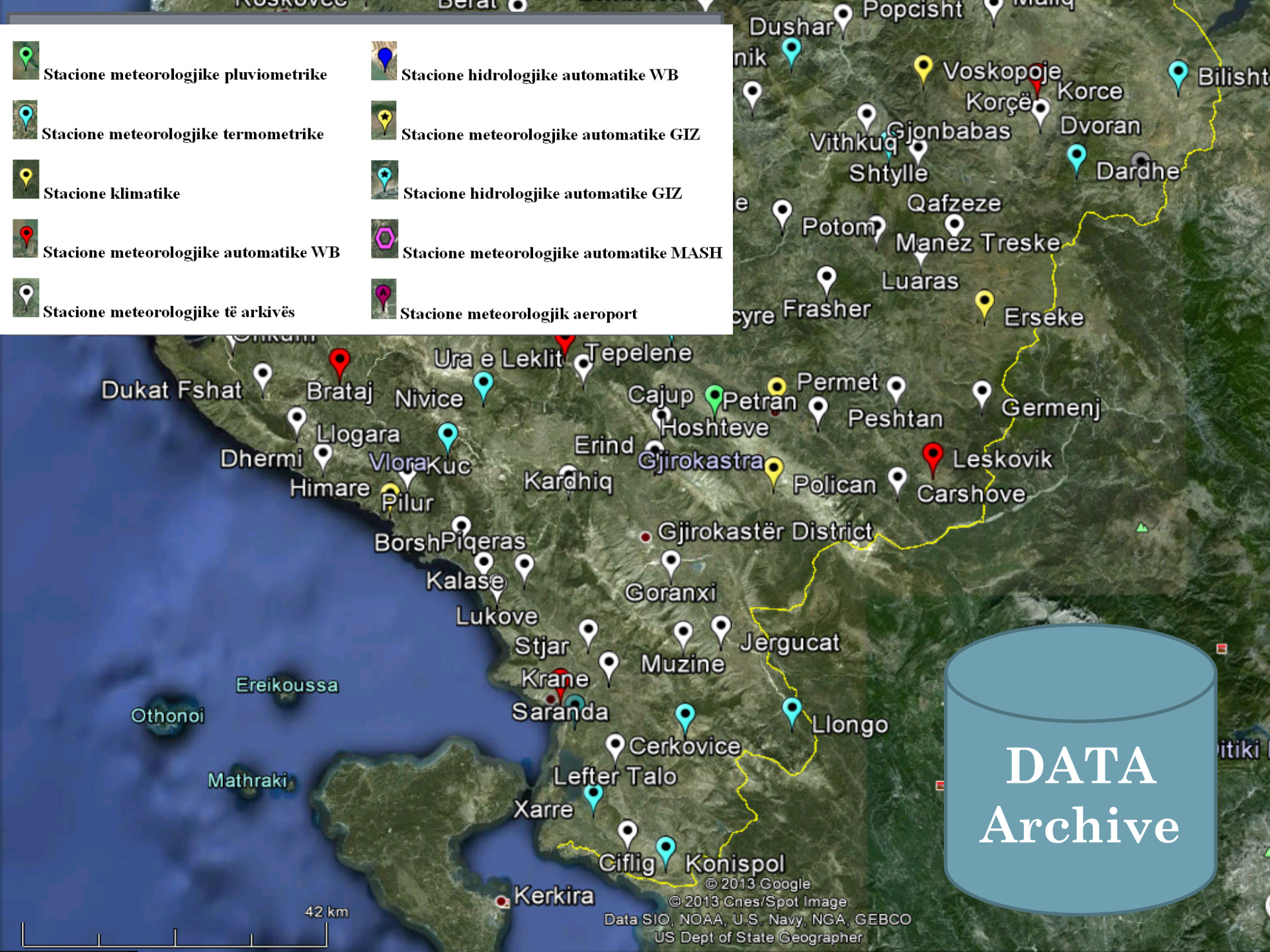
ALBANIA



24 (40) WB

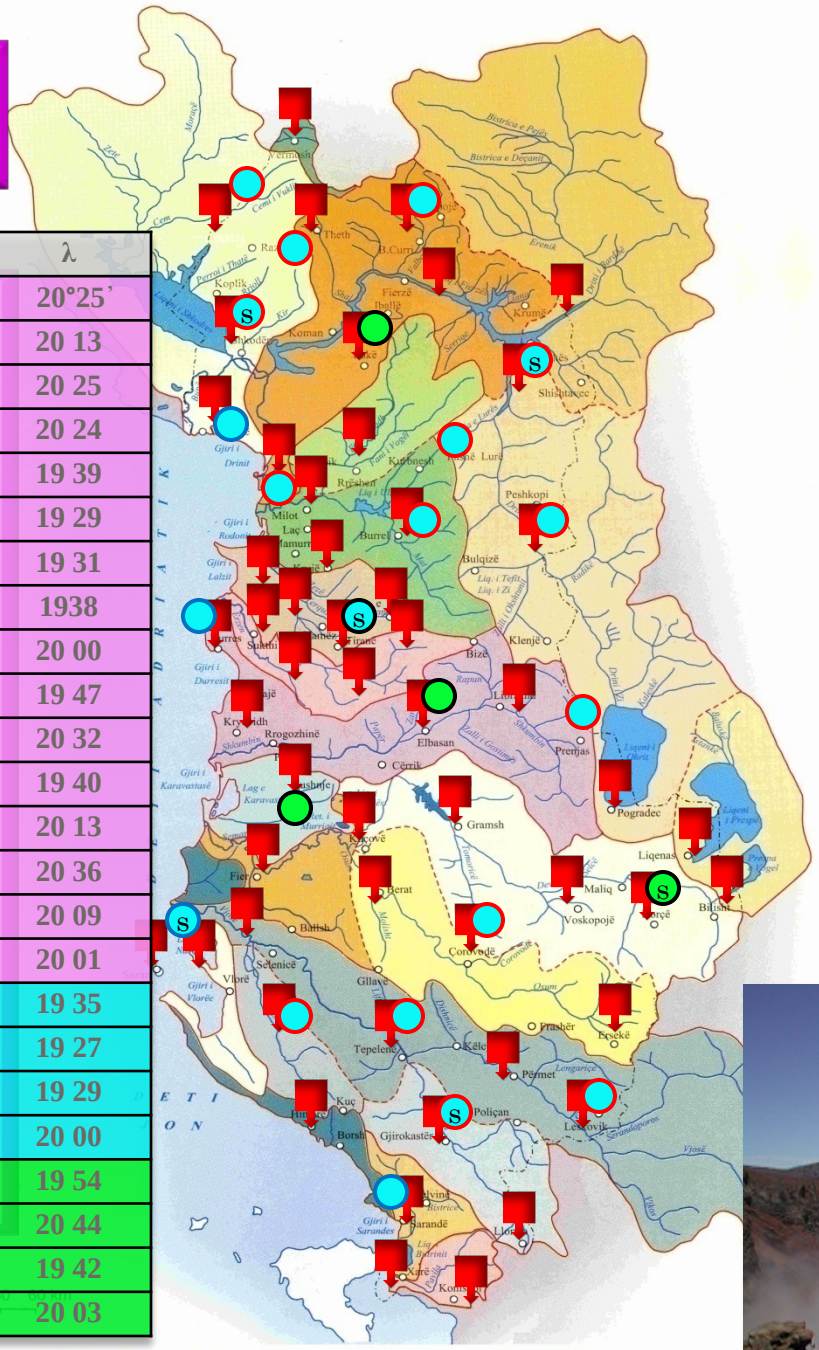
20
IGEWE


4
Agrometeorological stations
21-Puke
Total Rain Today
Rain Intensity
Air Temp
Relati
Air
Soil Temp -20
Soil Temp -50
Soil Temp -05
Wind Speed Zaxis
CO2 Content
H2O Content
Terrain Humidity -05
Terrain Humidity -20
Terrain Humidity -50
Rx BER GSM
Rx GSM Signal Level
Global Radiation
Numero Allarmi
Quality Level
Ora aggiornamento
19/03/2013 11.00.00
Consulta Digitali
16
Meteorological stations
4-B Curri
Total Rain Today
0 mm
Rain Intensity
0 mm/min
Air Temperature
30.1 C
Relative Humidity
30 %
Air Pressure
982 mBar
Wind Direction
88 Deg
Wind Speed
0.6 m/s
13.63 Vdc
Rx BER GSM
0.14 %
Rx GSM Signal Level
-57 dBm
Numero Allarmi
5
Quality Level
87 %
Ora aggiornamento
26/04/2013
Consulta Digitali
World Bank Project
16
Hydrological stations
Total Rain Today
Rain Intensity
River Level
Rx BER GSM
Rx GSM Signal Level
-63 dBm
2
34 %
26/04/2013 10.15.59
Consulta Digitali
Marine stations
18-Durres
Total Rain Today
0 mm
Rain Intensity
0 mm/min
Temperature
20.8 C
ive Humidity
71 %
ressure
1018 mBar
ind Direction
291 Deg
Wind Speed
5.7 m/s
Tide Sea
-3.83 m
Tensione Batteria
13.83 Vdc
Rx BER GSM
0.14 %
Rx GSM Signal Level
-51 dBm
Global Radiation
923 W/mq
Numero Allarmi
5
Quality Level
89 %
Ora aggiornamento
26/04/2013 12.19.03
Consulta Digitali
4


Stacione meteorologjike pluviometrike
Stacione meteorologjike termometrike
Stacione klimatike
Stacione meteorologjike automatike WB
Stacione meteorologjike të arkivës
Stacione hidrologjike automatike WB
Stacione meteorologjike automatike GIZ
Stacione hidrologjike automatike GIZ
Stacione meteorologjike automatike MASH
Stacione meteorologjik aeroport
Popcisht
Dushar
Voskopoje
Korce
Korçë
Bilisht
Gjonbabas
Dvoran
Vithkuq
Shtylle
Dardhe
Qafzeze
Potom
Manez Treske
Luaras
Frasher
Erseke
Tepelene
Ura e Leklit
Dukat Fshat
Brataj
Nivice
Cajup
Petran
Permet
Peshtan
Germenj
Hoshteve
Llogara
Dhermi
Vlora
Kuc
Erind
Gjirokastra
Leskovik
Himare
Pilur
Kardhiq
Polican
Carshove
Gjirokastër District
BorshPiqeras
Kalase
Goranxi
Lukove
Stjar
Muzine
Jergucat
Krane
Ereikoussa
Othonoi
Saranda
Llongo
Cerkovice
Lefter Talo
Mathraki
Xarre
Ciflig
Konispol
Kerkira
© 2013 Google
© 2013 Cnes/Spot Image
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
US Dept of State Geographer
42 km
DATA
Archive

WB Project

Nr	Station Name	Hs (m)	Φ	λ
1	Shupenzë*	480	41°32’	20°25’
2	Fushë Lurë*	1040	41 49	20 13
3	Kukës A (S) *	354	42 02	20 25
4	B .Curri *	360	42 21	20 24
5	Bogë*	1000	42 24	19 39
6	Rapsh*	600	42 23	19 29
7	Shkodër Q (S)	30	42 04	19 31
8	Shën Koll	6	41 43	1938
9	Burrel*	309	41 36	20 00
10	Tirana A (S)	89	41 20	19 47
11	Prrenjas*	590	41 04	20 32
12	Brataj*	270	40 16	19 40
13	Çorovodë*	410	40 30	20 13
14	Leskovik*	920	40 09	20 36
15	Gjirokastër (S)	193	40 05	20 09
16	Tepelenë*	220	40 18	20 01
1	Shëngjin (m)	10	41 49	19 35
2	Durrës (m)	10	41 18	19 27
3	Vlorë (S) (m)	10	40 28	19 29
4	Sarandë (m)	10	39 52	20 00
1	Pukë* (ag)	810	42 02	19 54
2	Korça (S) *(ag)	899	40 36	20 44
3	Lushnjë (ag)	20	40 57	19 42
4	Elbasan (ag)	100	41 05	20 03

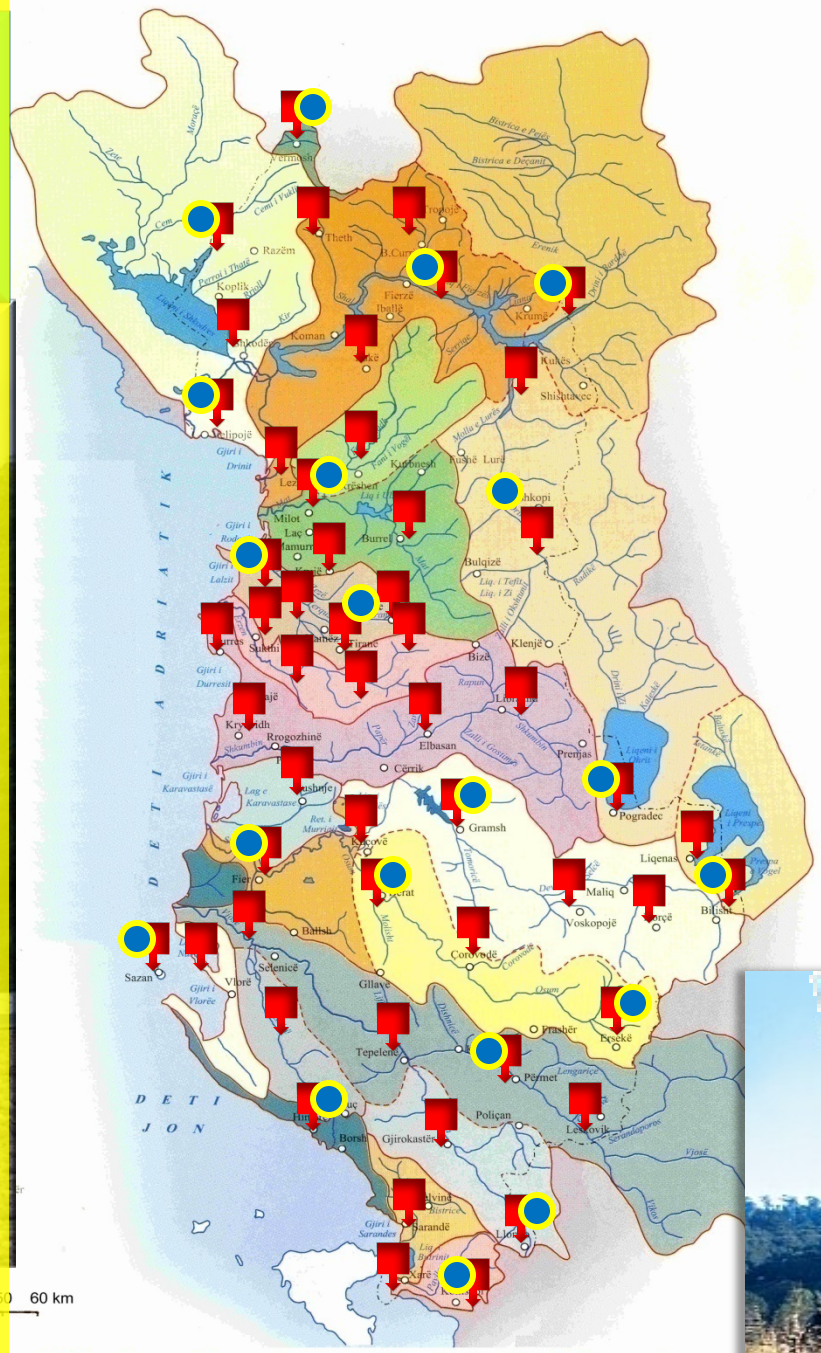


Water System Map of Albania

01 / 01 V
14 / 15 D
04 / 19 M
04 / 23 I
04 / 27 E
04 / 31 S
09 / 40 S
08 / 48 V
05 / 53 B

-Vermosh
-Hot
-Velipojë
-Morinë
-Fierzë
-Ura Milotit
-Peshkopi
-Likmetaj
-Tiranë
-Fier

-Berat/Kuçovë
-Gramsh
-Pogradec
-Bilisht
-Ersekë
-Borsh
-Përmet
-Llongo
-Konispol
-Sazan

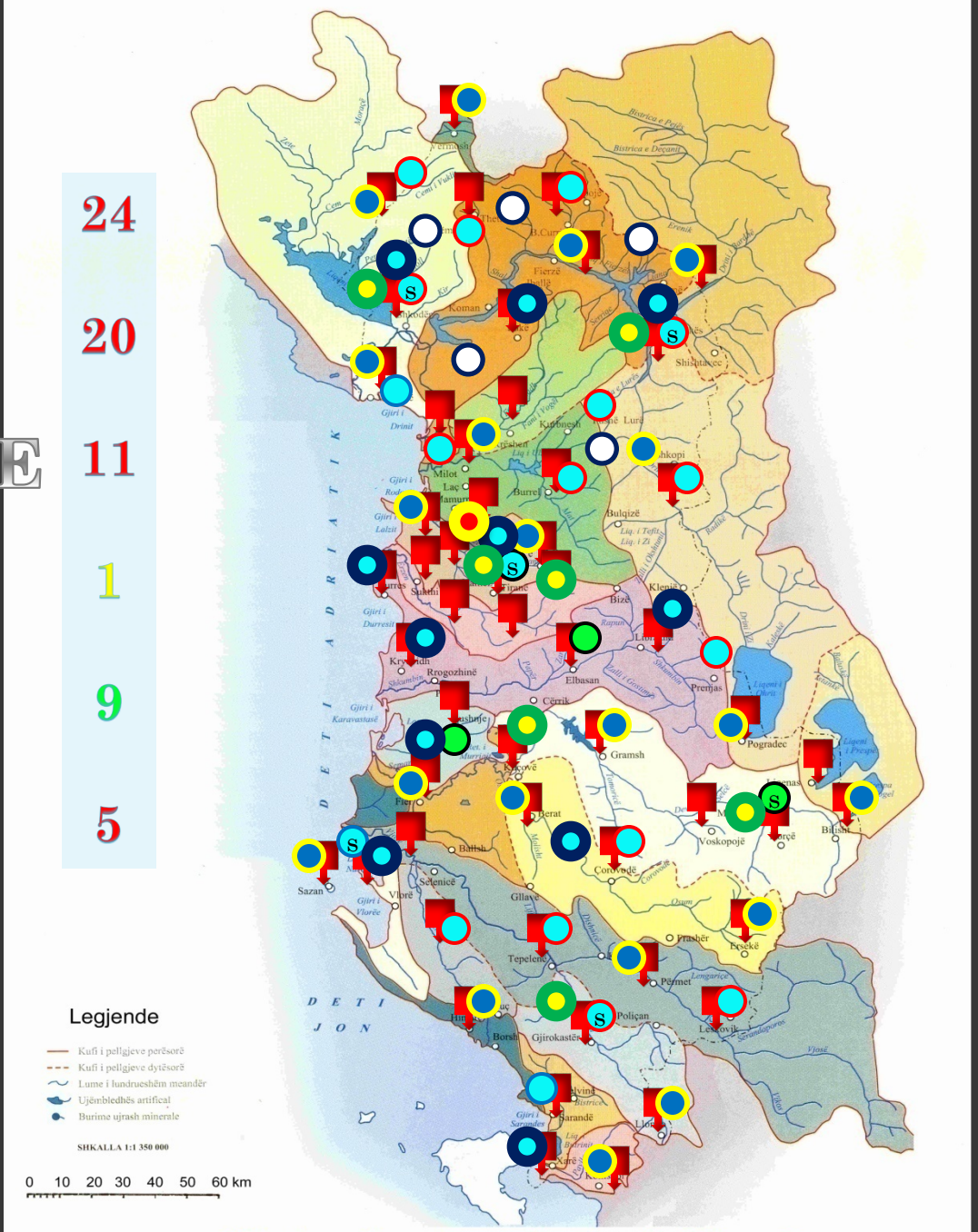


Water System Map of Albania

01 / 01 V
14 / 15 D
04 / 19 M
04 / 23 I
04 / 27 E
04 / 31 S
09 / 40 S
08 / 48 V
05 / 53 B

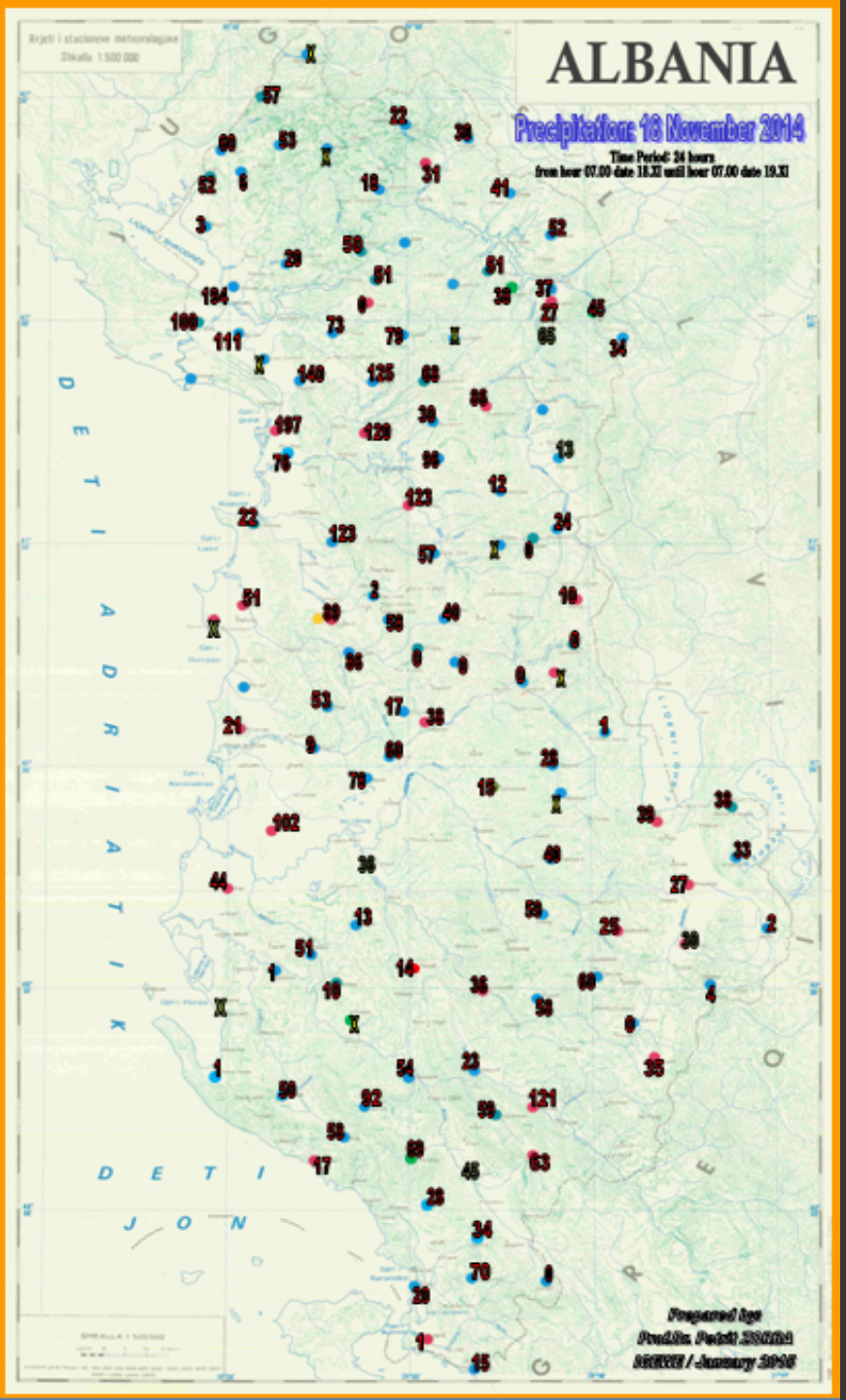
- WB
- Davis
- IGEWE
- Air
- MMS
- GIZ

24
20
11
1
9
5



01 / 01 V
14 / 15 D
04 / 19 M
04 / 23 I
04 / 27 E
04 / 31 S
09 / 40 S
08 / 48 V
05 / 53 B

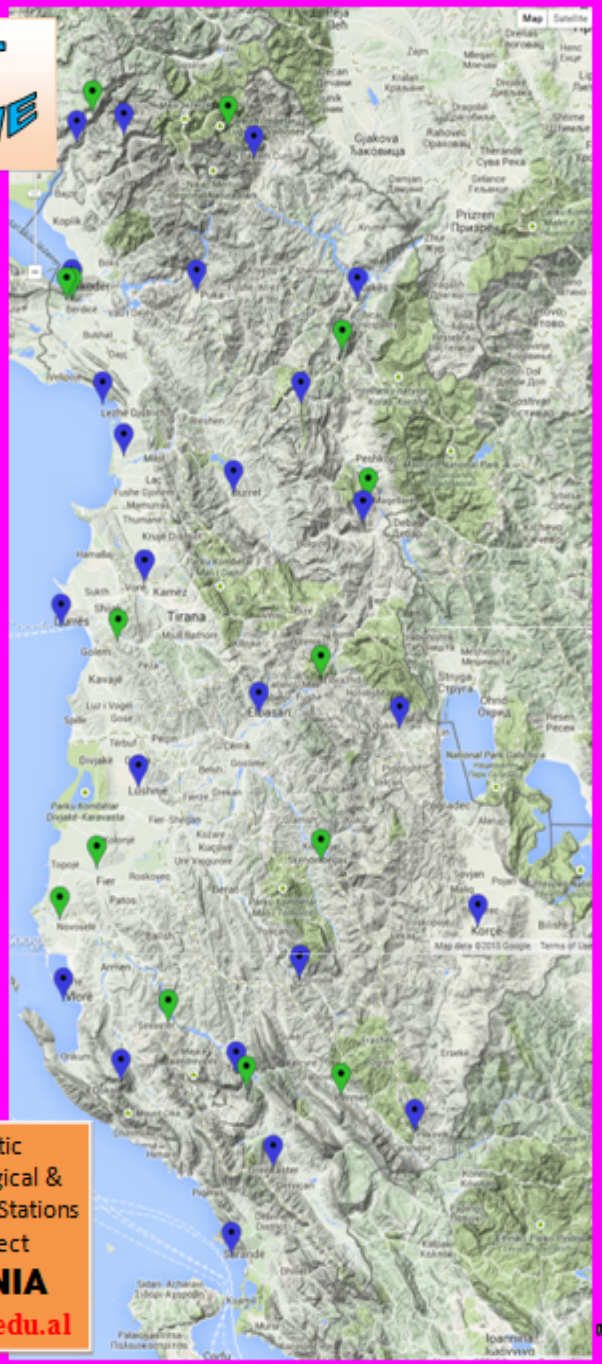
Water System Map of Albania



UPT

IGEWE

Departament of Climate & Environment



Automatic Meteorological & Hydrological Stations WB Project

ALBANIA

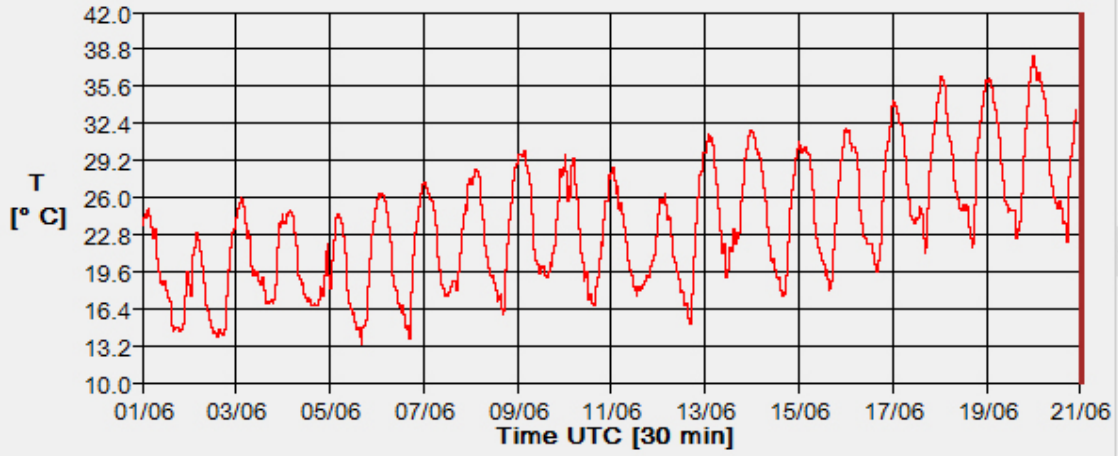
www.geo.edu.al

Prepared by
January, 2015

Start date: 01/06/2013 End date: 21/06/2013 Refresh Reset

Air Temperature - Lushnje | Temperature Warnings Analisys

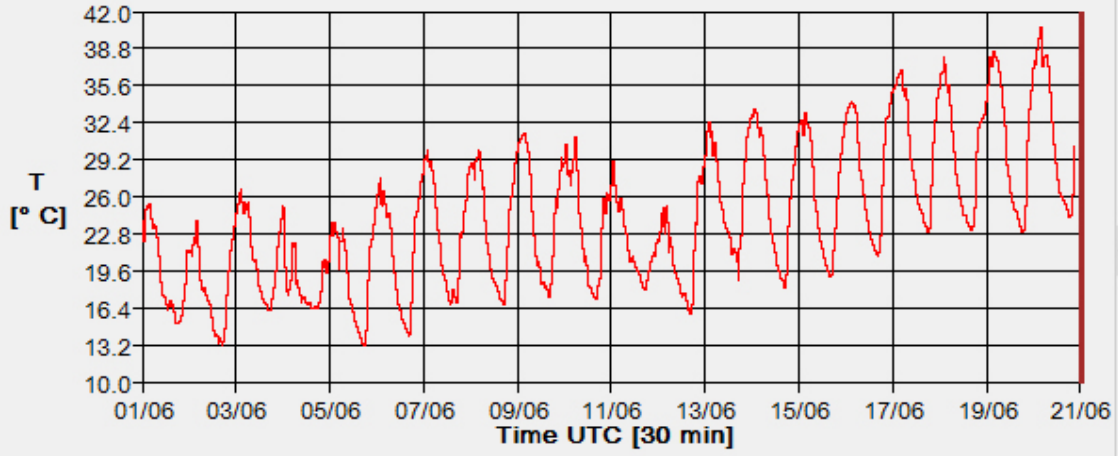
Customize

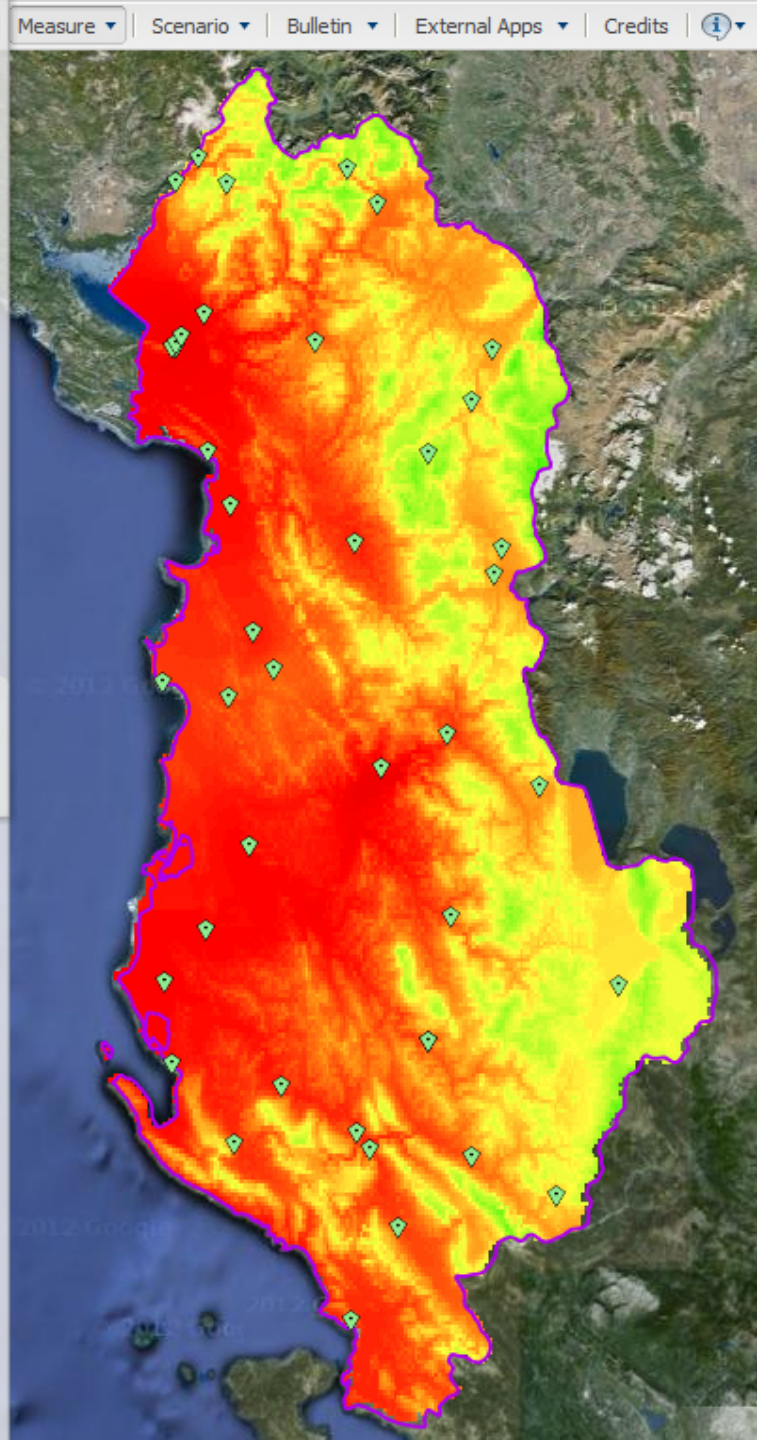


Start date: 01/06/2013 End date: 21/06/2013 Refresh Reset Close

Air Temperature - Elbasan | Temperature Warnings Analisys

Customize





Data Transmission & Digitalization

20

TIRANA
1- Airport

Sat link

Sat link

40

WB

MES

GPRS

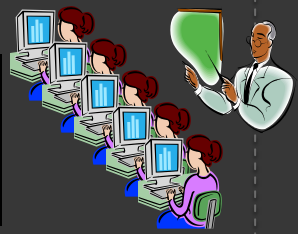
GPRS

4

Vaisala
Etc.

SERVER
IGEWE

Intranet



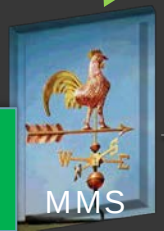
GPRS

11

Old electronic stations INEUM

Digital
Archive

135



9

MMS

Autostrada

UNIVERSITETI POLITEKNIK I TIRANËS

INSTITUTI I GJEOSHKENCAVE DHE ENERGJISË, UJIT DHE M

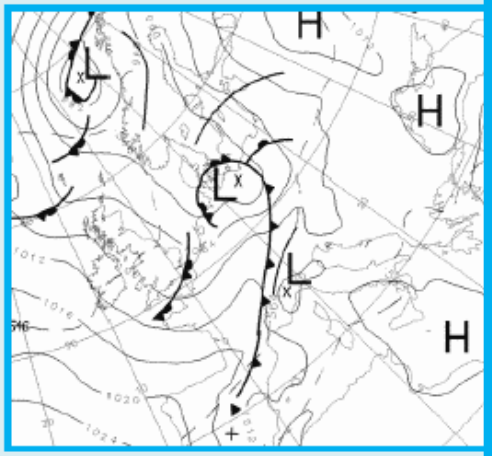
Adresa: Rr. "Don Bosko", Nr.60, Tiranë. Tel /Faks: 00355 4 2259540 Web site: http://www

BULETIN DITOR

Mbi parashikimin e motit për datat: 13 deri 19 Korrik 201

Situata sinoptike

Gjatë këtyre 3 ditëve pritet që mbi vendin tonë të ndikojë një fushë me presion atmosferik rre
normale. Figura më poshtë paraqet situatën sinoptike të parashikuar për orën 12 të datës 14 K



Kjo situate sinoptike karakterizohet nga një fushe barike me presion atmosferik të lartët e cila gjatë dy ditëve pasardhëse do të bëjë që mbi vendin tonë të vijnë masa ajrore të nxehta dhe të thata. Rrjedhimisht pritet të mbizotërojë mot i kthjellët me vranësira të pakta. Pritet që temperaturat maksimale me dt 15 të arrijnë deri 40 gradë në zonën e ulët

Parashikimi për daten 13 Korrik 2012

Gjatë kësaj dite mbi vëndin tonë do të ushtrojë ndikimin e saj periferia e një fushe me presion atmosferik të lartë. Si rezulta mbizotërojë mot i kthjellët me vranësira të pakta. Era do të fryjë e lehtë, deri 28 k veriperëndimi.

Temperaturat ekstreme të ajrit pritet të luhaten:

NË VENDET MALORE :

temp. minimale muk do të zbresin poshtë **18** ndërsa ato maksimale do të ngjiten deri në 3

NË VENDET E ULTA :

temp. minimale do të zbresin deri në 23, ndërsa ato maksimale do të ngjiten deri në 34

NË BREGDET :

temp. minimale do të zbresin deri në **22** ndërsa ato maksimale do të ngjiten deri në 34

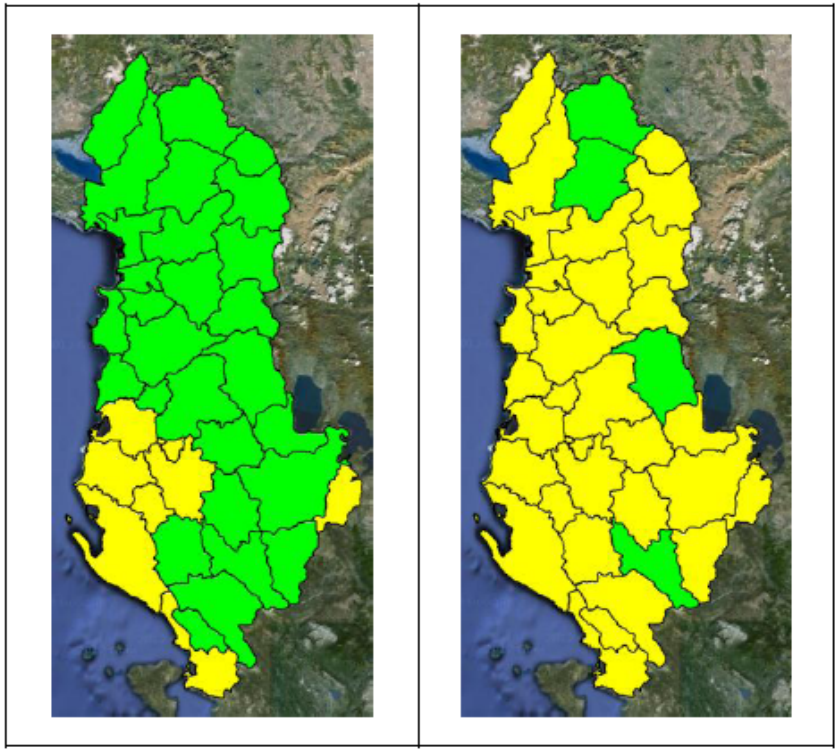
BULETINI I PARASHIKIMIT TË ZJARREVE NË PYJE

PROTEZIONE CIVILE

Qendra Kombëtare për Parashikimin dhe Monitorimin e Rreziqeve Natyrore IGJEUM

Buletini 102/2012; datë 19 Shtator 2012
Parashikimet për datat 20, 21 Shtator 2012

Niveli i Rrezikut të Zjarreve në Pyje sipas Parashikimeve, ilustruar për të gjithë Territorin, për datat 20 dhe 21 Shtator 2012.



Operatori i Qendrës	Supervizori i Qendrës
Liljana LATA	Metodi MARKU (068 21 51291)

UNIVERSITETI POLITEKNIK I TIRANËS

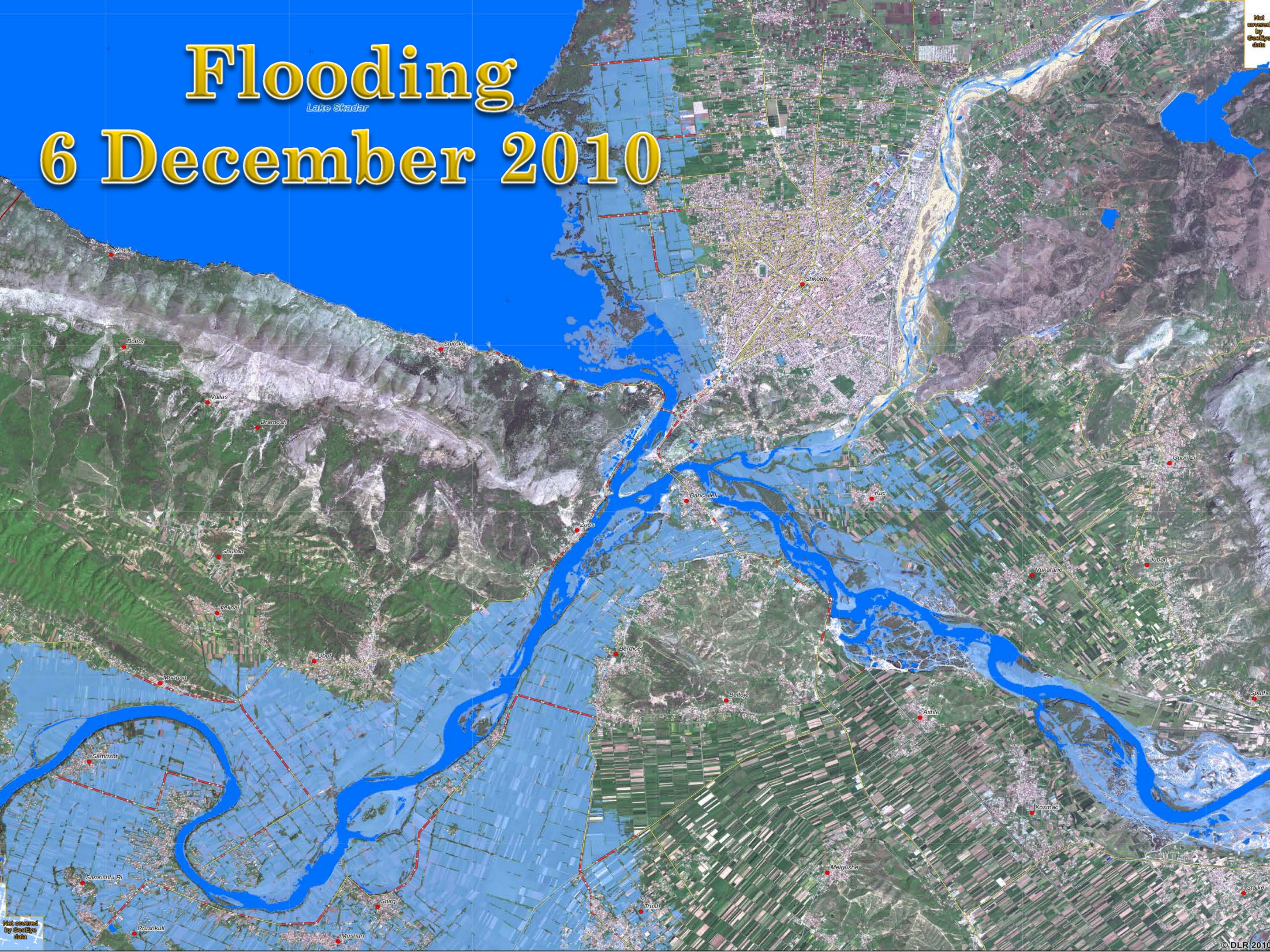
INSTITUTI I ENERGJISË, UJIT DHE MJEDISIT

cima RESEARCH FOUNDATION

Some considerations about

CLIMATE CHANGE

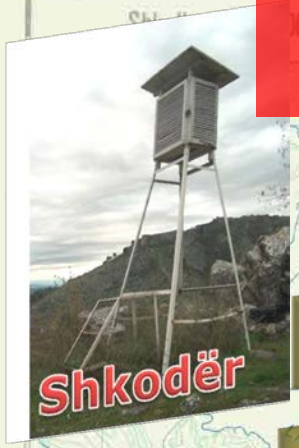
ALBANIA



Flooding
6 December 2010
Lake Skadar
Shkoder
Not covered by GeoEye data
© DLR 2010

2010

ALBANIA



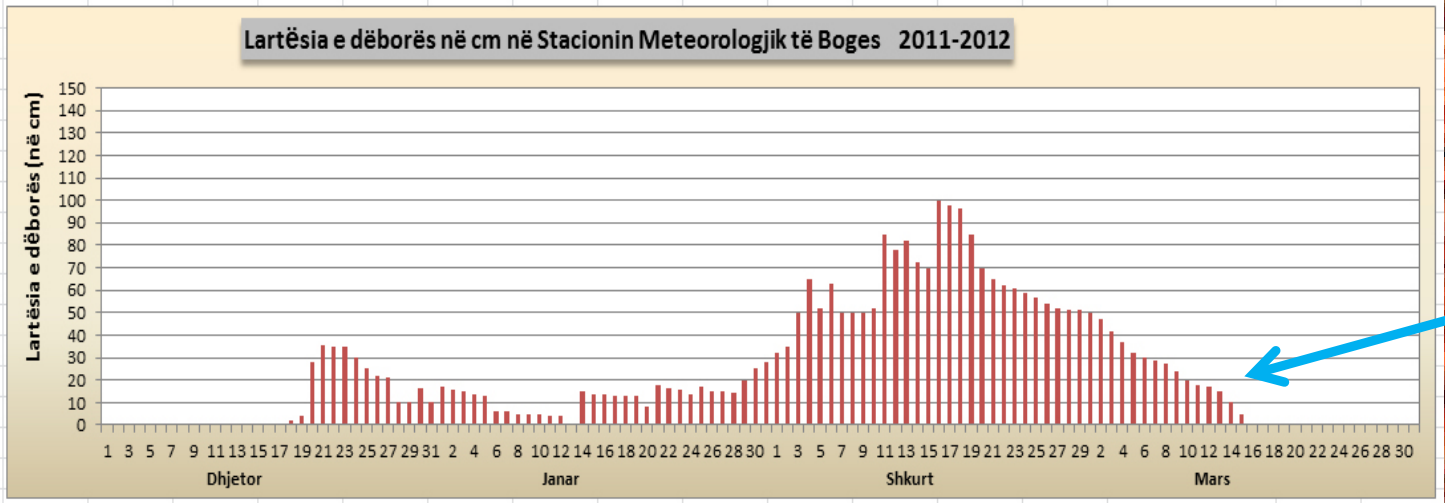
PRECIPITATION JANUARY 2010

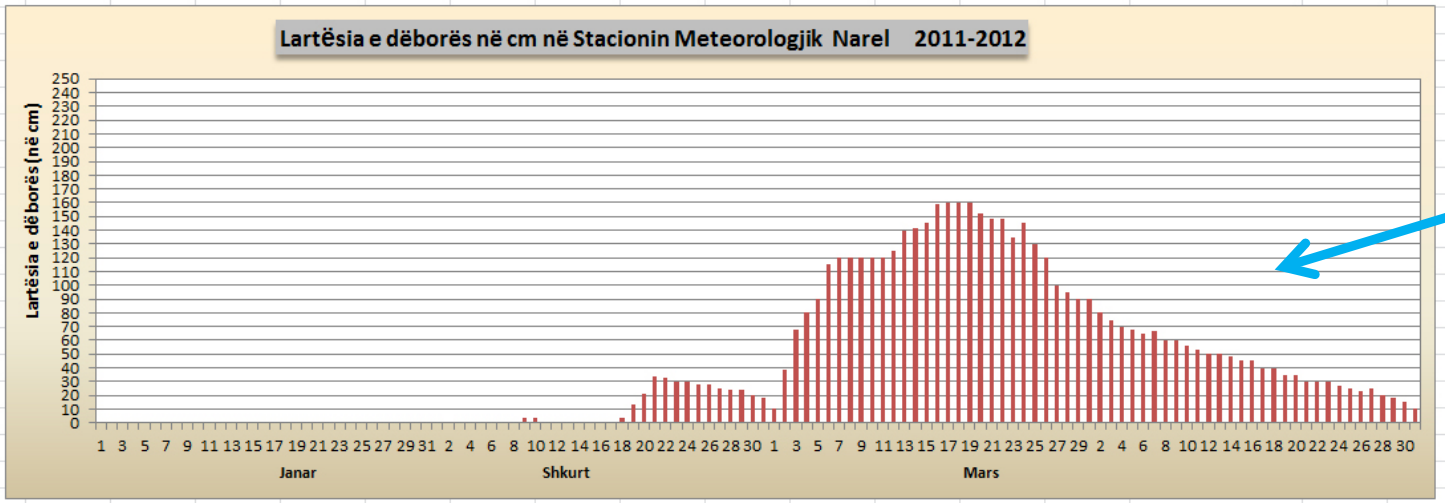
Vermosh 418.4mm
Dragobi 531.9mm
Tropojë 231.5mm
Bogë 548.8mm
Rapsh 480.6mm
Q. Mulaj 800.8mm
B. Curri 155.0mm
Zogaj 176.1mm
Hot 287.0mm
Vrith 563.0mm
Lekbibaj 298.9mm
Topojan 318.0mm
Krumë 107.0mm
Koplik 297.9mm
Dushman 611.8mm
Narel 380.5mm
Petkaj 333.9mm
Kukës G 151.8mm
U. Shtre 374.4mm
F. Paqes 266.2mm
Lajthizë 345.7mm
Kalimash 239.8mm
Kukës 162.8mm
Pukë 546.7mm
Dajç B. 272.1mm
Bushat 277.8mm
Korthpulë 333.5mm
Domgjon 393.5mm
Shishtavec 152.0mm
Velipojë 615.8mm
F. Lurë 372.mm
Z. Kalisë 236.0mm
Peshkopi 143.0mm
Selishtë 426.6mm
Shupenzë 136.4mm
Bulqizë 151.8mm
Zerqan 143.9mm

Flooding situation of January

But, the situation isn't the same.

Mbulesa e dëborës
Snow cover
17.II.2012

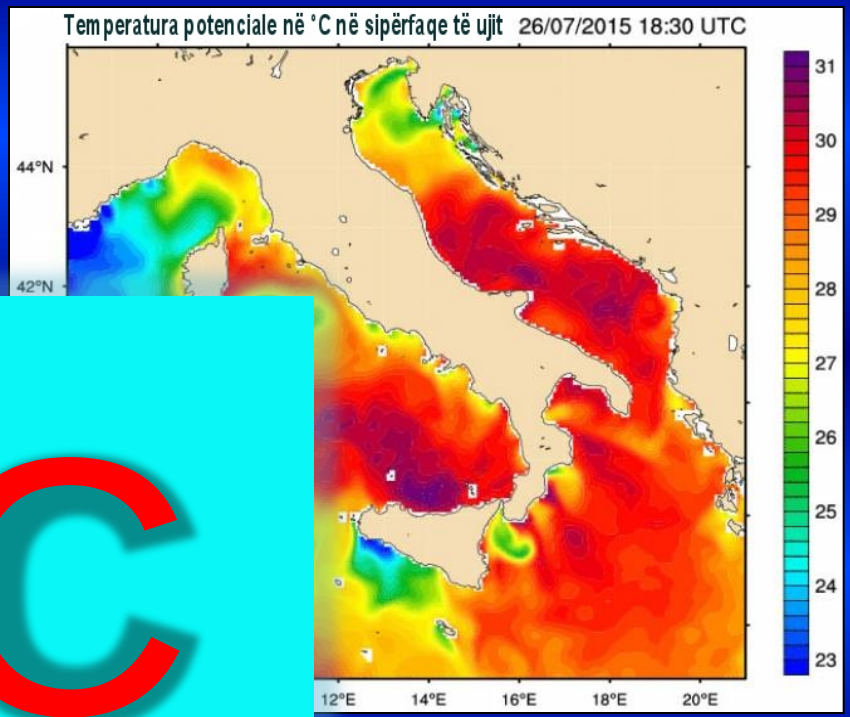


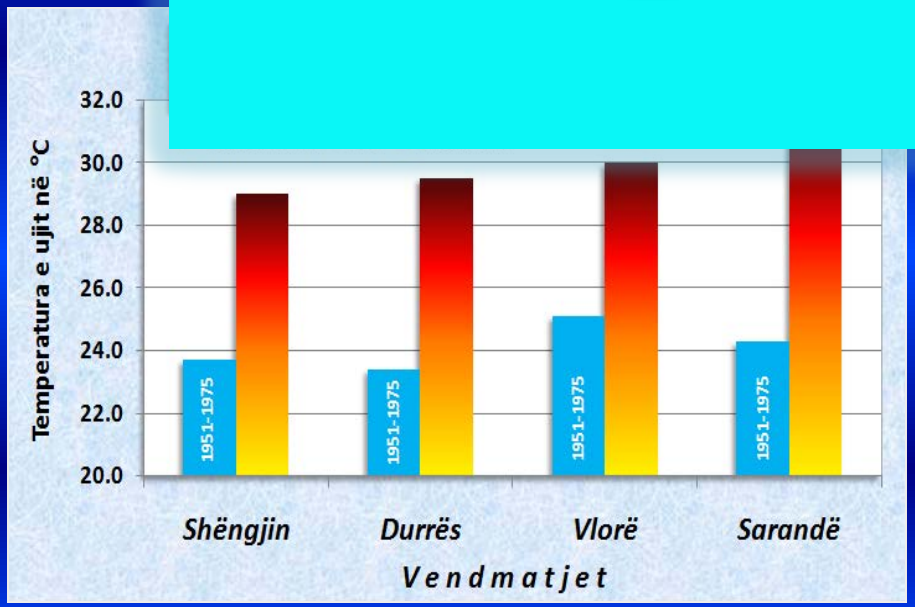


Water surface temperature of the sea Adriatic and Jonian during the last

valu

+8°C





tion of water temperatures for the Adriatic and Jon seas referring to the period of the years 1951-1975 and those of satellite information for the August 2015 , where are observed the maximum annual values of water temperatures.

Precipita

November – Dece

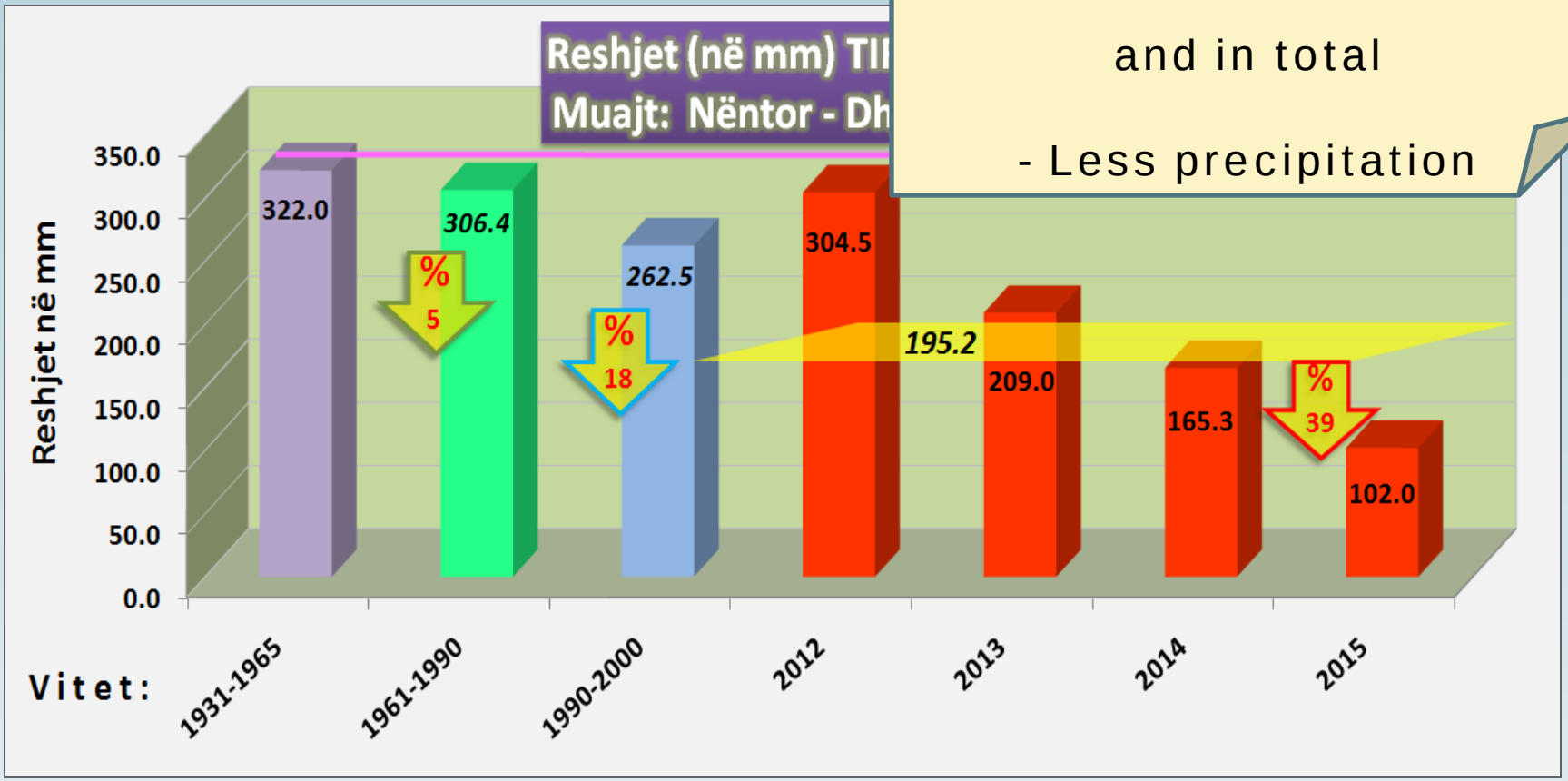
Important Note:

Not the same character !

-Less snows in the winter

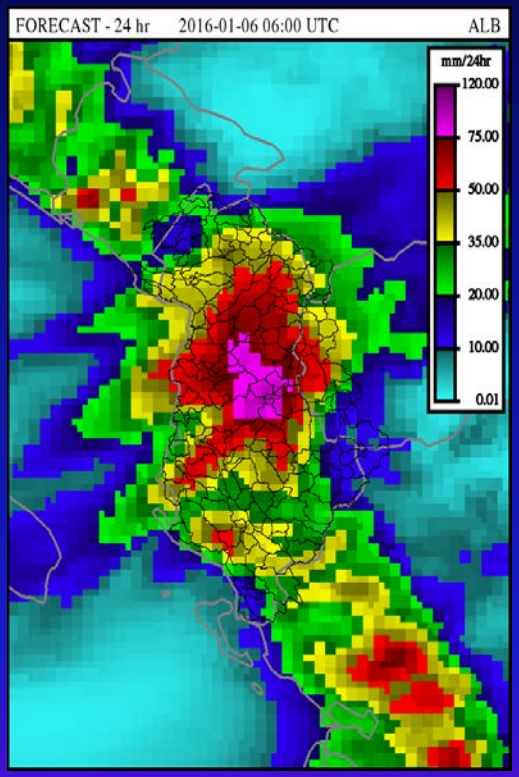
and in total

- Less precipitation

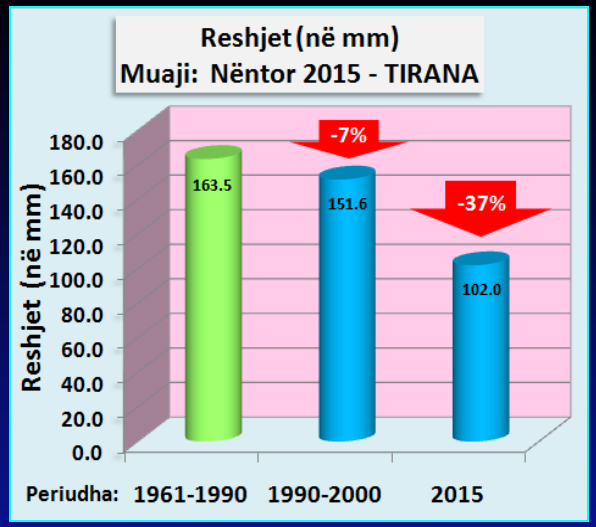


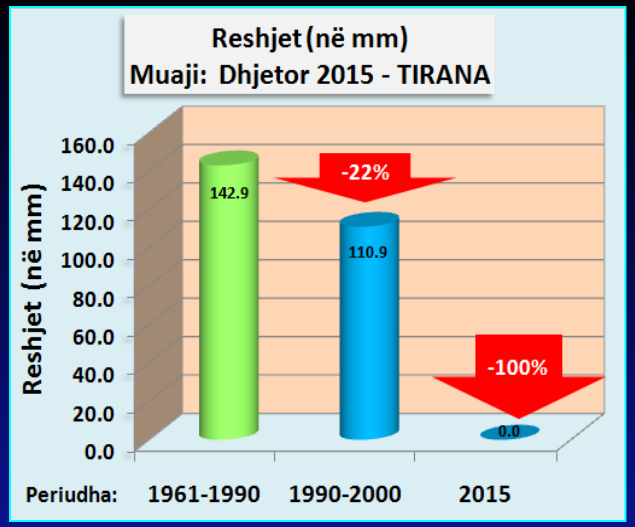
Rainfall (in mm) for Tirana meteorological station
referring to different historic periods for the months November and December

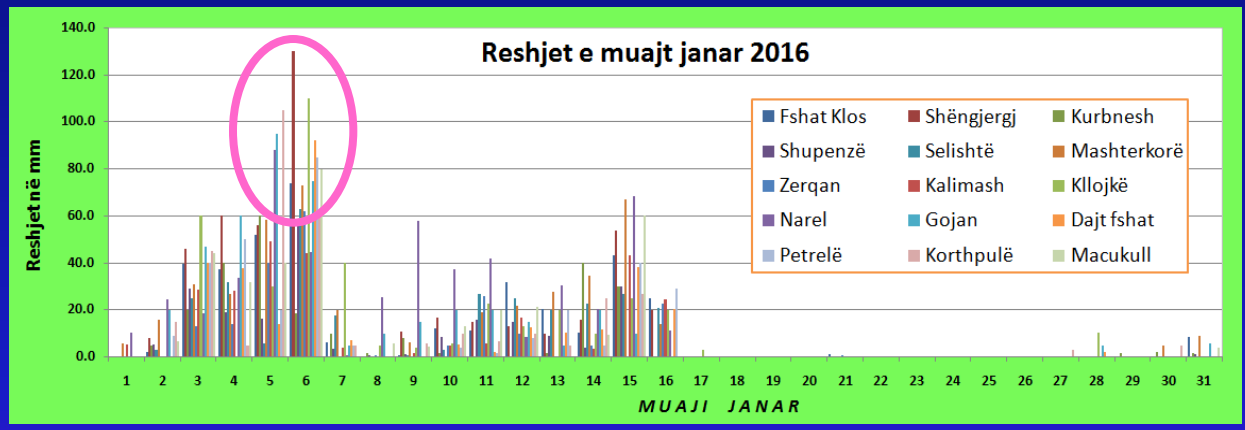
Rainfall observed during the months: November December 2015.



Rainfall forecast for the next 24 hours referring to the outputs of Aladin model of NOAA for Albania (date 6 Janary 2016 time 06 UTC), where in rose color are expected high precipitation of 75-120mm.



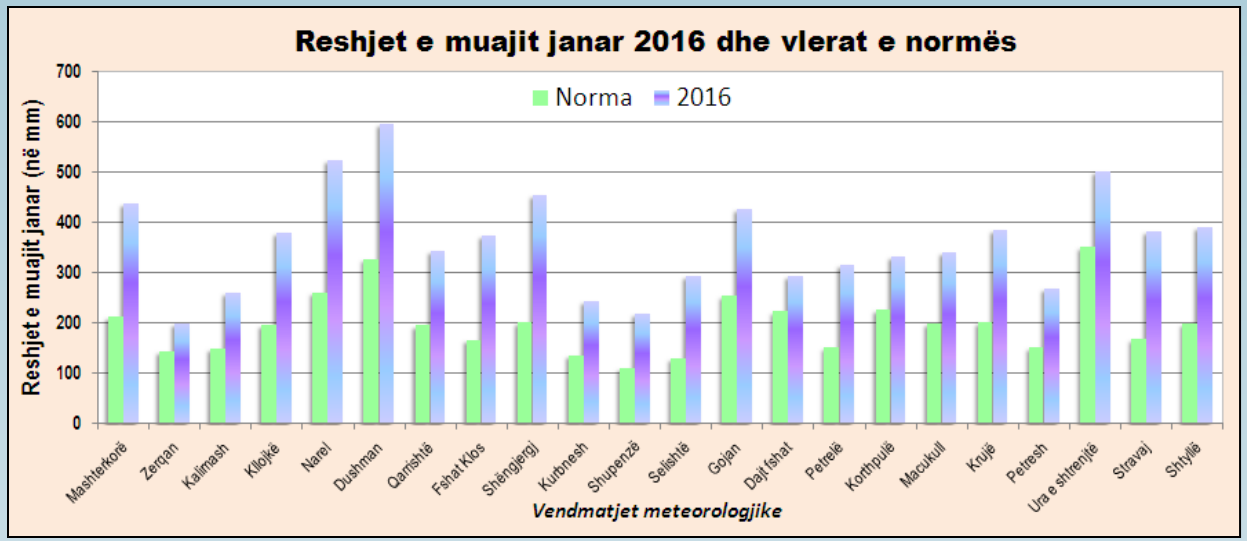




January 2016 precipitation for an area of central - east part of Albania (plus 160-230% of norm values).

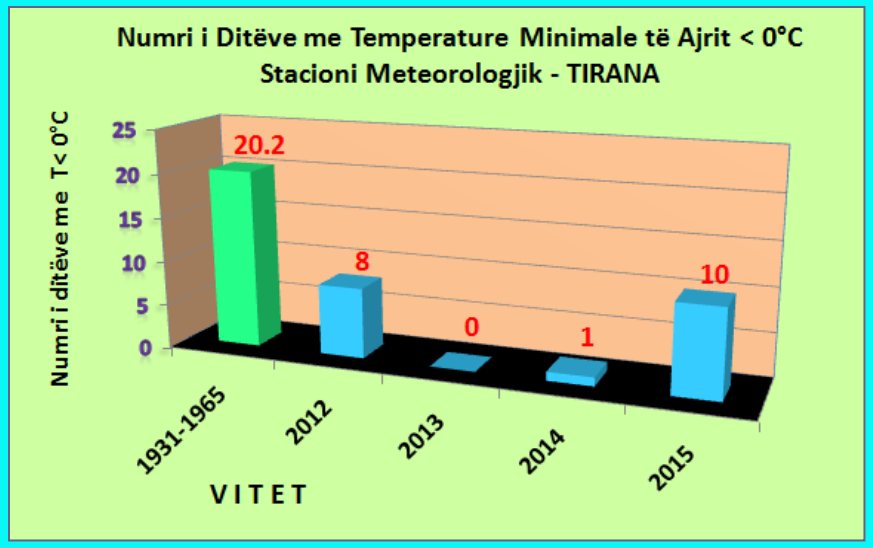
Rainfall of January 2016 and the norm values
About double of norm but:

NO SNOW !



Snow cover (up to 1-2 meters) – Typical for the winter period on that central - east part of Albania; but during the last winter 2015-2016 never observed (or in few cases some cm in very limited areas and melted rapidly).

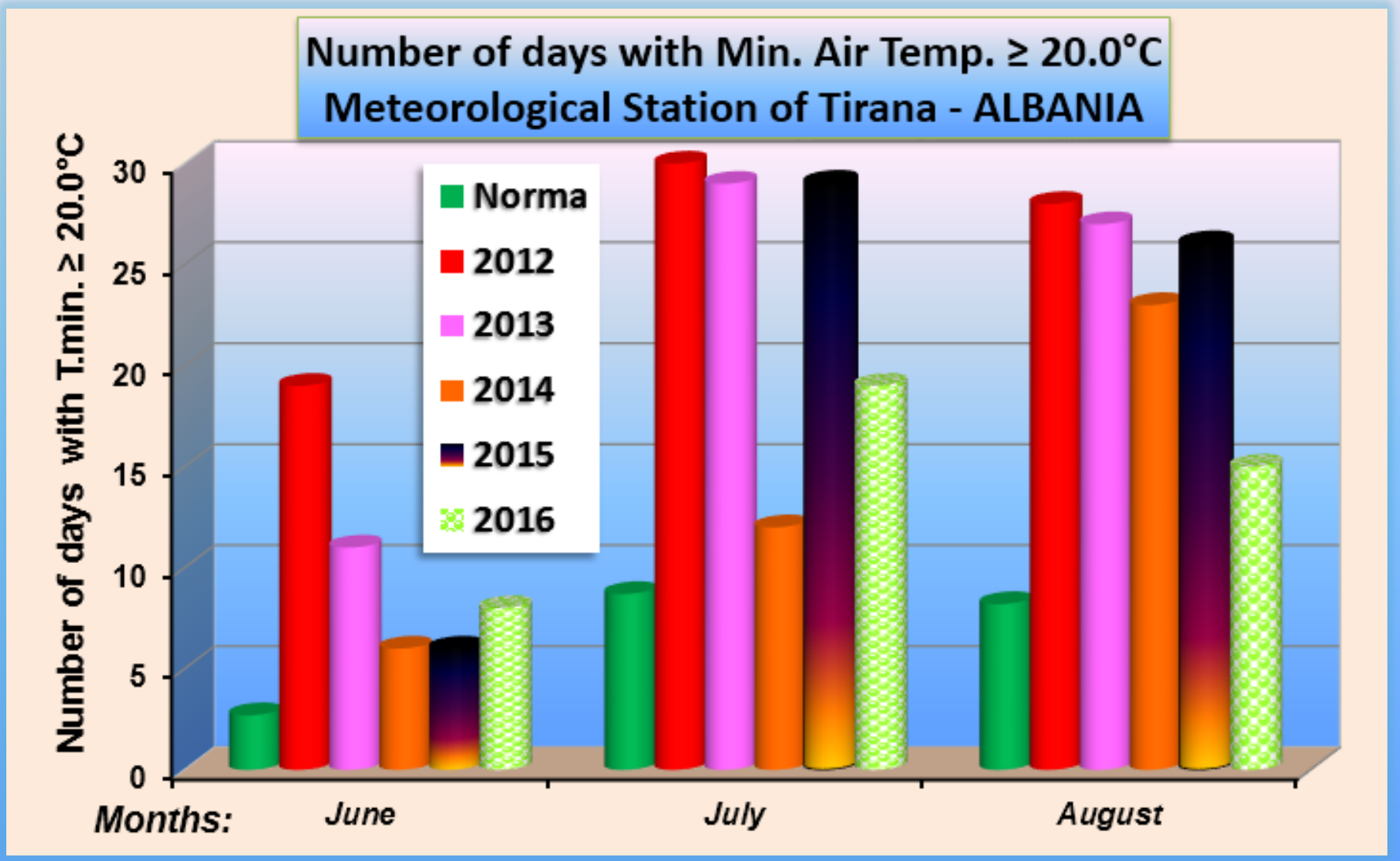
Number of days with frost T<0°C during the last years shows an important decrease.

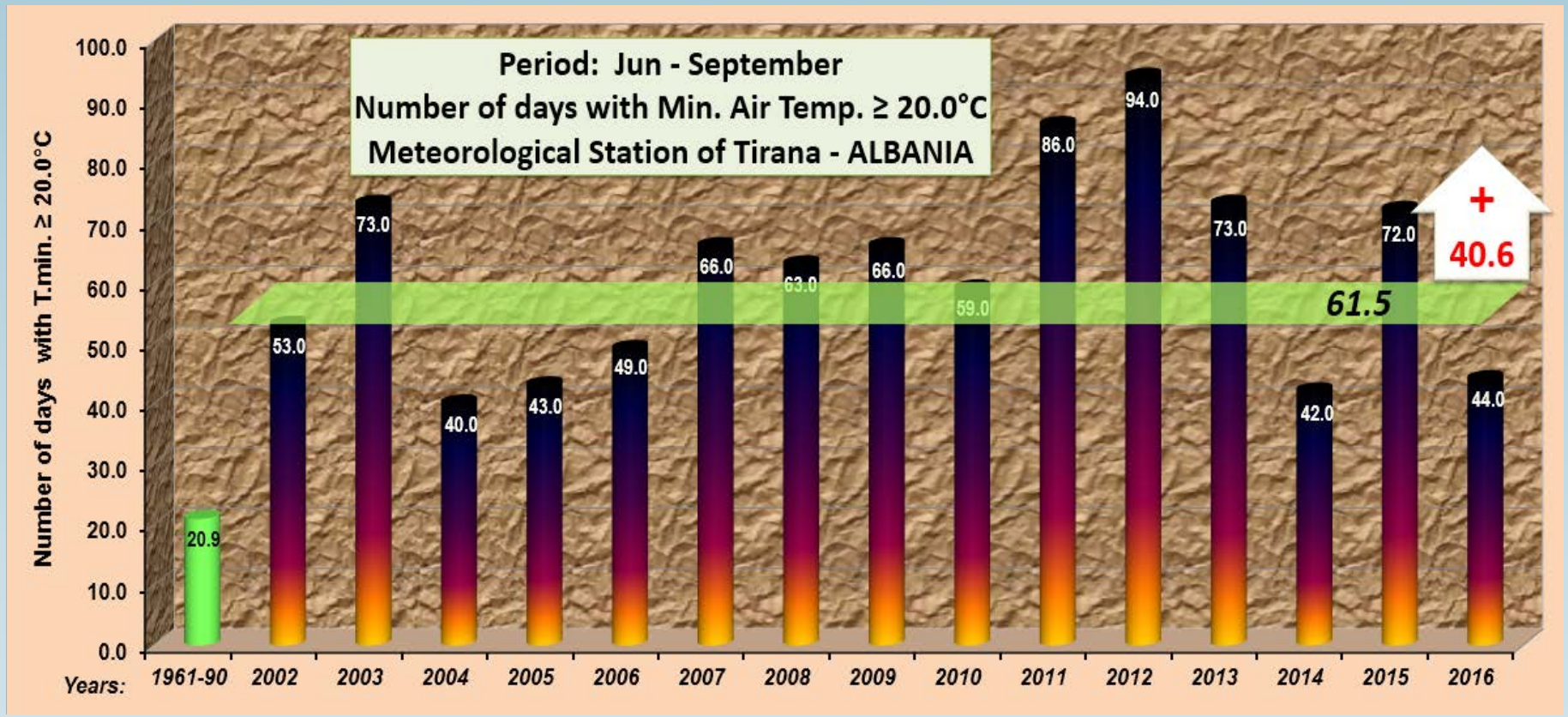


Note:

Shorter winter or "pieces" of winter

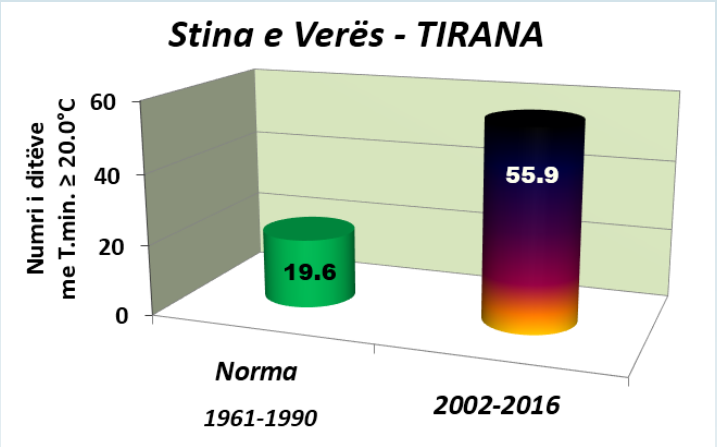
Tropical nights



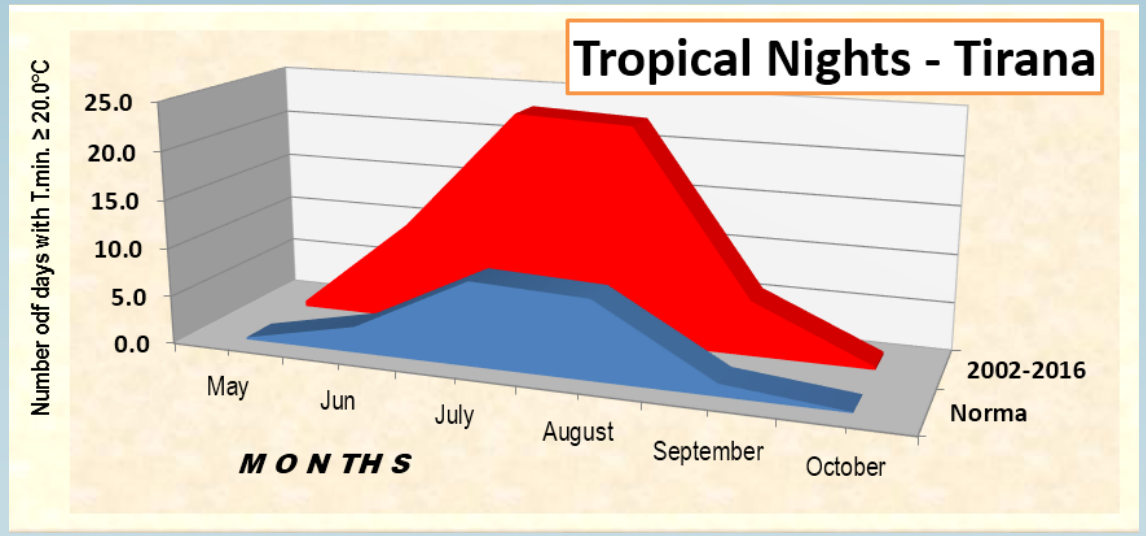


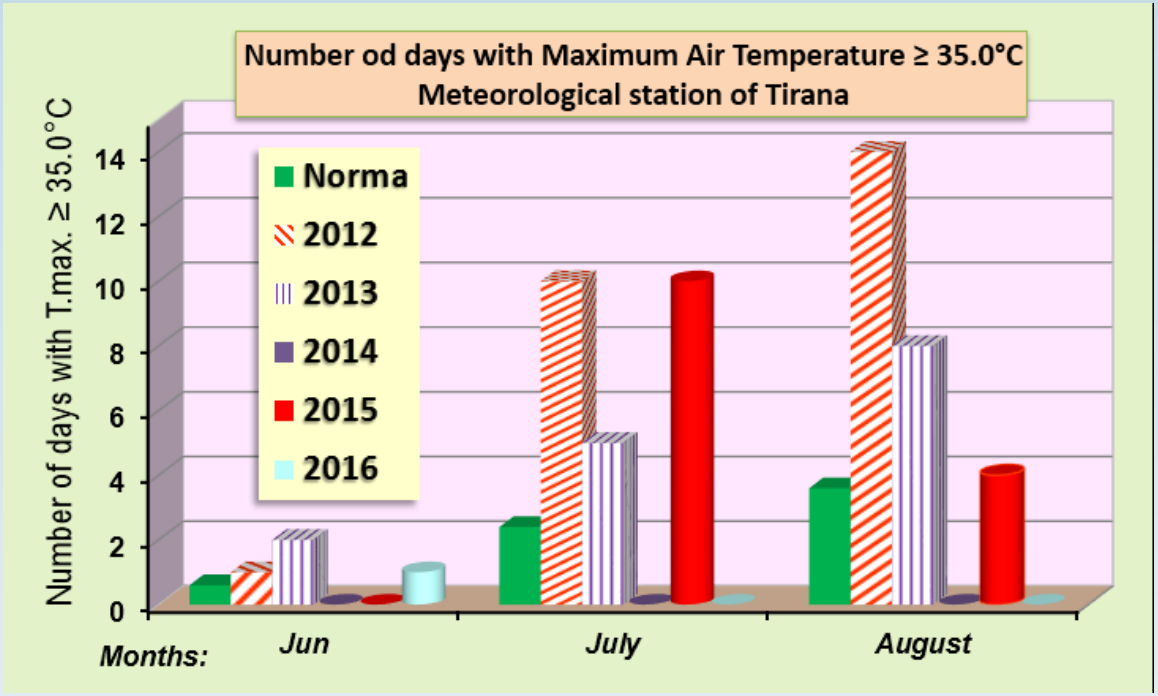
Tropical nights for Jun - September - Tirana meteorological station.

The number of tropical nights for summer season for Tirana.

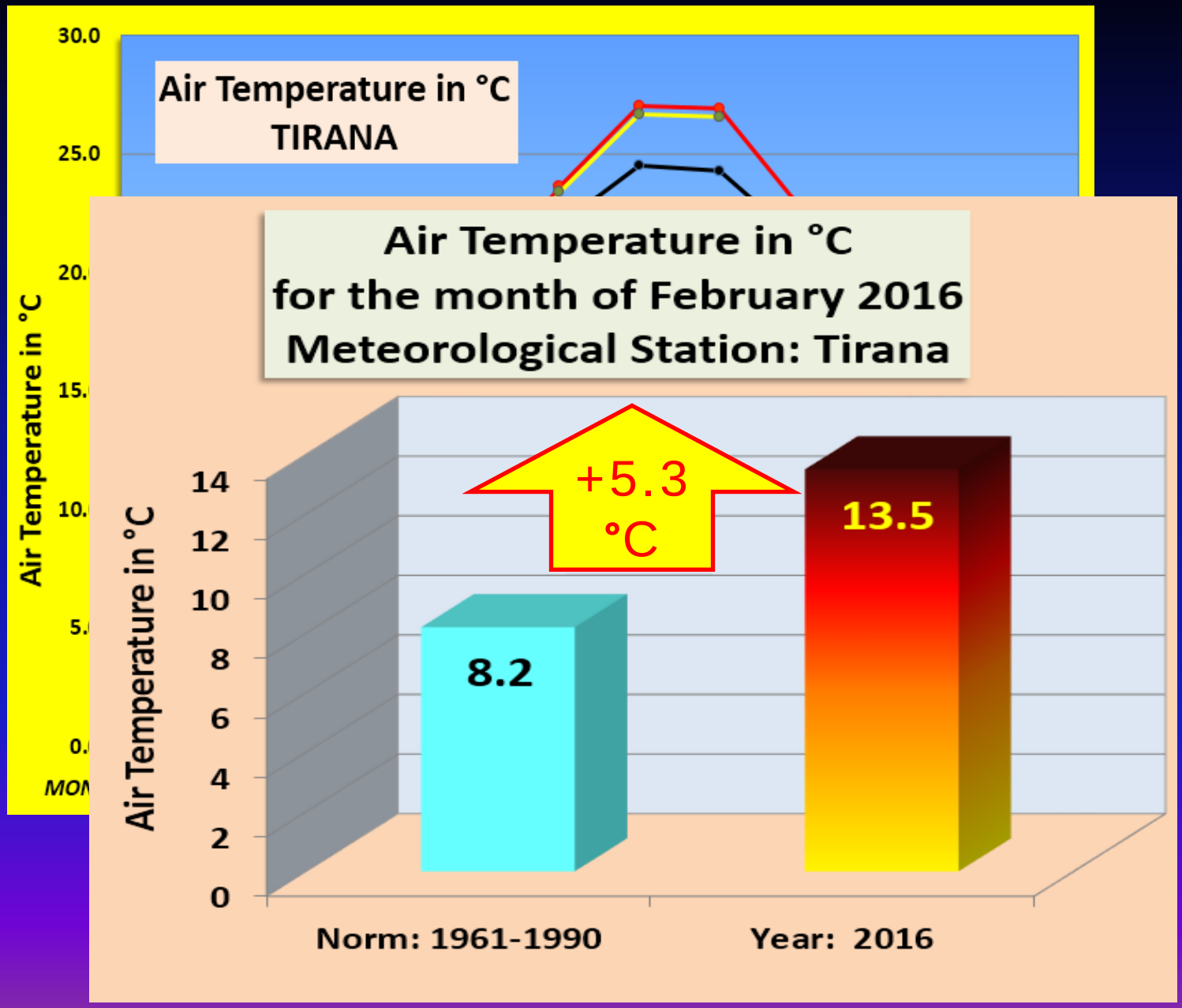


Tropical nights for the period May -October 2002-2016 compare to the norm values.

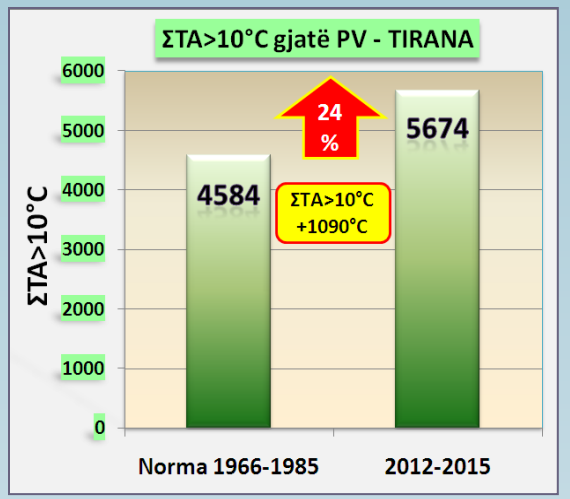




Number of days with Maximum Air Temperature over the threshold 35°C for meteorological stations of Tirana.

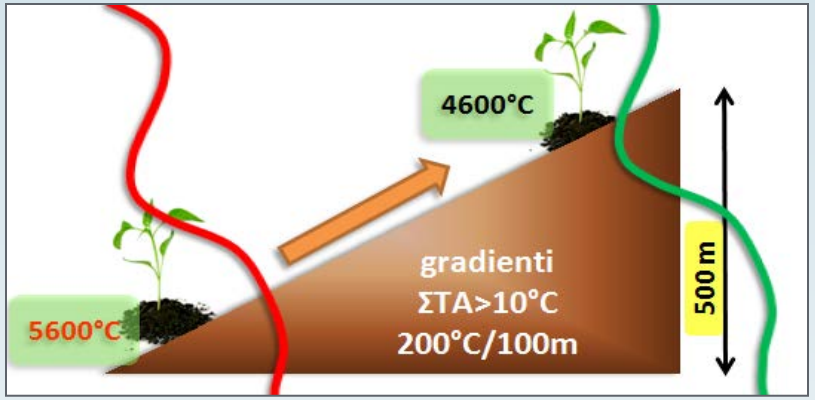

Air Temperature in °C
TIRANA
30.0
25.0
Air Temperature in °C
Air Temperature in °C
for the month of February 2016
Meteorological Station: Tirana
Air Temperature in °C
14
12
10
8
6
4
2
0
+5.3
°C
8.2
13.5
Norm: 1961-1990
Year: 2016

Index of the Sum of Active Air Temperature above the threshold of 10°C for the vegetative period.



Gradient of the index of ΣTA>10°C for the vegetative period in Albania is evaluated as 400°C for each geographical degree displacement versus north and about 200°C for every vertical movement of 100m.

Variability of the index of ΣTA>10°C for the vegetative period in vertical profile.



23 March 2016

World Meteorological Day

The theme of the world meteorological day celebration 2016 has been "Hotter, drier, wetter. Face the Future"

USERS of METEOROLOGICAL & HYDROLOGICAL INFORMATION

1 - Meteorological station – part of WB project is installed at the Meteorological Service of Airport – Tirana Airport

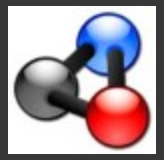
1 - Meteorological station – part of WB project is installed at the MMS – Gjirokaster Meteorological Station.

1 - Meteorological station – part of GIS project is installed at the MMS – Peshkopi Meteorological Station

For fulfilling the WMO standard we have provided to MMS and AMS a calibration tour, thanks to IPA project, where IGEWE was a participant.

Training courses and examinations for the respective staff are organized at IGEWE (former IHM) time by time in conformity with WMO standards for the Airport staff of meteorological office. The recent products will be EUMETSAT and RADAR info.

IGEWE



Tirana Airport

MMS

We provide to them:

- Data (different types)
- Metadata
- Study
- Technical assistance
- Calibration

About 240 requests per year

PUBLIC INSTITUTIONS

Different Ministries and other public institutions.

- Ministry of Health (for the strategy to minimize the impacts of CC in Health situation.)
- Ministry of Interior (for Civil Emergencies Department) and as well as for the national strategy regarding hazards, etc.
- Ministry of Agriculture (for strategic orientation of development in the respective fields)
- Ministry of Transport (airport, marine and road transport, etc.)
- Ministry of Environment (various type of collaboration and projects)
- Ministry of Energy (for Hydropower system, Evaluation about loos of energy in the national electric greed from climate change impact)
- Ministry of Tourism (evaluations about Touristic Climatic Index)

- Public research institutions and various national agencies, Supreme and regional districts courts, Municipalities, Communes, etc.

PRIVATE COMPANIES

Building and Road Constructions companies
Transport companies
Hydropower companies
Private enterprise in the field of agriculture & Farmers
Media (news paper, radio and TV)
Various NGO
Individuals

They need not only information, but as well as technical assistance in some cases

International Projects: TAP

UNIVERSITES

Doctorate thesis

Master degree thesis

Students diploma

Interdisciplinary Projects

INTERNATIONAL INSTITUTIONS

WMO

NOAA / EUMETSAT / EU

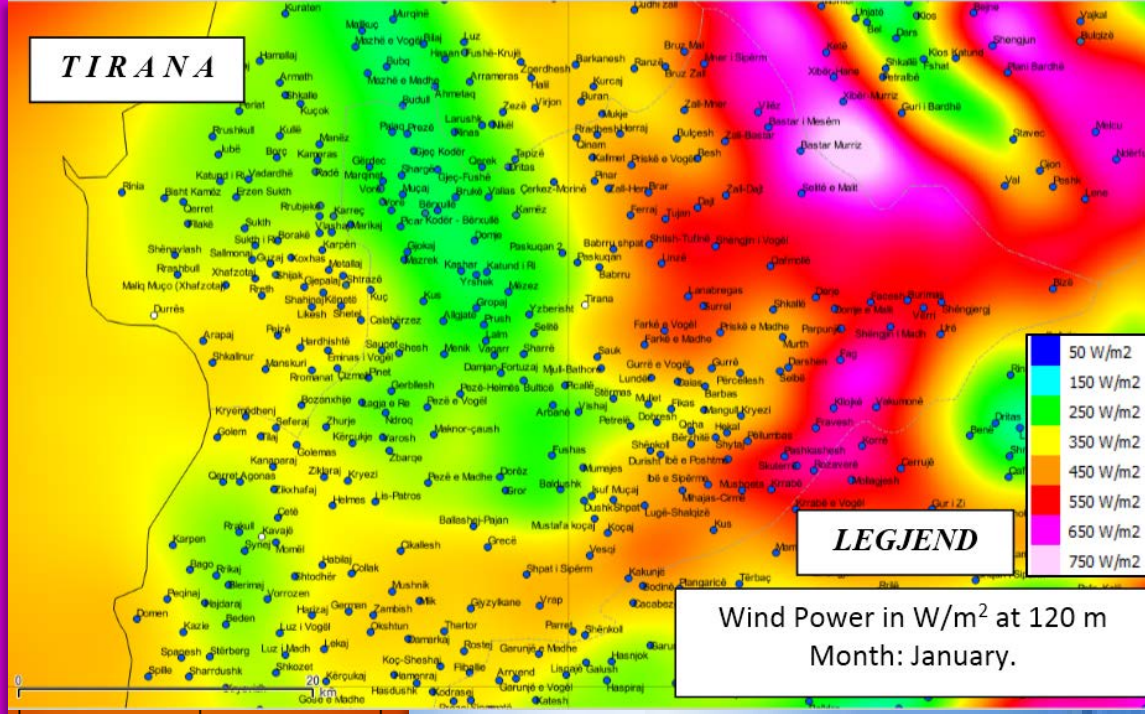
IPA projects

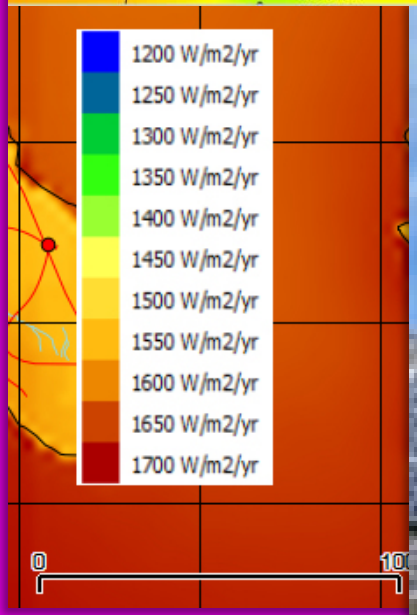
WB / CIMA / ASIS / GIZ / etc.

Bilateral projects

!

CLIMATE NATIONAL PROPERTY





Thank you !

www.geo.edu.al

Prof.Dr. Petrit ZORBA
Head of the Department of Climate & Environment
IGEWE – Tirana © 2016
E-mail: p.zorba@geo.edu.al
E-mail: petrit.zorba@gmail.com
Mob. Phone: 00355682151684

Tirana
17 October 2016