



Operational national Early Warning heat wave : example of collaboration between health and climate sectors in Senegal Africa.

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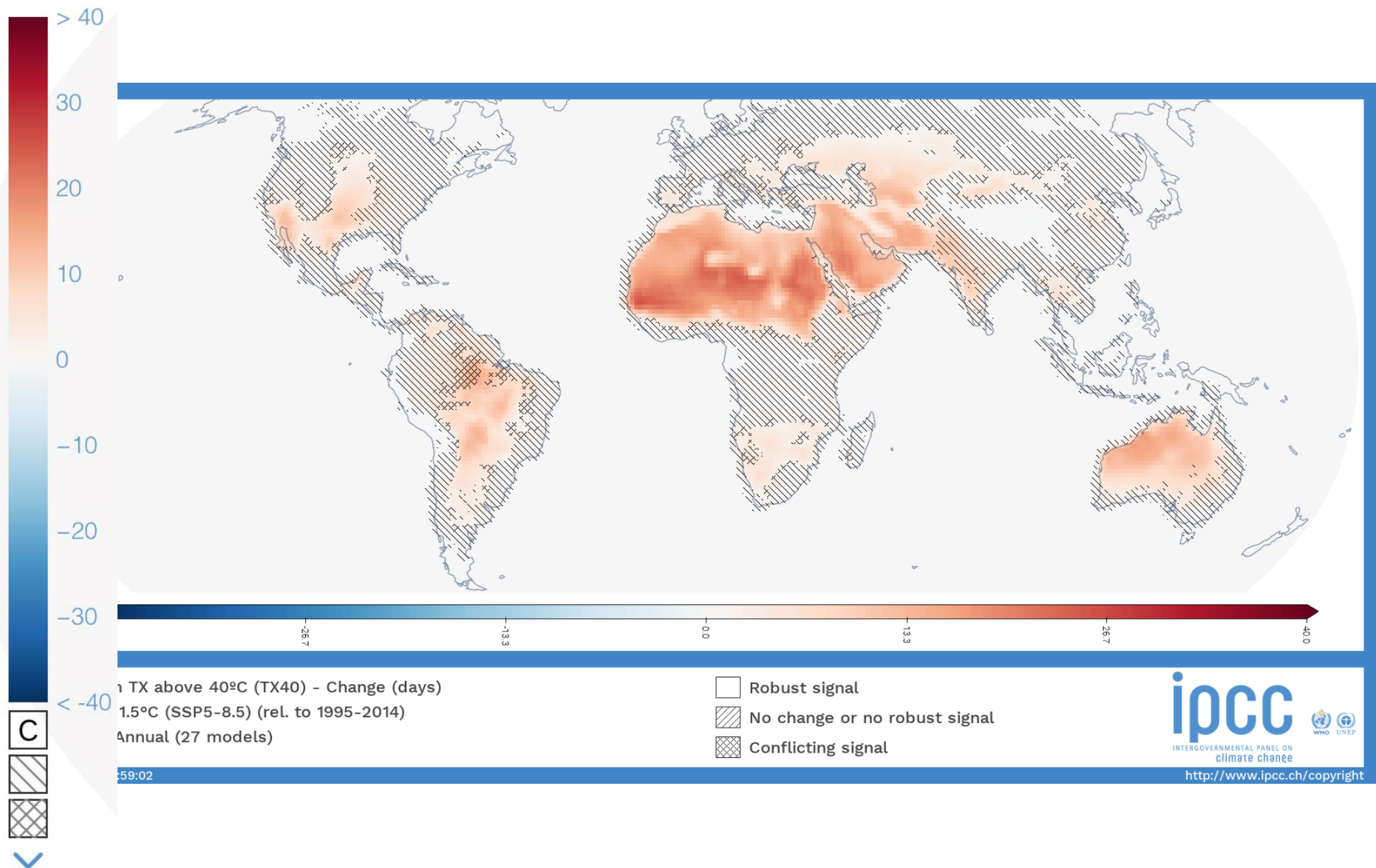
African Center of Meteorological Applications for Development (ACMAD)

Context and challenge

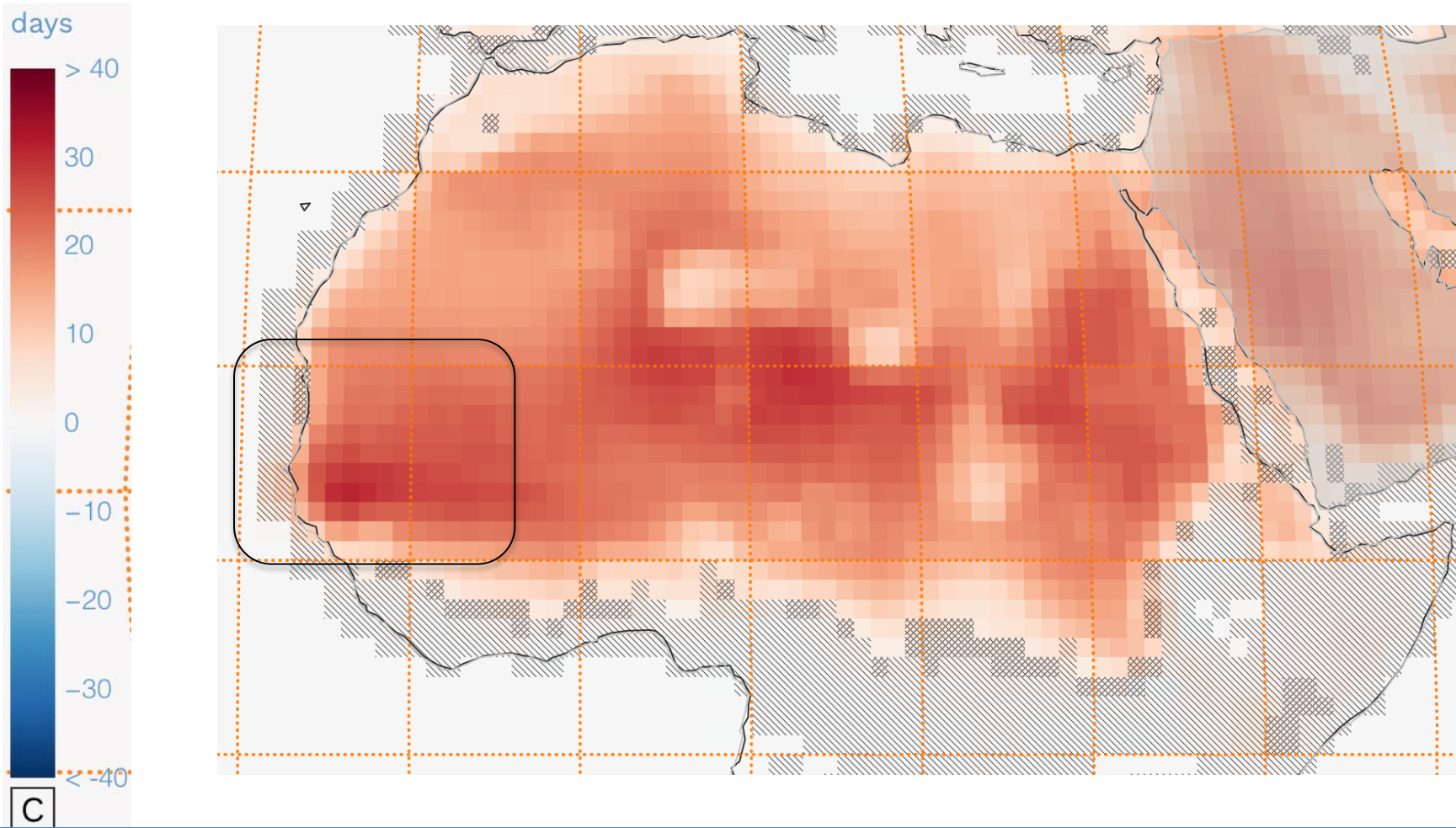


Already hot and just part of the livelihood

Number of extreme hot days (TEMP > 40°C) SCENARIO : 1.5°C (27 MODELS, 2021-2040)



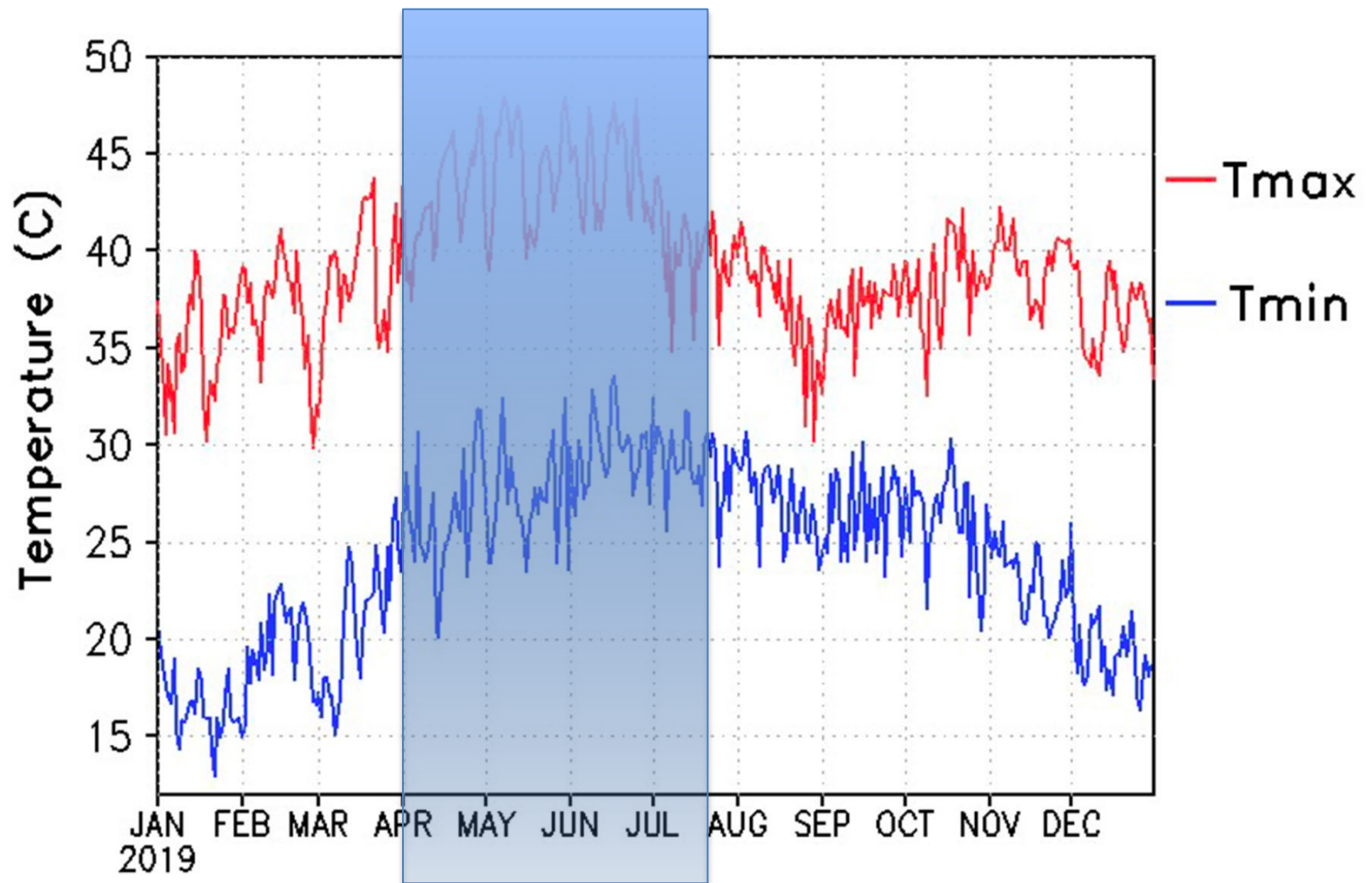
Number of hot days (Temp > 40°C) in 1.5°C world for climate scenario SSP5-8.5 (27 MODELS)



Days with TX above 40°C (TX40) - Change (days)
Near Term (2021-2040) (SSP5-8.5) (rel. to 1995-2014)
CMIP6 - Annual (27 models)

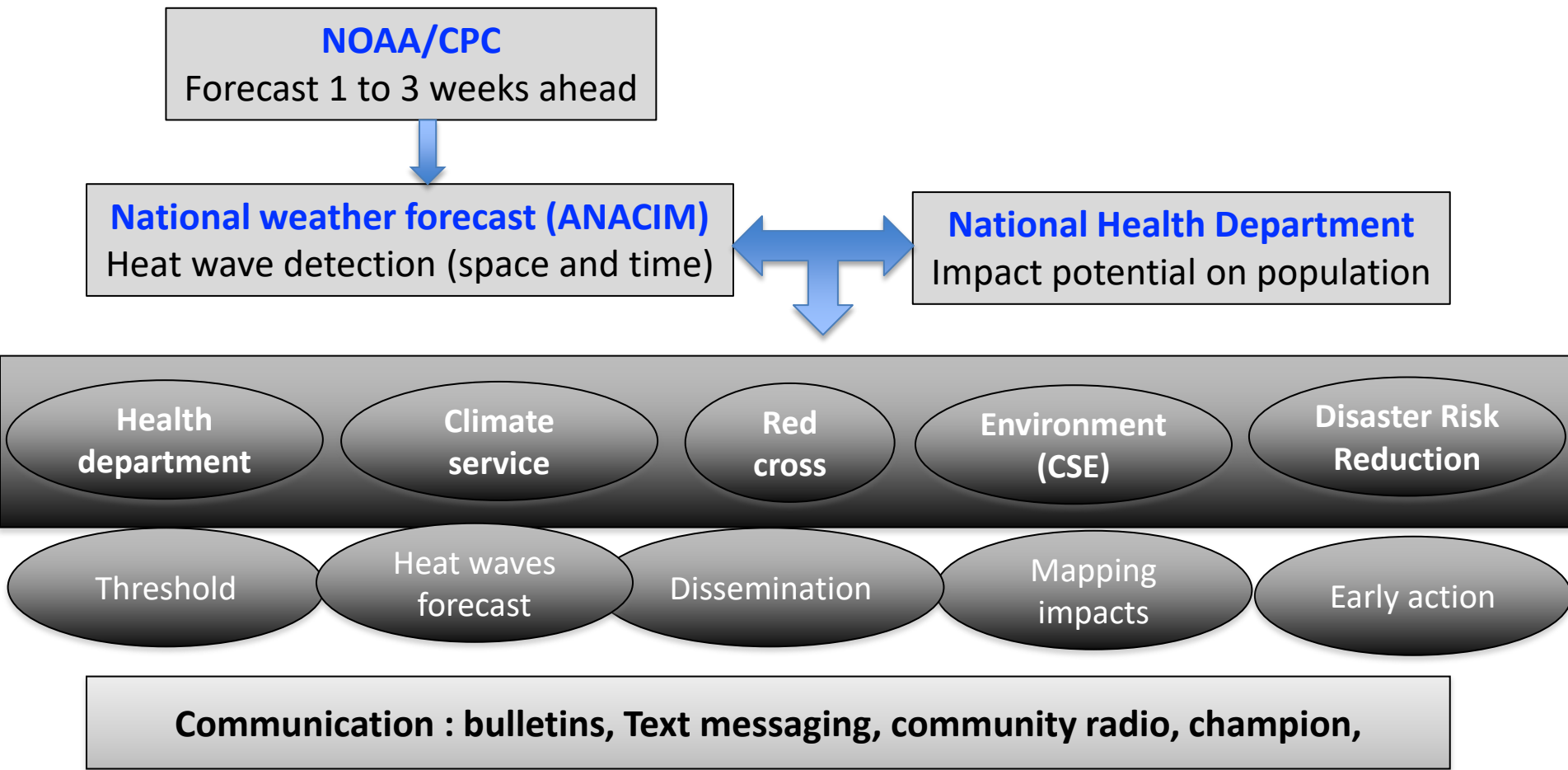
- Robust signal
- No change or no robust signal
- Conflicting signal

EXAMPLE OF TEMPERATURE ANNUAL CYCLE (Matam)



Multi-sector Engagements

- Co-learning between sectors : training on climate science and health disease
- Case study + Field study : data collection and impact studies
- Workshops : training with all stakeholders (how to build an heat waves EWS)
- Early warning System : co-designing, validation, distribution of work loads



HEAT WAVE EARLY WARNING SYSTEM

Use of climate information for an early warning early action to reduce heat waves impacts

Climate Forecast 1 to 3 weeks ahead

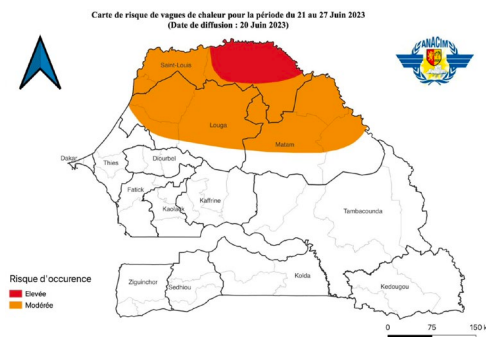
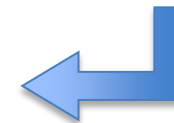


Heat wave detection (threshold)

Vulnerabilities mapping on heat waves



Health impacts and risk



Heat wave early warning bulletin

WEEK 2



Heat – Health Early Warning Bulletin



BULLETIN N°: 001

DATE OF ISSUE: 16 APRIL 2020

VALIDITY PERIOD: 24 – 30 APRIL 2020

HEALTH IMPACTS OF HEAT WAVE

Heat-health hazard outlook
for the period from 24 to 30 April 2020 (date of issue: 16 April 2020)



Legend

LEVEL OF ALERT	ALERT	HEALTH IMPACTS
Extremely dangerous	Heat strokes for the entire population	Possible aggravation of cardiovascular and pulmonary diseases
Dangerous	Heat strokes for heat sensitive population	Fainting, severe dehydration, cramps, fatigue
Very uncomfortable	Care required for heat sensitive population	Dehydration, headache, dizziness, confusion
Watch		Negligible

WEEK 2

HEALTH SITUATION FOR THE PERIOD FROM 24 TO 30 APRIL 2020

Extremely high temperatures are expected in the eastern part of Senegal during the period from 24 to 30 April 2020 (see annex).

Heat stroke and heat discomfort will probably occur in the following regions: St. Louis, Matam, Louga, Diourbel, Kaffrine, Tambacounda and Kédougou. A regular follow-up of vulnerable people is recommended, especially in the regions of Matam, the northern part of Tambacounda and Goudiry, as well as the south and eastern portions of Kanel and Linguère.

THE MOST VULNERABLE PEOPLE TO HEAT WAVES



Elderly people



Disabled and dependant people



People suffering from chronic diseases



Pregnant women



Children and infants

FIRST AID

1. Find help if you feel dizzy, weak, and anxious, feel very thirsty, and have headaches or painful muscle spasm.
2. Find a cool place as quickly as possible and take your temperature.
3. Drink water to rehydrate yourself.
4. Get medical assistance if cramps last for more than an hour. See your doctor if you experience any unusual symptoms or if symptoms persist.

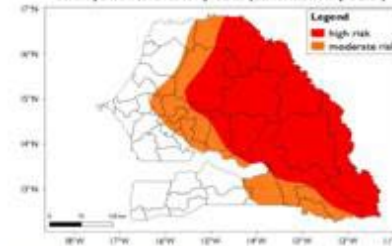
In case of MALAISE or URGENCY, call: 15 15

National Committee on Climate and Health – Heat-health early warning bulletin
Direction Générale de la Santé – Email: dgante@sns.gouv.sn / Phone: +221 33 869 42 97
ANACIM – Email: secretaire@anacim.sn / Phone: +221 33 865 60 60

WEEK 2

ANNEX – HEAT RISKS

Heat – hazard outlook
for the period from 24 to 30 April 2020 (date of issue: 16 April 2020)



METEOROLOGICAL SITUATION FOR THE PERIOD FROM 24 TO 30 APRIL 2020

The atmospheric conditions will favor hot and dry air in the eastern half of Senegal during the period from 24 to 30 April 2020. There is an increased chance for heat wave in Matam, Podor, Linguère, Bakel, Kanel, Goudiry, Saraya, and the northern and eastern portions of Tambacounda and Kédougou.

WHAT IS A HEAT WAVE?

A heat wave is defined as a period of abnormal hot and dry weather or hot and humid weather that persists during at least three consecutive days.

HOT AND DRY HEAT WAVE

The daily maximum temperature exceeds the 95th percentile during at least three consecutive days.

HOT AND HUMID HEAT WAVE

The daily heat index is greater than 40°C during at least three consecutive days.
The heat index expresses the sensation of heat felt by the human body as a function of air temperature and humidity.

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Heat waves forecast

Advices to population

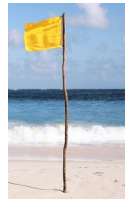
Impacts maps

Disseminating Channels Of Climate Information

END USERS ORGANISATION

- CLPA
- ORGANISATIONS PAYSANNES
- GTP
- FAO (appli mobile)
- Naatal Mbay
- DPM/DPSP – HASSMAR
- DPC
- Comités de Veille (St-Louis et Mbour)

Plateforme de relais



FLAGS :

- Beaches
- Ports

Internet



ONLINE :

- Site web ANACIM: www.anacim.sn
- Application Mobile: Rechercher [ANACIM](#) Sur [Google Play Store](#)
- Portail web du Cadre National des Services Climatiques
- Email

Radio



Community Radios

- Radios nationales
- Emissions
- URAC
- REJAQUES
- PRESSE ECRITE



Sms

TELEPHONE (text msg)

○ Alertes SMS et [VOCALES](#): pêcheurs (CLPA), organisations paysannes, CNGI, services techniques (pêche, croix rouge, Enda NRJ, FAO, Ministères...)



Phone App

- Accessing Alerts

TV



TV Bulletin

- Participation aux émissions TV
- Infos Météo dans les émissions TV Yeewoulen(TFM), Sen Show(SEN TV), Kinkeliba (RTS) et RDV



Voix

TELEPHONE (voice messaging)

Heat Wave Campaign March – June 2023



Red cross survey after Heat waves event

Region	Departement	Age du Chef de	Sexe	Canal d'interventio	Niveau de vigilanc	categorie de personnes vulneable	conseils de premiers secour	Type de conseils recu				
Region Kedougou	Salemata	30	Homme	volontaire Croix Rouge	tres inconfortable	Personnes âgées	Oui	Boire beaucoup en cette periode				
Region Kedougou	Salemata	58	Femme	watsapp	tres inconfortable	Personnes en situation de handicap_Perso	Non	aucun				
Region Kedougou	Salemata	45	Homme	watsapp	tres inconfortable	Personnes souffrant de maladies chroniqu	Non	aucun				
Region Kedougou	Salemata	38	Homme	volontaire Croix Rouge	tres inconfortable	Personnes âgées	Oui	consulter un medecin s'il ya des changements inhabituels sur notre corps				
Region Kedougou	Salemata	30	Homme	watsapp	tres inconfortable	Femmes encientes	Non	aucun				
Region Kedougou	Salemata	48	Femme	watsapp	tres inconfortable	Enfants et nourrissons	Oui	je ne sais pas				
Region Kedougou	Salemata	39	Homme	watsapp	Dangereux	personnes âgées	Non	aucun				
Region Kedougou	Salemata	34	Homme	watsapp	tres inconfortable	personnes âgées	Non	aucun				
Region Kedougou	Salemata	35	Homme	watsapp	Surveillance	personnes âgées	Non	aucun				
Region Kedougou	Salemata	45	Homme	volontaire Croix Rouge	Surveillance	personnes âgées	Oui	Limitier les déplacements des personnes âgées				
Region Kedougou	Salemata	38	Homme	watsapp	tres inconfortable	Enfants et nourrissons	Non	je ne sais pas				
Region Tambacounda	Goudiry	30	Femme	volontaire Croix Rouge	tres inconfortable	Enfants et nourrissons	Oui	consulter un medecin s'il ya des changements inhabituels sur notre corps				
Region Tambacounda	Goudiry	56	Homme	watsapp	Surveillance	personnes âgées	Non	aucun				
Region Tambacounda	Goudiry	34	Homme	volontaire Croix Rouge	tres inconfortable	personnes âgées	Oui	consulter un medecin s'il ya des changements inhabituels sur notre corps				
Region Tambacounda	Goudiry	34	Homme	watsapp	Dangereux	personnes âgées	Non	aucun				
Region Tambacounda	Goudiry	34	Homme	watsapp	tres inconfortable	personnes âgées	Non	aucun				
Region Tambacounda	Goudiry	39	Femme	watsapp	Surveillance	personnes âgées	Non	aucun				
Region Tambacounda	Goudiry	45	Homme	volontaire Croix Rouge	tres inconfortable	enfants et nourrissons_femmes enceintes	Oui	Aller souvent à l'hopital pour un contrôle de santé				
Region Tambacounda	Goudiry	40	Homme	volontaire Croix Rouge	tres inconfortable	personnes âgées	Oui	consulter un medecin s'il ya des changements inhabituels sur notre corps				
Region Tambacounda	Goudiry	40	Homme	volontaire Croix Rouge	tres inconfortable	personnes âgées	Oui	pas de conseils				
Region Tambacounda	Goudiry	34	Homme	watsapp	tres inconfortable	personnes âgées	Non	aucun				
Region Tambacounda	Goudiry	66	Femme	watsapp	Dangereux	personnes âgées	Non	aucun				
Region Matam	Kanel	74	Homme	watsapp	tres inconfortable	personnes âgées_Enfants et nourrissons	Non	pas de conseils				
Region Matam	Kanel	30	Homme	watsapp	tres inconfortable	personnes âgées	Non	aucun				
Region Matam	Kanel	34	Femme	volontaire Croix Rouge	Surveillance	personnes âgées	Oui	consulter un medecin s'il ya des changements inhabituels sur notre corps				
Region Matam	Kanel	39	Homme	volontaire Croix Rouge	tres inconfortable	personnes âgées	Oui	consulter un spécialiste en cas de soucis				
Region Matam	Kanel	40	Homme	watsapp	Dangereux	personnes âgées	Non	aucun				
Region Matam	Kanel	39	Homme	watsapp	tres inconfortable	personnes âgées	Non	aucun				

- Preferred channel
- Suitable lead time
- Actions taken
- Losses (affected)

Survey after heatwave warnings



Typical heat wave day (mid-day)



WHERE ARE WE

- ✓ EWHW :
 - ✓ Seasonal : preparedness (storage, business, ...), elder moving to other place, etc
 - ✓ Weather (1 to 2 weeks ahead of time) : hospital admission, nomadic shepherd, school, sport (jogging, soccer), etc
- ✓ Pilot in Fatick : pluri-disciplinary local group lead by the governor
 - ✓ Many lessons learned + effectiveness (school etc)
- ✓ Campaign of heat wave each year with health, disaster risk reduction, red cross, environment, etc
- ✓ What about : animals and plants