



Servicio
Meteorológico
Nacional
Argentina

Week-2 Outlook products

In evaluation for the risk management
sector

Lucía Castro y Alejandro Godoy

DSS: Direction of Sectoral Services

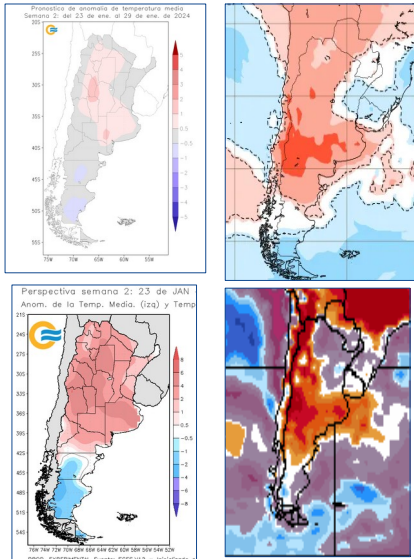
Week-2 Outlook products

In evaluation for the risk management sector

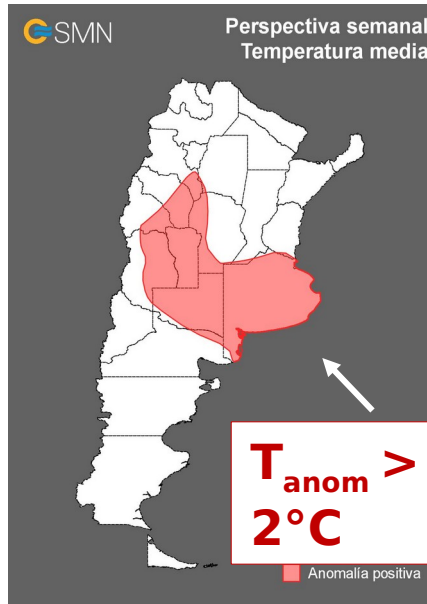
- *Forecast methodology and case study*
- *What products are used*
- *How we implement ECMWF in our workflow*

Workflow - 2 Weeks forecasts

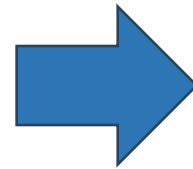
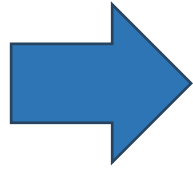
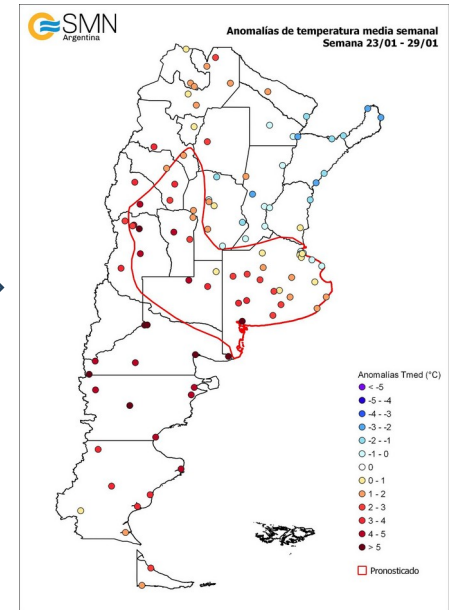
1° Analyse all graph products



2° Select a forecast area



3° Dichotomous verification

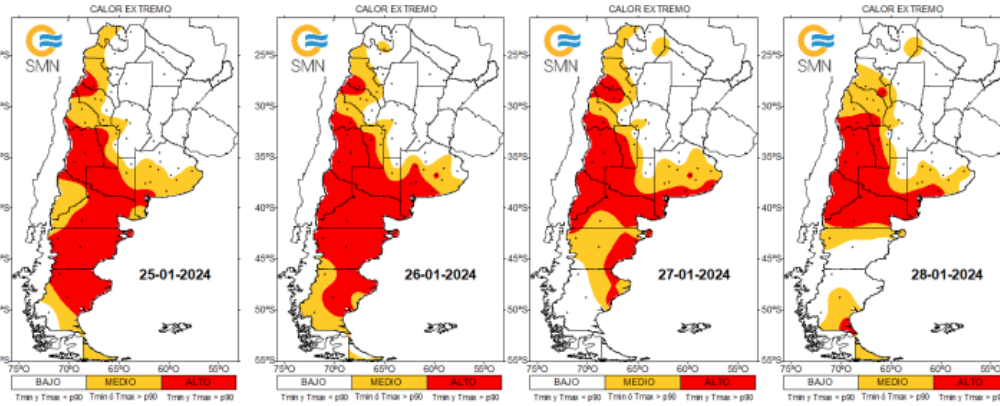
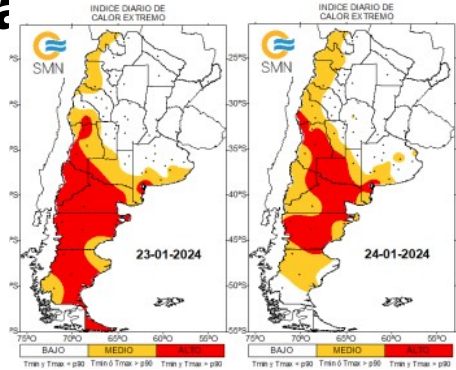


Only
Week 2!

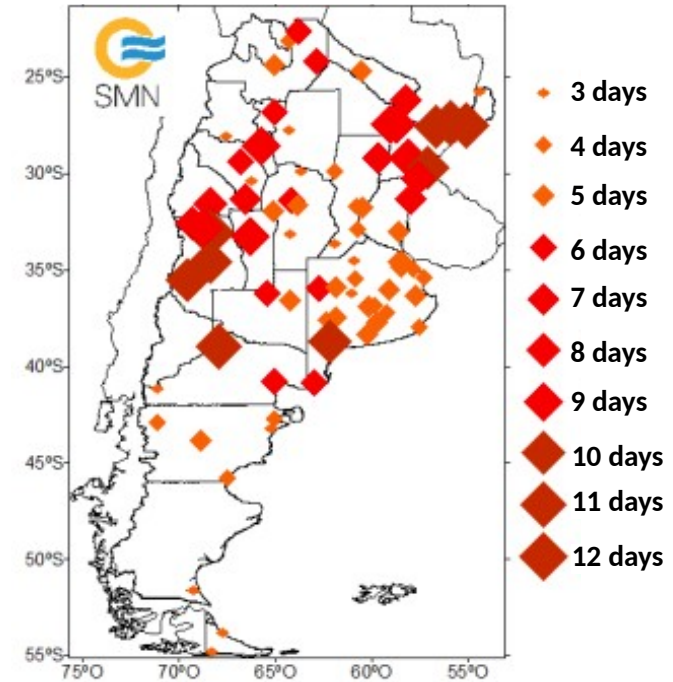
Case study - Heat Wave

Period:

21 January to 12 February of 2024 (**23 da**



Stations with heatwaves



This event affected **80** boroughs

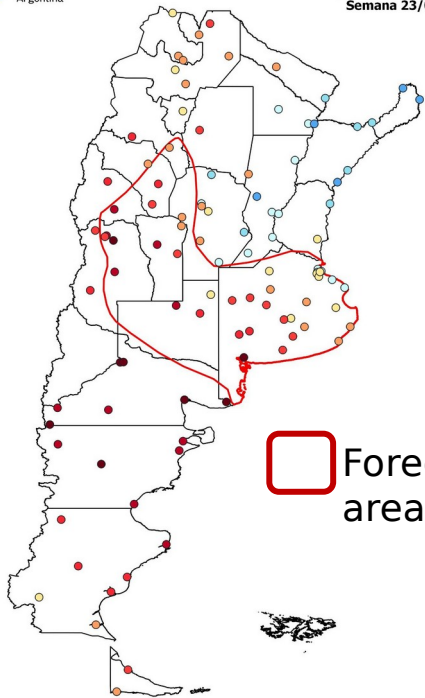
Fcst week: 23/01 al 29/01

Lead = 2 weeks

Forecast area and observations



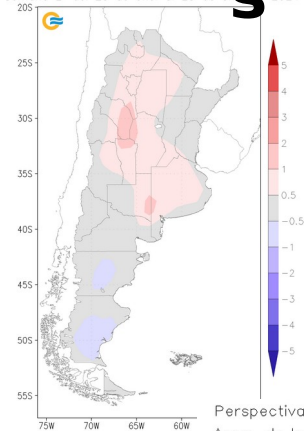
Anomalías de temperatura media semanal
Semana 23/01 - 29/01



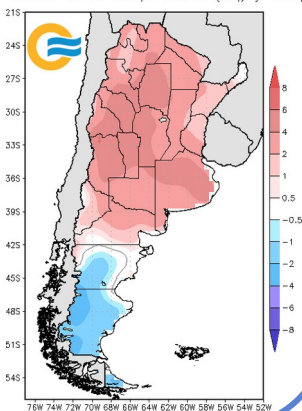
 Forecasted area

Internal product

Pronóstico de anomalía de temperatura media
Semana 2: del 23 de ene. al 29 de ene. 2024

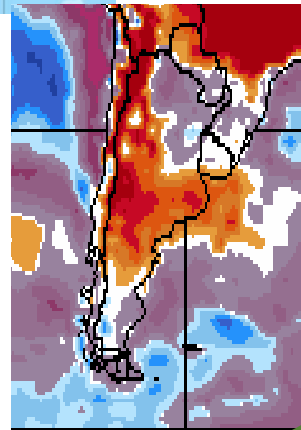
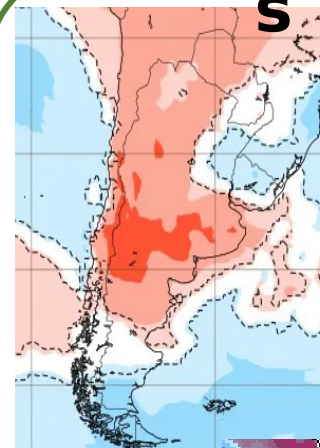


Perspectiva semana 2: 23 de JAN
Anom. de la Temp. Media. (izq) y Temp.



↑
↘
mad
efro
m
GFS!

External product



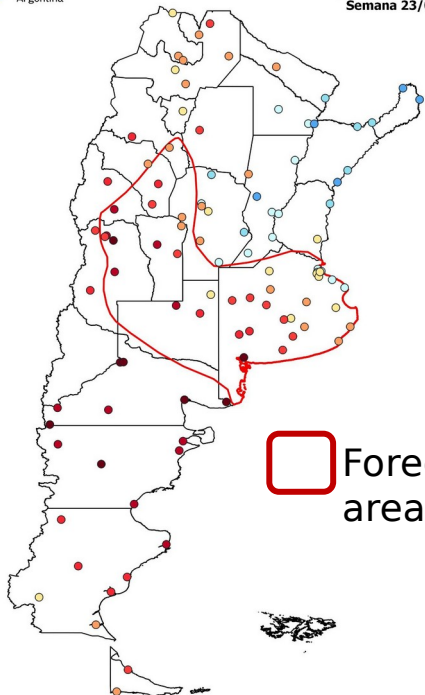
Fcst week: 23/01 al 29/01

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Forecast area and observations



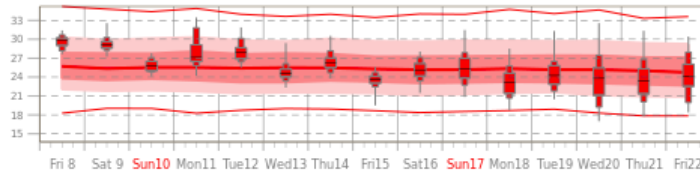
Anomalías de temperatura media semanal
Semana 23/01 - 29/01



 Forecasted area

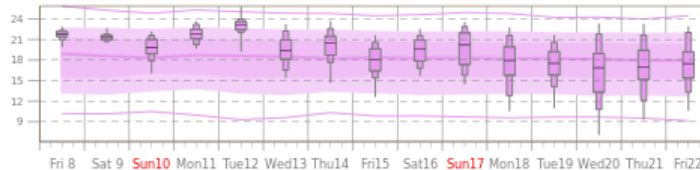
External

15-day epsgram 2m maximum temperature (C) with model climate
Base date: Friday 8 Mar, 00 UTC, adjusted to 0m height



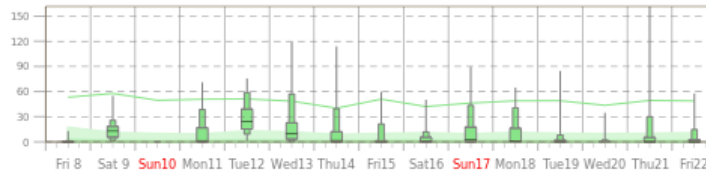
Tmax
x

15-day epsgram 2m minimum temperature (C) with model climate
Base date: Friday 8 Mar, 00 UTC, adjusted to 0m height



Tmin

15-day epsgram total precipitation (mm/24hr) with model climate
Base date: Friday 8 Mar, 00 UTC



Total
PP

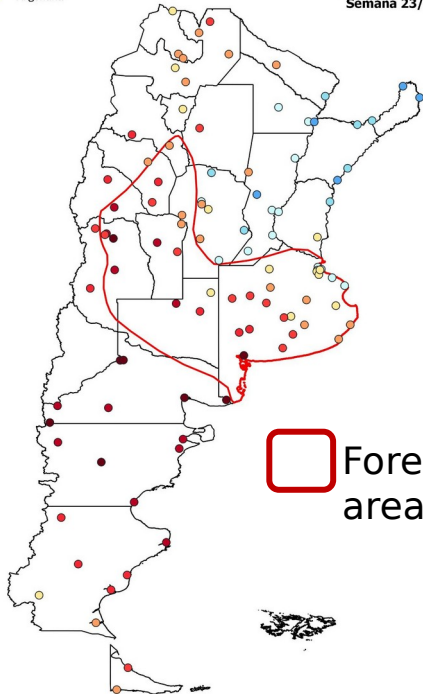
Fcst week: 23/01 al 29/01

Lead = 2 weeks

Forecast area and observations

SMN
Argentina

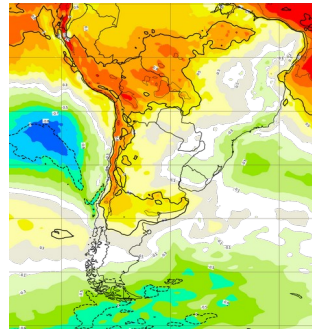
Anomalías de temperatura media semanal
Semana 23/01 - 29/01



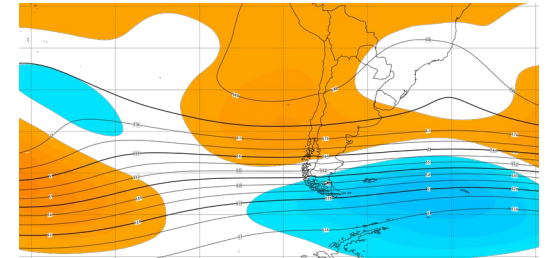
EFI and geopotential anomalies

Extended range forecast

Week 2

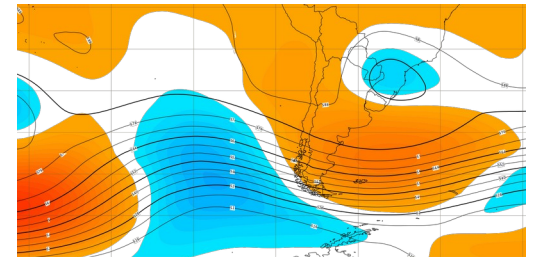
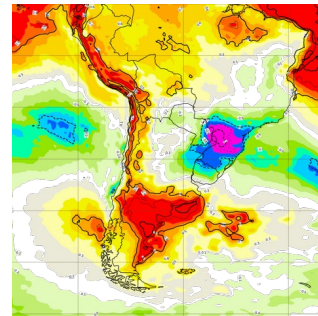


2 m temperature

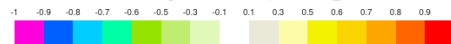


500 hPa height

Week 1



Extended range: EFI for 2m temperature (efi_index)



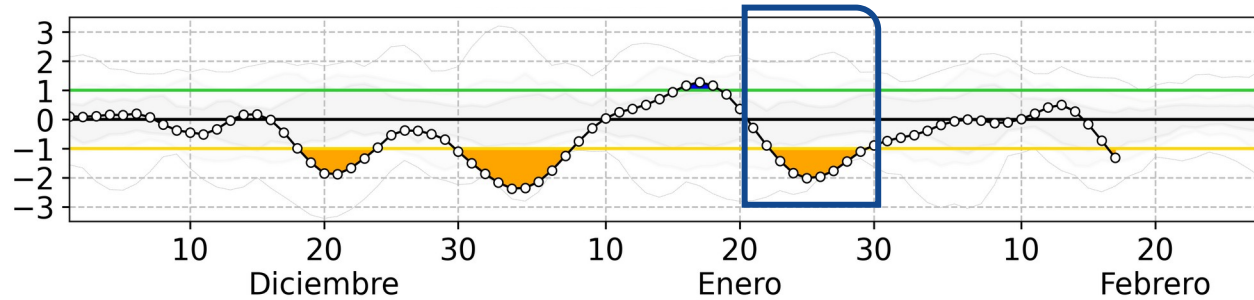
Extended range: 500 hPa geopotential anomaly (dam)



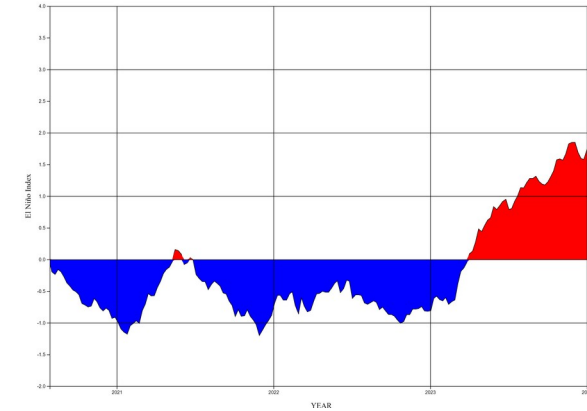
Extended range: 500 hPa geopotential (dm)

S2S forcing's analysis during the heat wave

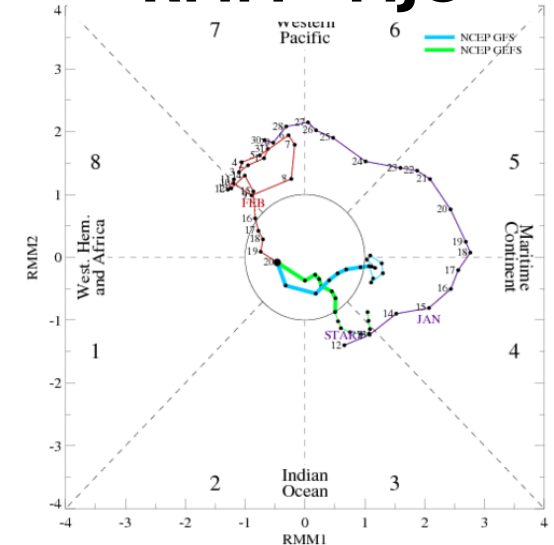
SIS (intraseasonal)



ONI - ENSO



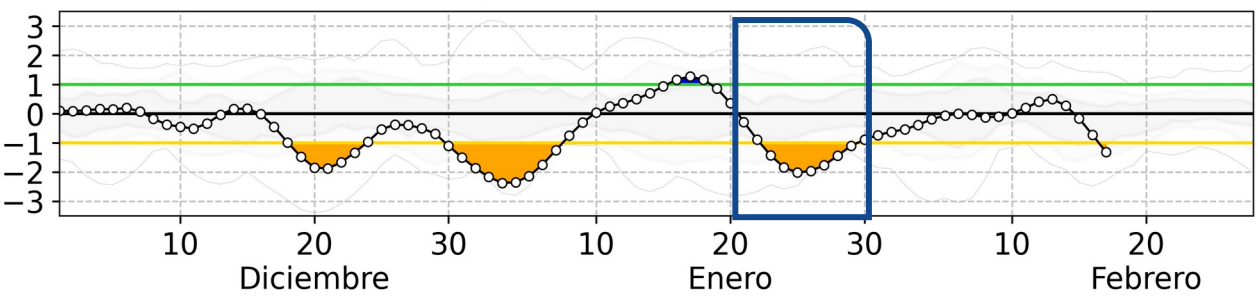
RMM - MJO



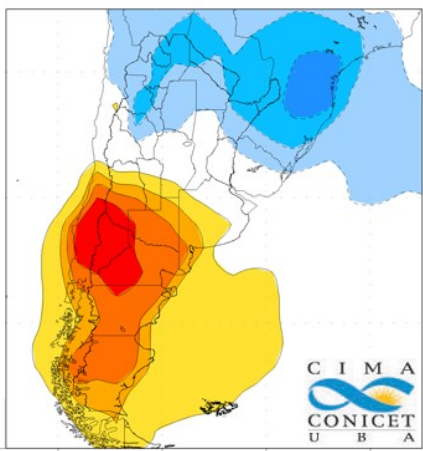
Source: Alvarez, M., C. Vera, G. Kiladis, and B. Liebmann, 2014: Intraseasonal Variability in South America during the Cold Season. *Climate Dynamics*, 42, 3253-3269.

<https://link.springer.com/article/10.1007/s00382-013-1872-z>

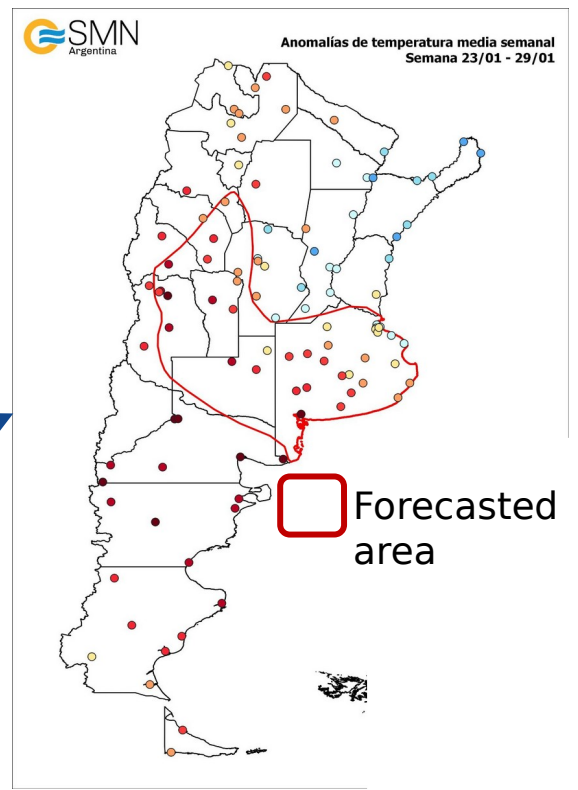
SIS (intraseasonal)



**Negative SIS
T2M
Response
(DJF)**

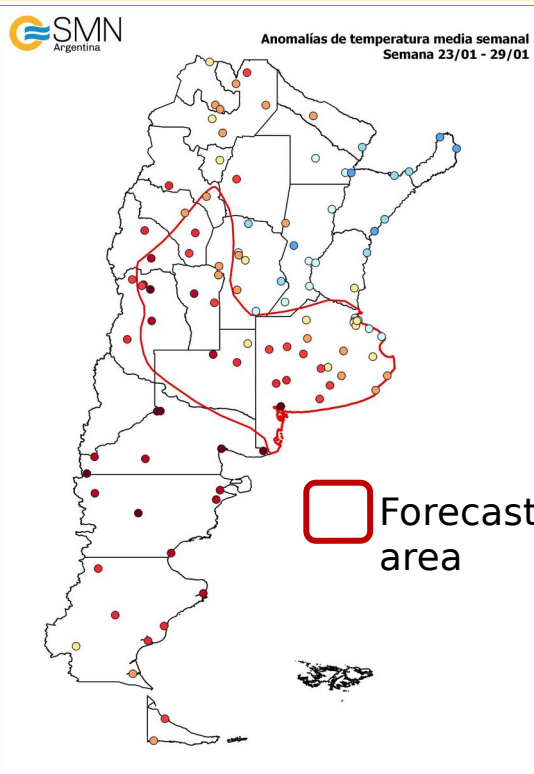


Observed
T2M
similar
to
expected



VERIFICATION - 23/01 to 29/01

Forecast area and observations



T2M forecasted - 2 Weeks *average in forecasted area*





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Año de la Defensa de la Vida, la Libertad y la Propiedad