Placing the user at the heart of innovative early warning services

SMN- ARGENTINA

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why “innovative”?

Incorporating the perspective of user evaluation into the creation of a new early warning system.

➔ BEFORE

1) Identification of vulnerabilities of an EWS from a user's perspective

➔ DURING

1) work with users in conceptualizing warning levels.
2) work with users in consultation of warning thresholds
3) work with users on the appropriation and understanding of warning icons from inclusive perspective

➔ BEFORE IMPLEMENTATION

1) decision makers and their knowledge before the EWS implementation

➔ AFTER THE IMPLEMENTATION: what now?

BEFORE | Identification of vulnerabilities of an EWS from a user's perspective

Methodology: give the same regional warning in flat text to each participant and ask them to draw the warning according to their interpretation on a map of the country.

AI_2015-11-09 22-00-00.txt

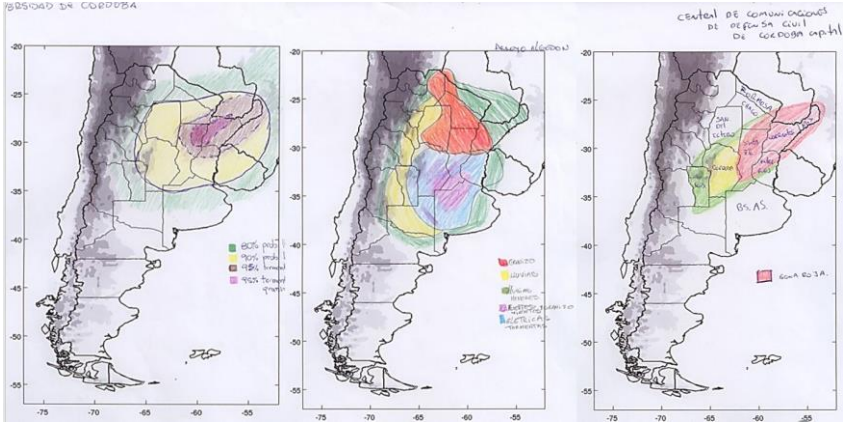
AVISO de alerta Nº: 5
09/11/2015 22:00 HS — Issue Time

ZONA DE COBERTURA:
EXTREMO NORTE DE LA PROVINCIA DE BUENOS AIRES. CORDOBA. CORRIENTES. ENTRE RIOS. NORTE DE SAN LUIS. SANTA FE. SANTIAGO DEL ESTERO. ESTE DE CHACO. ESTE DE FORMOSA. ESTE DE LA RIOJA. MISIONES. — Area involved

FENOMENO:
PROBABLES TORMENTAS FUERTES — Phenomenon

SITUACION:
SOBRE EL AREA DE COBERTURA SE DESARROLLAN AREAS DE LLUVIAS Y TORMENTAS AISLADAS DE VARIADA INTENSIDAD QUE SE ESTAN INTENSIFICANDO. SE PREVE QUE ALGUNAS DE ESTAS TORMENTAS PUEDEN SER LOCALMENTE FUERTES O SEVERAS, SIENDO LAS DE MAYOR INTENSIDAD LAS PREVISTAS SOBRE EL CENTRO Y NORTE DE SANTA FE, NORTE DE ENTRE RIOS, CORRIENTES, ESTE DE CHACO, ESTE DE FORMOSA Y MISIONES. SE PREVE QUE ESTAS TORMENTAS PUEDAN ESTAR ACOMPANADAS DE FUERTE ACTIVIDAD ELECTRICA, ABUNDANTE CAIDA DE AGUA EN CORTOS PERIODOS, RAFAGAS INTENSAS Y CAIDA DE GRANIZO. SE DETERMINA EL CESE DE ALERTA PARA EL SUR DE SAN LUIS — Situation details

ESTE INFORME SE ACTUALIZARA A LAS: 04:00 HORAS — Validity Period



BEFORE | Identification of vulnerabilities of an EWS from a user's perspective

INTERVIEWS | **SURVEYs** | **DECISION MAKING EXCERCISE**

- CONFUSING COVERAGE AREA
- NON-UNIFIED DENOMINA-TION OF PHENOMENA
- FLAT TEXT FORMAT
- TECHNICAL LANGUAGE.
- LOW RISK PERCEPTION.
- NO RECOMMEN-DATIONS

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2015 - 2016

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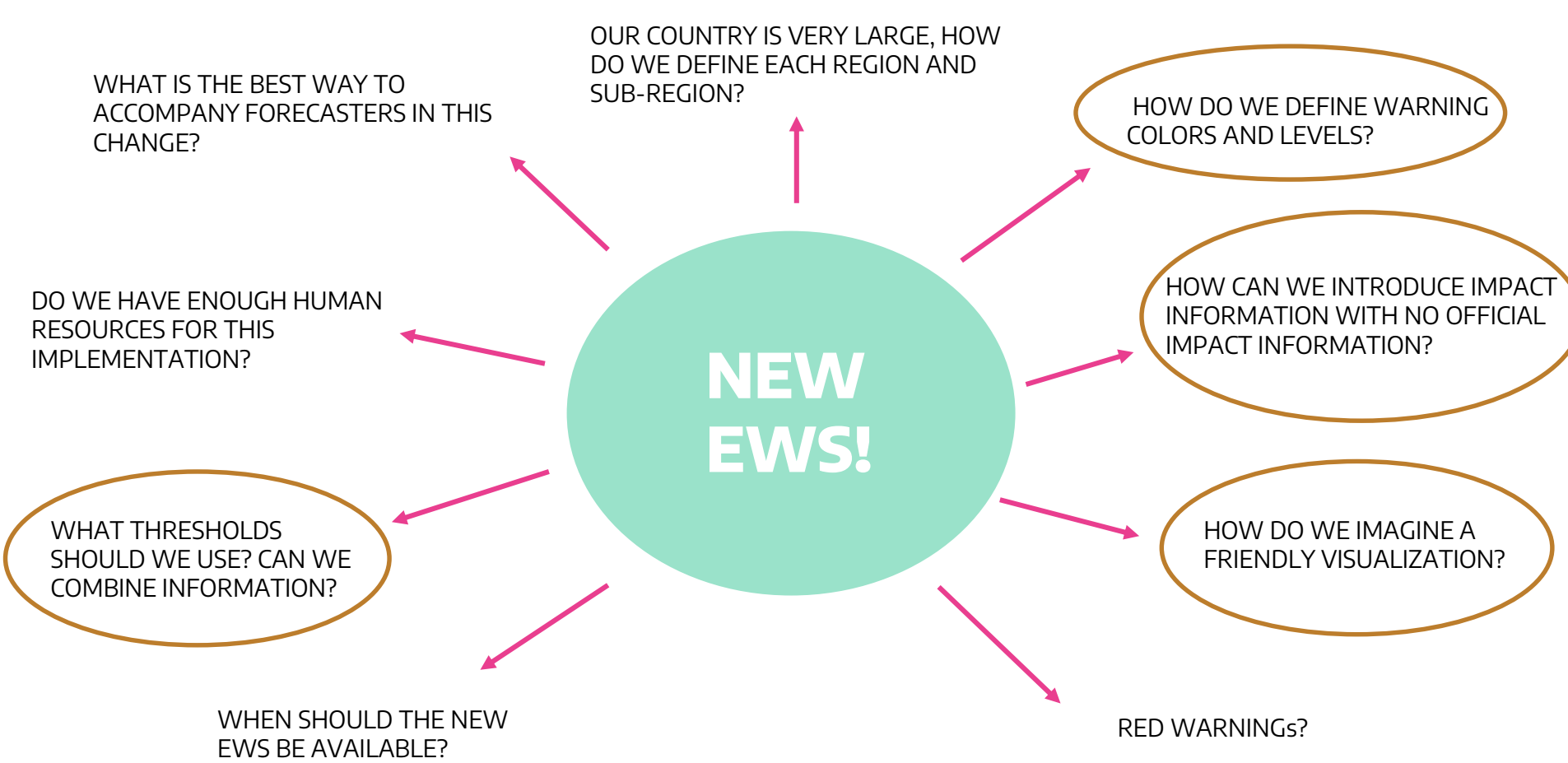
NEW EWS!
OUR COUNTRY IS VERY LARGE, HOW DO WE DEFINE EACH REGION AND SUB-REGION?
HOW DO WE DEFINE WARNING COLORS AND LEVELS?
HOW CAN WE INTRODUCE IMPACT INFORMATION WITH NO OFFICIAL IMPACT INFORMATION?
HOW DO WE IMAGINE A FRIENDLY VISUALIZATION?
RED WARNINGs?
WHEN SHOULD THE NEW EWS BE AVAILABLE?
WHAT THRESHOLDS SHOULD WE USE? CAN WE COMBINE INFORMATION?
DO WE HAVE ENOUGH HUMAN RESOURCES FOR THIS IMPLEMENTATION?
WHAT IS THE BEST WAY TO ACCOMPANY FORECASTERS IN THIS CHANGE?

2016- 2017

how do you orient the thresholds of an EWS to what users need if you cannot yet make impact based warnings?

The conventional meteorological observer and the decision-maker had to answer this question together and by consensus about all kinds of phenomena.

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"From how many kilometers per hour the wind begins to be a problem for the usual development of your city?"

DURING| work with users in consultation of warning thresholds

2016- 2017

Climate threshold

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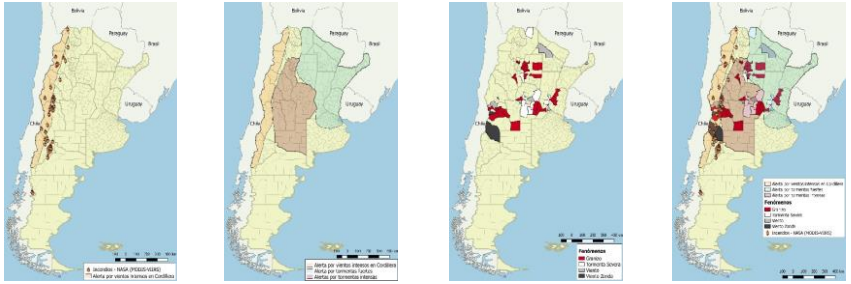

Impact data collected from various unofficial sources for contrasting

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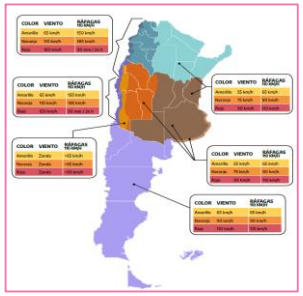
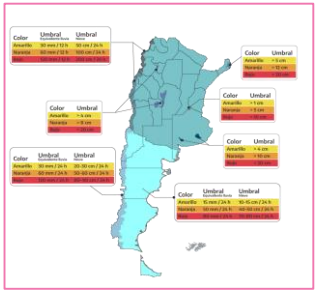
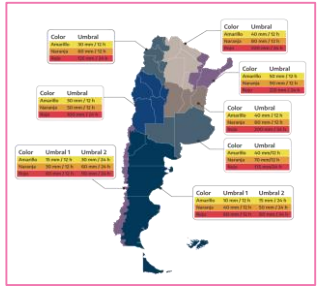
Collection, registry and systematization of the experience of operational forecasters for contrasting climate thresholds.







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➔DURING | work with users in conceptualizing warning levels.

"CHOOSE THE WARNING LEVEL DEFINITION THAT YOU UNDERSTAND THE MOST AND THAT WOULD MOTIVATE YOU TO MAKE A DECISION."

GREEN	YELLOW	ORANGE	RED
ALL IS CALM - Phenomena involving risks are not expected	**BE INFORMED** - Possible phenomena with the capacity to damage and risk of momentary interruption of daily activities	**GET READY** - Weather phenomena are expected to be dangerous to society, life, property and the environment	**FOLLOW OFFICIAL INSTRUCTIONS** - Exceptional weather events with the potential to cause emergencies or disasters are expected

SURVEY!

18 QUESTIONS RELATED TO WHAT PEOPLE EXPECT FROM AN EWS

Discretionary sampling

➔Citizens

➔DRR users

➔MetService personnel (with met background and no met background)

We have also asked other relevant questions that allow us to understand the expectations about the information and the access to it.

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2018

➔DURING | work with users in conceptualizing warning levels.

2018

do you consider that you have enough information about what to do in case of a severe weather event?

What do you interpret about the following sentence: "There is an 80% chance of rain"?

What do you understand by the following sentence: "There is a low probability of strong winds"?

Through which means you get informed about the weather?

In case of a weather warning, what is your priority?

Through which means do you access the information of the National Meteorological Service?

Do you think it is important that the warnings are accompanied by information on what to do in case of severe events??

98.6% YES!

➔ ***RECOMMENDATIONS***

Indicate how you feel about the word "red warning" when it is associated with a weather phenomenon, for example: "There is a red warning for severe storms".

- 47% felt confident if information is available.
- 34% felt fear and insecurity
- Having authority telephones also brings confidence.

SURVEY!

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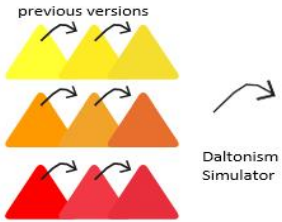
DURING| work with users on the appropriation and understanding of warning icons from inclusive perspective

TESTING ICONS SYSTEMS

The collection and testing of information shows that it is beneficial to use familiar symbols and languages, such as road signs, to distinguish warnings with a triangle shape and advisory system with a rhombus shape



Working with the National Disability Agency on the accessibility of the system in its web version was a great learning experience on Early Warning Systems and disabilities. In the future it is necessary to continue learning about inclusive developments so that weather warnings are more effective across the population.

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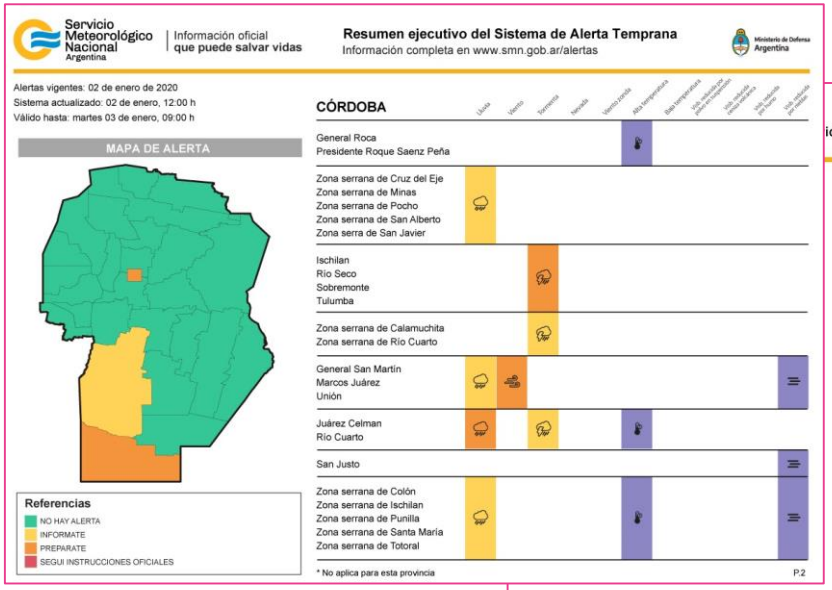
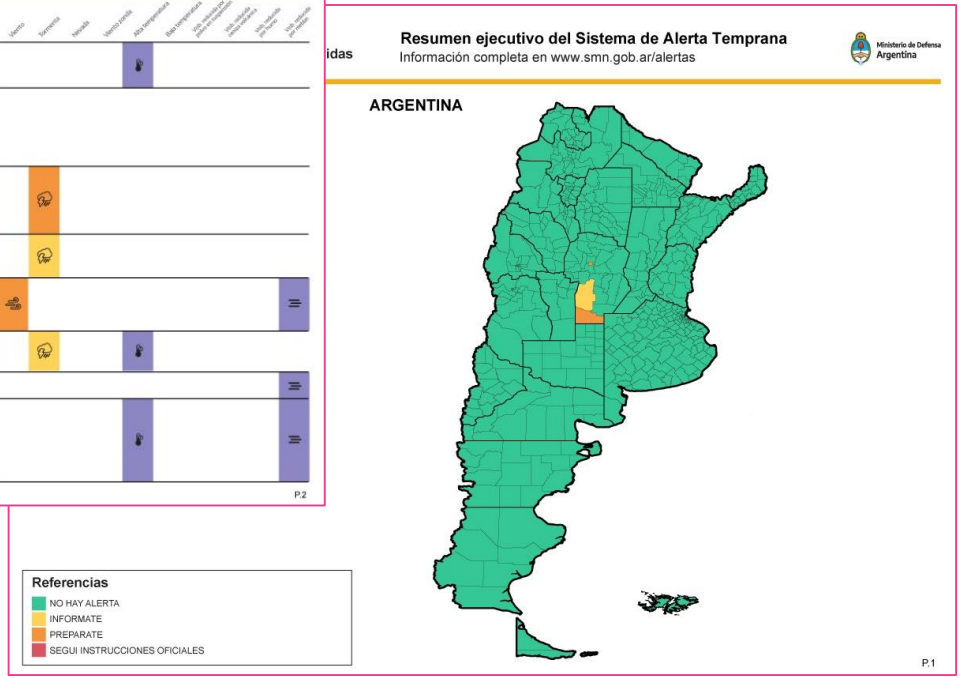
SPECIAL PRODUCT FOR EMERGENCY AGENCIES





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BEFORE IMPLEMENTATION| decision makers and their knowledge before the EWS implementation

IMPLEMENTATION OF TRAININGS FOR DECISION MAKERS PRIOR TO THE OFFICIAL LAUNCH

EWS Handbook for Decision Makers

+ 13 workshops
+ 1000 people
2 month

- National Disaster Management System
- 21 provincial emergency agencies
- National Parks Officers
- Scientific organizations that monitor other types of hazards influenced by meteorological events
- Local governments with expressed interests in climate change adaptation through national networks
- Defense personnel involved in the coordination of emergency response
- Argentine Red Cross and its volunteers
- others
- Government water management authorities

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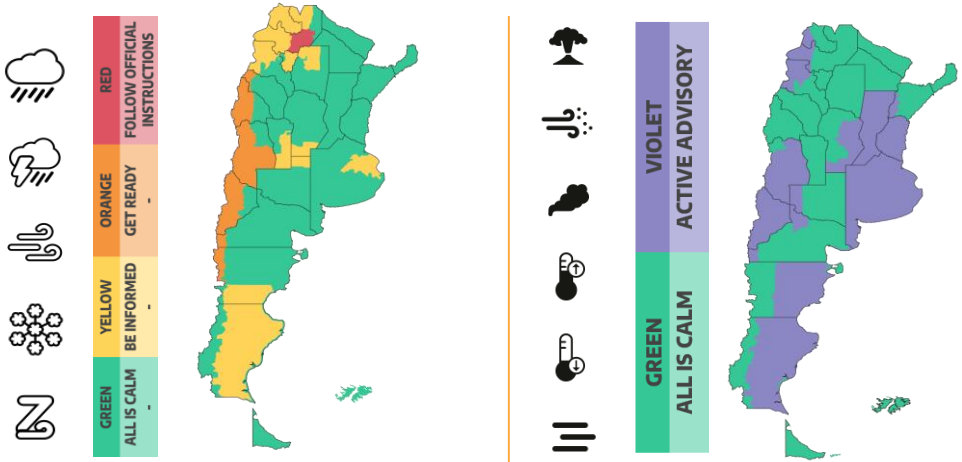
2020

how does the EWS look like?



WARNING | **ADVISORY**

24 h | **48 h** | **72 h**

Common Alerting Protocol (CAP)

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short term storm forecast / nowcasting (radar based information)

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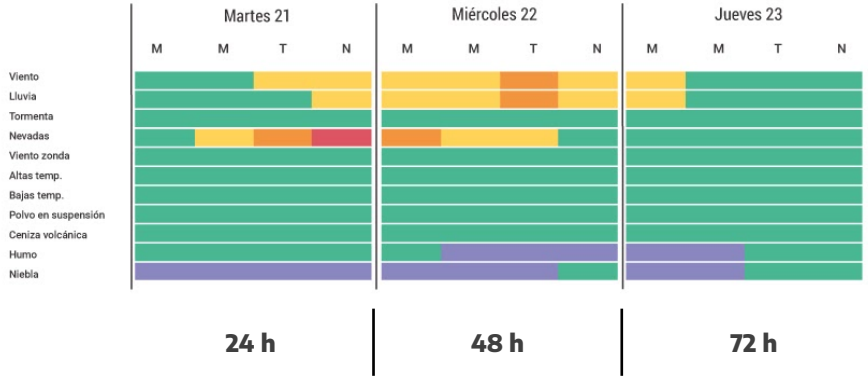
Cold-Heat wave & Health warning system



- **REACH:** 44 million inhabitants
- **AREA:** 2.78 million KM2 (100% of continental Argentina)
- **IMPLEMENTATION WORK TEAM:** 100 people
- **ESTIMATED TIME OF WORK:** 4 years
- About 1000 trained decision makers from all over the country.

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AFTER THE IMPLEMENTATION| what now?

- → Understand how users use the new EWS
- → Accompany the appropriation of the EWS.
- → Exploitation of non-operational communication channels.
- → Work on event reports according to warning levels for annual threshold adjustments.

- Once you start working with users to update a service, it is not and “end user” anymore. The user is everywhere in your creative process.

- Build longlasting relations. Generate the engagement by being there. Sustaining links over a long period of time increases confidence in the participation of co-creation processes.

- Work with social scientists.

- Share your questions with other DRR agencys, they might have the same questions that you have. Work together.

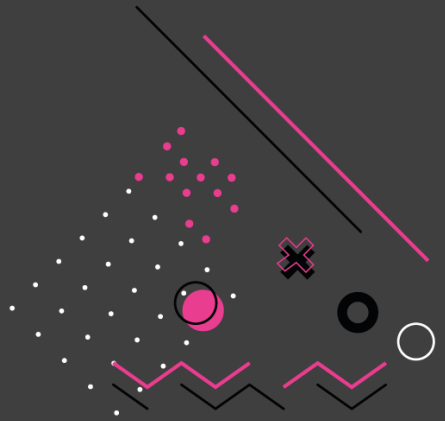
- Don’t go back. Once you start working with users, you may want to apply theses techniques in every weather or climate service improvement. And they will be better services.

- Be patient and constant. Progress take years.

HIGHLIGHTS & RECOMMENDATIONS

¡GRACIAS!

THANKS!



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