

TOWARDS MORE WATER-EFFICIENT AGRICULTURE AT THE SEGURA RIVER BASIN

Session 1, 21st May: "Towards more water-efficient agriculture from more resilient food security: WEFE nexus approach"



GOBIERNO
DE ESPAÑA

MINISTERIO
PARA LA TRANSICIÓN ECOLÓGICA
Y EL RETO DEMOGRÁFICO

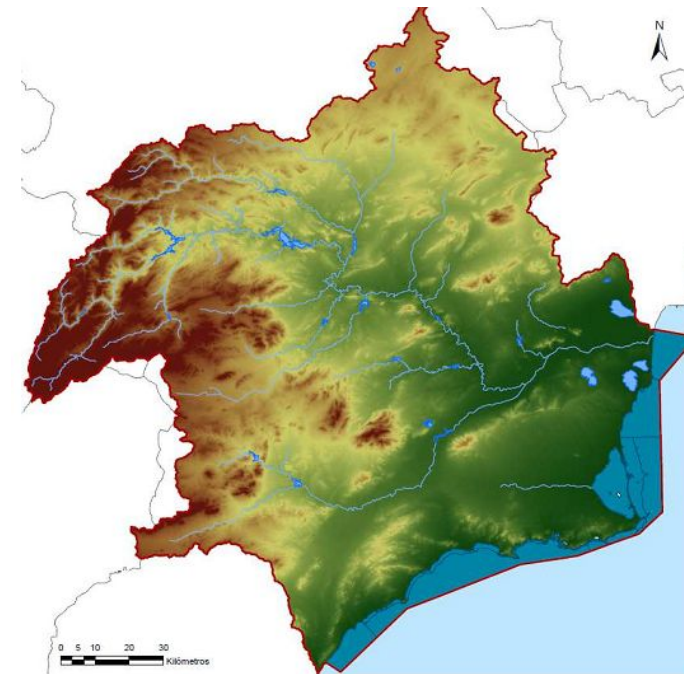
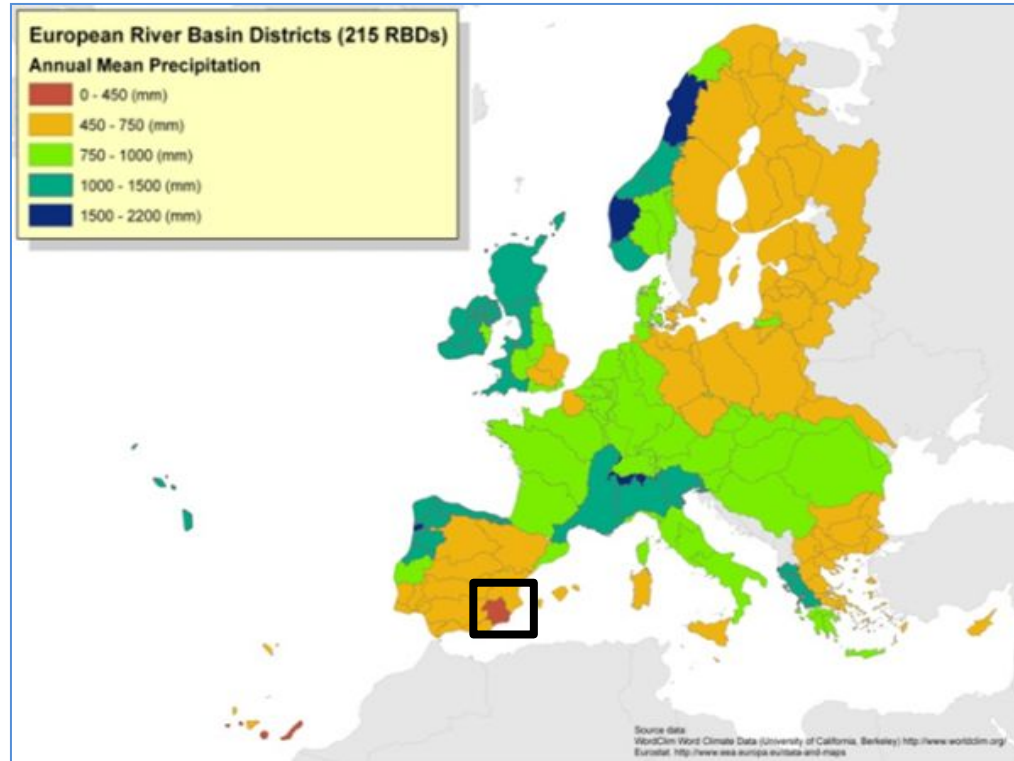
CONFEDERACIÓN
HIDROGRÁFICA
DEL SEGURA, O. A.



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International Network
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CURRENT SCENARIO AT THE SEGURA RIVER BASIN



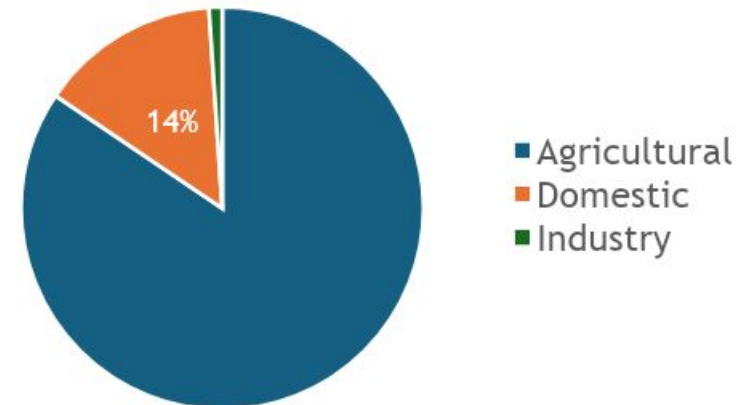
Water demand at Segura River Basin

Segura River Basin

Annual mean precipitación: 365 mm/year

Natural water resources: 785 hm³ /year

Agricultural water demand: 1526 hm³



UNDERSTANDING THE CHALLENGES

Natural
limitations

(Low rainfall and
high evaporation
rates)

Scarce
natural
resources
(Surface and
groundwater)

Water-inten
sive crops

Climate
change and
droughts



DANA 2019, Los Alcazares (Murcia, Spain)



Tail of the Fuensanta reservoir (Yeste, Spain)

SOLUTIONS FOR WATER-EFFICIENT AGRICULTURE



Integrated water resources management

Renewable groundwater
External transfers
Reclaimed water
Desalination



Advance irrigation technologies & digital monitoring

Drip irrigation
Sensors tracking soil moisture
Floating solar
Photovoltaic systems
Integrated exploitation control system



Crop diversification and soil management

Crop rotation
Cover cropping
Organic matter addition
Balanced fertilization

INTEGRATED WATER RESOURCES MANAGEMENT

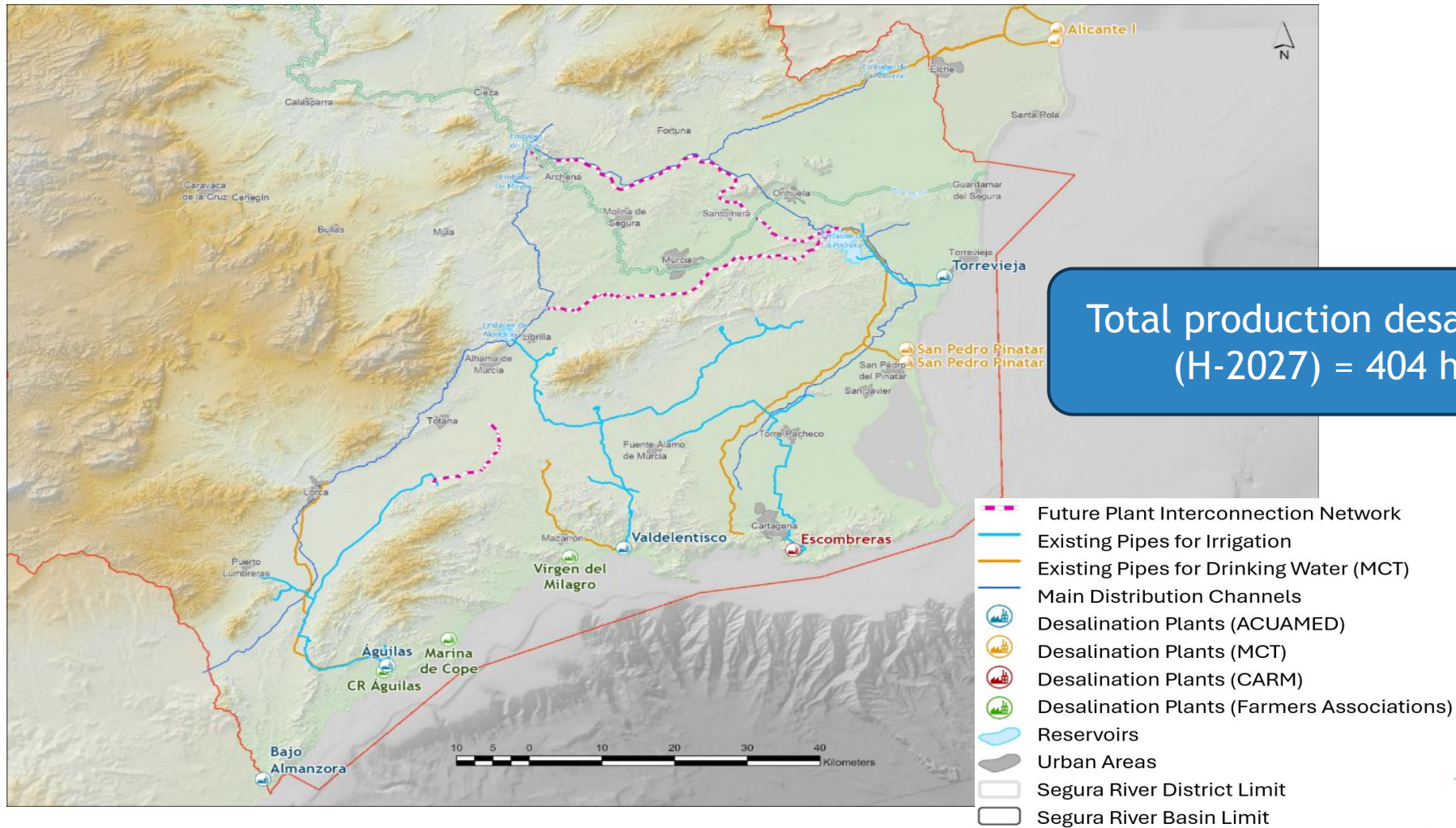


Mixture of water from different sources to get the appropriate salinity for plants and to avoid soil degradation in agricultural areas



DEFICIT 15 %

INTEGRATED WATER RESOURCES MANAGEMENT – INTERCONNECTION NETWORK FOR DESALINATION PLANTS



ADVANCE IRRIGATION TECHNOLOGIES AND MONITORING OF WATER

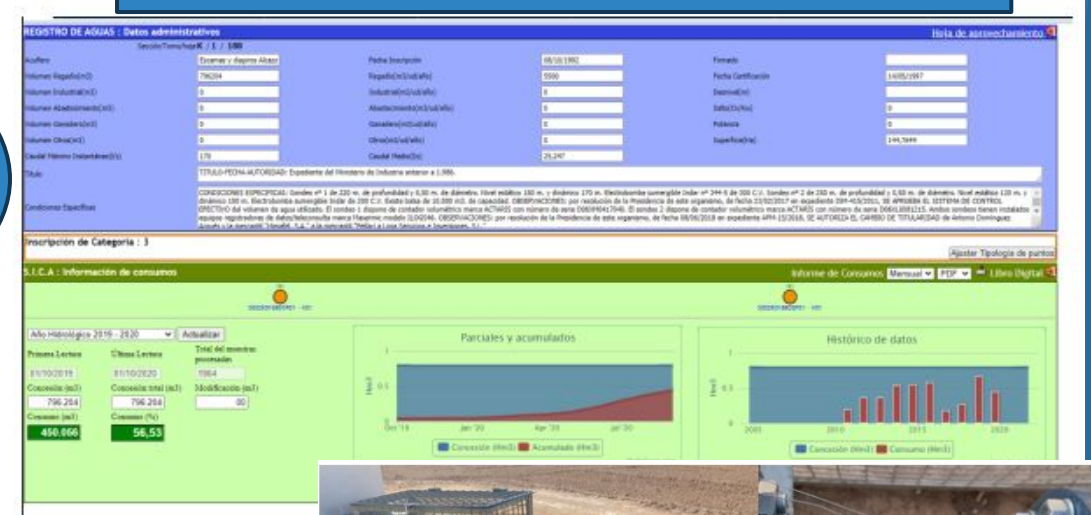


Drip irrigation: Water application rates can be reduced by 30-60%
Application efficiencies of 90-95%



Floating solar Photovoltaic systems: can reduce evaporation by 50%. Energy savings and lowering CO₂ emissions

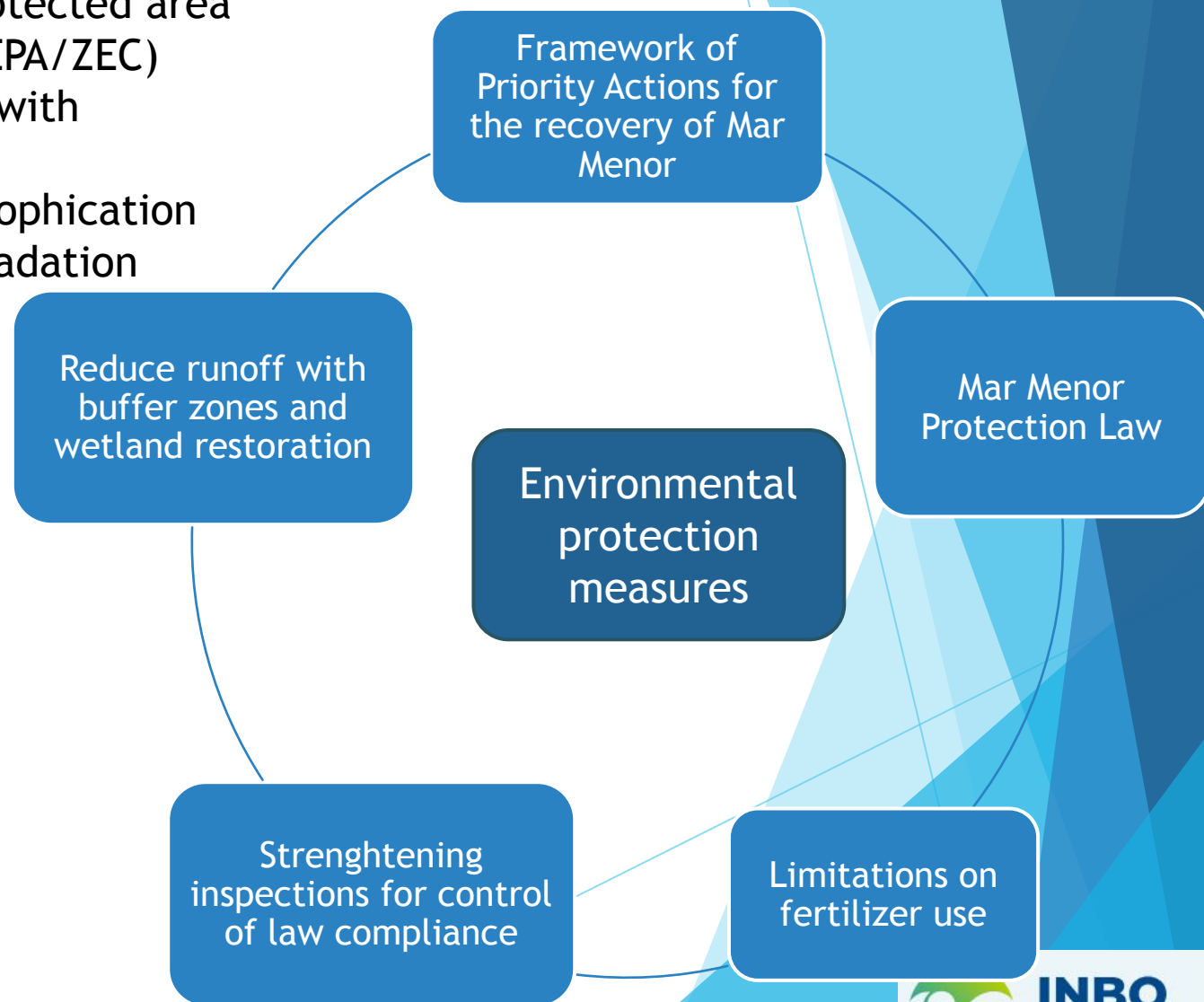
Integrated exploitation control system



ENVIRONMENTAL PROTECTION MEASURES AT MAR MENOR

Background:

- Largest coastal lagoon in Europe with several protected area designations (Ramsar, Natura 2000, ZEPIM and ZEPA/ZEC)
- Campo de Cartagena is a major agricultural hub with 46.000 ha of irrigated crops
- Pollution from agricultural runoff has led to eutrophication causing biodiversity loss and environmental degradation



Thank you



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