

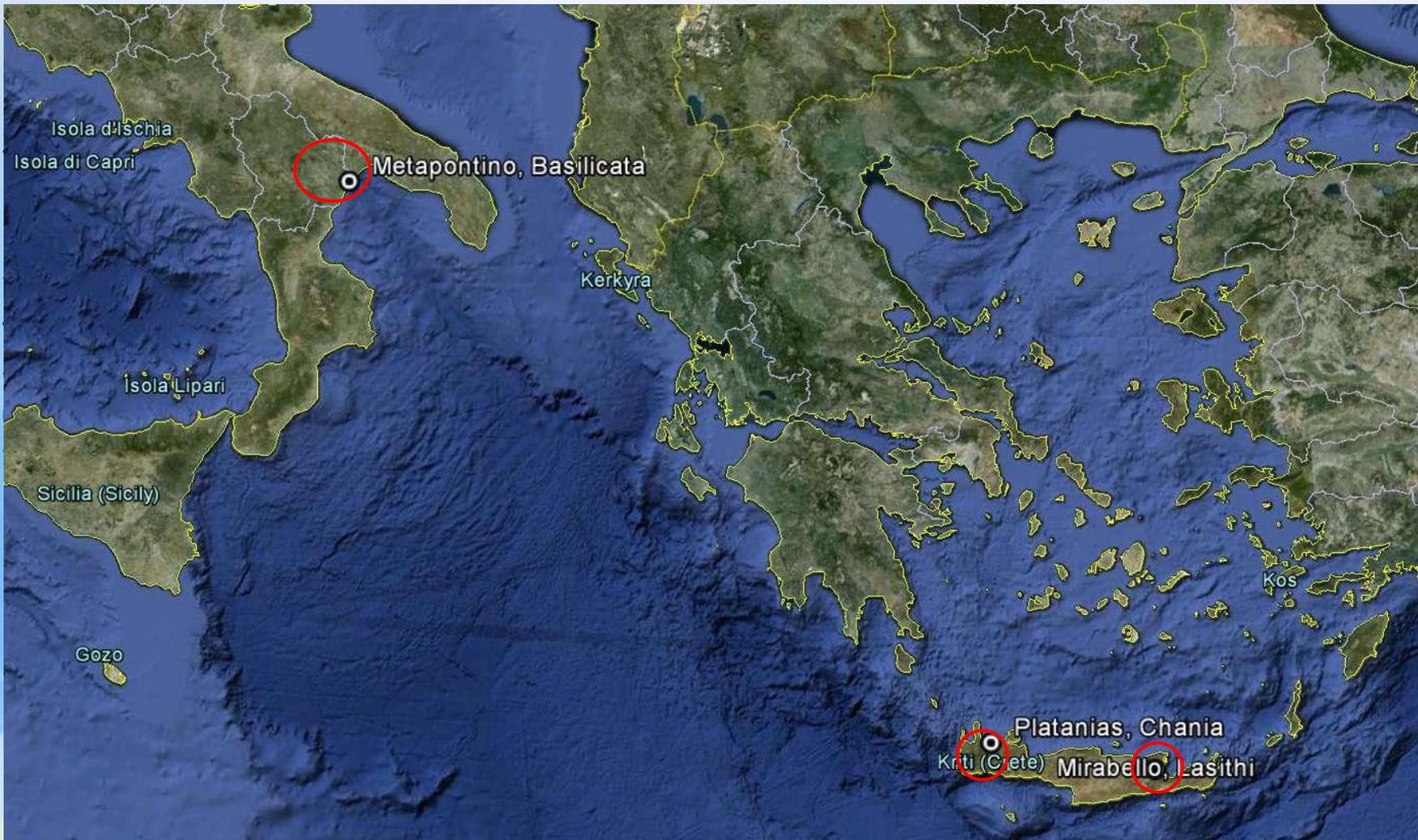
LIFE14 CCA/GR/000389 AgroClimaWater

“PROMOTING WATER EFFICIENCY
AND SUPPORTING THE SHIFT TOWARDS
A CLIMATE RESILIENT AGRICULTURE
IN MEDITERRANEAN COUNTRIES”

Elisavet Pavlidou, *Chemical Engineer, MSc*
Project manager
HYETOS S.A.
Studies, Research and consulting services

Dr Georgios Psarras
Project Responsible
ELGO “DEMETER” – *Institute of Olive Trees,*
Subtropical Plants and Viticulture

GENERAL INFORMATION





PROJECT GENERAL OBJECTIVE AND MAIN ACTION

General objective: Water efficiency and governance enhancement in agricultural sector towards the adaptation to climate change

Main Action: Formation and implementation of a Water Management Adaptation Strategy for the participants F.ORs in view of climate change based on EWS standard, which includes three identical parts:

- Specific action plans promoting water efficiency in 10 pilot parcels with perennial crops (olives, citrus, peaches and apricots) per pilot sub-basin
- Governance actions enhancing Water Management in the 3 FORs
- Proposal of flood and drought action plans for the pilot sub-basins



SPECIFIC ACTION PLAN PER PILOT PARCEL

Specific action plans for the pilot parcels:

- Data collection for project's targeted areas and selection of the pilot sub-basins
- Data collection for 100 parcels in the pilot basins towards the identification, analysis and impact assessment of the current agricultural practices applied
- Selection of 10 representative pilot parcels per area of interest
- Proposal and implementation of farm specific action plans (GAPs and monitoring process)
- Monitoring GAPs implementation and evaluation of results per parcel
- Projection of results and assessment of GAPs impacts on sub-basin level





GOVERNANCE ACTIONS - FLOODS AND DROUGHTS ACTION PLAN

Governance actions in participant FORs:

- Assessment of current governance actions
- **Proposal of improvements / corrective actions**
- Implementation and assessment of proposed actions

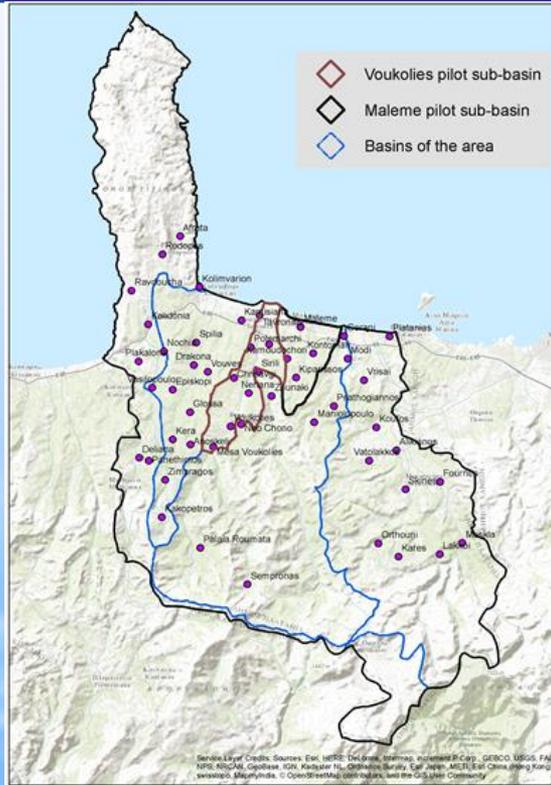
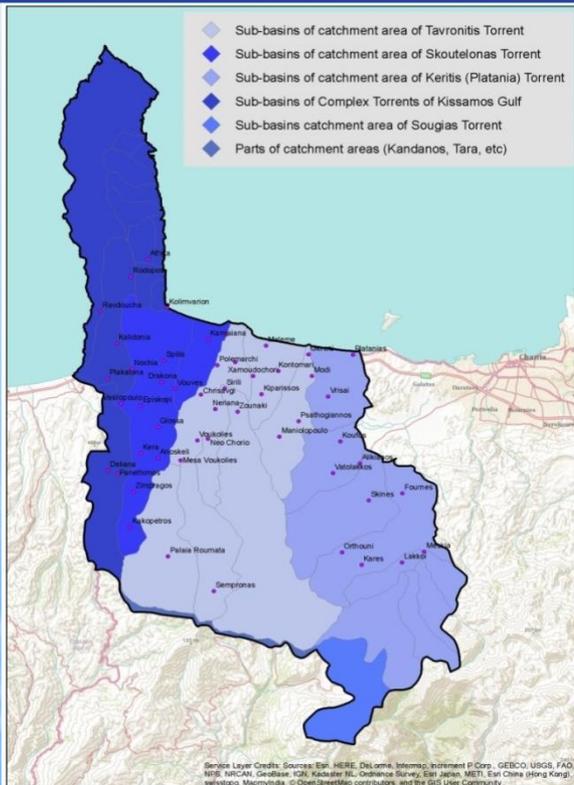
Floods and droughts action plans

- Prioritization of water needs and necessary infrastructures
- Communication of the plans to competent authorities

WMAS formulation, consultation and approval



PROJECTS TARGETED AND PILOT AREAS PLATANIAS MUNICIPALITY



Pilot area:
33,3 Km²

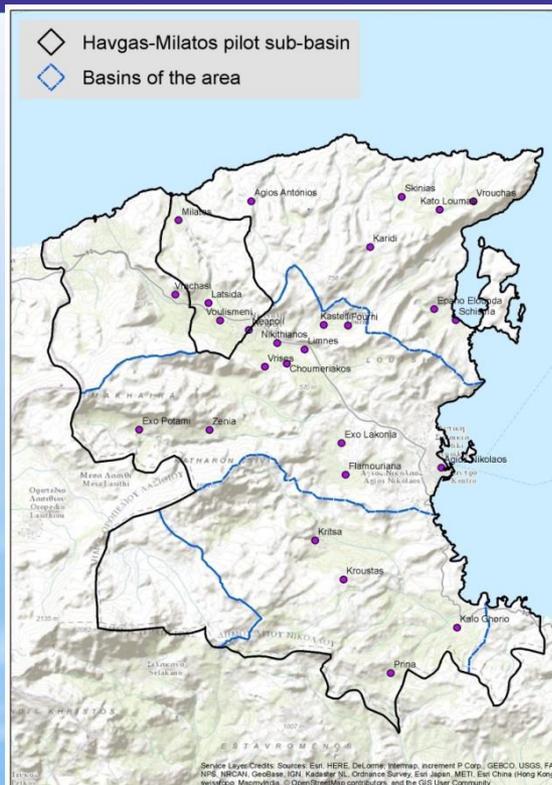
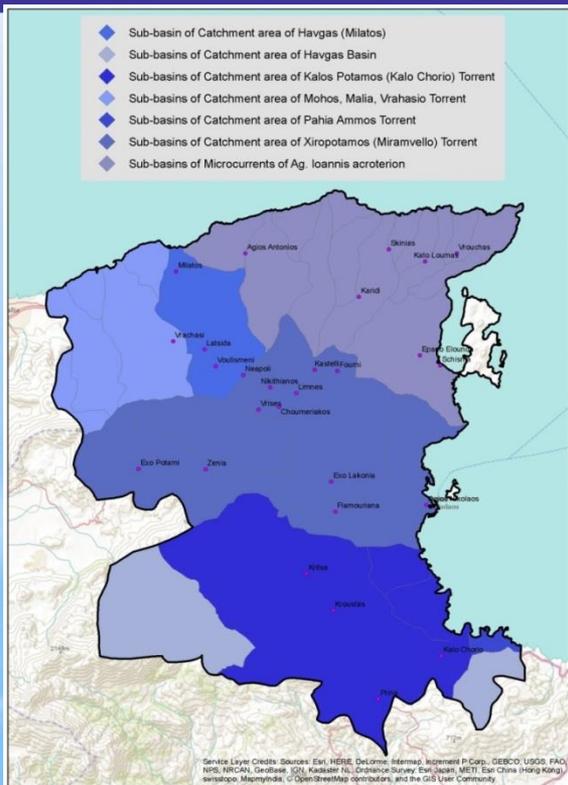
Development
Enterprise of
Platania
Municipality



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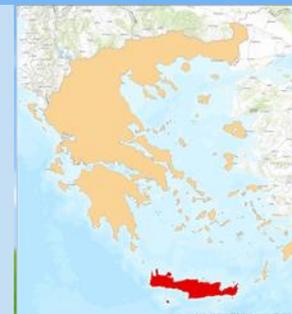
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AGIOS NIKOLAOS MUNICIPALITY

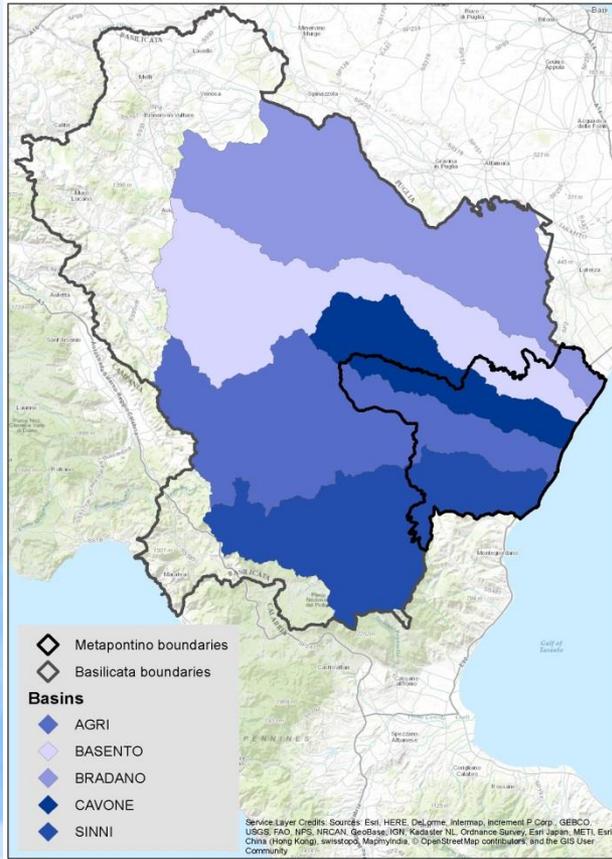
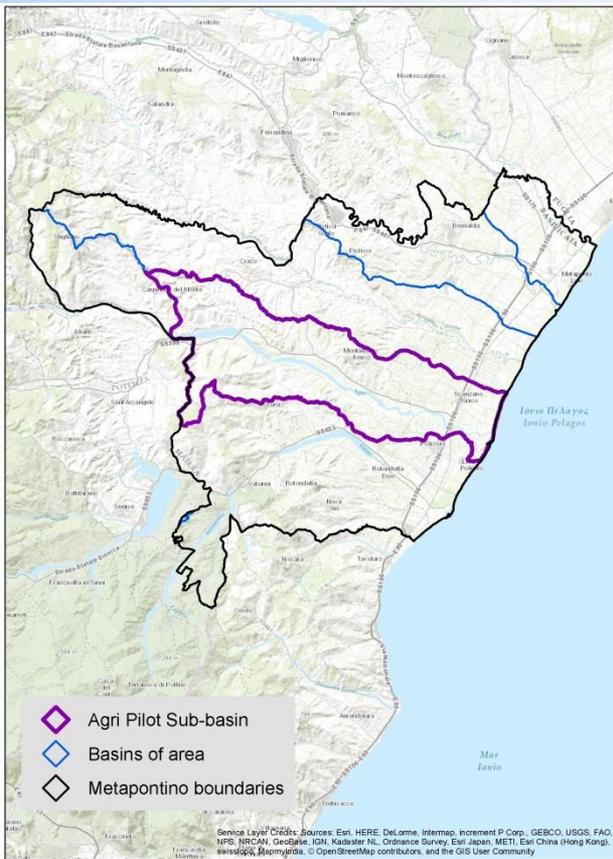


Pilot Area:
29 Km²

Mirabello Union S.A.



METAPONTINO AREA



Pilot area:
305 Km²

Assofruit
Italia



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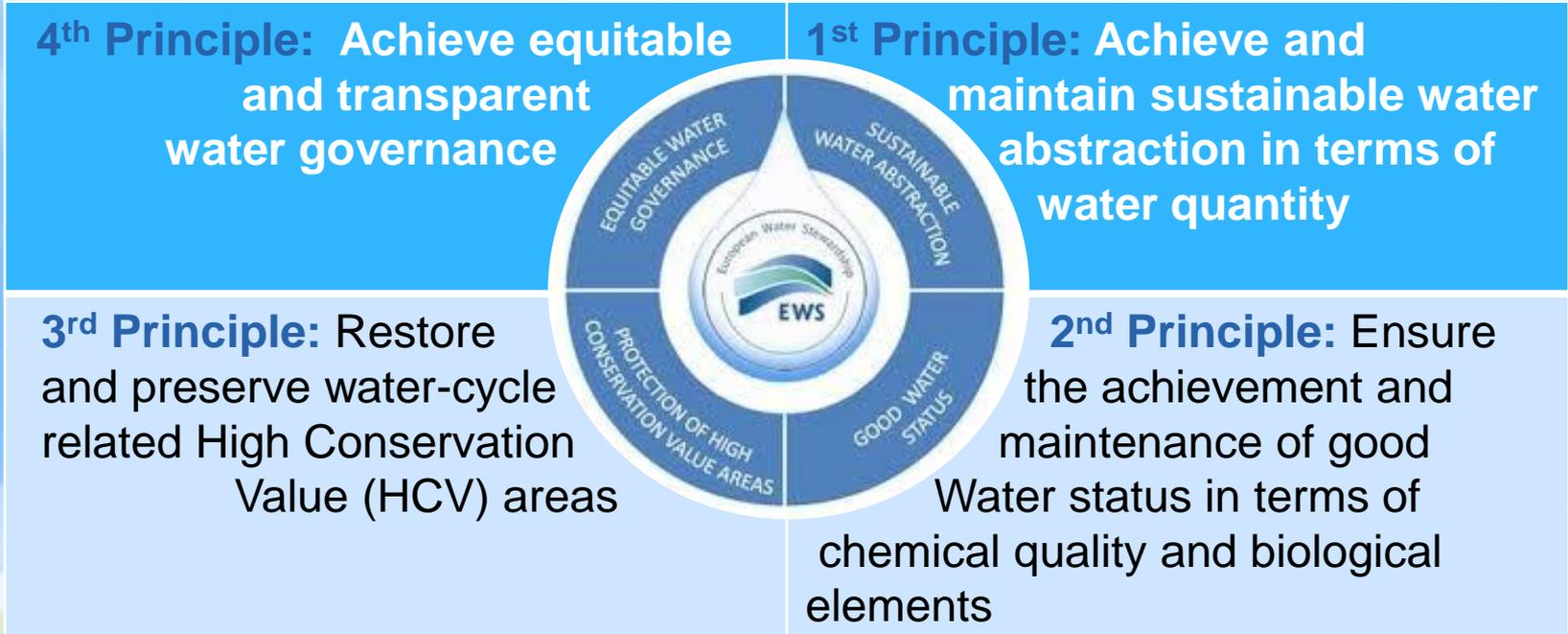
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METHODOLOGY FOR WMAS FORMATION

Main tool: Agricultural Water Management System (AWMS) for the FORs based on European Water Stewardship (EWS) standard

European Water Stewardship (EWS) standard is a voluntary tool for the continuous improvement of water management in a variety of sectors (from industry to agriculture).

Aim: to promote sustainable water management in terms of both water quantity and quality, maintain and restore High Conservation Value Areas in a river basin level.



EWS STANDARD – PRINCIPLES 1 - 3

Principle	Criterion 1 – Data collection or/and estimation	Criterion 2 – Impact assessment	Criterion 3 – Actions to be taken
1: Water Quantity	Water sources used for abstraction, water volume abstracted and discharge	On Water resources destination due to abstraction	To mitigate possible impacts identified in criterion 2
2: Water Quality	Substances used and water effluents	On Water resources destination due to effluents discharged	To mitigate possible impacts identified in criterion 2
3: HCV areas	HCV areas in a radius of 25 km	On HCVs due to abstraction and discharge	To mitigate possible impacts identified in criterion 2

EWS PRINCIPLE 4

- Criterion 1: Compliance with legal requirements
- Criterion 2: Evaluation of water management in supply chain
- Criterion 3: Relation of water used with other resources
- Criterion 4: Efficiency of water consumption
- Criterion 5: Internal and external transparency and raising awareness
- Criterion 6: Continuous improvement
- Criterion 7: Transparency in economic aspects
- **Criterion 8: Water resources management strategy**





OTHER ACTIONS AND MEANS INVOLVED

Implementation of networking, information, awareness raising and communication actions

- Cooperation with relevant projects and organizations/Institutes
- Information and training provision to farmers and FORs within the project's pilot areas
- Information provision and awareness raising to competitive water users in the project's area
- Information provision to other FORs in Greece, Italy and other Mediterranean countries
- Approaching and involvement of competent authorities in the evaluation and acceptance and utilization of project's results
- Participation in scientific conferences and agricultural fairs
- Publishing of project's informative material and implementation guidelines of GAPs and AWMS





NETWORKING ISSUES ENVISAGED RELATED WITH AWMS

- Data for Water bodies and protected areas identification and classification: *A valuable source are the riven management plans and its annexes.*
- Data on water sources used for abstraction: *An important document is the water use permit per source used for water abstraction, however the entire information needed is not available (stress periods, maximum abstraction rate per day, water table of the borehole etc)*
- Data on the total water consumption per water body and use is also needed. *How it can be achieved?*
- Data on the quality of water bodies: *Monitoring programme established*
- Impacts on water bodies and protected areas and mitigation measures: *River management plans and other studies*
- Impact assessment tools: *IAP (Impact Assessment Procedure) method by SAGE10*
- Including the project in the programme of measures of the Cretan water district management plan under revision. *Could it be attainable?*

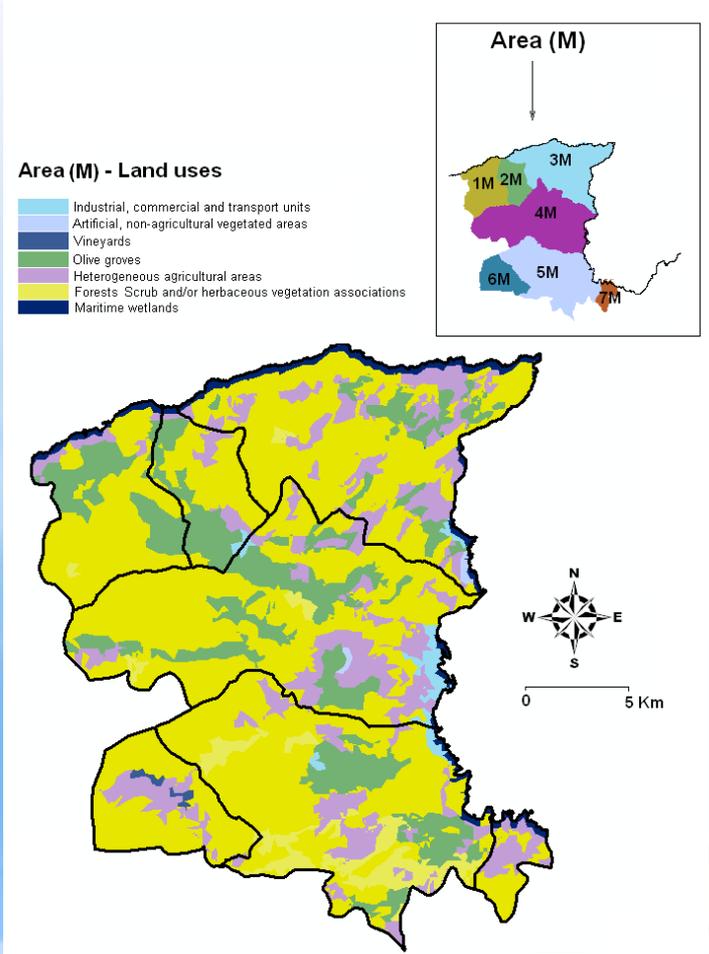
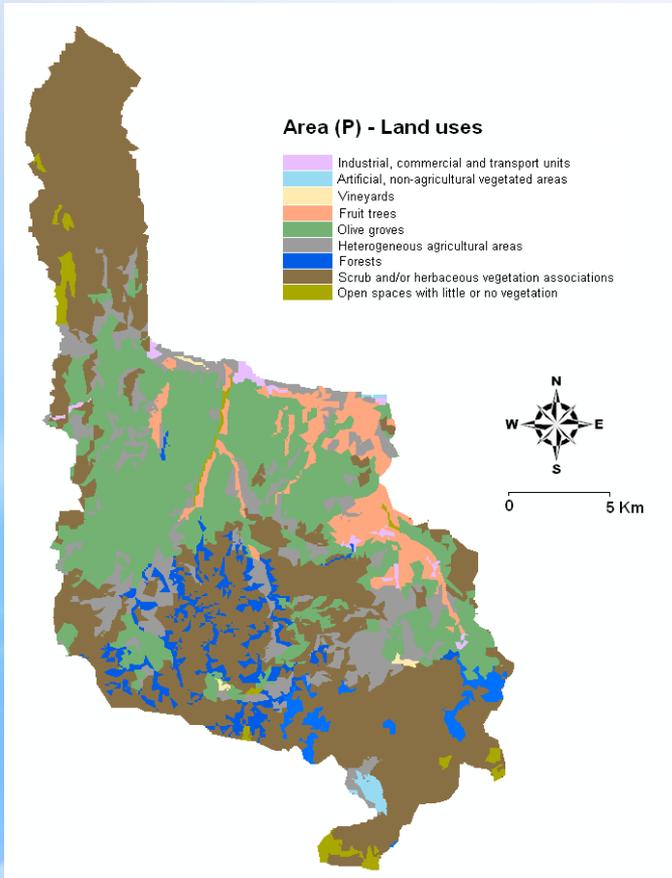


PILOT AREAS AND CROPS

- 2 areas in Crete: Platanias and Merabello
- 2 crops:
 - Olive (both areas)
 - Citrus (Platanias only)
- 1 area in Italy (Metapontino)
- 4 crops
 - Olive
 - Citrus
 - Peach
 - Apricot

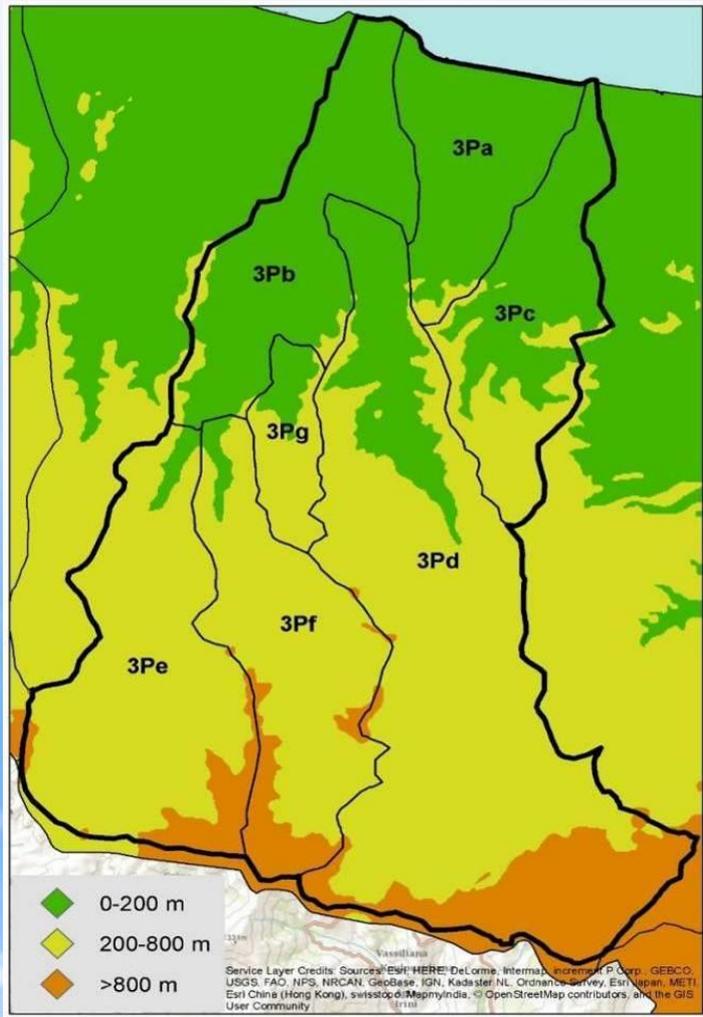
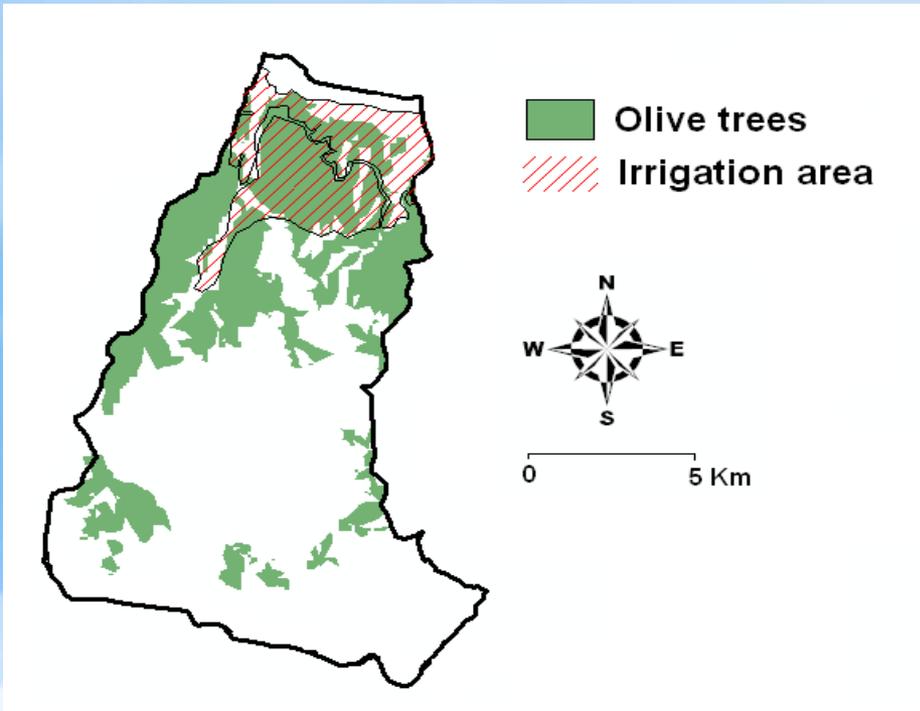


GOOD AGRICULTURAL PRACTICES IN AGROCLIMAWATER



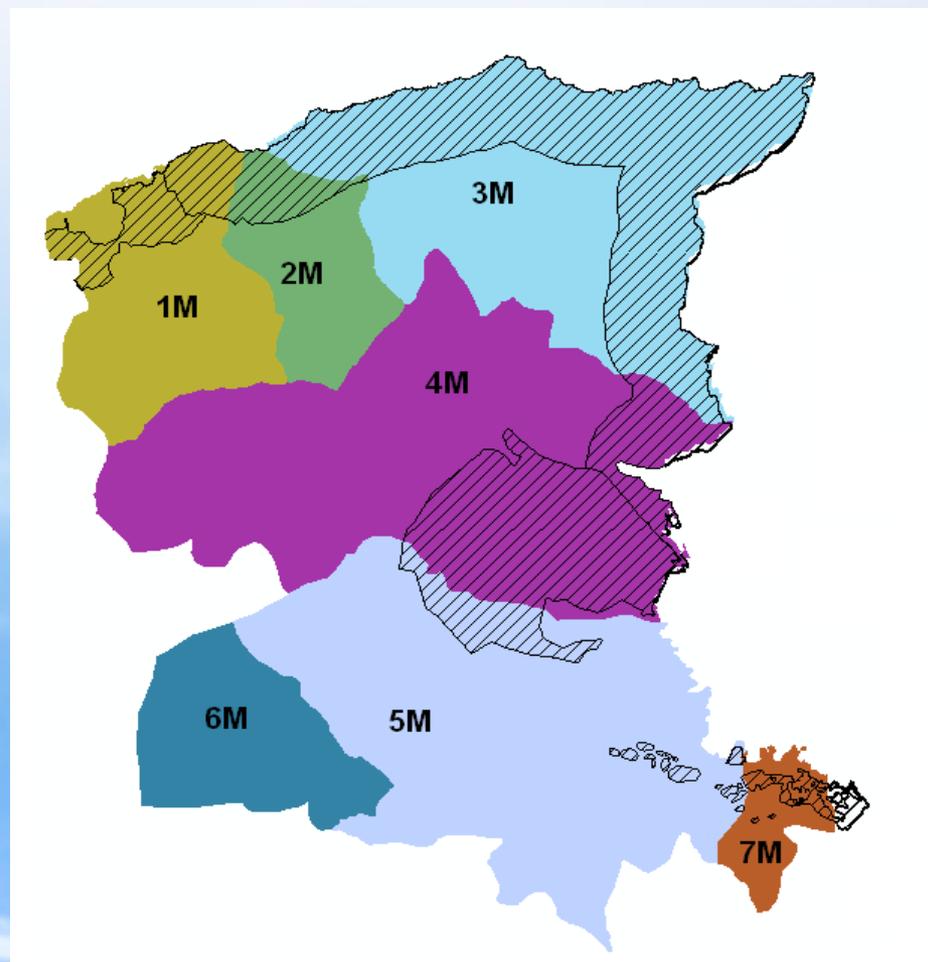
PLATANIAS

- Pilot area Platanias
- Sub-basins of Maleme and Voukolies



MERABELLO

- Pilot area Merabello
- Basin of Havgas-Milatos





PILOT FARMS

- 10 farms in each pilot area where agricultural practices of optimized management will be applied
- Duration: 3 years
- Starting date: Winter 2016-17



TRADITIONAL

Managed by farmer

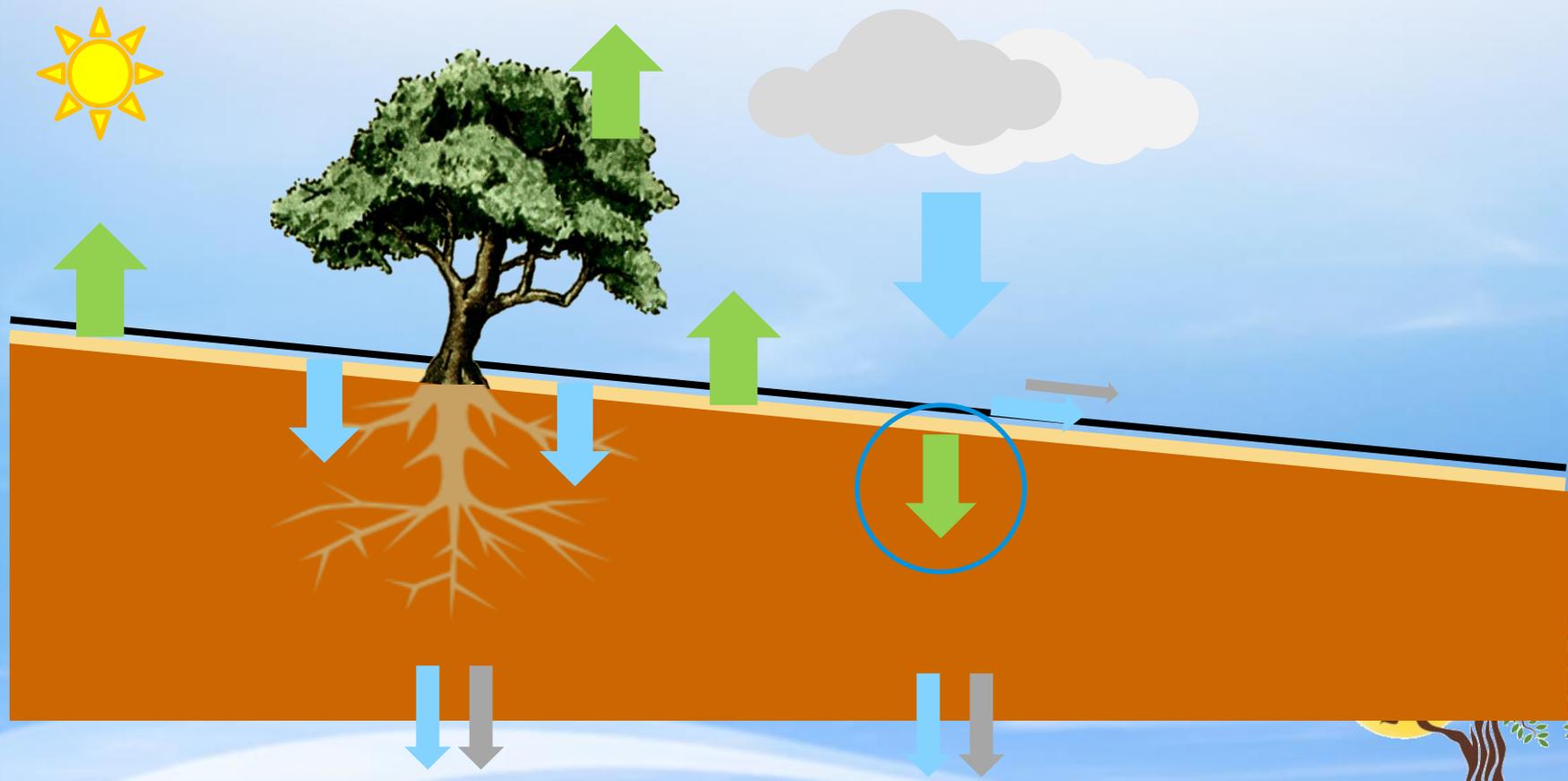
ACW practices

Managed according
to LIFE-ACW
Action plans

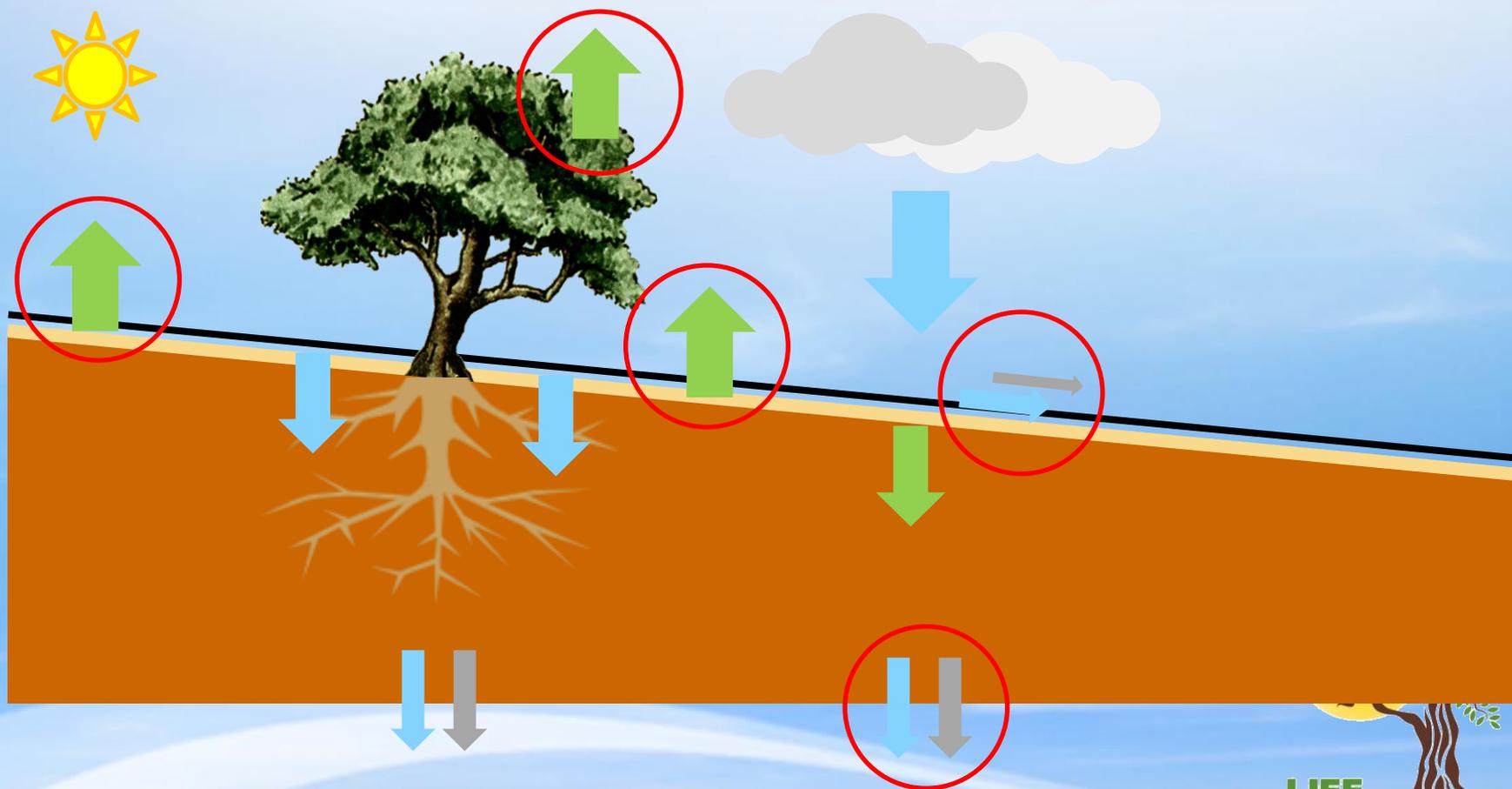
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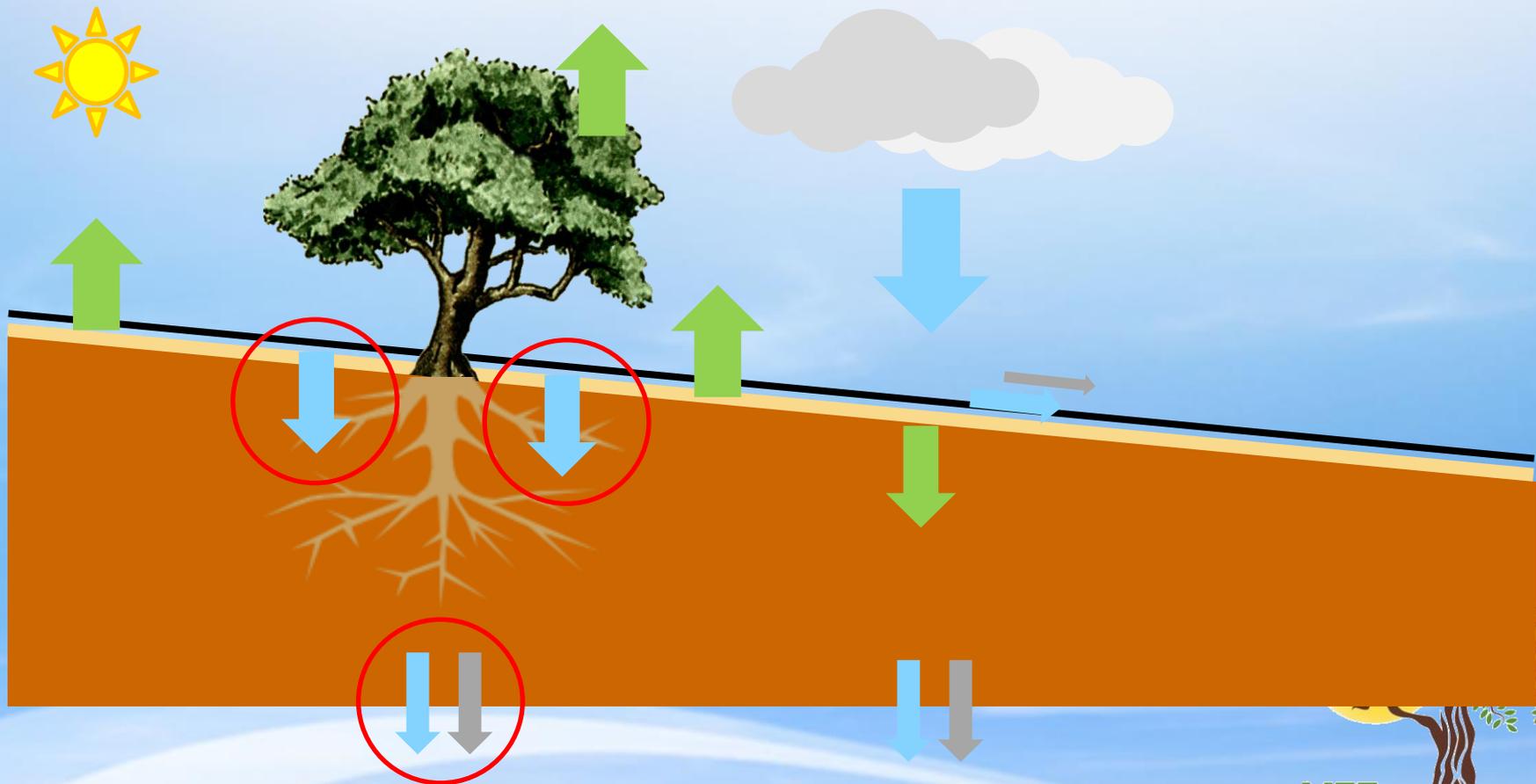
IMPROVE WATER STORAGE IN SOIL



REDUCE WATER LOSSES



OPTIMIZE IRRIGATION WATER MANAGEMENT



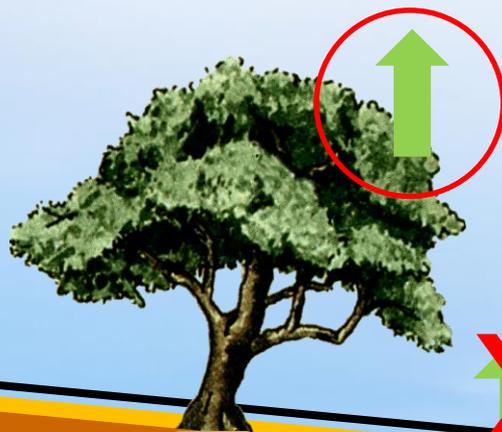
REDUCE EVAPORATION



Soil Mulching:
-Weed mowing
-Shredding of prunings



REDUCE TRANSPIRATIONAL LOSSES



Balanced canopy size

- Appropriate winter pruning
- Summer pruning
- No weeds in critical periods



REDUCE DEEP PERCOLATION LOSSES (WATER & NUTRIENTS)



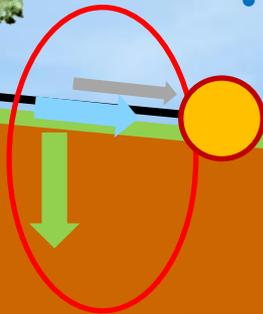
- Increase soil organic matter
- Fertigation



REDUCE SURFACE RUNOFF LOSSES



- Cover crops during winter
- No tillage
- Use of bio-rolls



OPTIMIZE IRRIGATION WATER USE



- Irrigation system maintenance
- Irrigate according to actual crop requirements
- Apply deficit irrigation



Main practices

Soil Mulching

No tillage

Winter and summer pruning

Shredding of prunings

Application of compost

Fertigation

Cover crops

Use of biorolls in high slope areas

Optimize use of irrigation water





MERABELLO CURRENT STATUS

Soil tillage: 12.9%

Cover crops: 5.9%

Shredding of prunings: 2%

Summer pruning: 0%

Application of OM: 3%

Weed mowing: 45.5%

Pruning: 73.3%, but in 39.9% not on an annual basis



MONITORING

Practice	Means of measurement/analysis
Soil moisture	Soil moisture sensors
Leaf Area Index (LAI)	LAI measuring device
Runoff water losses	Traps for collecting runoff water in high slope orchards
Runoff nutrients losses	The same traps as above

Practice	Means of measurement/analysis
Fruit yield	Weight of fruit yield
Meteorological data	Sensors of temperature, RH, rainfall, wind speed, calculated ETo
Nutrient leaching	Measurement of nitrates soil content in different soil depths, Nitratecheck devices

NETWORKING OPPORTUNITIES

- Contact establishment
- Data and knowledge exchange
 - Data for pilot areas (DAC)
 - Climate change scenarios (Adapt2Clima)
 - Best practices for tree crops (oLiveClima, ClimaTree)
 - Use of soil moisture monitoring sensors and irrigation according to plant water needs (FIGARO)
 - Impact assessment tools (SAGE10)





Thank you
for your attention





GOOD AGRICULTURAL PRACTICES IN AGROCLIMAWATER

