



Education and CultureLifelong learning programmeGRUNDTVIG

Final Project Meeting, July 1-5, 2013 Schrobenhausen, Germany

Water and Life: activities by Greek partner NAGREF

K. Chartzoulakis, G. Psarras, M. Bertaki A. Giannakaki



NAGREF, Institute for Olive Tree and Subtropical Plants Department of Irrigation and Water Resources Management Agrokipio, 73100 Chania, Crete, Greece



ISPOT in 'Water and Life'



3-7-2013 Schrobenhausen, Final Meeting, ✓ The Institute of Olive Tree and Subtropical Plants in cooperation with Local Water Boards in rural areas organized courses and lectures in order to increase farmers awareness about water saving.

More specifically, Institute aimed through this project to:

- suggest several methods and practices for water saving in agricultural sector
- train the farmers how to use the innovative, water saving irrigation systems
- produce informative material (leaflets, online information, etc) for rational use of water
- report on water availability, crop needs and irrigation.





1. Workshop on "Best Irrigation Practices" (for farmers) ✓ Platanos town, September 20th, 2012 ✓ Attendants: about 80 ✓ Main subjects addressed: - "Crop water requirements" (Dr. K. Chartzoulakis) - "Use of low quality waters for normonical Ounin Xovie irrigation" (Dr. G. Psarras) Εσπερίδα "Ορθολογική Διαχείριση του - "Water saving and irrigation Νερού Άρδευσης στις καλλιέργειες" systems" (M. Bertaki)



10 Epsimony - Euronau

19:10: Άρδευση των Καλλιεργειών - Ανάγκες σε νερό

19:30: Χρήση Υποβάθμισμένων Νερών στη Γεωργία Γ. Ψερράς, Ερευντικός Ινουτσίου Ελώς & Υποερσπιο 19:50: Σκεδιασμός Ευστηρίων Τοπικής Άρδουσης

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TPOTPAMMA: 19:00: Xaptinipol



Za. 4th Project meeting

- ✓ Chania, October 30th November 1st, 2012
- The first two days of the meeting the participants visited:
 - Organization for Development of Western Crete (OADYK)
 - Local Organization of Irrigation Management (TOEV) of Varypetros
 - Coastal Area of Platanos and Falasarna
 - Agia Lake
 - Dam of 'Potamoi', Amari, Rethimno
 - Hersonisos' Wastwater treatment
 - plant, Iraklio
 - Knossos



2b. 4th Project meeting, workshop on 'Water issues' Agrokipio, Chania, November 1st, 2012
 Attendants: Project participants, local
 Main subjects addressed:

 "Partners activities in the project"
 "Water resources management in C
 "Implementing the water framewor in the region of Crete: Problems ar

 Attendants: Project participants, local authorities

- "Partners activities in the project"
- "Water resources management in Cyprus"
- "Implementing the water framework Directive 60/2000 in the region of Crete: Problems and Perspectives"
- "Reuse of low quality water for irrigation: Results of EU project SAFIR
- "Biodiversity of Cretan wetlands"









- 3. Workshop on 'Learning about water' (for teachers)
- ✓ Kefalas, Vamos, March 9th, 2013
- Attendants: About 60 Elementary and High School Teachers
- Co-organized by: OADYK, ISPOT, Environmental Educational Center of Vamos
- ✓ Some of the subjects addressed were:
 - "Water resources management in Chania region"
 - "Quality and Management of irrigation water"
 - "Water quality control"
 - "Water resources infrastructure in Western Crete"
 - "Water: a precondition for life"
 - Presentation of 'water games'



Activities in the frame of 'Water and Life' - Learning about Water





το Κ.Π.Ε. Βάμου σε συνεργασία με τον ΟΑΔΥΚ, το Ινστιτούτο Ελιάς & Υποτροπικών Φυτών Χανίων και τους Υπευθύνους Ιχολικών Δραστηριοτήτων ΠΕ & ΔΕ Ν.Χανίων

ΠΕΡΙΦΕΡΕΙΑΚΗ Δ/ΝΣΗ Π/ΘΜΙΑΣ

& Δ/ΘΜΙΑΣ ΕΚΠ/ΣΗΣ ΚΡΗΤΗΣ

ΚΕΝΤΡΟ ΠΕΡΙΒΑΛΛΟΝΤΙΚΗΣ

EKRAIAEYTHT BAMOY

διοργαγώνουν τεμινάριο:

"Μαθαίνοντας για το Νερό"

στις 9 Μαρτίου 2013 ώρα έναρξης 9:00π.μ.

στο κτίριο του Κ.Π.Ε. Βάμου στον Κεφαλά Αποκορώνου





«Μαθαίνοντας για το νερό»

2 apparto 9 Maphou 2013

Χώρος: Αθούσα ΚΠΕ Βάμου

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10:10:10:36	Δισχαριση και ποιοτητο ναρού στην Γεωργία	Ανσητούτο έλιος κα Υποηροτικών συτών Χανίων	Sapolourd(at Kunnot
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12:30:13:30	Emigradum grie uSport	Aprilation of the second of the	of opposite and the second second

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- 4. Workshop on 'Legal framework of water resources management' in the frame of Worlds' Water Day (local authorities, public)
- ✓ Chania, March 22th, 2013
- Attendants: About 50 stakeholders and public
- Co-organized by: OADYK, ISPOT, Technical University of Crete, Region of Crete, Technical Chambers of Crete
- Some of the subjects addressed were:
 - "Management of large-scale water projects"
 - "Water potential in Chania Prefecture"
 - "Legal framework on water management"
 - "Water management in agriculture"
 - "Reclaiming energy from dams"
 - "Water management plan in Chania Prefecture in river basin scale



Activities in the frame of 'Water and Life'





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Μεγάλο Αρσενάλι, ώρα 18:30 Διοργανωτές: ΤΕΕ ΤΔΚ , ΚΕΠΠΕΔΗΧ-ΚΑΜ

ΠΡΟΓΡΑΜΜΑ ΕΤΑΙΡΙΚΗΣ ΚΟΙΝΩΝΙΚΗΣ ΕΥΘΥΝΗΣ







TPOSKAHOH

Σες προσκείωψα να περιτερετίτετε την Παρειτικτική 22 Μαρτικν, ωρα 18.30, στο Μεγείκα Αροτινόλι στην ακδήλωση με θερα "θεταμικά πλειστο διαχήρεσης υδετικών πάρων"

Η ανδήλωση πραγματοποιείται με αφοριμή την Παγκύσμο Ημέρα Ναρού. στα πλαίστα του Πραγράμματος Σταιρικής Κανιωνικής Ευθύνης του ΟΑΔΥΚ με τους συνεργαζόμαι τος φοριές.

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ΠΡΟΓΡΑΝΜΑ ΕΚΔΗΛΩΕΗΕ Προσδρείο: Νάνου Αγγκλίνη, Λευτίρης Κατάσης, Σπέρος Σοφιακός				
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19:06-19:19	Εύδιος μελίτη δαχτέρους, διακησης, συντέρτατης και Αυτουργίας ρογόιων υδρατλοιών (ργως οδραγούς και δράσσης και διοχιτέριση των διαθέσεων αδατικών τους πέρωσ	TEE - TAK	Roakse Reakburg	
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19:45-29:08	Διαρήμιση καριού όση μουριού	EYØ Scelar	Κωλλος Καραζουλόκης	
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20-15-20.30	Zanjospietská dyššei Katitej Andrej a Bisporije tratejska Sanikai	Τμημα Παρβάλλαστος ΠΚ	History Necessitiana	
1045-31.78	Ερωτήσος Σαζητήτη			





5. Workshops on 'Sustainable use of irrigation water' in Municipalities (local authorities, farmers)
5a. Kolibari, Municipality of Platanias, Aplil 24th, 2013
5b. Vrises, Municipality of Apokoronas, May 8th, 2013
5c. Kisamos, Municipality of Kisamos, May 22nd, 2013
Attendants: More than 80 local authorities and farmers
Co-organized by: ISPOT, OADYK, Municipalities
The main subjects addressed were:
"Crop water requirements - Sustainable water use for irrigation"
"Localized irrigation systems: design, operation and maintenance"

- maintenance"
- -"Use of low quality waters for irrigation"
- -"Water management projects in the Prefecture of Chania" -"Ethics on water use".





3-7-2013 Schrobenhausen, Final Meeting,



Water and Life

ΕΣΠΕΝ Ορθολογική Διαχείρι του Νερού Άρδευσης στις Καλλιέργειες

Employee



Τετάρτη 24 Απριλίου 2013, 19:00 Ορθόδοξος Ακαδημία Κρήτης, Κολυμβάρι



ΗΜΕΡΙΔΑ Ορθολογική Διαχείριση του Νερού Αρδευσης στις Κολλιέργειες

> Tenipre 24 Angeline 2013, inga 1940 Ophidağaç Axadeysia Ketenç, Kalaşındar

ПРОГРАММА

Residents: E. Kappang, K. Narripalang, A. Kappaténg,

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- 23.00. Epidanyje koncepta oznajalan versete ipikany M. Mugaieg, horazoto Eniç & Parapotecia 20.00. Koter verlakuszter szar em merete
- 30.00. Χρίστ να βαλμομίναι τερία στη ταιργία Γ. Ψερρία, Σοπορίας Ελώς & Υπογραφικών 20.40. Ερωτήσες - Εφήσχοη
- 31-00 Repeleeves Kepanas



Participation in project meetings -Mobility



✓ 3rd meeting, June 18-22, 2012, Corsica.

- ✓ Participants of NAGREF: K. Chartzoulakis, G. Psarras.
 - NAGREF presented the Institute activities in a workshop.



Grundtvig-Project



Participation in project meetings -Mobility



- 5th meeting, May 14 17, 2013, Granada, Spain.
- Participants of NAGREF:K. Chartzoulakis, M. Bertaki, A. Giannakaki .











Participation in project meetings -Mobility



 ✓ 6th meeting, June 17 - 18, 2013, Corsica, France.
 ✓ Participants of NAGREF: K. Chartzoulakis, G. Psarras, M. Bertaki.











Communication material



A leaflet in Greek and English is designed and printed on 'Best Irrigation Practices'

✓ The Greek version has been distributed either in printed or electronic form in all water-related entities (water authorities, cooperatives, municipalities, high schools, environmental agencies, etc) and farmers.

三郎

CROPS WATER REOUIREMENTS

ater requirements were estimated using the mehod of Penman-Montsith (Allen et al., 1998) in four regions of the island, using meteocological data of 30 years and taking into consideration the crop coefficient for each crop. For wentables the typical time of planting was taken into consideration too. In the following table the indicative water requirements for the main crops of Crete are given. The irrigation requirements increase as we move from the western to the castern part and from the nothern to the southern part of the island.

Water demand (m ³ /1000m ²)
215 290
-410-570
235-350
410-515
280-367
285-300
190-445
410-555
276-320

abon on the irrigation of cultures in rea listance-briefing for farmers and the webpage www.nagniti-cha.gr/aldocalimigation/baware



ABOUT Water and Life

Water is vital for all kinds of life. Taking into account the population explosion and climate changes, this issue all be crucial in the future for most of the world. People should be aware of the water quality and resources and contribute to its sustainability not only in their small area but in a global scale; they must respect other people, their diversities and special needs.

The serious water problems its quantity and quality) that the participating countries faced. the climate changes that affect most other countries in the world and the fact that water is the most precious element for all kinds of life are the main motivations for this project.

The water issue is global and only by commoactions can be faced; in order to do so, this sensitive, learn to communicate, understand other people's diversities and needs, cooperate, obtain skills, learn new practices and be competent for the new challenges of the future. Main objective of the project is to make people aware of future problems and competent to sace them. The project will deal with all water sades; resources, quality, manipulation, uses and projections in the future

the final report on practical measures mentence is to be introduced in a small scale in the areas of the partners by local authorities and institutions in the form of CD-ROM, reportick, leaflets and completing of the Water

PARTNERS Inversedan de Granado, D.T.S., de Ingenierte Se Committe, Canadesia Potentes, Spis University de Corse Passial Daoit, Pramer Volks for hSchule Schuchenheiten EV, Germany O DEMETSR Institute for One Tree & Buttenper

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Best Irrigation practices



in the frame of EU Project:





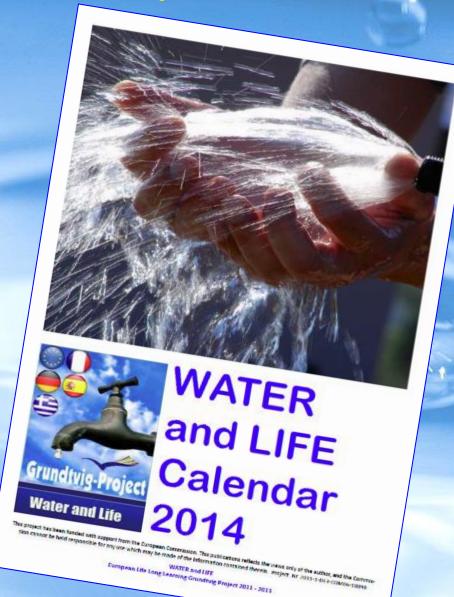


HEALTHIC AGRICULTURAL ORGANIZATION DEALTHIP DAVITATI OF OLDA THIN & SUBMITISHING PLANTS OF CHARACTER Laboratory of Industry & WALE Propunsity Management



Providing material for the Project calendar





Deliverables



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HPAKTIKA LYNEAPIDY

Water Quality

in the Francmark

of the European and the National Legislation

CONFERENCE PROCEEDINGS

Πεσότητα τεριού στο Πλαίποι

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THE FROMEN'S Napolization

Barriston Keeler, J. Ownedge to the and the states Cock. General view

Water and Life "Report on Water Resources in Crete" (EU MEDIS project)

"Water Quality in the Framework of the European and the National Legislation", Conference Proceedings ✓ "Water resources management in the Island of Crete, Greece, with emphasis on the agricultural use" (Chartzoulakis et al., 2001) and other relative papers





New Yor EVEL-CT-1901-4086





Water resources management in the Island of Crete, Greece, with emphasis on the agricultural use

Water Policy 3 (2001) 152-218

K.S. Chartzoulakis*, N.V. Paranychianakis*, A.N. Angelakis* *NeGREF, Subrepted Hans and Olive Tree Dataset. TINN Classic, Com. Net ORF, Respect Justices of Fakin, 71119 Dable, Core, Green Received 13 September 1890; received in revised form 21 January 2001; accepted 23 March 2001

Abstract

Crete is considered as a seni-arid region. The average an run al precipitation is estimated to be 900 run, the potential renewable water resources 2651 and the real water used about 485million m³/yr. The major water use in Crete is in irrigation for agriculture (\$4.5% of the total consumption) while domestic use is 12% and other uses 3.5%. Crete shows significant regional variations in water availability, especially in constal, estern and southern regions due to tourism and agriculture. It has a relatively high per rapits water availability, which is alightly lower than that of the country. The demand for irrigation water is high, while at the same time only 31.0% of the available agricultural land is irrigated. The growing water requirement make the rational management of water resources extremely increment for development to be mathinable and for the environment to be served. To overcome the water shortage, especially in the fature, seve measures should be taken for conservation of water resources and protection of the environment." integrated water resources management, securing water for the future in Crete, should include mean that are purely technical diversase the use of surface water, improvement of distribution systems irrigation acheduling, netscling, use of water saving irrigation systems, use of reclaimed, and but waters, etc.) and so do-compared c (pricing, national ration, extension, training, etc.). () 2001 Elsevier Sy Ind All rights reserved

1. Introduction

The techniques of the practice of drainage and infigation are probably as old a agriculture, although the first recorded examples of drainage and irrigation do not p Roman Imperial epoch. There are some indications, however, that these drainage an practices were known long before the Romans. Drains and/or formws and trenches,

*Corresponding author. Tel.: + (0.811.8142) [a.c. + 30.801.97663. Sound address: Industry(site or (K.S. Chartoolhilik)).

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THANK YOU!