optimizagua

LIFE03 ENV/E/000164

Water saving in traditional irrigation uses and in uses with leisure purposes

LIFE03 ENV/E/000164

Program: LIFE-Environment

PROJECT DEMONSTRATION

COFINANCED BY THE EUROPEAN UNION

Coordinator: Fundación San Valero – Zaragoza (España)

Partners:

- **Asociación Agraria de Jóvenes Agricultores de Aragón (ASAJA) – Barbastro (Huesca)**
- **Ayuntamiento de Zaragoza**
- **Consejería de Turismo y Medio Ambiente de La Rioja**
- **Ingeniería y Arquitectura, S.A. (INAR, S.A.) - Logroño**
- **Modélica, Comunicación Audiovisual y Organización de Eventos, S.L. - Zaragoza**
- **Soria Natural, S.A. – Garray (Soria)**

Collaborator:

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Start date..: 1 de octubre de 2003

End date....: 30 de septiembre de 2006

SUMMARY OF THE PROJECT

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Demonstration of water saving for watering uses through the experimentation of artificial intelligence integrated in traditional systems of water control.

General objective:

Demonstrate significant saving of water uses (35/50%) for different watering uses.

Specific objectives:

1º.- Experiment, test and validate innovative models integrated of artificial intelligence applications in traditional systems of water control through four pilot actions (2 in agriculture, public gardens, green zones of private houses).

2º.- Analyse, parameterise and modelling under environmental cost/benefit indicators, optimal models for various applications in watering uses.

3º.- Minimise the actual water deviations generated by a contribution over the minimum required by the crop.

4º. Disseminate models and results of each application tested at a high scale and by levels of target public (farmers, local authorities and architects).

Ations and means involved

1º.- Previous organisational and management aspects marking out concrete zones of test basis.

2º.- Definition of requirements and premises linked to the demonstration actions (area, water needs for growing, rainfall average, development of technical specifications required).

3º.- Development of the technological engineering of the system in relation with working logic and watering uses.

4º.- Elaboration of prototypes endowed with artificial intelligence and supplied with renewable energy integrated in traditional systems of water control and adapted to optimal requirements depending on uses.

5º.- Development of 4 pilot test experiences in different watering uses, types of growing and measurements of areas.

5.1. Pilot experience in agricultural exploitation (wheat)

5.2. Pilot experience in agricultural exploitation (maize)

5.3. Pilot experience in public gardens (grass)

5.4. Pilot experience in green zones of housing (grass)

6º.- Analyse of :

- Savings of water uses in each model experimented.
- Performance of crops and contrast with non-intelligent watering crops.
- Environmental cost/benefit ratio by each pilot action.
- Transfer potential of the models to different applications and scales (dimension of areas, optimal water requirements according to the kind of crops, rainfall average).
- Behaviour of the integrated system and the applications of artificial intelligence applied.

7º.- Validation of the pilot experience and modelling (kits) to facilitate its transfer at a European scale.

8º.- Design and development of a permanent dissemination strategy and integral, innovative and with a high impact at a European scale through products, tools and dissemination means oriented to a triple level of target public:

- Professional organisations of the agricultural sector.
- Local authorities of European medium size cities.
- Professional architect's associations.

Expected results:

-Demonstration of water savings (between 35-50%) depending on crops, climates and areas.

-Minimization of environmental impacts in watering (diffuse pollution) by efficient uses in watering and reuse of rainwater.

-Saving of 22.367.m3 (22.367.000 litters) of water/year in only four test hectares.

-4 Prototypes validated in uses, kinds of crops and dimensions.

-Parameterised modelling of optimal applications of the integral model depending on uses, demands of moistening, climates and areas with basis on experiences carried out ("kits" to be transfer).

-Dissemination products in 3 languages (FR, EN,ES) (TV spot in professional video, publications and catalogues, web, brochures).

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