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EC(EuropeAid)–CIHEAM Cooperation Project, 1998-2003: The Regional Action Programme on Rainfed Agriculture (RAP-RAG)

Mediterranean Agronomic Institute of Zaragoza – CIHEAM
P.O. Box 202, 50080 Zaragoza, Spain

SUMMARY – This document presents the activities developed within the framework of the EC(EuropeAid)–CIHEAM Cooperation Project, 1998-2003, Regional Programme on Rainfed Agriculture. Twelve training courses and four seminars for aid to decision making have been organised, and two research networks and one research project have been supported. Investments have been made and training on information and communication technologies has been carried out. The programme has been oriented towards and developed in close collaboration with institutions from Mediterranean non-EU member countries.

Key words: EC(EuropeAid), CIHEAM, rainfed agriculture.

RÉSUMÉ – "*Le Projet de Coopération CE(EuropeAid)–CIHEAM, 1998-2003 : Le Programme d'Action Régionale en Agriculture Pluviale (RAP-RAG)*". *Ce document présente les activités développées dans le cadre du Projet de Coopération CE(EuropeAid)–CIHEAM, 1998-2003, Programme Régional sur l'Agriculture Pluviale. Douze stages de formation et quatre séminaires d'aide à la décision ont été organisés, et par ailleurs deux réseaux et un projet de recherche ont été financés. Des investissements ont été effectués, et des formations sur les technologies de l'information et de la communication ont été menées. Le programme était orienté vers des institutions de pays méditerranéens non membres de l'UE, et s'est développé en étroite collaboration avec celles-ci.*

Mots-clés : *CE(EuropeAid), CIHEAM, agriculture pluviale.*

Introduction

Rainfed agriculture is practised over the largest crop surface area in the Mediterranean. The crop and livestock production that accompanies rainfed agriculture in the South and East of the Mediterranean have been and continue to be the main and often only basis of economic activity in these areas. The maintenance and efficacy of the agricultural systems in these areas is therefore an indispensable condition for the livelihood of the rural population and for a decline in their migration and concentration in the urban areas. From the point of view of environmental protection, even though excessive pressure from arable and livestock farming has harmful effects, particularly soil erosion, the abandonment of human activity in these lands leads to further risk of desertisation and desertification and to the impossibility of controlling natural phenomena: fires, floods, pests, etc., which are potentially hazardous for inhabited areas and for the equilibrium of ecosystems.

The EC(EuropeAid)–CIHEAM Cooperation Project, 1998-2003, has covered a second pluriannual period of collaboration between EC and CIHEAM with a new approach of more in-depth involvement of MNCs (Mediterranean non-EU member countries). The choice of rainfed agriculture as a Regional Action Programme (RAP-RAG) of the EC-CIHEAM project is justified by the expected effects of supporting the rural population, protecting the environment and contributing to the final agricultural output. The programme's objective has been to improve regional cooperation to favour sustainable agriculture and transition towards more open and competitive market economies. The programme has covered the components of training, with specialised short courses, support to cooperative research networks and research projects designed to develop joint research and information exchange, organisation of seminars and workshops, and logistic support to South and East Mediterranean institutions for information and communication technologies.

Partners

The main partner institutions have been: the Institut Agronomique et Vétérinaire Hassan II (IAV Hassan II), Morocco; the Institut National de la Recherche Agronomique (INRAM), Morocco; the Institut Technique des Grandes Cultures (ITGC), Algeria; the Institut des Régions Arides (IRA), Tunisia; the Desert Research Center (DRC), Egypt; the Field Crops Central Research Institute (FCCRI), Turkey; and the International Center for Agricultural Research in the Dry Areas (ICARDA).

Other partners associated to the programme through the MEDRATE Research Project have been: the Extension and Experimental Station for Irrigation Techniques (COTIR), Italy; the Universitat de Lleida–Institut de Recerca i Tecnologia Agroalimentàries (UdL-IRTA), Spain; and the Servicio de Investigación Agroalimentaria of Aragón (SIA-DGA), Spain.

Furthermore, 90 institutions from 18 countries have participated in the activities of the research networks. The coordination of the programme has been ensured by the CIHEAM-Mediterranean Agronomic Institute of Zaragoza and the Institut Agronomique et Vétérinaire Hassan II.

A Thematic Working Group (TWG) was created at the beginning of the programme. The TWG's functions were to propose the thematic priorities and subjects for the RAP-RAG and follow up the activities. The TWG was formed by representatives of CIHEAM and of the main partner institutions.

Thematic priorities and priority subjects

The following thematic priorities were defined by the TWG: (i) agro-ecology and production systems for dry areas; (ii) plant material adapted to water stress; (iii) animal production in arid and semi-arid areas; and (iv) sustainable management of arid and semi-arid zones.

Within these priorities, more precise subjects were selected in order to define the framework in which to organise the activities of the programme:

(i) *Agro-ecology and production systems for dry areas*. Agro-ecological characterisation (database, modelling and GIS…). Monitoring of crop production systems for managerial decisions. Technology generation and transfer opportunities (including socio-economic constraints). Water use efficiency (tillage system, crop rotation, weed control, water harvesting...). Nitrogen use efficiency (tillage system, crop rotation, plant improvement, fertility management…). Orchard management and fruit quality improvement in rainfed conditions (olive tree, nuts, under-utilised fruit crops…).

(ii) *Plant material adapted to water stress*. Durum wheat quality improvement. Integrated approach to breeding cereals for drought resistance: physiological aspects, molecular aspects. Integrated approach to breeding for biotic stress in food legumes. Economic importance of native spontaneous species. Genetic resources of rainfed Mediterranean fruit species (olive tree, nuts, under-utilised fruit crops; inventory, collection, *in situ* and *ex situ* conservation, evaluation).

(iii) *Animal production in arid and semi-arid areas*. Range rehabilitation and management. Optimisation of the use of local feeding resources. Improvement of camel production systems. Breeding objectives and strategies in sheep and goat populations. Monitoring of animal production systems for managerial decisions.

(iv) *Sustainable management of arid and semi-arid zones*. Soil degradation and desertification (including revegetation). Sustainable management at the watershed level. Land tenure framework related to sustainable management. Impact assessment of technology transfer (socio-economic and environmental). Institutional and socio-economic opportunities and constraints.

Activities carried out

Training

Twelve training courses have been organised, all of them in collaboration with the partner institutions from the MNCs:

(i) Fodder shrubs: their role in Mediterranean arid and semi-arid land development and environmental conservation (Rabat, Morocco, 28 September-9 October 1998).

(ii) Range management and development in Mediterranean arid and semi-arid zones (Rabat-Oujda, Morocco, 31 March-21 April 1999).

(iii) Sustainable use of resources in Mediterranean rainfed agriculture (Rabat, Morocco, 18-29 October 1999).

(iv) Techniques for mitigating desertification processes in Mediterranean countries (Médenine, Tunisia, 3-14 March 2000).

(v) Integrated approach to breeding cereals for drought resistance (Rabat, Morocco, 27 March-7 April 2000).

(vi) Agroecological characterisation for resource management in dry areas: use of GIS, remote sensing and modelling (Ankara, Turkey, 12-23 June 2000).

(vii) Olive orchard management in rainfed conditions: new perspectives (Sfax, Tunisia, 22 January-2 February 2001).

(viii) Optimising the use of local conventional and non-conventional feed resources in Mediterranean arid and semi-arid areas (Cairo, Egypt, 12-23 May 2001).

(ix) Management strategies to mitigate drought in the Mediterranean: monitoring, risk analysis and contingency planning (Rabat, Morocco, 21-26 May 2001).

(x) Seasonal weather information for sustainable agricultural management in the Mediterranean region (Cairo, Egypt, 19-23 January 2002).

(xi) Improvement of camel production (Rabat, Morocco, 4-15 March 2002).

(xii) Crop choices for Mediterranean rainfed conditions. Technical and socio-economic criteria (Algiers, Algeria, 6-17 April 2002).

Aid to decision making seminars

These seminars have been organised on relevant topics for agricultural policy and addressed to decision makers. The seminars organised are:

(i) Implementation of control and eradication programmes of animal diseases (Zaragoza, Spain, 8-12 February 1999).

(ii) Introduction of transgenic plants in agriculture: evaluation and decision-making criteria (Zaragoza, Spain, 22-26 November 1999).

(iii) Climate change: effects on agriculture in the Mediterranean region (Zaragoza, Spain, 25-29 September 2000).

(iv) Risk management in Mediterranean Agriculture: agricultural insurance (Zaragoza, 10-14 June 2002).

Support to cooperative research

The support to the cooperative research in the Mediterranean has been given through research networks and by developing a research project.

The two supported networks are:

(i) Plant resources adapted to Mediterranean dry conditions: study, conservation and utilisation (focused on nuts, apricot, Mediterranean under-utilised fruits, forestry species, cereals, food legumes).

(ii) Improvement of sheep and goat production systems adapted to the Mediterranean dry zones.

The objectives of these networks are the exchange of information, the development of research activities with common methodologies, the organisation of seminars and workshops, the publication of research results, etc.

The research project supported in this programme is the MEDRATE Project (Mediterranean Rainfed Agriculture Technologies Evaluation). The project, including the most relevant results, is presented in this volume (Cantero and Gabiña; Cantero *et al*.; Angás *et al*.; Gabiña *et al*.).

Support to Information and Communication Technologies (ICT)

The objectives of this component of the RAP-RAG programme were to implement and improve access to e-mail and internet in the main partner institutions (infrastructure and training), to disseminate and gain access to relevant information on rainfed agriculture (websites and databases) and to train personnel from the main partner institutions on ICT technologies.

The financial support provided by the RAP-RAG programme has allowed the six partner institutions to have internet connexion and to install an institutional internet server where websites are hosted. A website for the RAP-RAG has also been set up at the IAMZ server.

Three training activities have been organised within the framework of this ICT component with a total of 24 trainees.

Activity statistics

As the most relevant figures (Table 1), 1078 applications were received for the 12 training activities with 300 accepted participants from 28 different countries. For the 4 aid to decision making activities there were 477 applicants and 130 participants from 26 countries. Research network activities had 1664 participants, while 60 researchers from 14 institutions and 8 countries participated in the MEDRATE Research Project.

Table 1. Figures regarding participation and outputs in the RAP-RAG activities

	Activities	Participating institutions	Applicants	Participants	Lecturers	Participants' countries	Publications (P), Documentation (D), MSc Thesis (T)
Training	12	10	1078	300	156	28	12D
Research networks	31	60		1664 (500 regular participants)		19	29P
Research Project MEDRATE	1	14		60		8	
Aid to decision making	4	4	477	130	48	26	4D
Mobility	19	13		19		6	19T
ICT training	3	6		24		5	3D

RAP-RAG outputs

The RAP-RAG programme, through the intensive activity developed within its framework, has contributed to a better identification of the limiting factors for Mediterranean RAG sustainability, a more precise definition of the priorities regarding research and development in Mediterranean RAG and a comprehensive map of the relevant Mediterranean teams and programmes acting on RAG.

Furthermore, the programme has reinforced:

(i) The knowledge, exchange of experiences and cooperation between institutions and experts participating in the programme and with other experts on rainfed agriculture from the region and from outside the region.

(ii) The capabilities of the partner institutions in the organisation of international training courses and workshops.

(iii) The possibilities of communication and dissemination of their own information and of the information derived from the programme results.

(iv) The MEDRATE project has been one of the activities that has better promoted the exchange and cooperation between experts and participating institutions.

Finally, the programme has enabled some key elements to be identified in order to design a strategy which could contribute to Mediterranean RAG sustainability and to the Euro-Mediterranean integration. These elements are:

(i) Drought management: preparedness and mitigation.

(ii) Desertification/erosion monitoring and control.

(iii) Climatic change: monitoring and adaptation.

(iv) Implementation and dissemination of available technologies for sustainable rainfed agriculture.

(v) Development of new plant material. Regulatory framework.

(vi) Animal health and product safety.

(vii) Increasing the value and safety of products: quality assurance systems / integrated production.

All these elements can contribute to a more sustainable rural development in the Mediterranean rainfed agriculture areas.