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WAFLA

- **Integrated Water resource management by the implementation of improved Agro-
Forestry concepts in arid and semi-arid areas in Latin America-**

Instrument: Coordination Action

Priority 10: “Specific measures in support of international co-operation”

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BIOAZUL

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Dissemination Level		
PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	X

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1- PROJECT EXECUTIVE SUMMARY

1.1. Project Summary

About one-quarter of Latin America is covered by dry-lands including the Pacific coast, the dry plains of the Andean mountains, the arid region extending to Patagonia and the dry areas of Mesoamerica. **Desertification** is the most challenging problem in these areas, resulting from the non-sustainable use of the natural resources, leading to a reduction of the productivity of ecosystems and agriculture, thus increasing the poverty of the inhabitants. **It is a must to contribute to fight against degradation of land and to eradicate the poverty in dry areas in Latin America**, through a sustainable management of resources in an international scope. Bringing together **agroforestry approaches** with an **integrated water resource management (IWRM)** is the key direction that must be followed in order to enhance the sustainable development of arid and semi-arid areas in Latin America. Therefore, WAFLA was created given the **remaining need of establishing positive links**, in order to fortify the scope of local activities, by the integration of stakeholder in a multidisciplinary approach.

The general objective of WAFLA is to coordinate the current research, technological innovation and social and policy development activities, creating synergies to promote the adoption of IWRM and improved agroforestry systems in order to propose real solutions to combat the degradation of dry lands and to enhance rural development in Latin America.

The main outcome of WAFLA has been the identification of management strategies and policy options for the promotion of region-adapted agroforestry practices, by providing the **Latin-American Joint Arid-Agroforestry Management Guidelines**, based on the participatory management of agroforestry modules, with the involvement of local communities. During the framework of the project the following main activities took place: (1) local identification of **indigenous and adapted species** for dry areas, (2) identification and systematizing of **agroforestry practices and best practices**, (3) identification of strategies for promotion of agroforestry practices, (4) development of an **information network of markets for agroforestry products** to empower local producers and traders and (5) development of a sustainable Arid-Agroforestry Extension and **dissemination Strategy**.

The proposed activities were developed by a well-balanced consortium, allowing for the maximum integration of knowledge, expertise and experience between the 21 members representing each relevant field of resource management in arid and semi-arid ecosystems.

Project objectives

The **specific strategic objectives** of the WAFLA Co-ordination Action are:

1. To encourage the establishment of permanent communication links between research centres, rural developing associations, regional networks and other stakeholders in Latin America, promoting the know-how exchange and expertise in relation to agroforestry and integrated water resource management in arid and semi-arid ecosystems.
2. To co-ordinate current research and development activities in Latin America in order to promote cooperation and avoid overlapping and duplication of efforts, taking into account traditional knowledge and innovation technologies.
3. To define, initiate and guide future R&D activities on Latin-American level by mapping current research and forming research clusters in order to fulfil the scientific and technological needs for the further implementation of agroforestry and integrated water resource management in arid and semi-arid areas.
4. To identify management strategies and participatory policy options in a multidisciplinary approach for the promotion of region-adapted agroforestry structures and integrated water resource management, developing adequate recommendations for further implementation in arid and semi-arid areas and focusing on the socio-economic, technological, local conditions, legal and political requirements.
5. To disseminate the results, through an Integrated Agroforestry/Water Management Extension Programme Guidelines, designed specially to reach the community of local farmers and to

build capacity of authorities for future dissemination, developing institutional mechanisms for deployment of extension strategy.

The **scientific and technological objectives** of the WAFLA Co-ordination Action are:

1. To define criteria and indicators of: land degradation, best practices of agroforestry and water management and sustainable ecological productivity.
2. To assess the land degradation of the Latin American Region, with the aim of identifying potential areas for the implementation of agroforestry and integrated water management systems.
3. To evaluate the current water resource management in arid and semi areas, identifying best practices.
4. To identify the common traditional agroforestry systems of indigenous people in arid and semi-arid areas, identifying best practices, considered crucial in planning and implementing sustainable management strategies of renewable resources.
5. To evaluate and identify potential market-valuable crops and appropriated agroforestry and water management models adaptable to local conditions, identifying opportunities for enhanced economic productivity and sustainable production
6. To identify and develop suitable technology packages, including planting, irrigation, maintenance, harvesting and transformation of products, to diversify income generation and sustain rural and peri-urban livelihoods.
7. To develop and propose a Latin American market information system and institutional frame for agroforestry products, to empower local producers and traders providing more transparent information and thereby making agroforestry a more profitable activity for local communities.
8. To set up common information system, devoted to the mass dissemination of the accumulated know-how and experience in the region.

1.2. Contractors list

The contractors involved in the project are shown in the following list:

Partic. Role*	Partic. No.	Participant name	Participant short name	Country	Month enter project	Month exit project
CO	1	Technologie Transfer Zentrum Bremerhaven	TTZ	Germany	1	30
CR	2	Centro Agronómico Tropical de Investigación y Enseñanza	CATIE	Costa Rica	1	30
CR	3	Regional Information Network on Land Degradation, Drought and Desertification in Latin America and the Caribbean	UNCCD	INT	1	30
CR	4	Centro de Agroforestería para el Desarrollo Sostenible Universidad Autónoma Chapingo	CADS-UACH	Mexico	1	30
CR	6	Instituto Nicaragüense de Tecnología Agropecuaria	INTA	Nicaragua	1	30
CR	7	Instituto Argentino de Investigaciones de las Zonas Áridas	IADIZA	Argentina	1	30
CR	8	Universidad Nacional de Loja	UNL	Ecuador	1	30
CR	9	Institute Desert	ID	Brazil	9	30
CR	10	International Centre for Tropical Agriculture	CIAT	INT	1	30
CR	11	Centro de Investigaciones de Zonas Áridas – Universidad Nacional Agraria La Molina	CIZA-UNALM	Peru	1	30
CR	12	Plant Research International B.V.- Wageningen University	PRI	The Netherlands	1	30
CR	13	Centro de Información e Intercambio para la Agricultura Agroecológica	FAA	Bolivia	1	30
CR	14	Centre de Coopération Internationale en Recherche Agronomique pour le	CIRAD	France	1	30

		Développement				
CR	15	Fundación Desde el Chaco	DeSdel-Chaco	Paraguay	1	30
CR	16	Centro de Investigaciones en Ecología y Zonas Áridas - Universidad Francisco de Miranda	CIEZA-UNEFM	Venezuela	1	30
CR	17	BIOAZUL S.L.	BioAzul	Spain	1	30
CR	18	Facultad de Ciencias Forestales de la Universidad Autónoma de Nuevo León	FCF-UANL	Mexico	1	30
CR	19	Asociación Coordinadora Indígena y Campesina de Agroforestería Comunitaria Centroamericana	ACICAFOC	Central America	1	30
CR	20	Centro Salvadoreño de Tecnología Apropriada	CESTA	El Salvador	1	30
CR	21	School of Agricultural and Forest Science, University of Wales	UWB	United Kingdom	1	30
CR	22	ONG Red de Acción por la Tierra or EAN-Action Network	EAN-Santiago	Chile	1	30

Table 1: Contractors list

*CO = Coordinator / CR = Contractor

The contact details of the co-ordinator

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1.3. Work performed, results achieved and end results

The general objective of WAFLA Co-ordination Action is to coordinate and integrate the current scientific research, technological innovation and social and policy development activities, creating synergies to promote the adoption of integrated water resource management and improved agroforestry systems in order to propose feasible solutions to combat the advancing desertification and degradation of the arid and semi-arid ecosystems and to enhance rural development in Latin America.

In order to achieve the above mentioned objectives, the work has been organised in the following work packages (WP):

- WP1: Definition of assessment and monitoring tools
- WP2: Regional recognition
- WP3: Processing, marketing, trade and institutional frame
- WP4: Coordination of research, technology development and cooperation
- WP5: Future strategies of implementation
- WP6: Integrated agroforestry / water management extension and dissemination programme
- WP7: Project Management

During the 30 months of the project duration, reporting from the 1st October 2006 until the 31st March 2009, all project tasks foreseen in the DoW have been performed by project partners.

WP1 was the basis for the future evaluations performed across Latin America that standardized the evaluation criteria. The members of this workpackage have gathered the different existing evaluation criteria and monitoring tools that were used during the last 6 month of the first reporting period. The definition of assessment and monitoring tools in arid and semi-arid ecosystems was performed through the identification of several types of indicators and benchmarks of land degradation (D01). The definition of socio-economical and legislative criteria for the evaluation

under a social scope in arid and semi-arid regions was accomplished (D10) as well. Evaluation criteria of integrated water resources management practices for their application in the Latin American selected regions as well as the selection of best practices were performed (D11). Evaluation criteria of traditional agroforestry practices (D12) and identification of targeted crops (D13) in order to find the best Agroforestry practices and the most suitable crops for the WAFLA targeted region were studied. Finally, the criteria for the identification of the key actors as well as dissemination criteria were also obtained (D14).

All criteria resulting from WP1 have been used to prepare the needed methodologies in order to perform the regional recognition of the arid and semi-arid ecosystems in Latin America under WP2. That resulted in a unique and unified questionnaire applicable to the WAFLA targeted regions defined in task 2.1 (D02). The identification of the arid and semi-arid regions in Latin America was accomplished obtaining a list of 43 regions, the WAFLA targeted regions, and an assessment of land degradation covering 16 Latin American countries. The questionnaire was applied and the analysis/interpretation of the collected data was developed, obtaining detailed information corresponding to each region. Furthermore, the questionnaires results evaluation and selection of the best practices regarding all the aspects under survey were obtained. The socio-economical characterization of localities (D20), the evaluation of the current water management practices (D21), the identification of traditional Agroforestry systems (D22) and key species (D03 and D23) and the evaluation of the policy and legislative frame regarding water and soil management (D24) as well as the identification of key actors and stakeholders (D25) were deeply studied.

The information gathered in all the 7 tasks of WP2 served as a base of the WAFLA country-profiles, where information of each Latin American country has been presented and it is available to the public under <http://wafla.com/99.0.html>. Each country profile has information on the desertification status of the country, the targeted regions that each partner has chosen and its characteristics, the best agroforestry and water management practices of the specific localities that were studied and networks and associations with contacts of governmental and non-governmental actors.

Under WP3, a general characterisation of the agroforestry crops and products was developed during the first reporting period from the information on the primary report on the targeted species used in arid and semi-arid agroforestry systems (Task 2.5) including information about their properties, uses, products which are derived from the raw material, processing, existing market and marketing information, etc. This survey was an important input for the subsequent work corresponding to the development of a market information system for arid-agroforestry products. Furthermore, the characteristics of the production chain of two products prioritized (cashews and *Prosopis*) were determined, in order to define and formulate an institutional scheme for promoting the commercialization of these products, and developing the marketing information system (MIS).

With regards to WP4, mapping of current research related to WAFLA topics was accomplished within and outside the consortium. The key actors identified under WP2 were the basis for a preliminary survey performed on research centres in Latin America. Current research and development activities in the field of Agroforestry and water management in arid and semi-arid areas of Latin America outside the consortium have been identified, schematized and reported.

Once the mapping of current research was completed, research clusters have been identified and schematized according to thematic areas and strategies. These institutions have been contacted and invited to form part of WAFLA network as external members in order to create links of cooperation among institutions working in the same field of expertise and encourage the formation of new clusters. They were also invited to participate to the WAFLA Final Conference.

In addition, existing current regional and sub-regional networks dealing with agroforestry have been identified. The mapping of these associations and organisations provided an opportunity to set strategies for cooperation and cross-fertilisation of ideas, and has been an important input in the definition of future joint activities to promote network solidification. In this sense, the future of WAFLA network was discussed under the final meeting, and partners of the consortium found different fields in which WAFLA initiative could be extended. A concept note with the basis of a political incidence project was developed in order to be submitted in the future to different calls for proposal of international funding schemes (FP7, International Cooperation Agencies, etc.).

Moreover, specific recommendations for future research, technology development and cooperation strategies with a focus on the needs in Latin America have been proposed. These recommendations define the road for research for universities and research organizations within and outside the consortium. Some technologies for dry, sub-humid, arid and semi-arid regions recommended are Quesungual (or Kuxur Rum), fodder banks with scattered trees of *Cratylia argentea* or *Leucaena* spp., improvement of Prosopis based agroforestry system, and strengthening woody perennials where irrigation is possible.

Furthermore, in the frame of the tasks 4.3 and 4.4., the WAFLA target areas were divided into the following regions based on climatic conditions: 1) Dry sub-humid region of the Pacific in Central America (Costa Rica, Salvador, Guatemala, Nicaragua) and the Chaco (Paraguay); 2) Warm semi-arid region (Loja, Ecuador); 3) Temperate arid region (Zacatecas-Mexico; Piura-Peru; Mendoza-Argentina); 4) Cold arid region (Potosi and Cochabamba in Bolivia); and 5) Warm arid region (Falcon-Venezuela). The results of work package 2 were used to determine the main agroforestry systems in each site, the key agroforestry species, and socio-economic constraints for adoption of these systems. Following this, a design and diagnosis methodology was developed with the WAFLA consortium and it was applied to 3 - 6 farms in each partners' site of work, in order to make an inventory of the agroforestry practices and to collect socio-economic variables of these practices. The agroforestry practices were defined as: 1) successful agroforestry practices (a practice that is widespread in the region and is being managed by many farmers in the area for a long period); and 2) Agroforestry prototype (a practice that has been validated and is in the process of adoption by farmers). After the analysis of the data on farm inventory, a semi-structured interview was made with farmers (15 to 30 farmers) to evaluate their perceptions on the successful agroforestry practices and / or the agroforestry prototypes.

Regarding the WP5 (Future strategies of implementation), the content of the guidelines and related aspects like public addressed, languages and format were discussed during the mid-term meeting in Chapingo, Mexico and the Technical Meeting in Lima, Peru. It was decided to prepare a set of fact sheets that could be put together as different guidelines, depending to the type of public to be addressed. Two main target audiences were defined: 1) Local level, including grassroots specialists, technicians, local authorities and multiplicators (NGOs) and 2) National and international levels, authorities, policy makers, potential donors and networks. The sheets were divided in two types: 1) with geographical context, including 13 case studies per country identified in WP4, and 2) without geographical context, including agroforestry practices and their benefits, as well as promotion strategies, related to awareness raising, policy spectrum, management of resources, sustainable livelihoods and coordination of small and medium farmers to reach the market. Furthermore, 2 technical sheets were prepared to describe the concept of agroforestry and the methodology for the implementation. Finally, a set of 3 policy briefs have been produced including: Agroforestry and poverty and food security; Agroforestry and Biodiversity and Agroforestry and Climate change. The technical sheets were printed, compiled in folders and distributed among the partners and other stakeholders during the Final Conference in Santiago, in January 2009. Furthermore, the consortium decided to bring the information gathered in the 30 months of WAFLA in a more interactive way, thus building up a CD-Rom containing the fact sheets, WAFLA country profiles, the policy briefs, the sheets of species and the deliverables of the consortium.

Strong dissemination activities have been carried out within WP6 during the project time frame in order to widespread to a major public the project and its main outcomes. This work package was the most active during the last reporting period when most of the scientific project results had been achieved and partners of the consortium have been more devoted to the project dissemination.

The first version of the promotional leaflet (D08) has been developed in English and Spanish and was focused on the benefits of Agroforestry, the problems addressed, the WAFLA objectives, the workplan, the current and expected results, seminars and the Final Conference as well as Consortium contact details.

The second promotional leaflet (D31) was focused on the Final Conference held in Santiago de Chile, and has been printed in three languages (Spanish, English and Portuguese). It gave information about the procedure and calendar for submission the call for papers and a preliminary

program of the conference. It also included information about the WAFLA objectives, achieved and expected results, as well as consortium contacts details.

Several rural workshops have been carried out in key localities mapped under WP2 in order to reach the farmers and communities located in arid and semi-arid regions with potential for the application of agroforestry and integrated water management systems. Additionally to these workshops, specific seminars for the capacity building of authorities have been held in the same locations with the objective of enhancing the proposal of measures that promote agroforestry systems and the sustainable use of water resources.

The consortium has identified the possibilities of establishing new training activities in these fields, by formulating new national courses in universities or organizing specialized seminars, as well as developing possible links and cooperation strategies among member institutions to offer a broader scale of activities related to specialized training. In this sense, four specialized seminars with relevant actors from the regional scientific community have been held in Mendoza (Argentina), Texococo (Mexico), Lima (Peru), Coro (Venezuela), providing concepts, technologies, methodological tools, showing good practices and case studies and potentials of agroforestry for food security.

The results of the strategies of cooperation for these activities have been reported with the objective to link and empower new and existing specialized training activities highlighting the needs with a focus on the arid and semi-arid regions in Latin America.

Sensitive material to reach stakeholders in rural communities of Latin-America has been produced during the third period to be used across the region. This material comprises calendars, leaflets, flyers and posters to raise awareness about desertification and the benefits of agroforestry. In particular, specific dissemination material in form of flyers showing agroforestry systems have been developed to reach small indigenous communities of Central America.

One of the main tools for the wide dissemination of the project and its results is the official project web-page www.wafla.com. It consists of a public access site containing a description of the project, information about the objectives, partnership and progress of the WAFLA project, and a restricted area for the consortium in which all important information, project deliverables and other documents are hung down. Furthermore, a public library with related documents as well as documents produced within the project is also available for the general public. The website has been continuously updated accordingly to the results achieved.

Important outputs of the project have been uploaded to the web site, such as a database of species, and the content and details of the Final Conference held in Santiago, Chile. The fact sheets developed under WP5 are also available to the general public and they can be downloaded as PDF files to be printed and give guidelines adapted to different stakeholders. In addition, the translation of the website content into Portuguese was completed during the third year of the project.

Moreover, an official logo of the project has been developed and included in the webpage and all dissemination materials produced in the WAFLA project:



Fig. 1: WAFLA Logo

Provisions will be taken for the website to remain active after the project completion thanks to suitable institutional arrangement and a domain name acquired for a longer period of time.

The Final Conference of WAFLA has been the most important event for the dissemination of the project objectives and results during the project time frame. This International Conference called "Improved Tools to Combat Desertification and Drought" raised awareness of policy makers, civil society organisations and the science community of the impacts of climate change and of management of land degradation and desertification, and livelihoods in the semi-arid and arid

regions of Latin America. Relevant actors in WAFLA related topics within and outside the consortium participated providing their experience from different parts of the world. The Conference also identified policies and incentive mechanisms for the adoption of improved agroforestry systems in sub/humid, semi/arid and Arid regions in Latin America. These measures were discussed with relevant stakeholders in panels of discussions which was an excellent opportunity for the exchange of experiences and expertise.

The second promotional leaflet, focused on the Final Conference as stated above, and a poster of the conference were widely distributed for the broad dissemination of this event.

Other dissemination activities have been carried out, i.e. two WAFLA Posters, attendance to conferences, seminars and meetings, or the introduction of the project to relevant stakeholders and authorities. A more detailed explanation of the dissemination activities carried out, as well as several routes for the exploitation actions expressed by project partners to date regarding the results, are available in section 2 "Plan for Using and Disseminating the Knowledge".

The management of the project (WP7) has been carried out in parallel to the coordination activities, ensuring the correct coordination, communication and cooperation between the partners. The periodic activity and management reports have been prepared after each reporting period within task 7.2 by the administrative coordinator. In addition, two short project update reports have been prepared at month 6 and 18 respectively. Final activity and management reports as well as the Final Review have also been prepared for month 30. In addition, ten short local progress reports have been submitted during the project time frame by the scientific coordinator, who has also presented one scientific report after each reporting period.

The WAFLA project officially started the 1st October, 2006, and launched during the Kick-Off Meeting in October 29th – November 31st 2006, held at the facilities of the Centro Agronómico Tropical de Investigación y Enseñanza (CATIE) Turrialba, Costa Rica. Since then, the project has been managed by the three coordinators, TTZ (being the general and financial coordinator), CATIE (the scientific coordinator) and BIOAZUL (the administrative coordinator).

The Mid-Term Meeting was held from the 15th to 19th of October 2007, in the Centro de Agroforestería para el Desarrollo Sostenible, Universidad Autónoma Chapingo (CADS-UACH) Texcoco, Mexico. Two extra days of pre-workshops were scheduled, 12th and 13th of October, as the consortium considered it necessary in order to make progress in the work under WP2.

The Technical Meeting was held from June 2nd to June 4th, 2008, in the Centro de Investigaciones de Zonas Áridas, Universidad Nacional Agraria La Molina (CIZA-UNALM), Lima, Peru. Two extra days of pre-workshops were scheduled, 31st of May and 1st of June, as the consortium considered it necessary in order to make progress in the work under WP4 and WP5.

The Final Meeting was held on January 23rd, 2009 in Santiago (Chile), hosted by the ECLAC. The meeting served to analyze and assess the project results and all partners expressed their conclusions. Organization of the last activities of the project was also faced during the meeting. One important seminar related to the future of WAFLA network constituted an important task to extend the project results to future initiatives. In addition, a special session was devoted to financial issues, in which the requirements for the audit certificates to be submitted during this reporting period by every partner were largely discussed and clarified by TTZ and BIOAZUL.

In addition to daily management activities, extraordinary activities have been carried out during the project time frame such as 5 Chat Meetings. The Chat Meetings permitted to define the procedure in certain activities that required a deeper clarification than what it is stated in the work plan. These meetings were a great success, counting with the participation of all the members of the teams involved in the related tasks. As expected, the WAFLA consortium reached a consensus in the issues addressed.

First Chat meeting was held in June 12th, 2007, and aimed at the understanding of the WP2, task methodology in the form of a "unique questionnaire" to analyse the WAFLA regions and the WAFLA country profiles relation.

During the second year of the project three chat meetings were performed. One held on February 8th, 2008, another one on February 19th, 2008, and the last chat meeting on May 20th, 2008. These

three chat meetings dealt with the methodology of Diagnosis and Design developed in tasks 4.3 and 4.4.

One chat meeting was held in the third year of the project, on February 25th, 2009. This chat meeting dealt with the scope and content of the Concept Note developed under task 4.2.

Some changes regarding the participants in WAFLA project occurred. Two organizations, CONAF and EMBRAPA, from the 22 partners foreseen for the WAFLA project never were officially partners of the consortium since did not sign any form, except EMBRAPA signing only the Consortium Agreement. They did not receive any payment from the general budget either.

As there was no response from them, the coordinator decided to distribute their work among project partners and include a new partner from Brazil. Institute Desert (ID) was incorporated into the consortium in July 2007 performing part the work allocated to EMBRAPA. The work allocated to CONAF was distributed amongst the partners of the consortium as stated in the final version of the DoW (last review: August 13th, 2007).

At the beginning of November the European Commission informed TTZ that EMBRAPA and CONAF were withdrawn from the project (official date of acceptance of the Amendment to the contract 12th of October of 2007).

The specific results derived from the work performed in this period are presented in the following table:

Work package No ¹	Work package title	Lead Contractor	Start month	End month	Deliverable No	Status
1	Definition of assessment and monitoring tools	DeSdel-Chaco	1	6	D01, D10, D11, D12, D13, D14	Submitted
2	Regional recognition	IADIZA	1	12	D02, D03, D15, D20, D21, D22, D23, D24, D25, D30	Submitted
3	Processing, marketing, trade and institutional frame	CIAT	3	21	D38, D39, D45	Submitted
4	Coordination of research, technology development and cooperation	CIZA-UNALM	1	28	D07, D32, D37, D35, D44, D55, D57, D61	Submitted
5	Future strategies of implementation	TTZ	12	24	D49	Submitted
6	Integrated agroforestry / water management extension and dissemination programme	EAN-Santiago	1	30	D04, D05, D08, D09, D18, D31, D34, D36, D38, D40, D41, D47, D48, D53, D56, D58, D59, D62, D63	Submitted
7	Project Management	TTZ	1	30	D06, D16, D17, D19, D26, D27, D28, D29, D33, D42, D43, D46, D50, D51, D52, D54, D60, D64, D65, D66, D67, D68, D69, D70,	Submitted

Table 2. Workpackages of the third reporting period

1.4. Summary Overview of the Specific Objectives and Achievements for the Period

The main **scientific and technological objectives** of the WAFLA are:

- To define criteria and indicators of: land degradation, best practices of agroforestry and water management and sustainable ecological productivity.
- To assess the land degradation of the Latin American Region, with the aim of identifying potential areas for the implementation of agroforestry and integrated water management systems.
- To evaluate the current water resource management in arid and semi areas, identifying best practices.
- To identify the common traditional agroforestry systems of indigenous people in arid and semi-arid areas, identifying best practices, considered crucial in planning and implementing sustainable management strategies of renewable resources.
- To evaluate and identify potential market-valuable crops and appropriated agroforestry and water management models adaptable to local conditions, identifying opportunities for enhanced economic productivity and sustainable production
- To identify and develop suitable technology packages, including planting, irrigation, maintenance, harvesting and transformation of products, to diversify income generation and sustain rural and peri-urban livelihoods.
- To develop and propose a Latin American market information system and institutional frame for agroforestry products, to empower local producers and traders providing more transparent information and thereby making agroforestry a more profitable activity for local communities.
- To set up common information system, devoted to the mass dissemination of the accumulated know-how and experience in the region.

Agroforestry is a land management system that optimises land productivity by involving positive interactions between its components in time and space. It takes advantage of the complimentary relationships between trees, crops and livestock in such a way that the productivity, stability and sustainability of the total system exceed most of the single cases. Its appropriate exploitation is a remarkable opportunity for improving degraded sites, stabilizing fragile ecosystems and is also an ideal farming system for arid and semi-arid zones. It is also a suitable technique for arid and semi-arid land recovery and sustainable agriculture.

Agroforestry includes *alley cropping*, silvopasture, windbreaks and shelterbelts, riparian buffer or filter strips and forest farming, involves growing crops (grains, forages, vegetables, etc.) between trees planted in rows. Silvopasture investigations have been carried out for several years in several Latin American countries like Cuba, Peru, Colombia and Argentina. For more than two decades, there have been investigations and implementations of a series of experiences in the forests of the South American semi-arid Chaco, in order to revert the degradation state in which are the natural resources. In the Experimental Station of Coca-Amazonia, Ecuador, tests combining nutritional short rotation plantations (maize, beans, caupi) with herbaceous and *arbustivas leguminosas* practices have been carried out. Windbreaks have been shown to reduce wind impact over a horizontal distance equalling at least ten times the height of the trees. Wind and water erosion are reduced, creating a moist, more favourable microclimate for the crop. In Peru, there have been installed shelterbelts by means of forest species seeds sowing around the parcels, to take advantage of rains and to manage to protect areas of cultures, and thus to avoid the use of the species *Prosopis sp.*, *scabrida Capparis* for posts. These plantings are designed to catch soil, excess nutrients, and chemical pesticides moving over the land's surface before they enter waterways. The riparian buffers stabilize stream banks and prevent stream bank erosion.

Regarding the water management in Latin America, this is the region of the world that posses the highest access to water resources, about one third of the total renewable reserves. Only South America contains about 30% of the total runoff of the world, estimated on 42650 km³, receiving an annual average rainfall of 1556 mm, superior to any other region in the world.

In spite of the great reservoirs of fresh water, these are irregularly distributed in time and space, affecting the availability across the region. For instance, in the arid and semi-arid region of South America, representing 26% of the total surface, the rainfall accounts for less than 550 mm, having experienced extreme periods of droughts and floods, which have generated an impact on the natural resources, making it difficult to maintain or improve land productivity. On the other hand, two thirds of Central American region is located on the arid Pacific side where only 30% of rainwater drains in an irregular pattern, which has impaired maintaining a sustainable drying agricultural process. It is palpable that such climatic conditions, together with the lack of institutional measures for watershed management, have made agriculture a vulnerable and non-sustainable activity in dry areas of Latin America. In general, the agricultural practices adopt irrigation technologies of low efficiency.

Regarding the integrated water management in the region, some successful experiences have been identified. For instance, the “Trifinio –Alto Lempa” Plan, aimed to the rationalised use of water resources of the Lempa river, shared by Guatemala, El Salvador and Honduras, is an example of water management of a trans-bordered water body by the ecosystem approach.

Regarding the wastewater treatment, in 1998 less than 14% of the 600 m³/s of domestic wastewater collected in Latin America had some treatment before being disposed of in rivers and seas, and only 6% had an acceptable treatment causing the incidence of waterborne infectious diseases among 40 % of the population. Furthermore, the explosive urban growth has generated a rapid and chaotic urbanization of farmlands and has prioritised the use of surface waters for human consumption and the industrial sector. Consequently, the agricultural activity located around the periphery of the cities has been seriously affected and wastewater use has been the only survival alternative. This is reflected on the existence of more than 500,000 ha of agricultural lands irrigated directly with untreated wastewater. Some initiatives have been started by CEPIS, which proposed a model to integrate wastewater treatment and use, by an integrated system that adapts domestic wastewater treatment for its productive use, prioritising pathogen removal to protect public health, instead of the removal of organic matter and nutrients, which are important for agriculture. This system is intended to incorporate also the efficient water management in the basin.

WAFLA, as a coordination action, has integrated in a multidisciplinary approach the local and regional initiatives in the fields of agroforestry and integrated water resource management, in order to bring together the traditional and accumulated knowledge pointing out the needed research and technology efforts to propose feasible mechanisms to enhance the productivity of agroforestry activities in the arid and semi-arid areas of the region. The consortium has identified the targeted crops, described the properties, transformation processes and market value, as well as defined the suitable agroforestry/water management models and the criteria of application according to local conditions.

During the project the achieved objectives have been the following:

- Definition of assessment and monitoring tools for the standardisation of the evaluation exercises to be performed across the region
- Systematization/collection/interpretation/evaluation of information, regarding the current state of land degradation, socio-economical situation of the regions, current agroforestry practices and water management, national/regional policy frame and key actors corresponding to the current situation in Latin American regions.
- Characterization of Agroforestry targeted products.
- Mapping of current research inside the WAFLA Consortium.
- Establishment of different dissemination tools as the WAFLA web-page and the first promotional leaflet.
- Elaboration of WAFLA Country Profiles.
- Definition of the characteristics and transformation processes of agroforestry products from targeted crops.

- Identification of potential users, market and institutional channels, and actual economic structure regarding selected agroforestry species (cashews and *Prosopis*).
- Proposal of a Latin American Marketing Information System suitable for arid-agroforestry products.
- Mapping the current research and development activities outside the consortium.
- Mapping the current regional and sub-regional networking and development activities.
- Definition and documentation of successful study cases of agroforestry practices in Latin America.
- Development of Latin America Joint Arid-Agroforestry/Water Management Guidelines.
- Establishment of different dissemination tools such as the second promotional leaflet.
- Definition of future joint activities for network solidification
- Development of a set of recommendations for future research, technology development and cooperation strategies
- To define and implement extension activities sensitive to users.
- To define and implement extension activities sensitive to users.
- To define and implement capacity building activities of authorities for future dissemination.
- To link and empower new and existing specialised training activities.
- To develop and implement tools for mass dissemination / setting up common data information system.
- Creation and management of database platform
- To update the WAFLA website
- To organise a technology transfer workshop with relevant actors from the regional scientific community.
- To present the results of WAFLA at conferences and symposia
- To organize the WAFLA International Conference in Santiago de Chile.

According to the Description of Work (DoW), the following table shows the main achievements of the project:

ACHIEVEMENTS OF THE PERIOD		
WP1: Definition of assessment and monitoring tools	Partners Involved	Main achievements
Task 1.1: Indicators and benchmarks of degradation of arid and semi-arid ecosystems	UNCCD, IADIZA, CIZA-UNALM, DeSdelChaco, CIEZA-UNEFM, FCF-UANL	- Methodological framework and criteria for the assessment of land degradation in arid and semi-arid areas of Latin America.
Task 1.2: Criteria of socio-economical evaluation of arid and semi-arid regions, including criteria for reviewing legislative frame.	CADS-UACH, UNL, FAA, ACICAFOC	- Methodological framework and criteria for socio-economical assessment in arid and semi-arid areas of Latin America, including criteria for reviewing legislative frame.
Task 1.3: Criteria of evaluation of practices in integrated water resources management	TTZ, CATIE, BIOAZUL, IADIZA, UNL, CIRAD	- Methodological framework and criteria for water management assessment in arid and semi-arid areas of Latin America.
Task 1.4: Criteria of evaluation of traditional agroforestry practices in arid ecosystems	CESTA, CADS-UACH, UNL, PRI, UWB	- Methodological framework and criteria for traditional agroforestry practices assessment in arid and semi-arid areas of Latin America.

Task 1.5: Criteria of identification of targeted crops.	CIEZA-UNEFM, UNL, FCF-UANL	- Criteria of identification of targeted crops for agroforestry systems in arid and semi-arid areas of Latin America.
Task 1.6: Criteria of identification of key actors; dissemination criteria.	EAN-Santiago, FAA, DeSdelChaco, UNCCD	- Criteria of identification of key actors and dissemination criteria.
WP2: Regional recognition	Partners Involved	Main achievements
WP2: Development of the unified questionnaire	CATIE, IADIZA, TTZ, FAA, UNCCD, CESTA, UNL, EAN-Santiago	- Development of the unified questionnaire for the evaluation in localities in the region.
WP2: Application of the unified questionnaire	CATIE, CADS-UACH, INTA, IADIZA, UNL, CIAT, ID, CIZA-UNALM, FAA, DeSdelChaco, CIEZA-UNEFM, FCF-UANL, ACICAFOC, CESTA, EAN-Santiago	- Application of the unified questionnaire in the 42 localities identified.
Task 2.1: Regional assessment of land degradation in arid and semi-arid areas in Latin America. Selection of potential regions for further agroforestry implementation	IADIZA, UNCCD, TTZ, UNL, CIZA-UNALM, FAA, DeSdelChaco, CIEZA-UNEFM, FCF-UANL, CESTA, EAN-Santiago	- Pre-identification of the arid and semi-arid regions in Latin America (WAFLA targeted regions). - Assessment of land degradation in arid and semi-arid areas in Latin America.
Task 2.2: Socio-economical characterisation of localities.	FAA, IADIZA, CATIE, UNL, CIZA-UNALM, DeSdelChaco, CIEZA-UNEFM, FCF-UANL, ACICAFOC, CESTA, EAN-Santiago	- Unified questionnaire section on the socio-economical aspects. - Socio-economical characterisation of the localities in the WAFLA targeted regions, with potential for further agroforestry implementation.
Task 2.3: Evaluation of the current water management practices in arid and semi-arid regions. Selection of best practices.	BIOAZUL, IADIZA, CATIE, UNCCD, UNL, FAA, DeSdelChaco, EAN-Santiago	- Unified questionnaire section on the water source. - Evaluation of the current water management practices in the WAFLA targeted regions. Selection best practices.
Task 2.4: Identification of traditional agroforestry systems. Selection of best practices.	CESTA, IADIZA, CATIE, CADS-UACH, UNL, CIZA-UNALM, FAA, DeSdelChaco, CIEZA-UNEFM, ACICAFOC, UWB, EAN-Santiago	- Unified questionnaire section on the traditional agroforestry systems. - Identification and evaluation of traditional agroforestry systems applied in the WAFLA targeted regions. Selection of best practices.
Task 2.5: Identification of keys species / targeted crops	UNL, IADIZA, CIEZA-UNEFM, CATIE, CADS-UACH, CIZA-UNALM, DeSdelChaco, FCF-UANL, CESTA, EAN-Santiago	- Pre-identification of species used in agroforestry system in arid and semi-arid areas of Latin America. - Unified questionnaire section on keys species/targeted crops. - Identification of keys species and targeted crops for agroforestry production under arid and semi-arid conditions in Latin America.
Task 2.6: Evaluation of the national and regional policy and legislative frame regarding water and soil management	ACICAFOC, EAN-Santiago, CATIE, UNCCD, IADIZA, CIZA-UNALM, FAA, FCF-UANL	- Unified questionnaire section on the legal aspects. - Evaluation of the national and regional policy and legislative frame regarding water and soil management in Latin America, focusing in the WAFLA targeted regions.
Task 2.7: Identification of key actors	EAN-SANTIAGO, FAA, CATIE, UNCCD, ACICAFOC, TTZ	- Unified questionnaire section on the key actors. - Latin American key actors and stakeholders for future dissemination.
WAFLA Country Profiles	TTZ, CATIE, UNCCD, CADS-UACH, INTA, IADIZA, UNL, ID, CIAT, CIZA-UNALM, FAA, DeSdel-Chaco, CIEZA-UNEFM, FCF-UANL, ACICAFOC, CESTA, EAN-Santiago.	- Reporting of essential information of each Latin American country for general public, containing a first part with general information of the country and a second part with best practices in agroforestry and water management.
WP3: Processing, marketing, trade and institutional frame	Partners Involved	Main achievements
Task 3.1: Definition of characteristics and transformation processes of products from targeted crops	FCF-UANL, TTZ, CADS-	- Matrix on the traditional agroforestry products from the WAFLA targeted regions.

	UACH, UNL, CIAT, CIEZA-UNEFM, BIOAZUL, ACICAFOC	<ul style="list-style-type: none"> - Characterization of targeted crops with relevant information about: cultivation, industrial value, market opportunities, etc.
Task 3.2: Formulation of market and institutional channels	INTA, CIAT , CIEZA-UNEFM, FCF-UANL, ACICAFOC, EAN-Santiago	<ul style="list-style-type: none"> - Selection of products with major marketing potential according to criteria of geographical scope, market demand, adaptation to arid or semi-arid areas. - Marketing characterization of two products: <i>Annacadium occidentale</i> (cashew) and <i>Prosopis spp</i> (mesquite).
Task 3.3: Development and proposal of a Latin American market information system for arid-agroforestry products	CATIE, IADIZA, UNL, CIAT , CIRAD, ACICAFOC, EAN-Santiago	<ul style="list-style-type: none"> - Collection of information about local Market Information System (MIS). - Settlement of a WAFLA/Tradenet site to be used by WAFLA partners and groups of interest.
M10: Targeted crops for agroforestry system in arid and semi-arid areas of Latin America identified and characterised		
M12: Development of the Latin American market information system for arid-agroforestry products, making available a study case of the selected.		
WP4: Coordination of research, technology development and cooperation	Partners Involved	Main achievements
Task 4.1: Mapping current research and development activities. Formation of research clusters	CIZA-UNALM, CADS-UACH, IADIZA, UNL, CIRAD, CIEZA-UNEFM, BIOAZUL	<ul style="list-style-type: none"> - Identification and mapping of existing current regional and sub-regional research within and outside the consortium dealing with agroforestry, integrated water management and rural development in arid and semi-arid areas. - Identification and systematization of research clusters in Latin America. - Contact with clusters and research centres and involvement in the network. - Participation of research centres in the WAFLA Final Conference.
Task 4.2: Mapping current regional and sub-regional networking and development activities. Definition of future joint activities for network solidification	TTZ, UNCCD, ID, CIZA-UNALM, FAA, BIOAZUL, ACICAFOC, EAN-Santiago	<ul style="list-style-type: none"> - Identification of associations and organisations dealing with agroforestry, integrated water management and rural development. - Creation of a common instrument: A matrix was created for task 4.1, and adapted to the goals and needs of task 4.2 - Collection of information on current networking and development activities: Development of a network data base - Conclusions about regional and sub-regional networking related to different sub-regions in LA. - Development of a template with most frequent fields to be filled in international calls for proposals on which future initiatives can be built. - Development of a Concept Note regarding political incidence in the field of agroforestry to be used as a starting point for future network initiatives. - Definition of potential fields for further collaboration after the project time frame.
Task 4.3: Definition of appropriate agroforestry and water management systems according to local conditions	TTZ, CATIE , UNCCD, CADS-UACH, INTA, IADIZA, UNL, ID, CIAT, CIZA-UNALM, PRI, FAA, CIRAD, DeSdelChaco, CIEZA-UNEFM, BIOAZUL, FCF-UANL, ACICAFOC, CESTA, UWB	<ul style="list-style-type: none"> - Definition of criteria for appropriate Agroforestry and water management systems. - Inventory of the agroforestry practices and collection of socio-economic variables on each targeted local region. - Analysis and conclusions of the data collected and definition of appropriate agroforestry and water management systems which should be encouraged and promoted.
Task 4.4: Identification of suitable technology packages.	CATIE, CADS-UACH, INTA, IADIZA, UNL, ID, CIZA-UNALM, PRI, CIRAD, DeSdelChaco, CIEZA-	<ul style="list-style-type: none"> - Elaboration of a methodology to formulate agroforestry integrated diagnosis. - Agroforestry diagnosis, made through interviews and workshops involving the whole family group

	UNEFM, BIOAZUL, CESTA , UWB	<ul style="list-style-type: none"> of each selected farm. Completed with field work in every parcel. Inventories of woody plants, identification of different segments and land georeferencing. Identification and characterisation of agroforestry systems that exist in the sub-humid, semi-arid and arid ecosystems found in Latin America. Identification of future key areas for agroforestry research in dry sub-humid, semi-arid and arid regions of Latin America.
Task 4.5: Development of recommendations for future research, technology development and cooperation strategies.	TTZ, UNCCD, CADS-UACH , ADIZA, CIZA-UNALM, PRI, FAA, CIEZA-UNEFM, CESTA, UWB, EAN-Santiago	<ul style="list-style-type: none"> Proposals about cooperation strategies, future research and technology development from research organizations within the consortium Systematization of information, literature review and inputs of partners of the consortium with regards to research gaps and priorities. Proposal of specific recommendations for future research, technology development and cooperation strategies.
M09: Definition of appropriate agroforestry and water management systems according to local conditions		
M11: Proposal of suitable technology packages		
M14: Network Solidification Strategy		
WP5: Future strategies of implementation	Partners involved	Main achievements
Task 5.1: Development of the Latin America Joint Arid-Agroforestry /Water Management Guidelines	TTZ, CATIE, UNCCD, CADS-UACH, INTA, IADIZA, UNL, ID, CIAT, CIZA-UNALM, PRI, FAA, CIRAD, CIEZA-UNEFM, FCF-UANL, ACICAFOC, CESTA, UWB, EAN-Santiago	<ul style="list-style-type: none"> Development of 28 Technical Sheets and Guidelines, covering the topics and scope agreed in the technical meeting of Lima. Printing of the material and elaboration of folders with the Technical Sheets. CD-Rom with the Technical Sheets and important material of WAFLA results.
M13: Publishing of Latin America Joint Arid-Agroforestry /Water Management Guidelines		
WP6: Integrated agroforestry / water management extension and dissemination programme	Partners involved	Main achievements
Task 6.1: Extension activities sensitive to users	TTZ, CATIE, CADS-UACH, INTA, IADIZA, UNL, ID, CIZA-UNALM, FAA, DeSdelChaco, CIEZA-UNEFM, FCF-UANL, ACICAFOC, CESTA, EAN-Santiago	<ul style="list-style-type: none"> Design of a strategy for the performance of rural and local workshops. Elaboration of general guidelines and templates adapted and used in different WAFLA locations. Performance of 29 rural and local workshops in WAFLA locations. Collection of material used in the workshops
Task 6.2: Capacity building of authorities for future dissemination	CATIE, UNCCD, CADS-UACH, INTA, IADIZA, UNL, ID, CIZA-UNALM, FAA, DeSdelChaco, CIEZA-UNEFM, FCF-UANL, ACICAFOC, CESTA, EAN-Santiago	<ul style="list-style-type: none"> Definition of unified general guidelines for the seminars with authorities. Performance of 26 seminars for the capacity building of authorities at WAFLA locations. Design of a strategy for the capacity building of authorities. Set of materials suitable for use in awareness-raising activities targeting local authorities.
Task 6.3: Linking and empowering new and existing specialised training activities	CATIE, CADS-UACH , IADIZA, UNL, CIZA-UNALM, CIRAD, DeSdelChaco, CIEZA-UNEFM	<ul style="list-style-type: none"> Formulation of strategies of cooperation in order to link and empower new and existing specialised training activities. A specialized Seminar-Workshop-Training Course was conducted at CIZA-UNALM in the Technical Meeting held in Lima in June, 2008. Performance of a strategic capacity building course by training the trainers called "Agroforestry for Ecodevelopment".

		<ul style="list-style-type: none"> - Organization of an international seminar on "Agroforestry for controlling desertification". - Performance of the "4th International Seminar: Agroforestry and arid zones of Latin America. Concepts and Case Studies", held in Mendoza (Argentina). - Report of the training activities performed under this task and main conclusions of the seminars.
Task 6.4.1: WAFLA web-page establishment (set up and service)	TTZ	<ul style="list-style-type: none"> - Set up of the web site - Up-date of the web page and translation to Spanish and Portuguese - Dissemination of the Final Conference - Upload of dissemination material for the general public: WAFLA country profiles, data base of species, Joint Arid-Agroforestry /Water Management Guidelines, etc.
Task 6.4.2: Creation and management of database platform	TTZ, BIOAZUL	<ul style="list-style-type: none"> - Set up of the public library - Database of species
Task 6.4.3: Production of dissemination material	TTZ, ID, FAA, CIEZA-UNEFM, BIOAZUL, ACICAFOC, EAN-Santiago	<ul style="list-style-type: none"> - First promotional leaflet in English and Spanish - Second promotional leaflet in English, Spanish and Portuguese. - Broad distribution of the leaflets
Task 6.4.4: Final WAFLA Conference	TTZ, CATIE, UNCCD, CADS-UACH, INTA, IADIZA, UNL, ID, CIAT, CIZA-UNALM, PRI, FAA, CIRAD, DeSdelChaco, CIEZA-UNEFM, BIOAZUL, FCF-UANL, ACICAFOC, CESTA, UWB, EAN-Santiago	<ul style="list-style-type: none"> - Organization of the logistics and administration necessities for the Final Conference and planning. - Invitations and Call for Papers disseminated through the Conference website, the Conference poster (print) and the second WAFLA leaflet, e-mail invitations, a Conference banner in partners' websites, etc. - Performance of the Final Conference at the ECLAC headquarters in Santiago de Chile. - Presentation of WAFLA main results to the scientific community, policy makers and other relevant stakeholders at the Final Conference. - Panel of discussions with key actors in the fight against desertification and climate change. - Broad dissemination of WAFLA initiative through the Final Conference. - Development and dissemination of a poster for the dissemination of the Final Conference and WAFLA initiative.
Task 6.4.5: Participation in Symposia and Conferences	TTZ, BIOAZUL	<ul style="list-style-type: none"> - Elaboration of first poster of WAFLA Coordination Action - Participation at conference, workshop and academic events. - Elaboration of second poster of WAFLA Coordination Action with main results of the project including good practices and case studies.
M08: Specialised local seminars for scientific communities in Latin America		
M15: Local workshops for rural communities and farmers in targeted regions across Latin America.		
M16: Local awareness seminars for authority capacity building in targeted regions across Latin America.		
M17: Final WAFLA Conference		
WP7: Project Management	Partners involved	Main achievements
Task 7.1: General co-ordination, Administrative and Financial Project Management	TTZ	<ul style="list-style-type: none"> - Signature of the Consortium Agreement - Continuous communication with consortium and EC. - Monitoring of the activities performed within the network. - Supporting the partners on financial issues. - Management of consortium meetings. - Forms C of the third year ready - Audit Certificates ready
Task 7.2: Report project management	BIOAZUL	<ul style="list-style-type: none"> - Elaboration of the periodic activity and management reports - Elaboration of the final activity and management

		<ul style="list-style-type: none"> - reports. - Preparation of the project meetings minutes - Elaboration of the final review.
Task 7.3: Scientific and Local project management	CATIE	<ul style="list-style-type: none"> - Coordination with institutions in the WAFLA region for data analysis and scientific reporting of project results and monitoring of the activities. - Elaboration of 10 short local progress reports. - Elaboration of 3 Scientific Development Reports.
M01: Kick Off meeting		
M06: Mid term meeting		
M07: Mid term review and assessment		
M18: Third meeting		
M19: Final review and assessment		

Table 3. Main achievements of the third reporting period

1.5. List of Deliverables and Milestones

In table 4 and 5 all deliverables and milestones of the project are presented. The ones performed during the first reporting period (months 1 - 12) are highlighted in blue. The ones performed during the second reporting period are highlighted in yellow (months 13 – 24). And the ones performed during the third reporting period (months 25 – 30) are highlighted in green.

Deliv. No.	Deliverable name	Task n°	Lead Participant	Nature	Dissemination level	Delivery date
D01	Methodological framework for land degradation assessment in arid and semi-arid areas of Latin America.	1.1	UNCCD	R	PU	3
D02	Report: Pre-identification of the arid and semi-arid regions in Latin America.	2.1	UNCCD	R	PU	3
D03	Report: Pre-identification of species used in agroforestry system in arid and semi-arid areas of Latin America.	2.5	UNL	R	PU	3
D04	Website on-line	6.4.1	TTZ	O	PU	3
D05	First Poster of WAFLA Co-ordination Action	6.4.6	TTZ	O	PU	3
D06	1st short local progress report	7.3	CATIE	R	CO	3
D07	Report: current research within the consortium	4.1	CIZA- UNALM	R	PU	4
D08	Promotional Leaflets (first version)	6.4.3	BioAzul	O	PU	4
D09	Public Library on-line	6.4.2	TTZ	O	PU	6
D10	Methodological framework for socio-economical assessment in arid and semi-arid areas of Latin America, including criteria for reviewing legislative frame.	1.2	CADS-UACH/ ACICAFOC	R	PU	6
D11	Methodological framework for water management assessment in arid and semi-arid areas of Latin America.	1.3	CATIE	R	PU	6
D12	Methodological framework for traditional agroforestry practices assessment in arid and semi-arid areas of Latin America.	1.4	CESTA	R	PU	6
D13	Criteria of identification of targeted crops for agroforestry systems in arid and semi-arid areas of Latin America.	1.5	CIEZA-UNEFM	R	PU	6
D14	Criteria of identification of key actors; dissemination criteria.	1.6	EAN-Santiago	R	PU	6
D15	Report: Assessment of land degradation in arid and semi-arid areas in Latin America.	2.1	IADIZA	R	PU	6
D16	First short project-update report	7.2	BioAzul	R	CO	6
D17	2nd short local progress report	7.3	CATIE	R	CO	6
D18	Report: Strategies of cooperation in order to link and empower new and existing specialised training activities	6.3	CADS-UACH	R	PU	8
D19	3rd short local progress report	7.3	CATIE	R	CO	9
D20	Report: Socio-economical characterisation of the localities in arid and semi-arid regions of Latin America, with potential for further agroforestry implementation	2.2	FAA	R	PU	13
D21	Report: Evaluation of the current water management practices in arid regions of Latin America. Selection best practices.	2.3	BioAzul	R	PU	13
D22	Report: Identification and evaluation of traditional agroforestry systems applied in arid and semi-arid areas of Latin America. Selecting best practices.	2.4	CESTA/ CADS-UACH	R	PU	13
D23	Report: Identification of keys species and targeted crops for agroforestry production under arid and semi-arid conditions in Latin America.	2.5	UNL	R	PU	13

D24	Report: Evaluation of the national and regional policy and legislative frame regarding water and soil management in Latin America, focusing in arid and semi-arid regions.	2.6	ACICAFOC	R	PU	13
D25	Data Base compiled: Latin American key actors and stakeholders for future dissemination.	2.7	EAN-Santiago	R	PU	13
D26	First periodic activity report to EC	7.2	BioAzul	R	CO	13
D27	First periodic management report to EC	7.2	BioAzul	R	CO	13
D28	First scientific development report	7.3	CATIE	R	CO	13
D29	4th short local progress report	7.3	CATIE	R	CO	13
D30	WAFLA-Country Profiles	WP2	IADIZA/ UNCCD	R	PU	20
D31	Promotional Leaflets (second version)	6.4.3	EAN-Santiago	O	PU	22
D32	Report: current research in the field of agroforestry and water management in arid and semi-arid areas of Latin America.	4.1	CIRAD/ CIEZA- UNEFM	R	PU	20
D33	5th short local progress report	7.3	CATIE	R	CO	20
D34	WAFLA web site development	6.4.1	TTZ	R	PU	20
D35	Report: definition of appropriate agroforestry and water management systems according to local conditions or arid and semi-arid regions of Latin America.	4.3	PRI	R	PU	22
D37	Report: current regional and sub-regional networking and development activities in agroforestry and water management systems in Latin America.	4.2	EAN-Santiago / ACICAFOC	R	PU	20
D38	Report: Definition of characteristics and transformation processes of products from targeted crops	3.1	FCF-UANL	R	PU	20
D39	Report: Proposal of formulation mechanism for market and institutional channels. Study case: selected crops.	3.2	CIAT	R	PU	22
D40	Report: Strategy of dissemination and extension for local farmers: bringing agroforestry and water management to the arid and semi-arid areas of Latin America.	6.1	EAN-Santiago	R	PU	27
D41	Report: WAFLA Final Conference, plan and agenda (Annex, publicity material)	6.4.4	EAN-Santiago	R	PU	20
D42	6th short local progress report	7.3	CATIE	R	CO	20
D43	Third short project-update report	7.2	BioAzul	R	CO	20
D44	Report: technology packages for agroforestry systems selected according to local conditions.	4.4	CESTA	R	PU	22
D45	Latin American market information system for arid-agroforestry products. Model (selected crop).	3.3	CIAT	O	PU	27
D46	7th short local progress report	7.3	CATIE	R	CO	22
D47	Report on the material to be used by the members in each country as part of the awareness campaign (for task 6.1) in targeted localities (including samples of the material)	6.1	EAN-Santiago	R	PU	After 30
D48	Second Poster of WAFLA Co-ordination Action	6.4.6	TTZ/BioAzul	O	PU	27
D49	Latin America Joint Arid-Agroforestry /Water Management Guidelines	5.1	TTZ/ PRI/ (FAA printing)	O	PU	29
D50	Second periodic activity report to EC	7.2	BioAzul	R	CO	27
D51	Second periodic management report to EC	7.2	BioAzul	R	CO	27
D52	Second scientific development report	7.3	CATIE	R	CO	27
D53	General dissemination material to reach communities	6.4.3	FAA/ CIEZA- UNEFM/ EAN- Santiago	O	PU	After 30
D54	8th short local progress report	7.3	CATIE	R	CO	27

D55	Report: strategies for network solidification and cooperation activities	4.2	TTZ / CIZA-UNALM / EAN-Santiago	R	PP	After 30
D56	Report: Strategy of authority capacity building. Empowering local and national authorities for the deployment of dissemination programs for agroforestry and water management in arid and semi-arid areas of Latin America. (template for dissemination material).	6.2	FAA	R	PU	After 30
D57	Report: Current research in the field of agroforestry and water management in arid and semi-arid areas of Latin America. Development of research clusters report	4.1	CIZA-UNALM	R	PU	After 30
D58	Dissemination material to reach communities of indigenous people in Central America	6.4.3	ACICAFOC	O	PU	After 30
D59	WAFLA Conference proceedings and material to distribute	6.4.4	EAN-Santiago	O	PU	28
D60	9th short local progress report	7.3	CATIE	R	CO	30
D61	Report: recommendations for future research, technology development and cooperation.	4.5	CADS-UACH	R	PU	30
D62	Report: Dissemination activities sensitive to local farmers.	6.1	EAN-Santiago	R	PU	After 30
D63	Report: Dissemination activities: awareness seminar for authority capacity building.	6.2	EAN-Santiago	R	PU	After 30
D36	Report: Results of the strategies of cooperation in order to link and empower new and existing specialised training activities	6.3	CADS-UACH	R	PU	After 30
D64	10th short local progress report	7.3	CATIE	R	CO	After 30
D65	Third periodic activity report to EC	7.2	BioAzul	R	CO	After 30
D66	Third periodic management report to EC	7.2	BioAzul	R	CO	After 30
D67	Third scientific development report	7.3	CATIE	R	CO	After 30
D68	Final activity report to EC	7.2	BioAzul	R	CO	After 30
D69	Final management report to EC	7.2	BioAzul	R	CO	After 30
D70	Final review	7.2	BioAzul	R	CO	After 30

Table 4.- List of deliverables

Nature of the deliverables: R = Report, P = Prototype, D = Demonstrator, O = Other.

Dissemination level: PU = Public, PP = Restricted to other programme participants (including the Commission Services), RE = Restricted to a group specified by the consortium (including the Commission Services), CO = Confidential, only for members of the consortium (including Commission Services).

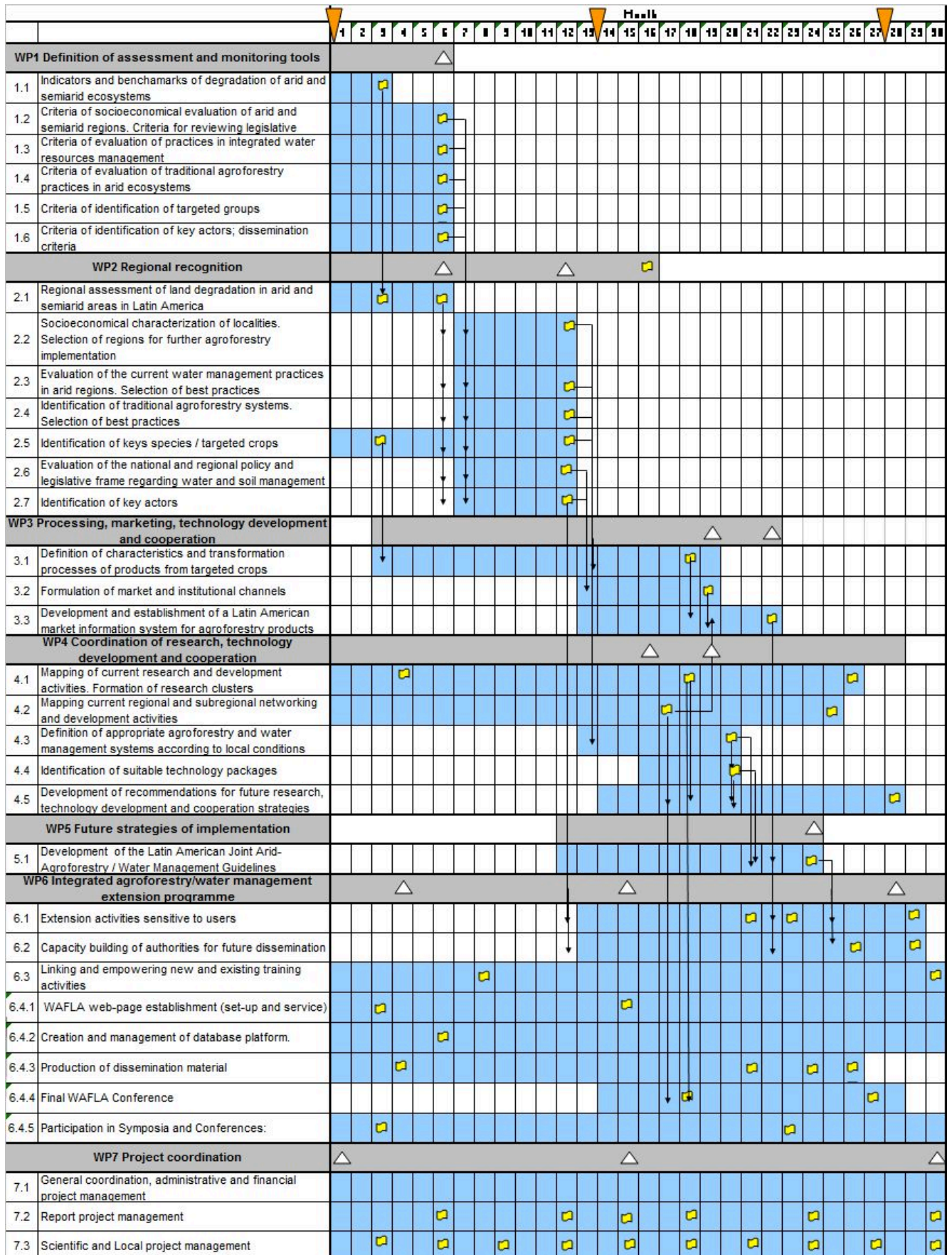
Milestone no.	Milestone title	Work package	Month
M01	Kick-off meeting	7	1
M02	Web-page on line	6	3
M03	Definition of all criteria and instruments for evaluation	1	6
M04	Multidisciplinary recognition of the current situation in arid and semi-arid areas in Latin America.	2	13
M05	Identification the key actors in a local, national and international level.	2	13
M06	Mid-term meeting	7	13
M07	Midterm review and assessment	7	15
M08	Specialised local seminars for scientific communities in Latin America	6	28
M09	Definition of appropriate agroforestry and water management systems according to local conditions	4	16
M10	Targeted crops for agroforestry system in arid and semi-arid areas of Latin America identified and characterised	3	18
M11	Proposal of suitable technology packages	4	19
M12	Development of the Latin American market information system for arid-agroforestry products, making available a study case of the selected crop.	4	21
M13	Publishing of Latin America Joint Arid-Agroforestry /Water Management Guidelines	5	29
M14	Network solidification Strategy	4	30

M15	Local workshops for rural communities and farmers in targeted regions across Latin America.	6	28
M16	Local awareness seminars for authority capacity building in targeted regions across Latin America.	6	28
M17	Final WAFLA Conference	6	28
M18	Third Meeting	7	28
M19	Final review and Assessment	7	After 30

Table 5.- List of milestones

Fig 2- WAFLA Contractual Gantt chart

1.6. Gant Chart of the project



1.7. WAFLA consortium-partners main contact details

No.	Acronym	Organization	Country	Name	Telephone number	E-mail address
1	TTZ	Technologie Transfer Zentrum Bremerhaven	Germany	Mr. Mirko HAENEL	+49 471 4832180	mhaenel@ttz-bremerhaven.de
				MSc. Leonelha BARRETO	+49 471 9448717	lbarreto@ttz-bremerhaven.de
2	CATIE	Centro Agronómico Tropical de Investigación y Enseñanza	Costa Rica	Mr. Muhammad Ibrahim	+ 506 558 2341	mibrahim@catie.ac.cr
				Mr. Guillermo Detlefsen	+ 506 558 2591	gdetlef@catie.ac.cr
3	UNCCD	Regional Information Network on Land Degradation, Drought and Desertification in Latin America and the Caribbean	INT.	Mr. Massimo Candelori	+49 228 815 2843	macandelori@unccd.int)
				Ms. Mónica Acosta	+52 55 52 63 9642	Monica.ACOSTA@un.org.mx
4	CADS-UACH	Centro de Agroforestería para el Desarrollo Sostenible Universidad Autónoma Chapingo	Mexico	Dr. Krishnamurthy Laksmi Reddiar	krishna_lr@yahoo.com	+52 5959521539
6	INTA	Instituto Nicaragüense de Tecnología Agropecuaria	Nicaragua	Mr. Elbenes Vega	evega@inta.gob.ni	+505 278 8339
7	IADIZA	Instituto Argentino de Investigaciones de las Zonas Áridas	Argentina	Mr. Eduardo Martínez Carretero	+54 261 428080	mcarrete@lab.cricyt.edu.ar
8	UNL	Universidad Nacional de Loja	Ecuador	Prof. Carlos Valarezo	+593 7 2545054	cvalarezo@sofhome.net
9	ID	Institute Desert	Brazil	Prof. Valdemar Rodrigues	+ 55 86 32 336491	desertpi@uol.com.br
10	CIAT	International Centre for Tropical Agriculture	INT.	Dr. Alonso González	+57 2 445 0000	a.gonzalez@cgiar.org
11	CIZA UNALM	Centro de Investigaciones de Zonas	Peru	Mr. Aldo Cruz		aguenieve@yahoo.es

		Áridas – Universidad Nacional Agraria La Molina		Prof. Juan Jesús Torres Guevara	+551 3495647	amotape@yahoo.com
12	PRI	Plant Research International B.V.- Wageningen University	The Netherlands	Dr. Premchand Bindraban	+31 317 475946	prem.bindraban@wur.nl
13	FAA	Centro de Información e Intercambio para la Agricultura Agroecológica	Bolivia	Ms. Anne Piepenstock	+591 4 4452 200	annpi@agrecolandes.org
14	CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement	France	Mr. Francis Forest	+33 4 67615641	Francis.Forest@cirad.fr
15	DeSdelChaco	Fundación Desde el Chaco	Paraguay	Mr. Wilfried Giesbrecht	+595 492 52191	wgiesbrecht@desdelchaco.org.py
16	CIEZA UNEFM	Centro de Investigaciones en Ecología y Zonas Áridas - Universidad Francisco de Miranda	Venezuela	Prof. Miriam Díaz	+58 268 2513776	cieza@unefm.edu.ve mdiaz54@cantv.net mdiaz541@gmail.com
17	BIOAZUL	BioAzul S.L.	Spain	Ms. Antonia Lorenzo López	+34 951 047 290	alorenzo@bioazul.com
18	FCF UANL	Facultad de Ciencias Forestales de la Universidad Autónoma de Nuevo León	Mexico	Dra. Maria de los Ángeles Rechy C.	+52 821 212 48 95-134	Mrechy_40@hotmail.com
19	ACICAFOC	Asociación Coordinadora Indígena y Campesina de Agroforestería Comunitaria Centroamericana	Central America	Ms. Varinia Rojas Moncada	(506) 240-6274/236-6217	vrojas@acicafoc.org
				Mr. Alberto Chinchilla	+506 2406274	oficinaregional@acicafoc.org
20	CESTA	Centro Salvadoreño de Tecnología Apropiada	El Salvador	Dr. Ricardo A. Navarro	(503) 2213-1404	cesta@cesta-foe.org
21	UWB	School of Agricultural and Forest Science, University of Wales	United Kingdom	Dr Fergus SINCLAIR	+44 1248 382459	f.l.sinclair@bangor.ac.uk
22	EAN- Santiago	ONG Red de Acción por la Tierra or EAN-Action Network	Chile	Ms. Viviane Castro	+56 2 7374280	viviane@earthaction.org

2- PLAN FOR USING AND DISSEMINATING THE KNOWLEDGE

INTRODUCTION

The plan for using and disseminating the knowledge is designed to present in a detailed and verifiable manner the terms of use and dissemination of the research results and knowledge generated in the project, in accordance with the interests of the partners. The results from the WAFLA project and all knowledge gained during the project, which might be subject to knowledge protection, are owned by all project participants. The responsibility for the protection of the knowledge lies with TTZ, the project coordinator.

All the intellectual rights arising from the WAFLA project are the property of the participating partners, according to the provisions regarding IPR laid down in the Guide to Intellectual Property Rights from the EC. A more detailed set of provisions has been set out in the Consortium Agreement signed by all partners. All publications, communications, etc. acknowledge partner's contribution and European Commission funding. The copyrights of all information material shall be retained by the project partners. The copyrights for print media and computer software are protected by international regulations and national laws.

For an important public dissemination and awareness of the problems due to desertification and human use of natural resources in Latin American countries and the necessity of finding adequate resources management for large implementation of Sustainable Development in Latin America, the partners have undertaken actions during the project for a broad and intensive dissemination campaign (without disclosing confidential information) involving relevant actors and stakeholders in order to achieve a real impact, in parallel to the project management activities. These activities are described in detail in section 2 (WP6) and include different tasks like extension activities sensitive to users, capacity building for authorities, specialised training activities, tools for mass dissemination as the project website, database platform or dissemination material and symposia and conferences, as well as the publication of the project results in relevant journals. Moreover, a Final Conference on WAFLA outcomes was held on January 2009 at the ECLAC headquarters in Santiago, Chile. More information on the already carried out and planned activities can be found in the section 2 of this Plan for Using and Disseminating the Knowledge.

The document presented here is the definitive "Plan for using and disseminating the knowledge" and has been prepared and agreed during the whole project time frame by all project partners who have shown their interest in the different results arising from WAFLA project.

The "Plan for using and disseminating the knowledge" is organised, following the EC reporting guidelines, in three sections:

- **Section 1 - Exploitable knowledge and its Use**
- **Section 2 - Dissemination of knowledge**
- **Section 3 - Publishable results**

SECTION 1- EXPLOITABLE KNOWLEDGE AND ITS USE

During the WAFLA time frame different regional surveys and evaluations have been performed, together with the design of strategies and supporting tools, in the technical, scientific and policy field, for which Intellectual Property Rights (IPR) provisions were carefully followed. The partners of WAFLA concentrated their efforts in the identification of good practices, describing different case studies of agroforestry practices across the region, and proposing strategies for their implementation. A set of 50 targeted species were identified, as well as their products and a possible channels to link the small and medium producers to the market, through a marketing information system. Currently, a set of material to bring the WAFLA outputs to key stakeholders has been prepared, for instance the fact sheets containing information about the key species, case studies of agroforestry practices with geographical content, general description of the agroforestry practices with their benefits, promotion strategies and the policy briefs. Furthermore, a WAFLA CD-Rom has been developed in order to present all the results of the Coordination Action to the stakeholders in an interactive manner. Results to be used by the general public are the on-line

marketing information system, together with the design of strategies in the technical, scientific and policy field, for which Intellectual Property Rights (IPR) provisions have been carefully followed as indicated in the Annex II of the General Conditions of the Contract with the EU. In this sense, the directives given by the Guide to Intellectual Property Rights for FP6 projects of the European Commission have been followed, which indicate that “Knowledge” will be understood as any results generated by the work carried out under the WAFLA project. The IPR provisions in WAFLA are part of the measures aimed at promoting the actual exploitation of projects' results, covering the following aspects:

- **Intellectual property protection:** protection of the knowledge resulting from WAFLA.
- **Dissemination activities beyond the consortium:** publications, conferences, workshops and Web-based activities aiming at disseminating the knowledge and technology produced;
- **Studies on socio-economic aspects:** assessment of the expected socio-economic impact of the knowledge and technology generated, as well as analysis of the factors that would influence their exploitation;
- **Activities promoting the exploitation of the results:** development of the plan for the use and dissemination of the knowledge produced, feasibility studies for the creation of spin-offs, etc, take-up activities to promote the early or broad application of state-of-the-art technologies.

Some project results have been identified as the exploitable results of the WAFLA project, such reports, workshops materials, the articles, brochures, poster, software tool, etc.

The collaboration between European and Latin American countries could be also considered as an exploitable result, being the basis for new collaborations in the future.

During the project time frame numerous discussions on exploitation have taken place. A summary of the exploitation actions expressed by some project partners to date regarding the results is shown in the following table:

Exploitable Knowledge	Exploitable product(s) or measure(s)	Sector(s) of application	Timetable for commercial use	Patents or other IPR protection	Owner & Other Partner(s) involved
WAFLA website on-line	Current platform of knowledge and information that could be further offered as an innovative area to expose the desertification in Latin America and the actual sustainable solutions based on Agroforestry	Policy makers, researches, students, and future related EC project(s)	Non-commercial use of the current web-site	-	TTZ and interested members of WAFLA consortium
WAFLA Latin American Guidelines in Water Management and Agroforestry	28 Fact sheets	Policy makers, researches, students, and future related EC project(s)	Non-commercial use of the current web-site	-	TTZ and interested members of WAFLA consortium
WAFLA CD-Rom	Current platform of knowledge and information that could be further offered as an innovative area to expose the desertification in Latin America and the actual sustainable solutions based on Agroforestry	Policy makers, researches, students, and future related EC project(s)	Non-commercial use of the current web-site	-	TTZ and interested members of WAFLA consortium
Promotional WAFLA leaflets, first and second version.	Project leaflet containing basic information about the actual state of desertification in Latin America and	This material could be used to raise awareness through basic information among policy makers, local and national authorities, and civil	Non-commercial use.	-	TTZ, BioAzul and those interested partners of the WAFLA consortium

	the potentialities of agroforestry	society			
WAFLA posters	Project poster for the promotion of the network	Researches, students, and related project(s)	Non-commercial use, but further printing to be distributed among the partners to promote WAFLA during and after the duration of the EC contribution	-	TTZ, BioAzul and other interested participants.
WAFLA country profiles	Fact sheets	Policy Makers	Non-commercial use, but fact sheets that can be complemented with new information and could be used as a reference material for all the stakeholders	-	TTZ, maybe ACICAFOC, FAA, EAN-, UNCCD
Best practices in water management identified in dry areas across the region	Scientific article to be published in an international journal	Research community	Non-commercial to be submitted by May 2008	-	TTZ, CIZA-UNALM, UNL, CATIE
Identified Agroforestry models for arid areas	Scientific article to be published in an international journal	Research community	Non-commercial to be submitted for publication by July 2008	-	CIZA-UNALM, FAA, CIEZA-UNEFM, CATIE and other members of the WP4
Identified Agroforestry models for sub-humid areas	Scientific article to be published in an international journal	Research community	Non-commercial to be submitted by July 2008	-	ACICAFOC, CESTA, TTZ, CATIE and other members of the WP4
Technological configuration and systems for appropriated systems	Scientific article to be published in an international journal	Research community	Non-commercial to be submitted by August 2008	-	Members of the WP4
Selected species and products	Scientific article to be published in an international journal	Research community	Non-commercial to be submitted by May 2008	-	UNL, FCF-UNALM, TTZ and other partners of 2.5 and WP3
Market and institutional channels	Informative article to be published in magazines	Different stakeholders communities	Non-commercial to be submitted in magazines by November 2008	-	Members of WP3 interested
Research mapped	Scientific article to be published in an international journal	Research community	Non-commercial to be submitted by December 2008	-	CIZA-UNALM, CIRAD, and other members of WP4
Organizations mapped	Informative article to be published in magazines	International cooperation field, possibly connecting to other networks, or possible WAFLA II	Non-commercial to be submitted by January 2009	-	EAN-Santiago, UNCCD, TTZ, and other members of WP4
Strategies of cooperation among RTD	Informative article to be published in magazines, or possible a WAFLA stage II	International cooperation field, possibly connecting to other networks, or possible WAFLA II	Non-commercial to be submitted by January 2009	-	EAN-Santiago, UNCCD, TTZ, and other members of WP4
First ideas for workshops with farmers	Protocol to be published in an information journal	NGOs communities	Non-commercial to be submitted by August 2008	-	EAN-Santiago, FAA, CIEZA, ACICAFOC, TTZ, and other members of WP6
Papers on AFS	Special Issue of International Magazine (ISSN 0327-9375)	Research community Stakeholders community	Non-commercial to be submitted by December 2008	-	IADIZA (Editor) ACICAFOC, INTA CESTA, FAA, DesdelChaco, other collaborators (Australia, Africa), other members interested
Agroforestry Concepts, appropriate species for arid zones, water conservation	Bulletin of Scientific Divulagation	Research community Stakeholders community Students Teachers	Non-commercial to be submitted by December 2008	-	IADIZA, TTZ, FAA, and other collaborators

Successful agroforestry systems and best water use practices for the dry areas of Loja province of Ecuador	Technical information booklet	Policy makers, local and national authorities, researchers, related professionals, students, different stakeholder communities, farmers and civil society	Non-commercial. Published February 2009	-	UNL
Key forest species and target crops for agroforestry systems of the arid and semiarid zones of Ecuador	Technical information booklet	Policy makers, local and national authorities, researchers, related professionals, students, different stakeholder communities, farmers and civil society	Non-commercial. Published February 2009	-	UNL
Impacts of climate change on water resources	Publication	Technical Series	Costa Rica	700 units	CATIE
Policy and incentive for the promotion and adoption of best practices as a measure of adaptation to Climate Change in Central America	Publication	Book with 14 chapters	Costa Rica	1000 units	CATIE

BIOAZUL and TTZ would like to use the project results also for setting up new projects to conduct further research on the topic.

The knowledge resulting from the WAFLA Coordination Action belongs to the Consortium members who generated it. If knowledge is generated jointly with the “pre-existing know-how (i.e. the separate parts of the knowledge cannot be distinguished), it will be jointly owned, unless the members concerned agree on a different solution. All the institutions will ensure that, when necessary, they reach an agreement with their staff and collaborators over the ownership of results generated by them in the context of WAFLA. If a study results in the discovery of something that could be protected by IPRs, it will be kept confidential, and the member will keep accurate records of the discovery (i.e. who discovered what and when).

SECTION 2- DISSEMINATION OF THE KNOWLEDGE

The WAFLA web-page (www.wafla.com) is considered one of the main tools for the wide dissemination of the project itself and the project results. It was also developed a platform for exchange of information within the consortium partners, launched in October 2006. The web-page is available in English, Spanish and Portuguese.

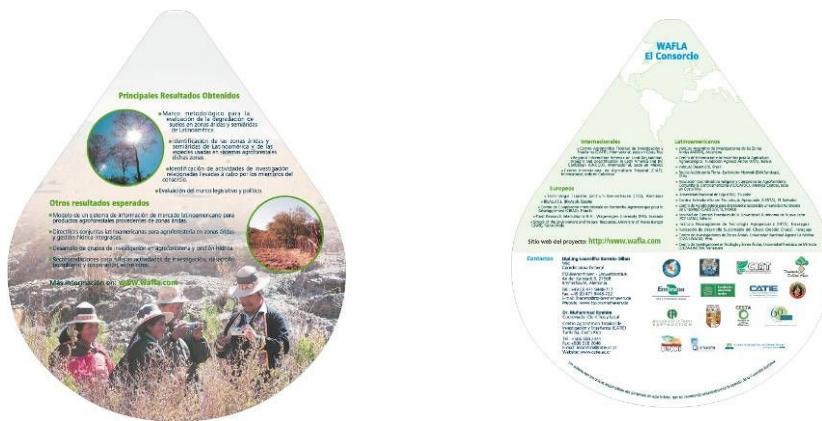
The website has been continuously updated by TTZ-Bremerhaven accordingly to the results achieved. Outputs and results of the project have been included in the web site, such as a database of species, the WAFLA Country Profiles, fact sheets of the Agroforestry /Water Management Guidelines, minutes and details of the Final Conference, etc.

Some partners have included a link to the project webpage in their own pages such as TTZ, CIZA-UNALM, BIOAZUL and DeSdel-Chaco.

The first promotional leaflet (D08) has been prepared by BioAzul and TTZ with the support of some project partners, particularly the WP6 leader EAN-Santiago. 1500 hard copies of the first leaflet in Spanish and 500 in English have been printed and distributed to the partners, who have distributed them out among relevant stakeholders, particularly in Latin America. The leaflet has been also distributed in seminars, conferences, and other related events in which project partners participated.



A second promotional leaflet (D31) has been prepared by EAN-Santiago focusing on the Final Conference. It has been printed in three languages (Spanish, English and Portuguese). It was included information about the procedure and calendar for submission the Call for Papers and a Preliminary Program of the Conference. It was also included information about the WAFLA objectives, achieved and expected results, as well as Consortium contacts details.



Additionally, it has been recognize that it is necessary to produce dissemination materials with a combination of visual messages and simple text in order to reach in a more direct way indigenous people and farmers with the objective to promote the benefits of the Agroforestry systems in dry zones of the region. All these materials permit to farmers and indigenous people to have a reference material in order to decide which Agroforestry practices are more adapted to biophysical conditions of their farms and at the same time to visualize other practices that are developed in other countries with similar biophysical conditions.

In this sense, FAA, CIEZA-UNEFM and EAN-Santiago have been in charge of producing a tear off calendar with the slogan “Agroforestry systems in the dry zones, an alternative to improve our farms” including pictures of agroforestry systems in order to raise awareness of stakeholders in rural communities. An example is shown below:

Sistemas agroforestales en zonas secas

una alternativa para mejorar nuestras fincas

Especies leñosas perennes dispersas en potreros

Especies leñosas perennes con cultivos anuales

Enero 2009							Febrero 2009						
Dominico	Lunes	Martes	Miercoles	Jueves	Viernes	Sabado	Dominico	Lunes	Martes	Miercoles	Jueves	Viernes	Sabado
				1	4	3	1	2	3	4	5	6	7
4	5	6	7	8	9	10	8	9	4	11	7	13	14
11	12	13	14	15	16	17	15	16	17	18	19	20	21
18	19	20	21	22	23	24	22	23	24	25	26	27	28
25	26	27	28	29	30	31							

☽ 5 Ocidente ● 11 Luna llena ☾ 18 Menguante ○ 26 Luna nueva

☽ 2 Ocidente ● 9 Luna llena ☾ 16 Menguante ○ 23 Luna nueva

Furthermore, ACICAFOC has produced specific dissemination material to reach small indigenous communities of Central America. Three types of flyers with pictures and brief explanations of agroforestry systems for Central America have been designed, printed and disseminated. These pictures represent the main Agroforestry practices identified in the Mesoamerican Countries. A sample of each flyer is shown below:

Conservación de la biodiversidad

Los indicadores de biodiversidad (por ejemplo la diversidad de aves), en potreros con alta densidad de especies leñosas, son mayores que en pasturas en monocultivo y similares a los de los bosques secundarios.

Adaptación al cambio climático

Con el cambio climático, la temperatura se incrementa y la sombra de los árboles permite reducir el estrés calórico sobre los animales, con lo cual se incrementa la producción animal en un 12 a 18%. Además, la sombra de los árboles permite reducir el estrés de las plantas al disminuir la temperatura.

Beneficios socio-económicos

Productividad y rentabilidad

La productividad de leche y carne en estos sistemas es mayor en un 10 a 40% en comparación con las pasturas en monocultivo y los ingresos son mayores en un 20%.

Seguridad alimentaria

Los árboles aportan alimentos ricos en nutrientes para los animales lo que permite mantener la producción de leche y carne durante la época seca.

Reducción de riesgo

Hay mayor disponibilidad de alimentos, lo cual reduce la mortalidad animal. Además, se obtienen otros productos como la madera y leña que generan ingresos y reducen los riesgos causados por la variación de precios.

Capital natural

La tierra adquiere mayor valor en comparación con las zonas de pasturas degradadas.

Factores de éxito para la adopción de esta práctica

- No se necesita invertir mucho dinero.
- Hay mercados para los productos animales y las especies leñosas (madera, leña etc...)
- Se contribuye a mejorar el bienestar de los productores.
- Simplificación de las políticas para permitir el aprovechamiento sostenible de la madera.

Breve información del proyecto WAFLA en: <http://www.wafla.com>



Especies leñosas perennes dispersas en potreros



El sistema de huertos caseros no es homogéneo; existen marcadas variaciones en la composición de especies, en su arreglo estructural, en la importancia relativa de los diferentes componentes de la producción, en su papel o propósito, en la magnitud del insumo nutricional y en el ingreso económico a las familias. Las condiciones ecológicas y socio-económicas no determinan qué plantar; sólo ponen un límite a lo que es posible.

Buenos ejemplos de esta práctica

Existen numerosos ejemplos donde los huertos caseros contribuyen de manera sustancial a la seguridad alimentaria y al ingreso económico de las familias de recursos limitados. Sin embargo, es preciso mencionar la escasez de información precisa y de datos cuantitativos sobre los valores de producción, insumo nutricional e ingreso económico de los huertos caseros.



Breve información del proyecto WAFLA en: <http://www.wafla.com>



Huertos caseros con especies leñosas perennes



En los huertos caseros, la selección de especies está determinada por preferencias individuales, hábitos alimenticios, disponibilidad de recursos -incluyendo mano de obra familiar-, importancia relativa de las especies, tradición familiar y conocimientos técnicos.

Beneficios asociados a su implementación

- Los huertos caseros producen cantidades suficientes de alimentos, con mano de obra marginal en áreas pequeñas, asegurando la disponibilidad de alimentos en caso de fracaso en la producción del campo y/o dificultad en el abastecimiento
- Proporcionan forraje a los animales y satisfacen otras necesidades domésticas (artesanías, leña, pequeños ingresos monetarios).
- Son convenientes y seguros por su proximidad al hogar.
- Garantizan en los hogares un regular y seguro abastecimiento, y un ingreso económico en pequeña escala resultante de algún excedente de producción.

Factores de éxito para la adopción de esta práctica

Para una mejor adaptación de esta práctica, se recomienda el diseño y promoción de huertos caseros mejorados que:

- requieran una inversión baja en capital,
- utilicen mano de obra marginal,
- donde puedan participar mujeres, adolescentes y ancianos,
- contribuyan a la seguridad alimentaria y conservar la biodiversidad.

Breve información del proyecto WAFLA: <http://www.wafla.com>



Madero negro, madreño o madrecaño (*Gliricidia sepium*), en asocio con frijol (*Phaseolus vulgaris*)

Beneficios directos e indirectos asociados a su implementación

Las especies leñosas asociadas con cultivos anuales cumplen importantes funciones, ya que generan productos como leña, postes vivos, madera, frutos para el consumo de la finca y venta de excedentes. Además, conservan el suelo, aumentan la biodiversidad, ayudan a la retención del agua y mejoran el paisaje.

Beneficios ecológicos y ambientales:

- Se evita la erosión del suelo (hasta 200 toneladas métricas por hectárea).
- Se mejora el contenido de materia orgánica e incrementa la fertilidad del suelo.
- Se brinda sombra y conserva la humedad mejorando la infiltración del agua (hasta 340 m³ de agua en el suelo).
- Se incrementa la biodiversidad.
- Se fija nitrógeno con el uso de especies leguminosas.
- Se logra una mayor adaptación a efectos climáticos extremos como las sequías

Beneficios económicos:

- Se incrementa la producción (70 quintales por hectárea en cultivo de maíz).
- Se obtiene leña para el autoconsumo (19.2 m³ por año).
- Se incrementan y diversifican los ingresos por la venta de productos.
- Se mejora la seguridad alimentaria de la familia.
- Se incrementa el valor de la propiedad.

Beneficios socio-culturales:

- Se fomenta una mejor relación de las personas con los árboles.
- Se reduce la distancia que las mujeres, niñas y niños deben recoger para traer leña y agua.
- Existe una mayor motivación para trabajar en la finca y por ende una reducción de la migración.
- Se logra un mejoramiento de los medios de vida rurales.

Factores de éxito para la adopción de esta práctica:

Entre los principales factores de adopción de la práctica se encuentran:

- Bajo capital inicial necesario, ya que los árboles se encuentran en la parcela.
- Buena aceptación de los agricultores/as debido a los productos de los árboles frutales y maderables.
- Disponibilidad de árboles semilleros en las zonas.
- Políticas favoreciendo la implementación de la agroforestería.
- Mayor adaptación de las fincas ante fenómenos de sequía y desertificación.

Breve información del proyecto WAFLA:
<http://www.wafla.com>

Especies Leñosas perennes con cultivos anuales



Moreover two promotional posters with the objectives and main results of the project have been developed to be used in conferences, seminars or other events regarding with agroforestry and water management

Integrated Water resource management by the implementation of improved Agro- Forestry concepts in arid and semiarid areas in Latin America

ESTADO DEL ARTE DE LA ACCIÓN DE CO-ORDINACIÓN WAFLA

Numerosas actividades han sido hasta ahora llevadas a cabo durante los dos primeros años del Proyecto WAFLA, la Acción de Co-ordinación que se propone integrar las investigaciones científicas actuales, innovaciones tecnológicas y las actividades de desarrollo social y político con relación a los sistemas agroforestales exitosos y a las estrategias de gestión de recursos hídricos que han sido estudiadas en regiones objetivo de los países de América Latina con el propósito de contribuir a la lucha contra los problemas de desertificación que un área considerable del continente afronta. En tal orden de ideas se exhibirá a continuación una compilación de las investigaciones de campo que toman lugar durante el desarrollo de los ya cerrados paquetes de trabajo del proyecto.

Leñosas perennes con cultivos anuales	Leñosas perennes dispersas en potreros	Huertos caseros con leñosas perennes	Leñosas perennes en barreras vivas con cultivos	Leñosas perennes en bancos forrajeros
Las leñosas asociadas con cultivos de ciclo corto, cumplen importantes funciones, ya que generan productos como leña, postes vivos, madera, frutos para el consumo de la finca y venta de excedentes. Además aumentan la biodiversidad, ayudan a la retención del agua y mejoran el paisaje.	Generalmente las leñosas perennes en potreros están manejadas por pequeños y medianos productores orientados a la producción de leche o carne, o a sistemas mixtos con cultivos, forraje y protección al suelo, entre otros. Las especies leñosas tienen mecanismos de tolerancia contra la sequía y hay una mayor eficiencia del uso del agua en comparación con las pasturas en monocultivos.	Este es el sistema de uso de la tierra que involucra el manejo de árboles y arbustos, en asociación cercana con los cultivos agrícolas anuales y perennes, así como con animales domésticos dentro del perímetro de los hogares, mediante el trabajo familiar y una producción que se destina principalmente al autoconsumo.	Los árboles y los arbustos que conforman las barreras o cercas vivas de las parcelas de cultivo (frutales), se plantan en líneas, a una corta distancia unos de otros (1 metro o menos), de manera de formar una barrera densa que obstaculiza el ingreso de animales al cultivo (cabras, bovinos, cerdos). Producción de semillas para la familia y los animales de la finca, con venta de los excedentes.	La implementación de estos sistemas tiene como objetivo principal la recuperación de áreas degradadas y el aumento de la productividad de la finca. Las leñosas en el caso de los Prosopis, se encuentran dispersas en la pastura, en un distanciamiento definido, en el caso de la Leucaena, se sembró en doble hilera dentro de la pastura en proceso de degradación.
Duraznos en asocio con melón y cebolla con árboles en lindero de almendras, olivos y cotinos componentes de eucaliptos, ARGENTINA	Prosopis spp. dispersos en pasturas naturales, PERU	Ejemplos de casos de estudio: Huertos caseros, MEXICO	Barreras vivas de kewiña y koswara en cultivos de papa y cebada con árboles dispersos, BOLIVIA	Bancos forrajeros de Cratylia argentina en asocio con árboles dispersos en pasturas, COSTA RICA
Árboles dispersos de cultivos anuales de maíz, frijol y zarzaparrá, ECUADOR	El desarrollo de las fichas técnicas del Paquete de Trabajo 6 de WAFLA orientará a los stakeholders en la concreta aplicación de las estrategias políticas, sociales y técnicas referidas a las prácticas agroforestales y a la gestión de los recursos hídricos en América Latina, objetos de estudio de los paquetes de trabajo técnicos.			Bancos forrajeros de Leucaena spp. en asocio con árboles dispersos Prosopis spp. PARAGUAY

CONSORCIO WAFLA


Países participantes: Alemania, Costa Rica, México, Chile, Nicaragua, Argentina, Ecuador, Brasil, Colombia, Perú, Países Bajos, Bolivia, Francia, Paraguay, España, Venezuela, El Salvador, Reino Unido.

INFORMACIÓN DE CONTACTO: Sitio web del proyecto: www.wafla.com

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In addition, one of the main results of WAFLA initiative, the Latin America Joint Arid-Agroforestry /Water Management Guidelines (D53), have been printed and compiled in a CD-ROM jointly with important material developed under WAFLA project to be widespread by partners of the consortium. This valuable material was distributed among the partners and has been used in subsequent dissemination and capacity building activities. The material is also available at WAFLA web site. An example of the technical sheets can be found below:

The Latin American Arid Agroforestry and Water Management Guidelines




Durazno y manzana en asociación con maíz y frijol

En las zonas áridas de México, es común encontrar plantaciones frutales, como durazno, manzana y vid, asociadas con cultivos anuales tales como maíz, frijol, chile y calabaza.

Localización: Sombriente, San Alito Matlana, Municipios de Sombriente y Fresnillo, Estado de Zacatecas, México.

Mapa de la localidad



Condiciones locales

Las comunidades donde se realiza la práctica, se ubican en el altiplano zacatecano por sobre los 2200 msnm, con un clima semiárido, con lluvias en verano entre junio y octubre, una huera canchida en agosto, y presencia de heladas invernales. La vegetación natural se compone básicamente de Matorral Xerófilo y Rosetillo, el cual se desmantela en suelos con menor contenido de materia orgánica y derivados de rocas volcánicas andesitas y riolitas.

Problematika actual

Las condiciones naturales predominantes, propician la escasez de humedad, incidencia de vientos, suelos someros y poca cobertura vegetal, lo que ha traído consigo una fuerte degradación física de los suelos y la constante disminución de su capacidad productiva. La agricultura predominante se desarrolla durante el corto verano y con la presencia de granizadas y heladas tempranas, que hacen poco productiva la agricultura, y trae como consecuencia que la región tenga una de las tasas de migración más altas del país.

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Los autores son los únicos responsables por el contenido de este trabajo, el cual no necesariamente representa la opinión o la política de la Comisión Europea.
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Potencial para el desarrollo sostenible

Los sistemas agroforestales a base de duraznos, manzanas y vid, en asociación con cultivos anuales como el frijol, maíz y chile, han sido adoptados por algunos productores líderes y emprendedores, como una alternativa de diversificación productiva de su tierra, que les da la posibilidad de incrementar hasta en un 100 por ciento, los ingresos derivados de la agricultura.

Este sistema de especies perennes frutales en asociación con cultivos básicos anuales de ciclo corto, considera los siguientes arreglos:

- Durazno - Frijol - Maíz
- Durazno - Frijol - Chile
- Durazno - Maíz
- Manzana - Frijol - Chile
- Manzana - Maíz
- Vid - Frijol
- Vid - Chile

La práctica agroforestal posee mucho potencial de desarrollo

Esta práctica requiere en general de poca inversión productiva, pero algunos productores han optado por incrementar las bondades de este sistema, a través de un paquete tecnológico de mayor sofisticación.

Para lograrlo, el establecimiento de tutoras de cemento, sistema de riego por goteo, acobijado de cultivos, prácticas mecánicas y biológicas para el control de plagas, ha hecho de algunas fincas, ejemplos de productividad.

Productores con menor capacidad económica para invertir han optado por prácticas de riego por bombeo en ciertos huertos y prácticas de riego con pequeñas perforaciones que brindan un goteo constante al frutal.

Invitación

Todo productor que desee experimentar estas prácticas, al conocer los diseños agroforestales, que se practican en las fincas de Sombriente y Fresnillo, Zacatecas, México, así como su impacto en la economía de la zona.

Quiénes estén interesados en los sistemas agroforestales para contribuir al bienestar social y ambiental en las zonas áridas, basadas en la asociación de plantaciones frutales y cultivos anuales, pueden visitar los municipios de Sombriente y Fresnillo, Zacatecas, México.

Preparación del terreno para la asociación durazno-maíz-cabulana-Zacatecas, México.

Suelos con poca protección vegetal expuestos a la degradación física.

Combinación manzana con maíz de temporada en México.

Suelos con poca protección vegetal expuestos a la degradación física.

Preparación del terreno para la asociación durazno-maíz-cabulana-Zacatecas, México.

Within the WP5 a total of 28 technical sheets were prepared, which together compose the Latin American Arid Agroforestry and water management guidelines.

A first set of sheets presents a systematization of the different agroforestry practices, grouped into 6 broad clusters:

- Woody perennial with annual crops
- Woody perennial (scattered trees and bushes) with succulent semi-perennial crops.
- Scattered woody perennial on pasture
- Home gardens with woody perennial
- Woody perennial (trees and bushes) as live fences with crops
- Woody perennial with fodder banks

In order to illustrate the agroforestry practices a total of 13 study cases were prepared by the project partners.

- Duraznos en asocio con melón y cebolla con árboles en linderos de almendras, olivos y cortina rompevientos de eucaliptos
- Barreras vivas de kewiña y kiswara en cultivos de papa y cebada con árboles dispersos
- Bancos forrajeros de *Cratylia argentea* en asocio con árboles dispersos en pasturas
- Árboles dispersos con cultivos anuales de maíz, frijol y zarandaja
- Quesungual
- Kuxur Rum
- Duraznos y manzanas en asocio con maíz y frijol
- Huertos caseros
- Árboles dispersos con maíz y frijoles
- Bancos forrajeros de *Leucaena spp.* en asocio con árboles dispersos *Prosopis spp.* en pasturas
- Prosopis spp.* dispersos en pasturas naturales
- Prosopis pallida* dispersa con plantaciones de frutales y cultivos anuales
- Prosopis spp.* con sábila y cocuy



To complement the information for the stakeholders, the consortium also prepared a set of policy briefs:

- Agroforestry vs. poverty*
- Agroforestry & Biodiversity*
- Agroforestry vs. climate change*

A set of strategies for the implementation of agroforestry plans were also designed:

- Politic advocacy and dissemination*
- Management of resources*

- Sustainable live hoods*
- Articulation of small and medium farmers to the markets*

Finally, a set of complementary information was also published:

- Introduction to agroforestry and water management*
- Methodology for the selection of agroforestry practices*

Rural workshops have been held at WAFLA target regions by national partners reaching farmers and communities located in arid and semi-arid regions with potential for the application of agroforestry and integrated water management systems. Jointly with these workshops, specific seminars for the capacity buildings of authorities have been carried out in order to build the necessary capacities for the local authorities to be able to further disseminate and exploit the findings of WAFLA initiative.

In addition specialized seminars have been organized in order to link and empower new and existing specialised training activities:

- The “4th International Seminar Agroforestry and arid zones of Latin America: Concepts and Case Studies” hosted by IADIZA was held in Mendoza (Argentina) between 26th and 27th of January, 2009 and provided concepts, technologies and potentials of agroforestry for food security.
- The seminar “Agroforestry options for sustainable development of arid and semi-arid zones in Latin America” hosted by CADS-UACH was held in Texcoco (Mexico) between 25th and 28th of September 2008 illustrated successful examples of soil and water conservation to combat desertification in the arid and semi-arid regions of Latin America
- The seminar “Agroforestry and Integrated Water Resource Management in Arid, Semi-arid and dry Sub-humid zones of Latin America” hosted by CIZA-UNALM was held in Lima (Peru) between 28th and 30th of May, 2009. offered methodological tools to address future situations related to agroforestry and integrated water resource management in arid, semi-arid and dry sub-humid regions of Latin America.
- The seminar “Agroforestry Systems: an alternative for holistic management of water and sustainable production in arid tropical regions” hosted by CIEZA-UNEFM held in Coro (Venezuela), between 7th and 10th of June, 2007 in facilities of the Universidad Nacional Experimental "Francisco de Miranda" (UNEFM), with field visits to agro-forestry systems developed in the outskirts of the Capital of Falcon, Coro. During the seminar sessions it was raised awareness of the need for sustainable agro-forestry systems, better management of water and other natural resource.

The WAFLA Final Conference has been the most important event related to mass dissemination held in the WAFLA framework. The Conference took place on January 21, 22 and 23, 2009 at ECLAC headquarters in Santiago, Chile, gathering the most relevant actors in the field of agroforestry and water management in arid and semi-arid areas of Latin America. The

conference was a perfect venue to exchange the most advanced developments in the field of Integrated Water Resource Management in Agro-forestry systems. A poster focused on the Final Conference has been prepared by EAN-Santiago. It also includes information about the WAFLA objectives, achieved and expected results, as well as Consortium contacts details. This poster, jointly with the second promotional leaflet, has been used by partners of the consortium for the wide dissemination of the Final Conference.

Leaflets, poster and website have been the main dissemination tools of the Final. English, Spanish and Portuguese versions of the second leaflet have been printed and distributed to the partners, who have been sharing them out among relevant stakeholders, particularly in Latin America. The leaflets have been also distributed in seminars, conferences, and other related events in which project partners participate.

Moreover, partners of the Consortium have been very active in disseminating the project results, they have carried out different dissemination activities such as interviews in local radio and television programmes, publication of press releases, etc. The dissemination activities that have been carried out by project partners during the project are summarised in the following table:

Planned /actual dates	Dissemination activity type	Type of audience	Countries addressed	Size of audience (persons)	Partner Responsible /involved
March 2006	Press release	Local and National	Ecuador	150 000	UNL
June 2006	IWRM Conference	Conference attendees	Latin America, Europe and other Mediterranean Countries	30	TTZ
October 2006	WAFLA website launching	General public	Worldwide	Non estimated	TTZ
October 2006	Written and oral information	Foundation council	Paraguay	10	DeSdelChaco
October 2006	Oral and written presentation	Directors of all research centres of UNEFM	Venezuela	12	CIEZA-UNEFM
October 2006	Conference	University students	Mexico	170	CADS-UACH
October 2006	Press release on WAFLA project	Local and National	Ecuador	150 000	UNL
October 2006	Oral (radio) presentation	Local and Regional	Argentina	700.000	IADIZA
From November 2006	Direct mailing contact	RIOD Venezuela Network NGOS and Government	Venezuela	100	CIEZA-UNEFM
November 2006	Oral and written presentation	Agronomy and Veterinary professors	Venezuela	35	CIEZA-UNEFM
1 st December 2006	Regional Bulletin	UNCCD Focal Points, International Organizations and NGOs	35 countries	100	UNCCD
December 2006	Mailing information	Foundation council	Paraguay	12	DeSdelChaco
17 th January 2007	Meeting	CONAFOR Comisión Nacional Forestal	Linares, N. L.	6	FCF-UANL

February 2007	WAFLA leaflet (first version)	General public	Worldwide	Non estimated	BIOAZUL/TTZ
February 2007	WAFLA poster (first version)	General public and attendees to conferences	Worldwide	Non estimated	TTZ
February 2007	Oral and written presentation	Researchers and students of the UNEFM Research council	Venezuela	13	CIEZA-UNEFM
February 2007	International Conference to diffuse WAFLA Project within CATIE	Students, Professors and CATIE Technicians	Costa Rica	38	CATIE
February 2007	Conferences	University students	Mexico	150	CADS-UACH
February 2007	E-Mail campaign of WAFLA visibility	Universities, Research Centres in Latin America and Europe	Latin America and Europe	122	TTZ
February 2007	Collaboration	Faculty staff	Mexico	25	CADS-UACH
March 2007	Radio programme	Population of Chaco region	Paraguay	50.000	DeSdeIChaco
March 2007	Presentation of WAFLA project in a radio station, framed in the world water day	General public	Venezuela y Antillas	more than 2000	CIEZA-UNEFM
March 2007	Press conference	Local and national newspaper journalists	Venezuela	more than 500	CIEZA-UNEFM
March 2007	Oral information	II Foro de Diálogo entre la sociedad civil centroamericana y la Unión Europea	Central American countries and members of the European Economic Council	300	ACICAFOC
March 2007	Press release in Notimexico	General public	Latin American countries	Non estimated	BIOAZUL
March 2007	Press release "El Universo"	General public	Ecuador	Non estimated	BIOAZUL
March 2007	Press release in the website of the Technological Park of Andalusia	Companies related to this business park	Spain	Non estimated	BIOAZUL
March 2007	Grulac meeting	LAC countries representatives	Latin America	60	UNCCD
March 2007	E mail	National	Ecuador	200	UNL
March 2007	Oral (University Radio) presentation	Regional	Argentina	50.000	IADIZA
Until March 2007	Direct mailing contact	Local ACICAFOC technician	Honduras, Belize, Panama, Guatemala y San Salvador	5	ACICAFOC
April 2007	Press release	Fundation contact list	Different countries	210	DeSdeIChaco

April 2007	Informative ACICAFOC bulletin	General public	7 Central American countries	1000	ACICAFOC
April 2007	WAFLA link in ACICAFOC webpage	General public	Worldwide	Non estimated	ACICAFOC
April 2007	Expert Group on Indicators of the Science and Technology Committee of the UNCCD	Experts from Europe, Asia, Africa and LAC regions	Worldwide	20 persons	UNCCD/CST
Until April 2007	E-mail	National and International academic colleagues	Europe	15 persons	IADIZA
May 2007	Linking the WAFLA webpage into the CIZA-UNALM web page	Public in general	Any country.	Non estimated	CIZA-UNALM
May 2007	WAFLA presentation of the V Seminario Internacional del Grupo Medamerica. Taller III: <i>Relaciones Científico Académicas entre Europa y América Latina</i>	Experts from Europe and Latin America	Europe and Latin America	250	TTZ
May 2007	UNL and WAFLA page link	local, national and international	Ecuador	50	UNL
May 2007	Meeting	Ecuador - Peru	Ecuador and Peru	50 persons	UNL
May 2007	International Seminar: Agroforestry Systems in Water Conservation	National and international research technicians	10 countries from Latin America	21	CATIE
June 2007	Article in the magazine Matices "revista de Latinoamerica, Espania y Portugal"	Public in General	Germany and some countries in Latin America	1000	TTZ
29 th – 30 th of June, 2007	Local workshop	Social organisations, NGO and public institutions in Aiquile	Bolivia	70	FAA
12 th – 13 th of July, 2007	Local workshop	Social organisations, NGO and public institutions in Sacaca	Bolivia	40	FAA
19 th – 20 th of July, 2007	Local workshop	Social organisations, NGO and public institutions in Chipaya	Bolivia	60	FAA
19 th of July, 2007	Meeting	National	Ecuador	Non estimated	UNL
July 2007	Information up date	Board members	National	10	Fundacion DeSdel Chaco
August 2007	Project presentation	European commission	National an international	5	Fundacion DeSdel Chaco
14 th September, 2007	Meeting	INIFAP Instituto Nacional de investigaciones forestales y agropecuarias	Chihuahua Chihuahua	8	FCF-UANL
19 th September 2007	Newsletters	National	Ecuador	500	UNL
27 th September, 2007	Meeting	CONAFOR E SEMARNAP	Guadalajara, Jal	12	FCF-UANL


September 11 th 2007	Side event, workshop at the UNCCD annual meeting COP8, Madrid Spain	UNCCD Focal Points, International Organizations and NGOs	Worldwide	30	TTZ, BioAzul, UNCCD, ACICAFOC
September 2007	National Seminar to Promote Environmental Services with Agroforestry Systems	National technicians	Costa Rica	48	CATIE
September 2007	Strategic International Course on Silvopastoral Systems	International research technicians	8 countries	26	CATIE
September 2007	Presentation in workshops with farmers	Piura Region Farmers	Peru	84	CIZA-UNALM
September 2007	Presentation	Piura region Institutions	Peru	7	CIZA-UNALM
September 2007	Meeting	Community leaders	Local	20	Fundacion DeSdel Chaco
September 2007	Article in news paper	International	Europe, North- and South America	2000	Fundacion DeSdel Chaco
September 2007	Cycle of Conferences at the University	University students, NGOs, Technicians	Regional	100 persons	IADIZA
3 th – 4 th of October, 2007	Regional workshop	Public and private institutions involved with desertification in Altiplano of Bolivia.	Bolivia	80	FAA
October 15 th , 2007	Public session in the Mid-Term Meeting at Agricultural University of Chapingo	Students and University Officials and Professors of the Agricultural University of Chapingo	Mexico	400	WAFLA Consortium
November 2007	Presentation of information obtained in the workshops (characteristics of the WAFLA areas in El Salvador).	Leaders of the communities.	El Salvador	80	CESTA
November 2007	Oral (Radio)	Regional	Argentina	400.000	IADIZA
November-December 2007	Written presentation in University Bulletin (BioEco bulletin)	Regional	Argentina	700 persons (Professors, students, NGOs)	IADIZA
December 2007	Press release in a local newspaper	Regional / National	Argentina	1.000.000	IADIZA
March 2008	University Meeting on Natural Resources	Regional	Argentina	30.000	IADIZA
December 2007	Article in Schriftenreihe der Fachhochschule Neubrandenburg (University of Neubrandenburg, Germany)	Students, researchers	Worldwide	100	FCF-UANL
November 2007	Conference	General public	Venezuela	85	CIEZA-UNEFM
December 2007	Radio Program	General Public	Venezuela	1000	CIEZA-UNEFM
January 2008	Workshop	Agronomists and foresters	Venezuela	35	CIEZA-UNEFM

February 2008	Press articles	General Public	Venezuela	Non estimated	CIEZA- UNEFM
March 2008	Workshop in Agro forestry	Peasants in Pecaya	Venezuela	60	CIEZA- UNEFM
April 2008	Press conference and meetings of RIOD Venezuela	General public and NGO's	Venezuela	Non estimated for press conference 80 for NGOs	CIEZA- UNRFM/INFAL COSTA/RIOD Venezuela
October, 2007	Article published about WAFLA project	General public	Paraguay, Canada and Germany	1500	Fundacion DeSdel Chaco
November, 2007	Visit to the community of Maria Auxiliadora for a meeting	Small ranchers	Paraguay	40	Fundacion DeSdel Chaco
November, 2007	Visit to SAF projects in the community of Sierra León, and meet people	Small ranchers	Paraguay	25	Fundacion DeSdel Chaco
November, 2007	Workshop of irrigation systems in the Chaco	Ranchers and farmers	Paraguay	25	Fundacion DeSdel Chaco
December, 2007 and February, 2008	Workshop with Bolivian Partners planning forest management in the Chaco	NGO	Paraguay and Bolivia	20	Fundacion DeSdel Chaco
February, 2008	Presentation of the Water Management Plan for the Chaco	Local governments, cooperatives and ranchers	Paraguay	15	Fundacion DeSdel Chaco
March, 2008	Course for Forest Fire-fighters	Volunteer Fire fighters	Paraguay	30	Fundacion DeSdel Chaco
February 28 2008	Workshop: Analysis and dissemination of best practices of optimal water use and agroforestry systems for the dry areas of Loja province of Ecuador	Rural extension officials Community leaders Researchers UNL	Ecuador	50	UNL
March 2008	University radio	University public	Regional / local	8.000	IADIZA
February / March 2008	University magazine (in press)	University / General public	Regional	2.000	IADIZA
March 2008	General extension magazine (in press)	University / Scientific / General public	Regional	3.000	IADIZA
September 2008	International Training Course on Agroforestry for Arid lands Development	Mid-level professionals	Latin America	50	CADS-UACH
September 2008	International Seminar "Success Stories on Arid lands Development "	University students and development professionals	Mexico and Latin America	200	CADS-UACH
January/February 2008	Meeting with technical experts and civil servants of local authorities	Technical experts and civil servants of local authorities	El Salvador.	30	CESTA
February 2008, 2nd	Radio Program	General public. National scope.	El Salvador	Non estimated	CESTA
22 Febrero de 2008	TV program	General public in the East of the country.	El Salvador.	Non estimated	CESTA

February 2008, 22nd					
December 2007	Workshop	CIEZA-UNEFM presentation	Venezuela	50	TTZ
March 2008	European magazine: "La cooperación científica en los retos socioeconómicos y medioambientales entre América Latina, el Caribe y la Unión Europea"	General Public	The world	More than 1000	TTZ
September 2008	Poster presentation at the European Water Research Day, in the context of Zaragoza EXPO 2008, organized by the European Commission, Directorate General for Research	General Public	Europe	300	TTZ
June 2008	Distribution of leaflets at a meeting with INRENA in Peru	Peru Natural Resources Institute workers, NGOs and Focal Point	Peru	15	UNCCD
June 2008	Regional Bulletin	UNCCD Focal Points, International Organizations and NGOs	35 countries	150	UNCCD
September 2008	Distribution of leaflets at the course on control of erosion and combat against desertification organized by the Ministry of Environment of Spain	Environmental workers of public administrations and universities of LAC	20 countries	25	UNCCD
November 2008	Distribution of leaflets at the meeting of the Committee of the Review of the Implementation of the Convention (CRIC) in Istanbul	UNCCD Focal Points, International Organizations and NGOs	Worldwide	Non estimated	UNCCD
June 2008	I National Congress on Sustainable Agriculture	Representatives of NGO, students, farmers	Bolivia-National	150	AGRECOL Andes
August 2008	Participation and presentation of wafla activities at National workshop on AFS: action plan; organized by Ministry of Planification	Representatives of private and public institutions.	Bolivia-National	50	AGRECOL Andes
May 2008	Course on recovery of degraded pasture lands in central america	Extensionist	Central America	30	CATIE
May 2008	Seminar on adaptation to climate change	Extensionist	Central America	100	CATIE
April 2008	Field day on good agroforestry practices for management	Farmers and extensionist	Costa Rica	40	CATIE
September 2008	University Press	Local and Regional	Argentina	15.000	IADIZA
October 2008	Workshop University	Local and regional	Argentina	80 (2.000 potential)	IADIZA
October – November 2008	Workshop Institute of Rural Development	Local and regional	Argentina	60 (3.000 potential)	IADIZA

November 2008	Press release	Regional and National	Argentina	200.000	IADIZA
March – August 2008	Radio program	regional	Paraguay	20.000	DeSdel Chaco
October 2008	Rural workshop held in the community centre in La Guacamayera, San Alejo, LA Unión	Famrmers	El Salvador	50	CESTA.
October 2008	Rural workshop held in the education centre Yucuaiquin, La Unión	Farmers	El Salvador	40	CESTA.
November 2008	Workshops with local aauthorities	Authorities from San Alejo y Yucuaiquin, technicians from government's institutions and local NGOs	El Salvador.	25	CESTA.
August 2008	Presentation of the project to dean and lecturers from the of agrarian university of El Salvador	Lecturers from UES agrarian university	El Salvador.	8	CESTA.
September 2008	Presenting WAFLA results at food sovereignty and agroecology forum at Lutheran Universidad de El Salvador	Lecturers and general public	El Salvador.	45	CESTA.
November 2007	Presenting WAFLA Project objectives and results at SMALLWAT07 (International Conference in Seville)	Lecturers and general public	Spain	50	BIOAZUL
October 2008	Field training on the design criteria of successful agroforestry technologies for dry areas	National	Mexico	25	CADS-UACH
September 2008	International Seminar on Agroforestry for Controlling Desertification	International	Latin America and Caribbean	57	CADS-UACH
September 2009	International Training Course for Training the Trainers	International	Latin America and Caribbean	50	CADS-UACH
8 October 2008	Presentation of the project in occasion of the Social Forum of the Americas – San Carlos university, Guatemala City, Guatemala.	Indigenous community leaders, activists from NGOs and social movements, university students from the American continent	Guatemala.	300	CESTA.
28 October 2008	Awareness raising workshop for agricultural farmers from the Guacamayera, San Alejo areas	Farmers from the Guacamayera, San Alejo and La Unión areas.	El Salvador.	37	CESTA
29 October 2008.	Rural workshops in Yucuaiquin.	Farmers leaders from yucuaiquin and nearby communities	El Salvador	17	CESTA
December 2008	Forum; 'Climate Change and Desertification – scenarios and alternatives'	Representatives from NGOs, government bodies,	El Salvador.	17	CESTA

		universities and social organisations from La Union department			
24 February 2009	Interview in the channel 10 TV programme called 'Hoy es un buen día'	Nationwide	El Salvador	Non determined	CESTA
22 April 2009	Forum: Climate Change and Desertification in El Salvador in occasion of 'Earth Day'.	Universities, minister of environment and natural resources, NGOs and other representatives from international cooperation organisations	El Salvador.	75	CESTA
21 April 2009	Interview in the channel 10 TV programme called "Hoy es un buen día" (invitación al foro del 22 de abril y los resultados más importantes del proyecto WAFLA)	National	El Salvador	Non determined	CESTA
22 April 2009	Interview in the channel 33 TV about the impacts of climate change in the desertification and the agroforestry as a solution to combat climate this problem	National	El Salvador	Non determined	CESTA
23 April 2009	Interview in the radio YSUCA 91.7 FM about the agroforestry system quesungual.	National	El Salvador	Non determined	CESTA
June 26 and 27, 2007	Meeting of the technical equipments of the projects working in desertification combating related activities in Zapatillo and Macará cantons of Loja province	Local	Ecuador	40	UNL
February 28, 2008	Analysis and dissemination of best water use practices in agroforestry systems in the drylands of Loja province	Local	Ecuador	50	UNL
October 31, 2008	Workshop with Authorities: Agroforestry Systems and integrated water management for desertification control and the promotion of sustainable development in the dry zones of Loja province and Ecuador	Local and national	Ecuador	50	UNL
February 27, 2009	Workshop with farmers: Best water use practices analysis and agroforestry systems recommended for the dry areas of Loja Province	Local	Ecuador	60	UNL
March 17, 2009	Official presentation and release of the booklets: Successful agroforestry systems and best water use practices for the dry areas of Loja province of Ecuador Key forest species and target crops for agroforestry systems of the arid and semiarid zones of Ecuador	Local and national	Ecuador	60	UNL

March 2009	Regional Bulletin	UNCCD Focal Points, International Organizations, Universities and NGOs	Worldwide	150	UNCCD
April-December 2008	One-hour Weekly radio programmes Available in CD on demand	Local and National, and global via Internet broadcast	Chile and global	n/a	EAN Santiago
August 2008 on	WAFLA final conference posters put up in universities, NGOs, 90 subway stations in Santiago and distributed to consortium partners	Local and national, and 16 countries involved in WAFLA coordination action	Chile and 16 countries involved in WAFLA coordination action	n/a	EAN Santiago
July 2008 on	WAFLA 2 nd leaflet distributed to all WAFLA consortium partners in English, Spanish or Portuguese	Local, national, global	Chile and 16 countries involved in WAFLA coordination action	n/a	EAN Santiago
July 2008 on	WAFLA Call for papers and invitations to Final Conference in the Conference sections of the EAN website, www.accionporlatierra.cl	Global	Latin America & Europe	n/a	EAN Santiago
10 and 19 October 2008	Rural workshops in localities of Ovalle and Pichasca, Coquimbo Region, Chile 	Local farmers and producers associations, and rural group against desertification and poverty	Chile	130	EAN Santiago
September-October 2008	Radio announcements inviting to rural workshops broadcast through local community radio station	Local	Chile	n/a	EAN Santiago
21, 22 & 23 January 2009	International Conference at ECLAC Headquarters in Santiago, Chile	National and international (NGOs, academy, government officials among others)	Chile, Latin America, Europe	160	EAN Santiago
26-27 January 2009	"4th International Seminar Agroforestry and arid zones of Latin America: Concepts and Case Studies" in Mendoza (Argentina).	International	Argentina, Latin America	60	IADIZA
11 November 2008	Workshop: Basic Principles of agroforestry applied to the Aloe vera Arid Areas San Jose de Cocodite in Paraguaná	Farmers, Communal and High School Students	Venezuela	35	CIEZA-UNEFM
12 February 2009	Workshop: Agroforestry applied to the Agave cocui farming on Arid Areas of	Members of the Artisans Association for Agave cocui production in Pecaya	Venezuela	45	CIEZA-UNEFM

	Pecaya m Falcon Estate				
5 March 2009	Seminar: The advantages of Agroforestry farming for sustainable development of Arid Lands communities. Held in Coro	Authorities from local and national government offices, deans of agronomy and NGO's	Venezuela	32	CIEZA-UNEFM
9 March 2009	Workshop: Agroforestry applied to the Agave cocui farming on semi Arid Areas in Siquisique, Lara Estate	Associations for Agave Production in Lara estate and students of Agronomy UCLA	Venezuela	39	CIEZA-UNEFM
November to March 2009	Interviews in radio and newspaper	General Public	Venezuela	Non determined	CIEZA-UNEFM
2 Septiembre 2008	Seminar with the directors of CONAFOR (Comisión Nacional Foresta), for future projects in agroforestry systems in the status of Baja California and Coahuila	Gubernamental authorities	MEXICO	10	FCF-UANL
19-20 Septiembre 2008	Workshop in Cataviña (Baja California) for the capacity building of farmers and peasants for the sustainable use of natural resources in the region	Rural communities	Mexico	Owners of 15 cooperatives and 20 workers	FCF-UANL
22-23-24 Septiembre 2008	Workshop in Ensenada (Baja California) with authorities at the CICESE (Centro de Investigación Científica y de Educación Superior de Ensenada): "Mesa de trabajo en Ensenada Baja California con autoridades y directivos de la Universidad para designar trabajo que se entregó posteriormente en Diciembre 2008"	Authorities: Universities, CONAFOR, SEMARNAT, GOBIERNO ESTATAL, ZONAS PROTEGIDAS, DPTO. DE AGUAS.	MEXICO	14	FCF-UANL
14 Octubre 2008	Seminar about WAFLA Project and the application of agroforestry system in arid and semi arid regions of Northern Mexico.	Professors and students of the Forest Faculty of the Universidad Autonoma de Nuevo Leo	MEXICO	80	FCF-UANL
16 Octubre 2008	Worshop in La Chancaca (Coahuila) to teach farmers about how implement agroforestry systems	Rural communities	MEXICO	19	FCF-UANL
17-18-19 Octubre 2008	Workshop with the authorities of CONAZA and owners in Sattilo (Coahuila)	Authorities of the Comisión Nacional de Zonas Áridas in Sattilo (Coahuila), owners of faros and other stakeholders of the region	MEXICO	35	FCF-UANL
3,4, 5 Noviembre 2008	Seminar with the Government of the State of Coahuila	Authorities and owners of farms	MEXICO	16	FCF-UANL
26-27 January 2009	"4th International Seminar Agroforestry and arid zones of Latin America: Concepts and Case Studies" in Mendoza (Argentina).	International	Argentina, Latin America	60	IADIZA
3 November 2008	Training workshop for agricultural farmers, students	Students in agrarian sciences and biology, Farmers	Argentina	50	IADIZA
October / November 2008	3 sessions of seminars with authorities to disseminate the theoretical basis of agroforestry and its relation to water management,	Agronomists, biologists and technicians of local and regional authorities	Argentina	30 in the 3 sessions (8+10+12)	IADIZA

	biodiversity, revalorization and potentiality of native species.				
October 2008	University press release	Local and Regional	Argentina	50.000	IADIZA
March 2009	Press release	Local and National	Argentina	300.000 (audience of the programme)	IADIZA
28 November 2008	Presentation of WAFLA project related to territorial ordering	Local authorities	Paraguay	51	DeSdeI Chaco
04 March 2009	Presentation of water management practices, AFS and territorial ordering plan	Authorities of Environmental Secretariat	Paraguay	24	DeSdeI Chaco
06 March 2009	Successful ASF and water management practices	Local leaders	Paraguay	83	DeSdeI Chaco
20 March 2009	Presentation of WAFLA project and production systems	Authorities of local governments	Paraguay	9	DeSdeI Chaco
March, 2009	Workshop on Sustainable Livestock: Valuations, progress and opportunities	Technical and farmers of the Brunca Region	Costa Rica	25	CATIE
December 2008	V Congress Agroforestry for sustainable livestock production	Researchers, technical and students	Venezuela	170	INIA VENEZUELA - CATIE
November, 2008	Workshop: Adaptation to Climate Change	Farmers, technical and students of Esparza	Costa Rica	34	CATIE
November 2008	Course: Livestock Environmental	Researchers, technical and students	Costa Rica	32	CATIE – MAG Costa Rica
October, 2008	Tools for the development of livestock environmental watershed	Farmers and technical of Copan Ruinas	Honduras	21	CATIE - FOCUENCAS II
October 2008	Climate change adaptation and integration into management plans for integrated water	Farmers and technical of Honduras, Guatemala and Nicaragua	Honduras, Guatemala y Nicaragua	92	CATIE
October 2008	General principles of design, methodology and implementation of model Landscape and Payment for Environmental Services	Farmers and, technical of Panamá	Panamá	55	CATIE – ANAM Panamá
November 18 and 19 th 2008	Awareness-raising workshop on the productive potential of the communitarian water management and successful Agroforestry practices identified in sub-humid dry zones of Central America, that are also vulnerable to climate change.	Farmers, Local Authorities, NGO representatives that work in the municipality of Texiguat and Morolica in the south part of Honduras	Honduras	63	ACICAFOC
December 2 th , 2008	Awareness-raising workshop on the productive potential of the communitarian water management and successful Agroforestry practices identified in sub-humid dry zones of Central America, that are also vulnerable to climate change.	Farmers, Local Authorities, NGO representatives that work in the municipality of Chiquimula in the oriental part of Guatemala	Guatemala	23	ACICAFOC
March 26 th , 2009	Awareness-raising workshop on the productive potential of the	Farmers, Local Authorities, NGO representatives that work in the municipality of Rio	Panama	25	ACICAFOC

	<p>communitarian water management and successful Agroforestry practices identified in sub-humid dry zones of Central America, that are also vulnerable to climate change.</p>	<p>Hondo in the dry zones of Panama</p>			
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A short description of some of the activities listed in the table is provided below:

TTZ has been the responsible of developing and maintaining the official WAFLA web-page since the very early stage of the project. The web has been the main communication tool among project partners. It has a secured area restricted to project partners which offers the possibility of having on-line chats and exchange of information as well as confidential deliverables uploading. An open area to the public offers general information about the project, work plan, project partners and a public library that contains the public deliverables produced and the databases.

The WAFLA Public Library aims to give the opportunity to access to a list of recommended reading and useful links to all important issues related to sustainable agroforestry. During the third year there was a re-organization of the data base, and now it is structured as follows:

- Background information
- WAFLA documents
- Data bases
 - Database of Documents
 - Database of Species
 - Database of Systems
 - Data Bases Policy Briefs
 - Data Bases Promotion Strategies
- Useful links



The **Data base of species** has been continuously up-dated with new fact sheets. According to the different ecosystems, some agroforestry species have been reported by the Latin American

countries. These species are supposed to have a very high potential in the development of agroforestry systems, quite apart from the fact that their uses and their demand can be considered as a strategy to improve the livelihood of farmers and rural community in the targeted regions of the WAFLA project.

Two categories have been created in order to make easier the access to the information. These categories are:

The Latin American country that has reported the species.

The family that the species belongs to, according to its taxonomic identification.

The screenshot displays the WAFLA Public Library website interface. At the top, there are navigation tabs: WAFLA Events, Project Information, Partners, Public Library (highlighted), Final Conference, and Secured Area. Below the navigation is a banner with the WAFLA logo and the text: "Integrated Water resource management by the implementation of improved Agro-Forestry concepts in arid and semi-arid areas in Latin America". A search bar is located below the banner.

The main content area is titled "Database of Species related to Agroforestry" and lists three species:

- Acacia capensis**: Familia: Fabaceae. Nombres comunes: Acacia espinosa, Aromo de África del Sur, Carambuco africano; Espina dulce, Huranguillo, Karroothorn, Mimosa naranja, Acacia Karroo.
- Acacia farnesiana**: Familia: Mimosaceae. Nombres comunes: Huizache, Guizache, Güizache yóndiro, Aromo, Aroma, Bihi, Coo-ca, Cucá, Espino, Espino blanco, Flor de niño, Quisache, Gabia, Lai-do-no, Kánkilis-ché, Kántilis, X-kántilis, Zubín, Zubínché,...
- Acacia macracantha Humboldt & Bonpland ex**: Familia: Mimosaceae. Common names: Faique, Guarango, Espino, Aromo, Vilca; Quatapana in Cuba, Taque, Espino in Peru.

Each species entry includes a small photograph and a "[more]" link. On the right side, there is a "Categories" sidebar with two sections: "Species reported by" (listing countries like Bolivia, Colombia, Ecuador, Peru, Venezuela, Chile, Argentina, Paraguay, Panama, Costa Rica, Nicaragua, El Salvador, Guatemala, Honduras, Mexico) and "Families" (listing various plant families like Caesalpinaceae, Boraginaceae, Mimosaceae, etc.).

Furthermore, a **data base of agroforestry systems**, containing the sheets with agroforestry practices and case studies implemented in the WAFLA region was also prepared. This can be observed as follow:

WAFLA Events Get the latest information	Project Information What is WAFLA about	Partners Who is the team	Public Library Infos to WAFLA themes	Final Conference Santiago, Chile 2009	Secured Area For participants only
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Integrated Water resource management by the implementation of improved Agro-Forestry concepts in arid and semi-arid areas in Latin America

WAFLA country profiles



Background information and articles

WAFLA Documents

Databases

- Database of Documents
- Database of Species
- Database of Systems
 - Agroforestry Practices
 - Study Cases
- Data Bases Policy Briefs
- Data Bases Promotion Strategies
- Database Search

Useful links

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Agroforestry Practices


Study Cases


Policy Briefs

» Public Library » Databases » Database of Systems » Agroforestry Practices

Agroforestry Practices

Documents are only available in Spanish

Práctica Agroforestal 1:
Leñosas perennes con cultivos anuales
Uso de la práctica agroforestal: En zonas sub húmedas secas de diversos lugares de América Central
[\(Click here\)](#)

Práctica Agroforestal 2:
Leñosas perennes: árboles y arbustos dispersos con cultivos suculentos semiperennes
Uso de la práctica agroforestal: Es una práctica utilizada en las zonas áridas y semiáridas de América Latina
[\(Click here\)](#)

Práctica Agroforestal 3:
Leñosas perennes dispersas en potreros
Uso de la práctica agroforestal: Es muy común en las zonas bajas tropicales con estación seca prolongada y/o en zonas áridas y semi-áridas.
[\(Click here\)](#)

Práctica Agroforestal 4:
Huertos caseros con leñosas perennes
Uso de práctica agroforestal: Manejo de árboles y arbustos, en asociación con los cultivos agrícolas anuales y perennes y animales
[\(Click here\)](#)

Práctica Agroforestal 5:
Leñosas perennes (árboles y arbustos) en barreras vivas con cultivos
Uso de la práctica agroforestal: Producción de hortalizas, cultivos anuales, un huerto frutícola, protegido por barreras vivas de árboles y arbustos nativos. Incluye también ganado vacuno, caprino y ovino, manejado por agricultores p.e. en Ecuador y Bolivia.
[\(Click here\)](#)

Práctica Agroforestal 6:
Leñosas perennes en bancos forrajeros
Uso de práctica agroforestal: En las regiones semi áridas del Chaco Americano
[\(Click here\)](#)






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The process of evaluation of the traditional agroforestry practices comprised of two moments or stages: first a group of activities were carried out, mainly from the field, to obtain information that allowed to characterize the agroforestry systems and the type of practices that are carried out in them; a second stage constitutes the systematizing and documentation of the registered information, to then carry out a comparative analysis, through agreed criteria, what allowed to determine what the best traditional agroforestry practices are.

WAFLA Events Get the latest information | Project Information What is WAFLA about | Partners Who is the team | **Public Library** Infos to WAFLA themes | Final Conference Santiago, Chile 2009 | Secured Area For participants only

WAFLA
Integrated Water resource management by the implementation of improved Agro-Forestry concepts in arid and semi-arid areas in Latin America

WAFLA country profiles

Search

- Background information and articles
- WAFLA Documents
- Databases**
 - Database of Documents
 - Database of Species
 - Database of Systems**
 - Agroforestry Practices
 - Study Cases
 - Data Bases Policy Briefs
 - Data Bases Promotion Strategies
 - Database Search
- Useful links

Contact
Get in touch with us

>> Public Library >> Databases >> Database of Systems

Data Bases of Systems


Agroforestry Introduction
What is the Agroforestry? Agroforestry refers to systems and technologies for the soil use in which the perennial woody species (trees, shrubs, palms, etc.) are used deliberately in the same management system, with agricultural cultivation and/or animal production, in some form of spatial arrangement or temporary sequence (ICRAF, 1982; Nair, 1993).
(Click here) Document in Spanish

The Agroforestry Systems developed in WAFLA project are the following:

Agroforestry practices

Study Cases

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A powerful search engine was also prepared to help to find the information about the agroforestry systems, the species or other documents.

WAFLA Events Get the latest information | Project Information What is WAFLA about | Partners Who is the team | **Public Library** Infos to WAFLA themes | Final Conference Santiago, Chile 2009 | Secured Area For participants only

WAFLA
Integrated Water resource management by the implementation of improved Agro-Forestry concepts in arid and semi-arid areas in Latin America

WAFLA country profiles

Search

- Background information and articles
- WAFLA Documents
- Databases**
 - Database of Documents
 - Database of Species
 - Database of Systems
 - Data Bases Policy Briefs
 - Data Bases Promotion Strategies
 - Database Search**
- Useful links

Contact
Get in touch with us

>> Public Library >> Databases >> Database Search

Search within the databases of WAFLA

This powerful search engine helps finding your information right away! Please type in the keyword that's interesting for you. Whenever there is a document, expert or species listed in the database the result will be shown.


Search

Please enter a searchword.

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Furthermore, a redesign was made within the main tool bar of the WAFLA web page, eliminating the section “news” and changing it for “WAFLA events”, in order to show the different WAFLA events that took place in the timeframe of the project:


WAFLA Events Get the latest information	Project Information What is WAFLA about	Partners Who is the team	Public Library Infos to WAFLA themes	Final Conference Santiago, Chile 2009	Secured Area For participants only
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WAFLA

Integrated Water resource management by the implementation of improved Agro-Forestry concepts in arid and semi-arid areas in Latin America

WAFLA country profiles



▼ Consortium Meetings

- Kick off meeting
- Mid Term Meeting
- Technical Meeting
- Final Conference
- ▶ Specialized Seminars

>> WAFLA Events >> Consortium Meetings

Consortium Meetings

One of the main objectives of WAFLA is to promote international cooperation between research organisations, universities, associations, NGOs and social stakeholders in a Latin American context, which devote themselves to the research, development and application of agroforestry and integrated water management in arid and semi-arid areas of Latin America.


Due to this main objective of WAFLA project, was necessary to develop several meetings, in order so ensure the success of the project, which took place, in different countries of Latin America and have been hosted by the consortium partners.

Kick off Meeting
29 October to 1 November, 2006
Turrialba, Costa Rica



Mid-Term Meeting
12 to 19 October, 2007
Chapingo, México


Technical Meeting
2 to 4 June, 2008
Lima, Perú

Final Conference
21 to 23 January, 2009
Santiago, Chile



Supported by the European Commission under the Sixth Framework Program



According to the different ecosystems, some agroforestry species have been reported by the Latin American countries. These species are supposed to have a very high potential in the development of agroforestry systems, quite apart from the fact that their uses and their demand can be considered as a strategy to improve the livelihood of farmers and rural community in the targeted regions of the WAFLA project.

The WAFLA Consortium organised a Public Session at the beginning of the Mid-Term Meeting at the University of Chapingo, Mexico, on October 15th 2007. Definitely, together with the WAFLA web-page, these events have been the most significant of the dissemination activities to date.

UNCCD has performed different types of dissemination activities. A regional bulletin on the Kick-off Meeting held in Costa Rica was prepared by them at the final of 2006. The grulac meeting where took place the discussion on the Convention to Combat Desertification implementation in March 2007 was another spreading event. Another activity was the preparation of a document by the Expert Group on Indicators of the Science and Technology Committee of the UNCCD with the purpose to clarify a baseline of indicators of land degradation in April 2007.

IADIZA contributed to the spreading of WAFLA project with several activities. They performed two actions on the radio:

- Extent participation on a radio programme devoted to agricultural aspects (water management, special crops, traditional crops, etc.). In this occasion the aims of the WAFLA project and the future expectative were commented.
- In the Radio Universidad (FM 93.1), San Juan province, the project was presented and many people expressed their interest on the theme.

Communication via e-mail was also used by IADIZA informing to several colleagues, in different academic centres, about the WAFLA project.

In September 2007, WAFLA was presented also into the Cycle of Conferences at the Universidad Nacional de San Juan, Facultad de Cs. Ex. F. y Nat.–Argentina organized by IADIZA related to natural resources (evaluation, conservation, auto-determination). Into this activity they presented the WAFLA project, organization, achievements, and expectative.

IADIZA also spreads the WAFLA project through BioEco bulletin (University Bulletin), produced by professors and advanced students, appears at least twice in a year and writes critical comments on different topics related to the biology, relevant notices, etc.; and “Revista la U”, produced by University Editorial, includes notes on relevant projects.

UNL performed also several kinds of dissemination activities as meeting newsletters, press releases spreading the WAFLA project. Press releases informing about EU approval of WAFLA project and the starting of WAFLA project and kick off meeting. Meetings between UNL WAFLA specialist group and the technical team of the Bi-national project of Regional Integration for Sustainable Management of Dry Forest Ecosystem at the border Ecuador Peru were held. Newsletters on Desertification, Human Development and Natural Resources Conservation reporting about WAFLA activities and selected areas of Ecuador.

CIZA-UNALM contributed linking the WAFLA web-page to their web-site. Furthermore, they performed several presentations on WAFLA projects and workshops to compile the necessary information for the general recognition of the WAFLA regions allocated in the Piura region (Peru). The presentations were addressed to State and Education (university and schools) Institutions and NGOs. E-mailing communication to the Agroforestry National experts was accomplished performing presentations on the project and inviting them to visit the WAFLA web-page and establishing a relation for future collaborations.

WAFLA was also presented by FAA making emphasis on efficient water use in two WAFLA regions. FAA prepared the local workshops in each WAFLA region aiming to disseminate the project, its goals and activities, with local organizations and institutions in Bolivia. The main topic was a reflection about sustainable agriculture, specially agroforestry systems and its contribution to the efficient use and protection of natural resources. A regional workshop was organised by the Bolivian RIOD; they reported on the state of the art of the knowledge about problems and dynamics of the Puna agro-ecological system and experiences with sustainable management and production.

DeSdelChaco has contributed to the dissemination activities uploading the description about the WAFLA project and related aspects to the Mid-Term Meeting held at CADS-UACH facilities into the web site of their organization. The following picture shows it:

Desde el Chaco - Fundación Para el Desarrollo Sustentable del Chaco Sud Americano Organización - Microsoft Internet Explorer

Archivo Edición Ver Favoritos Herramientas Ayuda

Dirección <http://www.desdelchaco.org.py/index.php/news/37/15>

FUNDACION PARA EL DESARROLLO SUSTENTABLE DEL CHACO SUD AMERICANO

ORGANIZACION DATOS E INFORMES CONOZCA EL CHACO SERVICIOS DEL SITIO

Jueves, 08 de noviembre de 2007 Parcialmente nuboso T: 31°C ST: 31°C H: 38%

Reunión internacional del WAFLA en la Universidad Autónoma Chapingo

General
10/15/07
La Fundación para el Desarrollo Sustentable del Chaco – DESDELCHACO, participa de la reunión internacional del WAFLA en la Universidad Autónoma Chapingo, ubicada entre las ciudades de Méjico y Texcoco, Méjico, que se desarrollará del 12 al 21 de octubre del cte año.
admin_chaco

La Fundación para el Desarrollo Sustentable del Chaco – DESDELCHACO, participa de la reunión internacional del WAFLA en la Universidad Autónoma Chapingo, ubicada entre las ciudades de Méjico y Texcoco, Méjico, que se desarrollará del 12 al 21 de octubre del cte año.

WAFLA es un proyecto de gestión integrada de los recursos hídricos mediante la implantación de conceptos de agroforestería en las zonas áridas y semiáridas de Latinoamérica.

Es una instancia de acción coordinada que está integrada por 22 organizaciones latinoamericanas y europeas, entre las que se encuentra la Fundación DeSdelChaco, y conforman un consorcio internacional, con el apoyo de la Comisión Europea. El objetivo es promocionar la cooperación internacional entre centros de investigación, universidades y grupos de interés de carácter social, industrial y gubernamental en el contexto Latinoamericano y Europeo, que se dedican a la investigación, desarrollo y aplicación de la agroforestería y gestiones de aguas alternativas en las áreas áridas y semiáridas de América Latina.

Es importante mencionar que alrededor de un cuarto de la superficie de Latinoamérica está constituida por tierras áridas. La desertificación es uno de los problemas más desafiantes en la región, como consecuencia del uso no sostenible de los recursos naturales, y eso ha llevado a la reducción de la productividad de los sistemas agrícolas y aumenta por tanto el grado de pobreza de la población.

Por eso, la agroforestería es la respuesta clave que puede contribuir a resolver los problemas más acuciantes en las regiones áridas y semiáridas en Latinoamérica y particularmente en nuestro país.

WAFLA es un compromiso de lucha contra la degradación del suelo y la pobreza en las zonas áridas de Latinoamérica, por medio de una gestión sostenible de los recursos.

Para mayor información: www.wafla.com

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GALERIA DE FOTOS

Inicio Bandeja de entrada WAFLA_first activity Desde el Chaco - Fun... 9:57

The European Commission in Paraguay invited Lic. Wilfried Giesbrecht (DeSdelChaco) to present the WAFLA project to their staff in August 2007.

In September 2007 DeSdelChaco visited the communities Maria Auxiliadora and Sierra León (both WAFLA regions) to present the WAFLA project to the people and talk to the leaders about the activities the project is carrying out.

Lic. Wilfried Giesbrecht (DeSdelChaco) published an article about the WAFLA project in a local newspaper in German language in September 2007. This periodic newspaper is also sent to people in neighbouring countries, Canada and Germany. The article is provided below:

WAFLA – Projekt

Wilfried Giesbrecht, Fundacion DeSdel Chaco

Etwa 25% der Oberfläche Südamerikas besteht aus ariden (trockenen) Gebieten. Durch die ungeeignete Nutzung der Böden gilt die Wüstenbildung, entweder durch Versalzung oder durch Erosion, in diesen Zonen als eines der Hauptprobleme. Dieses führt zu einer Verminderung der Produktivität der ökologischen und landwirtschaftlichen Systeme. Als Folge davon erhöht sich der Armutsgrad der Bevölkerung, die dann wieder einen verstärkten Druck auf die natürlichen Ressourcen ausüben um überleben zu können.

WAFLA leitet sich aus den Anfangsbuchstaben des englischen Begriffes für „Integrierte Wasserhandhabung und Agroforstliche Systeme in Lateinamerika“, ab. Agroforstliche oder forstwirtschaftliche Systeme, sind eine Kombination aus Ackerbau oder Weiden mit Bäumen. Diese werden je nach System reihenweise oder verstreut auf dem Felde gepflanzt bzw. stehen gelassen und man benutzt dazu einheimische oder exotische Arten. In den letzten Jahren haben die Anbauflächen mit forstwirtschaftlichen Systemen hier im Chaco zugenommen, wozu bisher hauptsächlich Weiden mit Leucaena, aber auch mit Algarrobo kombiniert werden. Diese Systeme fördern die Produktivität des Bodens, schützen vor Sonneneinstrahlung und Austrocknung, geben den Tieren Schutz, sind zusätzliche eine Futterquelle, ermöglichen die Ansiedlung von Vögeln die dann in der Schädlingsbekämpfung hilfreich sind u.a.m. Besonders in ariden und semi-ariden

Gebieten wie der Chaco, hofft man auf den positiven Einfluss solcher Systeme. Wir haben auch erfahren, dass sich der Schatten des Algarrobobaumes hervorragend zur Anpflanzung von Gemüsegärten eignet.

Die integrierte Wasserhandhabung bezieht sich auf alle Aspekte von der Wasserernte bis zur Verwertung der Abwasser. Ich wage zu behaupten, dass wir Chacobewohner wohl eines der erfahrensten Völker in Sachen Wasserernte sind, was unsere gut funktionierenden Systeme zur Genüge beweisen. Auch sind wir durchaus erfinderisch im sparsamen Umgang mit dem Wasser und die Abwasser finden auch immer mehr Anwendung. Dieser Fortschritt rückt uns in eine privilegierte Lage andern gegenüber und da kommt der heute vielfach verwendete Begriff der sozialen Verantwortung in Frage. Es ist vorteilhaft gute Systeme zu entwickeln und es ist gut die Mittel zu haben um solche Systeme aufzubauen, aber es ist noch besser wenn wir andere daran teilhaben lassen. Genau das ist mit der sozialen Verantwortung oder für uns besser gesagt, sozial – christlichen Verantwortung gemeint. Langfristige Entwicklung an der sich möglichst viele erfreuen können.

Das WAFLA – Projekt versucht geeignete Wirtschaftssysteme für aride Gebiete zu erforschen und zu verbreiten, um damit zur gesunden Entwicklung und Bekämpfung der Armut beizutragen. Dabei spielt der Austausch von Kenntnissen und Erfahrungen eine grosse Rolle. Der Hauptteil dieses Projektes, woran 17 lateinamerikanische und 5 europäische Organisationen beteiligt sind, wird über Internet koordiniert. Die Eröffnungssitzung fand im Oktober vergangenen Jahres in Costa Rica statt und vom 12. bis zum 20. Oktober dieses Jahres wird die Halbzeitsitzung in Chapingo (México) durchgeführt. Das Anschlussseminar soll im Januar 2009 in Santiago (Chile) stattfinden. Die Fundacion DeSdel Chaco ist die einzige Organization aus Paraguay, die an diesem Projekt mitwirkt.

BIOAZUL has contributed in the spreading of the project preparing the first promotional leaflet with the support of the WAFLA Consortium as well as supporting in the development of the WAFLA poster. Furthermore, BIOAZUL together with TTZ performed a Side Event supporting by UNCCD and ACICAFOC. An overview of the WAFLA project at the UNCCD annual meeting COP-8 in Madrid Spain, in September 2007 was held.

A press release for the dissemination of WAFLA was prepared by BIOAZUL and published by the website of the Technological Park of Andalusia, Spain (National level). The note is provided below:

Bioazul combate la desertificación en Iberoamérica

El proyecto Wafla busca soluciones para combatir el avance de la desertificación y la degradación de los ecosistemas y favorece el desarrollo rural en Iberoamérica mediante la integración de actividades de investigación científica, innovación tecnológica y políticas sociales.

El proyecto se centra en el estudio de las causas que degradan el suelo y que convierten a los terrenos en zonas áridas y semiáridas, que no son adecuadas para el cultivo y las prácticas agrícolas. Se trata de la implantación de "una mejora de los recursos hídricos de la zona" y la adopción de un nuevo sistema denominado "agroforestería", basado en una forma de cultivo múltiple con métodos tradicionales. Con ello, se pretende lograr aumentar el nivel de vida de los ciudadanos, según explicó Almudena Ortega, gestora de proyectos de Bioazul.

Los países miembros ya han iniciado actividades de investigación y desarrollo en el ámbito latinoamericano para evaluar e identificar los cultivos con potencial comercial que deben proteger. El siguiente paso es aplicar políticas sociales que traten de informar a la población afectada sobre los mejores métodos para conservar su producción.

FCF-UANL performed two relevant meetings in order to find the specific study area for applying the methodology to evaluate the possibilities for implementation of suitable Agroforestry systems spreading also the WAFLA project. It is foreseen to publish an article related to desertification provided by FCF-UANL at the final of the year at an international scope.

CESTA performed presentations describing the information gathered corresponding to the traditional Agroforestry systems in El Salvador, during November 2007. The Municipal Authorities of San Alejo and Yucuaiquin were invited, together with representatives of the Ministry of Environment, community leaders and representatives of local government institutions. Consequently they contributed to the project by spreading its results and objectives across the region and seeking for links of cooperation.

An article was prepared by TTZ in a German - Latin American magazine named "MATICES" which is distributed in all Germany and other parts of the world. The article is found as follows:



Lucha contra la desertificación

Una experiencia de cooperación entre Europa y América Latina



WAFLA es un proyecto creado bajo el instrumento „Acción de Coordinación“ financiado por la Comisión Europea dentro del 6to Programa Marco de Apoyo a la Investigación de la Unión Europea. El consorcio de WAFLA está compuesto por 22 socios de América Latina y Europa, siendo su objetivo principal promocionar la cooperación internacional entre centros de investigación, universidades y grupos de interés de carácter social y gubernamental dedicados a la investigación, desarrollo y aplicación de la agroforestería en las áreas áridas y semiáridas de América Latina.

von Leonelha S. Barreto Dillon

América Latina ha sido conocida tradicionalmente por sus selvas tropicales, especialmente por la Cuenca Noroeste Amazónica, el Escudo Guayanés y el bosque Centroamericano, que constituyen el 57% del bosque tropical mundial. En la actualidad, la deforestación en estas áreas es alarmante, con una pérdida de superficie del 2% anual, causada tanto por la tala de árboles para cubrir la demanda internacional de madera, como por el desmonte de áreas verdes para actividades ganaderas y agrícolas.

La merma de los recursos forestales es un hecho, dado que cerca de un cuarto del territorio latinoamericano actual está compuesto por desierto y zonas áridas (20 533 000 km²). Citando algunos ejemplos, los desiertos de la costa pacífica de América Latina se extienden desde el sur de Ecuador, por todo el litoral peruano hasta buena parte del norte de Chile; los llanos áridos de la Cordillera de los Andes abarcan grandes áreas de Perú, Bolivia, Chile y Argentina. Desde Paraguay a la Patagonia en el Sur de Argentina se extiende una amplia región árida; y las regiones norte y central de México están cubiertas principalmente por ecosistemas áridos.

Destrucción del ecosistema

La desertificación es la causa principal de la degradación del terreno en zonas áridas, siendo en parte consecuencia de las prácticas agrícolas no sostenibles, tales como la

plantación de monocultivos, la irrigación desmesurada y el sobrepastoreo. El resultado de estas prácticas es una aceleración del proceso natural de erosión, así como la destrucción de los recursos hídricos locales, los nutrientes y las estructuras reguladoras del clima. La presión ejercida sobre el ecosistema forestal junto con la gestión agrícola no sostenible resulta en la reducción de la productividad de la tierra, llevando finalmente a una crisis ecológica que afecta las opciones de sustento para el desarrollo.

Desertificación es una causa de la pobreza

El avance de la degradación de los ecosistemas tiene un impacto directo sobre la creciente pobreza predominante en las áreas secas de América Latina, debido a que los habitantes no tienen acceso a recursos productivos como tierra fértil, agua, infraestructura y empleo. Por esta razón, la población rural migra a las ciudades, con la esperanza de mejorar sus condiciones de vida, encontrando bariadas para vivir, haciendo de América Latina una de las regiones con mayor densidad de población en las áreas urbanas (74% de la población total en 1998). Las consecuencias de dichas condiciones de vida son devastadoras; por ejemplo, menos del 14% de los 600 metros cúbicos por segundo de agua residual urbana producida en América Latina reciben algún tipo de tratamiento antes de su vertido a los ríos o mares, causando la incidencia de enfermedades transmitidas por agua contaminada en un 40% de la población.



campo de caña de azúcar en América Latina



Miembros del equipo de Wafila

Para proponer una solución sostenible a la situación actual, es necesario concebir una medida basada en la gente, que a la vez sea favorable para el medio ambiente, disminuyendo así la presión ejercida sobre los recursos naturales y asegurando la participación de la población rural. Son muchos los ejemplos en países en vía de desarrollo que evidencian los beneficios de la agroforestería como herramienta para la provisión de empleo, generación de ingresos y seguridad alimentaria, mediante la resiembra de áreas degradadas y la diversificación de la agricultura. La agroforestería se define como una práctica ancestral de gestión de tierras que optimiza la productividad, aprovechando la alternación positiva de diferentes cultivos y el ganado en un terreno, mientras que a la vez se conservan y rehabilitan los ecosistemas.

Objetivos del proyecto

La fusión entre una práctica de agroforestería sostenible con una gestión de recursos hídricos que integre la reutilización controlada del agua aguas servidas, es la estrategia a seguir para estimular el desarrollo socio-económico de las áreas áridas y semiáridas en América Latina.

La Comisión Europea en su 6to Programa Marco de Apoyo a la Investigación, en su Prioridad 10: „Medidas específicas de apoyo a la Cooperación Internacional“ ha considerado necesario subvencionar la investigación de la agroforestería y gestión hídrica en las regiones áridas y semiáridas de Latinoamérica para frenar el fenómeno de la desertificación. Dentro de este marco de apoyo, en Octubre del 2006 comenzó el proyecto WAFLA (*Gestión integrada de recursos hídricos mediante la implementación de conceptos de agroforestería mejorados en regiones áridas y semiáridas de América Latina*) creado bajo el instrumento „Acción de Coordinación“ con un presupuesto de 1.369.846 Euros.

Este proyecto es llevado a cabo por un grupo de 22 instituciones de alto renombre internacional, con especial incidencia en el territorio latinoamericano, entre los cuales se destacan la UNCCD (Naciones Unidas), CATIE (Costa Rica), Universidad de Chapingo (Mexico), CIAT

(Colombia), INTA (Nicaragua), CIRAD (Francia), Universidad de Wageningen (Países Bajos), IADIZA (Argentina), entre otros. TTZ-Bremerhaven, como Coordinador General de WAFLA, es el miembro encargado de la organización general y financiera del proyecto. TTZ es un Centro de Transferencia Tecnológica asociado a la Universidad Técnica de Bremerhaven (Norte de Alemania) con amplia experiencia en la organización de proyectos financiados por la Unión Europea, tanto en tareas administrativas, como en la ejecución de tareas de investigación y científicas en el campo de tecnología ambiental, biotecnología y energía.

El objetivo principal de WAFLA es la promoción de la cooperación internacional entre centros de investigación, universidades y grupos de interés de carácter social que se dediquen a la investigación, desarrollo y aplicación de la agroforestería en las áreas áridas de América Latina. Su propósito es la unificación y coordinación de esfuerzos y el intercambio de conocimiento para la promoción de los conceptos de agroforestería en las regiones áridas y semiáridas.

Estrategia de Wafila

El principal resultado de WAFLA será la identificación de estrategias de gestión en una aproximación multidisciplinaria para la promoción de prácticas de agroforestería adaptadas a cada región, mediante la publicación de la „Guía de Gestión Conjunta de Agroforestería en zonas áridas y semi-áridas de Latinoamérica“ (LAJAM), basada en la administración participativa de los módulos de agroforestería, con la intervención de las comunidades locales como factor clave para asegurar la sostenibilidad de las medidas. Este esquema de planificación de „abajo hacia arriba“ armonizará tecnología, institución y medioambiente, con el fin de proponer la base de las estrategias de implementación basadas en las condiciones locales, a la vez generando las herramientas científicas, tecnológicas, económicas y sociales apropiadas para su funcionamiento. Entre otras, las futuras herramientas de LAJAM serán: (1)

identificación local de comunidades indígenas (2) identificación y desarrollo de paquetes técnicos para la puesta en marcha de cultivos cualitativos, (3) desarrollo de iniciativas de gestión adaptables para la plantación, irrigación, mantenimiento, cosecha y procesamiento, (4) desarrollo de una red de información de mercados para los productos de agroforestería dirigida a productores y comerciantes y (5) desarrollo de una estrategia de extensión sostenible de agroforestería en zonas áridas y semi-áridas.

Miembros del equipo

El primer encuentro del grupo WAFLA se llevó a cabo en la ciudad de Turrialba en Costa Rica, del 29 de Octubre al 1o de Noviembre del 2006, en las instalaciones del Centro Tropical de Investigación y Enseñanza (CATIE). Allí, se reunieron 40 participantes representantes de 22 instituciones oriundas de Alemania, Costa Rica, México, Nicaragua, Argentina, Ecuador, Colombia, Perú, Países Bajos, Bolivia, Francia, Paraguay, Venezuela, España, Inglaterra

y Chile, para discutir el plan de trabajo del proyecto, y el futuro impacto en sus respectivas regiones. En Octubre del 2007, el grupo WAFLA se encontrará una vez más, esta vez en la ciudad de Chapingo en México, para trabajar juntos en la definición de estrategias conjuntas para la promoción de la agroforestería en la región.

WAFLA pretende servir como plataforma de información de la agroforestería en regiones áridas de América Latina, facilitando así la divulgación de toda la información que se vaya desarrollando a lo largo del proyecto. Para ello, se ha establecido una biblioteca de acceso público en su página web (<http://www.wafla.com>), la cual está a disposición de todo el público interesado.

Uno de los hitos más importantes de WAFLA será la conferencia final a realizarse en Santiago de Chile en enero del 2009, un evento que reunirá a expertos y a los principales representantes en el campo de la agroforestería y la gestión hídrica en zonas áridas y semiáridas de América Latina. Dicha conferencia será escenario de talleres y seminarios en los que se presentarán los resultados del proyecto.

CESTA also presented the WAFLA project in a TV program broadcast by Channel 23 TVO on February the 22nd, 2008. The topic of desertification was discussed in this program with great audience in the East of El Salvador. CESTA also participated in a Radio Program of the ARPAS Net on February the 2nd, 2008. This Radio Chanel is connected to communitarian radio channels of El Salvador.

In November 2007, DeSdel-Chaco has been visiting the WAFLA areas to meet the local people in workshops and discuss the agroforestry practices in each of the areas. They also made in field observation of the agroforestry practices and water management practices.

During the month April and July 2008 they met again the actors of the WAFLA areas, to talk about the experiences of Agroforestry Systems (AFS) and water management. They also presented the advantage of AFS and the best species for the Chaco and give them presentations of AFS.

From April till August 2008 DeSdel-Chaco presented a radio program for one hour every week. In this program they have included different environmental presentations and the AFS and water management issues as well.

Furthermore DeSdel-Chaco made publications in their web site www.desdelchaco.org.py in the section "Servicios del sitio" in "Noticias anteriores" number 09/07, 16/04 and 15/10.



IADIZA gave several information on the WAFLA Project (objectives, involved institutions, expectative, potential impacts, etc.) by mean of an extent interview in the University radio.

■ Investigadores de la UNSJ, en proyecto internacional

Cuidar los recursos naturales de la Patria Grande

UN PROYECTO FINANCIADO POR LA COMISIÓN EUROPEA, DEL QUE PARTICIPA LA FACULTAD DE CIENCIAS EXACTAS, SE ORIENTA A IMPLEMENTAR EL MANEJO INTEGRADO DE LOS RECURSOS HÍDRICOS Y DE LAS PRÁCTICAS AGROFORESTALES EN ZONAS ÁRIDAS Y SEMIÁRIDAS DE AMÉRICA LATINA.

Docentes-investigadores de la cátedra de Manejo de Áreas Naturales y Botánica II de la Licenciatura en Biología de la Facultad de Ciencias Exactas, Físicas y Naturales (FCEFN) de la UNSJ participan en el proyecto internacional WAFLA. Financiado por la Comisión Europea, tiene por objetivo coordinar e integrar las actividades de investigación científica, innovación tecnológica y las políticas sociales y de desarrollo actuales para implementar el manejo integrado de los recursos hídricos y de las prácticas agroforestales en zonas áridas y semiáridas de América Latina. Estas regiones abarcan aproximadamente un cuarto de la superficie de este continente, donde el 70 por ciento presenta fuertes procesos de degradación. Las áreas concentran alrededor del 28 por ciento de la población (145 millones de habitantes), porcentaje que en Perú, Bolivia, Chile y México alcanza alrededor del 60 por ciento, zonas donde además esta situación se conjuga con una alta incidencia de la pobreza. La demanda creciente de recursos naturales, particularmente de suelos con potencial agrícola y agua, se ha intensificado a través de un proceso de concentración continua en latifundios que lleva a la emigración interna de la población rural a modificar el sistema natural, simplificándolo estructuralmente y en su diversidad, a cambiar el uso múltiple de la tierra por el monocultivo y a intensificar procesos de degradación.

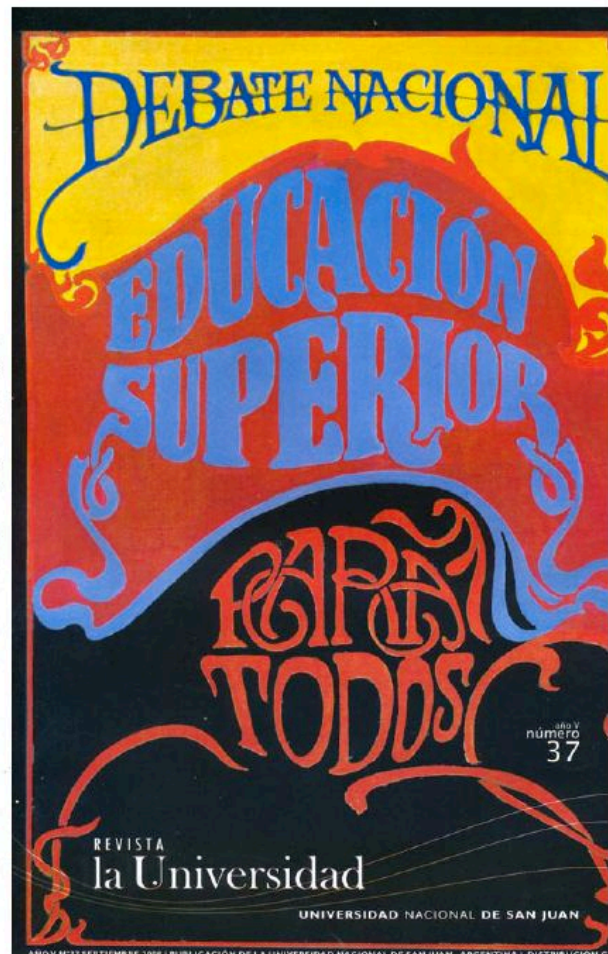
En el proyecto participan 21 instituciones académicas y ONGs de diferentes lugares del mundo. Por Argentina lo hace el Grupo de Investigación en Geobotánica y Fitogeografía del Instituto Argentino de Investigaciones de las Zonas Áridas (IADIZA/CRICYT/CONICET). Este equipo está vinculado a la UNSJ, ya que los profesionales de esta Institución mendocina son docentes-investigadores de la citada cátedra de la FCEFN.

Hasta el momento se identificaron más de 140 especies nativas de valor agroforestal actual y potencial, las principales prácticas de manejo del agua y del suelo, y se identificó un conjunto importante de sistemas agroforestales para toda la región. En el marco de las actividades de capacitación del programa se desarrollaron talleres con comunidades campesinas, identificando un conjunto importante de sistemas agroforestales para toda la región. Como cierre de estas actividades se realizará en Mendoza en enero próximo el "Seminario Internacional sobre Zonas Áridas de América Latina: Reconocimiento, Potencialidades y Agroforestería".

Para más información: www.wafla.com

Herramientas para combatir la sequía

El 21, 22 y 23 de enero de 2009 se realizará la *Conferencia Internacional WAFLA "Herramientas Mejoradas para Combatir la desertificación y la Sequía"*, en la sede de la CEPAL (Comisión Económica para América Latina y El Caribe) en Santiago de Chile. La conferencia será auspiciada por el Consorcio WAFLA con el apoyo de la Comisión Europea bajo el 6° Programa Marco, del que participarán con ponencias docentes investigadores de otras cátedras del Departamento de Biología de la FCEFN relacionados a esta área del conocimiento.



In the University magazine (in press) of the Universidad Nacional de San Juan (UNSJ), in the number of September 2008, a short note on WAFLA project was published. In the same, information on the Final Conference was communicated.

A General extension magazine was also used by IADIZA-CRICYT: WAFLA Project was introduced to students and professors and to the scientific community and general public of the region.

CIEZA-UNEFM have concentrated in communicating to the general public, farmers and members of the agriculture and environmental authorities the scopes and achievements' of the WAFLA consortium as well as creating awareness as to change the patterns of cultivating the land. So far they have produced around 25 press notice (both in local newspapers and national ones), 4 radio programs and one local TV programs. On February 2008, a practical workshop was organized in Pecaya, where 60 farmers participated, learned principles of agroforestry, the valuation of agroforestry , how to establish nursery's and how to plan agroforestry systems which include Native legume trees, *Aloe vera* and *Agave cocui* as alternative crops.

EAN Santiago is performing a series of weekly radio programmes aired on Radio Tierra (1300 AM) (www.radiotierra.cl) focusing mainly on desertification and drought but also the relevant WAFLA issues. The Final Conference is regularly publicized through this radio program.

CESTA was invited to take part in the 'Forests and Biodiversity' discussion table in occasion of the Social Forum of the America that took place in Guatemala City from the 7th to the 12th of October 2008. Here CESTA presented WAFLA project emphasising the agroforestry system quesungual adapted for arid areas of Central America. Moreover, information material (WAFLA brochures) were handed out and the 2009 conference was publicised by putting up posters in various strategic points.

As part of series of actions taken to disseminate the results of the project a forum called 'Climate Change and Desertification; scenarios and alternatives' was organized by CESTA in the city of La Union. To the event were invited representatives from the Ministry of Environment and Natural Resources, the 'University of El Salvador', local NGOs, environmental offices from various municipalities of the area and the environmental unit of the 'Policia Nacional Civil' (Civil National Police). In this occasion the project main results were exposed and the main referent for the UNCCD in El Salvador

In occasion of 'Earth Day' celebrations, a forum titled Climate Change and Desertification in El Salvador has been organised during which the results of the WAFLA project and especially those focusing of agroforestry systems as an alternative to the climate change challenges were presented by CESTA. Representatives from international cooperation organisations, from universities and other stakeholders from the civil society were invited to the event.

CIEZA-UNEFM organized several workshops directed to peasants and farmers which included the basis of agroforestry and the needs for rainwater capture, as well as basic training in establishing nurseries for trees and succulents, organic compost preparation and transplanting techniques. In Pecaya, the workshop lasted 7 hours, activities were divided into 2 - 3 hours of theoretical background and practical experiences during the rest of the day, where they prepared organic compost, planted in bags and then visited an agroforestry nursery. In Siquisique (Lara state) the workshop had more theoretical component since very few of the presents new about agroforestry. In all cases the results of economical analysis of traditional monoculture farming compared with agroforestry systems done during WAFLA work package 4 were presented as an evidence of advantages of agroforestry for the well being of rural communities and the environment.

CIEZA-UNEFM also organized workshops in Coro directed to policy makers, extension professionals and NGO's, thus the activity included basic principles of agroforestry and its applications on water management and sustainable development, as well as the presentation of successful cases analysed during WAFLA both in Venezuela and Centro America, Peru and Mexico. There was an open discussion about possibilities of changing the policies for economical support for farmers in arid areas. One of the most important conclusion was that the local government should promote agro-silvopastoral systems and rain water capture in arid areas and also do not finance deforestation.

CADS-UACH published a press release ("Promueven la Agroforestería para recuperar tierras dañadas") for Texococo Mass Media that has been published in different web sites such as:

- <http://www.toditotexcoco.com.mx/jmbl/content/view/523/6/>

- <http://www.infoagronomo.com/infoagronomo/nota.jsp?nota=386&seccion=1>

An example is shown below:



Promueven la Agroforestería para recuperar tierras dañadas



En este encuentro se dieron cita las diferentes autoridades universitarias para llevar a cabo el acto inaugural
[Agrandar Imagen](#)

MTI /Texcoco Mass Media/Gabriela Hernández
 09/09/08

Texcoco, México. (Texcoco Mass Media).-Representantes ambientales de más de diez países y diferentes estados de las República Mexicana participan en el XVII Curso Internacional de capacitación de Agroforestería para el Ecodesarrollo con el fin de diseñar proyectos que reduzcan el impacto climático y contribuyan a la soberanía alimentaria.

Dicha capacitación se impartirá a lo largo de veinte días en la Universidad Autónoma Chapingo (UACH), a través de conferencias magistrales, seminarios, sesión de temáticas silvopastoriles, restauración de tierras agrícolas, técnicas de captura de agua de lluvia y visitas a plantaciones de cítricos y maíz, en Veracruz.

Cabe destacar que la Agroforestería es considerada como el acopio de técnicas innovadoras y ancestrales que permiten el uso sustentable de los recursos naturales, recordó el doctor Hugo Ramírez Maldonado director de la División de Ciencias Forestales de la UACH.

De esta forma, los biólogos, sociólogos, ingenieros forestales provenientes de diferentes centros de estudio y universidades de Chile, Panamá, Haití, Brasil, Oaxaca o Guanajuato compartirán sus experiencias para regresar a su lugar de origen como líderes en la promoción de la Agroforestería.

Sobre ello, el doctor Laksmi Reddiar Krishnamurthy profesor investigador de Chapingo y fundador de este curso, indicó que en los últimos treinta años diversos países han aplicado dentro de sus políticas ambientales el uso de la Agroforestería para dar solución al calentamiento global, combatir la desertificación, mitigar efectos de la crisis alimentaria y aumentar la biodiversidad.

Por su parte, el doctor Rubén Márquez en representación del doctor Ricardo Sánchez Sosa director regional del Programa de las Naciones Unidas para el Medio Ambiente para América Latina y el Caribe (PNUMA) otorgó un

mensaje de bienvenida a los asistentes y señaló la urgencia de conservar y entender los elementos que conforman la naturaleza.

Pues según el último reporte GEO, indica la degradación de más de 300 millones de hectáreas de tierras y casi 30 por ciento de los arrecifes en el Caribe están considerados en situación de peligro.

En este encuentro se dieron cita las diferentes autoridades universitarias para llevar a cabo el acto inaugural en compañía de los representantes de las diferentes instancias que hacen posible la realización de este congreso como la Conafor y la Semarnat de quien se contó con la presencia del biólogo Salvador Morelos Ochoa.

www.alianzatex.com | www.teotihuacanhoy.com | www.texc
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UNCCD publishes a periodic newsletter to raise awareness on the problem of desertification. In the bulletin of March 2009, WAFLA Final Conference is specifically mentioned giving the details of the event. An extract of this bulletin is shown below:



CONVENCIÓN DE LAS NACIONES UNIDAS DE LUCHA CONTRA
LA DESERTIFICACIÓN



Unidad de Coordinación Regional para América Latina y el Caribe - México-DF

BOLETÍN N° 18 – MARZO 2009

promover la cooperación entre los Estados y las Organizaciones con el tema de este año: “construyendo puentes ante las divisiones para el agua”. La Declaración de Estambul fue aprobada por los Ministros y Jefes de delegaciones de más de 150 países, convocando mayores esfuerzos internacionales para adaptar la gestión de los recursos hídricos a los cambios globales y mejorar la cooperación en todos los niveles. Los líderes del mundo firmaron el Consenso del Agua de Estambul durante la cumbre de Jefes de Estado, señalando la importancia del desarrollo sostenible de los recursos hídricos y las estrategias de gestión del agua ante los cambios globales.

Conferencia Internacional de WAFLA en Santiago de Chile

La Conferencia Internacional “Herramientas mejoradas en la lucha a la desertificación y sequía – Agroforestería integrada y sistemas de gestión de los recursos hídricos en zonas áridas y semiáridas en América Latina”, se celebró en la sede de la CEPAL en Santiago de Chile, del 21 al 23 de Enero. La Conferencia fue organizada conjuntamente por la CEPAL y Acción por la Tierra y patrocinada por el consorcio WAFLA con el apoyo de la Comisión Europea bajo el 6° Programa Marco. Después de la Conferencia, el consorcio WAFLA participó en el 4° Seminario Internacional de WAFLA sobre Agroforestería en zonas áridas en Latinoamérica el 26 y 27 de enero en Mendoza, Argentina. La CNULD contribuyó sustancialmente a la Conferencia y Seminario Internacionales a través de presentaciones y conferencias.

Reunión del CST en Bonn

La reunión del Bureau del Comité de Ciencia y Tecnología (CST) de la CNULD se celebró en Bonn el 4 y 5 de marzo. Durante la reunión se presentó el conjunto mínimo de indicadores de impacto para medir el progreso de los objetivos estratégicos 1, 2 y 3 de la Estrategia Decenal de la Convención, basados en los resultados del cuestionario que se envió a todos los países Parte. Todos los países que no pudieron

contestar al cuestionario tendrán una segunda oportunidad para revisar los indicadores y hacer sus contribuciones. Una cooperación más estrecha está prevista con aquellos países que participaron en la primera fase para desarrollar una metodología común. Otros temas de discusión fueron el camino al CST9, la armonización de los indicadores de impacto y de desempeño, la actualización de la lista de expertos, la designación de corresponsales científicos para participar en las consultas regionales, la identificación de una línea de base y un sistema para romper las barreras del conocimiento.

Reunión sobre la Estrategia Financiera Regional para LAC en Cuba

El Mecanismo Mundial celebró una reunión el 26 de febrero en la Habana, Cuba, para discutir una Estrategia Financiera Regional (EFIR) para apoyar la implementación de la Convención en Latinoamérica y el Caribe. Varios Puntos Focales de la región participaron en la reunión, así como la coordinadora de la Unidad de Coordinación Regional. Algunos de los temas que se debatieron fueron las barreras para la movilización de recursos, el posicionamiento de la CNULD en las agendas nacionales y regionales, el fortalecimiento de alianzas, las sinergias, la cooperación Sur-Sur y los compromisos del MM y de los países Parte en la EFIR.

Concurso Internacional de fotografía de la CNULD

El 17 de marzo la CNULD lanzó el segundo concurso de fotografía para elevar la conciencia sobre la desedificación y sus consecuencias sociales. Las fotos deben representar conceptual y artísticamente los esfuerzos de las personas conservando el suelo, la tierra y/o el agua en las tierras secas, o la relación entre las personas afectadas y los ecosistemas en las tierras secas. El plazo para la presentación de fotografías es el 17 de junio de 2009. El anuncio completo lo pueden ver en: www.unccd.int

Esta es una publicación de DESELAC preparada con el apoyo financiero de España.

Contactos: Unidad de Facilitación, Coordinación y Monitoreo de la implementación de la CNULD - Bonn. Coordinador: Massimo Candelori - mcandelori@unccd.int / Unidad de Coordinación Regional (UCR) para América Latina y el Caribe - México-DF. Mónica Acosta - macosta@un.org.mx

DesDelChaco published a press release in order to disseminate the capacity building seminars held under work package 6, an extract is shown below:



<p>Secciones</p> <ul style="list-style-type: none"> → Portada → Locales → Internacionales → Política → Economía → Deportes → Policiales → Judiciales → Temas Indígenas → Ecología → Comerciales → Entrevistas → Comentarios → Sociales → Espectáculos → Editorial <p>Publicidad</p>  	<p>ECOLOGIA</p> <p>2009-03-06 Realizarán Seminario sobre Prácticas Agroforestales y Manejo del Agua en el Chaco</p> <p>Esta mañana en el local de la Estación Experimental Chaco Central, ubicado en Cruce Pioneros, a partir de las 08:00 horas, se llevará a cabo el Seminario Administración de Recursos Naturales - Prácticas puestas en Práctica.</p> <p>Este seminario está organizado por la Fundación para el Desarrollo Sustentable del Chaco - DeSdelChaco, en el marco del Proyecto WAFLA Sistemas Agroforestales y Manejo Integrado de Recursos Hídricos en zonas áridas y semi-áridas de América Latina, en coordinación con la Comisión Nacional para el Desarrollo del Chaco dependiente del Ministerio de Agricultura y Ganadería, la Facultad de Ciencias Agrarias de la Universidad Nacional de Asunción, el Servicio Agropecuario de Loma Plata y la Asistencia Técnica de Filadelfia y Neuland.</p> <p>Están invitados a participar de este evento las autoridades y tomadores de decisión de la región occidental, entre ellos los Gobernadores de Boquerón, Alto Paraguay y Presidente Hayes, intendentes de los municipios, representantes de cooperativas, asociaciones de productores, miembros del consejo de la Fundación DeSdelChaco, entre otros.</p> <p>El objetivo es despertar el interés en la utilización sustentable de los recursos naturales y diseminar prácticas sostenibles de producción.</p> <p>En la oportunidad disertarán técnicos de instituciones locales, de la Facultad de Ciencias Agrarias de la UNA y de la Secretaría del Ambiente (SEAM).</p>	<p>OTRAS NOTICIAS</p> <p>Seam intervino c licencia en Bella</p> <p>SEAM interviene remolcadora de l</p> <p>Se inicia confere Ecohidrología pa del cambio globa</p> <p>Kolping se adhie todo pulmón, Pa</p> <p>Intervinieron ver en la bahía de A:</p> <p>Palada inicial a v ecológica en Ypa</p> <p>Está en marcha l Reforestación en ACEPAR</p> <p>Contaminación a proporciones de</p> <p>Depósito de hidr ubicado cerca de succionadora de</p> <p>La naturaleza pa oceanos</p> <p>Pescadores expr por la Ley de Pe:</p> <p>Intendencia de E el Plan Municipal Territorial</p> <p>Lanzarán el Plan Ordenamiento Ti Negra</p> <p>Central plantará</p>
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DesDelChaco also presented WAFLA project in a seminar with local authorities related to the territorial ordering plan for local authorities. This was important as a tool to support the governmental planning as well as for the community outreach programs. The different experts provided very useful information about water management and production practices to the local governments. DesDelChaco also held an important capacity building workshop for the authorities of the Environmental Secretariat.

Workshops, seminars, meetings and publications have been developed within the work plan of Program: Livestock Environmental and the Environmental Management (GAMMA) of CATIE, which have been exploited for the dissemination of the various WAFLA project activities. In the development of these events it is highlighted the participation of women, farmers and local technical, which has allowed have higher success in the dissemination.

EAN Santiago has been performing a series of weekly radio programmes aired on Radio Tierra (1300 AM) (www.radiotierra.cl) focusing mainly on desertification and drought but also the relevant WAFLA issues. The Final Conference was regularly publicized through this radio program. In addition, over 30 interviews with relevant actors were carried out in the one-hour weekly radio program (“Acción por la Tierra”) on the radio station “Radio Tierra”. Radio Tierra is a private, non-commercial AM radio station that is also actively involved in a network of local and community radio stations that broadcast in Chile and Latin America (AMARC-AL). EAN-Santiago produces this program every Wednesday at 2 pm (Chilean time). EAN-Santiago has used this radio program to widely disseminate the results of the project, as well as the benefits of agroforestry through interviews made to different experts in the field, and short messages broadcast during the program. Local workshops were also advertised.