



Adaptation to Climate Change of the Mediterranean Agricultural Systems ACCLIMAS

*SWIM (Sustainable Water Integrated Management) -
Demonstration Project – Water and Climate Change
"European Neighborhood and Partnership (ENP) financial co-operation
with Mediterranean countries"*

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OVERALL OBJECTIVE: to bring a durable improvement in the agricultural water management and a broader socio-economic development in target areas in the context of adaptation to climate change, increasing water scarcity, and desertification risk.

TARGET AREAS AND CROPS

● **Chaouia Ourdigha ,
Morocco**
(wheat, barley,
chickpea, lentil,
forage legume)

● **Northern Tunisia,
Tunisia**
(wheat, barley,
chickpea,
faba bean)

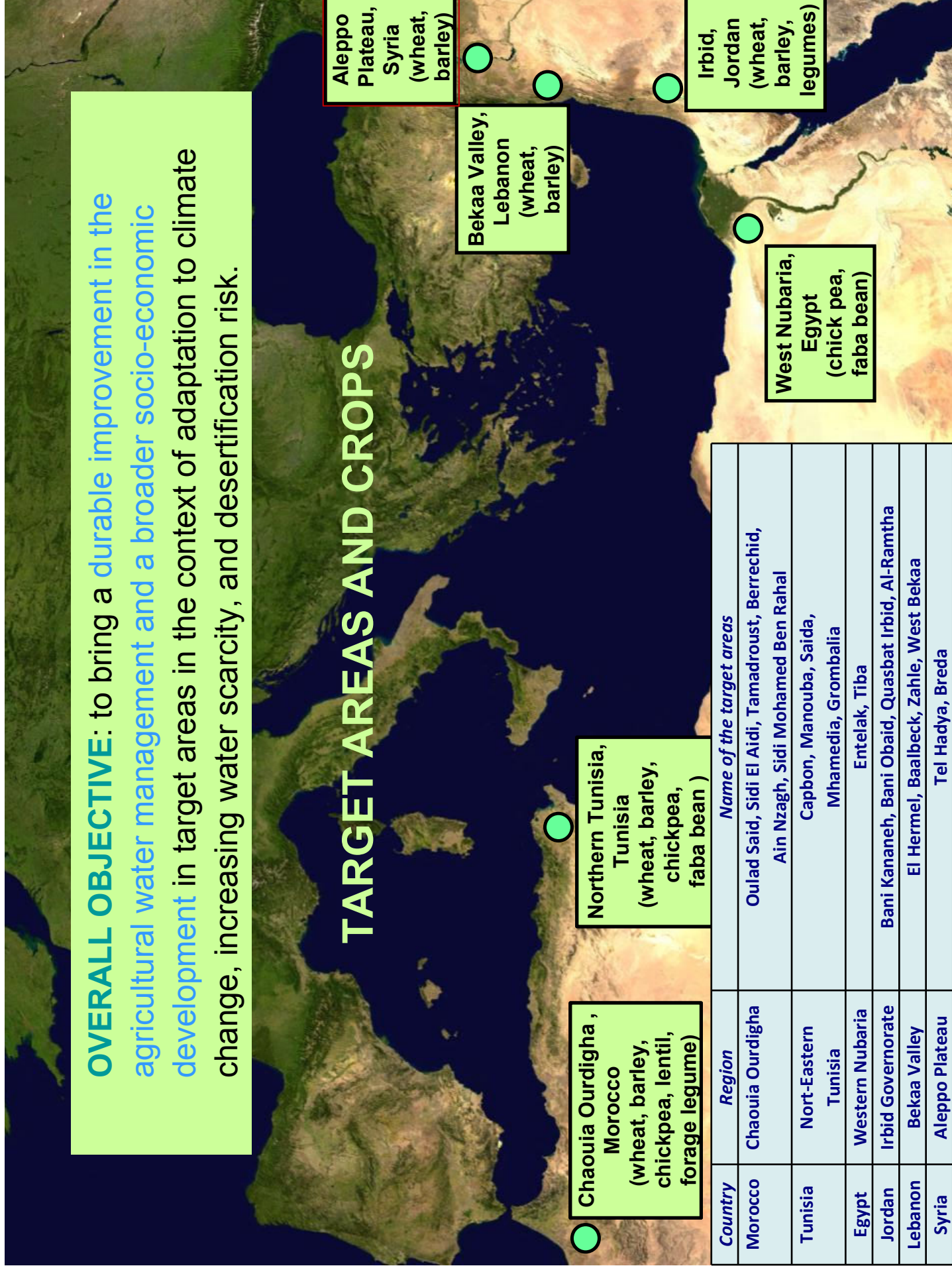
● **Bekaa Valley,
Lebanon**
(wheat,
barley)

● **Aleppo Plateau,
Syria**
(wheat,
barley)

● **Irbid,
Jordan**
(wheat,
barley,
legumes)

● **West Nubaria,
Egypt**
(chick pea,
faba bean)

Country	Region	Name of the target areas
Morocco	Chaouia Ourdigha	Oulad Saïd, Sidi El Aïdi, Tamadrout, Berrechid, Ain Nzagh, Sidi Mohamed Ben Rahal
Tunisia	North-Eastern Tunisia	Capbon, Manouba, Saida, Mhamedia, Grombalia
Egypt	Western Nubaria	Entelak, Tiba
Jordan	Irbid Governorate	Bani Kananeh, Bani Obaid, Quasbat Irbid, Al-Ramtha
Lebanon	Bekaa Valley	El Hermel, Baalbeck, Zahle, West Bekaa
Syria	Aleppo Plateau	Tel Hadya, Breda

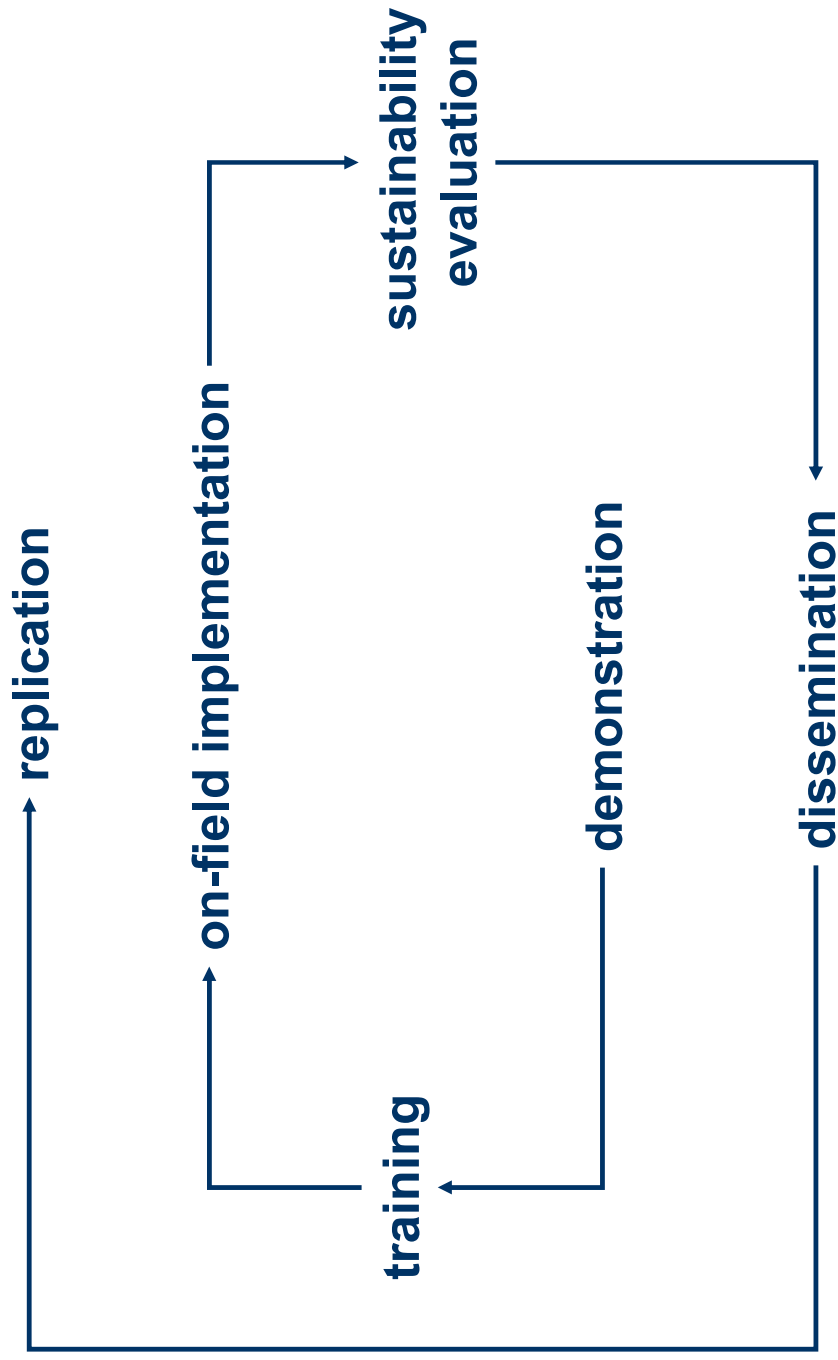


Specific Objectives

- To improve the initial conditions (local offices, stations, and demonstration fields) for lasting promotion of sustainable agricultural practices in target areas.
- To demonstrate the applicability for the selected combinations of genotypes and water management practices (including water harvesting and conservation tillage) at demonstration fields;
- To adapt/stabilize agricultural production through large scale on-ground implementation of the best performing genotypes and water harvesting/management practices;
- To evaluate the on-ground sustainability of the proposed adaptation measures considering the economic, social and environmental dimensions at farm level;
- To train local farmers and growers on the application and implementation of proposed management practices;
- To disseminate the results of the action through the thematic guidelines, brochures, field days, seminars, video material and a dedicated web page.

- **Target groups:**
 - Farmers, growers, breeders, policy makers, water/irrigation managers, local seed companies, agricultural advisers.
- **Final beneficiaries:**
 - All rural society, local farmers communities and associations, water user's associations, governments, environment
- **Estimated results:**
 - Improved water productivity in agriculture and more stable agricultural production
- **Main activities:**
 - Demonstration, replication, on-ground implementation, dissemination, training, sustainability evaluation.

ACLIMAS strategy

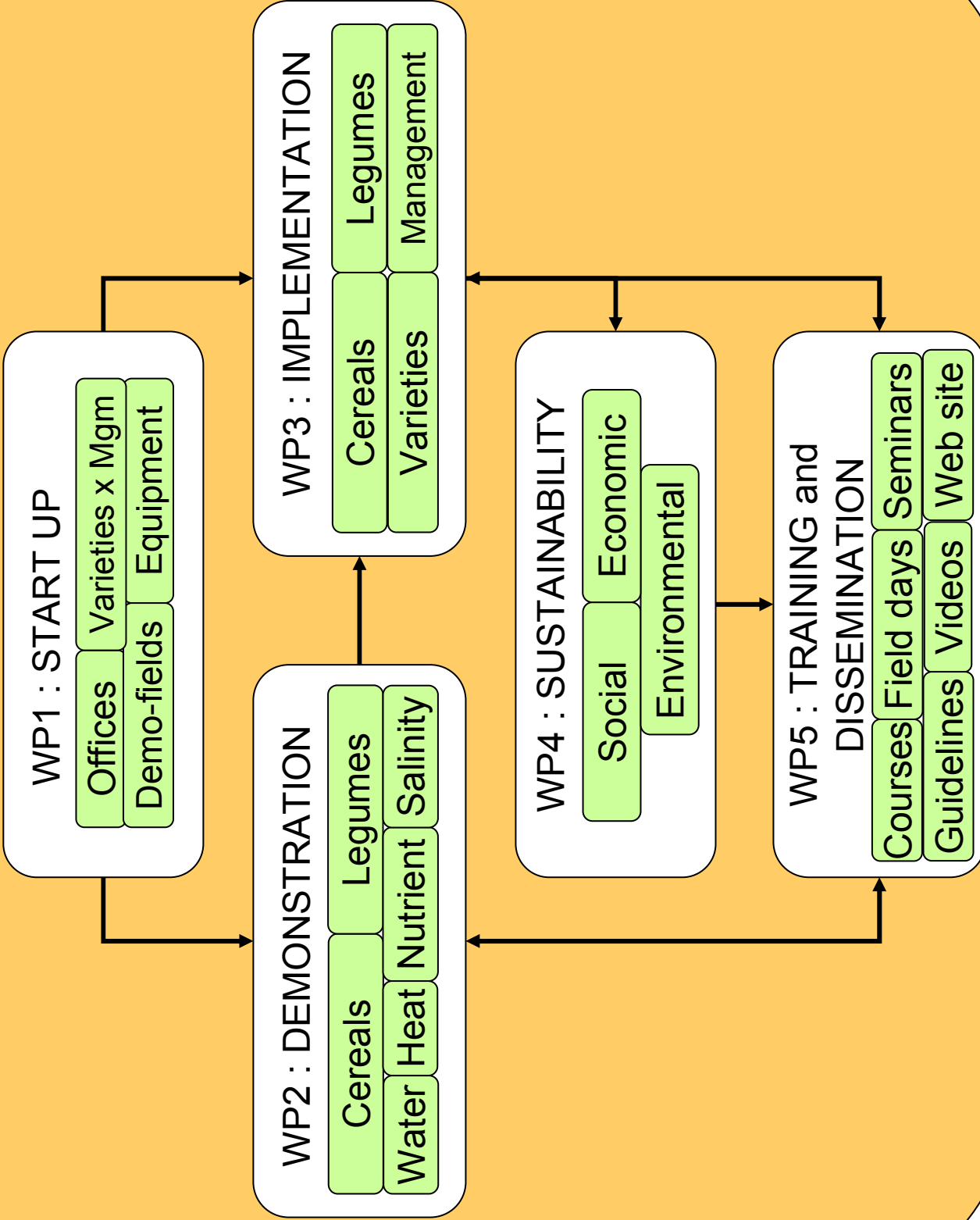


ACLIMAS

the management of marginal rural areas at the lowest ecological cost

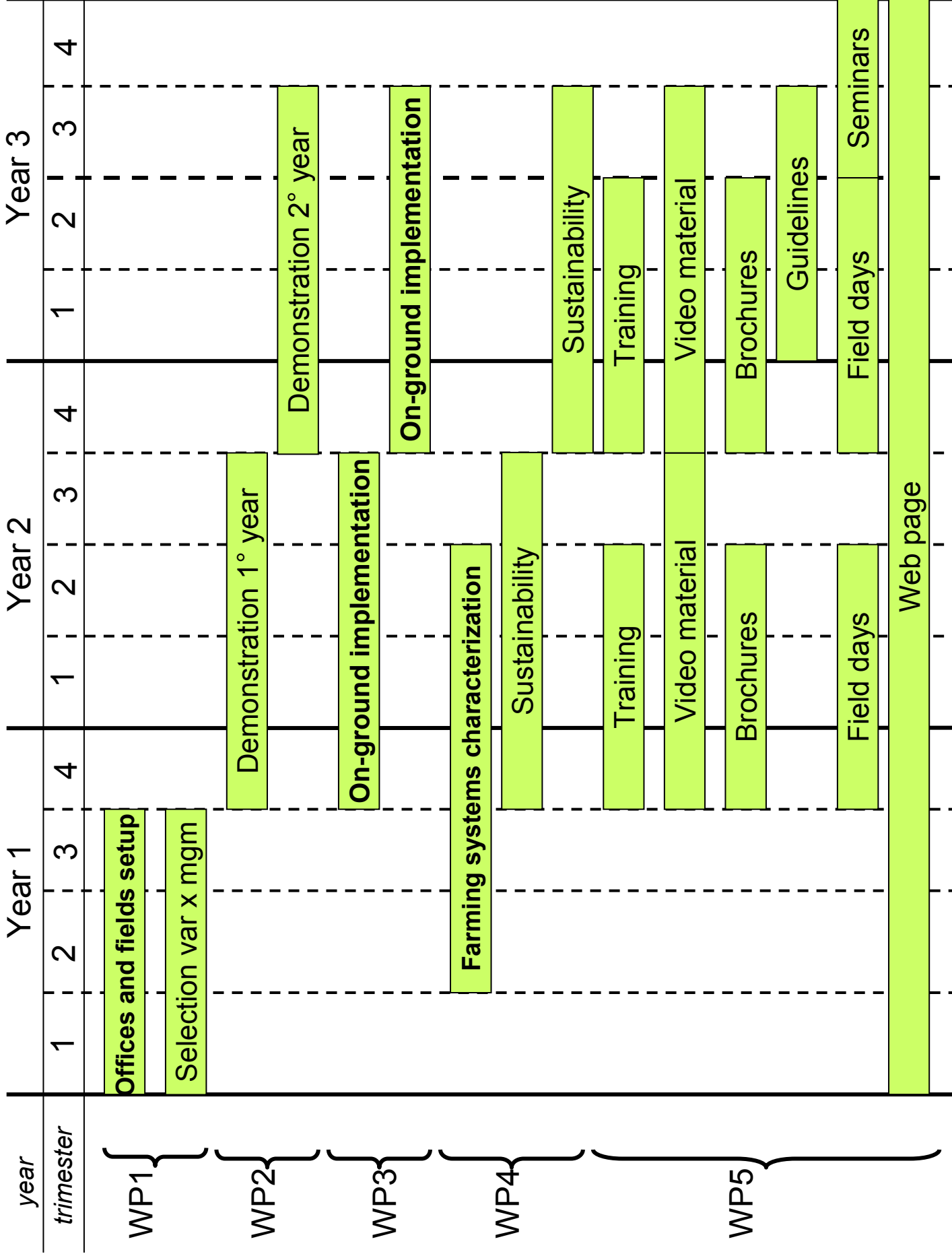
- ❑ the implementation of the **best management practices** – sustainable land and water management
- ❑ **prevention** of land degradation and desertification, and **capability to adapt** to extreme events
- ❑ **social stability** in terms of number of jobs and regional balance (maintaining agriculture – a major activity in rural areas)
- ❑ **limiting urbanization** (focuses on rural areas where a large part of the population still lives)

PROJECT MANAGEMENT



Demonstration fields, crops and management

- Morocco – Sidi El Aydi Experimental Station of Institut National de la Recherche Agronomique of Settat (**wheat, chickpea, faba bean**); **crop rotation, tillage practices, and nitrogen input**
- Tunisia – Mornag station of the Institut National Agronomique de Tunisie (**durum wheat – supplemental irrigation and precision sowing, barley – supplemental irrigation with saline water, chickpea – winter-spring sowing and faba bean – planting density**)
- Egypt – Al-Esraa wa Al-Meraag Training and Extension Station of the Ministry of Agriculture, located in Entlak area in Nubaria (**chickpea and faba bean**); **water (salinity) input and timely sowing**
- Jordan – Maru Agricultural Research Station (**wheat, barley**) **water harvesting, conservation tillage, timely sowing**
- Lebanon – Lebanese Agricultural Research Institute (LARI), in Tal Amara (**wheat and barley**); **supplemental irrigation, conservation tillage and timely sowing**
- **Syria – ICARDA experimental station in Aleppo** (**durum wheat and barley**); **water harvesting, supplemental irrigation, conservation tillage and timely sowing**

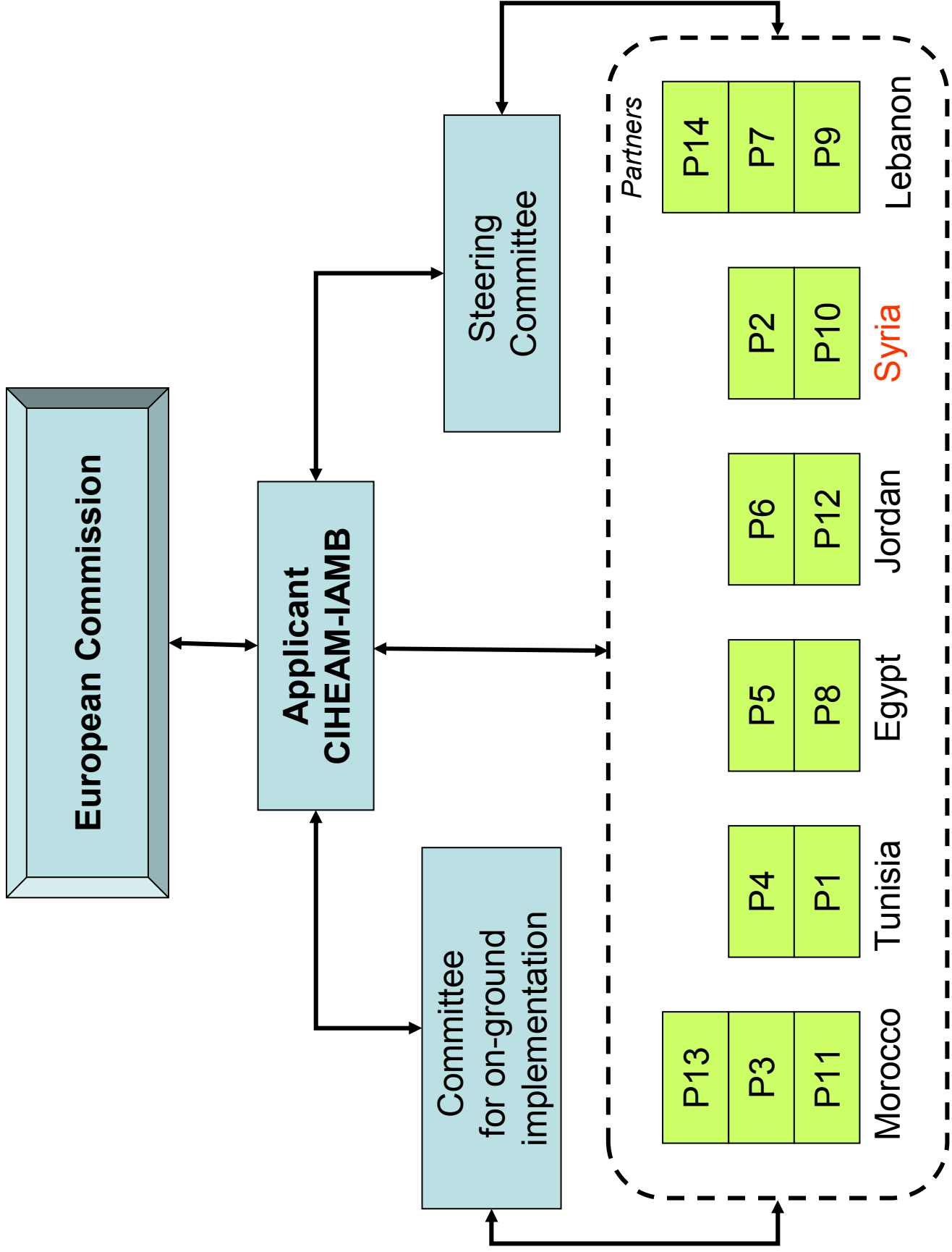


The expected direct outputs

- 6 demonstration fields with agro-meteorological stations, other equipment and Excel-based irrigation scheduling tool;
- 2 years of testing (at least 48 combinations of genotypes and water management practices);
- 24 training courses and 600 farmers, technicians and water managers trained;
- 60 field days with the participation of 1200 local stakeholders;
- 2 years on-ground implementation of the best performing varieties and water harvesting and management practices in a surface area of at least 240 ha with the involvement of at least 120 farmers;
- 2 guidelines, 24 brochures, 6 seminars, 90 minutes of video material, etc.
- Social and economic impact:
 - support of the local communities to market a quality durum wheat (in Lebanon and Morocco) and chick pea (in Morocco) products and
 - promotion of the women cooperatives for durum wheat transformation to several types of couscous on downstream value chain (in Morocco)

Partnership

- P1 International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM-IAMB)
- P2 International Centre for Agricultural Research in the Dry Areas (ICARDA)
- P3 Institut National de la Recherche Agronomique (INRA), Morocco
- P4 Institut National Agronomique de Tunisie (INAT), Tunisia
- P5 West Nubaria Rural Development Project (WNRDP), Egypt
- P6 National Center for Agricultural Research and Extension (NCARE), Jordan
- P7 Lebanese Agricultural Research Institute (LARI), Lebanon
- P8 Centro Euro-Mediterraneo per i Cambiamenti Climatici (CMCC), Italy
- P9 Consiglio Nazionale delle Ricerche - Istituto per i Sistemi Agricoli e Forestali del Mediterraneo (CNR-ISAFOM), Italy
- P10 Universitat de Barcelona (UdB), Spain
- P11 Universitat de Lleida (UdL), Spain
- P12 University of Nottingham (UNOTT), United Kingdom
- P13 Agriculture Environnement et Developpement, pour l'Avenir (AGENDA), NGO, Morocco
- P14 Association of the Friends of Ibrahim AbdEl Al (AFIAL), NGO, Lebanon



Status of project implementation 1

- Kick-off meeting held in Tunis, 20-22 March 2012
- Annual meeting postponed to 12-14 December 2012 (Jordan/Morocco)
- Project web site (www.aclimas.eu)
 - completed in May;
 - includes live weather conditions and forecasting for the target areas and live precipitation areas for the Mediterranean
 - visitors 486 (3.2 per day); pages visited 1789 (3.68 views per visit)
 - Translation into French and Arabic is in progress
- Morocco
 - Selection of varieties and mgm practices completed
 - Demonstration trial and farmers for implementation defined
 - Setup of offices, demonstration field and acquisition of equipment in progress
 - Demonstration and on-field implementation will start in Nov. 2012
 - 2 technical visits (3-9 June and 25-29 June)
 - Socio-economic and environmental characterization in progress
 - **Administrative problems with the acquisition of vehicles**

Status of project implementation 2

- Tunisia
 - Selection of varieties and mgm practices completed
 - Demonstration trial and farmers fields for implementation defined
 - Setup of offices, demonstration field and acquisition of equipment in progress
 - Demonstration and on-field implementation will start in Oct. 2012
 - 1 technical visits (19 March – 1 April); next planned in November
 - Request to acquire the technical on-field equipment instead of zero-tillage machine
 - **Administrative problems with the overall management of budget**
- Egypt
 - Project reference staff has changed – new staff is willing to collaborate
 - Selection of varieties and mgm practices in progress
 - **Demonstration trial and farmers for implementation are not defined**
 - **Setup of offices, demonstration field and acquisition of equipment is stagnating**
 - Demonstration and on-field implementation should start in Nov. 2012
 - 1 technical visits (22-26 July); next in October 2012
 - **Administrative problems with the approval of the project by the Ministry for International Cooperation**

Status of project implementation 3

- Jordan
 - Selection of varieties and mgm practices completed
 - Demonstration trial and farmers fields for implementation defined
 - Setup of offices, demonstration field and acquisition of equipment in progress
 - Demonstration and on-field implementation will start in Nov. 2012
 - 1 technical visits (3-8 June); next visit in October
 - Request to acquire the technical on-field equipment instead of zero-tillage machine
 - **Problem with the acquisition of cars (VAT exemption)**
 - **Geopolitical situation in the region**
- Lebanon
 - Selection of varieties and mgm practices in progress
 - Demonstration trial and farmers field for implementation defined
 - Setup of offices, demonstration field and acquisition of equipment in progress (tender fixed for 5 November)
 - Demonstration and on-field implementation should start in Nov. 2012
 - 1 technical visits (29 July - 10 August); next visit in October
 - Request to acquire the technical on-field equipment instead of weather station and zero-tillage machine
 - **Geopolitical situation in the region**

Morocco: training activities, season 2012-2013

Training activity	Objective	participants	Number	Date
1. Hands on no-till drill	<ul style="list-style-type: none"> - Drill setting, adjustment, calibration and maintenance. 	Farmers, tractor drivers and entrepreneurs	15	week 1 November
2. Climate change, its impact on agriculture in dry-land area and agricultural practices to increase WUE	<ul style="list-style-type: none"> - Involvement of farmers on the project; - Understanding of the new challenges facing agriculture; - Learning on how to adapt the conventional farming ; - To the new agro-ecological conditions. 	Farmers, developers	25	Week 4, December
3. Decisions making tools for crop management and monitoring	<ul style="list-style-type: none"> - Understand and use the new tools for crop management ; - Learn on how to monitor some crop parameter such as fertilizer deficiencies, weed and disease infestation; - effect of crop residue and rotation on yield 	Stakeholders, researcher Technician and farmers	25	Week 4, Jan.
4. Conservation agriculture principles for sustainable production system	<ul style="list-style-type: none"> - Methods of increasing water productivity and economic profitability; - Long term effect on soil quality and its impact on production; 	Developers and farmers	25	Week 4, April

Morocco: field-days activities, season 2012-2013

Theme	Objectives	Period	Number of participants
Field day 1 : Pre-emergence treatments and planting	Sprayer calibration and herbicide application; Drill calibration for different crops and maintenance	Week 1 November	30
Field day 2 : Crop Stand monitoring	Plant stand and tillering	Week 1 December	30
Field day 3 : Weed monitoring and herbicide And application safety	Master weed control practice	Week 1 January	30
Field day 4 : Decision making tool for fertilisation and disease control	Detection of fertilizer deficiencies; fertilizer application needs; Disease monitoring and fungicide application;	Week 4 January	30
Field day 5 : Harvest for good quality and minimum loss	Reduce grain losses, increase quality characteristics	Week 4 April	30

Morocco: brochures, season 2012-2013

Brochure 1: Best farmer's practice in limited rainfall area

Soil sampling and interpretation of soil analysis
Importance of crop rotation
Choice of the appropriate genotype
Date and rate of seeding
Fertilisation
Weed management
Disease control

Brochure 2: Durum wheat quality

Appreciation of durum wheat quality
Factors affecting Wheat quality
Added value of durum wheat products

TUNISIA: planned training activities, 2012-2013

October 2012

Analysis of weather, evapotranspiration and crop data

INAT, Tunis;

10 participants; Researchers, young engineers, technical staff

February 2013

Crop water consumptive use assessments under rainfed conditions

Kamech, Nabeul;

20 participants; Researchers, young engineers, extension service staff

March 2013

Performance of small scale irrigation systems

Saida;

30 participants; Researchers, young engineers, technicians and farmers

April 2013

Deficit irrigation scheduling and salinity control under dry environment

IRA-Medenine;

20 participants; Researchers, young engineers, technicians

TUNISIA: brochures and field days, 2012-2013

Brochures and field days targeting different stakeholders (20 for each event) and two main themes:

1) Water scarcity and objectives of ACLIMAS.

The objective is to explain how water scarcity constitute a framework for ACLIMAS actions.

1 field day on water harvesting, Zaghouan

1 field day on supplemental irrigation, Manouba

2) Crop water productivity.

Objective is to give the definition, methods of estimation and options for improving water productivity;

1 field day on wheat varieties, Grombalia

1 field day on Legumes, Nabeul

1 field day on crop succession and rotation, Zaghouan

JORDAN, field days, season 2012-2013

No.	Field days Title	Objective	Target Group	Location	Period	N° participants
1.	Project introduction	To disseminate to participants objectives and activities of ACLIMAS	Farmers, extension agents, researches and decision makers	Maru station	November, 2012	50
2.	Planting wheat and barley under zero-tillage practices	To train participants on the planting of crops under zero-tillage system	Farmers and extension agents,	Maru station	December, 2012	20
3.	Wheat under full-package practices	To compare full-package with conventional practices	Farmers and extension agents,	Wheat farmer fields of on-ground impl.	April, 2013	20
	Barley under full-package practices	To compare full-package with conventional practices	Farmers and extension agents,	Barley farmer fields of on-ground impl.	April, 2013	20
5	Performance and evaluation of applied technologies	To present the performance of introduced varieties and management practices	Farmers, extension agents, researches and decision makers	Maru station and farmers fields	May, 2013	50

Training courses

Training course on “Crop phenotyping instruments and techniques” for NCARE staff, Maru station, Feb. 2013, 15

Training course on “Conservation agriculture” for research staff and extension service personnel, March 2013, 15

Brochures

Brochure 1 – ACLIMAS objectives and activities

Brochure 2 – Conservation agriculture best management practices

LEBANON: planned training activities

Training 1

Location: Tal Amara – LARI Station

Period: February 2013

Title: Adaptation to climate change of the Mediterranean agricultural systems

Objective: Training of trainees, to facilitate the promotion of the new varieties and management practices in target areas.

Target group: Extension service staff

Expected number of participants: 25

Training 2

Location: Tal Amara – LARI Station

Period: April 2013

Title: Adapting cereals systems to climate change

Objective: To introduce the concept of climate change and its effects on cereals systems to farmers and to train them on the management practices that could be used as adaptation measures (conservation tillage, supplemental irrigation, etc.).

Target group: farmers

Expected number of participants: 25

Brochures

Brochure 1: describing combinations of varieties and management practices promoted by the project.

Brochure 2: describing the 1^o year demonstration activities

LEBANON: planned field days activities

Field day 1:

Location: LARI station at Tal Amara; Period: Late November, after sowing time and the establishment of demonstration experiments; Title: Promoting ACLIMAS demonstration activities

Objective: Introducing to farmers the varieties and management practices that will be promoted through ACLIMAS project, within the demonstration experiments that will take place at LARI.

Target group: farmers; Expected number of participants: 20

Field day 2:

Location: LARI station at Tal Amara; Period: April, spring time, Title: ACLIMAS demonstration activities follow-up; Objective: Informing farmers about the behaviour of tested varieties and management practices within the demonstration experiments, particularly at flowering time.

Target group: farmers; Expected number of participants: 20

Field day 3:

Location: LARI station at Tal Amara; Period: harvest, June 2013

Title: First year results of ACLIMAS demonstration activities

Objective: Informing farmers about the first year results of tested varieties and management practices within the demonstration experiments. Target group: farmers; Expected number of participants: 20

Field day 4:

Location: at a selected farm where ACLIMAS activities are implemented

Period: harvest, June 2013, Title: First year results of ACLIMAS implementation activities

Objective: Informing farmers about the first year results of tested varieties and management practices on the land of a selected farmer who may have implemented ACLIMAS activities.

Target group: farmers; Expected number of participants: 20

Field day 5:

Location: LARI station at Tal Amara; Period: August 2013

Title: Support of the local communities to market quality durum wheat products

Objective: Promotion of the women cooperatives for durum wheat transformation to several types of products (burgul, kechek, bread, etc.). Target group: Women cooperatives; Expected number of participants: 20

SYRIA

Two options for the continuation of activities:

1. Transfer of the activities to Algeria (ICARDA and UB in collaboration with Algerian ITGC and Ministry of Agriculture) – **preferred**
 - Target area: Khemis Milana, located about 100km West of Algiers in the Wilaya of Aïn Defla; already visited by ICARDA and UB (in July)
 - 2 years of demonstration work at the Bassami Aljelali pilot (governmental) farm
 - Implementation/dissemination activities – same to those at other sites
 - **Request the use of contingency budget (100k€) for acquisition of necessary equipment and involvement of Algerian partner**

2. Extension/reinforcement of other activities (training and guidelines preparation)
 - Collection/elaboration of data from target areas for the guidelines
 - Collection of other (historical) data on cereals and legumes cultivation in the Mediterranean
 - Participation in training courses and field days in other target areas
 - Leading the guidelines preparation
 - Organization of a Final Project event
 - No changes in the budget amount – the changes in the description of activities

Other issues

- Coordination with National SWIM Focal Points and EU Delegations
 - EU delegation rep in Tunisia and NFP participated in the KO meeting
 - Participation in SWIM info days (MEDIA events) organized by SWIM-SM in Morocco, Tunisia, Lebanon and Jordan
 - Contribution to the SWIM promotional movie (Tunisia)
 - Exchange of opinions with EU Algeria reps
 - Collaboration with National SWIM Focal Points and reps of EU delegations should be improved
- Problems and constraints encountered during implementation, identified ways to overcome them
 - Difficulty to involve/identify the relevant interlocutors (out of the project) at local level (due to)
 - Management of budget by the local institutions seems to be very complex; depends on external factors (governmental decisions)
 - Request of some partners that IAMB manages (at least partially) their budget



جمهورية مصر العربية
وزارة الزراعة وإستصلاح الاراضي
مشروع التنمية الريفية بغرب النوبارية
West Noubaria Rural Development Project (WNRDP)



ACLIMAS Project

*"Adaptation to Climate Change of the
Mediterranean Agricultural Systems"*

25-7-2012


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Designed by: Unit of audio-visual project

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