

# Water JPI Workshop



Royal Tulip Hotel, Tangier  
31<sup>st</sup> March 2017

# Welcome address

Sanaa Zebakh, Institut Agronomique et Vétérinaire  
Hassan II

# Welcome and agenda



Maurice Héral  
Water JPI Chair

# Agenda (1/2)

<b>9:00-9:15</b>	Participant Registration and Welcome coffee	
<b>9:15-9:30</b>	Welcome address Welcome address & aims of the workshop	Sanaa Zebakh – Institut Agronomique et Vétérinaire Hassan II Maurice Héral – Water JPI Chair
<b>9:30-9:45</b>	The Water related RDI landscape in Morocco	INRA Morocco representative - tbc
<b>9:45-10:45</b>	Short introductions from other African & Mediterranean countries: main research and innovation priorities for water domain	Chaired by Solène Gasnier
<b>10:45-11:15</b>	Coffee break	
<b>11:15-12:15</b>	Existing cooperation / links to Water JPI Activities <ul style="list-style-type: none"> <li>• ARIMNet2 - Florence Jacquet (ARIMNet2coordinator)</li> <li>• ERANETMED – Maroun El Moujabber (ERANETMED project manager)</li> <li>• PRIMA – Giuseppina Monacelli (PRIMA representative)</li> <li>• LEAP-AGRI – Bernard Mallet (LEAP AGRI deputy coordinator)</li> <li>• AfriAlliance – Mamohloding Tihagale (South African representative)</li> </ul>	Chaired by Maurice Héral
<b>12:15-12:45</b>	Water JPI activities and modalities of cooperation	Maurice Héral – Water JPI Chair
<b>12:45 -13:45</b>	Lunch	



# Agenda (2/2)

<b>13:45-14:00</b>	Presentation of the interactive sessions	Maurice Héral – Water JPI Chair
<b>14:00-15:00</b>	<p>Interactive Session 1 – Interactions between regional activities and research themes of the Water JPI</p> <ul style="list-style-type: none"> <li>• Regional challenges: how to find synergies with the numerous existing initiatives? In particular, how to build the interactions between the Water JPI and PRIMA?</li> <li>• How to define common water priorities between Mediterranean &amp; African countries and EU?</li> <li>• Specific issues for the region: data collection / validation and harmonization, Open data, any other suggestions</li> </ul>	All participants
<b>15:00-15:30</b>	Coffee Break	
<b>15:30-16:45</b>	<p>Interactive Session 2 – How to cooperate together?</p> <ul style="list-style-type: none"> <li>• Which activities of common interest (shared RDI agenda, mapping, joint calls, knowledge hubs, mobility, alignment of national programme)?</li> <li>• Which tools for this cooperation? Is the Era-net cofund a good model for African &amp; Mediterranean countries?</li> <li>• How to simplify the current complexity (different funding models, evaluation criteria, rate and S&amp;T competencies) and avoid duplication?</li> </ul>	All participants
<b>16:45-17:00</b>	Wrap-up of the 2 interactive sessions	Table chairs
<b>17:00-17:10</b>	Closure of the workshop and outlook to next Water JPI activities	<p>Sanaa Zebakh – Institut Agronomique et Vétérinaire Hassan II</p> <p>Maurice Héral – Water JPI Chair</p>

# Water RDI landscape in Morocco



Sliman El Hani  
INRA

# Overview of Research and innovation in the field of water

Presented by: El hani Sliman/INRA

On behalf of:

Chentouf Mouad/INRA

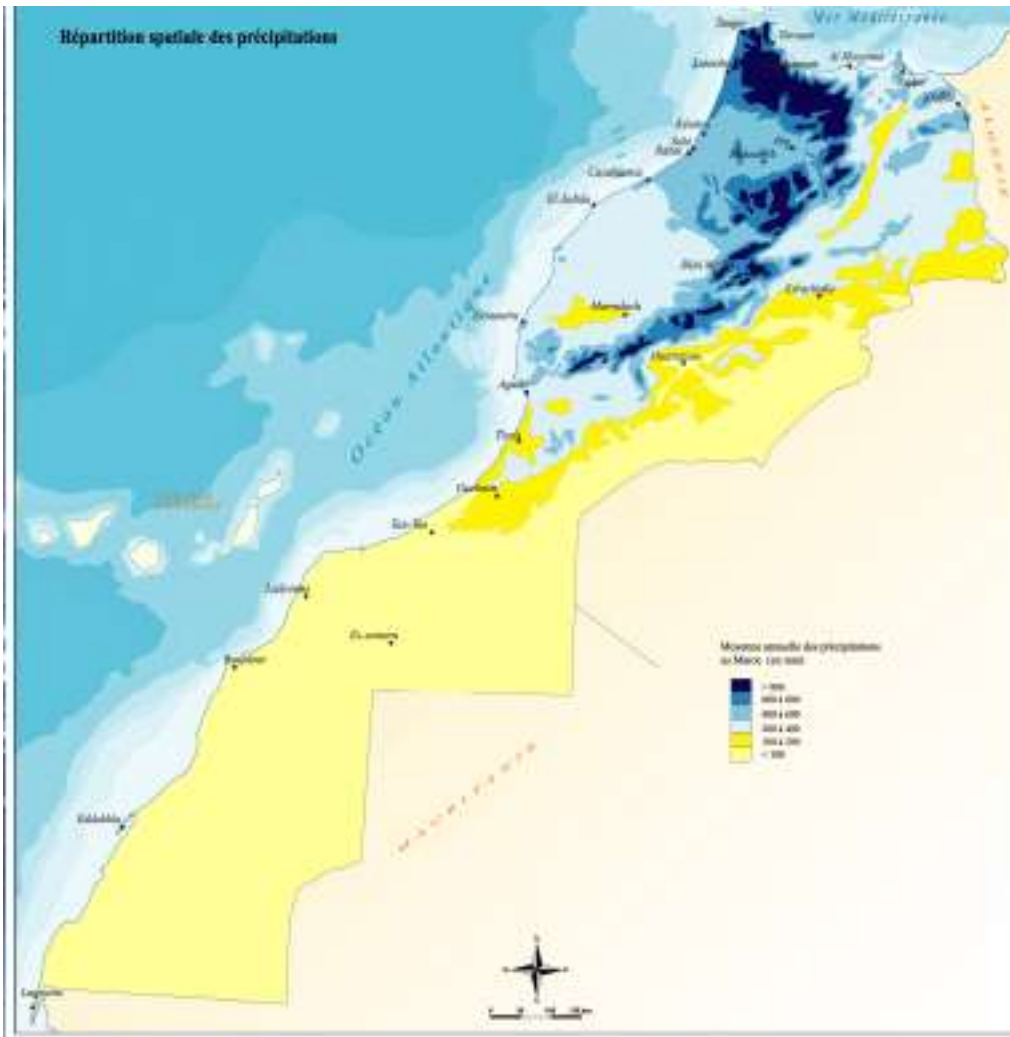
and

Sanaa Zebakh/IAV Hassan II

# **Outline**

- 1. Introduction on water resources in Morocco**
- 2. Scientific research funding**
- 3. Research potential**
- 4. National calls**
- 5. MPC- UE International calls**
- 6. National Institute of Agricultural Research (INRA) (breve presentation)**
- 7. Mid-term research program of INRA on water**

# Water resources in Morocco



140 billions m<sup>3</sup>/year

Natural water resources  
22 Billions m<sup>3</sup>/year

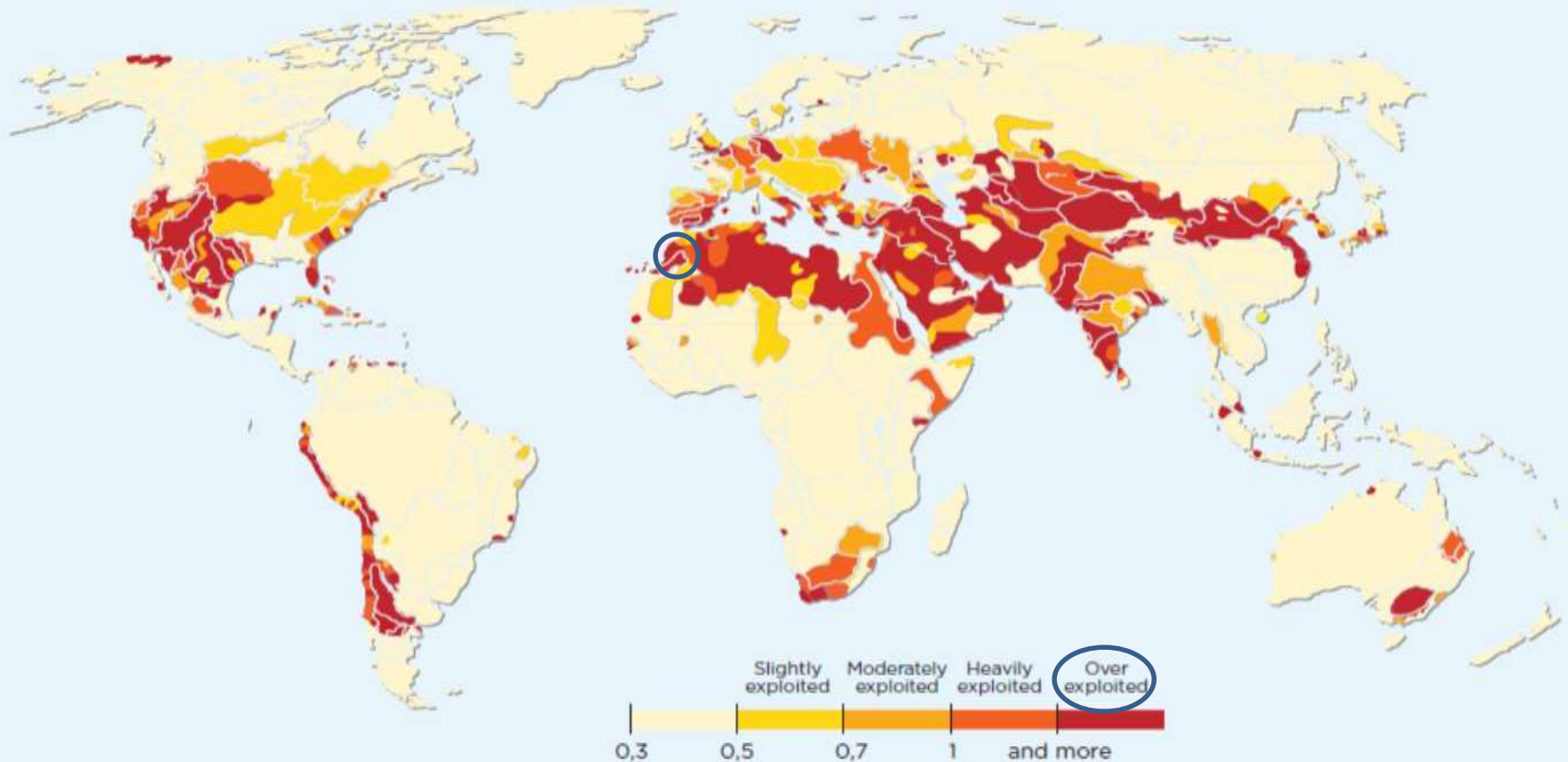
18 Bll m<sup>3</sup>/year  
Surface water

4 Bll m<sup>3</sup>/year  
Underground water



## Water resources are over exploited in Morocco

Global Water Stress Indicator (WSI) in major basins



Source: UNEP/GRID-Arendal (2008) (<http://maps.grida.no/go/graphic/water-scarcity-index>, P. Rekacewicz [cartographer], with sources Smakhtin, Revenga and Döll [2004]).



# Water National strategy

Since the end of the 1960s, significant efforts have been taken by Morocco to set a Water National Strategy based on:

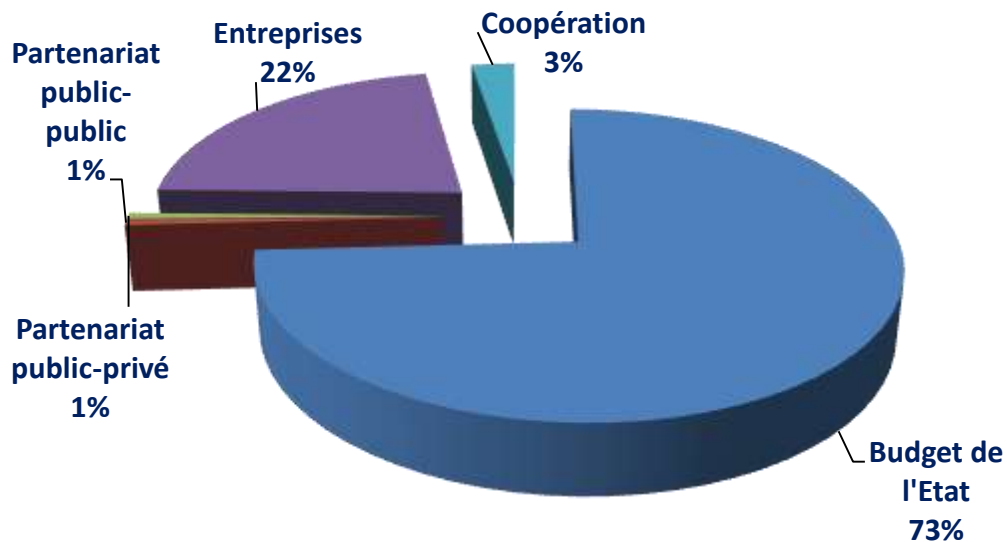
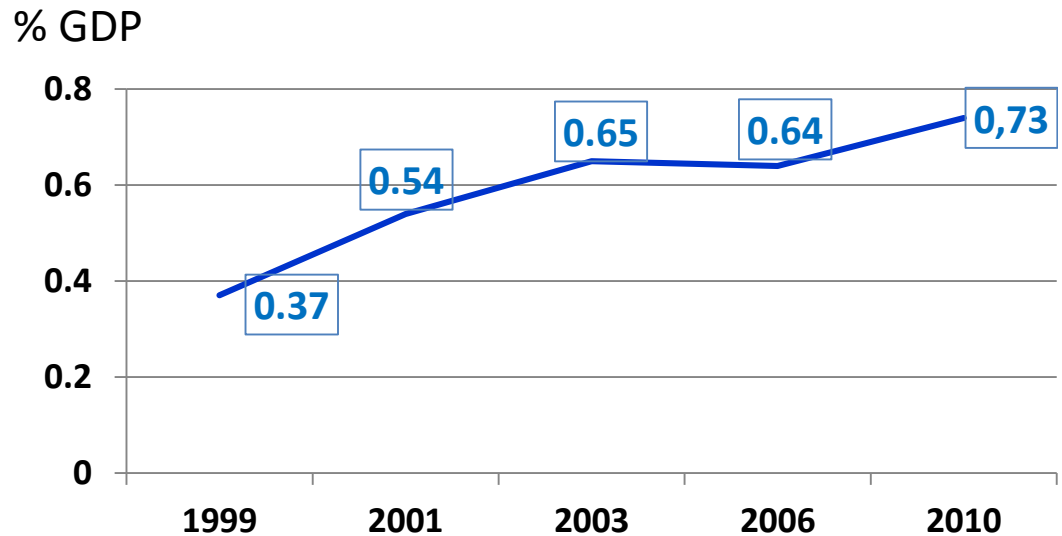
- Water demand management and water valorization
- Development and management of water offer
- Preservation and protection of water resources, environment and sensitive areas
- 1995: Publication of water Law 10-95, which emphasises on integrated water resources management through better WUE, resource allocation practices, and protection of water quality.



# Main realizations

- 130 dams : capacity of 17.5 billions m<sup>3</sup>;
- Thousands of Water drilling;
- Total water serving urban area (94%) rural (92%);
- Implementation of the national program of sanitation : connection rate (72%), purification rate (24%);
- Irrigation of 1,5 millions of hectare ( 67% funded by gov.);
- Hydropower: 10% of national energy production by hydraulic power.

# Scientific Research funding



Funding sources

# Research potential and infrastructures

- Research staff : **37.000**
- **12** public Universities + 5 private recognized universities
- **982** accredited research structures
- More than **50** centers of doctoral studies
- **20** engineering specialized institutions
- **12** specialized research centres (not belonging to Universities)
- Implementation of structures hosting high performant scientific equipment (*Unités d'Appui Technique à la Recherche Scientifique (UATRS-CNRST)*)

# Main institutions working on water research

Ministry of higher  
education and research

## Universities

Center of water research ;  
University of Marrakech

Ministry of agriculture  
and fisheries

INRA : specific research center

IAV , ENA , ENFI : higher education and  
engineering institution

Others : OCP , private universities, IRESEN,  
ONEE : (The International Institute for Water and the  
Sanitation)

# Main Research funding instruments

- Creation of national fund in support to scientific research and technological development by the Ministry of higher education, scientific research and executive training in 2001:
  - **Calls for proposals at national level (sectorial calls, PPR1, PPR2, OCP call)**
  - **Calls for Euro Med cooperation (ARIMNET , ERANETMED)**
- Funding scheme by the ministry of agriculture
  - **National call : Competitive mechanism for research development and extension**
  - **Bilateral cooperation with France : PRAD , Toubkal**

# NATIONAL CALLS

## **National calls related to national research priorities :**

**Call Budget : 30 M euros**

**Funded projects : 186**

**Projects in water sector : 19**

**Topics : water heavy metals contamination, sea water desalinization by inversed osmose ( hybrid process and solar energy), water tanneries treatment, margin valorization, flood management , waste water treatment, dam management, water decision tool management, etc.**



- **Ex. PPR2 Project: Agronomic, physiological and quality responses of potato and clementine to PRD in Loukkos region.**

**INRA and FPL Collaboration**

**Coordinated INRA (Dr. El hani Sliman)**

**Funded : MESRSFC (Ministry of Higher  
Education, Training and Scientific  
Research)/CNRST.**

# National call for proposals on phosphates

- **Funders : ministry of higher education and research in collaboration with OCP**

**call budget : 9 M euros**

**funded projects : 56**

**5 projects in water sector**

**P1 :** Coupling Regional Climate Models to Hydrological Models to Assess and Predict the CC Impacts on Water Resources and Socio- Economic Vulnerability: Case Studies of the OCP Areas.

**P2:** Développement d'un prototype de réacteur photocatalytique à base de phosphate pour le traitement et le recyclage des eaux usées

# Call : competitive mechanism

- Ministry of agriculture
- Calls dedicated to institutions belonging to the Ministry of Agriculture
- Initially called PROFERD , now *mecanisme compétitif*
- Last call in 2016 : cooperation between agropoles and research and higher education institutions

# MPC–UE INTERNATIONAL CALLS

# ARIMNET CALL

Morocco : 2,3 million of euros by the Ministry of Higher Education and Research

## 2014 FUNDING TABLE : 7. 040 K€

Country	Funding Partner	Contribution up to (in k€)
Algeria	MESRS	In Kind
Croatia	KRS	In Kind
Egypt	ASRT	600
Egypt	ARC	40
France	ANR	2000
Greece	DEMETER	100 in cash 100 In Kind
Israel	MOARD	300
Italy	MIPAAF	800
Malta	MCST	In kind
Morocco	MESRSFC	800
Portugal	FCT	400
Slovenia	MIZS	300
Spain	INIA	200
Tunisia	MESR	600
Tunisia	IRESA	300
Turkey	GDAR	600

## 2016 FUNDING TABLE : 5.82 K€

Countries	Funding Organisation	Intended total financial contribution (€)	Comments
 France	ANR	1,500,000	max 200,000 € /project
 Italy	MIPAAF	400,000	Max 100,000 € /project
 Algeria	MESRS	200,000	Max 40,000 € /project
 Spain	INIA	200,000	75,000 € /project as partner 100,000 € /project as coordinator
 Turkey	GDAR	650,000	Max 100,000 € /project
 Egypt	ASRT	500,000	Max 100,000 € /project
 Portugal	FCT	250,000	50,000 € /project as partner 100,000 € /project as coordinator
 Morocco	MESRSFC	500,000	Max 50,000 € /partner/project
 Greece	ELGO – DEMETER	70,000 in cash + 70,000 in kind	Max 30,000 € in cash + 30,000 € in kind /project
 Tunisia	MHESRT	600,000	Max 55,000 € /project
	IRESA	300,000	Max 55,000 € /project
 Slovenia	MIZS	300,000	Max 150,000 € /project
 Croatia	KRS	20,000	Max 10,000 € /project
 Malta	MCST	39,000	Supporting only one project
 Israel	MOARD	300,000	Max 150,000 € /project

## 2011 FUNDING TABLE : 6.46 K€

Countries			Intended total financial contribution (k€)
	France	ANR	2,0
	Italy	MIPAAF	0,5
	Algeria	DGSRD-Ministry of Higher Education and Scientific Research	1,0
	Spain	INIA	0,4
	Turkey	GDAR	0,5
	Egypt	ARC/ Ministry of Agriculture and Land Reclamation	0,35
	Morocco	MENESFCRS	1,0
	Greece	NAGREF	0,1
	Tunisia	IRESA	0,3
	Cyprus	Ministry of Agriculture, Natural Resources and Environment	0,06
	Israel	MOARD	0,25
TOTAL			6,46

# ARIMNET Funded projects

Call results : 31 funded projects

Topics related to water : promotion of sustainable agriculture development  
Sustainable management of landscapes and natural resources , etc

## ➤ **Copping with water scarcity / Soil**

**APMed**- Apple and Peach in Mediterranean orchards – Integrating tree water status and irrigation management for coping with water scarcity and aphid control

**ARIDWASTE**- Development of specific agricultural practices with the use of recycled wastes suitable for intensively cultivated Mediterranean areas under degradation risk

**SALTFREE** Salinization in irrigated areas: risk evaluation and prevention

**MASCC** Mediterranean Agricultural Soils Conservation under global Change

**ENVIROS** : Opportunities for an Environmental-friendly Viticulture: optimization of water management and introduction of new Rootstock and Scion genotypes

**SEMIARID** Sustainable and Efficient Mediterranean farming systems: Improving Agriculture Resilience through Irrigation and Diversification

# ARIMNET Funded projects

## Plant sciences- drought adaptations –

**MEDILEG**- Breeding, agronomic and biotechnological approaches for reintegration and revalorization of legumes in Mediterranean agriculture

**REFORMA**-Resilient, water- and energy-Efficient FORage and feed crops for Mediterranean Agricultural systems

**BacPlant**-Towards a sustainable agriculture by increasing plant tolerance to biotic stress under climatic change

**BEST** Exploring genotypic diversity to optimize barley grain and straw quality under marginal/stressful growth conditions

**IBARMED** Innovative barley breeding approaches to tackle the impact of climatic change in the Mediterranean region

Funded project 2011 (10 projects) / 2015 (10 projects) / 2016 (11 projects)



# ARIMNET Success stories...



## REFORMA/ Resilient, water- and energy-Efficient FORage and feed crops for Mediterranean Agricultural systems

9 partners from 6 countries. Coord IT.

- Highlights on the added value of the genetic diversity of crop and the association with legumes
- Participative Science involving farmers.
- Project web site: <http://reforma.entecra.it/>
- 12 articles published or in press
- Relations with seeds companies
- 4 Masters thesis and 1 PhD
- 2 workshops with scientists and officers
- Electronic booklet "Guidelines for cultivation and use of lucerne- and pea-based crops" (for extension services and farmers; in 3 languages)



# ERANETMED Calls

## **CALL 1: 2014**

**topics : & water , energy and nexus**

Budget : 13,40 M€

funded projects : 21

projects in water sector : 10 over 21 projects in total

## **CALL 2 : 2016**

Budget: 11,45 M€

Ex of projects :

**WABA** : Wastewater bioremediation using Algae-Bacteria consortia for rural Area

**NanoSWS**: Integrated nanotechnologies for sustainable sensing water and sanitation

## **INRA**

**Already one hundred years of its existence**

INRA, a public organization, mandated to undertake research for agricultural development,

INRA has greatly contributed to the modernization of the agricultural sector and agro-systems, and to the improvement of the competitiveness of the country's agriculture.

# An organization decentralized for responsiveness to different agricultural environments

## Gouvernance and concertation organs

- ❑ Board council
- ❑ Technical Committee
- ❑ National Committee for Orientation of Research
- ❑ Regional Committees for Orientation of Research

## Central level

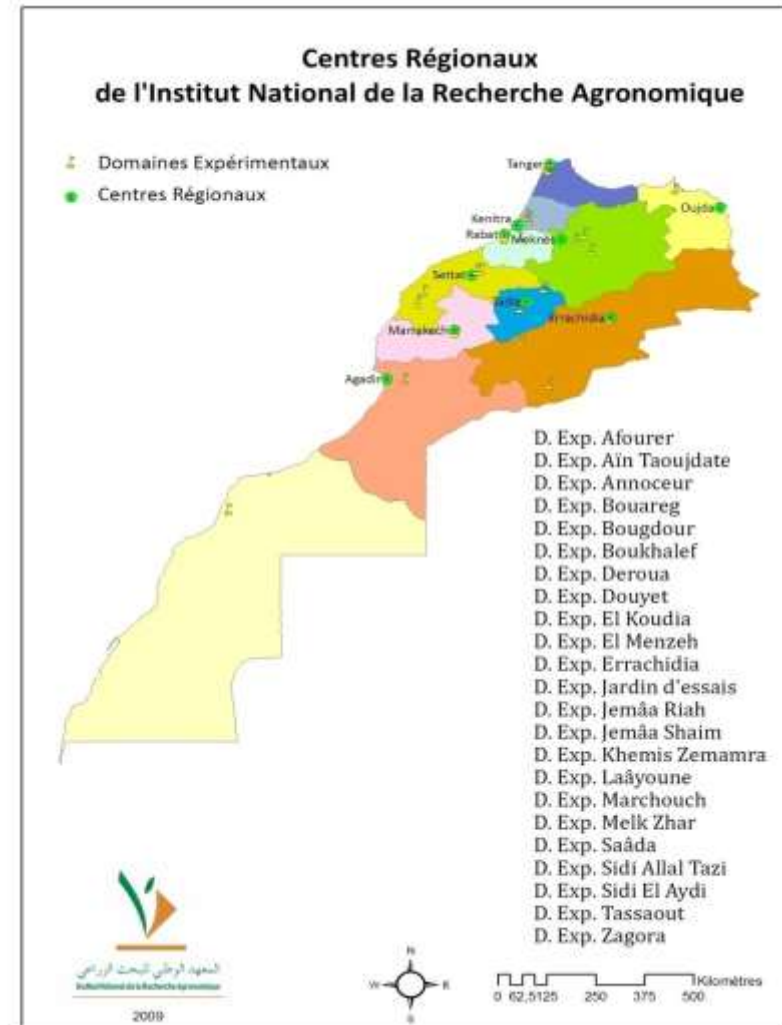
- ❑ Director and Deputy Director
- ❑ General Inspection
- ❑ 3 Divisions
- ❑ 11 Departements

## Regional level

- ❑ 10 CRRA
- ❑ 10 R&D Services;
- ❑ 23 Experim. Stations
- ❑ 26 Research Units

## Human ressources:

1015 employees with 188 researchers, 209 techniciens, 63 administrators and 555 support staff



# Mid-term research Program on water 2017-2020

GO: Sustainable management of water resources and efficiency of agricultural water use:

- Optimisation of irrigation management;
- Environmental aspects and life cycle analysis;
- Development of standards, design and performance of irrigation innovations;
- Modelling, water governance and analysis of costs and investments;
- Knowledge transfer and irrigation consultancy.

# Optimisation of irrigation management

1. Determine the water requirements for different crops and varieties;
2. Enhancing irrigation management and steering of irrigation water;
3. Evaluate and control different strategies of deficit and complementary irrigation for different crops;
4. Improve the WUE by DI and PRD.

# Environmental aspects and life cycle analysis

1. Establishment of networks to monitor water and soil quality;
2. The use of agro-alimentary waste and clay in the decontamination of groundwater polluted by pesticides;
3. Define appropriate methods for detecting changes in the water status of plots;
4. Evaluate spectral and thermal indices for the estimation of soil and cover moisture in irrigated perimeters.



## Development of standards, design and performance of irrigation innovations;

1. Optimization of installation and management of drip irrigation;
2. Management of date palm subsurface micro-irrigation ;
3. Optimizing the conception of fertigation system for efficient pumping using solar energy;
4. Development of micro-irrigation system using solar radiation in small and medium farming .

# Thank you for your attention



# Short introductions



Main research and  
innovation priorities for  
water domain

<b>Institution</b>	<b>Country</b>	<b>Institution</b>	<b>Country</b>
CDTI	Spain	MESR	Senegal
CIHEAM-IAMM		MESRS	Ivory Coast
CIRAD	France	MHESR	Tunisia
DEMETER	Greece	MIZS	Slovenia
ERANET MED		MKGP	Slovenia
FONRID	Burkina Faso	MIUR	Italy
GDAR	Turkey	SEMIDE	
HCST	Jordan	STEPRI	Ghana
IRESA	Tunisia	SUEN	Turkey
ISPRA	Italy	Water JPI	
LEAP-Agri		WRC	South Africa

# CENTRO PARA EL DESARROLLO TECNOLÓGICO INDUSTRIAL (CDTI) SPAIN



Public R&D Funding Agency under the Spanish Ministry of Economy, Industry & Competitiveness, focused on enhancing the technological profile of Spanish companies

## Funding Programmes

Continuously open calls (loans) & Competitive calls (grants)

Focused on Industry

**Technology-based**, Industrial Research & Experimental Development activities



## Water Research & Innovation

- **Bottom-up & Market-oriented**
- **All water technologies**
- Non-specific Water programme, except for the **Water JPI ERANETs**  
**WATEUR, WW14, WW15, WW17**  
*(13 projects funded)*



## International Cooperation

Technological Cooperation Programmes, at Bilateral (including the **North-African & Mediterranean Area** ALGESIP, ESIP, ESITIP, etc.) & Multilateral level (ERA-NETs, EUREKA, IBEROEKA, etc.)



*Strengthening technological cooperation through long-term relationships and promoting industrial engagement within and beyond Europe, special focus on bilateral and multilateral international cooperation through MoUs and international Calls.*



CIHEAM

# **CIHEAM – International Center for Advanced Mediterranean Agronomic Studies**

*JPI Water Workshop - Water challenges for a changing world  
Tangier, March 30*



# International Center for Advanced Mediterranean Agronomic Studies

- Founded in 1962 : The CIHEAM is a Mediterranean intergovernmental organisation devoted to sustainable agriculture and fisheries, food and nutrition security and rural and coastal development
- 13 members states : Albania, Algeria, Egypt, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Spain, Tunisia and Turkey

# International Center for Advanced Mediterranean Agronomic Studies

4 Institutes :

- Bari (Italy)
- Chania (Greece)
- Montpellier (France)
- Zaragoza (Spain)

General Secretariat based in Paris

The CIHEAM collaborates with several international and regional organisations : FAO, EU, EBRD,....





# CIHEAM STRATEGIC AGENDA 2025

## OUR MISSIONS



## OUR TOOLS

Education and Training

Research and Innovation

Networks and Open Knowledge Platforms

Projects and Technical Assistance

Policy Dialogue and Partnerships

## OUR APPROACHES

Holistic vision of Development

Multilateral Approach

Bottom-Up Collaboration

Problem Solving Oriented Projects

# **CIHEAM – Mediterranean Agronomic Institute of Montpellier**

**Research, training and cooperation in  
territorial development and agri-food  
economics**

# Education : Masters programs

**Master CDV**  
Food Value Chains and  
Agri-logistics  
CIHEAM accredited

**Master ECODEVA**  
Economy of agricultural,  
environment and food development  
co-accredited with the University  
of Montpellier and Montpellier SupAgro

**Master GAT**  
Agricultural Management and  
Territories  
co-accredited with the University Paul Valéry  
of Montpellier

**Master I3P**  
Project and Public Policies  
Engineering  
co-accredited with the University of Montpellier



## Platforms in Partnership *for Research and Education*

ex. DP SIRMA: Analyze and support the dynamics of  
irrigated systems in the Maghreb

The DPs are jointly elaborated and operated by a community of partners, pooling together expertise from diverse sources, and thus mutually strengthening their respective capacities.

### Main research priorities:

- 1- Sustainability of irrigated agriculture based on groundwater
- 2- Environmental constraints for management (i.e. salinity, re-use,...)
- 3- Technical innovation in irrigation & Water Use Efficiency
- 4- Supporting collective action and professional organizations





## MINISTRY OF RURAL DEVELOPMENT AND FOOD

### HELLENIC AGRICULTURAL ORGANIZATION «DEMETER»

The Directorate General of Agricultural Research one of the three Directorate of Hellenic Agricultural Organisation DEMETER is the research body of the Hellenic Ministry for Rural Development and Food.

**The Soil Water Resources Institute** (based in Thessaloniki, northern Greece), among others, carries out research in:

- Wastewater Treatment, with **Natural Systems** & their effluent **Reuse** ( Fig. 1-6) .
- Protection and sustainable management of surface and groundwater
- Monitoring networks of water bodies (quality and quantity parameters)
- River discharge measurements
- Mathematical modeling and GIS applications in water resources management
- Water bodies' assessment
- Groundwater artificial recharge
- Optimization of irrigation water use
- Crop-water relations, deficit irrigation
- Utilization of deteriorated water in irrigation
- Re-use of treated effluent in irrigation
- Sustainable management of irrigated land, rehabilitation of deteriorated soils
- Utilization of geothermal fluids in agriculture
- Heat pumps applications in agriculture
- Credibility-functionality control and development of instruments and methods for monitoring environmental parameters





# MINISTRY OF RURAL DEVELOPMENT AND FOOD

## HELLENIC AGRICULTURAL ORGANIZATION «DEMETER»

### *OVERVIEW OF THE NATURAL SYSTEMS PROJECT IN THESSALONIKI*



# NATURAL SYSTEMS & WASTEWATER TREATMENT - REUSE

## ANAEROBIC POND



## FACULTATIVE PONDS



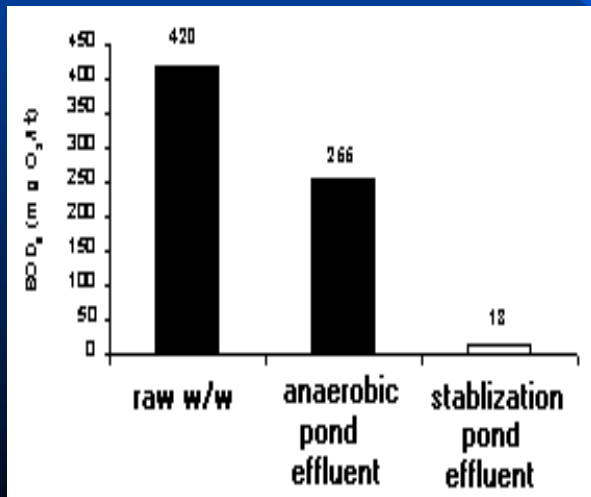
## REUSE



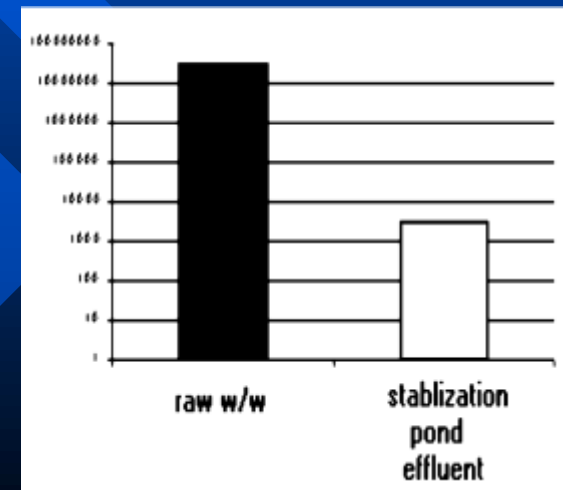
# RESULTS

- Simplicity in design & Environmental friendly technology
- Ability to absorb periodical changes of the influent
- **Low annual cost of operation /maintenance**
- Overall system reliability for long time
- Shelter for aquatic birds
- Skilled personnel not required
- Suitable for Mediterranean & African Countries

Annual average BOD<sub>5</sub> at the entry and exit of the pond system



Total Coliforms /100ml at the entry and exit of the pond







## EURO-MEDITERRANEAN COOPERATION THROUGH ERANET JOINT ACTIVITIES AND BEYOND (ERANETMED)



- ✓ **23** partners
- ✓ **16** countries
- ✓ **2** regions

### **DURATION**

✓ **Oct. 2013 – Oct. 2017**

**First Joint Call on:  
Renewable Energies, Water  
Resources and their connections for  
the Mediterranean Region**

**Second Joint Call on:  
Environmental challenges and  
solutions for vulnerable communities**

**Third Joint Call on:  
Sustainable management of  
resources for the economic growth of  
the Mediterranean region**

[www.eranetmed.eu](http://www.eranetmed.eu)

**Ministère de l'Enseignement Supérieur, de la Recherche  
Scientifique et de l'Innovation**



**FONDS NATIONAL DE LA RECHERCHE ET DE L'INNOVATION POUR LE  
DEVELOPPEMENT (FONRID)**

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01 BP 5933 Ouagadougou

Tel : (00226) 25 41 25 48/70 24 26 13

**Dr Inoussa ZONGO, Senior Researcher,  
FONRID Program Manager**

# Priorities of national water research

Priorities defined by all the actors can be summarized by the contribution to remove the following constraints:

1. Low level of knowledges on water resources
2. Inadequat protection and preservation of water resources
3. Inefficient management of water resources
4. Water pollution
5. Bad quality of drinking water
6. Low ability of water resources due to climate change

For the next five years, all the research on area is evaluated to 12 millions euros to

**Main research and innovation priorities for the water domain in Turkey**

**❑ WATER USE EFFICIENCY**

- ❑ Struggling for water loss and leakage, developing advanced standards
- ❑ Improving water management, irrigation and salinity control to anticipate water scarcity
- ❑ More efficient use of water and increasing water productivity particularly in water stressed regions

❑ *Development of drought-tolerant crop varieties*

**❑ PROTECTING THE NATURAL RESOURCE BASE ENVIRONMENT**

- ❑ Integrated water resources management
- ❑ Developing innovative land reclamation techniques
- ❑ Reuse of waste water in agriculture
- ❑ Reducing waterlogging and salinity risks in irrigated areas
- ❑ Developing and setting up early warning&monitoring systems
- ❑ Innovative water harvesting and conservation technics

# Main research and innovation priorities for the water domain In Jordan



## Subject

## Research Issues of Top Priority

Integrated Approach to Water Resources Management

**Optimization of water resources at the basin level.**  
**Developing the use of flood waters for artificial recharge and enhancing natural recharge.**  
**Assessment of trans-boundary water resources: sharing, legislation and management.**

Groundwater Recharge

**Assessment and vulnerability of recharge areas.**  
**Suitability of reclaimed wastewater for groundwater recharge.**  
**Modeling of groundwater recharge.**

Innovations in Irrigation Water Management

**Optimizing the efficiency of the on-farm irrigation systems and management.**  
**Management of water quality and its effect on irrigation water requirement.**  
**Improving water use efficiency using deficit irrigation, resistant crops and biotechnology.**

Water Safety and Public Health

**Water and wastewater related diseases: assessment, prevention and control.**  
**Evaluation of new technologies in the treatment of waste water.**  
**Water quality in the network and in storage tanks, wells and reservoirs; and intermittent water supply.**

Integrated Waste Management

**Environmental risk assessment and management for existing landfills and dumpsites including impacts on groundwater pollution.**  
**Application of integrated solid waste management at municipal pilot level.**  
**Waste to energy (waste as a resource).**

Databases and Information Systems for Water Resources and Environment

**Developing drinking water research information network and national environmental publication information system.**  
**Upgrading the data bank for groundwater and surface water basins in Jordan.**  
**Environmental information management systems for water supply and demand in Jordan.**

# **MAIN RESEARCH AND INNOVATION PRIORITIES FOR THE WATER DOMAIN IN TUNISIA**

***Dr. ALI RHOUMA***

# Features and characteristics of water resources in Tunisia

## Water challenges in Tunisia

### Availability of water resources

### Quality of the water resources

Limited resources in quantity

A temporally variable resources

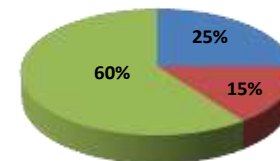
A heterogeneous spatiotemporal distribution of the resources

A variable salinity of the water resources

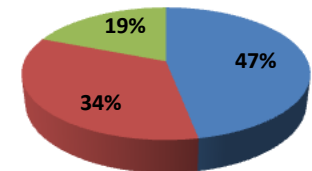
Per capita annual water availability (467 m<sup>3</sup>) < Threshold of water poverty (scarcity) (500 m<sup>3</sup>).

◆ Great seasonal variability of rainfall.

◆ Strong inter-annual variability of rainfall: it varied from 21 to 60 milliards de m<sup>3</sup> /an.



■ North 400 mm/year / < 1500 mm/year  
■ Center 200 to 400 mm/year  
■ South 200 to 50 mm/year



■ Salinity < 1,5 g/l  
■ 1,5 g/l < Salinity > 3 g/l  
■ Salinity > 3 g/l

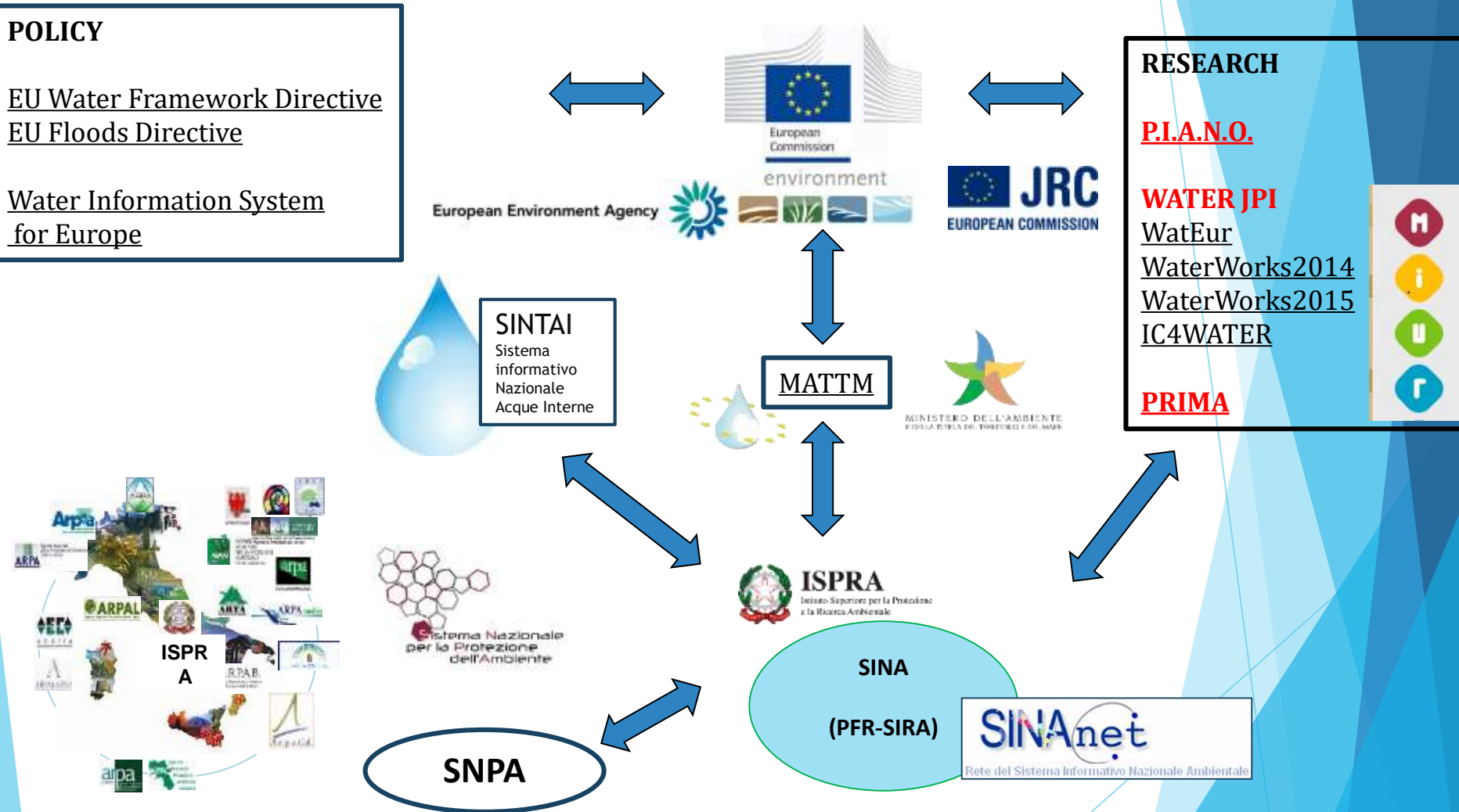
- Improving the efficiency of systems :
  - Development of innovative water savings techniques and agronomic packages, integrated and sustainable management of salt risk
  - Development of varieties specifically adapted to non-irrigated mode, or rainfed agriculture using varieties and agronomic practices adapted and resilient to water scarcity and rainfall variability
- Sustainable management of water resources
- Valorisation of non-conventional waters :
  - The treated waste water: analysis of the blocking points to a better adoption in Tunisia, interest for tertiary treatment
  - The desalinization of salt water, brackish water and sea water: development of innovative approaches, technico economic and environmental evaluation of operational solutions within a systemic approach



## POLICY

EU Water Framework Directive  
EU Floods Directive

# Water Information System for Europe



## LEAP-Agri : [www.leap-agri.com](http://www.leap-agri.com)



- A political decision from both EU and AU : HLPD on FNSSA
- A long term EU-Africa research and innovation partnership on food and nutrition security and sustainable agriculture
- An “EraNetCofund” project with 30 European and African partners
  - > a Call for African European research projects (27,6 million €)  
projects = science x innovation x impact ; with 3 topics :
    - Sustainable agriculture and aquaculture
    - Food security, nutrition and Health
    - Trade, policies and access to food
  - > Feeding the EU- Africa long term partnership in R&I on FNSSA :
    - Synergies, Cooperation, Alliances, Alignment



Un Peuple – Un But – Une Foi

MINISTÈRE DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE  
DIRECTION GÉNÉRALE DE LA RECHERCHE

**Atelier sur la coopération internationale dans le domaine de l'eau**



**Le 31 mars 2017 Tanger**

**Maroc**

**Tafsir Babacar NDOYE**

# INTRODUCTION

- The access to the drinking water and to the services (departments) of purification represents one of the big priorities of the republic of Sénégal. It joins in the axis 2 (human resources, social welfare and sustainable development) of the plan Emergent Senegal ( PSE).
- The Drinking water and program Purification Of the Millennium (PEPAM), (since 2005) opérationnalise the (policy) of the state regarding drinking water and regarding purification.

# INTRODUCTION

- It aims at improving the access rate in the drinking water and in the purification with the following objectives: reach(affect) 100 % in urban zones from 2015 and 98 % in 2017 in rural areas, for the drinking water and reach (affect) an access rate of the households systems improved by 85 % purification from 2017 in urban zones and by 70 % from 2017 in rural areas

# Financing research projects

- 1-Etude technical and economic of the processes of clay and nanofiltration for the partial elimination of the fluorine and the salinity of waters of drink of the pond arachidier in Senegal (UASZ)

2-Etude analytics of toxicity and change of the halieutic products and the determination of heavy metals and residues of pesticides in maritime waters coastal and river: highlighting of the state of pollution of the coast of her under region (UCAD)

3-Hydrovar: dish forms of inversion variationnelle of data in a model of hydrology: towards a better prediction of géorisques (erosion, flood.) thanks to the data grounds/satellite and in the simulations (CLIMMOD ENGINEERING SME, France)

4-Modélisation of the drinkable ageing of water mains (aqueduct) and structural state

# SYSTÈME DE GESTION DE L' ACCES A L' EAU EN COTE D' IVOIRE

(Prof. KATI-COULIBALY S.) UFHB /MESRS

Ministères : Infrastructures Economiques ( MIE), Industrie (MIM)  
Eaux et Forêts (MEF), Environnement (MSEDD), Santé (MSHP)  
Enseignement Supérieur et Recherche Scientifique (MESRS)

## Office National de l' Eau Potable (ONEP)

### *Secteur Privé*

Forages

Sociétés industrielles

### *Secteur Public*

SODECI

CIAPOL, CRO

INHP, ONAD

IPCI, INSP, CRE

Recherche Scientifique (UFRs, Instituts)

Projets (Lagune Aghien, ...)

### *Secteur Informel*

Puits artisanaux

Sources naturelles

Production artisanale

PRESED CI projets C2D Côte d'Ivoire

Lagune Aghien: une source durable d'eau potable pour le district d'Abidjan

# MESRS

CENTRES DE  
RECHERCHE

GRANDES  
ECOLES

UNIVERSITES

INSTITUTS

UFR

FORMATION

EXPERTISE

RECHERCHE

Labo

Labo

Labo

Labo

Géosciences  
Environnement  
Hydrosciences

Géologie  
Chimie  
Microbiologie

Téledétection  
Urbanisme  
Ethno-sociologie

Génie procédés  
Climatologie  
Nutrition-Santé



# National Priorities (Water)

MHESR(TUNISIA)

Challenges	Topics
<b>Water Governance</b>	<ul style="list-style-type: none"> <li>- <b>Nexus (Water-Energy-Food) interactions and complementarities</b></li> <li>- <b>Nexus approach in the Climate Change context and scarcity of natural resources</b></li> <li>- <b>Management of extreme events (flood and drought)</b></li> <li>- <b>Management of the conflicts between users (water allocation, water integrity, engagement of stakeholders and empowerment of civil society, strategic and policy vision, ...)</b></li> <li>- <b>Water saving, water use efficiency, water quality</b></li> <li>- <b>Modelling and development of biotechnological and ICT tools</b></li> </ul>
<b>Treatment and reuse of unconventional water</b>	<ul style="list-style-type: none"> <li>- <b>Development and valorisation of unconventional water resources (Treatment and recycling/reuse of Wastewater)</b></li> <li>- <b>Water Desalination (for drinking and irrigation)</b></li> <li>- <b>Using the renewable energy (water pumping, treatment, ...)</b></li> <li>- <b>Water supply and sanitation, particularly in the rural and marginal areas.</b></li> <li>- <b>Emerging pollutants</b></li> </ul>

# MIUR - Ministry of Education, Universities and Research – MIUR



*Ministero dell'Istruzione, dell'Università e della Ricerca*

**Country:** Italy

**Organisation role:** Public body / Funding Agency

## **Main research and innovation priorities for the water domain:**

- Water issues are addressed in different research areas of the National Research plan based on the National Specialisation Strategy (e.g. Health, Food and Quality of Life; Smart and sustainable Industry, Energy and Environment; etc..)
- International cooperation in the Water sector is also a priority. MIUR is partner of the Water JPI and related projects and is leading the PRIMA initiative.
- Main objectives of international cooperation: alignment of research activities and strategic goals, in synergy with different stakeholders.



## MIZS's involvement in JPIs

- ▶ MIZS as the Ministry responsible mainly for national and EU research policy does not set priorities for any domain.
- ▶ MIZS acts as national coordinator for JPIs and is currently carrying out activities to attract relevant Ministries to participate in JPIs
- ▶ In the case of JPI Water MIZS has been in contact with the Ministry of agriculture, forestry and food and the Ministry of Environment and spatial planning, which is in fact responsible for water protection, use and regulation of water, potable water supply and treatment of urban and drainage waste water.
- ▶ Main issue:
  - ▶ Increased (national) commitment at policy level is needed
  - ▶ No national policy / strategies for societal challenge research
  - ▶ Finding ways to increase interest of other relevant Ministries



# JPI WATER

SITUATION IN SLOVENIA

Jana Erjavec, secretary  
Ministry of Agriculture,  
Forestry and Food,  
Slovenia

# JPI WATER — THE CASE OF SLOVENIA

Extensive research work on issue (national funding 2008-2020):

- Evaluation of water perspectives in Slovenia and possibilities of water use in agricultural production;
- Projection of water for irrigation in Slovenia
- Sustainable use of water to enhance plant production potential in Slovenia
- Creating technological guidelines for the irrigation of olive trees in Slovenia;
- Accuracy of Irrigation Forecast

Outputs:

- Analyses of available, actually used, and the potential capacity of all water resources, suitable for irrigation, evidence of water resources for irrigation and agricultural areas suitable for irrigation (parcel level);
- Analyses and recommendations for administrative procedures for more transparent and more consistent sustainable water planning;
- Guidance for irrigation in different technologies (intensity, scope of water, ...) for different plant products;
- Form the basis for enhancing agricultural production potential and to increase the domestic supply of vegetables, fruits and other plant products...

Main impacts of the research work:

- ✓ contribution to the national Plan for the development of irrigation in agriculture
- ✓ Implementation in to the Rural development programme (2007-2020) in the area of investment in irrigation

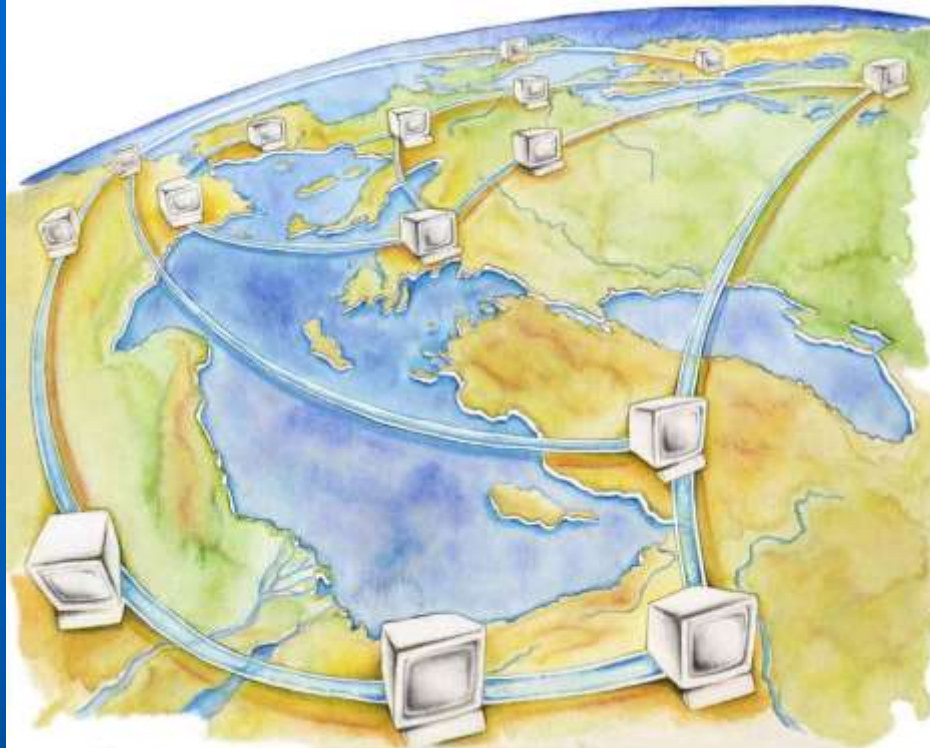




# SEMIDE

[www.semide.net](http://www.semide.net)

Système Euro-  
Méditerranéen  
d'information sur les  
savoir-faire dans le  
domaine de l'Eau



# EMWIS

[www.emwis.net](http://www.emwis.net)

Euro-Mediterranean  
Information System  
on know how in the  
water sector

النظام المعلوماتي الأورو متوسطي  
للمعرفة في مجال المياه

Relevant regional activities in the euro-Mediterranean area

**Maroua OUESLATI**

[m.oueslati@semide.org](mailto:m.oueslati@semide.org)

International Workshop on RDI cooperation development  
for tackling global water challenges

Tangier, Morocco

31 March 2017



- **EMWIS:** Institutional network of national water authorities of Euromed countries

## ■ **Mediterranean Water Knowledge Platform**

### *Better knowledge for Climate adaptation and mitigation*

- Organising data sharing and management in each country
- Building capacities for monitoring, evaluation, planning
- Exchange of experiences



## ■ **EMWIS relevant activities**

### ❑ **Research and Innovation:**

- Sustainable Mediterranean Cities (compost 4 agri/ water and sanitation)
- WEF nexus (Assessment with EC-Joint Research Center for policies improvement in the Med region/ Water Footprint / DSS and tools for water & energy management)
- Circular economy: water reuse & resource recovery

### ❑ **Regional Policy interface: 5+5 water strategy & action plan; UfM Water Agenda**

### ❑ **Assistance based on EU water directives : EU institutional twining, SWIM-H2020-SM, ENI-SEIS**

## ■ **Suggestions for the way forward**

- ❑ **Put in practice “science-policy interface”: research responding to practitioner needs, research data hubs as part of the Med Water Knowledge Platform**
- ❑ **Involving the industry for technological innovation**





# Thank You for your attention



Wetlands Observation

Solid waste  
management



Water Infrastructure  
Smart management



Climate Services  
Water & energy  
efficiency in irrigation

Water efficiency for  
touristic sector

Med Water Knowledge  
Platform



**CSIR-STEPRI Presentation at Water  
JPI International Workshop at the  
Royal Tulip City Center, Tangier,  
Morocco 31 March 2017**

Masahudu Fuseini

# CSIR – Science and Technology Policy Research Institute (CSIR-STEPRI)

- STEPRI is one of the 13 Research Institutes of the Council for Scientific and Industrial Research (CSIR-STEPRI) Ghana
- Conduct research that influence the formulation and implementation of policies in Science, Technology, and Innovation for economic growth
- International cooperation is very much part of the institute
- Water Research Institute is part of the CSIR research institute – ground and surface water

# CSIR-STEPRI

- Availability of quality water is a global problem including Ghana – Drinking, Agriculture, Hydro, etc
- Government of Ghana policies and programmes: Ministry of Water and Sanitation; Water Resources Commission

## Country's Area of Interest

- Destruction of water bodies by small-scale mining (Galamsey) – Pollutants - Heavy metals
- Irrigation system for crops production in northern Ghana (SADA zones)
- **Immediate Past Project:** Rain Water Harvesting System in collaboration with SINTEF Norway

## Who are we?



SUEN is a national think tank working in close collaboration with national & international organisations on sustainable water management, development of water policies and capacity building for the solution of local water problems.

SUEN conducts national & international projects on water resources management, modeling, water quality management, etc.



## What we do?



Istanbul  
International  
Water Forum

Organised one year prior to each World Water Forum, Istanbul International Water Forum (IIWF) is the flagship event of SUEN.

Istanbul, Turkey

## Training Programmes

SUEN delivered trainings to more than 600 water professionals from over 30 countries.

- River basin scale planning
- Master planning in the urban water sector
- Water & ww treatment design & operation
- Wastewater management in rural areas
- Water and sewage network management
- Groundwater management

<https://suen.gov.tr/>



# Water JPI - SRIA structure

## Vision Document (5 themes)

**Theme 1**  
Improving  
Ecosystem  
Sustainability  
and Human  
Well-being



**Theme 2**  
Developing  
Safe Water  
Systems for  
Citizens



**Theme 3**  
Promoting  
Competitiveness in the  
Water  
Industry



**Theme 4**  
Implementing  
a Water-wise  
Bio-based  
Economy



**Theme 5**  
Closing the  
Water Cycle  
Gap  
Improving  
Sustainable  
Water  
Resources  
Management



## SRIA 2.0

(5 themes and 11 sub-themes)

# WRC, who are we?



- Public entity established by the Water Research Act of 1971 and reporting to Ministry of Water and Sanitation
- The principal aim of the WRA is to promote of research in connection with water affairs (access to quality drinking water and sanitation for all)
- Also implement the National Water RDI strategy and the Water Technologies Demonstration Programme (WADER) of the Ministry of Science and Technology

SA water challenges include that:

- Water stressed country and 2030 prediction that South Africa will have 17% deficit if it continues as is
- 98% of SA surface water is allocated, but 60% of ground water not yet used

WRC

- 2 branches: Research and development (R&D) and Innovation and impact (I&I) to take research findings/product to market
- Fund majority of the SA water and sanitation research through the water levy therefore required PPP, local, regional and international to leverage more funding
- knowledge dissemination and facilitating water conversations with all stakeholders

Knowledge tree

- Inform policy and decision making
- To drive and support development of new innovative products and services for economic growth
- HCD
- Community empowerment
- Promote transformation and redress

Partner in WW2014, WW2015, WW2017, AfriAlliance, co-organiser of the Stockholm WWW, Global Water Research Coalition, Indian Ocean Rim Association

Key strategic areas next page

# Research Strategic Areas (Whole Water Cycle and Linkages covered)



## Water Resources (Environment)

Surface

Groundwater

Governance

Planning

## Water-linked Ecosystems (Environment)

Ecological Reserve

Biodiversity

## Water Use and Effluent Management (Use 38%)

Supply and Demand

Pollution Management

Infrastructure

## Water and Agriculture (Use – 62%)

Water Use Efficiency

Food security



# COFFEE



# ARIMNet2

Florence Jacquet,  
ARIMNet2 coordinator





# JPI Water Meeting

31 March 2017, Tangiers, Morocco

## PRESENTATION OF ARIMNet2

Florence JACQUET ([florence.jacquet@inra.fr](mailto:florence.jacquet@inra.fr))

INRA, France



# ARIMNet – ARIMNet2

## ERA-NETs funded by the EU:

- ARIMNet (2008-2012)
  - ARIMNet2 (2014-2017)
- 
- Network of Funding Agencies and Agricultural Research Organisations
  - **Objective:** to improve the coordination of Agricultural Research Programmes in the Mediterranean Area



# ARIMNet2 Objectives

- Mediterranean agricultures are facing huge common challenges, but research capacities are fragmented and scattered all around the Med.
- ARIMNet2 aims at strengthening cooperation in **Agricultural Research among Mediterranean** countries through sharing priorities to enable them to respond more efficiently to the global challenges their agricultures are facing: **sustainable development, natural resources management** and **food security**, under the constraint of **climate change**.
- It intends to forge a scientific community among its members to better address the common challenges.



# ARIMNet2 (2014-2017)

- Mediterranean countries
  - from the EU : France, Italy, Spain, Greece, Portugal, Cyprus Malta, Slovenia, Croatia
  - from South and East of the Mediterranean : Morocco, Algeria, Tunisia, Egypt, Turkey, Israel



15 countries  
25 partners

## An enlarged network

N°	Participant organisation name	Short name	Country
1.	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE	INRA-FR	FRANCE
2.	ACADEMY OF SCIENTIFIC RESEARCH AND TECHNOLOGY ASRT	ASRT-EG	EGYPT
3.	AGENCE NATIONALE DE LA RECHERCHE	ANR-FR	FRANCE
4.	CENTRE DE COOPERATION INTERNATIONAL EN RECHERCHE AGRONOMIQUE POUR LE DEVELOPPEMENT	CIRAD-FR	FRANCE
5.	CENTRE INTERNATIONAL DE HAUTES ETUDES MÉDITERRANÉENNES-INSTITUT AGRONOMIQUE MÉDITERRANÉEN DE MONTPELLIER	CIHEAM-IAMM	
6.	FUNDACAO PARA A CIENCIA E A TECNOLOGIA	FCT-PT	PORTUGAL
7.	HELLINIKOS GEORGIKOS ORGANISMOS - DIMITRA (HELLENIC AGRICULTURAL ORGANIZATION - DEMETER)	DEMETER-GR	GREECE
8.	INSTITUT AGRONOMIQUE ET VETERINAIRE HASSAN II	IAV-MA	MOROCCO
9.	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE D'ALGERIE	INRAA-DZ	ALGERIA
10.	INSTITUT ZA JADRANSKE KULTURE I MELIORACIJU KRSA-SPLIT	KRS-HR	CROATIA
11.	INSTITUTION DE LA RECHERCHE ET DE L'ENSEIGNEMENT SUPERIEUR AGRICOLES	IRESA-TN	TUNISIA
12.	INSTITUTO NACIONAL DE INVESTIGACION Y TECNOLOGIA AGRARIA Y ALIMENTARIA	INIA-ES	SPAIN
13.	INTERNATIONAL CENTRE FOR AGRICULTURAL RESEARCH IN THE DRY AREAS	ICARDA	
14.	ISTITUTO NAZIONALE DI ECONOMIA AGRARIA	INEA-IT	ITALY
15.	MINISTERE DE L'ENSEIGNEMENT SUPERIEUR ET DE LA RECHERCHE SCIENTIFIQUE	MESRS-DZ	ALGERIA
16.	MINISTERO DELLE POLITICHE AGRICOLE ALIMENTARI E FORESTALI	MIPAAF-IT	ITALY
17.	MINISTRSTVO ZA IZOBRAZEVANJE, ZNANOST, KULTURO IN SPORT	MIZS-SI	SLOVENIA
18.	MINISTRSTVO ZA KMETIJSTVO IN OKOLJE	MKO-SI	SLOVENIA
19.	MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT	MOARD-IL	ISRAEL
20.	MINISTRY OF AGRICULTURE, NATURAL RESOURCES AND ENVIRONMENT OF CYPRUS	ARI-CY	CYPRUS
21.	MINISTRY OF FOOD AGRICULTURE AND LIVESTOCK	GDAR-TR	TURKEY
22.	MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH	MESRT-TN	TUNISIA
23.	OFFICE OF THE PRIME MINISTER	MCST-MT	MALTA
24.	THE AGRICULTURAL RESEARCH CENTER	ARC-EG	EGYPT

# ARIMNet2 WORK PACKAGES

## WP6: Outreach & Communication

Dissemination/valorisation of research results, awareness-raising, optimising synergies...

## WP1: Integrated Strategic Research Agenda (ISRA)

Key agriculture research and innovation priorities for the EU and Mediterranean countries

## WP2: Joint calls to fund transnational research

Funding transnational multidisciplinary/transdisciplinary projects

## WP4: Joint activities for collaborative research and capacity-building

Researchers training, mobility, networking; sharing of knowledge/infrastructure

## WP3: Monitoring, follow-up and impact assessment of calls, joint activities and funded research projects

Monitoring and evaluation of ARIMNet2 activities/outcomes

## WP5: From Research to Innovation

Reflection on Agricultural Knowledge and Innovation Systems (AKIS): enhancing the links between research and innovation to foster agricultural development in Mediterranean countries

## WP7: Coordination & Management



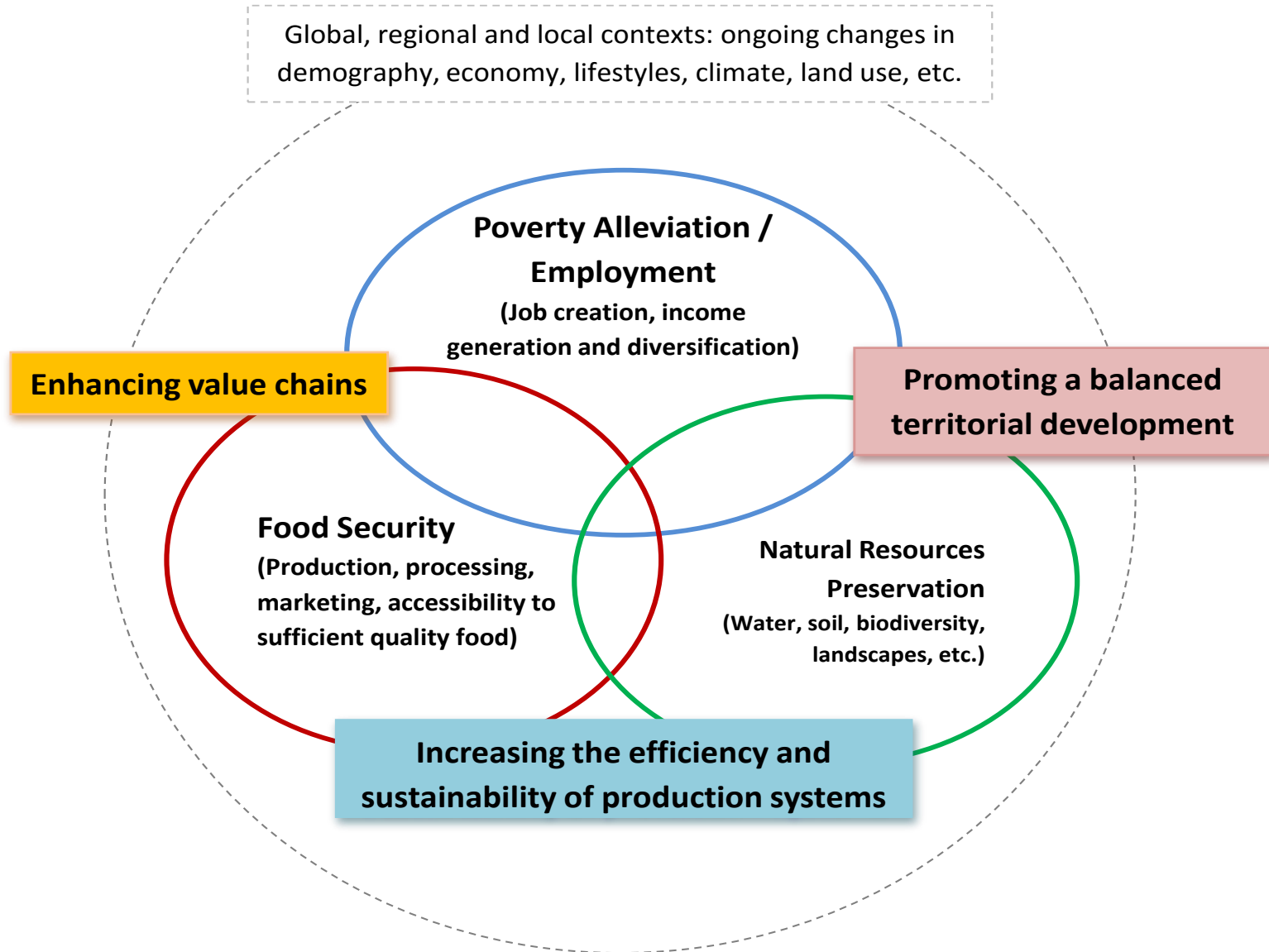
# ARIMNet2 (2014-2017)

## Actions / Achievements

- Defining priorities & a common agenda → **Integrated Strategic Research Agenda (ISRA)**
- Joint calls for Research Proposals to support more research projects addressing Mediterranean agriculture challenges → **2015 + 2016 Joint Calls**
- Actions to boost R&I and Networking in the Med Area → **Young Researchers Seminar** (29 May-4 June 2016, Montpellier)
- A reflexion on how to improve the links between Research & Innovation → **AKIS Conference** (12-13 October 2016, Antalya)



# ARIMNet2 Strategic Agenda



# Funding international research Projects

- **ARIMNet Call 2011**

- ✓ Sustainable agriculture and Food systems (Production Systems, Food Chains, Land and Natural Resources Management)
- ✓ 6,5 million euros virtual pot ;
- ✓ 78 eligible projects;
- ✓ 10 selected projects

- **ARIMNet2 Call 2015**

- ✓ Similar topics than 2011
- ✓ 7.3 million euros virtual pot
- ✓ 146 eligible preprojects (2 steps procedure);
- ✓ 10 selected projects

- **ARIMNet2 Call 2016**

- ✓ Enhancing Mediterranean agricultural and food Value Chains
- ✓ 6 million euros virtual pot
- ✓ 78 eligible proposals
- ✓ 11 selected projects<sub>91</sub>



# Funded projects 2011 (10) / 2015 (10) / 2016 (11)

## ➤ Food chains

**SAFEMED** - Food safety regulations, market access and international competition

**MedOOmics** - Mediterranean Extra Virgin Olive Oil Omics: profiling and fingerprinting

**Promedfoods** - Promotion of local Mediterranean fermented foods through a better knowledge and management of microbial resources

**VIPACFOOD** - Valorization of Industrial fruits by Products and algae biomass waste: Development of Active Coatings to extend Food shelf life and reduce food losses

**REALMED** - Pursuing authenticity and valorization of Mediterranean products

**DIVERCROP** - Land system dynamics in the Mediterranean basin across scales as relevant indicator for species diversity and local food systems

## ➤ Plant & Animal Health, pest and disease

**SWIPE** - Predicting whitefly population outbreaks in changing environments

**PESTOLIVE** - Contribution of olive history for the management of soil-borne parasites in the Medi Basin

**POHMED** - Potato Health - Managed for Efficiency and Durability

**AVIAMED** - AVIAn viral disease prevention and control with plant vaccines for the MEDiterranean area

**EMERAMB** - Emergent viruses and virus vectors in Mediterranean Basin crops

**BrucMednet** - Improvement of epidemiological and serological tools for diagnosis and control of Brucellosis in the Mediterranean region

**ORPRAMed** - Risk assessment of introduction of *Xanthomonas citri* subsp *citri* through commercial trade of ornamental rutaceous plants in the Mediterranean basin

**STomP** - Sustainable Tomato Production: plant defense enhancement, development of new biopesticides and optimization of environmental, water and chemical inputs

**NANOBIOAGRI** - Plant disease biocontrol by means of non-infectious biodegradable proteinaceous nanoparticles.

**BEEHEAL** - Promoting bee health for sustainable agriculture

# Funded projects 2011 (10) / 2015 (10) / 2016 (11)

## ➤ Improving livestock and cropping systems

**CLIMED** - The future of Mediterranean Livestock Farming Systems: Opportunity and efficiency of Crops – Livestock Integration

**DOMESTIC** - Mediterranean biodiversity as a tool for the sustainable development of the small ruminant sector: from traditional knowledge to innovation

**MEDILEG** - Breeding, agronomic and biotechnological approaches for reintegration and revalorization of legumes in Mediterranean agriculture

**BacPlant** - Towards a sustainable agriculture by increasing plant tolerance to biotic stress under climatic change

**BEST** - Exploring genotypic diversity to optimize barley grain and straw quality under marginal/stressful growth conditions

**PERFORM** - Breeding and management practices towards resilient and productive sheep and goat systems based on locally adapted breeds

**CARAVAN** - Toward a Camel transnational value chain

**IBARMED** - Innovative barley breeding approaches to tackle the impact of climatic change in the Mediterranean region

## ➤ Copping with water /soils scarcity + Management of Water used in Agriculture

**APMed** - Apple and Peach in Mediterranean orchards – Integrating tree water status and irrigation management for coping with water scarcity and aphid control

**ARIDWASTE** - Development of specific agricultural practices with the use of recycled wastes suitable for intensively cultivated Mediterranean areas under degradation risk

**REFORMA** - Resilient, water- and energy-Efficient FORage and feed crops for Mediterranean Agricultural systems

**SALTFREE** - Salinization in irrigated areas: risk evaluation and prevention

**MASCC** - Mediterranean Agricultural Soils Conservation under global Change

**SEMIARID** - Sustainable and Efficient Mediterranean farming systems: Improving Agriculture Resilience through Irrigation and Diversification

**ENVIROS** - Opportunities for an Environmental-friendly Viticulture: optimization of water management and introduction of new Rootstock and Scion genotypes

# ARIMNet and...beyond

## PRIMA: Partnership for Research and Innovation in the Mediterranean Area

- Long term and ambitious programme for supporting research in the Mediterranean Area
- Water Resources and Food Systems
- Will develop Mediterranean transnational activities in Research Innovation based on co-decision and co-funding among participant countries (North, South and East of the Mediterranean)
- Will start in 2018
- PRIMA will benefit from ARIMNet2 experience !





# To learn more about ARIMNet2...

[www.arimnet2.net](http://www.arimnet2.net)



Join our network!





# ERANETMED

Maroun El Moujabber,  
ERANETMED project  
manager



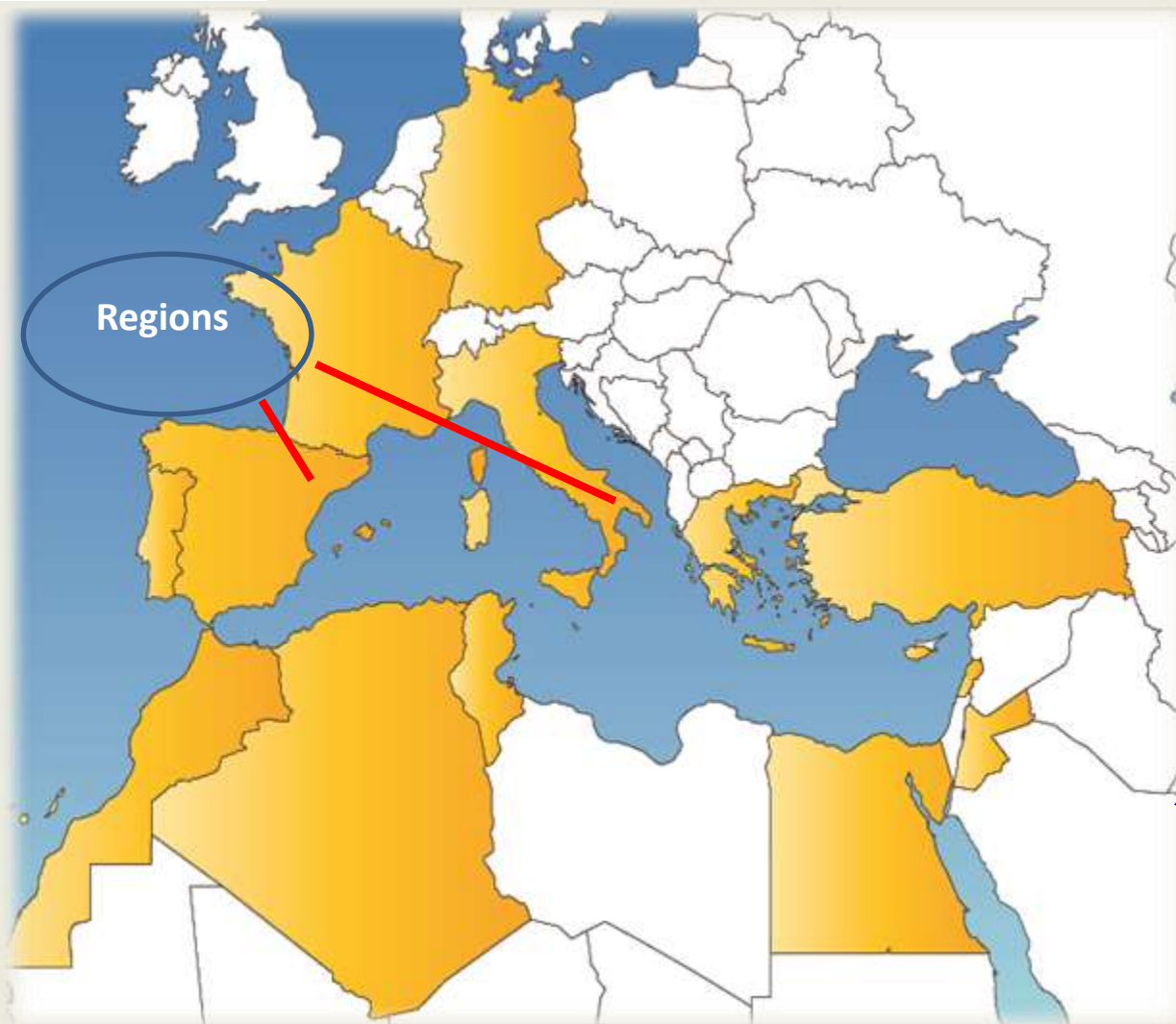


International Workshop on RDI cooperation development  
for tackling global water challenges  
Tangier, Morocco  
31 March 2017

Strengthening Euro-Mediterranean Cooperation through  
ERANETMED joint activities



*Maroun El Moujabber*



- ✓ **23** partners
- ✓ **16** countries
- ✓ **2** regions

## DURATION

- ✓ **Oct. 2013 – Oct. 2017**



## First Joint Call: key facts

1. **Countries engaged:** 15 + 1 International Organization (CIHEAM)
2. **Funding Agencies committed:** 18 (7 from MPCs)
3. **Funds Committed:** 13,00 MEuro (40 % from MPCs)
4. **Themes:** Renewable energy and energy efficiency; Water resources management; Water-Energy Nexus
5. **Actions addressed:** Collaborative research (mandatory), Innovation, Mobility, Capacity building.



## First joint call: submitted proposals

**190** proposals submitted

❖ **107 Energy**

❖ **57 Water**

❖ **26 Nexus**

**148** eligible proposals

❖ **86 Energy**

❖ **47 Water**

❖ **15 Nexus**

**20** countries involved in proposals

**1136 participants!**





# First joint call: Evaluation & Funding

## EVALUATION

✓ **445** evaluations by **147** evaluators (peer review)

✓ Scientific panel (**15 experts**) for scientific excellence ranking



## FUNDING

✓ **21** projects retained for funding

- **11 Energy**
- **7 Water**
- **3 Nexus**

✓ **76** Beneficiaries in **14** Countries

✓ Total real funding: **11M** Euro



## Results of call 1

### Success rate

14% of the eligible proposals

11% of the submitted proposals

**Renewable  
Energies and  
Energy  
Efficiency**

**86** (58 %)

**Energy-Water  
Nexus**

**15** (10 %)

**Water Resources  
Management**

**47** (32 %)

**Eligible: 148 proposals for evaluation**

**11** (52 %)

**3** (14 %)

**7** (33 %)

**Funded: 21**



## The 2<sup>nd</sup> ERANETMED call

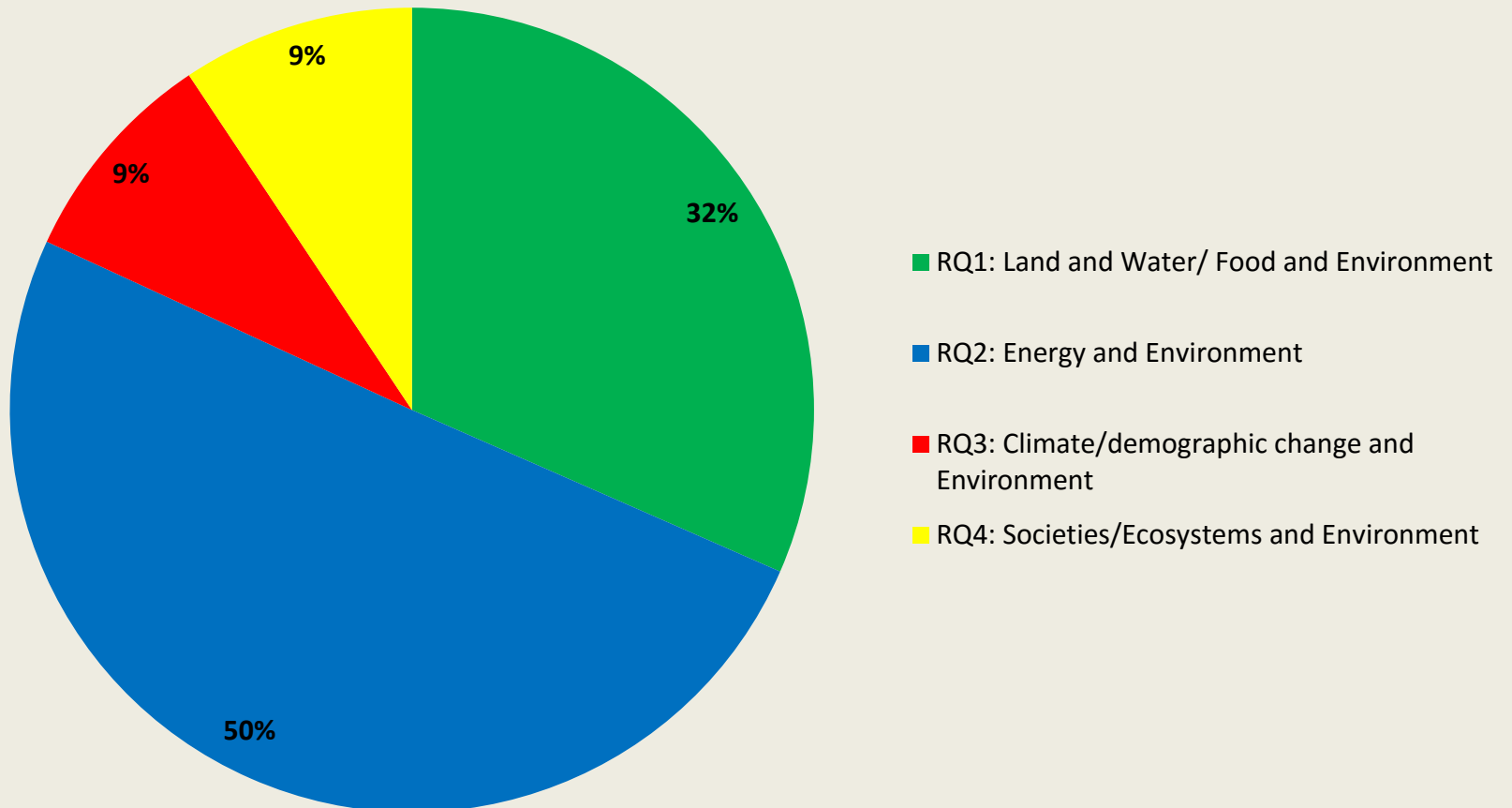
1. **Countries engaged:** 14 + 1 International Organization (CIHEAM)
2. **Funding Agencies committed:** 17 (7 from MPCs)
3. **Funds Committed:** 12,50 MEuro (40 % from MPCs)
4. **Themes:**
  - “Land &Water/ Food” and Environment (Call identifier RQ1-2016)
  - Energy and Environment (Call identifier RQ2-2016)
  - “Climate/demographic change” and Environment (Call identifier RQ3-2016)
  - “Societies/Ecosystems” and Environment (Call identifier RQ4-2016)
5. **Actions addressed:**

Collaborative research (mandatory), Innovation, Mobility, Capacity building.



## 171 Submitted Proposals

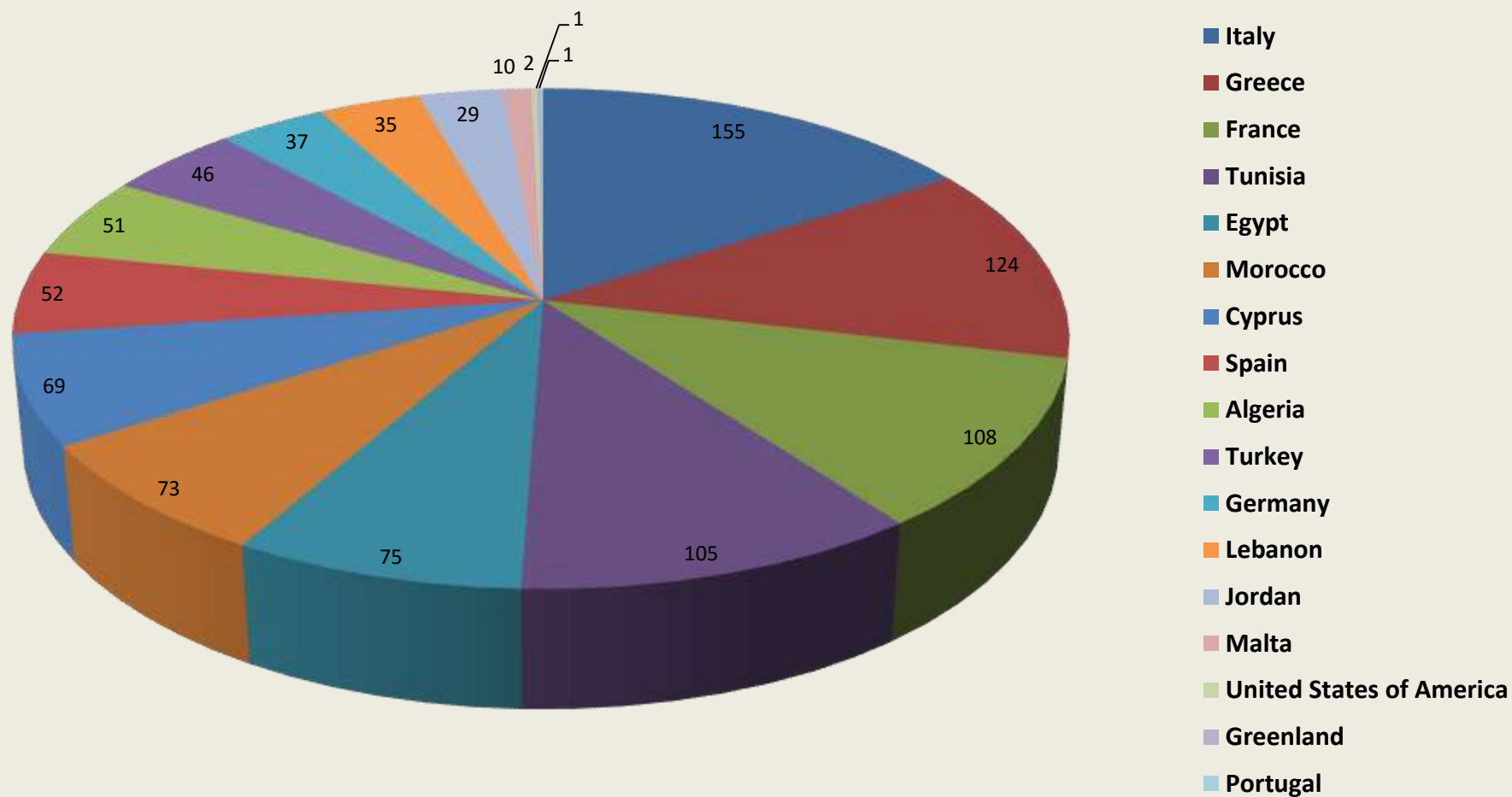
Proposals submitted per Research Question





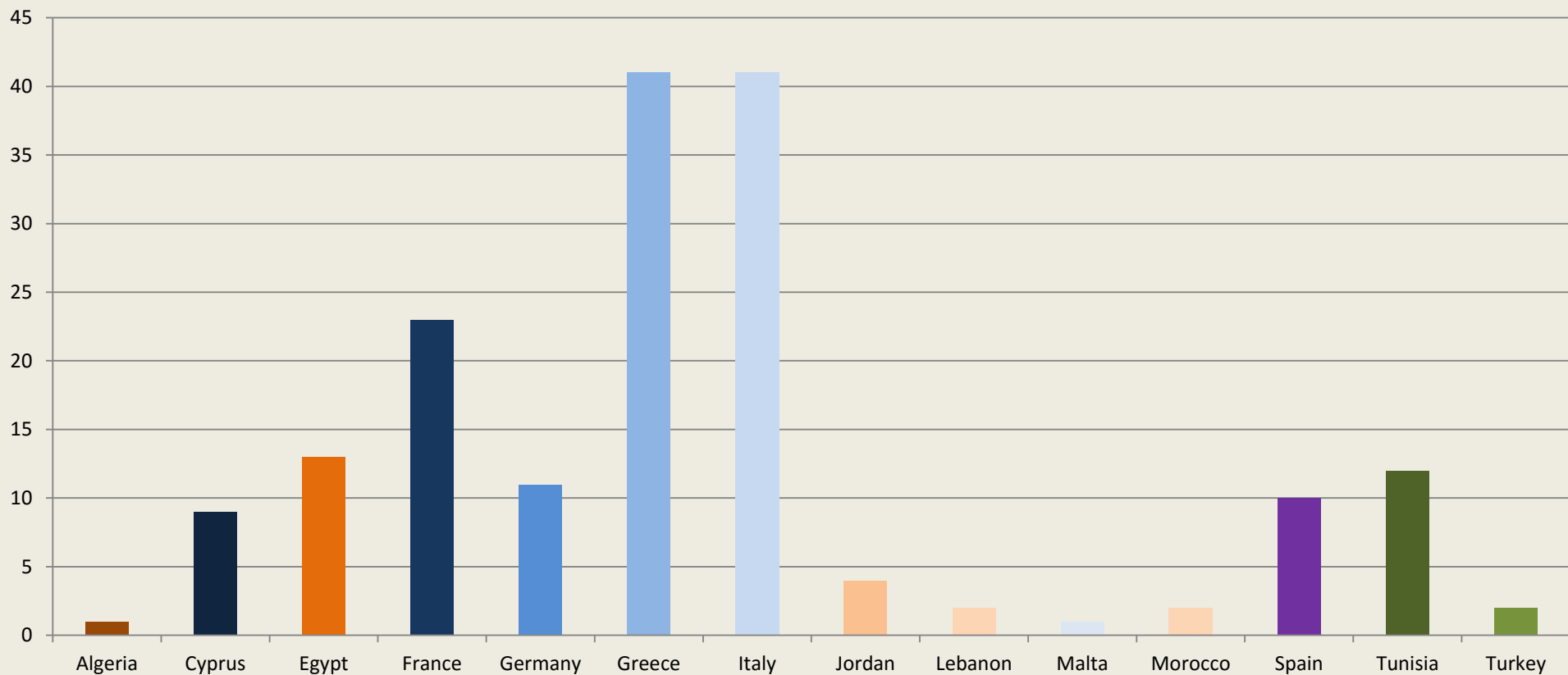


## Overall Proposal Participations





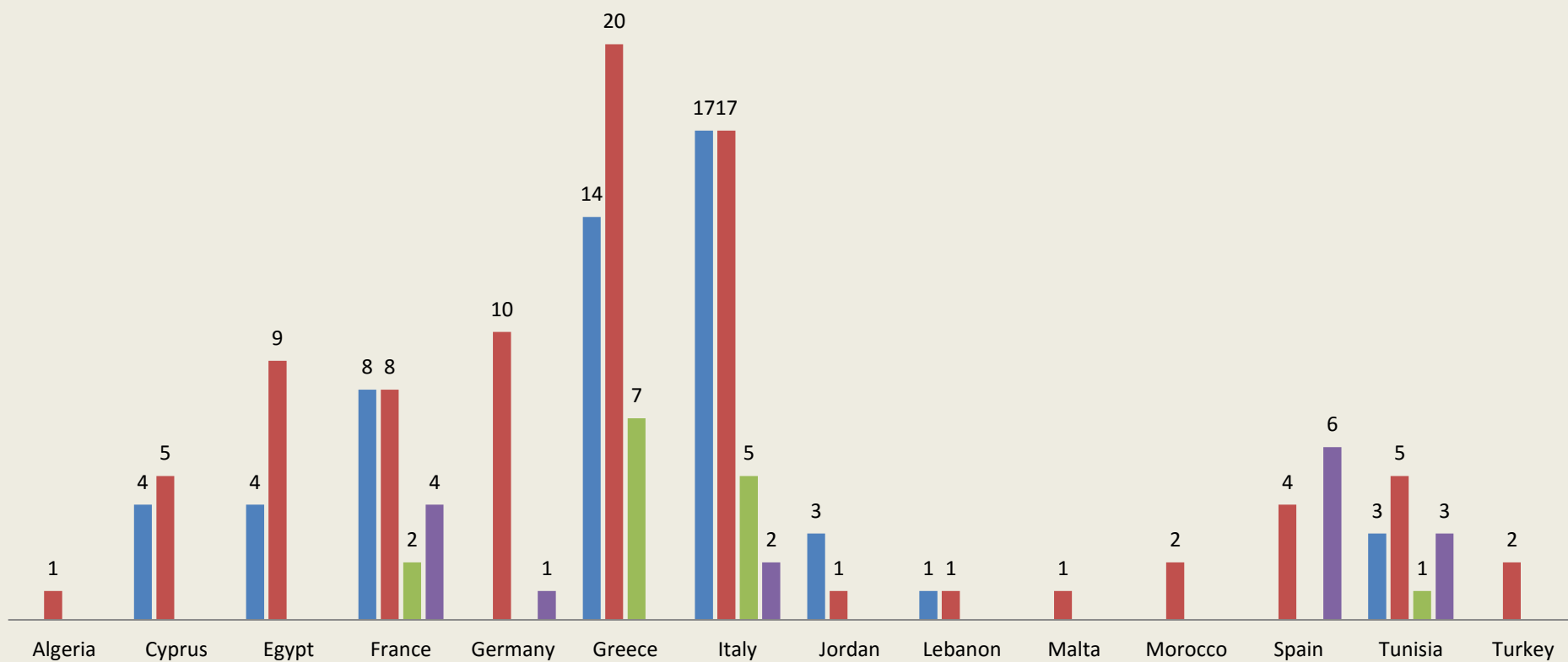
## Country Affiliation of Coordinators





## Country affiliation of Coordinators per RQ

■ RQ1 ■ RQ2 ■ RQ3 ■ RQ4





## Second joint call: Evaluation & Funding

### EVALUATION

✓ **516** evaluations by **172** evaluators (peer review)

✓ Scientific panel (**16 experts**) for scientific excellence ranking



### FUNDING

✓ **17** projects retained for funding

- **4 RQ1**
- **10 RQ2**
- **1 RQ3**
- **2 RQ4**

✓ **70** Beneficiaries in **14** Countries

✓ Total real funding: **10M** Euro



# ERANETMED Calls

1st Call	2nd Call
<b>Renewable Energy and Energy Efficiency, Water Resources management and their connections for the Mediterranean Region</b>	<b>Environmental challenges and solutions for vulnerable communities</b>
13,720,000Eur	11,450,000Eur
8,400,000Eur (EU)	6,800,000Eur (EU)
5,020,000Eur (MPC)	4,350,000Eur (MPC)
300,000Eur (CIHEAM)	300,000Eur (CIHEAM-1)



2 JOINT CALLS

€ 25 millions





## ERANETMED 3° call

- Sustainable management of resources for the economic growth of the Mediterranean region
- 15 May: launch of the call

# Thank you

- [www.eranetmed.eu](http://www.eranetmed.eu)
- [elmoujabber@iamb.it](mailto:elmoujabber@iamb.it)
- [bogliotti@iamb.it](mailto:bogliotti@iamb.it)





# PRIMA

Giuseppina Monacelli,  
PRIMA representative



PARTNERSHIP FOR RESEARCH AND INNOVATION IN THE MEDITERRANEAN AREA

## **Giuseppina Monacelli**

ISPRA representative in the IT4PRIMA core group

*on behalf of Prof. Angelo Riccaboni – Coordinator of PRIMA*

# Partnership for Research and Innovation in the Mediterranean Area (PRIMA Joint Initiative)

- ▶ Launched as an immediate follow-up to the **2012** Barcelona Euro-Mediterranean Conference by a group of EU Member States and Mediterranean Partnering Countries (MPCs),
  - ▶ to develop innovative solutions and promote their adoption for **improving the efficiency and sustainability of food productions and water provision**
  - ▶ to support an inclusive well-being and socio-economic development in the Mediterranean Area, within the framework of a **reinforced Euro-Mediterranean co-operation**



# Art. 185 TFEU

- Article 185 of the Treaty on the Functioning of the European Union (TFEU) enables the EU to make provision for its **participation in research and development programmes undertaken by several Member States**, including participation in the structures created for the execution of those programmes.
- Article 185 initiatives may only be proposed by the Commission in cases where:
  - there is a need for a **dedicated implementation structure** (DIS)
  - there is a **high level of commitment of Participating States** to **integration at scientific, management and financial levels**.
- In an Article 185 initiative, all Participating States (EU Member States and third countries) have the **same rights** (e.g. participation in governing structures with decision-making power) **and same obligations** (e.g. financial contribution) under the relevant basic act.



# PRIMA Participating States



## Budget

- **The Participating States have already committed to provide €210 million in cash.** In fact, the current commitment of cash plus in-kind contributions exceeds €300 million of public funding for R&I activities towards achieving the objectives of the PRIMA Joint Programme.
- **The EU financial contribution would not exceed €200 million.** 95% of these funds would be used for operational purposes.



# Implementation and management of the PRIMA Joint Programme

- The PRIMA Joint Programme will operate on the basis of a jointly formulated **strategic R&I agenda** comprising: operational objectives, identified R&I gaps, and main expected R&I results.
- Takes into account Stakeholder opinion through open consultations and face to face **Stakeholder fora**.

**It will be concluded in 2024 and implemented until 2027-2028.**

**PRIMA will be implemented with seven Annual Work Plans (2018 – 2024).**

## Impacts of PRIMA Joint Programme

- It will have **large-scale positive environmental impacts**.
- It will **provide greater opportunities for SMEs** and other companies in the **food** and **water sectors** in the Mediterranean area.
- It will **improve the livelihoods of farmers**.
- It will **improve nutrition and health** for the people of the Mediterranean area.



# The 8 objectives of PRIMA

The PRIMA initiative identified eight operational objectives clustered in **three main thematic pillars.**

## PILLAR 1

**Sustainable management of water for arid and semi-arid Med areas**

### PRIMA OBJECTIVES

- 2. To test and stimulate adoption of context-tailored water-saving solutions, in particular in agriculture
- 7. To improve land and water sustainability in arid and semi-arid watersheds
- 8. To elaborate and stimulate adoption of new policies and protocols for the governance of water management systems

## PILLAR 2

**Sustainable farming systems under Med environmental constraints**

### PRIMA OBJECTIVES

- 1. To develop smart and sustainable farming systems to maintain natural resources and to increase production efficiency
- 5. To design and promote the adoption of novel approaches to reduce the impact of pests and pathogens in farming

## PILLAR 3

**Mediterranean food value chain for regional and local development**

### PRIMA OBJECTIVES

- 3. To innovate in the Mediterranean food products based on Mediterranean diet heritage and to enhance the links between nutrition and health
- 4. To find context-adapted solutions to increase food and water chain efficiency, and reduce losses and wastes
- 6. To conceive and implement innovative, quality oriented models in agro-business as potential sources of new jobs and economic growth

# THEMES

## THEMES/TOPICS TO BE ADDRESSED:

- ✓ Understanding groundwater processes and link with surface water for catchment/basin balance
- ✓ Technical and social aspects of water saving and water management in agriculture
- ✓ Technologies adapted to smallholders and to local conditions
- ✓ Soil, water and vegetation interactions
- ✓ Water systems governance
- ✓ Water reuse and water desalination for use in agriculture

## THEMES/TOPICS TO BE ADDRESSED:

- ✓ Crop and cropping systems resistance to drought and climatic stresses
- ✓ Optimizing pesticides and fertilizers use in rainfed and irrigated agriculture
- ✓ Use of local biodiversity in developing new crops and animal breeds
- ✓ Integration of natural regulation inside production systems , ecological intensification
- ✓ Integrated animal and plant pest and disease management
- ✓ Social aspects of adoption of innovation in farming systems

## THEMES/TOPICS TO BE ADDRESSED:

- ✓ Orienting youths and industry towards sustainable competitive business models
- ✓ Valorising food products from traditional Mediterranean diet
- ✓ Food safety in local food chains, health risk and hazards assessment
- ✓ Organisation and coordination in the food chains for improving efficiency and waste valorisation
- ✓ Integration of smallholders into formal supply chains
- ✓ Health effects of the dietary shifts and promoting healthy diet for the Med populations



# Pillar 1 - THEMES

Pillar 1 themes to be addressed	
<b>Understanding groundwater processes and link with surface water for catchment/basin balance</b>	<p>The PRIMA DIS will ensure that a detailed prioritisation of the activities within each subtheme is defined and reflected in Annual Work Programmes.</p> <p>Such prioritisation will be developed on the basis of the SRIA and of the specific input of the Member States and MPCs participating in the PRIMA Initiative.</p>
<b>Technical and social aspects of water saving and water management in agriculture</b>	
<b>Technologies adapted to smallholders and to local conditions</b>	
<b>Soil, water and vegetation interactions</b>	
<b>Water systems governance</b>	
<b>Water reuse and water desalination for use in agriculture</b>	

# PRIMA Actions

**A - Research and Innovation Action** - Action primarily consisting of activities aiming to establish new knowledge and or to **explore feasibility on a new improved technology, product, process, service or solution**. In PRIMA,

- **IA - Innovation Actions** - Action primarily consisting of activities directly aiming at **producing plans and arrangements** of designs for new, altered or improved products, processes of services. They **may include prototyping**, testing demonstrating, piloting large scale product validation and marked replication.
- **CSA - Coordination and support actions** - Actions consisting primarily of accompanying measures such as **standardization, dissemination, awareness-raising and communication**, networking, coordination or support services, policy dialogues and mutual learning exercises and studies, including design studies for new infrastructure and may also include complementary activities of strategic planning, **networking and coordination between programmes in different countries**.
- **TMA - Training and mobility Actions** - In PRIMA these actions are primarily consisting of both developing research /capacities of Researchers and innovation/competence broker & entrepreneurship skills. These actions promote also **mobility of researchers, research staff and innovator brokers**.
- **SME instrument** - This instrument is aimed at **highly innovative SMEs** with the **ambition** to develop their growth potential. It offers lump sums for **feasibility studies**, grants for an **innovation project's main phase** (demonstration, prototyping, testing, application development...).

# PRIMA Web & Social

[www.prima4med.org](http://www.prima4med.org)



[www.4prima.org](http://www.4prima.org)



Facebook



Twitter





PARTNERSHIP FOR RESEARCH AND INNOVATION IN THE MEDITERRANEAN AREA

**Thank you for your kind attention**

[prima@unisi.it](mailto:prima@unisi.it)





## LEAP-Agri

Bernard Mallet,  
LEAP-Agri deputy  
coordinator



# LEAP-Agri



**A long term EU-Africa research  
and innovation partnership  
on  
food and nutrition security and  
sustainable agriculture**

## **European Union - African Union High Level Policy Dialogue on Science, Technology and innovation**



- > priority on Food Nutrition Security and Sustainable Agriculture**
- > ERAFRICA + ProIntensafrica**
- > EC H2020 Tool to foster partnerships: ERA-NET-Cofund**
- > Joint proposal submitted to H2020 SFS (22 countries - Feb 2016)**
  - > LEAP-Agri**

## **The LEAP Agri project : 30 partners from 18 countries**



**Africa:** Algeria, Burkina Faso, Cameroun, Egypt, Ghana, Kenya, Senegal, South Africa (2), Uganda;

**Europe:** Belgium (3), Finland (2), France (4), Germany (2), Netherland (3), Norway, Portugal, Spain (2), Turkey;

**International : CIHEAM + European Commission : DG RTD H2020**

**24 Funding Partners (Ministries, Funding Agencies) :**  
**Call Implementation and the Projects funding**

And

**6 Non Funding Partners (European Research organizations) :**  
**Contribution to long term partnership strategies**



## **A joint project signed on January 2017**

(H2020-SFS-2016-1 Number: 727715)

**With two pillars:**



- > A joint call (15 March 2017)  
for cofounded Europe Africa research projects  
with a total budget of 27,6 million €**
- > “Additional activities”: Feeding the EU- Africa  
long term partnership in R&I on food and  
nutrition security and sustainable agriculture**

## The Call thematics :

- > Sustainable agriculture and aquaculture
  - > Food, nutrition and health
    - > Access to food and trade

*Water : a key and transversal question*



## The Cofunded Projects :

at least 2 African and 2 European eligible teams

**Associated Partners** out of LEAP-Agri (either national or international such as CGs, Excellence Centers) are welcome, with their own funds (either national, international, ...) but are not eligible to LEAP-Agri funds

**Preproposals : Call launch 15 March 2017 / open -> 15 June 2017**

# What do we expect :



- **A cluster of 20/30 EU AU projects**
- **Covering the “Food System” questions**
- **Combining Science, Innovation,**
  - **Taking care of Impact pathway**
  - **Giving support to decision makers**



## **Additional activities (WP6): Feeding the EU- Africa long term partnership in Research and Innovation on food and nutrition security and sustainable agriculture**

- **Developing a strategy to mobilize a consortium of EU-AU funders and research and innovation partners,**
- **Enlarging the Donor mobilization (Belmont Forum, World Bank, EU member state agencies, ...)**
- **Cooperation with the JPIs initiative from FACCE, CLIMATE, WATER...**
- **Provide a framework and mechanism to reflect and conceptualize new partnership instruments**
- **Create a permanent network of Donors & Scientist**

## What do we expect :



- 1. Synergies between EU AU projects**
- 2. Sustain cooperation of our network beyond the project period of LEAP-Agri**
- 3. Efficient contribution to food security and agriculture**
- 4. Launching of operational research alliances (Donors, researchers, targeted policy, population, NGOs..)**
- 5. Pooling of resources (capacities, in-kind and funds) for Food Security**
- 6. Enhanced visibility & Acquisition of partners**

# The LEAP Agri budget



**Max Partners contribution to the Call**  
**000**

**€ 18 500**

**Max EC Top Up (Support to projects):**  
**9 111 942**

**€**

**Max Support to cofounded projects**  
**27 611 948**

**= €**

**Max EC Unit costs recovering**

**€ 1 794 375**

**Estimated Total Project Cost:**

**€ 33 049 448**

# The LEAP Agri project



- > Project start : **1<sup>st</sup> December 2016**
- > Grant + Consortium Agreements : **March 2017**
- > Call launch : **15 March 2017**
- > Project Implementation : **+/- July 2018 – July 2021**
- > End of the LEAP-Agri project : **30 November 2021**



***For more information :***

**[www.leap-agri.com](http://www.leap-agri.com)**





## AfriAlliance

Mamohloding Tthagale,  
AfriAlliance  
representative



# afrialliance

Africa-EU Innovation Alliance for Water and Climate

Dr. Mamohloding Tlhagale, Head of International Cooperation and Partnerships,  
Water Research Commission (WRC), South Africa

WaterJPI International Workshop on RDI cooperation development for tackling  
global water challenges, Royal Tulip City Centre, 31 March 2017, Tangier,  
Morocco

UNESCO-IHE  
Institute for Water Education



Office  
International  
de l'Eau



WATER  
RESEARCH  
COMMISSION



UNIVERSITY OF TWENTE

FACULTY OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION



The European Water System



WASCAL  
Water Africa Science Centre for  
Climate Change and Adaptation

ICLEI  
Local  
Governments  
for Sustainability

Both ENDS  
Cooperating for a better world

akvo.org

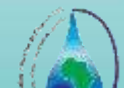


Global Water  
Partnership

CSIR



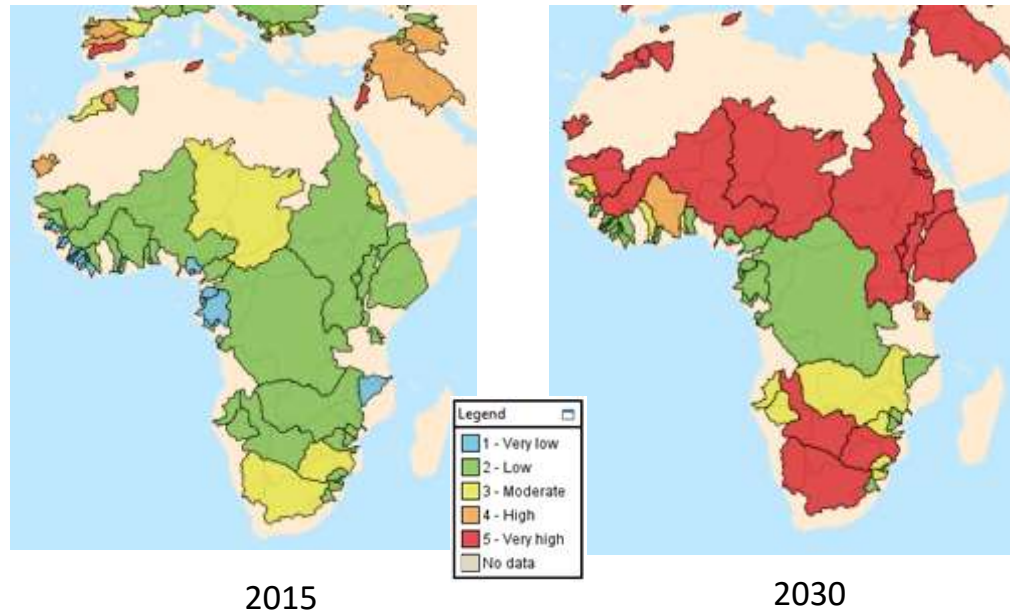
WE & B  
Water, Environment and  
Business for Development



ADWA/AAE

Project Director: Dr. Uta Wehn, UNESCO-IHE, [u.wehn@unesco-ihe.org](mailto:u.wehn@unesco-ihe.org)

# Environmental water stress



Source: Excerpt from the Transboundary Waters Assessment Programme - RIVER BASINS COMPONENT <http://twap-rivers.org/> last visited on 15 March 2015. Environmental water stress is expected to increase due to climate change (especially in dryer regions and where snowmelt plays a crucial role) and increasing water consumption. Very high and high risk basins/BCUs in 2030 are dominated by areas of high population, high water demand, and/or low water availability or some combination of these, while medium and low risk basins are characterized by lower population, higher water abundance and/or lower levels of industrial development to impact the water resources. The highest risk basins in 2030 continue to be located mainly in water-scarce regions.

# Preliminary gap analysis of existing networking associations

	Africa	Africa-EU	EU Wide	Global
<b>Industry</b>	AFWA, AfriWater CoP, GWP (Africa)	EU-Africa regions/cities/RBOs	EIP, WssTP, EEN, AquaEuropa, EUREAU	IWA, Water Alliance
<b>SMEs</b>			EIP, WssTP, EEN	Global Network of Water SMEs, Water Innovations Alliance Foundation, GWP
<b>Regions, RBOs and Cities</b>	ICLEI, ANBO, AMWS, Africa Water and Sanitation local authorities network		NetworkH2O, ERRIN, ICLEI, Euro INBO	UCLG, GWP, INBO, ICLEI
<b>Basic and applied Research</b>	Waternet, Cap-Net UNDP, WASCAL, TIGER, AfriGEOS, IWA (Africa), GWP (Africa), AMMA-NET		EIP, WssTP, EWRA, EURAQUA, SFIC, EWA	IWA, GWRC, Water Innovations Alliance Foundation, GWP
<b>Policy Makers</b>	AMCOW, ANBO	Africa-EU Partnership	IWAC, OECD WGI	UN WATER, GWP, UNECE, OECD WGI
<b>Financers</b>	AfDB Water Facility, WRC	Africa-EU Partnership, EuropeAid, EU MS dev. Agencies	EIB, H2020, EuropeAid, EUREKA (ACQUEAU)	GWP
<b>Regulators</b>			ENDWARE	RegNet
<b>Non-profit and Civil Society Organisations</b>	AfriWater CoP, Cap-Net UNDP, AFWA, ANEW, CONIWAS, Friends of Rivers and Water Bodies, Green Network, WA-NET, ARID		European Water Movement, EWP	BothEnds, GEF-NGO Network, RWSN, Living Lakes Network, GWOPA, Global BoP Network

# afrialliance Main objective

The main objective of AfriAlliance is for African and European stakeholders to **work together** in the areas of water and climate innovation, research, policy and capacity development in order to **enhance the preparedness of Africa** for climate change challenges.

# afrialliance Specific objectives

1. To promote and implement **enriched and strengthened coordination** within Africa and between Africa and the EU
2. To **identify vulnerabilities and raise awareness** about the impacts of Climate Change on Water Resources
3. To **facilitate knowledge sharing and technology transfer** in online and offline environments and events for African and EU stakeholders in water and climate
4. To **improve water resources monitoring and forecasting** processes and tools in Africa

# afrialliance Concept

- Serve as an '**alliance of networks**' by connecting existing African and European networks
- Demand-driven **Action Groups** – bottom-up solutions
- Create shared, demand-driven **short term innovation opportunities** and long-term **research agendas**
- Coordinate and connect (local) demand and supply through **knowledge sharing** and **technology transfer**
- Improve African "data capacity"
- Connect with **international audience**



# afrialliance Activities





# afrialliance Action Groups



## Integrated Water Resources Management and Ethics

An AfriAlliance Action Group

📍 No recipient countries specified

Rhodes University + 1 partner



## Upscaling Potential of Water Harvesting across Africa

An AfriAlliance Action Group

📍 No recipient countries specified

Wageningen University + 1 partner



## Arid African Alluvial Aquifers for Agriculture

An AfriAlliance Action Group

📍 No recipient countries specified

Makelle University + 2 partners



## Sustainable Intensification for Resilience And Food Security (SIRAF)

An AfriAlliance Action Group to support learning about smallholder farmer resilience in Ghana, Burkina Faso and Malawi (and in Africa overall)

📍 Burkina Faso, Ghana, Malawi

IIED + 1 partner



## Efficient and Innovative Small Scale Irrigation (EISSI)

An AfriAlliance Action Group for assessing, prioritizing and advocating efficient and innovative small scale irrigation technologies for African smallholders

📍 No recipient countries specified

EIWR + 4 partners

# afrialliance Events

## 1st Innovation Bridge Event, WaterNet Symposium, 26-26 October 2016, Botswana



## Inaugural Launch Conference, 22-24 March 2017, LoCS4Africa Water & Climate congress, SA



# afrialliance Expected Impacts

## Impacts

Increased preparedness of Africa for future Climate Change challenges

### Minimised fragmentation

- Well-connected broader water sector community in Africa, with the EU and relevant other international actors
- Evidence-based strategic advice and recommendations for improving innovation/development aid in Africa

### Demand-driven

#### Research & Social Innovation

- Identified short term R&I opportunities for implementation
- Shared long term R&I Agenda to prepare for Climate Change challenges
- Small-scale solutions to key challenges

### Improved M&F tools for water & climate

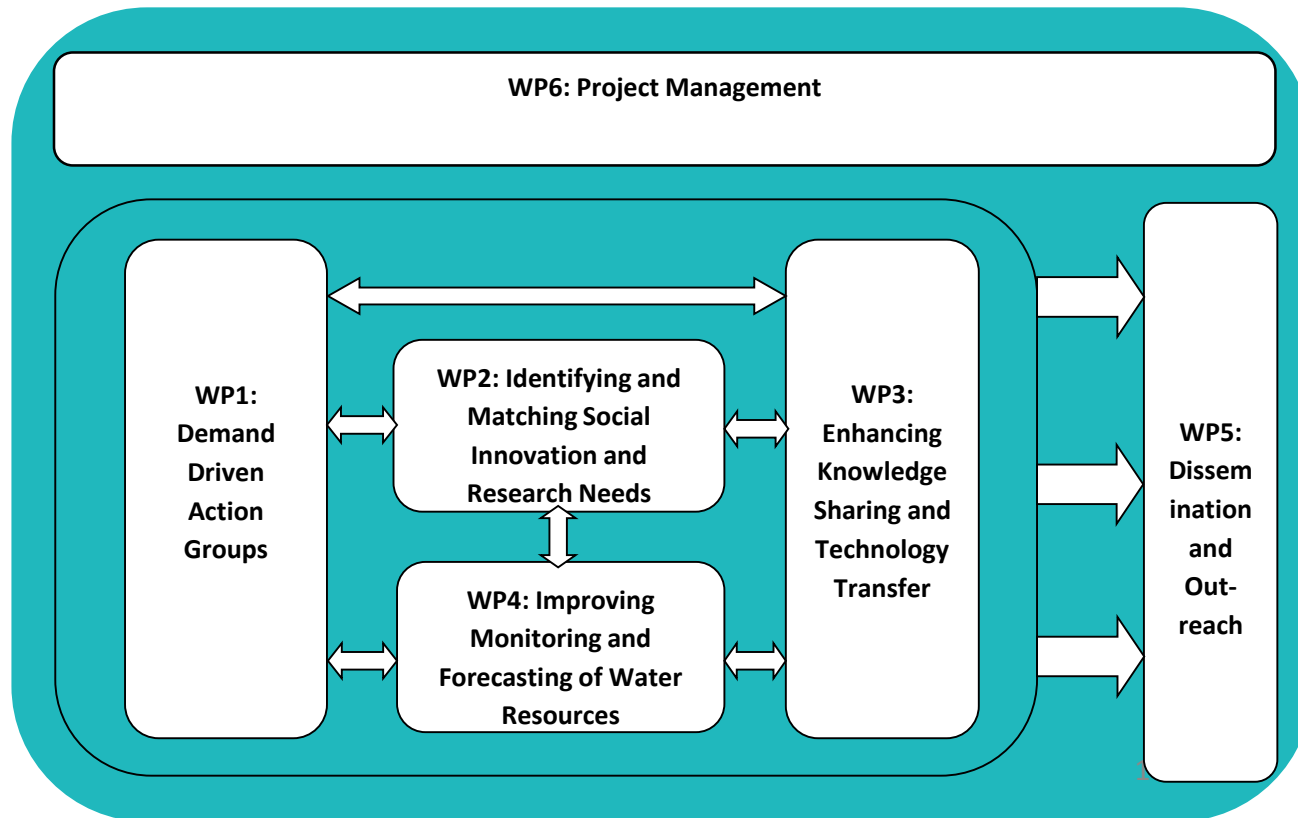
- Scalable blueprint for triple-sensor approach
- Online interactive inventory of water resources M&F efforts in Africa
- Plan to improve M&F mechanisms (tools and institutional set up)

### Enhanced Knowledge Sharing and Technology Transfer

- Structural communications between stakeholders and networks at all scales
- Effective, demand-driven and problem-focused knowledge sharing



# afrialliance Work Packages



# afrialliance Project details

- 5 years: 2016-2021
- Funding by EU H2020, 3.2 million EUR
- Project coordinator:

## UNESCO-IHE

Dr. Uta Wehn,  
Associate Professor of  
Water Innovation Studies



# afrialliance Partners



# afrialliance Advisory Board



Oswald Chanda



Bai-Mass Taal



Dominique Darmendrail



Richard Elelman



Cesar Carmona-Moreno



Michiel Blind



Kees Leendertse



Catherine Chevauche



# thank you



## more information



[www.afrialliance.org](http://www.afrialliance.org)



[afrialliance@unesco-ihe.org](mailto:afrialliance@unesco-ihe.org)



UNESCO-IHE  
Institute for Water Education



Office  
International  
de l'Eau



WATER  
RESEARCH  
COMMISSION



UNIVERSITY OF TWENTE.  
ITC FACULTY OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION



WATERNET  
Building Capacity for Water Research and Innovation in Sub-Saharan Africa



ICLEI  
Local  
Governments  
for Sustainability



Both ENDS  
Exceeding everyday dreams



akvo.org



2iE

WASCAL  
Water Africa Science Service Center on  
Climate Change and Adapted Land Use



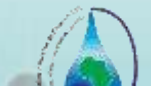
Global Water  
Partnership



CSIR



WE & B  
Water, Environment and  
Business for Development



AFWA/AAE

Project Director: Dr. Uta Wehn, UNESCO-IHE, [u.wehn@unesco-ihe.org](mailto:u.wehn@unesco-ihe.org)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 689162.

# Water JPI activities and modalities of cooperation



Maurice Héral, Water JPI  
Chair

# What is the Water Joint Programming Initiative?

- Coordination of the national / regional public research, development and innovation programmes in Europe
- A process based on variable geometry
- A new way to address RDI problems with European dimension

# Joint Programming in Water

- 2010 – Start of the discussions around **Water JPI**
- December 2011 – **Water JPI** officially adopted by European Competitiveness Council
  - 2011 – 2014: Chaired by Spain, co-chaired by the Netherlands
  - Since November 2014: Chaired by France, co-chaired by Ireland, with the support of Spain and Italy
- February 2013 – **Water JPI** and **CSA WatEUr** (Coordination and Support Action of the Water JPI) official launch meetings in Madrid

# Water JPI Partner Countries

Water JPI partners currently represent 88% of the European National Public RDI investment on water





# Main Objectives of the Water JPI and related Activities

## OBJECTIVES

Reaching effective, sustainable coordination of European water RDI

Involving water end-users for effective RDI results uptake

Harmonising National water RDI agendas in Partner Countries

Supporting European leadership in science and technology

## TOOLS

Joint Call Management for providing and steering **research and innovation** in the water sector

Alignment of Research Agendas (SRIA Document and Implementation Plan) and RDI activities (including mapping activities and infrastructures)

International Cooperation (MoUs, Call Partnerships...)

# Strategic Research and Innovation Agenda



- Conceived as a participatory, inclusive, shared and forward-looking strategic document that lays out Research, Development and Innovation (**RDI**) **needs** in Europe in the field of water
- Conceived as an instrument **to guide European research and innovation**

➡ **Objective: to be the European reference document on water stakes that will framework H2020 calls, etc.**




# SRIA structure



## Vision Document (5 themes)





**Theme 1**  
Improving  
Ecosystem  
Sustainability  
and Human  
Well-being





**Theme 2**  
Developing  
Safe Water  
Systems for  
Citizens




**Theme 3**  
Promoting  
Competitiveness in the  
Water  
Industry



**Theme 4**  
Implementing  
a Water-wise  
Bio-based  
Economy



**Theme 5**  
Closing the  
Water Cycle  
Gap  
Improving  
Sustainable  
Water  
Resources  
Management



**SRIA 2.0**

(5 themes and 11 sub-themes)

# Implementation Plan 2017-2019

- **Water JPI Thematic Activities**

- Exploratory workshops
- Transational joint calls
- Monitoring of Water JPI-funded projects
- Networking Workshops
- Knowledge Hubs
- Thematic Annual Programming
- Strategy Activities

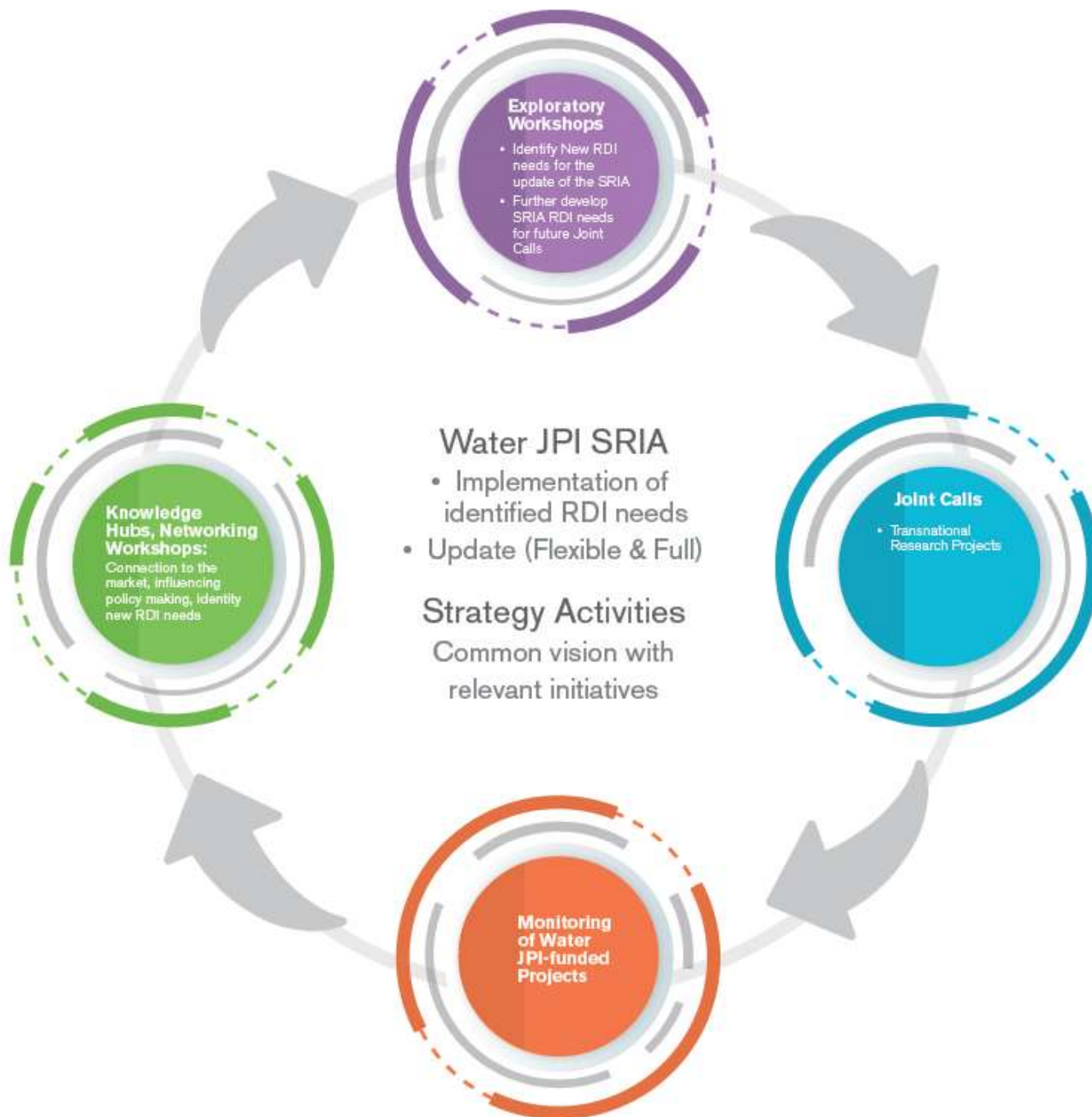


Water Joint Programming Initiative

## Implementation Plan

2017-2019





# Implementation Plan 2017-2019

## • **Water JPI Horizontal Activities**

- Strategy Activities  
(Foresight, Consultative workshop, Consultation)
- Mobility and Infrastructures
- Horizontal Activities Workshops

- Towards a common vision
- Updating the SRIA
- Enlarging the Water JPI membership
- Engaging stakeholders
- International cooperation
- Updating the mapping
- Outreach & dissemination

# Water JPI on-going activities covered by EC funds

- CSA – Coordination and support action
- ERA-NET Cofund – Joint calls with 33% EC top-up

2013	2014	2015	2016	2017	2018	2019	2020	2021
CSA WatEUr								
		ERA-NET Cofund WaterWorks2014						
			ERA-NET Cofund WaterWorks2015					
				CSA International Cooperation				
					ERA-NET Cofund WaterWorks2017 ?			

# Water JPI Joint Calls



# Water JPI Joint Calls

- **Pilot Call** – Emerging Contaminants – No Beyond Europe country
  - Joint Call: 8 M€
  - 7 projects recommended for funding
- **WaterWorks2014** – Waste Water Treatment and Water Reuse
  - Joint Call: 14 M€ (including South Africa)
  - 16 projects recommended for funding – 1 with South Africa
- **WaterWorks2015** – (in coop. with JPI FACCE) - “improving water use efficiency and reducing soil and water pollution for a sustainable agriculture”
  - Joint call: 17 M€
  - 5 outside EU partners: Canada, Egypt, South Africa, Taiwan and Tunisia
  - 21 projects recommended for funding – Kick-off meeting 6 April 2017



# IC4WATER call

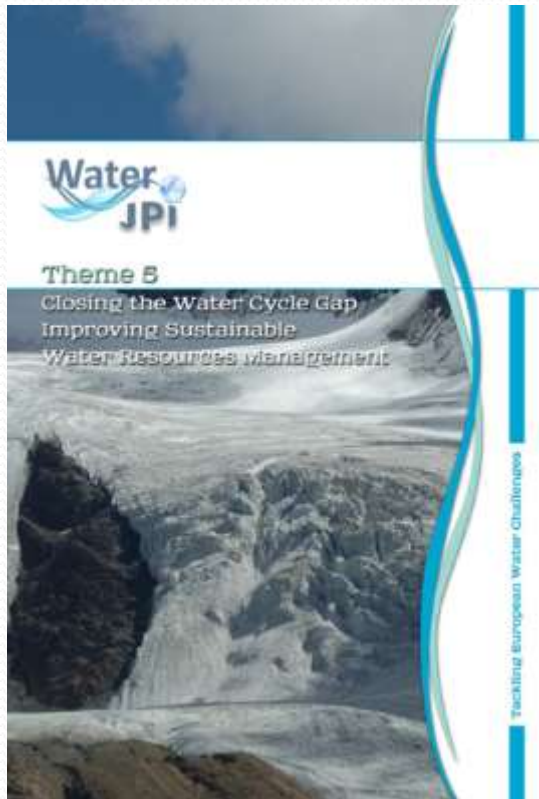
- To be launched in **August 2017** on Multiple Risks
- In the context of UN Sustainable Development Goals and global changes



# WaterWorks2017 Call

- Scheduled on **February 2018** on Closing the Water Cycle Gap: Improving Sustainable Water Resources Management
- Relevant SRIA Subthemes:
  - ☐ 5.1 Enabling sustainable management of water resources
  - ☐ 5.2 Strengthening socio-economic approaches to water management

# WaterWorks2017 Call



Social



Economic



Technological



Environmental



Policy

## Expected Impacts on

- Public awareness of water-reuse opportunities
- Allocation of water resources between competing user demands, mitigation measures and short-term solutions to overcome water scarcity
- Development of practical and low-cost technologies treating wastewater
- Balance between water availability & demand
- Relevant to EU Regulations & Policies (7th Environment Action Programme, Water Scarcity & Drought Strategy...) and to UN Sustainable Development Goals (6, 11 and 13)

# Future projects



# Recommendations for the Horizon 2020 Work Programme 2018-2020

- Priorities for the Water JPI for 2019 & 2020
  - **Ecosystems services** with a particular focus on degraded water bodies and aquatic ecosystems (SRIA theme 1) with Biodiversa
  - **Exposure to pollutants and microorganisms** present in water resources (SRIA Theme 2- 2.1) in collaboration with JPI AMR (Anti Microbial Resistance)



# Knowledge Hub



# Knowledge Hub development

A Knowledge Hub is a network consisting of selected research groups within a defined area of research.

The Water JPI Knowledge Hub will be built for **selected research groups and targeted to stakeholders.**

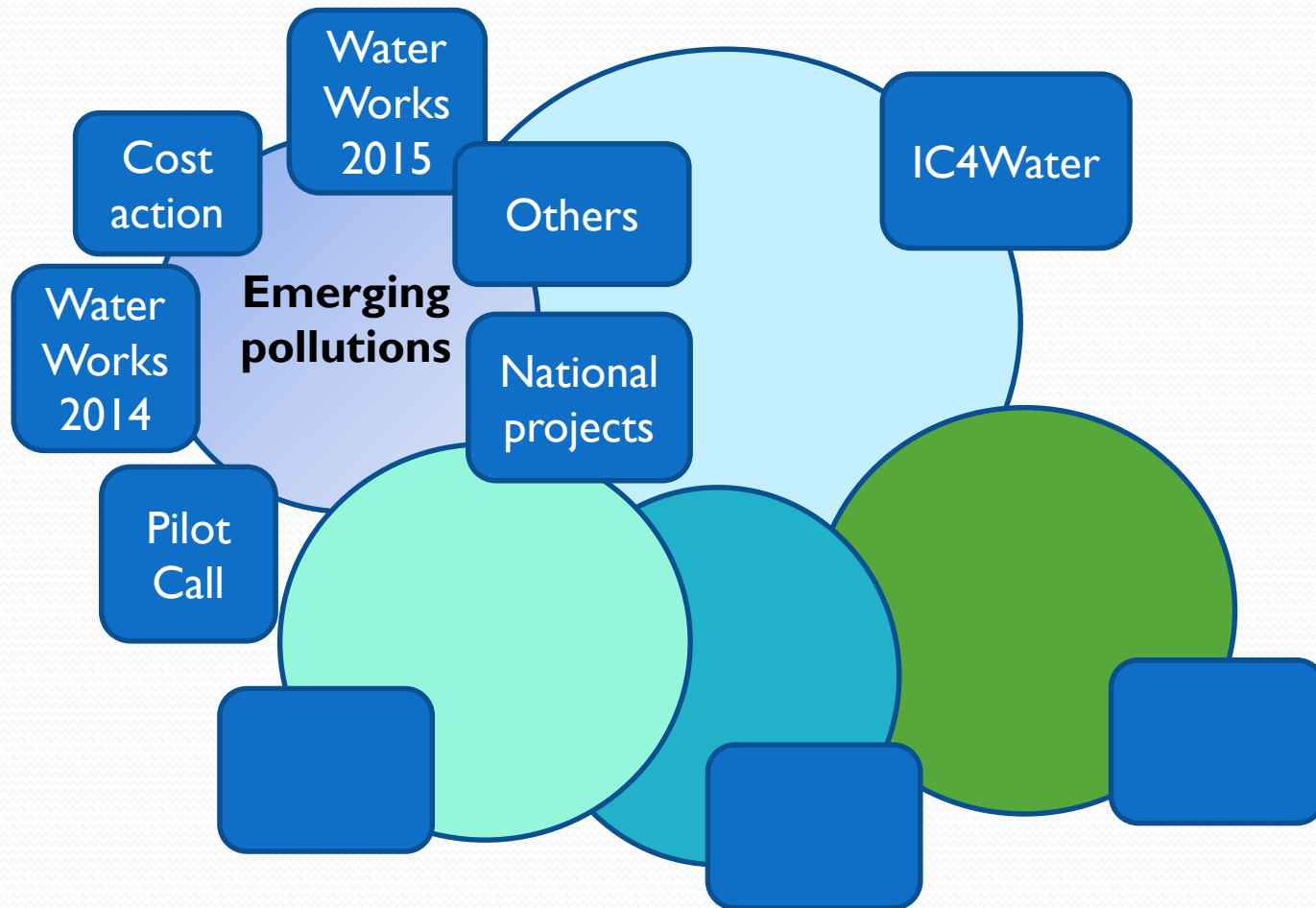
- Added values

- establishing a critical mass of research and technological excellence,
- integration of knowledge,
- sharing of infrastructures, data and modelling tools,
- training and capacity building,
- improved communication and networking with stakeholders and the scientific community.

⇒ First KH workshop on the 22<sup>nd</sup> of March 2017 in Dublin



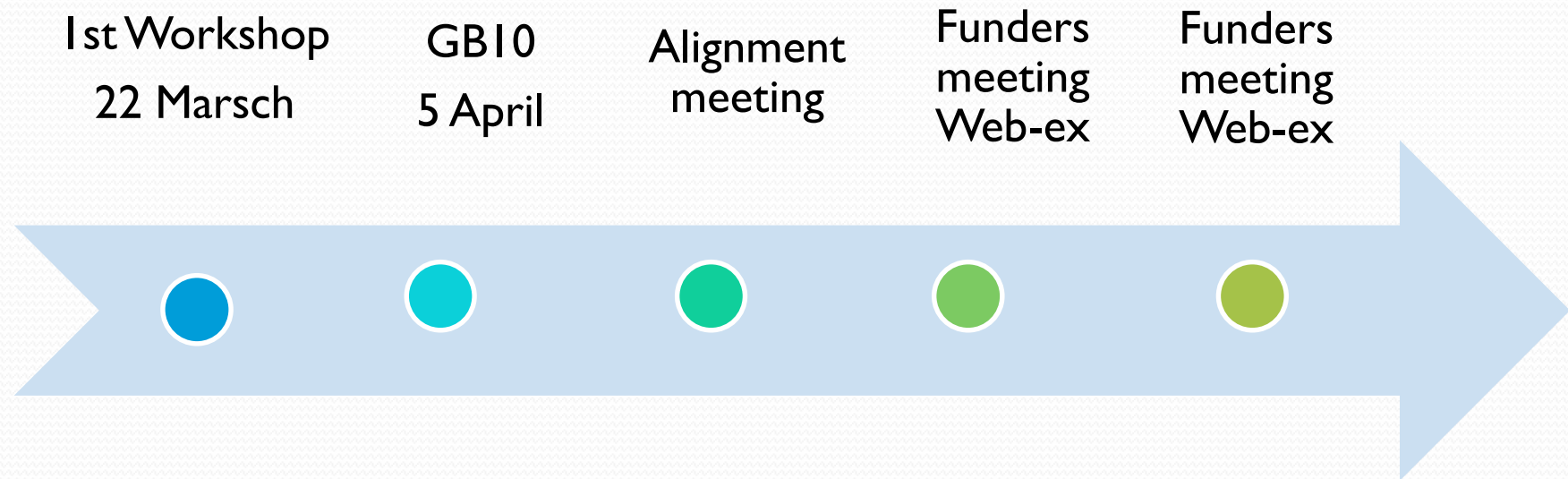
# Water JPI Knowledge hubs



# Summary

- Organization of WaterJPI KH – **research driven KH create flexible KH**
- Funding for participants **travelling and networking costs** are crucial for the performance of the KH
- **Aim for the KH** – It is important to have strategy for the KH and develop the aim for it
- **Emerging pollutants** in one of the key research topics in SRIA.
- **Stakeholder engagement** and efficient use of research results are important aims of Water JPI

# Activities and timetable 2017



# Water JPI and International cooperation



# Water JPI / International partners

Water JPI already has

- Members in several EFTA countries, enlargement countries and countries covered by the European Neighbourhood Policy



- Contacts beyond these countries:
  - Other EFTA / Neighbourhood Policy countries
  - Industrialised countries and emerging economies
  - Developing countries

# International Cooperation

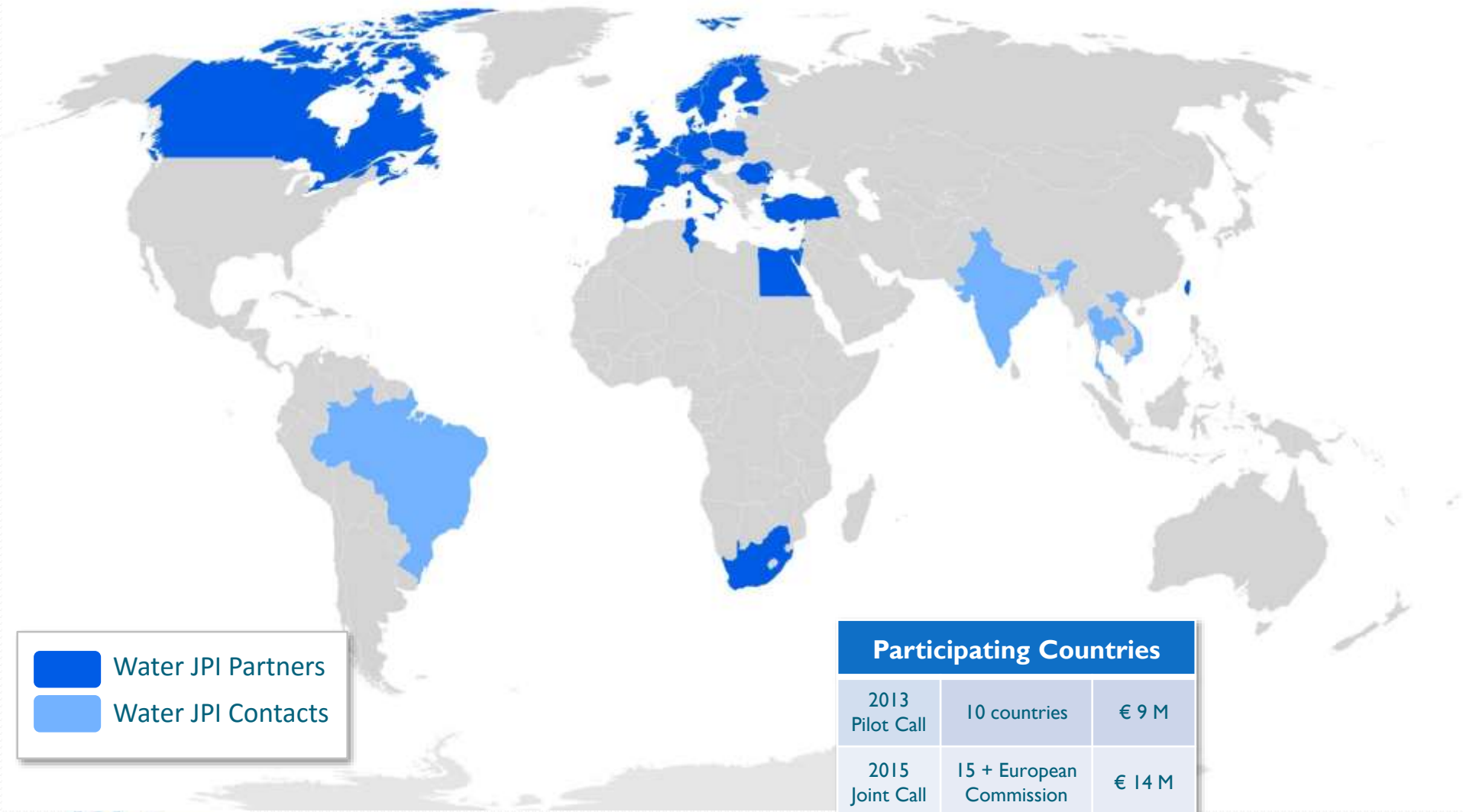
- Mapping of RDI activities and first contacts with research funding organisations to invite them to participate in the ERA-NET



- ✓ Brazil
- ✓ Canada
- ✓ China
- ✓ India
- ✓ South Africa
- ✓ USA
- ✓ Vietnam



> **Criteria:** Scientific excellence, development and market

# International Linkages



 Water JPI Partners  
 Water JPI Contacts

## Participating Countries

2013 Pilot Call	10 countries	€ 9 M
2015 Joint Call	15 + European Commission	€ 14 M
2016 Joint Call	22 + European Commission	€ 25.5 M



# Cooperation challenges



# A new Coordination Action – International Cooperation on Water

## Strategy Activities

**Strategy for enlarging Water JPI network and the dialogue platform**

**Building the Public – Private Partnership for developing & implementing research and innovation programme**

## Implementation Activities

**Knowledge Hub development**

**Joint activities on a shared topic for the achievement of UN sustainable development goals related to water (UN SDG) – including Joint call without top-up**

# The IC4WATER partnership

- 18 Water JPI partners from 17 countries + WssTP (BE)
  - CY, DE, DK, EE, ES, IE, IL, IT, FI, FR, MD, NL, NO, PT, RO, SE, UK
- Support from:

Countries already involved in Water JPI activities	New countries	International initiatives	Associated European Partners	Regional initiatives
ASRT, Egypt	CONFAP, Brazil	Belmont Forum	JPI FACCE	PRIMA Initiative
MOST, Taiwan	MOST, Thailand	GWRC	JPI Urban Europe	BONUS
IRESA, Tunisia	MOST, Vietnam	Division of Water Sciences, UNESCO	JPI Climate	
DST, South Africa			EURAQUA	
			JRC	

# Our Wishes, long-term cooperation partnership agreements

On Joint Actions such as

- Shared strategic research agenda
- Joint calls
- Demonstration programmes or launch of demonstration platforms
- Access to key infrastructures, observatories
- Knowledge hub (Including development of policy briefs, innovation factsheets)
- Joint events / conferences / workshops / webinars
- Brokerage events / roadshows
- Training and capacity building
- Mobility schemes (for researchers, for research programmes managers)
- Connections with leading research networks (e.g. COST Actions)



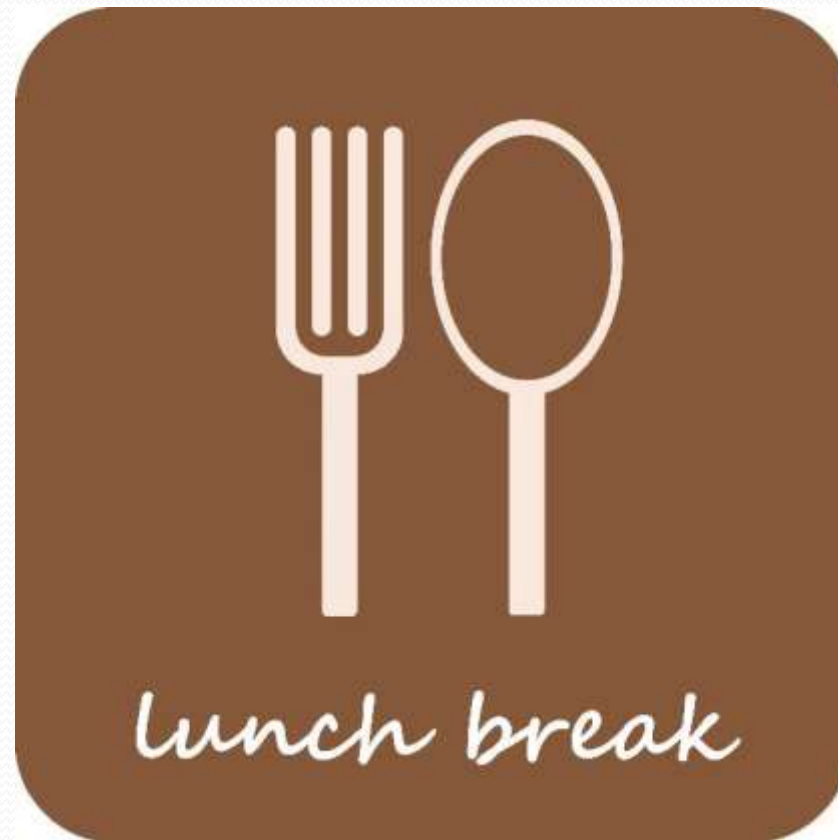
# Being up-to-date on the Water JPI



- A website: <http://www.waterjpi.eu/>
- A newsletter
- A LinkedIn group
- A Secretariat in France (ANR):
  - [waterjpisecretariat@agencerecherche.fr](mailto:waterjpisecretariat@agencerecherche.fr)
  - tel.+33 | 78098120 / +33 | 78098037

# Discussion / inputs / suggestions







# Presentation of interactive sessions



Maurice Héral, Water JPI  
Chair

# Interactive Session I

## **Interactions between regional activities and research themes of the Water JPI**

- Regional challenges: how to find synergies with the numerous existing initiatives? In particular, how to build the interactions between the Water JPI and PRIMA?
- How to define common water priorities between Mediterranean & African countries and EU?
- Specific issues for the region: data collection / validation and harmonization, Open data, any other suggestions

# COFFEE



# Interactive Session 2

## **How to cooperate together?**

- Which activities of common interest (shared RDI agenda, mapping, joint calls, knowledge hubs, mobility, alignment of national programme)?
- Which tools for this cooperation? Is the Era-net cofund a good model for African & Mediterranean countries?
- How to simplify the current complexity (different funding models, evaluation criteria, rate and S&T competencies) and avoid duplication?

# Wrap-up of the two interactive sessions



Table Chairs

# Main challenges for collaboration

- Language barrier: French/English speaking countries
- Lack of visibility of the different initiatives
- Lack of knowledge of what is a JPI
- Problem of involvement of private entities
- Multiple agencies involved → potential conflicts
- Willingness & effective mobilisation of governments

# Interactions between the Water JPI and PRIMA

- Objective: a shared implementation plan between the two initiatives
- Particular attention to the schedules/the calendars of both initiatives
- Difficulty to find interesting topics for the paneuropean partners of the Water JPI and PRIMA.



# Identification of common priorities

- Identification of common priorities is critical for launching cooperation
- Common priorities could be identified at different levels
- Important to ensure that common priorities are of relevance at national level
- Potential criteria for defining the priorities: severity, of water challenges water scarcity, climate change impact on water resources, water resources management, water resources quality and time to provide access to water
- Establishment of a researchers group to work on modelling (defining mid and long term prospective for water resources): tool to define common priorities. Comparison and selection of common robust tools to be generalized and used in the different regions

# Aligning national programmes

- While drafting a national programme, a country should refer to the strategies of the other countries and to the SRIA of the JPI. JPI could serve as an interface to exchange the documents.
- Elaboration of a booklet on EU priorities in the field of water to foster the alignment.

# Joining forces on structural challenges

- Data collection
  - Sharing of data at regional and international levels is critical
  - Harmonisation of data collection methodologies to have comparable data. Information on Water JPI project database will be communicated.
- Mobility
  - Mobility between African/Mediterranean research teams within the projects should be encouraged
- Infrastructure
  - Opportunities to have access to infrastructures in the different regions should be encouraged. Mapping of infrastructure & conditions of access under preparation by the Water JPI.

# Joining forces on structural challenges

- Capacity building of researchers
  - Difficulties for research teams to draft high quality proposals and build relevant Consortia
- capacity building can be implemented by H2020 national contact points
- Platform gathering data on funded projects in the water domain could be implemented (theme, research teams involved)
- Training
  - Elaboration of a mapping of available training opportunities
- Networking
  - Implementation of networking activities

# Tools for multilateral cooperation

- Strengths and weaknesses of Era-net cofund
  - Complex tool, high administrative and financial burden for the coordinators and for non EU countries
  - But it allows greater commitments of the countries (countries are interested in receiving the cofund) and funding of more project (EC contribution avoids the blocking of the ranking list)
  - Need to bring more countries on board to increase visibility of the tool
  - Evaluation of the Era-net should be done to identify the shortfalls and the potential areas of improvement
  - EC currently preparing a new version of the cofund which should be implemented in the following years

# Tools for multilateral cooperation

- Explore partnerships with non state actors (such as the IWA) and regional organisations (such as OMVG or OMVS)

# Conclusions

- Activities of common interest
  - All proposed activities interesting: aligning, networking, clustering, foresight, capacity building
  - Particular interest in the KH:
    - Issue of the topic: enlarge to water contaminants to include more countries
  - Interest by some countries in joining the Water JPI as observers



# Conclusions

- Role for the Water JPI
  - Disseminate the relevant information to interested partners (in particular for KH/procedure to become observers)
  - Improve the visibility of the Water JPI
  - Request the different participating organisations not involved in the Water JPI to communicate a contact point in their organisation
  - Disseminate a short note on Water JPI activities to the identified contact points
  - Launch proactive discussions with PRIMA
  - Remain open and flexible in the establishment of the priorities to allow the involvement of international partners

# Closure of the workshop



Sanaa Zebakh, IAV  
Hassan II

Maurice Héral, Water JPI  
Chair

# For more information

- Joint Calls
- E-newsletters
- Water JPI events
- Projects database
- ...

[www.waterjpi.eu](http://www.waterjpi.eu)



***Thank you!***

Contact

[waterpisecretariat@agencerecherche.fr](mailto:waterpisecretariat@agencerecherche.fr)

***See you...***

